TECHNOROPE

STEEL WIRE ROPE TECHNOLOGIES

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CONTENT

STEEL WIRE ROPES

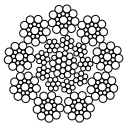
> Special Steel Wire Ropes
> General Purpose Steel Wire Ropes
> Magnetic Rope Testing

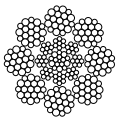
OVERVIEW OF APPLICATION FIELDS!

ELEVATOR

We serve to the important players of the market with our strong stock and fast shipping advantages in a sector which is directly related to human life and constantly developing.

We offer high quality and high performance at the same time for your high, mid and low - rise elevators.


DRAKO 300 T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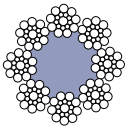
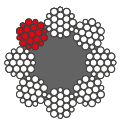
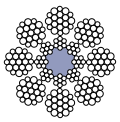

DRAKO 8x19 S-FC


İZMİT 8x19 SEALE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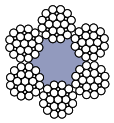
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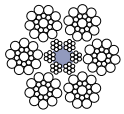
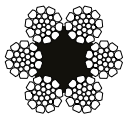

DRAKO 6x19 S-FC


İZMİT 6x19 M (STD)

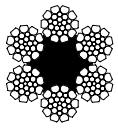
FISHING

Fishery sector has been developing every day in our country, which is surrounded by several seas.

In such a dynamic geography, we offer reliable solutions to all our fishermen for purse seining and trawler with our steel, polypropylene, wire ropes and other products.


OLIVEIRA SUPER YELLOW FIN

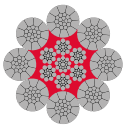

İZMİT 6x19 SEALE

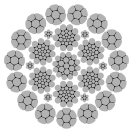

OLIVEIRA ZINCAL COMPACT


İZMİT 6x7 STD

MARINE

We offer safe solutions with high strength steel and synthetic ropes for the sector needs which vary according to ship and tug types in terms of product range.


DIEPA X 53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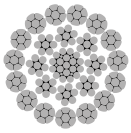
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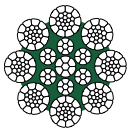
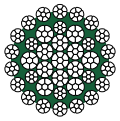

OLIVEIRA HD 8 K PPI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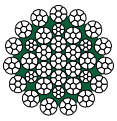
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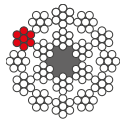
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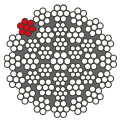
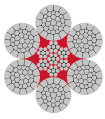

İZMİT 35Wx7 NUFLEX

IRON - STEEL

We offer solutions to high temperature and abrasion for cranes used in iron and steel industry. With the high - tech products we have, we meet the expectations of our business partners by finding right solutions.

In this regard, with sound cooperation, we make significant contributions to steel production and production cost minimization in our country.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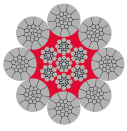
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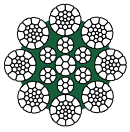
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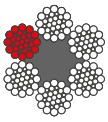
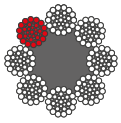
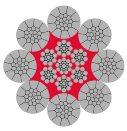

İZMİT 6x36 WS


İZMİT 8x36 WS

OFF - SHORE CONSTRUCTION

The demand for port and shore structures has led to the need for safety, planning and project design in this sector.

We support the leading enterprises of the sector with steel ropes and other lifting equipment, and we conduct many projects together.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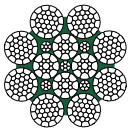
OLIVEIRA
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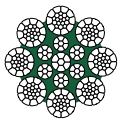
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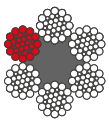
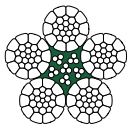

İZMİT
6x36 WS

SUSPENDED SCAFFOLD

We build a strong service network with our strong stock structure and product variety for the suspended scaffolding systems which are one of the leading systems in the construction sector and especially for the high - rise buildings.

As for the ropes which are the heart of hanging scaffoldings, we serve the sector with our European products.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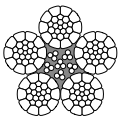
LP 5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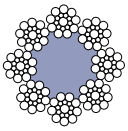
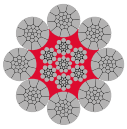

DRAKO
8x19 S-FC

INDUSTRIAL CRANES

In heavy industrial enterprises, which have an important role in the development of the industry, cranes are a very important and life - saving equipment for businesses. We are also adopting the same importance and developing our business operations with this awareness.

For many years, we have been operating as the main supplier of Turkey's leading crane manufacturers. We successfully carry out the distributions of domestic and foreign steel wire ropes as an exclusive partner.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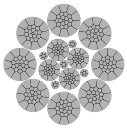
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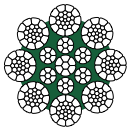
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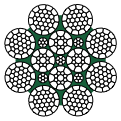
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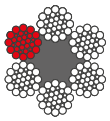
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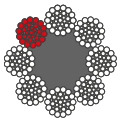
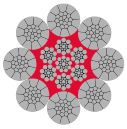

İZMİT
8x36 WS

PORTS

By means of our strong brands and stock structure, we offer the most optimal products to our business partners in the ports which are crucial for export and import in terms of security, performance, time and cost.

We are proud of reaching Turkey and the Middle East safely from Mediterranean to Aegean Sea, from Marmara to Black Sea.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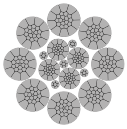
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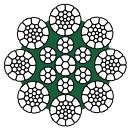
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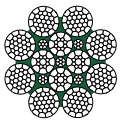
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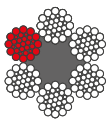
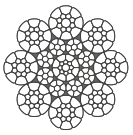

İZMİT
6x36 WS

CABLE CAR

To the suspended hanging vehicle moving through one or several steel ropes stretched between the two places.

We carry out all our business processes in compliance with our trust - focused service concept that entails safe carriage and suspension ropes resistant to abrasion, corrosion and fatigue.


VORNBAUMEN
VS 8-4 C


İZMİT
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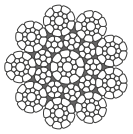
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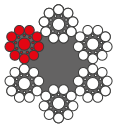
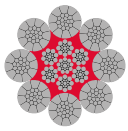

İZMİT
6x19 SEALE

OIL & GAS

We continue to work as a solution partner for companies engaged in exploration works for oil, natural gas and geothermal resources.

We offer a wide range of rope and lifting equipment to geothermal and oil exploration drilling rigs, which are the substantial part of the sector.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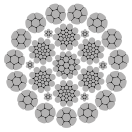
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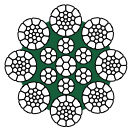
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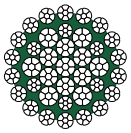
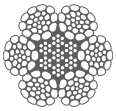
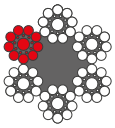
HD 8 K PPI


OLIVEIRA
NR MAXIPACT PPI


UNION
FLEX X-9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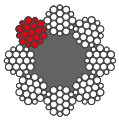
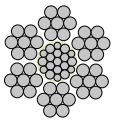
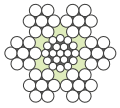

İZMİT
8x19 SEALE

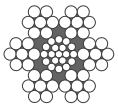
MARBLE

The most important part of the production cost in marble sector is the selection of the steel rope in which the diamond wire used for marble cutting processes.

With the diamond wires manufactured from high performance steel ropes in our product range, we prevent labor, energy, consumable losses, provide a longer service life, and aim to increase operational efficiency.


DIEPA
S 67 WP

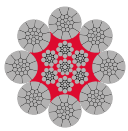

VORNBAUMEN
VS 6-8 P

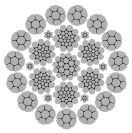

VORNBAUMEN
VS 6-7

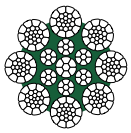
CONSTRUCTION

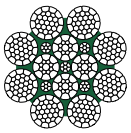
With our institutional background, experienced staff, national and international market - leading products and strong stock structure we have supported construction industry.

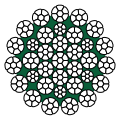
Encouraged by our past achievements, we're working for the aim of spreading our values and service concept beyond Turkey's borders.

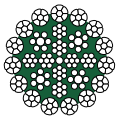

DIEPA
X 53

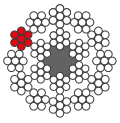

DIEPA
B 55

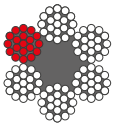

OLIVEIRA
HD 8 K PPI


OLIVEIRA
DP 8 K PPI


OLIVEIRA
NR15 MAXILIFT PPI


OLIVEIRA
TOWERLIFT 15

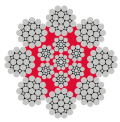

İZMİT
18x7 NUFLEX

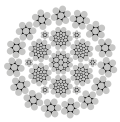

İZMİT
6x19 M (STD)

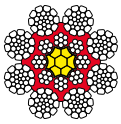
MINING

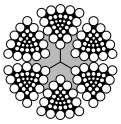
With our reliable, high quality and durable products, we address to mining sector which is capable of creating high added value.

We increase the productivity of the companies by meeting the needs of lifting - pulling equipment, dragline and excavators used in surface and underground mining firms with new - generation solutions.


DIEPA
MX SERİSİ


DIEPA
MB SERİSİ

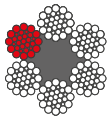

CASAR
TURBOLITE M


CASAR
TRIANGULAR


UNION
TUF-MAX


UNION
POWERMAX PFV

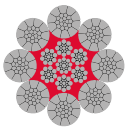

UNION
6-STRAND PFV

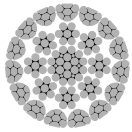

İZMİT
6x19 SEALE

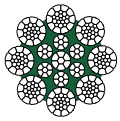
DRILLING

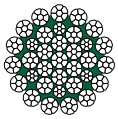
We provide original ropes for ground machinery used in different engineering solutions and application areas in many infrastructure and superstructure projects such as motorways, bridges, viaducts, tunnels, docks, harbors etc.

To ensure the safety of your machines, we provide our long life and high performance assuring products to assist machines with different functions operating in different fields.


DIEPA
X 53


DIEPA
K 43

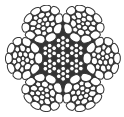

OLIVEIRA
HD 8 K PPI

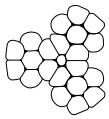

OLIVEIRA
NR15 MAXILIFT PPI

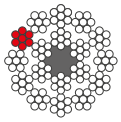
CORE DRILLING

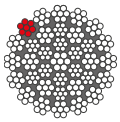
Exploration activities in rich mineral deposits increasingly continue day by day. The requirements and the capacity of the drilling machines used in this field also increase at the same rate.

As a company, we provide solutions with our strong stock and quality product portfolio within the scope of wire-line and drum ropes used in drilling machines. We contribute your business processes together with the regional and global solution partners dealing with domestic and foreign ropes.


UNION
FLEX X-9

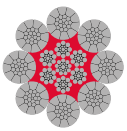

UNION
3xK7

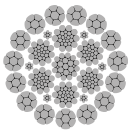

İZMİT
18x7 NUFLEX

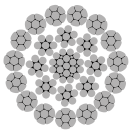

İZMİT
35Wx7 NUFLEX

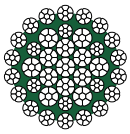
CONSTRUCTION CRANES

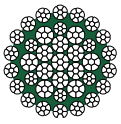
We steadily provide original steel wire ropes for specially designed cranes as well as, wide - range general purpose lifting equipment for leading users and manufacturers.

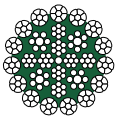

DIEPA
X 53

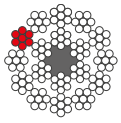

DIEPA
B 55

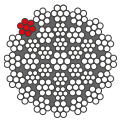

DIEPA
C 45

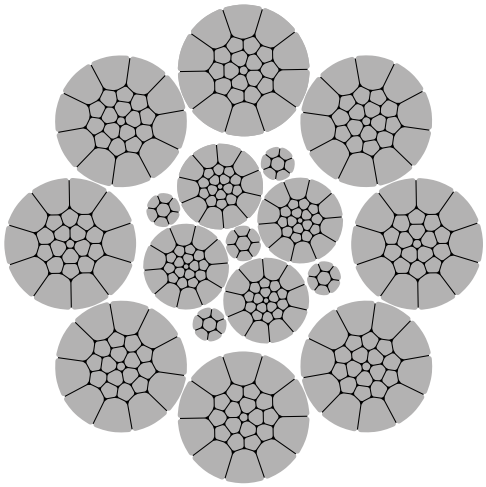

OLIVEIRA
NR MAXIPACT PPI


OLIVEIRA
NR15 MAXILIFT PPI


OLIVEIRA
TOWERLIFT 15


İZMİT
18x7 NUFLEX


İZMİT
35Wx7 NUFLEX



DIEPA
H 43

- Available only in ordinary lay.
- Available in right hand and left hand.
- Plastic impregnated.
- Should not be used with a swivel!

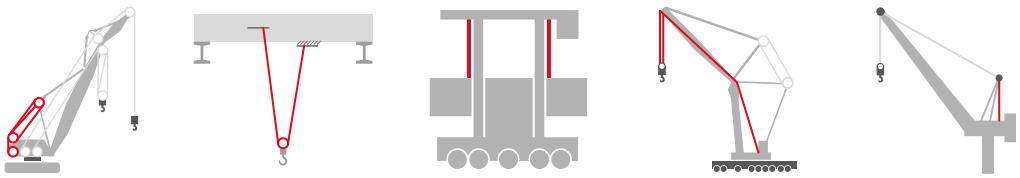
Applications:

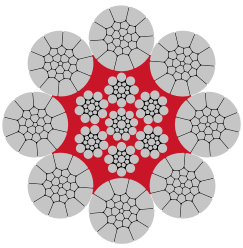
When an extremely high MBL is required for a multipart reeving hoist system: Electric hoists, twin hoist systems, boom hoist and pendant rope for mobile cranes.

GENERAL VIEW

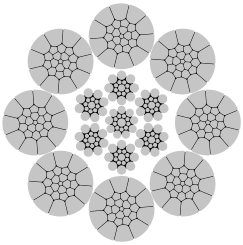
> For details of tables about the product, see page: 320 - 322

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
02	4 - 6	8	95	56	0.7403	0.8400 (2160 N/mm²)
04	7 - 15	8	263	152		
09	16 - 24	8	319	208		
09	25 - 44	8	347	208		
13	45 - 64	8	427	288		
13	65 - 76	8	487	328		





DIEPE X 53



DEIPA X 50

DIEPA
X 53 and X 50

- Available in ordinary lay and lang's lay.
- Available in right hand and left hand.
- Plastic impregnated (X 53).
- Should not be used with a swivel!

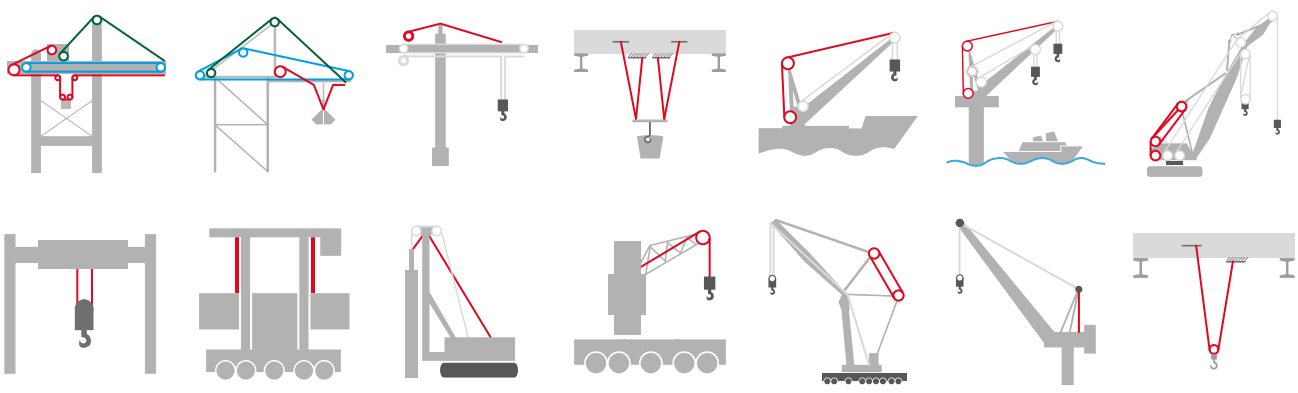
Applications:

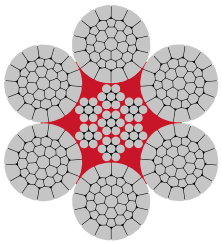
When rotation resistant ropes are not required (twin hoist systems with right hand and left hand ropes, small heights). Hoist for steel mill cranes, container cranes, floating cranes and boom hoist for deck cranes, luffing and mobile cranes, and grab cranes.

GENERAL VIEW

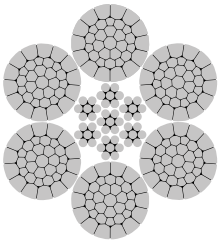
> For details of tables about the product, see page: **323 - 326**

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
04	4 - 14	8	201	152	0.6750	0.8500 (1770 N/mm²) 0.8500 (1960 N/mm²) 0.8400 (2160 N/mm²)
09	15 - 44	8	329	208		
13	45 - 69	8	409	288		
13	70 - 100	8	580	328		





DIEPE PZ 299



DEIPA Z 299

DIEPA
PZ 299 and Z 299

- Non - rotation resistant
- Compacted outer strands
- Use without rope swivel
- Ordinary lay
- Core with internal plastic component (PZ 299)

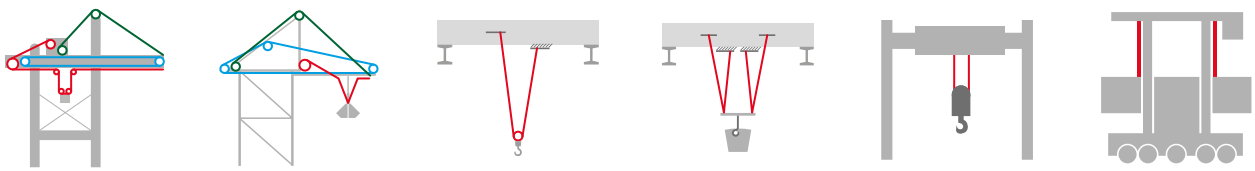
Applications:

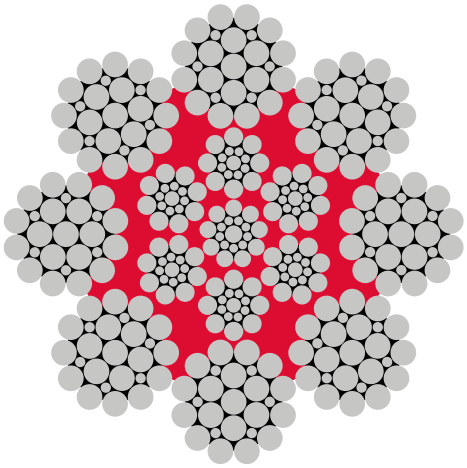
When rotation resistant ropes are not required (twin hoist systems and small heights); iron - steel, container and grab cranes.

GENERAL VIEW

> For details of tables about the product, see page: **327 - 328**

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
01	4 - 6	6	91	42	0.6526	0.8400 (1770 N/mm²) 0.8400 (1960 N/mm²) 0.8400 (1960 N/mm²)
09	7 - 60	6	265	216		





DIEPA MX4

- Non - rotation resistant
- Non - compacted outer strands
- With or without plastic component
- Optimised for longevit

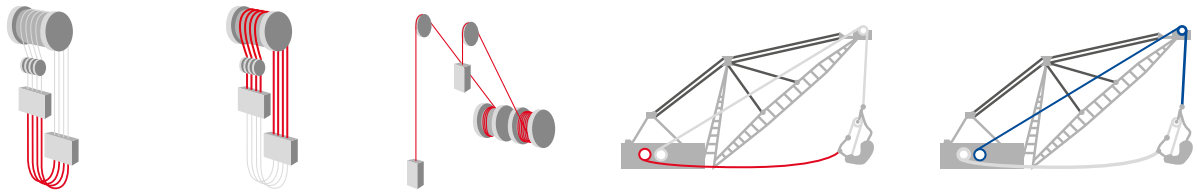
Applications:

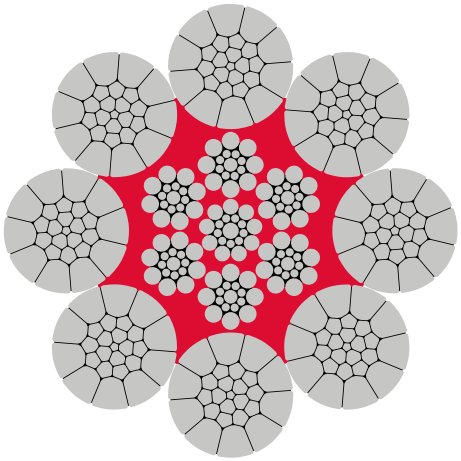
In drum wells, it is used as balance rope and hoisting rope. In surface mining, Dragline cover is used as hoist and drag rope in excavation machines. It is used as hoist rope in electric excavator machines.

GENERAL VIEW

> For details of tables about the product, see page: 329 - 331

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
06	12 - 49	8	152	0.6226	0.8450
13	50 - 69	8	288		
13	70 - 100	8	328		





DIEPA MX5

- Non - rotation resistant
- Compacted outer strands
- With or without plastic component
- Balance between longevity and breaking force

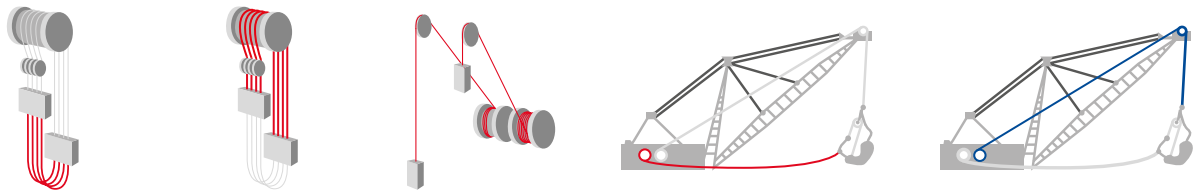
Applications:

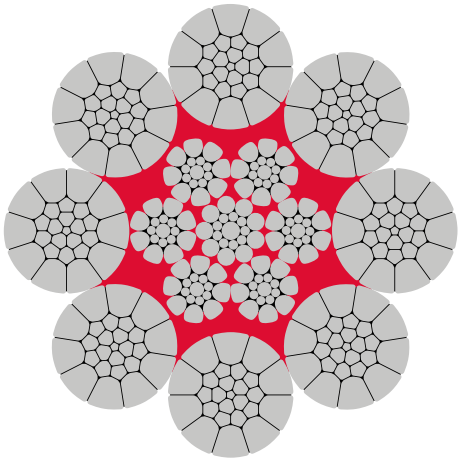
In drum wells, it is used as balance rope and hoisting rope. In surface mining, Dragline cover is used as hoist and drag rope in excavation machines. It is used as hoist rope in electric excavator machines.

GENERAL VIEW

> For details of tables about the product, see page: 329 - 331

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
04	12 - 14	8	152	0.6750	0.8500
09	15 - 44	8	208		
13	45 - 69	8	288		
13	70 - 100	8	328		





DIEPA MX6

- Non - rotation resistant
- Compacted outer and inner strands
- With or without plastic component
- Optimised for breaking force
- Sustainable in rough conditions

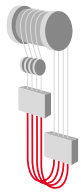
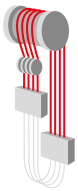
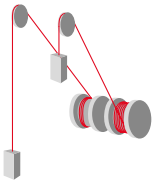
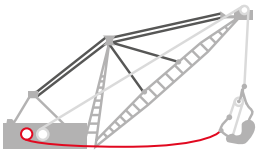
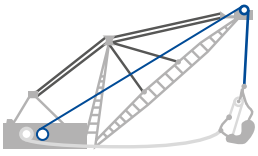
Applications:

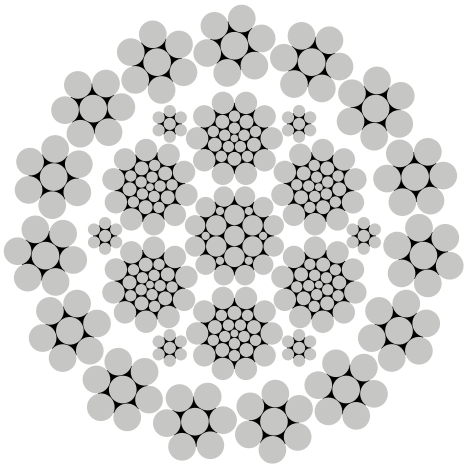
In drum wells, it is used as balance rope and hoisting rope. In surface mining, Dragline cover is used as hoist and drag rope in excavation machines. It is used as hoist rope in electric excavator machines.

GENERAL VIEW

> For details of tables about the product, see page: 329 - 331

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
04	12 - 14	8	152	0.6226	0.8450
09	15 - 44	8	208		
13	45 - 69	8	288		
13	70 - 100	8	328		



DIEPA MB4

- Rotation resistant
- Non - compacted outer strands
- Optimised for longevity

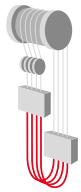
Applications:

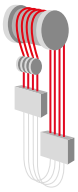
It is used as balance rope and hoisting rope in well mining at a depth of more than 450 meters. It is used as hoist rope in electric excavator machines.

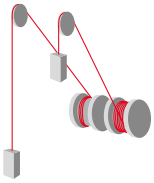
GENERAL VIEW

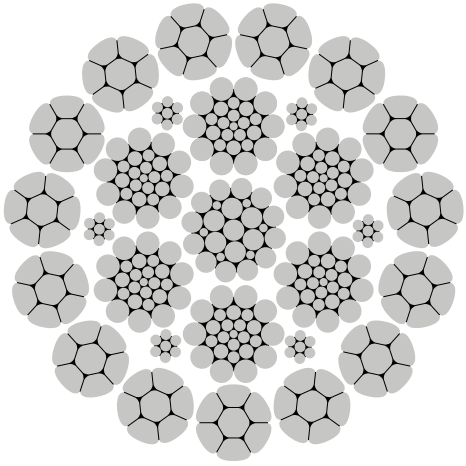
> For details of tables about the product, see page: **332 - 334**

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
23-2	15 - 49	15	105	0.6511	0.7800
27	50 - 99	15	255		
31	100 - 120	15	540		









DIEPA MB5

- Rotation resistant
- Compacted outer strands
- High breaking force

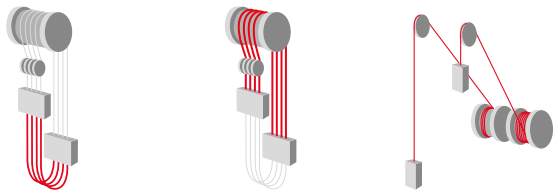
Applications:

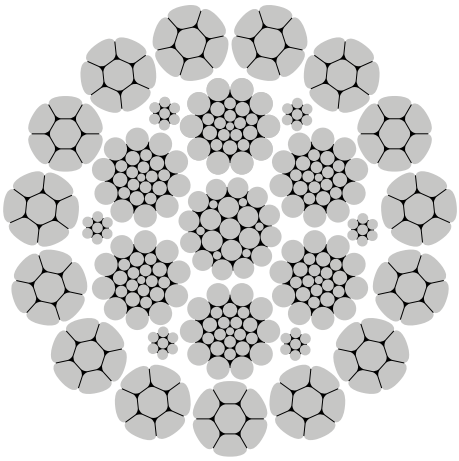
It is used as balance rope and hoisting rope in well mining at a depth of more than 450 meters. It is used as hoist rope in electric excavator machines.

GENERAL VIEW

> For details of tables about the product, see page: 332 - 334

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
23-2	15 - 49	15	105	0.7145	0.8350
27	50 - 99	15	255		
31	100 - 120	15	540		





DIEPA MB6

- Rotation resistant
- Compacted outer and inner strands
- Very high breaking force

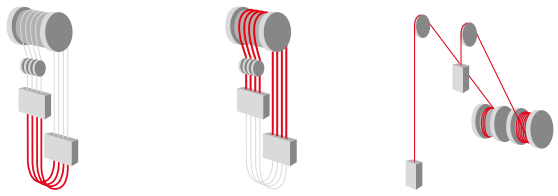
Applications:

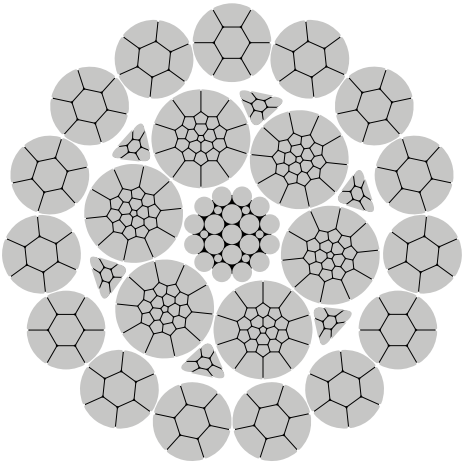
It is used as balance rope and hoisting rope in well mining at a depth of more than 450 meters. It is used as hoist rope in electric excavator machines.

GENERAL VIEW

> For details of tables about the product, see page: 332 - 334

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
23-2	15 - 49	15	105	0.7357	0.8450
27	50 - 70	15	208		





DIEPA MB7

- Rotation resistant
- Compacted outer and inner strands
- Extremely high breaking force
- Optimised for breaking force

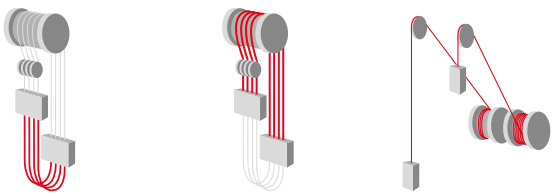
Applications:

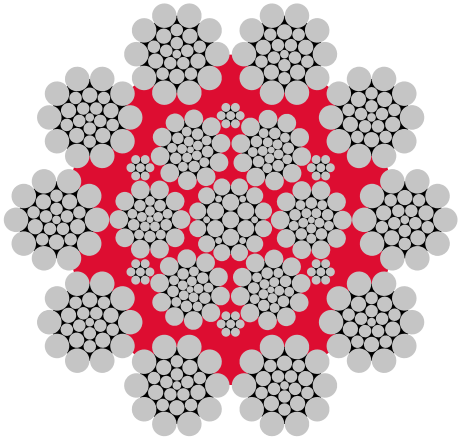
It is used as balance rope and hoisting rope in well mining at a depth of more than 450 meters. It is used as hoist rope in electric excavator machines.

GENERAL VIEW

> For details of tables about the product, see page: 332 - 334

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
23-2	15 - 49	15	105	0.7550	0.8450
27	50 - 70	15	208		





DIEPA ML4

- Non - rotation resistant
- Non - compacted outer strands
- With or without plastic component
- 10 strand construction optimised for longevity

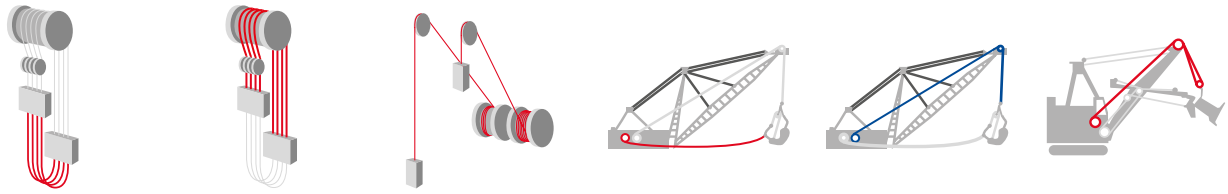
Applications:

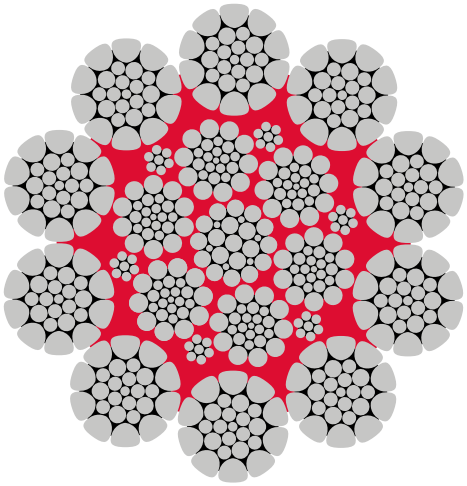
In drum wells, it is used as balance rope and hoisting rope. In surface mining, Dragline cover is used as hoist and drag rope in excavation machines. It is used as hoist rope in electric excavator machines.

GENERAL VIEW

> For details of tables about the product, see page: **335 - 337**

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
11	20 - 59	10	260	0.6601	0.8500
13	60 - 90	10	310		
13	91 - 127	10	410		





DIEPA ML5

- Non - rotation resistant
- Compacted outer strands
- With or without plastic component
- 10 strand construction optimised for breaking load

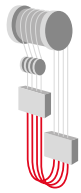
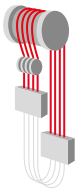
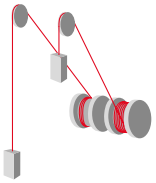
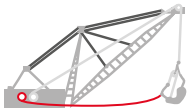
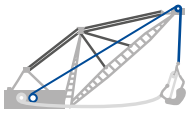
Applications:

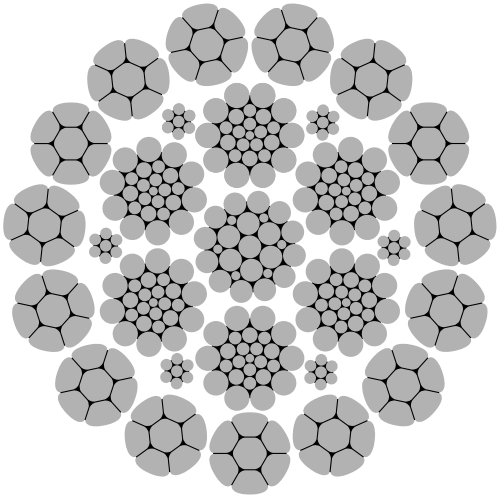
In drum wells, it is used as balance rope and hoisting rope. In surface mining, Dragline cover is used as hoist and drag rope in excavation machines. It is used as hoist rope in electric excavator machines.

GENERAL VIEW

> For details of tables about the product, see page: 335 - 337

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
11	20 - 59	10	260	0.6940	0.8400
13	60 - 90	10	310		
13	91 - 127	10	410		

DIEPA
B 55

- Available in lang's lay.
- Available in right hand and left hand.
- Plastic impregnated (B 58).
- Should be used with a swivel!

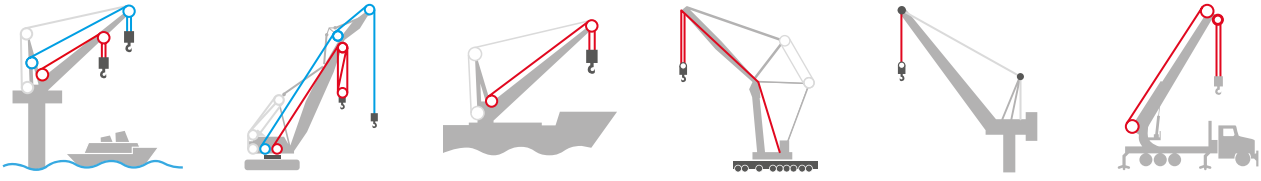
Applications:

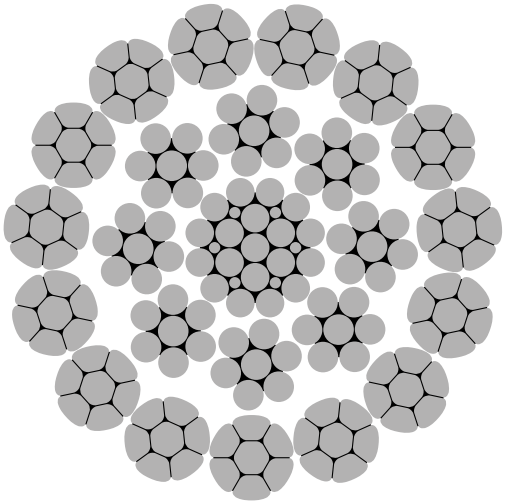
All cranes and performance lifting devices where non - rotating and high MBL ropes are required. Recommended for offshore, deck cranes and marine environment.

GENERAL VIEW

> For details of tables about the product, see page: 338 - 341

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
23-2	4 - 5	18	154	105	0.7145	0.8350 (1770 N/mm²) 0.8350 (1960 N/mm²) 0.8150 (2160 N/mm²)
23-2	6 - 10	18	238	105		
23-2	11 - 49	18	328	105		
27	50- 99	18	549	255		
31	100 - 120	18	1053	540		





DIEPA
C 45

- Available in lang's lay.
- Available in right hand and left hand.
- Should be used with a swivel!

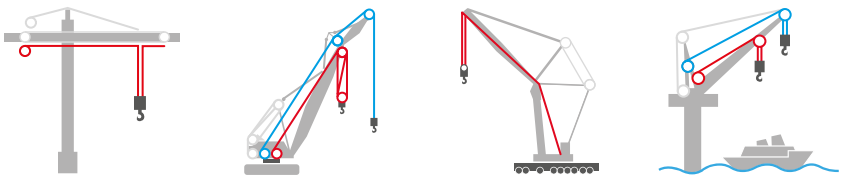
Applications:

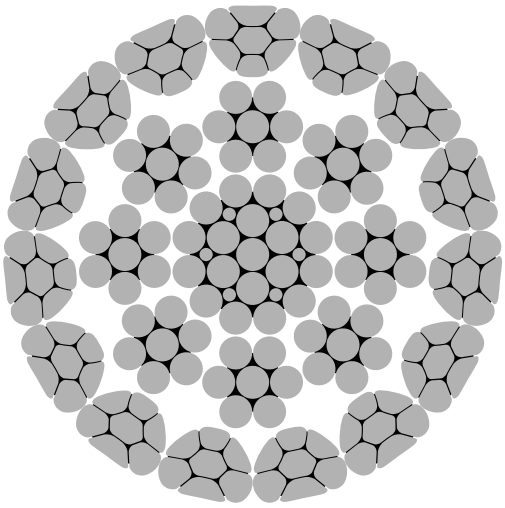
Special Hoist Rope for tower cranes, mobile cranes, crawler cranes. It is also suitable for offshore and deck cranes in marine environment.

GENERAL VIEW

> For details of tables about the product, see page: **342 - 343**

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
23–2	6 - 7	15	154	105	0.6441	0.8300 (1770 N/mm²) 0.8300 (1960 N/mm²) 0.8100 (2160 N/mm²)
23–2	8 - 40	15	186	105		





DIEPA
K 43

- Available in ordinary lay and lang's lay.
- Available in right hand and left hand.
- Plastic impregnated.
- Should be used with a swivel!

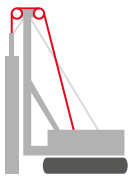
Applications:

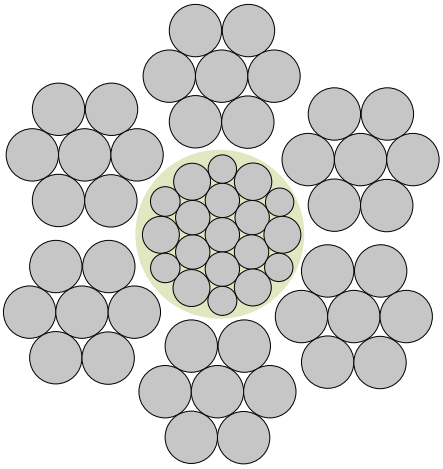
The special Kelly rope is for the piling machine.

GENERAL VIEW

> For details of tables about the product, see page: 344

Category No (RCN)	Diameter Range (mm)	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
23–2	18 – 46	15	186	105	0.6850	0.8300 (1960 N/mm²)





DIEPA
S 67 WP

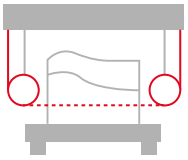
- Galvanized design.
- Resistant to corrosion.
- Plastic padding prevents internal wear.
- Resistance to wear and abrasion.

Applications:

It is used by placing industrial beads on it or by covering plastic injection (E.g. hard stone, marble, sandstone, and concrete, refractory).

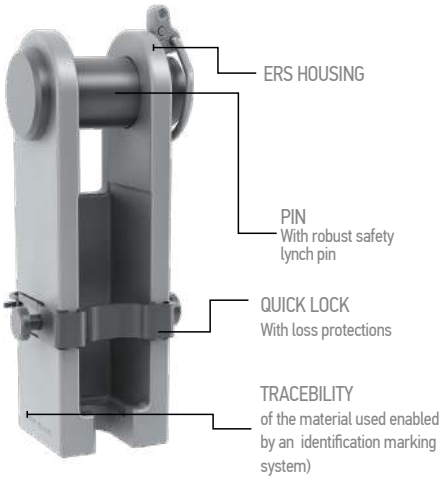
GENERAL VIEW

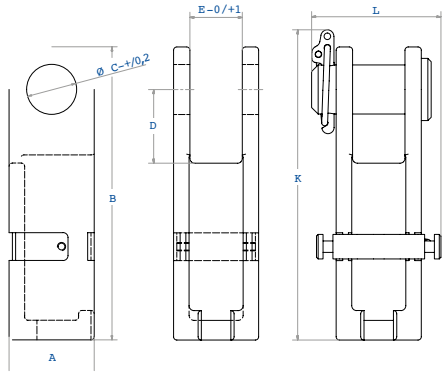
Rope Diameter (mm)	Minimum Breaking Load, kN (1770 N/mm²)	Weight (kg/100 m)
3.2	6,9	4,2
3.5	8,3	5,0
3.6	9,2	5,3
3.8	9,8	5,9
3.9	10,3	6,2
4.2	11,6	7,2
4.5	14,3	8,3
4.6	14,9	8,6
4.8	15,1	9,7
4.9	15,2	9,8

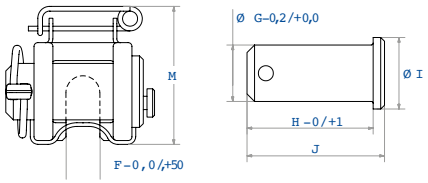


DIEPA ERS SYSTEM

- The DIEPA ERS System is a unique wire rope end termination assembly consisting of a socket (ERS Cast Socket) that is specially designed to facilitate rope installation through its compact size and in-built stowaway becket and a suitable housing (ERS Housing) that provides for secure containment of the socket and easy release when replacing ropes through its 'quick-lock' facility.
- DIEPA ERS Systems are Compatible with only Diepa ropes.





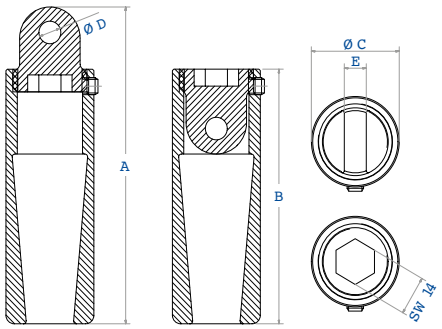


ERS HOUSING

Item	Rope Range (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	k (mm)	l (mm)	m (mm)
ERS015	13 - 15	52	179	30,5	45	32	18	189,5	79	73,3
ERS019	16 - 19	60	200	34	47	35	21	209,5	93,7	82,8
ERS023	20 - 23	80	255	36	55	32	25	255,3	112	101,3
ERS026	24 - 26	94	262	52	55	51	29	262,5	131	115,3
ERS028	27 - 28	100	295	58	62	57	32	296,5	137,5	121,3
ERS032	29 - 32	118	332	63,5	83	69	36	332	158,7	139,3
ERS036	33 - 36	128	370	65	94	69	42	370	168,7	149,3
ERS040	37 - 40	140	433	76,5	116	76	45	433	180,7	161,3

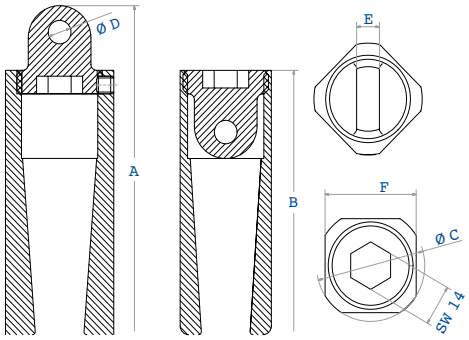
ROUND PIN

Item	g (mm)	h (mm)	ı (mm)	j (mm)
BLZ-ERS015P	30	67	38	73
BLZ-ERS019P	33,5	77	48	85
BLZ-ERS023P	35,5	100	48	108
BLZ-ERS026P	51,5	119	62	127
BLZ-ERS028P	57,5	125	76	133
BLZ-ERS032P	63	143	78	151
BLZ-ERS036P	64,5	153	79	161
BLZ-ERS040P	76	165	90	175



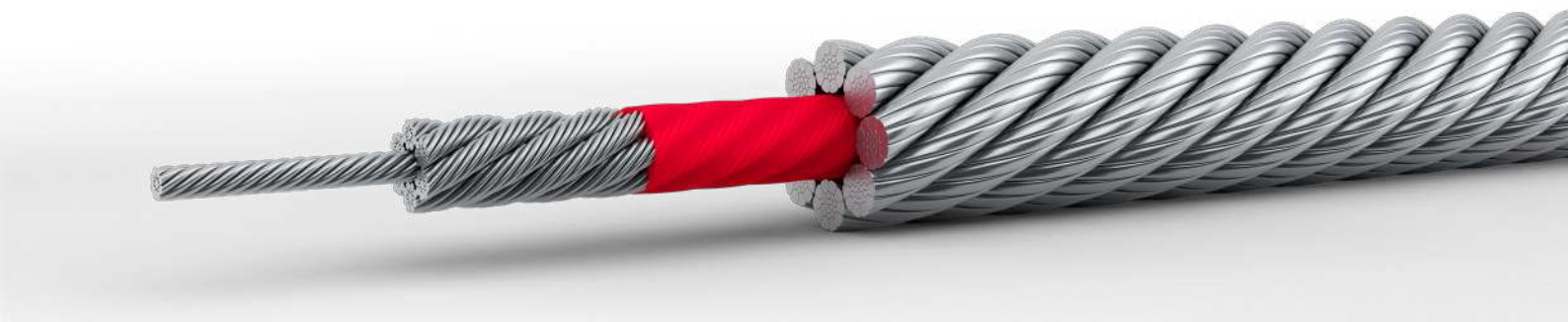
ROUND CROSS - SECTION

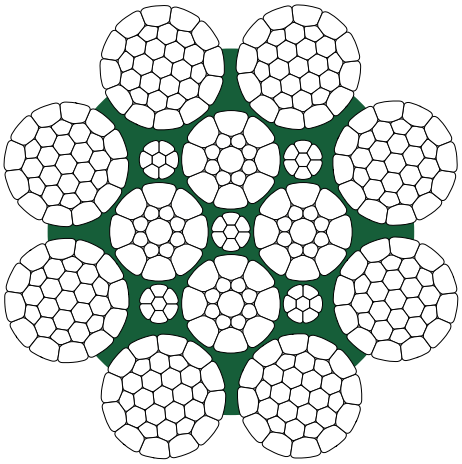
Item	Rope Range (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)
VGH-ERS015Z	13 - 15	112	90	32	8	8
VGH-ERS019Z	16 - 19	127	105	38	10	8
VGH-ERS023Z	20 - 23	161	135	42	12,3	12
VGH-ERS026Z	24 - 26	154	128	52	12,3	12
VGH-ERS028Z	27 - 28	180	150	56	12,3	12
VGH-ERS032Z	29 - 32	190	160	68	12,3	12
VGH-ERS036Z	33 - 36	212	180	74	14	16
VGH-ERS040Z	37 - 40	244	200	78	16	20



SQUARE CROSS - SECTION

Item	Rope Range (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)
VGH-ERS015D	13 - 15	112	90	38	8	8	32
VGH-ERS019D	16 - 19	127	105	44	10	8	38
VGH-ERS023D	20 - 23	161	135	48	12,3	12	42
VGH-ERS026D	24 - 26	155	128	60	12,3	12	52
VGH-ERS028D	27 - 28	180	150	64	12,3	12	56
VGH-ERS032D	29 - 32	190	160	80	12,3	12	68
VGH-ERS036D	33 - 36	212	180	88	14	16	74
VGH-ERS040D	37 - 40	244	200	90	16	20	78





OLIVEIRA
DP 8 K PPI

- Temperature range of use: -50 °C to 100 °C.
- Temperature range of use for option PPI: -50 °C to 80 °C.
- Option PPI – only available for diameter ≥ 13 mm.
- 1.5% unit weight increase for PPI ropes.
- Available in ordinary lay and lang's lay.
- Available in right hand and left hand.
- For fleet angles less than 1.3°.
- Should not be used with a swivel.

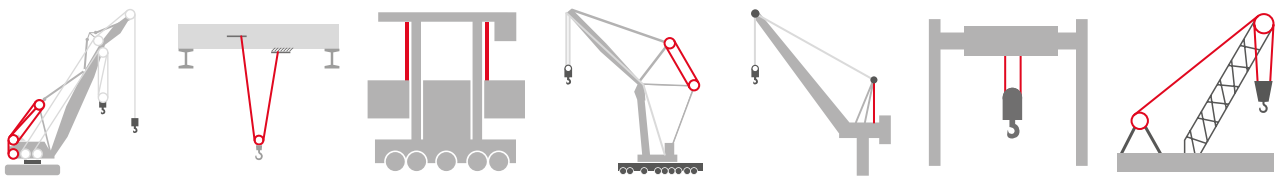
Applications:

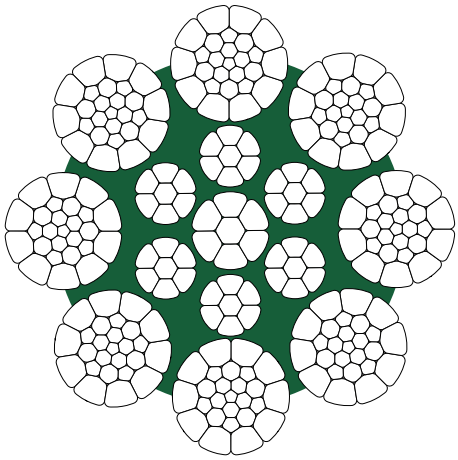
When an extremely high MBL is required for a multipart reeving hoist system; electric hoists, twin hoists systems, boom hoist and pendant rope for mobile cranes, tower cranes and all marine equipments.

GENERAL VIEW

> For details of tables about the product, see page: **345**

Category No (RCN)	Diameter Range (mm)	Rope Construction	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
03	6,40 - 7,20	8xK12	8	105	96	0.7010	0.8600 (2160 N/mm²)
03	8 - 17	8xK17	8	239	136	0.7100	
09	18 - 28,58	8xK26	8	311	208	0.7120	
11	30 - 38	8xK31	8	351	248	0.7210	





OLIVEIRA
HD 8 K PPI

- Temperature range of use: -50 °C to 100 °C.
- Temperature range of use for option PPI: -50 °C to 80 °C.
- Option PPI – only available for diameter ≥ 13mm.
- 1.5% unit weight increase for PPI ropes.
- Available in ordinary lay and lang's lay.
- Available in right hand and left hand.
- Should not be used with a swivel.

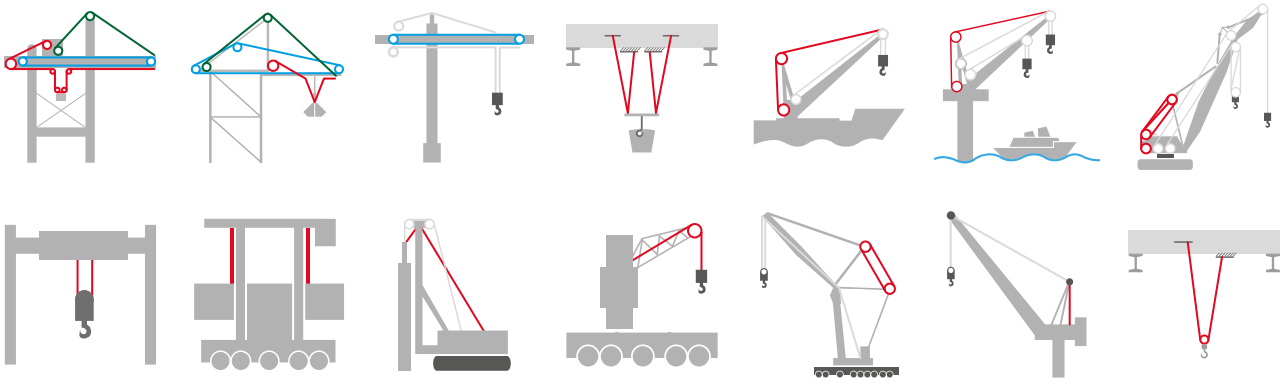
Applications:

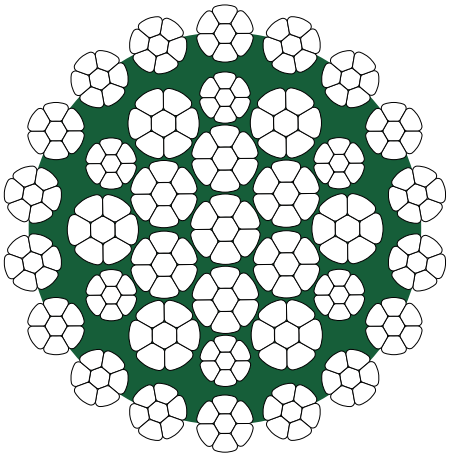
When rotation resistant ropes are not required (twin hoist systems with right hand and left hand ropes, small heights). Hoist for steel mill cranes, container cranes, floating cranes and boom hoist for deck cranes, luffing and mobile cranes, and grab cranes.

GENERAL VIEW

> For details of tables about the product, see page: 346

Category No (RCN)	Diameter Range	Rope Construction	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
03	8 - 11	8xK12	8	145	96	0.6720	0.8500 (1770 N/mm²) 0.8500 (1960 N/mm²) 0.8200 (2160 N/mm²)
03	12 - 14	8xK17	8	185	136	0.6750	
09	15 - 28,58	8xK26	8	257	208	0.6770	
11	30 - 42	8xK31	8	297	248	0.6730	





OLIVEIRA
NR MAXIPACT PPI

- Temperature range of use: -50 °C to 100 °C.
- Temperature range of use for option PPI: -50 °C to 80 °C.
- Option PPI – only available for diameter ≥ 13mm.
- 1% unit weight increase for PPI ropes.
- Available in ordinary lay and lang's lay.
- Available in right hand and left hand.
- Should be used with a swivel.

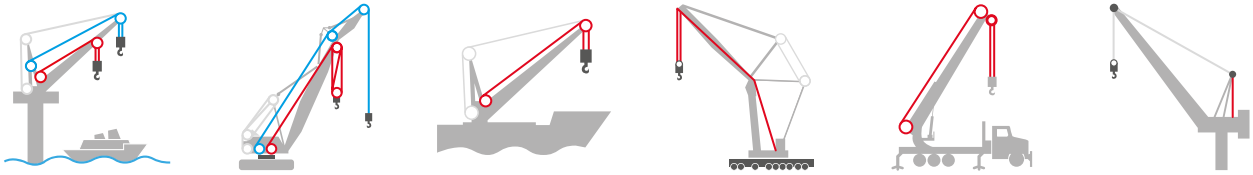
Applications:

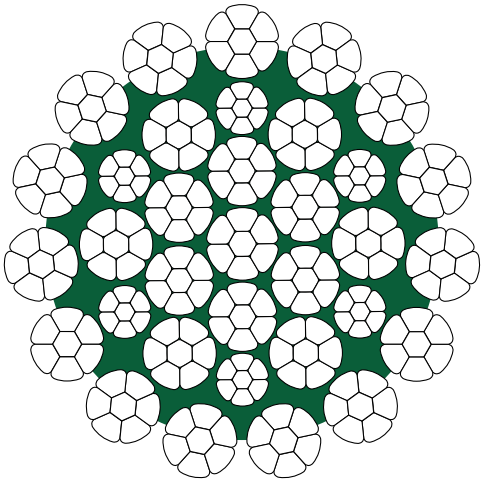
All cranes and performance lifting devices where non - rotating and high MBL ropes are required. Recommended for offshore, deck cranes and marine environment.

GENERAL VIEW

> For details of tables about the product, see **page: 347**

Category No (RCN)	Diameter Range (mm)	Rope Construction	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
23-3	12,70 - 52	37xK7	18	259	126	0.7160	0.8500 (1960 N/mm²) 0.8100 (2160 N/mm²)
30	54 - 64	37xK19	18	710	342	0.7260	0.8300 (1960 N/mm²) 0.7900 (2160 N/mm²)
>31	66 - 70	37xK26	18	1092	468	0.7140	0.8100 (1960 N/mm²) 0.7800 (2160 N/mm²)





OLIVEIRA
NR15 MAXILIFT PPI

- Temperature range of use: -50 °C to 100 °C.
- Temperature range of use for option PPI: -50 °C to 80 °C.
- Option PPI – only available for diameter ≥ 13mm.
- 1% unit weight increase for PPI ropes.
- Available in ordinary lay and lang's lay.
- Available in right hand and left hand.
- Should be used with a swivel.

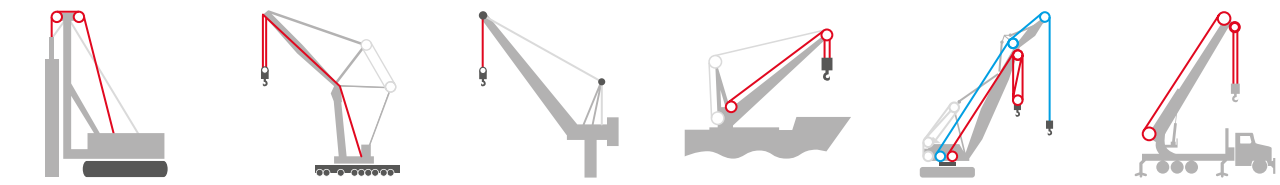
Applications:

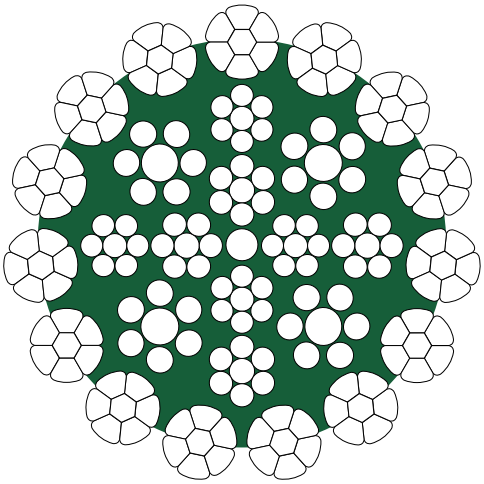
For all the most severe hoist applications, intensive use, corrosive environment. Traditional applications like mobile cranes, tower cranes and crawler cranes.

GENERAL VIEW

> For details of tables about the product, see page: 348

Category No (RCN)	Diameter Range (mm)	Rope Construction	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
23-2	10 - 28,58	31xK7	15	217	105	0.7010	0.8500 (1960 N/mm²) 0.8100 (2160 N/mm²)
23-2	30 - 50,80	34xK7	15	238	105	0.7050	





OLIVEIRA TOWERLIFT 15

- Temperature range of use: -50 °C to 100 °C.
- Available in ordinary lay and lang's lay.
- Available in right hand and left hand.
- Should be used with a swivel.

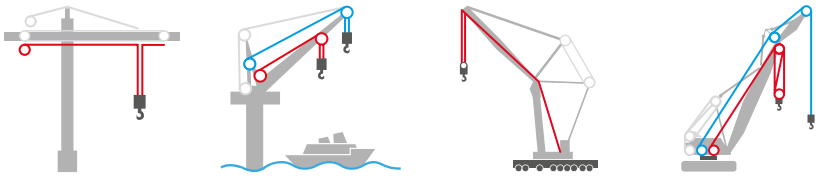
Applications:

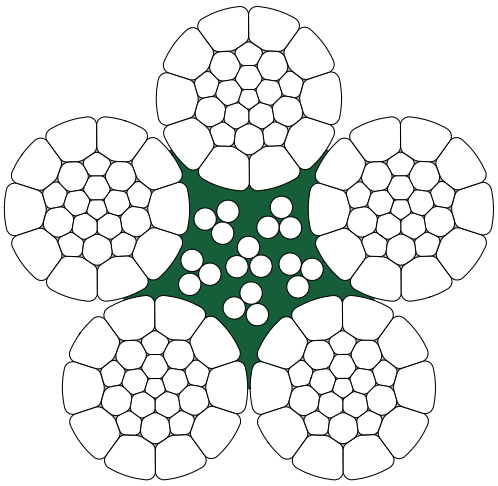
The Towerlift 15 can be used for all cranes and hoisting systems where non - rotating properties arerequired: Tower cranes, mobile cranes, crawler cranes, offshore cranes, cargo cranes.

GENERAL VIEW

> For details of tables about the product, see page: 349

Category No (RCN)	Diameter Range (mm)	Rope Construction	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor
23–2	8 - 21	27x7	15	190	105	0.6480	0.8500 (1960 N/mm²) 0.8100 (2160 N/mm²)
23–2	22 - 50,80	31x7	15	217	105	0.6600	





OLIVEIRA
LP 5

- Temperature range of use: -50 °C to 100 °C.
- Available in ordinary lay and lang's lay.
- Available in right hand and left hand.

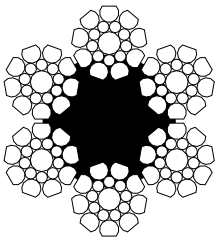
Applications:

Suspended gondolas and platforms. Jaw pulling device. Overhead cranes and electric hoists. Wind mill hoists and forest winches.

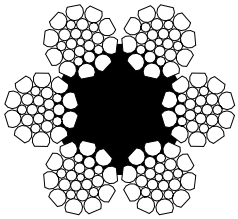
GENERAL VIEW

> For details of tables about the product, see page: 350

Category No (RCN)	Diameter Range (mm)	Rope Construction	Number of Outer Strands	Number of Total Wires	Number of Wires in Outer Strands	Average Fill Factor	Average Spin Factor N/mm²
02	6,00	5xK12-CWP	5	78	60	0.6330	0.8500 (1960 N/mm²) 0.8100 (2160 N/mm²)
03	8,30 - 10,30	5xK19-CF	5	95	95	0.5440	
05	11,50 - 14,00	5xK26-CF	5	130	130	0.5500	
06	16,30	5xK31-CF	5	155	155	0.5330	



14 - 26 mm
6xK19 Seale



28 - 36 mm
6xK26 Seale

OLIVEIRA
SUPER YELLOW FIN - FC

- Very flexible rope
- Higher resistance against crushing
- Higher resistance to fatigue
- Higher breaking strength
- Reduced wear when passing through blocks, guiding gear and purse seine rings
- Lower tendency to untwist
- Less elongation of wire rope

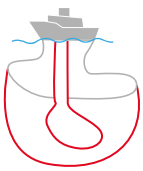
Applications:

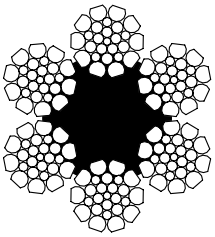
Fishing wire rope for trawler.
Excellent performance on the trawler.

GENERAL VIEW

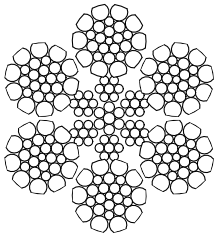
> For details of tables about the product, see page: **350**

Diameter Range (mm)	Rope Construction	Steel Wire Rope Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grade (N/mm²)	Average Spin Factor
14 - 26	6xK19 S	FC	6	114	1570	-
28 - 36	6xK26 WS	FC	6	156	1570	-





6xK26 WS-FC



6xK26 WS-IWRC

OLIVEIRA ZINCAL COMPACT

- Excellent lifetime and performance
- Excellent abrasion and wear resistance
- Excellent resistance against crushing
- Excellent fatigue resistance
- Very high breaking load
- Lower elongation of the wire rope
- Better grease adherence

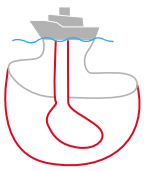
Applications:

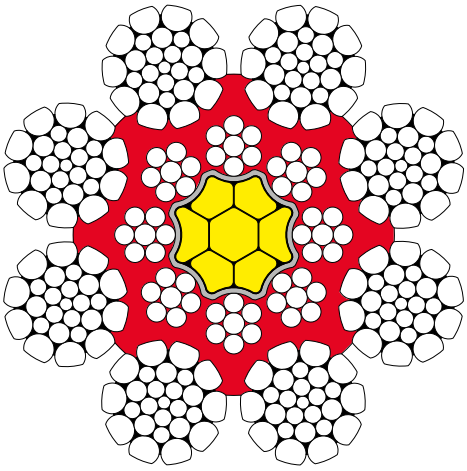
Fishing wire rope for trawler.

GENERAL VIEW

> For details of tables about the product, see page: **351**

Diameter Range (mm)	Rope Construction	Steel Wire Rope Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grade (N/mm²)	Average Spin Factor
19 - 36	6xK26 WS	FC	6	156	1570	-
20 - 44	6xK26 WS	IWRC	6	156	1570	-



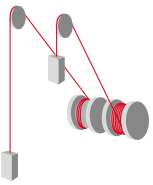


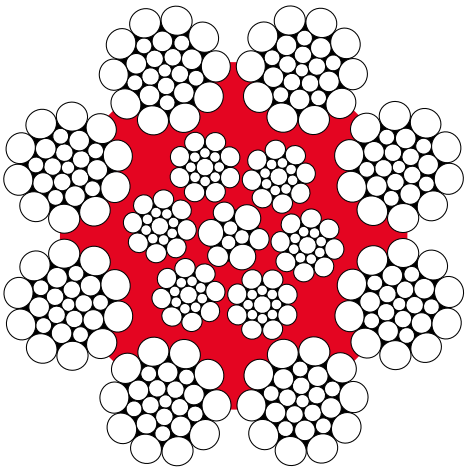
CASAR TURBOLITE M

- Lightest hybrid mine hoist rope on the market
- Best strength to weight ratio hoist rope on the market
- High strength fiber core for increased strength and resistance to bending fatigue
- Flexible for ease of installation and rope maintenance
- Minimized stretch compared to other fiber core hoist ropes

> For details of tables about the product, see page: **352**

Applications:
It is used as hoisting rope in drum winders.



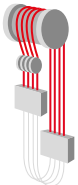


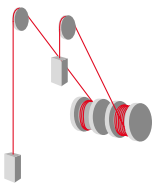
CASAR STRATOPLAST M

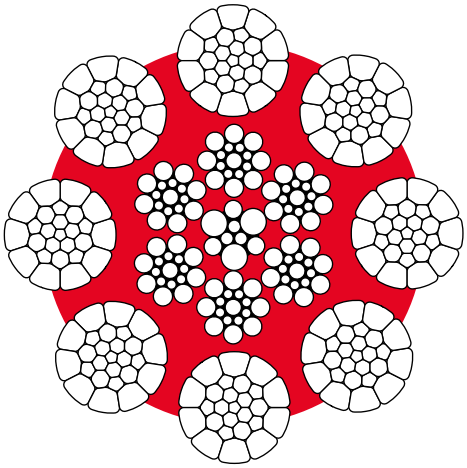
- 8 strand construction
- Fully lubricated
- Plastic layer between steel core and outer strands
- Available in ordinary (regular) lay or lang lay
- Available in right hand or left hand lay

> For details of tables about the product, see page: **353**

Applications:
It is used as hoisting rope in koepe and drum winders.







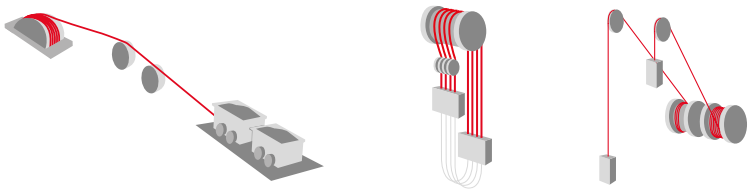
CASAR TURBOPLAST M

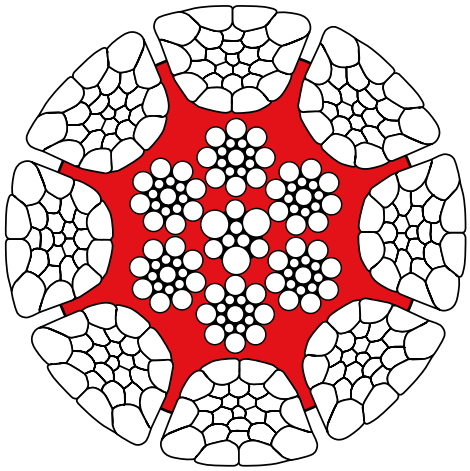
- 8 strand construction with compacted outer strands
- Fully lubricated
- Plastic layer between steel core and outer strands
- High breaking force
- Good resistance to drum crushing
- Available in ordinary (regular) lay or lang lay
- Compact production is possible and is named with the VM code.

> For details of tables about the product, see page: 354

Applications:

It is used as hoisting rope in drum wells and slope hoisting systems.





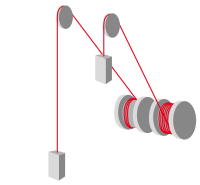
CASAR TURBOFIT M

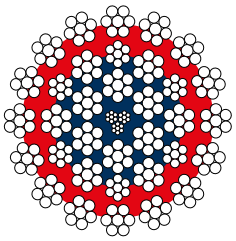
- Swaged 8 strand rope made with compacted outer strands
- Fully lubricated
- Plastic layer between steel core and outer strands
- High breaking load and very good resistance to drum crushing
- Available in ordinary (regular) lay or lang

> For details of tables about the product, see page: 355

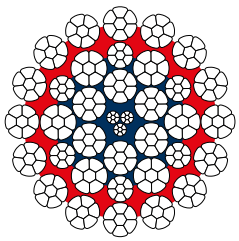
Applications:

It is used as hoisting rope in koepe and drum winders.





STARPLAST M



STARPLAST VM

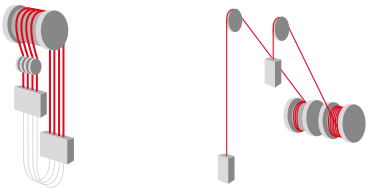
CASAR STARPLAST M

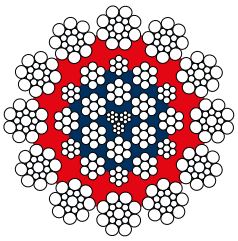
- Rotation resistant
- Fully lubricated
- Plastic layer between steel core and outer strands
- High breaking force
- Good resistance to drum crushing
- Available in ordinary (regular) lay or lang lay
- Compact production is possible and is named with the VM code.

> For details of tables about the product, see page: **356**

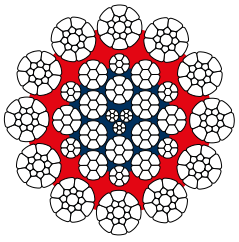
Applications:

It is used as hoisting rope in koepe and drum winders.





MINEPLAST M



MINEPLAST VM

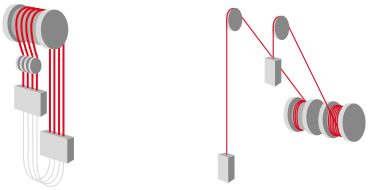
CASAR MINEPLAST M

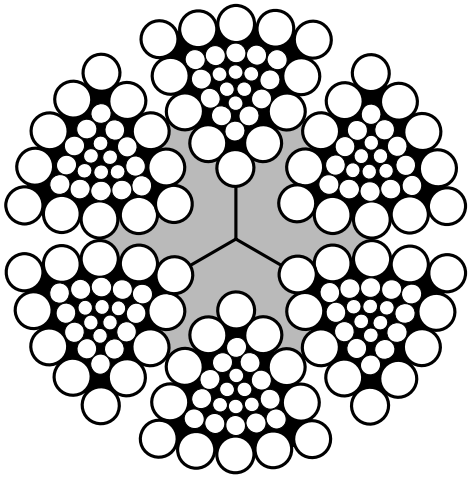
- Rotation resistant
- Fully lubricated
- Plastic layer between steel core and outer strands
- High breaking force
- Good resistance to drum crushing
- Available in ordinary (regular) lay or lang lay
- Compact production is possible and is named with the VM code.

> For details of tables about the product, see page: **357**

Applications:

It is used as hoisting rope in koepe and drum winders.





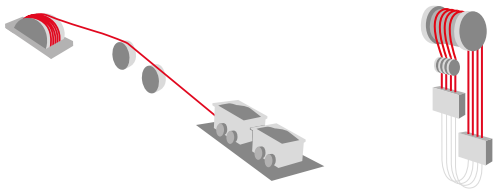
CASAR TRIANGULAR STRAND

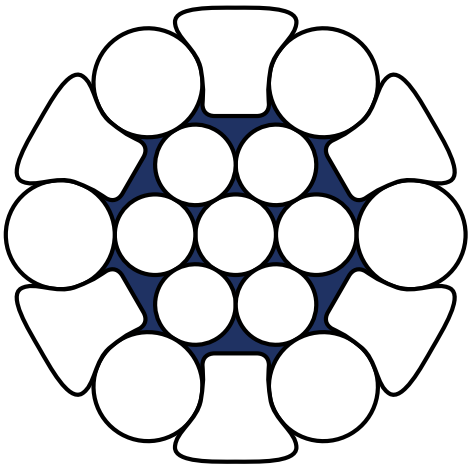
- Constructions: 6x26, 6x27, 6x28, 6x29, 6x30, 6x31, 6x32, 6x33, 6x34
- Provides a “flat” strand surface on sheave and drum areas, exposing 4x more wearing surface than round strand, reducing abrasion and applied unit pressure
- Compact design resists crushing and distortion under heavy loads
- Produces 10 percent greater strength over a standard 6 strand rope
- Reduces wear on sheaves and drums
- Available with either fiber core or IWRC

> For details of tables about the product, see page: 358

Applications:

It is used as hoisting rope in drum wells and slope hoisting systems.





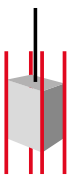
GUIDE ROPES HALF LOCK COIL ROPE

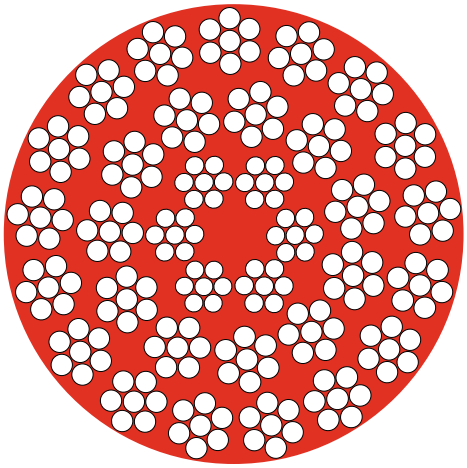
- Guide or rubbing rope
- Round and shaped wires
- Special design to increase wear and corrosion resistance
- Conforms to EN12385-7

> For details of tables about the product, see page: 359

Applications:

It is used as guide rope in drum wells and desandre systems.



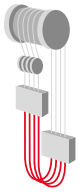


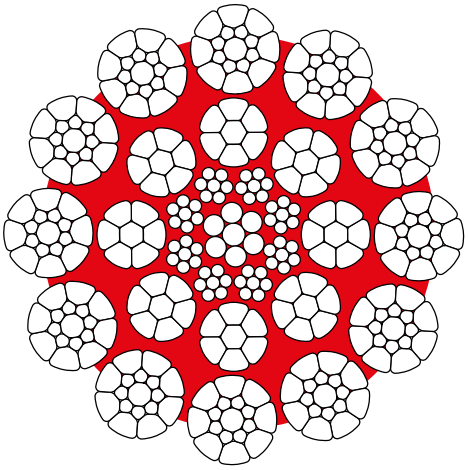
CASAR 34x7 and 34x17

- Rotation resistant
- Designed to have a specific unit weight
- Impregnated and coated with tough polymer, offering superior protection against the harsh, aggressive environment of a shaft mine
- Can be used with a swivel
- Available in ordinary (regular) lay or lang lay

> For details of tables about the product, see page: **359**

Uygulamalar:
It is used as a balance rope in koepe systems.



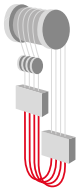


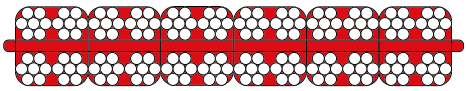
CASAR DOUZEPLAST VM

- 12 strand rope construction with compacted strands
- Fully lubricated
- Plastic layer between steel core and outer strands
- Available in ordinary (regular) lay or lang lay
- Can be used with a swivel as a tail rope

> For details of tables about the product, see page: **360**

Applications:
It is used as a balance rope in koepe systems.



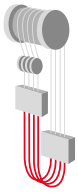


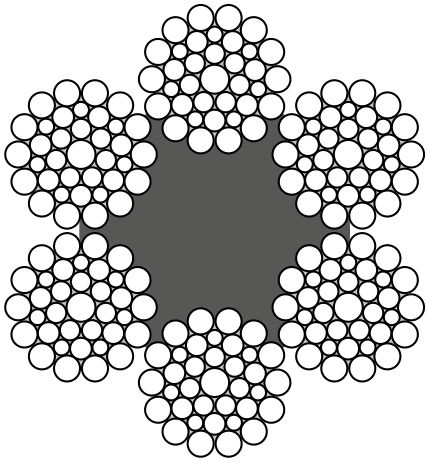
CASAR FLAT BALANCE ROPE

- Conventional strands
- Very flexible
- Very low loop diameter
- Single or double stitched
- Riveted
- Conforms to EN12385-6

Applications:
It is used as a balance rope in koepe systems.

> For details of tables about the product, see page: **361 - 362**



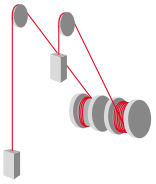


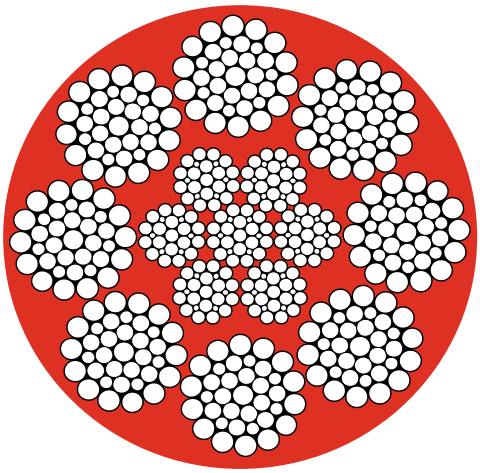
CASAR 6x36

- Proven and reliable rope construction
- Available in galvanized and bright
- Available in ordinary (regular) lay or lang lay
- Compact production is possible
- The breaking force of compact ropes is 15% more

Applications:
It is used as hoisting rope in drum winders.

> For details of tables about the product, see page: **362**





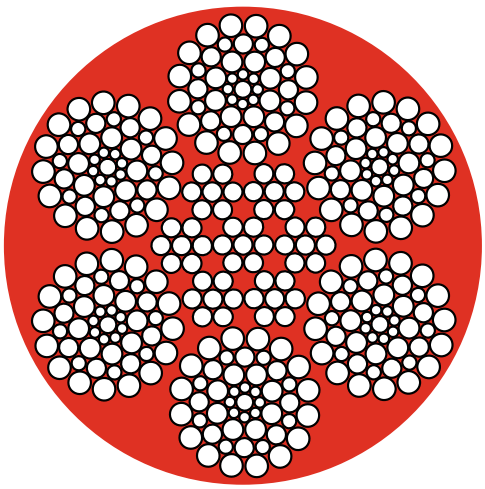
UNION POWERMAX PFV

- Good resistance to fatigue.
- Plastic polymer cushions strands, distributes internal stresses and keeps out dirt.
- Good abrasion resistance.
- Keeps lubricant in, allowing internal movement between wires and strands.

GENERAL VIEW

> For details of tables about the product, see page: 364

Production Range: From 60,3 mm (2 3/8 inch) to 127 mm (5 inch)



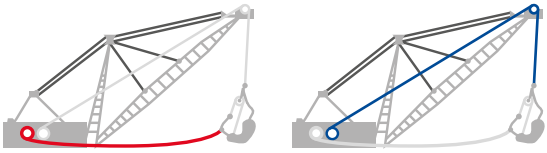
UNION 6-STRAND PFV

- PFV cushions the strands, distributes internal stresses, keeps in wire rope lubricant and keeps out dirt and debris.
- 6 Strand construction.
- Proprietary wire metallurgy for exceptional wear resistance.

GENERAL VIEW

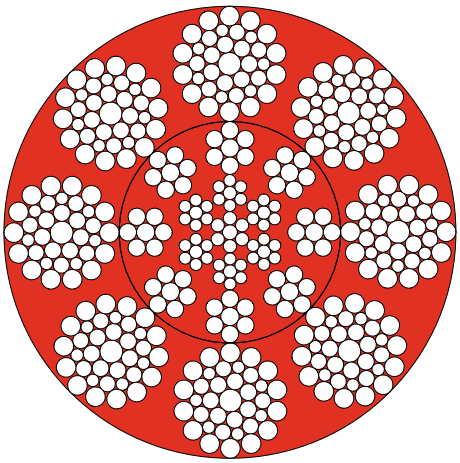
> For details of tables about the product, see page: 363

Production Range: From 44,5 mm (1 3/4 inch) to 127 mm (5 inch)



Applications:

In surface mining; it is used as hoist ropes and drag ropes in dragline and shovel.



UNION TUF-MAX

- More fatigue resistant than standard ropes.
- Dual - coated core prevents internal nicking.
- Ideal hoist Rope for surface mining applications.

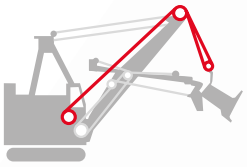
Applications:

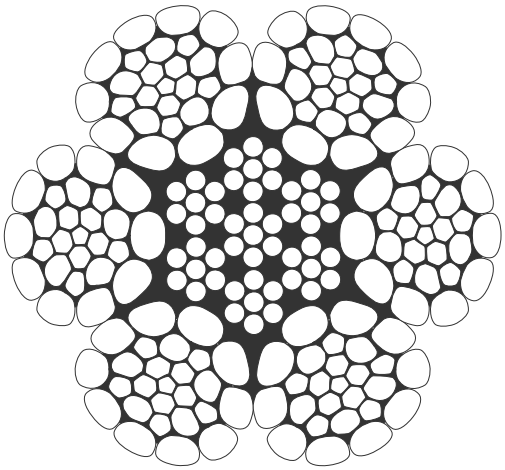
In surface mining; it is used as hoist ropes in shovel.

GENERAL VIEW

> For details of tables about the product, see page: 364

Production Range: From 50,8 mm (2 inch) to 73 mm (2 7/8 inch)





UNION FLEX X-9

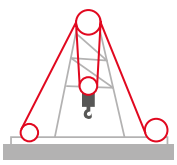
- Extra strength and resistance to abrasion.
- Compact cross - section with minimum voids and greater surface.
- High resistance to drum crushing and abrasion.
- Swaged rope.

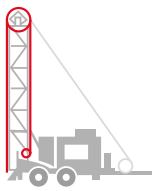
Applications:

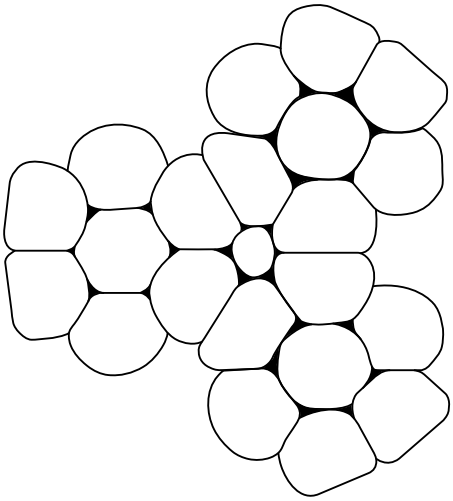
Hoist rope for exploration and core drilling.

GENERAL VIEW

Rope Diameter		Minimum Breaking Load (1770 N/mm²)		Weight	
(mm)	(inch)	(kN)	(lbs)	(kg/m)	(lb/ft)
16	5/8	233,0	52.400	1,34	0,90
19	3/4	332,7	74.800	1,94	1,30
22	7/8	450,1	101.200	2,66	1,79
25.4	1	584,5	131.400	3,47	2,33
28.5	1 1/8	735,7	165.400	4,36	2,93







UNION 3xK7

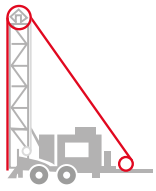
- Resistant to rotation.
- High strength/weight ratio.
- High resistance to wear.
- Swaged rope.

Applications:

Ideal ropes for diamond drilling operations

GENERAL VIEW

Rope Diameter		Minimum Breaking Load (1770 N/mm²)		Weight	
(mm)	(inch)	(kN)	(lbs)	(kg/m)	(lb/ft)
4.8	3/16	24,46	5.500	0,104	0,074
6.35	1/4	40,03	9.000	0,193	0,131



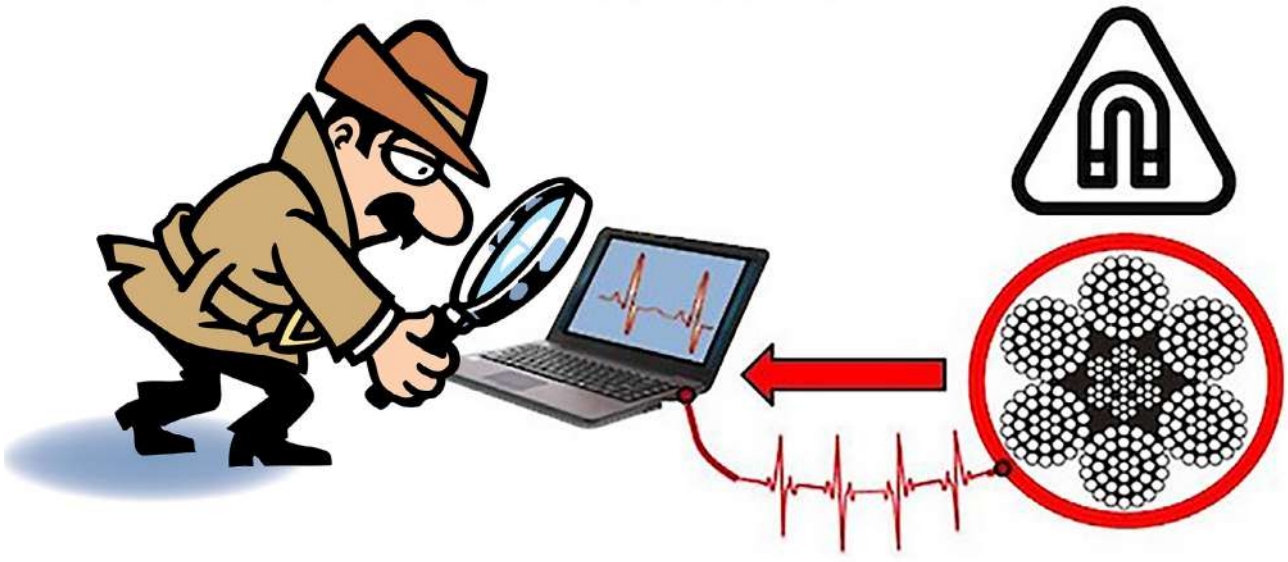
WE KNOW WHAT HAPPENED TO YOUR STEEL ROPE!!!

WHERE, WHY, HOW..

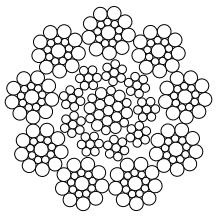
MAGNETIC ROPE TESTING

Non - destructive testing (NDT) method, abrasion, corrosion etc. cross-sectional wear on the rope and metal losses are measured. Rope control devices are widely used in six different sectors. These sectors include mining, crane rope applications, off - shore works, underwater pipe systems, oil and gas industry, bridge constructions, ski cable cars and amusement parks. In almost every area where steel ropes are used, these devices provide users with great convenience and safety to measure the durability of structures. Elevator ropes used to transport and pull up the substances extracted from the mines are controlled by these devices. Since the carrying capacity of ropes is directly proportional to the durability of the ropes, MRT devices are one of the most important control devices in these sectors.

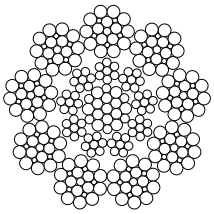
Magnetic rope testing devices within our company with fiber core, steel core or plastic coated steel ropes between 0 - 64 mm is provided control. Thanks to these controls, internal and external wire breaks, wear and corrosion, such as damage at the initial stage to detect and contribute to the necessary measures.



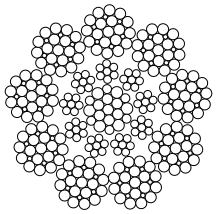
STEEL WIRE ROPES



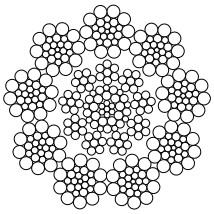
9x19 S – IWRC



9x21 F – IWRC



9x25 F – IWRC



9x26 WS – IWRC

DRAKO 300 T

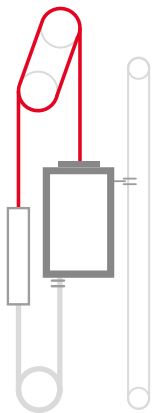
- Preformed, pre - stretched.
- Bright design (galvanized upon request).
- 9 strand heavy duty rope.
- Very round cross-section.
- Many thin wires, hence very flexible with good bending performance.
- High flexural performance.
- Low elastic and plastic elongation.
- Marking line for an easy installation.

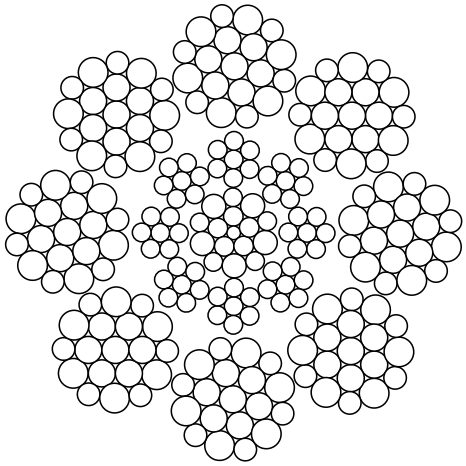
Applications:

Traction ropes for high - rise elevators.

GENERAL VIEW

Rope Diameter (mm)	Rope Construction	Minimum Breaking Load, kN (1570 N/mm²)	Metallic Area (Approx) (mm²)	Weight (kg/100m)
8	9x19 S - IWRC	42,1	30,8	26,1
9	9x19 S - IWRC	53,3	39,0	33,1
9.5	9x19 S - IWRC	59,4	43,5	36,8
10	9x21 F - IWRC	66,0	49,7	42,8
11	9x21 F - IWRC	79,9	60,1	51,8
12	9x21 F - IWRC	95,1	71,6	61,6
13	9x21 F - IWRC	111,6	84,0	72,3
14	9x25 F - IWRC	133,0	96,6	84,0
15	9x25 F - IWRC	153,0	110,9	96,0
15.5	9x25 F - IWRC	163,0	118,4	103,0
16	9x25 F - IWCR	174,0	126,2	110,0
17.5	9x25 F - IWRC	208,0	151,0	131,0
18	9x25 F - IWRC	220,0	159,7	139,0
19	9x25 F - IWRC	245,0	178,0	154,0
20	9x25 F - IWRC	272,0	197,2	171,0
22	9x26 WS - IWRC	333,0	243,5	215,0





DRAKO 250 T

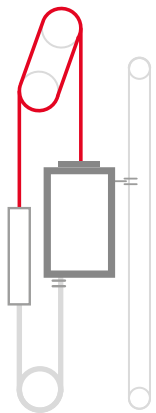
- 8x19 Warrington construction.
- Preformed, pre - stretched, bright, right hand ordinary lay.
- TÜV Süd certificate CA067 (6.0 mm – 8.0 mm).
- Very low D/d ratio of up to 8 mm in diameter.
- Required drive torque is greatly reduced.
- Cost saving drives possible.
- Flexible with good bending endurance.
- Low elastic and plastic elongation.
- High breaking strength in relation to diameter.
- Marking line for an easy installation.

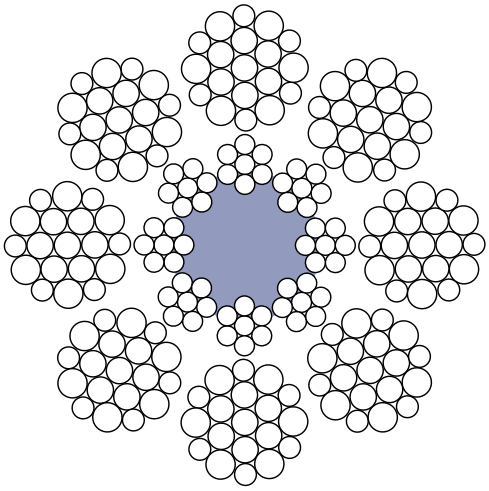
Applications:

Traction ropes for mid - rise elevators.

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1570 N/mm²)	Minimum Breaking Load, kN (1770 N/mm²)	Metallic Area (Approx) (mm²)	Weight (kg/100m)
6	-	26,8	18,5	16,4
6.5	-	31,5	20,6	17,9
8	43,3	46,6	31,6	27,3
9	54,8	-	40,0	34,3
10	67,7	72,7	49,4	42,3
11	81,9	-	59,7	51,2
12	97,4	-	71,1	61,0
13	114	-	83,4	71,5
14	133	-	96,7	82,9
16	173	-	126,0	108,3





DRAKO 210 TF

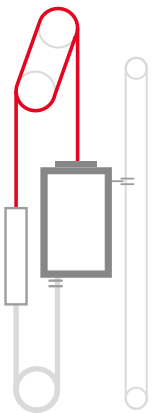
- 8x19 Warrington construction.
- Preformed, pre - stretched (medium).
- Bright, right hand ordinary lay.
- High breaking strength in relation to diameter.
- Low elastic and plastic elongation.
- Slightly more deformable cross - section.
- Combined steel and fiber core.
- Marking line for an easy installation.

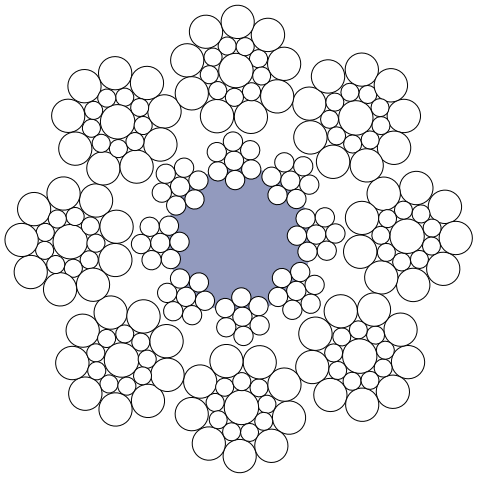
Applications:

Traction ropes for mid - rise elevators.

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1570 N/mm²)	Metallic Area (Approx) (mm²)	Weight (kg/100m)
8	40,0	28,5	25,0
10	61,3	44,5	39,0
11	76,1	53,8	47,0
12	88,3	64,1	56,0
13	106	75,2	66,0
15	137	99,0	86,0
16	156	113,9	100,0





DRAKO 210 TFS

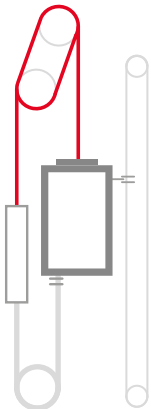
- 8x19 S - IWRC construction
- Preformed, pre - stretched (medium).
- Bright, right hand ordinary lay.
- High breaking strength in relation to diameter.
- Low elastic and plastic elongation.
- Slightly more deformable cross-section.
- Combined steel and fiber core.
- Marking line for an easy installation.

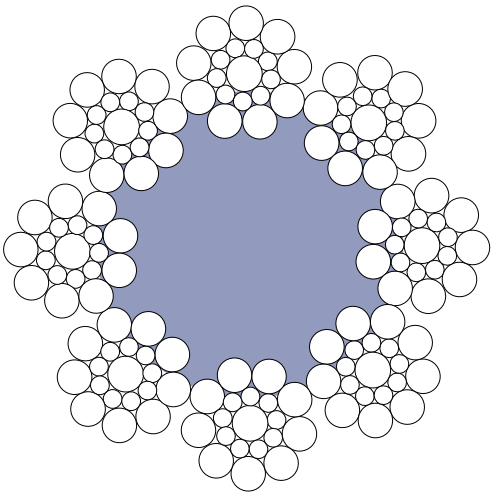
Applications:

Traction ropes for mid - rise elevators.

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1570 N/mm² and 1370/1770 N/mm²)	Metallic Area (Approx) (mm²)	Weight (kg/100m)
8	38,7	27,9	25,0
10	60,5	43,6	40,0
13	102,2	73,7	67,0
16	154,9	113,5	100,0





DRAKO
8x19 S-FC

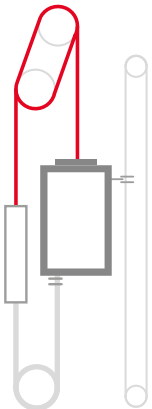
- Preformed, pre - stretched (medium).
- Bright, right hand and ordinary lay.
- Easy to install.
- Marking line for an easy installation
- Rounder than 6 strand ropes, more contact points rope to groove.

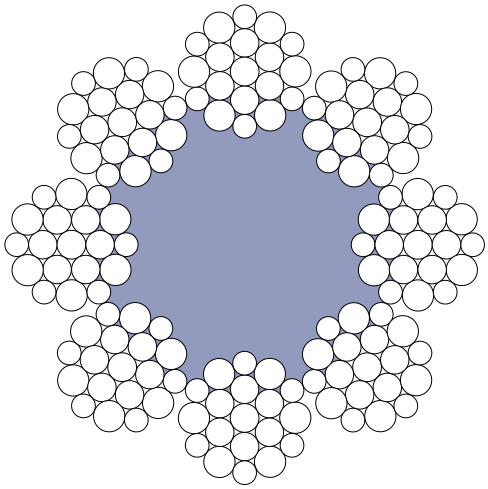
Applications:

Traction ropes for
low - rise elevators

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1570 N/mm² and 1370/1770 N/mm²)	Metallic Area (Approx) (mm²)	Weight (kg/100m)
8	30,4	22,5	21,5
9	38,4	28,4	27,3
9.5	42,8	31,7	30,4
10	47,4	35,1	33,7
11	57,4	42,5	40,7
12	68,3	50,6	48,5
13	80,2	59,3	56,9
14	93,0	68,8	66,0
15	107	79,0	75,7
15.5	114	84,4	80,8
16	121	89,9	86,1
18	154	114	109
19	171	127	121





DRAKO
8x19 W-FC

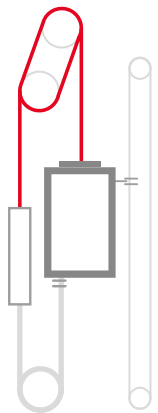
- Preformed, pre - stretched (medium).
- Bright, right hand and ordinary lay.
- Easy to install.
- Marking line for an easy installation.
- Rounder than 6 strand ropes, more contact points rope to groove.

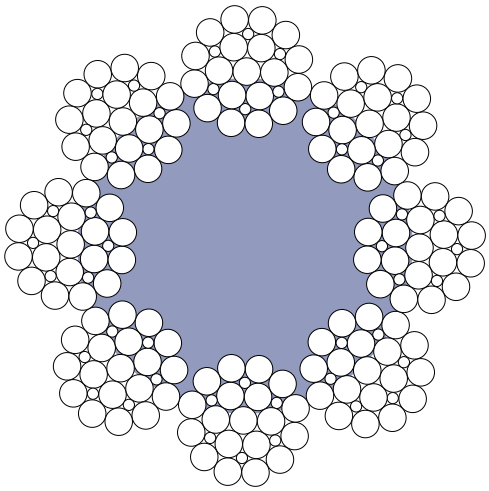
Applications:

Traction ropes for
low - rise elevators.

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1570 N/mm² and 1370/1770 N/mm²)	Metallic Area (Approx) (mm²)	Weight (kg/100m)
8	31,6	23,4	22,2
9	40,0	29,6	28,1
10	49,4	36,5	34,7
11	59,7	44,2	42,0
12	71,1	52,6	50,0
13	83,4	61,7	58,6
16	126	93,5	88,8





DRAKO
8x25 F-FC

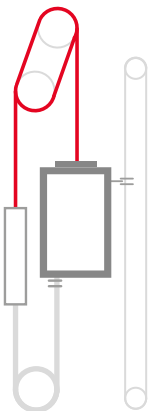
- Preformed, pre - stretched (medium).
- Bright, right hand ordinary lay.
- Easy to install.
- Marking line for an easy installation.
- Rounder than 6 strand ropes, more contact points rope to groove.

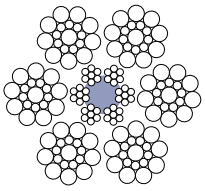
Applications:

Traction ropes for
low - rise elevators.

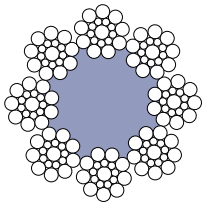
GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1570 N/mm² and 1370/1770 N/mm²)	Metallic Area (Approx) (mm²)	Weight (kg/100m)
13	81,0	60,0	59,0
15	108,0	80,0	78,0
16	122,0	91,0	89,0
18	155,0	115,0	112,0
19	173,0	128,0	125,0

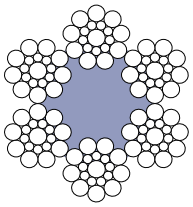




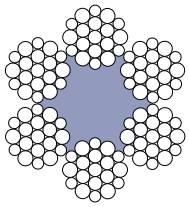
6x19 S – IWRC



8x19 S – FC



6x19 S – FC



6x19 W – FC

DRAKO (6x19 S, 6x19 W, 8x19 S)

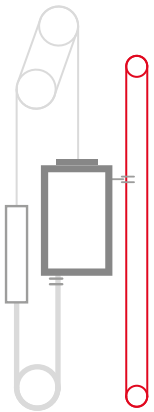
- Preformed, pre - stretched (medium).
- Bright or galvanized right hand ordinary lay.
- Greater reliability and system availability
- Lower susceptibility to breakdown.
- Higher breaking strengths.
- Length and form stability in all environments.

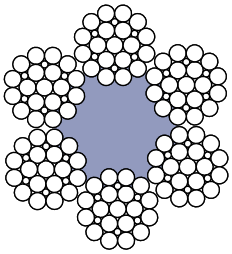
Applications:

Governor ropes for elevator system.

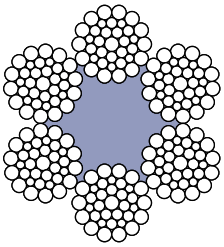
GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1370/1770 N/mm²)	Minimum Breaking Load, kN (1570 N/mm²)	Minimum Breaking Load, kN (1770 N/mm²)	Minimum Breaking Load, kN (1960 kN/mm²)	Weight (kg/100m)
DRAKO 6x19 S - IWRC					
8	-	35,9	-	-	26,2
DRAKO 8x19 S - FC					
6.5	-	19	-	-	14,6
8	-	-	34,2	-	21,5
9.5	-	-	48,3	-	30,4
10	47,4	47,4	-	-	33,7
12.7	76,5	-	-	-	54,3
DRAKO 6x19 S - FC					
6	-	19	21,4	23,3	13
DRAKO 6x19 W - FC					
5	-	-	14,6	-	9,5
6	-	19,8	-	24,7	13,2
6.3	-	-	-	27,2	14,6
6.5	23,2	23,2	26,2	-	15,5
7	-	-	28,6	-	18
8	-	-	39,6	-	23,6





6x25 F – FC



6x36 WS – FC

DRAKO 180 B

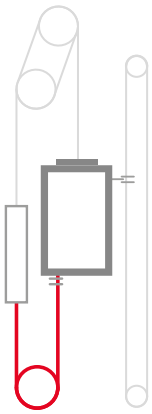
- The rope construction varies with the nominal diameter to optimize the performance.
- It has a long service life.
- It has the ability to operate quietly.
- Synthetic fiber core.

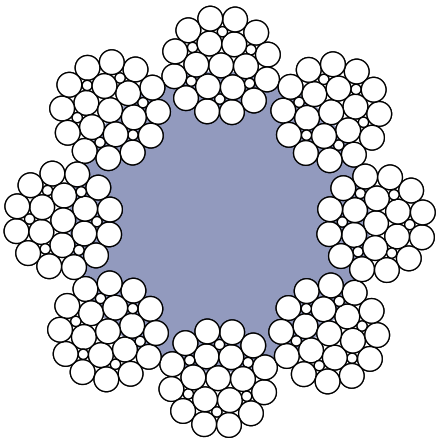
Applications:

It is used as a balance rope in elevator systems exceeding 3 m/s speed.

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1370/1770 or 1570 N/mm²)	Weight (Approximately) (kg/100 m)
DRAKO 6x25 F - FC		
13	83,70	60,70
16	127,0	92,00
18	160,0	116,0
19	179,0	130,0
20	198,0	144,0
22	240,0	174,0
DRAKO 6x36 WS - FC		
24	292,0	211,0
26	342,0	248,0
32	518,0	376,0
36	656,0	476,0
38	731,0	530,0





DRAKO 200 B

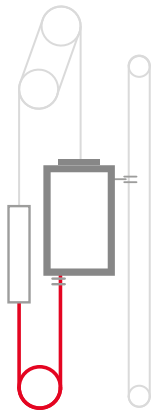
- The rope construction is 8x25 F - FC.
- The rope construction varies with the nominal diameter to optimize the performance.
- It has a long service life.
- It has the ability to operate quietly..
- Synthetic fiber core

Applications:

It is used as a balance rope in elevator systems exceeding 3 m/s speed.

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1370/1770 or 1570 N/mm²)	Weight (Approximately) (kg/100 m)
13	74,30	57,50
16	113,0	87,00
18	142,0	110,0
19	159,0	123,0
22	213,0	165,0



ROPE TENSION MEASUREMENT MACHINE

Ropes play an important role in the operation of elevators efficiently and comfortably. One of the most important issues here is that the loads on steel wire ropes to be equal.

Otherwise, elongation in ropes, broken wires and early damage can be seen in the pulley. In order to minimize this circumstances, it is important to measure the tension of the rope before taking the elevator into the system.

Through the devices measuring the tension of the ropes, this process now can be done more professionally and significantly. It is possible to adjust the load balance perfectly.

Properties:

- Extremely fast and accurate tension setting in each wire rope.
- Easy to fit wire rope WRT sensor
- Easy calibration with no need for known weights
- Suitable for use with any wire rope diameter from 06 - 20 mm
- Up to 12 independent channels for measuring up to 12 ropes at the same time
- Large LCD display with backlight
- USB port
- Easily programmable software
- Operation temperature -10 C° to 50 C°
- Rechargeable batteries
- Total weight 15 kg

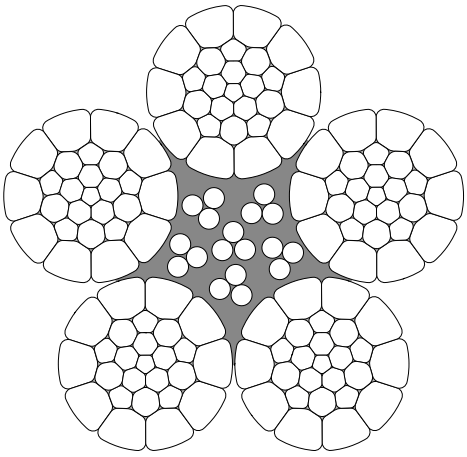
WIRE ROPE INSPECTION SYSTEM - LMA 75 (NONDESTRUCTIVE)

Specifications;

- For the nondestructive inspection of wire ropes with diameters from 0 to 3/4 inch (19 mm).
- Rope Guide sizes available: 3/8 inch (10 mm), 1/2 inch (13 mm), and 5/8 inch (16 mm).
- Ruggedized construction with pit - worthy hardware and connectors.
- Shown with external latch protector.
- Weight: 2,7 kg
- Battery operation: 6 - 8 hours continuous.
- Signal console weight: 10 kg

Performans

- Rope Speed : 0,5 to 600 feet per minute (0,003 to 3 m/sec).
- Test Signals : LF and LMA signal, amplitudes independent.
- Flaw Detection : Loss of metallic cross - sectional area (LMA); external and internal corrosion, wear, various changes of wire rope structure.
- Flaw Detectability : Localized flaws (LF); broken wires and corrosion pitting. Flaw cross section: 0,1% of rope cross-sectional area. Quantitative flaw identification of loss of metallic crosssectional area for flaws longer than 2 inch (50 mm), qualitative flaw identification for localized flaws.



VORNBAUMEN 5xK26

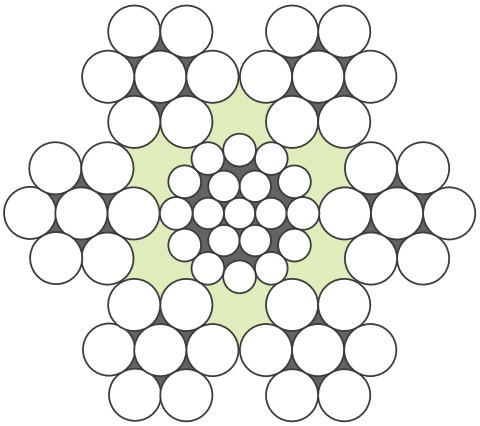
- Galvanized design (Class B).
- Available in only ordinary lay.
- Compacted rope.

Applications:

Suspended gondolas/platforms, jaw pulling device, overhead cranes and electric hoists.

GENERAL VIEW

Rope Diameter (mm)	Rope Construction	Core	Surface	Minimum Breaking Load, kN (1960 N/mm²)
8.3	5xK26 WS	SFC	Galvanized	52,2
10.2	5xK26 WS	SFC	Galvanized	78,3



VORNBAUMEN VS 6-8 P

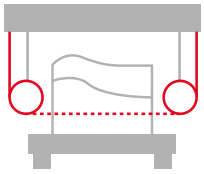
- Galvanized design (Class B).
- Plastic padding.
- Available in only ordinary lay.
- Specially lubricated or dry surface.

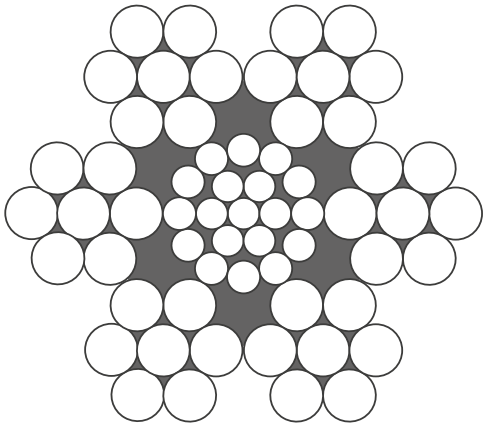
Applications:

It is used by placing industrial beads on it or by covering plastic injection (E.g. hard stone, marble, sandstone, and concrete, refractory).

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1770 N/mm²)	Metallic Area (mm²)	Weight (kg/100 m)
3	6,4	3,76	3,43
3.5	8,7	5,12	4,67
4	11,4	6,69	6,10
4.5	14,4	8,46	7,72
4.6	15,0	8,84	8,06
4.8	16,4	9,63	8,78
4.9	17,0	10,00	9,15
5	17,7	10,50	9,53





VORNBAUMEN VS 6-7

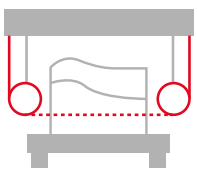
- Galvanized design (Class-B).
- Available in only ordinary lay.
- Specially lubricated or dry surface.

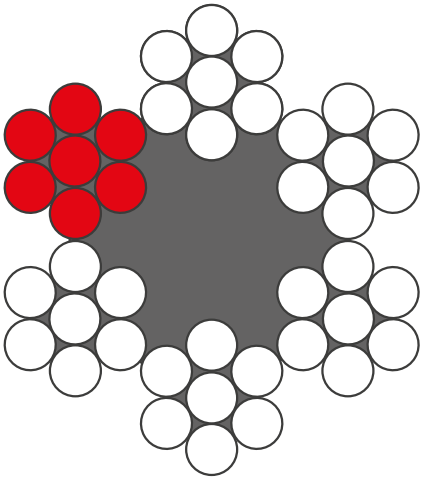
Applications:

It is used by placing industrial beads on it or by covering plastic injection (E.g. hard stone, marble, sandstone, and concrete, refractory).

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load, kN (1770 N/mm²)	Metallic Area (mm²)	Weight (kg/100m)
3	6,84	3,89	3,46
3.5	9,32	5,29	4,70
4	12,2	6,91	6,14
4.5	15,4	8,75	7,78
4.6	16,1	9,14	8,13
4.8	17,5	9,95	8,85
4.9	18,3	10,40	9,22
5	19,0	10,80	9,60





İZMİT
6x7 (STD)

- Galvanized and bright design
- Resistant to abrasion.
- Available in right hand and left hand
- Production according to EN 12385-4.

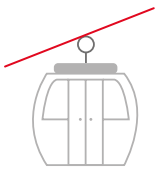
Applications:

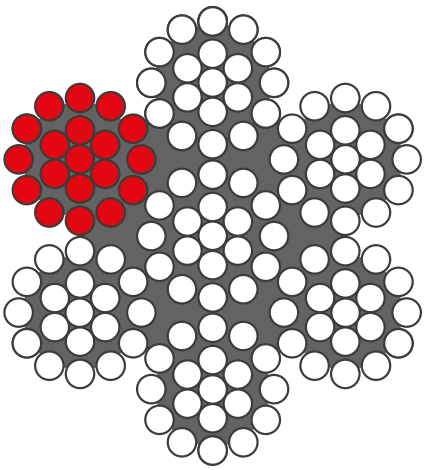
It is used as cable car applications, trawling fishing and general purpose.

GENERAL VIEW

> For details of tables about the product, **see page: 369**

Diameter Range (mm)	Rope Construction	Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grades (N/mm²)	Metallic Area Factor
2 - 40	6x7	Fiber	6	42	1770, 1960	0.3690
2 - 40	6x7	Steel	6	42	1770, 1960	0.4320





İZMİT
6x19 M (STD)

- Galvanized and bright design.
- More flexible than 6x7 M ropes.
- Resistant to abrasion.
- Available in right hand and left hand.
- Production according to EN 12385-4.

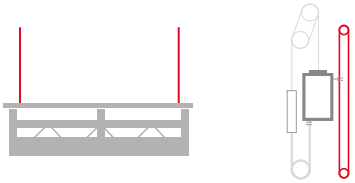
Applications:

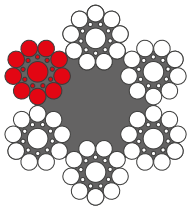
Used as tension rope. It can be used in the production of wire rope sling. Purse seine winch in construction is preferred. It can be used as elevator regulator rope. The machine can be used in suspended scaffold and facade cleaning system in case of motor suitability.

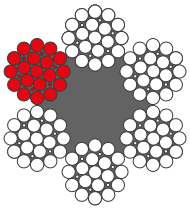
GENERAL VIEW

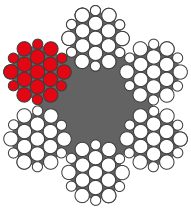
> For details of tables about the product, see page: 369

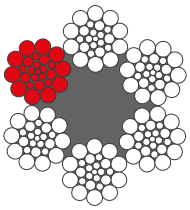
Diameter Range (mm)	Rope Construction	Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grades (N/mm²)	Metallic Area Factor
6 - 56	6x19 M	Fiber	6	114	1770, 1960	0.3570
6 - 56	6x19 M	Steel	6	114	1770, 1960	0.4180




6x19 S


6x25 F


6x19 W


6x26 WS

İZMİT
6x19 CLASS

- Galvanized and bright design.
- Resistant to corrosion.
- Resistant to salty sea water.
- Resistant to fatigue.
- Available in right hand and left hand.
- Production according to EN 12385-4.

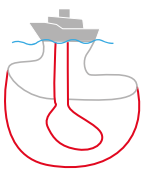
Applications:

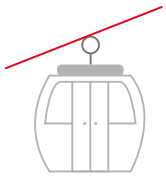
In fishing, it is used as purse seining rope; as chair lift rope; as inclined rope in mining sector; as drum rope in drilling towers.

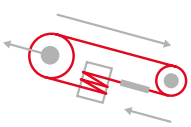
GENERAL VIEW

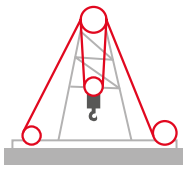
> For details of tables about the product, see page: 317

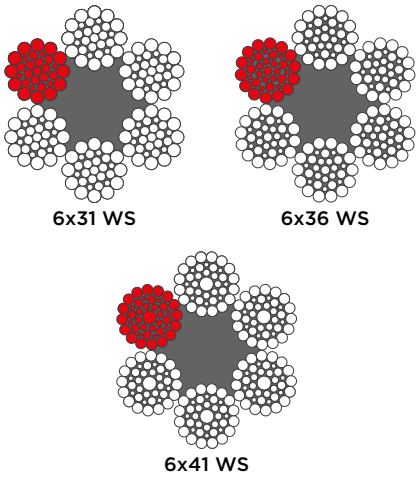
Diameter Range (mm)	Rope Construction	Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grades (N/mm²)	Metallic Area Factor
6 - 60	6x19 S	Fiber	6	114	1770, 1960	0.3840
6 - 60	6x19 S	Steel	6	114	1770, 1960, 2160	0.4490
6 - 60	6x25 F	Fiber	6	150	1770, 1960	0.3840
6 - 60	6x25 F	Steel	6	150	1770, 1960, 2160	0.4490
6 - 60	6x19 W	Fiber	6	114	1770, 1960	0.3840
6 - 60	6x19 W	Steel	6	114	1770, 1960, 2160	0.4490
6 - 60	6x26 WS	Fiber	6	156	1770, 1960	0.3840
6 - 60	6x26 WS	Steel	6	156	1770, 1960, 2160	0.4490











İZMİT
6x36 CLASS

- Galvanized and bright design.
- Available in right hand and left hand.
- Available in ordinary lay and lang's lay.
- Resistant to fatigue.
- More flexible than 6x19 M ropes.
- Production according to EN 12385-4.

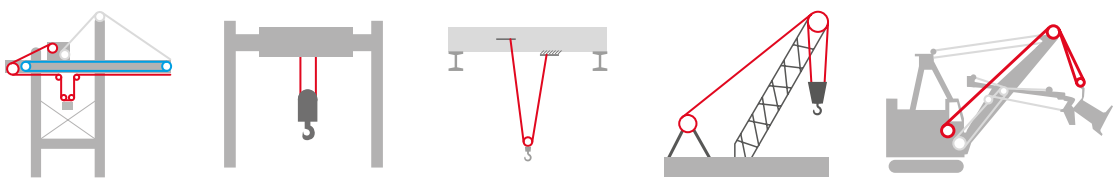
Applications:

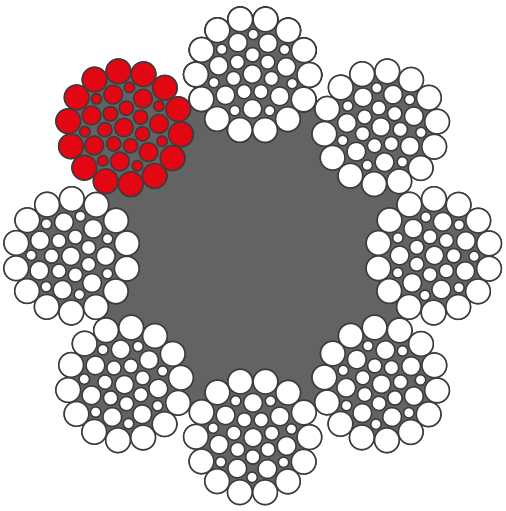
All types of load lifting application where rotation resistant ropes are not required. It can be used for the production of wire rope sling.

GENERAL VIEW

> For details of tables about the product, see page: 318

Diameter Range (mm)	Rope Construction	Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grades (N/mm²)	Metallic Area Factor
8 - 60	6x31 WS	Fiber	6	186	1770, 1960	0.3830
8 - 60	6x31 WS	Steel	6	186	1770, 1960, 2160	0.4600
8 - 60	6x36 WS	Fiber	6	216	1770, 1960	0.3830
8 - 60	6x36 WS	Steel	6	216	1770, 1960, 2160	0.4600
8 - 60	6x41 WS	Fiber	6	246	1770, 1960	0.3830
8 - 60	6x41 WS	Steel	6	246	1770, 1960, 2160	0.4600





İZMİT
8x36 WS

- Galvanised and bright design.
- Available in right hand and left hand.
- Available in ordinary lay and lang' s lay.
- Greater surface ares with respect to 6 stranded ropes.
- Production according to EN 12385-4.

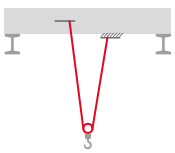
Applications:

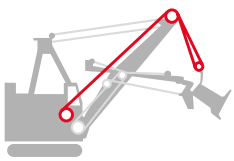
It can be used as crane rope. Some of load lifting applications where rotation-resistant ropes are not required. It can be used for the production of wire rope sling.

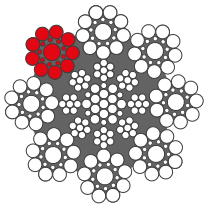
GENERAL VIEW

> For details of tables about the product, see page: 370

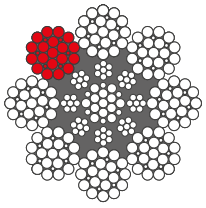
Diameter Range (mm)	Rope Construction	Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grades (N/mm²)	Metallic Area Factor
8 - 60	8x36 WS	Fiber	8	288	1770, 1960	0.3570
8 - 60	8x36 WS	Steel	8	288	1770, 1960, 2160	0.4680



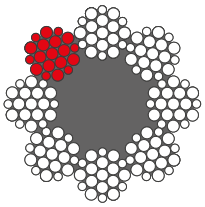




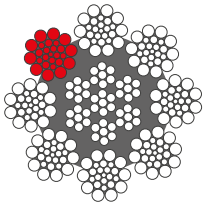
8x19 S



8x19 F



8x19 W



8x26 WS

İZMİT
8x19 CLASS

- Galvanised and bright design.
- Available in right hand and left hand.
- Available in ordinary lay and lang' s lay.
- Resistant to fatigue.
- Rounder than 6 strand ropes, more contact points rope to groove.
- Production according to EN 12385-4.

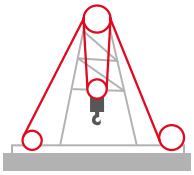
Applications:

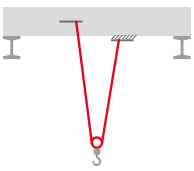
Hoist rope for exploration and core drilling. It can be used as a crane rope for some lifting applications.

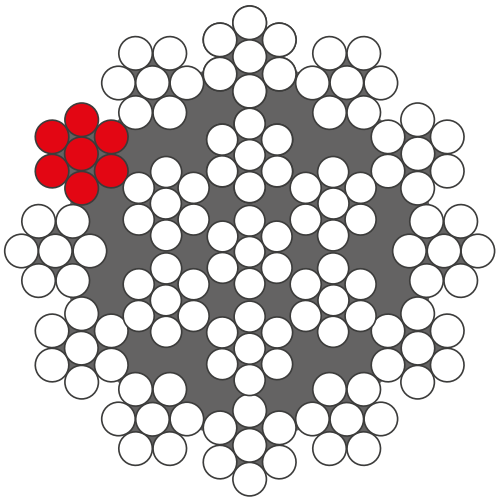
GENERAL VIEW

> For details of tables about the product, see page: 371

Diameter Range (mm)	Rope Construction	Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grades (N/mm²)	Metallic Area Factor
8 - 60	8x19 S	Fiber	8	152	1770, 1960	0.3590
8 - 60	8x19 S	Steel	8	152	1770, 1960, 2160	0.4570
8 - 60	8x19 F	Fiber	8	152	1770, 1960	0.3590
8 - 60	8x19 F	Steel	8	152	1770, 1960, 2160	0.4570
8 - 60	8x19 W	Fiber	8	152	1770, 1960	0.3590
8 - 60	8x19 W	Steel	8	152	1770, 1960, 2160	0.4570
8 - 60	8x26 WS	Fiber	8	208	1770, 1960	0.3590
8 - 60	8x26 WS	Steel	8	208	1770, 1960, 2160	0.4570







İZMİT
18x7 NUFLEX

- Galvanized and bright design.
- Available in right hand and left hand.
- Available in ordinary lay and Lang's lay.
- Resistant to rotation.
- Must be used with a swivel.
- Production according to EN 12385-4.

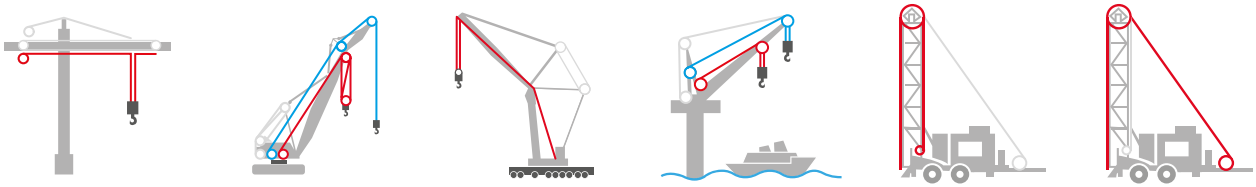
Applications:

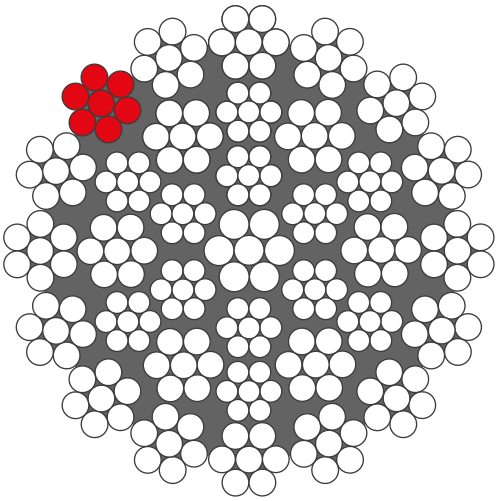
It is recommended to be used for offshore, deck cranes and marine environment. Traditional applications like mobile cranes, tower cranes and crawler cranes where non - rotating ropes are required.

GENERAL VIEW

> For details of tables about the product, see page: 374

Diameter Range (mm)	Rope Construction	Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grades (N/mm²)	Metallic Area Factor
6 - 32	18x7	Fiber	12	84	1770, 1960	-
6 - 32	18x7	Steel	12	84	1770, 1960	0.4180





İZMİT
35Wx7 NUFLEX

- Galvanized and bright design.
- Available in right hand and left hand.
- Available in ordinary lay and Lang's lay.
- Resistant to rotation.
- Must be used with a swivel.
- Production according to EN 12385-4.

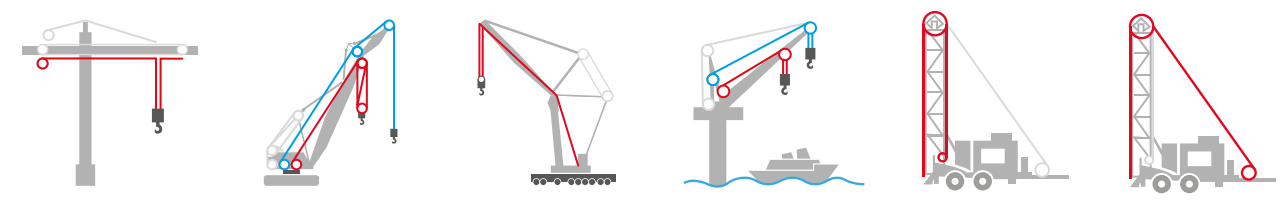
Applications:

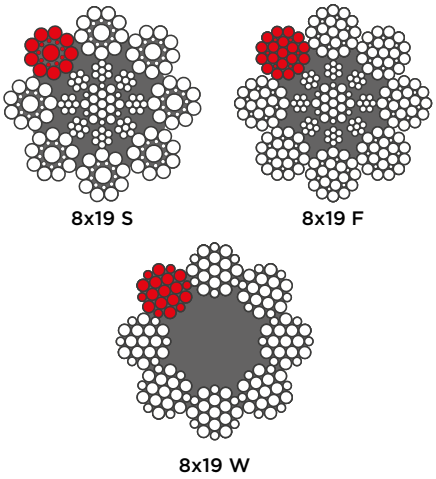
It is recommended to be used for offshore, deck cranes and marine environment. Traditional applications like mobile cranes, tower cranes and crawler cranes where non - rotating ropes are required.

GENERAL VIEW

> For details of tables about the product, see page: 374

Diameter Range (mm)	Rope Construction	Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grades (N/mm²)	Metallic Area Factor
13 - 40	35(W)x7	Fiber	16	112	1960, 2160	-
13 - 40	35(W)x7	Steel	16	112	1960, 2160	0.4800





İZMİT
8x19 CLASS

- Bright design, right of left handed in ordinary lay.
- Easy to install.
- Rounder than 6 strand ropes, more contact points rope to groove.
- Production according to EN 12385-4.

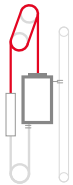
Applications:

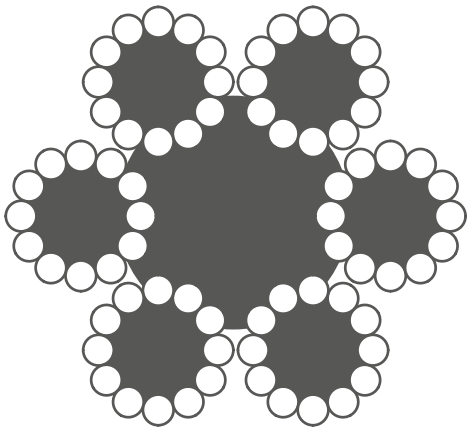
It can be used as traction rope for elevators (low speed).

GENERAL VIEW

> For details of tables about the product, see page: 375

Diameter Range (mm)	Rope Construction	Core	Number of Outer Strands	Number of Wires in Outer Strands	Rope Grades (N/mm²)	Metallic Area Factor
8 - 60	8x19 S	Fiber	8	152	1770, 1960	0.3590
8 - 60	8x19 S	Steel	8	152	1770, 1960, 2160	0.4570
8 - 60	8x19 F	Fiber	8	152	1770, 1960	0.3590
8 - 60	8x19 F	Steel	8	152	1770, 1960, 2160	0.4570
8 - 60	8x19 W	Fiber	8	152	1770, 1960	0.3590
8 - 60	8x19 W	Steel	8	152	1770, 1960, 2160	0.4570



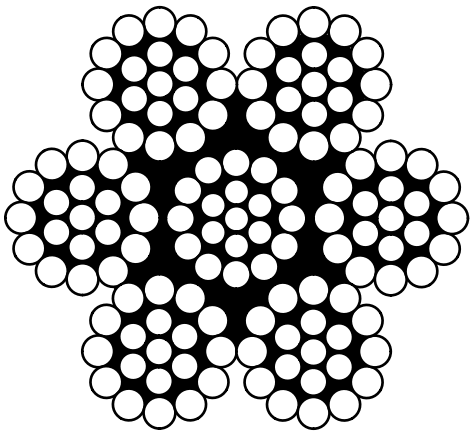


6x12+7 GALVANISED

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load (1770 N/mm²)	Weight (kg/m)
6	1,27	0,10
8	2,29	0,16
10	3,67	0,26
12	5,21	0,34

- Fiber core and galvanized
- Fiber core in each strand
- For lashing applications

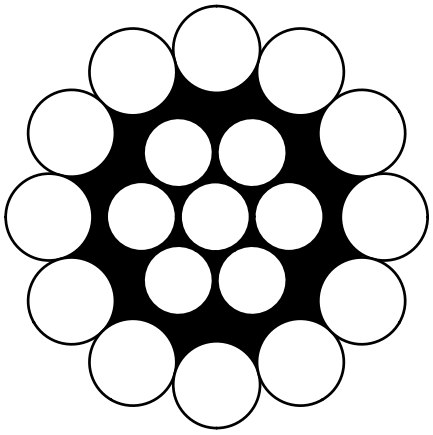


7x19 STAINLESS

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load (kg)	Weight (kg/m)
2	212,0	0,017
3	477,0	0,034
4	849,0	0,061
5	1.326	0,095
6	1.960	0,138
8	3.400	0,243
10	5.310	0,381
12	7.650	0,548

- Material: AISI 304 or AISI 316 stainless steel
- Spiral stranded
- Production: Acc. to DIN 3055
- Resistant to corrosion
- For outdoor applications

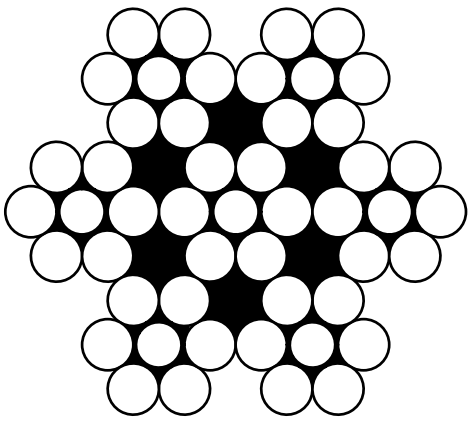


1x19 STAINLESS

GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load (kg)	Weight (kg/m)
2	336,0	0,02
3	756,0	0,045
4	1.340	0,079
5	2.100	0,124
6	3.030	0,178
8	5.380	0,317
10	8.400	0,495
12	12.100	0,713

- Material: AISI 304 or AISI 316 stainless steel
- Spiral stranded.
- Production: Acc. to DIN 3055
- Resistant to corrosion
- For outdoor applications

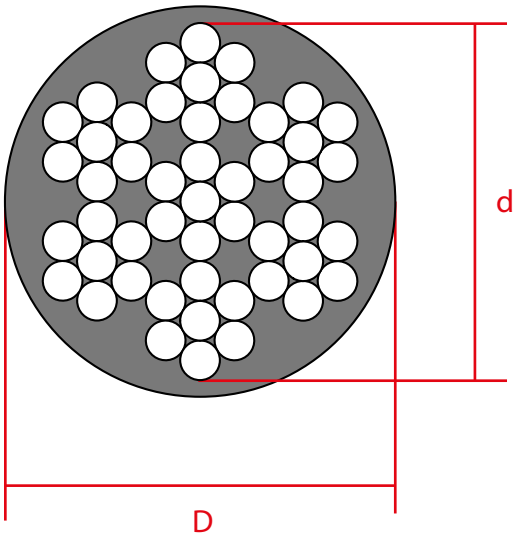


7x7 STAINLESS

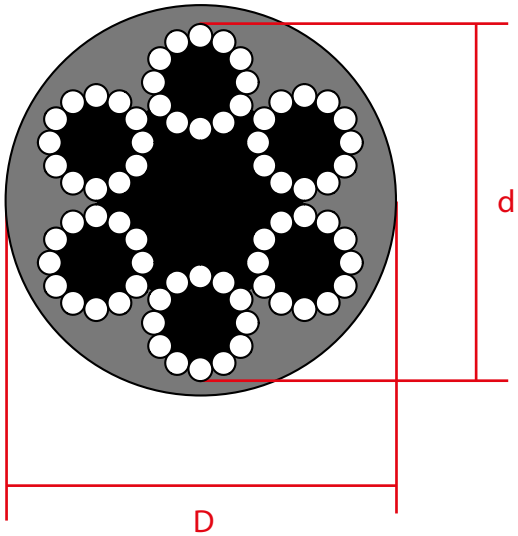
GENERAL VIEW

Rope Diameter (mm)	Minimum Breaking Load (kg)	Weight (kg/m)
1	60,00	0,004
1,5	130,0	0,009
2	230,0	0,016
3	515,0	0,035
4	915,0	0,063
5	1.430	0,098

- Material: AISI 304 or AISI 316 stainless steel
- Construction: 7x7
- Production: Acc. to DIN 3055
- Resistant to corrosion
- For outdoor applications



6x12+7 - FC



6x7 - FC

PVC COATED STEEL WIRE ROPE

Applications:

Used in water wells, emergency systems, greenhouse applications.

- The rope is galvanized.
- Ropes have 6x7 and 6x12+7 rope construction.
- Pvc coating can be made in red, blue, green and yellow colors according to demand.

GENERAL VIEW

Rope Diameter (mm) (d - D mm)	Rope Construction	Breaking Load (kg)
2 - 3	6x7 - FC	250,0
2 - 4	6x7 - FC	250,0
3 - 5	6x7 - FC	550,0
4 - 6	6x7 - FC	900,0
5 - 7	6x7 - FC	1.500
6 - 8	6x12 + 7 - FC	2.000
8 - 10	6x12 + 7 - FC	3.600
10 - 12	6x12 + 7 - FC	5.700

STEEL WIRE ROPE ACCESSORIES

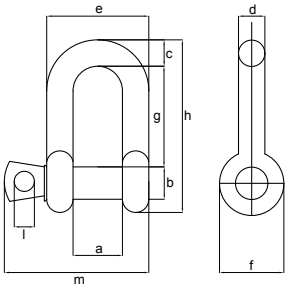
- Shackles and Wire Rope Clips
- Thimbles
- Sockets
- Sling Links and Sling Hooks
- Swivel, Turnbuckles and Eye Bolts
- Rope Pulleys
- Shank Hooks
- G-Flex Ballance Chain
- Rope Lubricant Machine
- Other Accessories

SHACKLES

Applications:

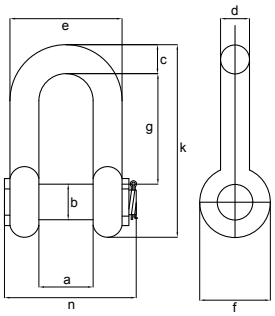
It is used in static and dynamic systems to connect steel ropes, chains and other connecting elements. The standard ones are usually used in permanent applications, and the safety bolt ones are used in temporary applications.

- The information on the shackles you have received should be legible.
- Body and pin must be compatible with each other.
- Thread of the shackle should be checked before use.
- It should not be damaged.
- Shackle with cotter pin must not be used without a cotter pin.
- Should not be used with notched, broken, hollow and rusty materials.
- Safety working load should not be exceeded.
- No modifications should be made.



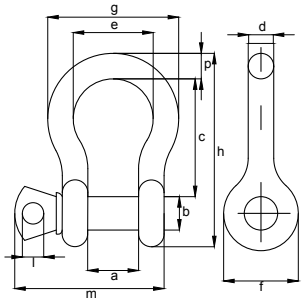
SCREW SHACKLE - U TYPE

Size (inch)	Safety Working Load (kg)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	k (mm)	l (mm)	m (mm)
1/4	500	11,9	7,80	6,35	6,35	24,6	15,5	22,4	40,4	4,85	35,1
5/16	750	13,5	9,65	7,85	7,85	29,5	19,1	26,2	48,5	5,60	42,2
3/8	1.000	16,8	11,2	9,65	9,65	35,8	23,1	31,8	58,5	6,35	51,5
7/16	1.500	19,1	12,7	11,2	11,2	41,4	26,9	36,6	67,5	7,85	60,5
1/2	2.000	20,6	16,0	12,7	12,7	46,0	30,2	41,4	77,0	9,65	68,5
5/8	3.250	26,9	19,1	15,7	16,0	58,5	38,1	51,0	95,5	11,2	85,0
3/4	4.750	31,8	22,4	20,6	19,1	70,0	46,0	60,5	115	12,7	101
7/8	6.500	36,6	25,4	24,6	22,4	81,0	53,0	71,5	135	12,7	114
1	8.500	42,9	28,7	25,4	25,4	93,5	60,5	81,0	151	14,2	129
1 1/8	9.500	46,0	31,8	31,8	28,7	103	68,5	91,0	172	16,0	142
1 1/4	12.000	51,5	35,1	35,1	31,8	115	76,0	100	191	17,5	156
1 3/8	13.500	57,0	38,1	38,1	35,1	127	84,0	111	210	19,1	174
1 1/2	17.000	60,5	41,4	41,1	38,1	137	92,0	122	230	20,6	187
1 3/4	25.000	73,0	51,0	54,0	44,5	162	106	146	279	25,4	231
2	35.000	82,5	57,0	60,0	51,0	184	122	172	312	31,0	263
2 1/2	55.000	105	70,0	66,5	66,5	238	145	203	377	35,1	330



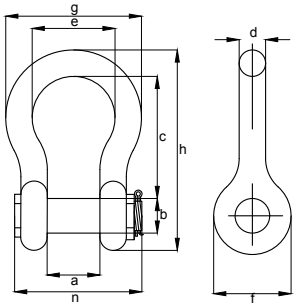
SHACKLE WITH COTTER PIN - U TYPE

Size (inch)	Safety Working Load (kg)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	k (mm)	n (mm)
1/4	500	11,9	7,80	6,35	6,35	24,6	15,5	22,4	40,4	39,6
5/16	750	13,5	9,65	7,85	7,85	29,5	19,1	26,2	48,5	46,2
3/8	1.000	16,8	11,2	9,65	9,65	35,8	23,1	31,8	58,5	55,0
7/16	1.500	19,1	12,7	11,2	11,2	41,4	26,9	36,6	67,5	63,5
1/2	2.000	20,6	16,0	12,7	12,7	46,0	30,2	41,4	77,0	71,0
5/8	3.250	26,9	19,1	15,7	16,0	58,5	38,1	51,0	95,5	89,5
3/4	4.750	31,8	22,4	20,6	19,1	70,0	46,0	60,5	115	103
7/8	6.500	36,6	25,4	24,6	22,4	81,0	53,0	71,5	135	120
1	8.500	42,9	28,7	25,4	25,4	93,5	60,5	81,0	151	135
1 1/8	9.500	46,0	31,8	31,8	28,7	103	68,5	91,0	172	150
1 1/4	12.000	51,5	35,1	35,1	31,8	115	76,0	100	191	165
1 3/8	13.500	57,0	38,1	38,1	35,1	127	84,0	111	210	183
1 1/2	17.000	60,5	41,4	41,1	38,1	137	92,0	122	230	196
1 3/4	25.000	73,0	51,0	54,0	44,5	162	106	146	279	230
2	35.000	82,5	57,0	51,0	53,3	184	122	172	312	264
2 1/2	55.000	105	70,0	66,5	66,5	238	145	203	377	344
3	85.000	127	82,5	89,0	76,0	279	165	216	429	419



SCREW SHACKLE - OMEGA TYPE

Size (inch)	Safety Working Load (kg)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	l (mm)	m (mm)	p (mm)
3/16	300	9,65	6,35	22,4	4,85	15,2	14,2	24,9	37,3	4,06	28,4	4,85
1/4	500	11,9	7,80	28,7	6,35	19,8	15,5	32,5	46,7	4,85	35,1	6,35
5/16	750	13,5	9,65	31,0	7,85	21,3	19,1	37,3	53,0	5,60	42,2	7,85
3/8	1.000	16,8	11,2	36,6	9,65	26,2	23,1	45,2	63,0	6,35	51,5	9,65
7/16	1.500	19,1	12,7	42,9	11,2	29,5	26,9	51,5	74,0	7,85	60,5	11,2
1/2	2.000	20,6	16,0	47,8	12,7	33,3	30,2	58,5	83,5	9,65	68,5	12,7
5/8	3.250	26,9	19,1	60,5	16,0	42,9	38,1	74,5	106	11,2	85,0	17,5
3/4	4.750	31,8	22,4	71,5	19,1	51,0	46,0	89,0	126	12,7	101	20,6
7/8	6.500	36,6	25,4	84,0	22,4	58,0	53,0	102	148	12,7	114	24,6
1	8.500	42,9	28,7	95,5	25,4	68,5	60,5	119	167	14,2	129	26,9
1 1/8	9.500	46,0	31,8	108	28,7	74,0	68,5	131	190	16,0	142	31,8
1 1/4	12.000	51,5	35,1	119	32,8	82,5	76,0	146	210	17,5	156	35,1
1 3/8	13.500	57,0	38,1	133	36,1	92,0	84,0	162	233	19,1	174	38,1
1 1/2	17.000	60,5	41,4	145	39,1	98,5	92,0	175	254	20,6	187	41,1
1 3/4	25.000	73,0	51,0	178	46,7	127	106	225	313	25,4	231	57,0
2	35.000	82,5	57,0	197	53,0	146	122	253	348	31,0	263	61,0
2 1/2	55.000	105	70,0	267	69,0	184	145	327	453	35,1	330	79,5



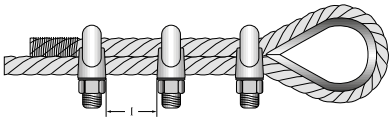
SHACKLE WITH COTTER PIN - OMEGA TYPE

Size (inch)	Safety Working Load (kg)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	n (mm)
1/4	500	11,9	7,80	28,7	6,35	19,8	15,5	32,5	46,7	39,6
5/16	750	13,5	9,65	31,0	7,85	21,3	19,1	37,3	53,0	46,2
3/8	1.000	16,8	11,2	36,6	9,65	26,2	23,1	45,2	63,0	55,1
7/16	1.500	19,1	12,7	42,9	11,2	29,5	26,9	51,5	74,0	63,8
1/2	2.000	20,6	16,0	47,8	12,7	33,3	30,2	58,5	83,5	71,1
5/8	3.250	26,9	19,1	60,5	16,0	42,9	38,1	74,5	106	90,4
3/4	4.750	31,8	22,4	71,5	19,1	51,0	46,0	89,0	126	105
7/8	6.500	36,6	25,4	84,0	22,4	58,0	53,0	102	148	122
1	8.500	42,9	28,7	95,5	25,4	68,5	60,5	119	167	137
1 1/8	9.500	46,0	31,8	108	28,7	74,0	68,5	131	190	150
1 1/4	12.000	51,5	35,1	119	32,8	82,5	76,0	146	210	170
1 3/8	13.500	57,0	38,1	133	36,1	92,0	84,0	162	233	183
1 1/2	17.000	60,5	41,4	145	39,1	98,5	92,0	175	254	196
1 3/4	25.000	73,0	51,0	178	46,7	127	106	225	313	246
2	35.000	82,5	57,0	197	53,0	146	122	253	348	275
2 1/2	55.000	105	70,0	267	66,5	184	145	327	453	345
3	85.000	127	82,5	330	76,0	200	165	365	546	384

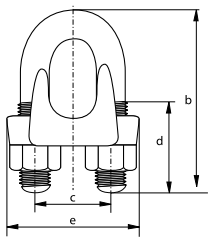
WIRE ROPE CLIPS

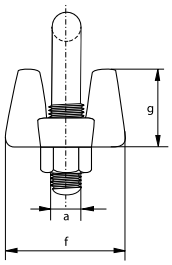
Applications:

It is the connection element used in steel ropes where socket installation, bonding and pressing are not possible or temporary connection is required.



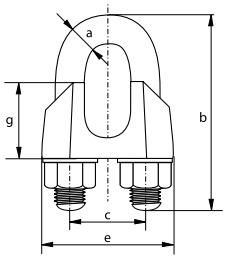
- Introductory information should be legible.
- There should not be any cracks, broken and hollow on the wire rope clip.
- The diameter of the rope to be used should be selected as appropriate sizes of wire rope clip.
- Should not be subjected to any heat treatment.
- When the rope ends with the wire rope clips, the connection must be made as shown.

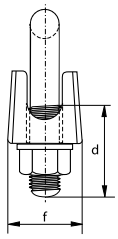




TYPE A

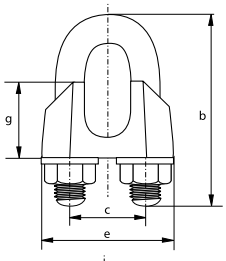
Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)
6,00	5,00	24,0	12,0	14,0	23,0	17,0	14,0
8,00	6,00	30,0	15,0	16,0	28,0	21,0	17,0
10,0	8,00	37,0	19,0	20,0	38,0	28,0	21,0
12,0	10,0	47,0	24,0	25,0	45,0	34,0	27,0
15,0	12,0	56,0	29,0	30,0	52,0	40,0	32,0
20,0	14,0	70,0	36,0	36,0	62,0	47,0	38,0
22,0	16,0	77,0	40,0	39,0	69,0	52,0	43,0
25,0	18,0	85,0	43,0	44,0	76,0	56,0	50,0
28,0	20,0	95,0	48,0	48,0	85,0	62,0	57,0
32,0	22,0	108	55,0	51,0	93,0	67,0	61,0
40,0	24,0	120	64,0	62,0	110	81,0	73,0
45,0	27,0	137	72,0	70,0	123	88,0	86,0
50,0	30,0	154	80,0	80,0	135	95,0	95,0

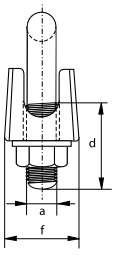




DIN 1142

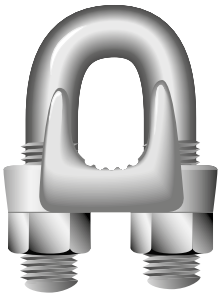
Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)
5,00	5,00	25,0	12,0	14,0	25,0	13,0	13,0
6,50	6,00	32,0	14,0	17,0	30,0	16,0	14,0
8,00	8,00	41,0	18,0	20,0	39,0	20,0	18,0
10,0	8,00	46,0	20,0	24,0	40,0	20,0	21,0
13,0	12,0	64,0	29,0	30,0	55,0	28,0	29,0
16,0	14,0	76,0	34,0	35,0	64,0	32,0	35,0
19,0	14,0	83,0	37,0	36,0	68,0	32,0	40,0
22,0	16,0	96,0	41,0	40,0	74,0	34,0	44,0
26,0	20,0	111	46,0	50,0	84,0	38,0	51,0
30,0	20,0	127	54,0	55,0	95,0	41,0	59,0
34,0	22,0	141	60,0	60,0	105	45,0	67,0
40,0	24,0	159	68,0	65,0	117	49,0	77,0

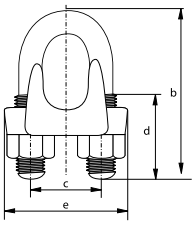


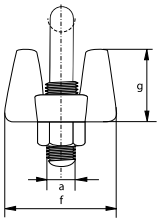


DIN 741

Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)
3,00	4,00	20,0	9,00	12,0	21,0	10,0	10,0
5,00	5,00	24,0	11,0	13,0	23,0	11,0	10,0
6,00	5,00	28,0	13,0	15,0	26,0	12,0	11,0
8,00	6,00	34,0	16,0	19,0	30,0	14,0	15,0
10,0	8,00	42,0	19,0	22,0	34,0	18,0	17,0
11,0	8,00	44,0	20,0	22,0	36,0	19,0	18,0
13,0	10,0	55,0	24,0	30,0	42,0	23,0	21,0
14,0	10,0	57,0	25,0	30,0	44,0	23,0	22,0
16,0	12,0	63,0	29,0	33,0	50,0	26,0	26,0
19,0	12,0	75,0	32,0	38,0	54,0	29,0	30,0
22,0	14,0	85,0	37,0	44,0	61,0	33,0	34,0
26,0	14,0	95,0	41,0	45,0	65,0	35,0	37,0
30,0	16,0	110	48,0	50,0	74,0	37,0	43,0
34,0	16,0	120	52,0	55,0	80,0	42,0	50,0
40,0	16,0	140	58,0	60,0	88,0	45,0	55,0
45,0	18,0	163	65,0	75,0	97,0	49,0	60,0
50,0	20,0	170	72,0	77,0	106	51,0	65,0

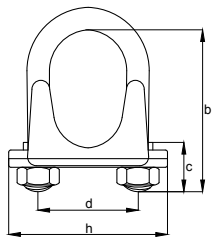


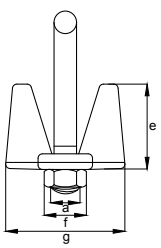




TYPE XL

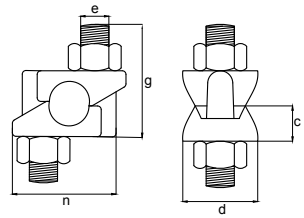
Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)
4,00	5,00	24,0	12,0	11,0	24,0	21,0	10,0
5,00	6,00	31,0	15,0	13,0	29,0	24,0	13,0
7,00	8,00	34,0	19,0	13,0	37,0	30,0	18,0
8,00	10,0	45,0	22,0	19,0	43,0	33,0	19,0
10,0	11,0	49,0	26,0	19,0	49,0	42,0	25,0
11,0	12,0	60,0	30,0	25,0	58,0	46,0	26,0
15,0	14,0	72,0	33,0	32,0	63,0	52,0	31,0
16,0	14,0	74,0	33,0	32,0	64,0	54,0	36,0
20,0	16,0	86,0	38,0	37,0	72,0	57,0	38,0
22,0	19,0	98,0	45,0	41,0	80,0	62,0	40,0
30,0	19,0	117	51,0	51,0	91,0	73,0	48,0
36,0	22,0	140	60,0	59,0	108	79,0	58,0
40,0	22,0	147	66,0	60,0	112	85,0	64,0
42,0	25,0	161	70,0	67,0	121	92,0	67,0
46,0	29,0	174	78,0	70,0	134	97,0	76,0
52,0	32,0	195	86,0	78,0	150	113	85,0

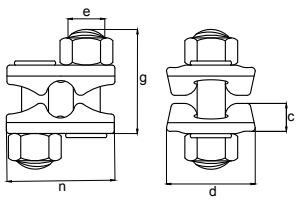




CROSBY G-450

Size (mm)	Size (inch)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)
3 - 4	1/8	5,60	18,3	11,2	11,9	10,4	9,65	20,6	23,9
5	3/16	6,35	24,6	14,2	15,0	12,7	11,2	23,9	29,5
6 - 7	1/4	7,85	26,2	12,7	19,1	16,8	14,2	30,2	36,6
8	5/16	9,65	35,1	19,1	22,4	18,3	17,5	33,3	42,9
9-10	3/8	11,2	38,1	19,1	25,4	23,1	19,1	41,4	49,3
11	7/16	12,7	47,8	25,4	30,2	26,2	22,4	46,0	58,0
12 - 13	1/2	12,7	47,8	25,4	30,2	28,7	22,4	48,5	58,0
14 - 15	9/16	14,2	57,0	31,8	33,3	31,0	23,9	52,5	63,5
16	5/8	14,2	60,5	31,8	33,3	34,0	23,9	52,5	63,5
18 - 20	3/4	15,7	70,0	36,6	38,1	35,8	26,9	57,0	72,0
22	7/8	19,1	79,0	41,1	44,5	40,4	31,8	62,0	80,5
24 - 26	1	19,1	89,0	46,0	47,8	45,2	31,8	67,0	88,0
28 - 30	1 1/8	19,1	98,5	51,0	51,0	48,5	31,8	71,5	91,0
32 - 34	1 1/4	22,4	108	54,0	59,4	55,5	36,6	79,5	105
36	1 3/8	22,4	118	58,5	59,4	58,5	36,6	79,5	106
38	1 1/2	22,4	125	60,5	66,5	62,0	36,6	86,5	113
41 - 42	1 5/8	25,4	135	66,5	70,0	67,5	41,4	92,0	121
44 - 46	1 3/4	28,7	146	70,0	77,5	74,5	46,0	97,0	134
48 - 52	2	31,8	164	76,0	86,0	77,0	51,0	113	149





CROSBY G-429

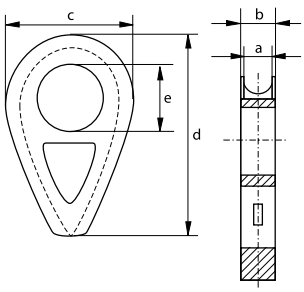
Size		c	d	e	g	n
(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	(mm)
5 - 7	3/16 - 1/4	10,2	23,9	9,65	32,5	36,6
8	5/16	11,9	26,9	9,65	37,3	39,1
10	3/8	13,0	26,9	11,2	46,0	45,2
11 - 13	7/16 - 1/2	15,0	31,8	12,7	55,5	54,6
14 - 16	9/16 - 5/8	18,3	38,1	16,0	68,5	65,3
18 - 20	3/4	21,8	46,0	19,1	74,5	67,8
22	7/8	24,6	53,8	19,1	84,0	72,6
24 - 26	1	28,7	57,0	19,1	94,5	77,7
28 - 30	1 1/8	32,5	60,5	22,4	107	87,4
32 - 34	1 1/4	34,0	63,5	22,4	108	90,4
36 - 40	1 3/8 - 1 1/2	39,6	76,0	25,4	141	105

THIMBLES

Applications:

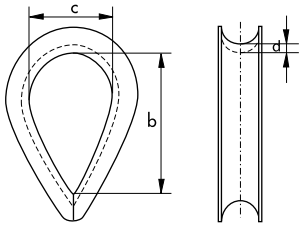
Thimbles; steel ropes, fiber ropes, synthetic ropes are used to protect. It is produced in various sizes according to rope diameter.

- The thimbles should be checked regularly.
- Thimbles are worn, cracked and broken should not be used.
- The thimble should be selected according to the diameter of the rope.
- The appropriate thimble should be preferred according to place of use of the rope.



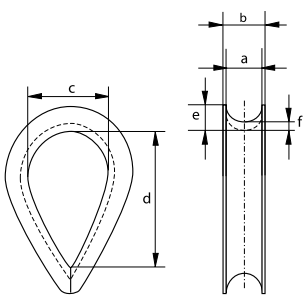
DIN 3091

Size (mm)	a (mm)	b (mm)	Standard Hole Diameter e (mm)	Extendable Hole Diameter e (mm)	c (mm)	d (mm)
8,00	9,00	15,0	14,0	20,0	40,0	66,0
10,0	11,0	17,5	18,0	25,0	50,0	82,0
12,0	13,0	20,0	21,0	30,0	60,0	98,0
14,0	16,0	23,5	25,0	35,0	70,0	114
16,0	18,0	26,0	28,0	40,0	80,0	130
18,0	20,0	28,5	31,0	45,0	90,0	145
20,0	22,0	31,0	35,0	50,0	100	161
22,0	24,0	33,5	38,0	55,0	110	177
24,0	26,0	36,0	41,0	60,0	120	193
26,0	29,0	39,5	44,0	65,0	130	209
28,0	31,0	42,0	47,0	70,0	140	224
32,0	35,0	47,0	53,0	80,0	160	256
36,0	40,0	53,0	59,0	90,0	180	288
40,0	44,0	58,0	65,0	100	200	320
44,0	48,0	63,0	70,0	110	220	352
48,0	53,0	69,0	76,0	120	240	384
52,0	57,0	74,0	81,0	130	260	416
56,0	62,0	80,0	86,0	140	280	448



DIN 6899

Size (mm)	b (mm)	c (mm)	d (mm)
3,00	12,0	19,0	1,20
4,00	13,0	21,0	1,20
5,00	14,0	23,0	1,70
6,00	16,0	25,0	2,20
7,00	18,0	28,0	2,20
8,00	20,0	32,0	2,70
10,0	24,0	38,0	2,90
12,0	28,0	45,0	3,20
14,0	32,0	51,0	3,50
16,0	36,0	58,0	3,80
18,0	40,0	64,0	4,20
20,0	45,0	72,0	5,20
22,0	50,0	80,0	5,20
24,0	56,0	90,0	6,20
26,0	62,0	99,0	6,50
28,0	70,0	112	7,30
30,0	75,0	120	8,00
32,0	80,0	128	8,00
34,0	95,0	152	8,00
36,0	100	160	8,00
38,0	110	176	8,50
40,0	115	184	10,5
42,0	120	192	10,5
45,0	150	240	10,5
50,0	160	245	12,0
60,0	170	260	12,0



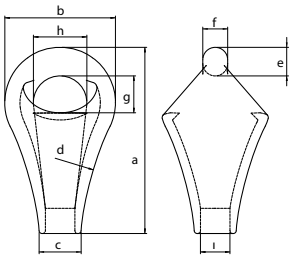
DIN 3090

Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)
24,0	26,0	37,0	60,0	120	27,0	11,0
26,0	29,0	46,0	65,0	130	30,0	12,0
28,0	31,0	50,0	70,0	140	33,0	12,0
32,0	35,0	55,0	80,0	160	38,0	14,0
36,0	40,0	60,0	90,0	180	42,0	16,0
40,0	44,0	65,0	100	200	46,0	18,0
44,0	48,0	70,0	110	220	53,0	20,0
48,0	53,0	75,0	120	240	58,0	22,0
52,0	57,0	80,0	130	260	64,0	25,0
56,0	62,0	85,0	140	280	67,0	25,0
60,0	66,0	90,0	150	300	70,0	25,0
64,0	70,0	95,0	160	320	78,0	30,0

SOCKETS

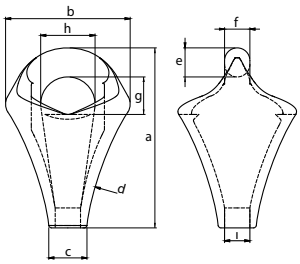
Applications:
Sockets are used to connect steel ropes to a fixed point. Anchorage systems, bridge systems, crane systems, membrane applications, etc. used in operations.

- The socket should be selected suitable for the rope diameter.
- Before using, it should be checked for cracks.
- Cracked and broken sockets must not be used.
- Parts in different sizes should not be mixed up.
- Attention should be payed on connection point and the method.



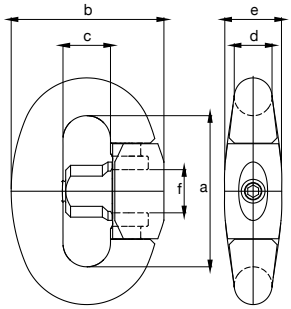
PEAR SOCKET

Socket No	Rope Diameter (mm)	Safety Working Load (ton)	Minimum Breaking Load (ton)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	ı (mm)	Weight (kg)
2	12 - 13	2,00	14,0	95,0	56,0	25,0	195	15,5	13,5	22,0	25,0	16,0	0,40
3	14 - 15	2,50	17,5	109	64,0	28,0	220	17,5	15,5	24,0	29,0	19,0	0,60
4	16 - 17	3,00	22,5	123	70,0	31,0	220	19,5	17,5	26,0	31,0	21,0	0,90
5	18 - 19	4,50	27,5	135	84,0	33,0	245	21,0	19,0	30,0	42,0	23,0	1,30
6	20 - 21	5,00	35,0	152	84,0	36,0	310	23,0	21,0	33,0	38,0	26,0	1,50
7	22 - 24	7,00	42,5	166	100	40,0	310	26,0	23,0	37,0	48,0	30,0	2,20
8	25 - 27	8,00	52,5	186	100	43,0	350	28,0	25,0	39,0	44,0	32,0	2,40
9	28 - 30	11,0	70,0	202	120	45,0	350	32,0	28,0	40,0	58,0	35,0	3,70
10	31 - 33	13,0	85,0	222	120	52,0	445	32,0	28,5	45,0	56,0	39,0	4,10
11	34 - 36	15,0	95,0	239	142	55,0	445	36,0	31,5	50,0	70,0	42,0	5,90
12	37 - 39	17,0	110	264	142	60,0	495	39,0	34,5	51,0	64,0	45,0	6,70
13	40 - 42	21,0	125	285	166	63,0	555	43,0	36,5	59,0	80,0	48,0	9,30
14	43 - 45	26,0	155	312	166	68,0	595	47,0	40,0	62,0	72,0	51,0	10,5
15	46 - 48	30,0	180	337	170	75,0	595	51,0	44,0	66,0	68,0	55,0	12,1
17	52 - 56	42,5	240	400	220	84,0	880	60,0	54,0	75,0	90,0	63,0	21,3



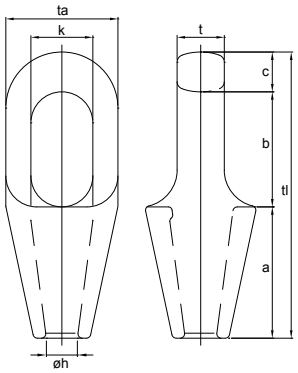
PEAR SOCKET - S TYPE

Socket No	Rope Diameter (mm)	Safety Working Load (kg)	Breaking Load (kg)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	l (mm)	Weight (kg)
924	22 - 24	11.000	70.000	192	133	40,0	325	31,0	27,0	40,0	58,0	29,0	3,80
1026	25 - 27	13.000	85.000	212	143	43,0	375	35,0	30,5	43,0	60,0	32,0	4,80
1130	28 - 30	15.000	95.000	239	156	45,0	400	36,0	31,5	50,0	70,0	35,0	5,90
1232	31 - 33	17.000	110.000	249	165	52,0	425	39,0	34,5	57,0	72,0	38,0	7,00
1336	34 - 36	21.000	125.000	257	184	55,0	450	43,0	36,5	60,0	80,0	42,0	9,30
1440	37 - 40	26.000	155.000	297	192	60,0	475	47,0	40,0	62,0	80,0	46,0	11,6
3221	42 - 44	32.500	189.000	314	204	66,0	425	53,0	46,0	70,0	80,0	49,0	13,8
1548	46 - 48	30.000	180.000	329	192	74,0	575	51,0	44,0	66,0	80,0	57,0	12,4
1648	46 - 48	36.000	215.000	343	218	70,0	500	56,0	50,0	75,0	90,0	54,0	15,0



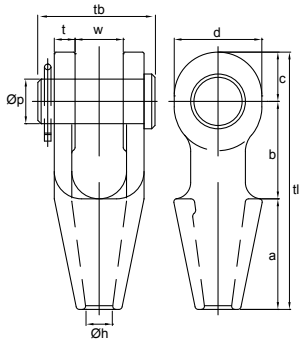
PEAR SOCKET LINK

Socket No	Working Load (kg)	Breaking Load (kg)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Weight (kg)
4	3.000	25.000	76,0	76,0	24,5	19,0	30,0	21,0	0,90
5	4.500	33.000	84,0	84,0	27,0	21,0	32,5	23,0	1,20
6	5.000	37.500	92,0	92,0	29,5	23,0	35,0	25,0	1,50
7	7.000	49.000	100	100	32,0	25,0	38,0	28,0	2,00
8	8.000	54.000	108	108	34,5	27,0	40,5	31,0	2,50
9	9.500	60.000	116	116	37,0	29,0	43,5	34,0	3,10
10	12.000	75.000	128	128	40,5	32,0	48,0	37,0	4,40
11	15.000	95.000	140	140	44,0	35,0	53,0	40,0	5,70
12	17.000	110.000	152	152	47,5	38,0	57,0	43,0	7,20
13	21.000	135.000	164	164	51,0	41,0	61,5	46,0	8,70
14	26.000	160.000	176	173	54,0	44,0	66,0	50,0	11,0
15	30.000	175.000	188	188	58,0	47,0	70,5	52,0	13,5
17	42.500	260.000	222	222	68,0	56,0	84,0	62,0	23,0



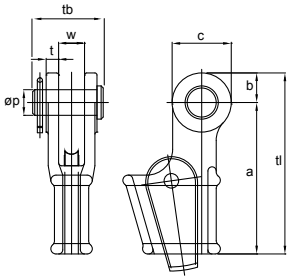
CLOSE SPELTER SOCKETS

Rope Diameter (mm)	Minimum Breaking Load (ton)	a (mm)	b (mm)	c (mm)	Ø h (mm)	k (mm)	t (mm)	ta (mm)	tl (mm)	Weight (kg)
6 - 7	8,00	50,0	40,0	11,0	9,00	22,0	13,0	37,0	101	0,30
8 - 10	12,0	57,0	48,0	14,0	13,0	25,0	18,0	43,0	119	0,40
11 - 13	20,0	64,0	59,0	17,5	15,0	30,0	23,0	51,0	140	0,70
14 - 16	25,0	76,0	65,0	21,0	18,0	36,0	26,0	67,0	162	1,40
18 - 19	40,0	89,0	78,0	27,0	22,0	42,0	32,0	76,0	194	2,20
20 - 22	55,0	101	90,0	33,0	25,0	47,0	38,0	92,0	224	3,80
23 - 26	75,0	114	103	36,0	29,0	57,0	44,0	104	253	5,40
27 - 30	90,0	127	116	39,0	33,0	65,0	51,0	114	282	7,00
31 - 36	125	139	130	43,0	39,0	71,0	57,0	126	312	10,0
37 - 39	150	152	155	51,0	42,0	81,0	63,0	136	358	13,0
40 - 42	170	165	171	54,0	45,0	83,0	70,0	146	390	17,0
43 - 48	225	190	198	55,0	52,0	93,0	76,0	171	443	26,0
49 - 54	280	216	224	62,0	59,0	100	82,0	193	502	37,0
55 - 60	360	228	247	73,0	64,0	112	92,0	216	548	50,0
61 - 68	425	248	270	79,0	75,0	140	102	241	597	66,0
69 - 75	460	279	286	79,0	81,0	159	124	273	644	91,0
76 - 80	560	315	298	83,0	88,0	171	133	292	696	117



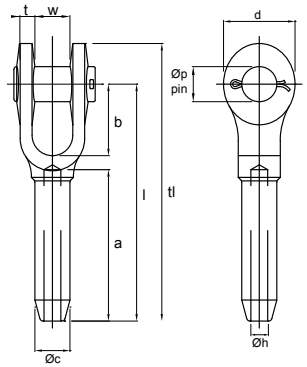
OPEN SPELTER SOCKETS

Rope Diameter (mm)	Minimum Breaking Load (ton)	a (mm)	b (mm)	c (mm)	d (mm)	Ø h (mm)	Ø p (mm)	t (mm)	tl (mm)	tb (mm)	w (mm)	Weight (kg)
6 - 7	8,00	50,0	40,0	19,0	34,0	9,00	16,0	9,00	109	51,0	19,0	0,40
8 - 10	12,0	57,0	45,0	22,0	42,0	13,0	20,0	11,0	124	63,0	21,0	0,70
11 - 13	20,0	64,0	51,0	27,0	50,0	15,0	25,0	12,0	142	67,0	25,0	1,00
14 - 16	25,0	76,0	63,0	32,0	58,0	18,0	30,0	14,0	171	85,0	32,0	1,80
18 - 19	40,0	89,0	76,0	40,0	70,0	22,0	35,0	16,0	205	95,0	38,0	3,00
20 - 22	55,0	101	89,0	45,0	80,0	25,0	41,0	19,0	235	110	44,0	4,60
23 - 26	75,0	114	101	60,0	104	29,0	51,0	22,0	275	128	51,0	8,00
27 - 30	90,0	127	114	65,0	114	33,0	57,0	25,0	306	142	57,0	11,0
31 - 36	125	139	127	72,0	126	39,0	63,0	28,0	338	155	63,0	15,0
37 - 39	150	152	162	80,0	142	42,0	70,0	30,0	394	177	76,0	22,0
40 - 42	170	165	165	88,0	156	45,0	76,0	33,0	418	187	76,0	27,0
43 - 48	225	191	178	100	176	52,0	89,0	39,0	469	215	89,0	41,0
49 - 54	280	216	228	108	194	59,0	95,0	45,0	552	244	101	60,0
55 - 60	360	229	254	120	210	64,0	108	53,0	603	275	113	88,0
61 - 68	425	248	273	133	236	75,0	121	60,0	654	300	127	118
69 - 75	460	279	279	138	240	81,0	127	73,0	696	335	133	155
76 - 80	560	305	286	146	252	88,0	133	76,0	737	355	146	186



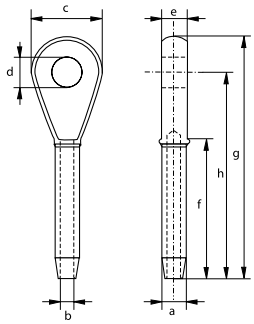
OPEN WEDGE SOCKETS

Rope Diameter (mm)	Safety Working Load (ton)	a (mm)	b (mm)	c (mm)	Ø p (mm)	t (mm)	tl (mm)	tb (mm)	w (mm)	Weight (kg)
7 - 8	8,00	110	18,0	36,0	16,0	9,00	128	51,0	18,0	0,80
9 - 10	12,0	145	23,0	46,0	21,0	11,0	168	63,0	21,0	1,70
11 - 13	20,0	146	29,0	57,0	25,0	12,0	175	67,0	25,0	2,10
14 - 16	25,0	176	35,0	70,0	30,0	15,0	211	85,0	31,0	4,00
18 - 19	40,0	210	40,0	80,0	35,0	16,0	250	95,0	38,0	7,00
20 - 22	55,0	238	48,0	95,0	41,0	18,0	285	110	44,0	10,0
23 - 26	75,0	275	55,0	110	51,0	22,0	330	128	51,0	15,0
27 - 29	90,0	310	65,0	130	57,0	25,0	375	142	57,0	21,0
30 - 32	110	350	73,0	146	63,0	28,0	423	155	63,0	31,0
34 - 36	125	400	74,0	148	64,0	28,0	474	160	70,0	37,0
37 - 39	150	450	80,0	142	70,0	30,0	530	177	77,0	51,0
40 - 42	170	500	87,0	160	76,0	33,0	587	187	76,0	64,0
43 - 48	225	550	100	186	89,0	39,0	650	215	89,0	96,0
49 - 52	280	640	105	205	95,0	46,0	745	244	101	130
54 - 58	360	660	125	250	108	54,0	785	275	114	180
60 - 68	425	835	135	270	121	60,0	970	300	127	275



SWAGE SOCKETS OPEN

Rope Diameter (mm)	Ø c (mm)	Ø h (mm)	Ø p (mm)	b (mm)	tl (mm)	a (mm)	l (mm)	t (mm)	w (mm)	d (mm)	Weight (kg)
6,00	12,7	6,85	17,5	38,0	121	54,0	102	8,00	17,0	35,0	0,25
8,00	19,6	8,65	20,6	44,0	159	81,0	135	10,0	21,0	41,0	0,50
10,0	19,6	10,4	20,6	44,0	159	81,0	135	10,0	21,0	41,0	0,50
11,0	24,9	12,2	25,4	51,0	198	108	169	13,0	25,0	51,0	1,10
13,0	24,9	14,0	25,4	51,0	198	108	169	13,0	25,0	51,0	1,10
14,0	31,8	15,5	30,2	57,0	243	135	206	16,0	32,0	63,0	2,10
16,0	31,8	17,0	30,2	57,0	243	135	206	16,0	32,0	63,0	2,10
19,0	39,4	20,3	35,1	70,0	297	162	254	19,0	38,0	76,0	3,60
22,0	43,2	23,9	41,1	83,0	346	189	295	23,0	44,0	86,0	5,30
25,0	50,5	26,9	51,0	95,0	397	216	340	26,0	51,0	102	8,10
29,0	57,0	30,2	57,0	108	444	243	381	30,0	57,0	114	13,5
32,0	64,5	33,8	63,5	121	494	270	419	30,0	63,0	127	16,4
35,0	71,0	36,8	63,5	133	540	297	460	33,0	63,0	133	21,4
38,0	78,0	40,1	70,0	146	591	324	502	37,0	76,0	146	29,5
44,0	86,0	47,2	89,0	171	689	378	584	43,0	89,0	178	42,2
51,0	100	53,5	95,5	203	798	432	679	46,0	102	203	65,8
57,0	113	59,9	108	171	835	486	705	65,0	114	222	93,5



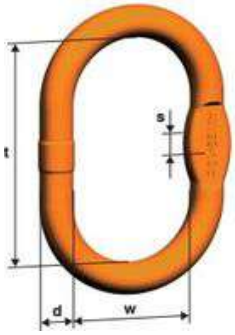
SWAGE SOCKETS CLOSED

Rope Diameter (mm)	Size Before Pressing a (mm)	Size After Pressing Min. a (mm)	Size After Pressing Max. a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	Weight (kg)
6,00	13,0	10,9	11,7	7,00	37,0	19,0	13,0	54,0	111	89,0	0,15
8,00	20,0	17,2	18,0	9,00	43,0	22,0	17,0	81,0	140	114	0,36
10,0	20,0	17,2	18,0	12,0	43,0	22,0	17,0	81,0	140	114	0,35
11,0	25,0	22,0	23,1	12,0	51,0	27,0	22,0	108	176	146	0,66
13,0	25,0	22,0	23,1	14,0	51,0	27,0	22,0	108	176	146	0,63
14,0	32,0	28,3	29,5	15,0	63,0	32,0	29,0	135	222	184	1,26
16,0	32,0	28,3	29,5	17,0	63,0	32,0	29,0	135	222	184	1,25
19,0	39,0	34,7	36,1	20,0	76,0	37,0	33,0	162	264	219	2,27
22,0	43,0	37,8	39,4	24,0	89,0	43,0	38,0	189	308	257	3,40
25,0	50,0	44,2	45,7	27,0	102	52,0	44,0	216	349	292	5,08
29,0	57,0	50,5	52,1	30,0	114	59,0	51,0	243	387	324	7,17
32,0	64,0	56,8	58,4	34,0	127	65,0	57,0	270	438	365	10,4
35,0	71,0	63,2	65,0	37,0	133	65,0	57,0	297	479	400	14,1
38,0	78,0	69,6	71,4	40,0	140	71,0	63,0	324	518	432	17,7
44,0	86,0	75,9	77,7	47,0	171	91,0	76,0	378	610	508	23,6
51,0	100	88,6	90,4	54,0	197	97,0	83,0	432	698	584	40,8
57,0	113	100	102	60,0	219	110	102	486	756	632	55,3
63,0	125	111	112	67,0	219	110	102	498	791	667	64,4

SLING LINK

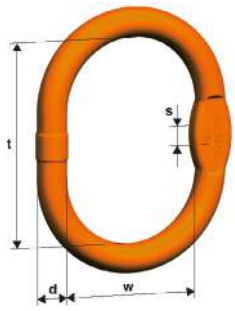
Applications:
It is used for balanced and safe lifting of the load in the sling operations.

- Relevant symbols on the ring must be legible.
- There should not be any cracks, broken and hollow on the ring.
- The ring should be selected according to sling design.
- No thermal treatment and welding should not be applied to the rings. These operations can be adversely affecting the working load.
- Used rings should be checked regularly.
- Tolerances related; t: 10%, d: -15%



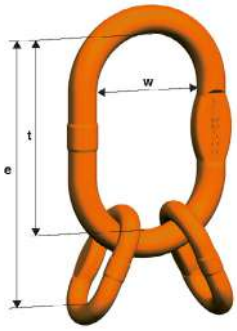
MASTER LINK - AW

Code	Load Capacity 0° - 45°	Use According to DIN 15401	d	t	w	s	For 1 Handle Slings	For 2 Handle Slings	Weight
	(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
AW 10	1,40	1.6	10,0	80,0	50,0	10,0	5,00	5,00	0,14
AW 13	2,30	2.5	13,0	110	60,0	10,0	6,00 - 7,00	6,00	0,34
AW 16	3,50	2.5	16,0	110	60,0	14,0	8,00	7,00	0,58
AW 18	5,00	5	19,0	135	75,0	14,0	10,0	8,00	0,92
AW 22	7,60	6	23,0	160	90,0	17,0	13,0	10,0	1,60
AW 26	10,0	8	27,0	180	100	20,0	16,0	13,0	2,46
AW 32	14,0	10	33,0	200	110	26,0	19,0	16,0	4,04
AW 36	25,1	16	36,0	260	140	29,0	22,0	19,0	6,22
AW 45	30,8	25	45,0	340	180	-	26,0	22,0	12,8
AW 50	40,0	32	50,0	350	190	43,0	32,0	26,0	16,6
AW 56	64,0	32	56,0	400	200	-	-	32,0	23,3
AW 72	85,0	50	70,0	460	250	-	-	-	43,1



ENLARGED MASTER LINK - MW

Code	Load Capacity 0° - 45°	Use According to DIN 15401	d	t	w	s	For 1 Handle Slings	For 2 Handle Slings	Weight
	(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
MW 10	1,40	2.5	11,0	90,0	65,0	10,0	5,00	5,00	0,22
MW 13	2,30	4	14,0	120	70,0	10,0	6,00 - 7,00	6,00	0,44
MW 16	3,20	5	16,0	140	80,0	13,0	8,00	7,00	0,71
MW 18	4,20	6	19,0	160	95,0	14,0	10,0	8,00	1,09
MW 22	6,70	10	23,0	170	105	17,0	13,0	10,0	1,74
MW 26	10,1	10	27,0	190	110	20,0	16,0	13,0	2,65
MW 32	16,0	12	33,0	230	130	26,0	19,0	16,0	4,78
MW 36	21,2	20	38,0	275	150	29,0	22,0	19,0	7,48
MW 56	40,0	50	56,0	350	250	46,0	32,0	26,0	22,0
SAW 32	10,0	50	33,0	540	250	26,0	-	-	9,25
SAW 45	22,5	50	45,0	540	250	39,0	-	-	18,7
SAW 60	31,5	100	60,0	800	300	55,0	-	-	48,0



MASTER LINK ASSEMBLY - VW

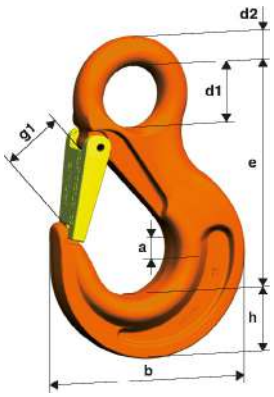
Code	Contents	Load Capacity 0° - 45°	Use According to DIN 15401	e	t	w	Weight
		(ton)	(Nr.)	(mm)	(mm)	(mm)	(kg/pc.)
VW 5	AW 13 + 2 BW 10	2,30	2.5	154	110	60,0	0,52
VW 6	AW 18 + 2 BW 13	4,20	5	189	135	75,0	1,30
VW 7/8	AW 22 + 2 BW 16	7,60	6	230	160	90,0	2,32
VW 10	AW 26 + 2 BW 20	9,60	8	265	180	100	3,80
VW 13	AW 32 + 2 BW 22	14,0	10	315	200	110	6,50
VW 16	AW 36 + 2 BW 26	21,2	16	400	260	140	10,1
VW 19/20	AW 50 + 2 BW 32	34,1	32	500	350	190	22,6
VW 22	AW 50 + 2 BW 36	40,0	32	520	350	190	24,5
VW 26	AW 56 + 2 BW 45	56,0	32	570	400	200	37,6
VW 32	AW 72 + 2 BW 50	85,0	50	660	460	250	66,6

SLING HOOKS

Applications:

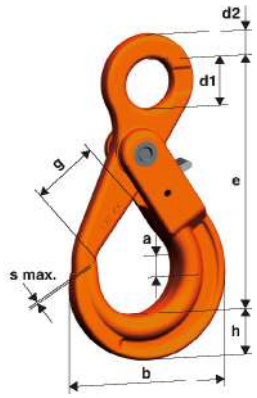
The interconnection accessory used between the sling and the load to be removed.

- Relevant symbols must be legible on the hook.
- There should not be any cracks, broken and hollow on the hook.
- The hook latch must be operational.
- The hook should be selected according to sling design.
- The load should never be placed on the head, side and back of the hook.
- Hook latch should not be used to carry load.
- No thermal treatment and welding should not be applied to the hooks. These operations can be adversely affecting the working load.
- Used hooks should be checked regularly.
- Tolerances related; d2: -10%, d1: 5%, g1: 10%



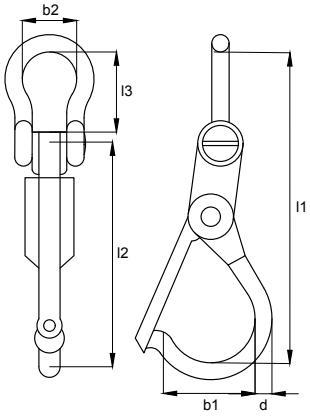
EYE SLING HOOK - HSW

Code	Load Capacity	e	h	a	d1	d2	g1	b	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
HSW 5/6	1,40	85,0	21,0	17,0	20,0	10,0	19,0	68,0	0,30
HSW 7/8	2,50	106	27,0	19,0	25,0	11,0	26,0	88,0	0,57
HSW 10	4,00	131	33,0	26,0	34,0	16,0	31,0	109	1,25
HSW 13	6,70	164	44,0	33,0	43,0	19,0	39,0	134	1,86
HSW 16	10,0	183	50,0	40,0	50,0	25,0	45,0	155	3,86
HSW 19/20	16,0	205	55,0	48,0	55,0	27,0	53,0	178	6,01
HSW 22	19,0	225	62,0	50,0	60,0	29,0	62,0	196	8,19
HSW 26	26,5	259	75,0	70,0	70,0	37,0	73,0	235	13,4
HSW 32	40,0	299	97,0	82,0	66,0	45,0	87,0	291	27,9



SAFETY HOOK - LHW

Code	Load Capacity	e	h	a	b	d1	d2	g	s Max.	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
LHW 5/6	1,40	110	20,0	17,0	71,0	21,0	11,0	28,0	1,00	0,53
LHW 7/8	2,50	136	26,0	20,0	88,0	25,0	12,0	34,0	1,00	0,92
LHW 10	4,00	169	30,0	29,0	107	35,0	15,0	45,0	1,00	1,57
LHW 13	6,70	205	40,0	35,0	138	40,0	20,0	52,0	1,50	3,19
LHW 16	10,0	251	50,0	41,0	168	50,0	27,0	60,0	2,00	6,24
LHW 19/20	16,0	290	62,0	50,0	194	60,0	30,0	70,0	2,00	9,75
LHW 22	19,0	322	65,0	52,0	211	70,0	32,0	81,0	2,00	12,5
LHW 26	26,5	383	79,0	61,0	253	82,0	42,0	100	2,00	20,0

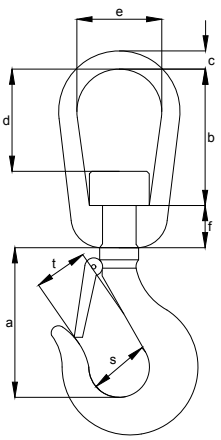


LOCKED HOOK

Code	Working Load (ton)	b1 (mm)	b2 (mm)	d (mm)	l1 (mm)	l2 (mm)	l3 (mm)	Weight (kg/pc.)
KLH 2.5	2,50	50,0	46,0	20,0	210	150	50,0	1,50
KLH 4.5	4,50	70,0	56,0	28,0	278	208	57,0	3,60
KLH 8	8,00	96,0	72,0	34,0	381	286	76,0	8,00
KLH 12.5	12,5	106	92,0	43,0	437	317	98,0	13,8
KLH 25	25,0	150	98,0	60,0	565	435	105	34,0
KLH 50	50,0	210	130	85,0	813	623	147	92,0
KLH 70	75,0	275	160	110	1033	812	164	194
It can be manufactured with a chain sling on request.								

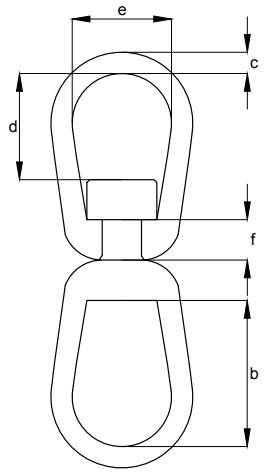
Applications:
Rotating movement of the steel rope and chains are used to prevent removed to transfer on material.

- Relevant symbols must be legible on the swivel.
- There should not be any cracks, broken and hollow on the swivel.
- Swivel should be used in the safe working load and should not exceed this limit.
- Shape of the swivel should not be altered by using welding and heat.
- No modifications should be made.



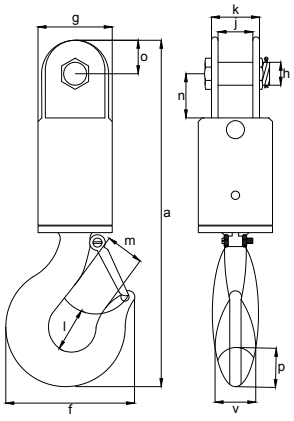
SWIVEL HOOK

Size (inch)	Working Load (ton)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	ı (mm)	s (mm)	t (mm)
5/8	2,50	63,0	17,0	44,0	39,0	20,0	70,0	39,0	28,0
3/4	3,20	74,0	21,0	49,0	50,0	22,0	80,5	42,0	31,0
7/8	5,40	81,0	25,0	53,0	65,0	25,0	98,0	51,0	39,0
1	8,00	92,0	27,0	60,0	62,5	33,0	121	64,0	46,0
1 1/4	11,5	105	35,0	67,0	79,0	40,0	149	76,0	62,0
1 3/8	16,0	115	39,0	67,0	97,0	42,0	162	83,0	77,0
1 5/8	22,0	150	44,0	95,0	123	48,0	207	109	87,0
2	30,0	165	52,0	103	128	55,0	240	127	104



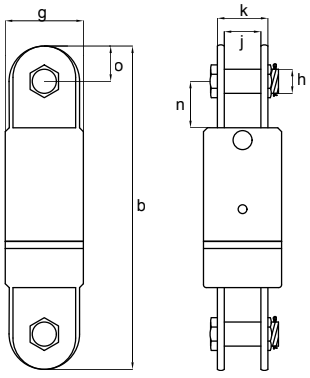
STANDARD SWIVEL

Size (inch)	Working Load (ton)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)
5/8	2,50	63,0	17,0	44,0	39,0	20,0
3/4	3,20	74,0	21,0	49,0	50,0	22,0
7/8	5,40	81,0	25,0	53,0	65,0	25,0
1	8,00	92,0	27,0	60,0	62,5	33,0
1 1/4	11,5	105	35,0	67,0	79,0	40,0
1 3/8	16,0	115	39,0	67,0	97,0	42,0
1 5/8	22,0	150	44,0	95,0	123	48,0
2	30,0	165	52,0	103	128	55,0



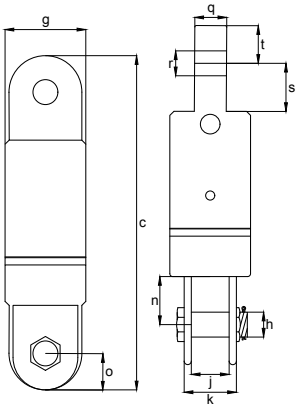
JAW – HOOK SWIVEL

Size (mm)	a (mm)	f (mm)	g (mm)	h (mm)	j (mm)	k (mm)	l (mm)	m (mm)	n (mm)	o (mm)	p (mm)	v (mm)	Working Load (ton)
13,0	291	123	70,0	19,1	22,4	41,1	38,9	35,8	33,3	25,4	36,6	28,4	3,00
16,0	339	160	76,0	22,4	25,4	57,0	49,3	42,9	41,1	28,4	46,0	36,6	5,00
19,0	418	192	102	25,4	39,5	71,5	62,5	56,5	54,0	35,1	57,0	41,1	8,50
22,0	502	212	114	38,1	44,5	86,0	66,0	61,0	89,0	44,5	66,0	49,3	10,0
26,0	565	263	127	38,1	44,5	86,0	71,5	81,0	89,0	44,5	76,0	60,5	15,0
-	680	346	152	51,0	51,0	117	87,5	92,0	93,5	60,5	93,0	76,0	25,0
-	760	357	165	51,0	51,0	117	98,5	95,5	93,5	60,5	116	81,0	35,0
-	891	392	178	57,0	63,5	127	121	108	102	76,0	129	82,5	45,0



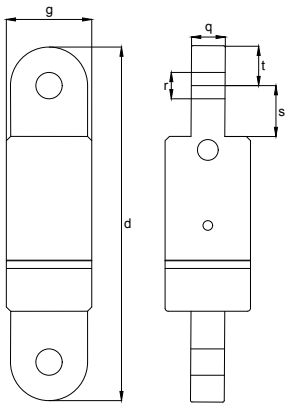
JAW – JAW SWIVEL

Size (mm)	b (mm)	g (mm)	h (mm)	j (mm)	k (mm)	n (mm)	o (mm)	Working Load (ton)
13,0	236	70,0	19,1	22,4	41,1	33,3	25,4	3,00
16,0	262	76,0	22,4	25,4	57,0	41,1	28,4	5,00
19,0	321	102	25,4	39,5	71,5	54,0	35,1	8,50
22,0	426	114	38,1	44,5	86,0	89,0	44,5	10,0
26,0	435	127	38,1	44,5	86,0	89,0	44,5	15,0
-	527	152	51,0	51,0	117	93,5	60,5	25,0
-	527	165	51,0	51,0	117	93,5	60,5	35,0
-	641	178	57,0	63,5	127	102	76,0	45,0



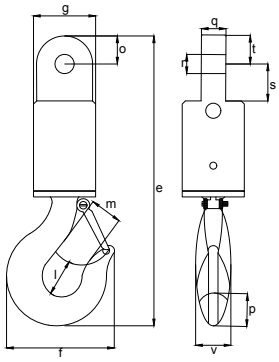
JAW – EYE SWIVEL

Size (mm)	c (mm)	g (mm)	h (mm)	j (mm)	k (mm)	n (mm)	o (mm)	q (mm)	r (mm)	s (mm)	t (mm)	Working Load (ton)
13,0	237	70,0	19,1	22,4	41,1	33,3	25,4	19,1	26,2	28,4	31,8	3,00
16,0	256	76,0	22,4	25,4	57,0	41,1	28,4	25,4	32,5	31,8	31,8	5,00
19,0	311	102	25,4	39,5	71,5	54,0	35,1	31,8	35,8	41,1	38,1	8,50
22,0	409	114	38,1	44,5	86,0	89,0	44,5	42,9	42,9	70,0	47,8	10,0
26,0	425	127	38,1	44,5	86,0	89,0	44,5	49,3	51,5	70,0	54,0	15,0
-	546	152	51,0	51,0	117	93,5	60,5	57,0	58,5	98,5	60,5	25,0
-	546	165	51,0	51,0	117	93,5	60,5	57,0	58,5	98,5	60,5	35,0
-	657	178	57,0	63,5	127	102	76,0	63,5	64,5	102	76,0	45,0



EYE – EYE SWIVEL

Size (mm)	d (mm)	g (mm)	q (mm)	r (mm)	s (mm)	t (mm)	Working Load (ton)
13,0	239	70,0	19,1	26,2	28,4	31,8	3,00
16,0	249	76,0	25,4	32,5	31,8	31,8	5,00
19,0	302	102	31,8	35,8	41,1	38,1	8,50
22,0	394	114	42,9	42,9	70,0	47,8	10,0
26,0	416	127	49,3	51,5	70,0	54,0	15,0
-	565	152	57,0	58,5	98,5	60,5	25,0
-	565	165	57,0	58,5	98,5	60,5	35,0
-	673	178	63,5	64,5	102	76,0	45,0



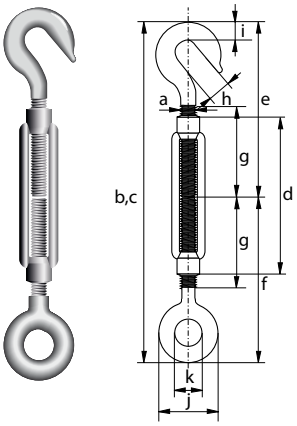
EYE – HOOK SWIVEL

Size (mm)	e (mm)	f (mm)	g (mm)	l (mm)	m (mm)	p (mm)	q (mm)	r (mm)	s (mm)	t (mm)	v (mm)	Working Load (ton)
13,0	292	123	70,0	38,9	35,8	36,6	19,1	26,2	28,4	31,8	28,4	3,00
16,0	332	160	76,0	49,3	42,9	46,0	25,4	32,5	31,8	31,8	36,6	5,00
19,0	408	192	102	62,5	56,5	57,0	31,8	35,8	41,1	38,1	41,1	8,50
22,0	486	212	114	66,0	61,0	66,0	42,9	42,9	70,0	47,8	49,3	10,0
26,0	540	263	127	71,5	81,0	76,0	49,3	51,5	70,0	54,0	60,5	15,0
-	699	346	152	87,5	92,0	93,0	57,0	58,5	98,5	60,5	76,0	25,0
-	780	357	165	98,5	95,5	116	57,0	58,5	98,5	60,5	81,0	35,0
-	907	392	178	121	108	129	63,5	64,5	102	76,0	82,5	45,0

TURNBUCKLE

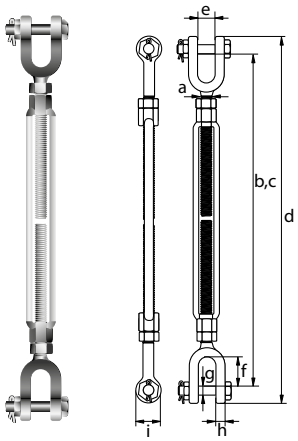
Applications:
It is used to connect and stretch for steel ropes.

- Should be used in straight and sequential pull operations.
- Should not be used for transport operations.
- Pulling process should not be carried out outside the safe working load.
- Safe working load is only for pulling. It should be used accordingly to that.
- Materials under tension should be checked regularly for cracked, rusted, and broken parts. Deformed materials should be removed from the system.



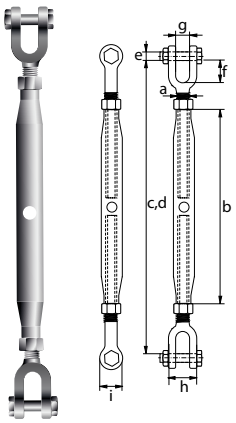
DIN 1480

Thread Size a (mm)	Closed Length b (mm)	Open Length c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	i (mm)	j (mm)	k (mm)	Weight (kg)
5,00	125	180	70,0	56,0	57,0	35,0	7,00	12,0	16,0	8,00	0,07
6,00	172	258	110	77,0	80,0	55,0	8,00	15,0	20,0	9,00	0,11
8,00	184	264	110	85,0	84,0	57,0	10,5	15,0	22,0	10,0	0,20
10,0	222	311	125	106	105	68,0	13,0	11,0	31,0	14,0	0,28
12,0	241	324	125	117	111	70,0	16,0	13,0	35,0	16,0	0,43
14,0	261	351	140	124	122	75,0	18,0	15,0	40,0	18,0	0,61
16,0	311	427	170	144	150	88,0	20,0	17,0	47,0	22,0	1,00
20,0	358	490	200	170	167	105	21,0	21,0	52,0	24,0	1,60
22,0	414	559	220	200	186	118	24,0	28,0	60,0	27,0	2,20
24,0	453	630	255	215	205	135	26,0	33,0	65,0	27,0	2,80
30,0	495	660	255	240	220	135	34,0	35,0	71,0	31,0	4,10
33,0	545	744	295	260	245	148	38,0	40,0	88,0	36,0	6,00
36,0	597	782	295	275	277	158	46,0	45,0	94,0	38,0	8,40



AMERICAN TYPE

Thread Size a (mm)	Closed Length b (mm)	Open Length c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	i (mm)	Safety Working Load (ton)	Weight (kg)
3/8	273	409	304	12,0	21,0	7,00	9,00	21,0	0,54	0,55
1/2	304	435	343	16,0	26,0	10,0	11,0	25,0	1,00	0,96
1/2	379	588	418	16,0	26,0	10,0	11,0	25,0	1,00	1,18
1/2	455	740	494	16,0	26,0	10,0	11,0	25,0	1,00	1,50
5/8	346	469	406	18,0	32,0	13,0	14,0	33,0	1,59	1,75
5/8	421	622	480	18,0	32,0	13,0	14,0	33,0	1,59	2,14
5/8	498	774	557	18,0	32,0	13,0	14,0	33,0	1,59	2,43
3/4	369	487	439	24,0	38,0	16,0	16,0	41,0	2,36	2,70
3/4	444	640	514	24,0	38,0	16,0	16,0	41,0	2,36	3,23
3/4	520	792	590	24,0	38,0	16,0	16,0	41,0	2,36	3,57
3/4	670	1096	740	24,0	38,0	16,0	16,0	41,0	2,36	4,55
7/8	561	826	638	27,0	42,0	19,0	19,0	48,0	3,27	5,22
7/8	713	1.132	790	27,0	42,0	19,0	19,0	48,0	3,27	6,56
1	598	859	683	31,0	50,0	22,0	20,0	54,0	4,54	6,96
1	750	1.168	835	31,0	50,0	22,0	20,0	54,0	4,54	8,40
1	903	1.470	988	31,0	50,0	22,0	20,0	54,0	4,50	8,90
1 1/4	805	1.230	910	44,0	71,0	28,0	26,0	68,0	6,90	13,6
1 1/4	964	1.541	1.069	44,0	71,0	28,0	26,0	68,0	6,90	14,2
1 1/2	825	1.244	956	52,0	71,0	35,0	28,0	80,0	9,71	19,3
1 1/2	980	1.551	1.111	52,0	71,0	35,0	28,0	80,0	9,71	22,0
1 3/4	938	1.316	1.092	60,0	86,0	41,0	33,0	90,0	12,7	30,0
1 3/4	1.089	1.621	1.243	60,0	86,0	41,0	33,0	90,0	12,7	33,0
2	1.153	1.673	1.338	63,0	93	50,0	40,0	107	16,8	50,0
2 1/2	1.255	1.831	1.480	75,0	114	57,0	41,0	143	27,2	92,0
2 3/4	1.348	1.882	1.604	90,0	110	70,0	41,0	158	34,0	109



CLOSED BODY TYPE

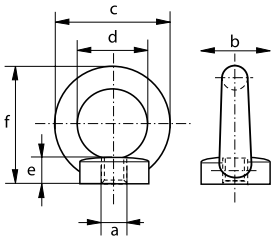
Thread Size a (mm)	b (mm)	Closed Length c (mm)	Open Length d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	i (mm)	Working Load (ton)
20,0	300	480	720	21,0	72,0	25,0	51,0	42,0	3,00
27,0	370	625	900	26,0	96,0	30,0	68,0	55,0	5,00
33,0	390	650	950	28,0	96,0	30,0	68,0	55,0	8,00
36,0	420	700	1.000	32,0	126	45,0	92,0	68,0	10,0
42,0	550	880	1.290	38,0	135	53,0	102	81,0	15,0
48,0	640	1.035	1.555	44,0	170	60,0	126	106	20,0

EYE BOLTS

Applications:

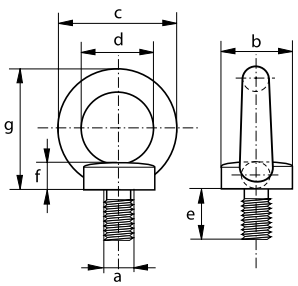
Used for loading machines or other parts that cannot be removed by hand or sealift.

- All signs must be readable.
- Eye bolt should be seated well in the equipment to be removed.
- There should not be any cracks, broken and hollow on the eye bolt.
- Safe working load should not be exceeded.
- Shape of the eye bolt should not be altered by using welding and heat.
- No modifications should be made.



DIN 582 - NUT

Screw Size	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Safety Working Load 0° (ton)	Safety Working Load 0° - 45° (ton)	Weight (kg)
M8	8,00	20,0	36,0	20,0	8,50	36,0	0,14	0,10	0,05
M10	10,0	25,0	45,0	25,0	10,0	45,0	0,23	0,17	0,09
M12	12,0	30,0	54,0	30,0	11,0	53,0	0,34	0,24	0,16
M16	14,0	35,0	63,0	35,0	13,0	62,0	0,70	0,50	0,24
M20	16,0	40,0	72,0	40,0	16,0	71,0	1,20	0,86	0,35
M24	20,0	50,0	90,0	50,0	20,0	90,0	1,80	1,29	0,75
M30	24,0	65,0	108	60,0	25,0	109	3,20	2,30	1,25
M36	28,0	75,0	126	70,0	30,0	128	4,60	3,30	2,08



DIN 580 - BOLT

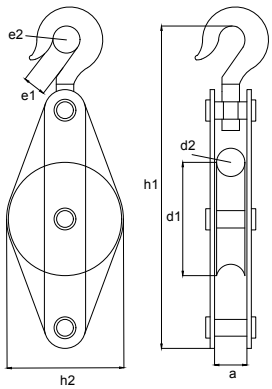
Screw Size	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	Safety Working Load 0° (ton)	Safety Working Load 0° - 45° (ton)	Weight (kg)
M8	8,00	20,0	36,0	20,0	13,0	6,00	36,0	0,14	0,10	0,06
M10	10,0	25,0	45,0	25,0	17,0	8,00	45,0	0,23	0,17	0,10
M12	12,0	30,0	54,0	30,0	20,5	10,0	53,0	0,34	0,24	0,17
M16	14,0	35,0	63,0	35,0	27,0	12,0	62,0	0,70	0,50	0,31
M20	16,0	40,0	72,0	40,0	30,0	14,0	71,0	1,20	0,86	0,42
M24	20,0	50,0	90,0	50,0	36,0	18,0	90,0	1,80	1,29	0,91
M30	24,0	65,0	108	60,0	45,0	22,0	109	3,20	2,30	1,59
M36	28,0	75,0	126	70,0	54,0	26,0	128	4,60	3,30	2,35

METAL ROLLER (ROPE PULLEYS)

ROPE PULLEYS

Applications:
Accessories for removing heavy materials in lower forces.

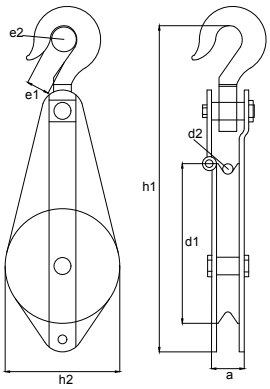
- Should be selected according to the diameter of wire rope.
- Before use, check for cracks and rust.
- Should not be operated over the safe working load capacity.



- Hot forging in closed mold
- Hook: ST-52-3 & 4135 & 4140
- Shackle: ST-52-3 & 1040
- Our products are CE certified.

SHEET METAL ROLLER

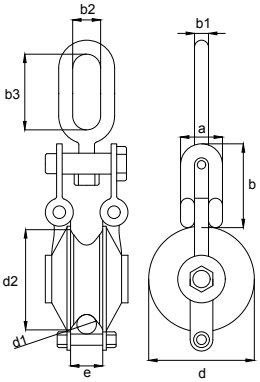
Roller Size (mm)	Working Load (ton)	a (mm)	d1 (mm)	d2 (mm)	e1 (mm)	e2 (mm)	h1 (mm)	h2 (mm)
45x1	0,25	23,0	65,0	13,0	32,0	24,0	195	80,0
45x2	0,25	50,0	65,0	13,0	32,0	24,0	195	80,0
45x3	0,25	76,0	65,0	13,0	32,0	24,0	195	80,0
65x1	0,50	30,0	100	20,0	39,0	28,0	275	120
65x2	0,50	63,0	100	20,0	39,0	28,0	275	120
65x3	0,50	96,0	100	20,0	39,0	28,0	275	120
100x1	1,00	30,0	125	20,0	42,0	31,0	380	145
100x2	1,00	63,0	125	20,0	42,0	31,0	380	145
100x3	1,00	96,0	125	20,0	42,0	31,0	380	145
125x1	2,00	31,0	150	20,0	51,0	39,0	390	168
125x2	2,00	65,0	150	20,0	51,0	39,0	390	168
125x3	2,00	100	150	20,0	51,0	39,0	390	168
150x1	3,00	38,0	200	24,0	64,0	46,0	500	230
150x2	3,00	80,0	200	24,0	64,0	46,0	500	230
150x3	3,00	122	200	24,0	64,0	46,0	500	230
200x1	5,00	68,0	300	26,0	83,0	77,0	600	340
200x2	5,00	68,0	350	26,0	109	87,0	860	390
200x3	5,00	84,0	410	28,0	127	104	930	440



ROPE PULLEYS

Roller Size (mm)	Working Load (ton)	a (mm)	d1 (mm)	d2 (mm)	e1 (mm)	e2 (mm)	h1 (mm)	h2 (mm)
100x1	1,00	30,0	100	20,0	39,0	28,0	275	120
125x1	2,00	30,0	125	20,0	42,0	31,0	380	145
150x1	3,00	31,0	150	20,0	51,0	39,0	390	168
200x1	6,00	38,0	200	24,0	64,0	46,0	500	230
250x1	10,0	80,0	250	26,0	62,0	76,0	600	290

- Hot forging in closed mold
- Hook: ST-52-3 & 4135 & 4140
- Our products are CE certified.

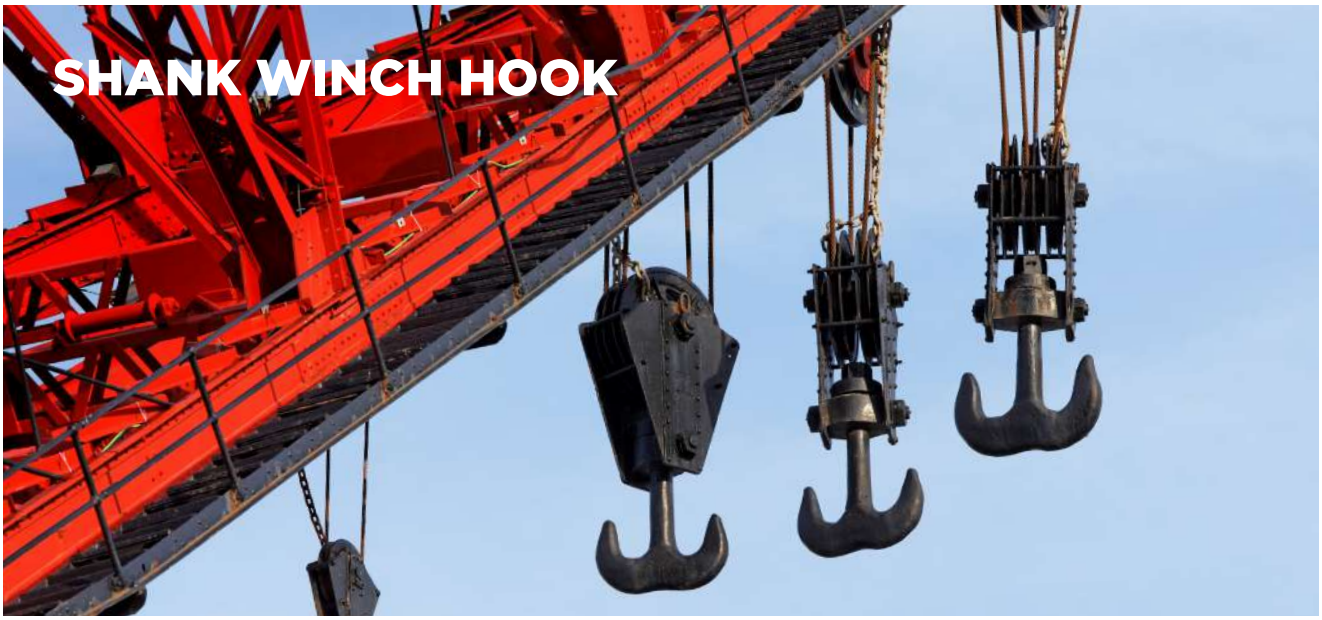


JAPAN TYPE

Roller Size (mm)	Working Load (ton)	a (mm)	b (mm)	b1 (mm)	b2 (mm)	b3 (mm)	d (mm)	d1 (mm)	d2 (mm)	e (mm)
150	5,00	70,5	127	24,0	35,0	70,0	170	20,0	150	40,0

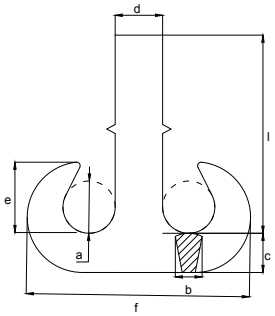
- Hot forging in closed mold
- Body: Steel casting
- Hook: ST-52-3 & 4135 & 4140
- Shackle: ST-52-3 & 1040

SHANK WINCH HOOK



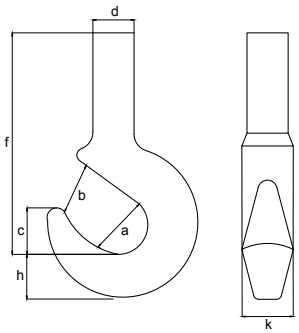
Applications:
It is used as part of a hook block in rope lifting equipment.

- It is produced as one-jaw and double-jaw.
- The handle part is produced with or without teeth upon requested.
- Care should be taken to avoid deformation.
- It should be selected according to the lifting block and crane tonnage.
- It is produced by hot forging method.



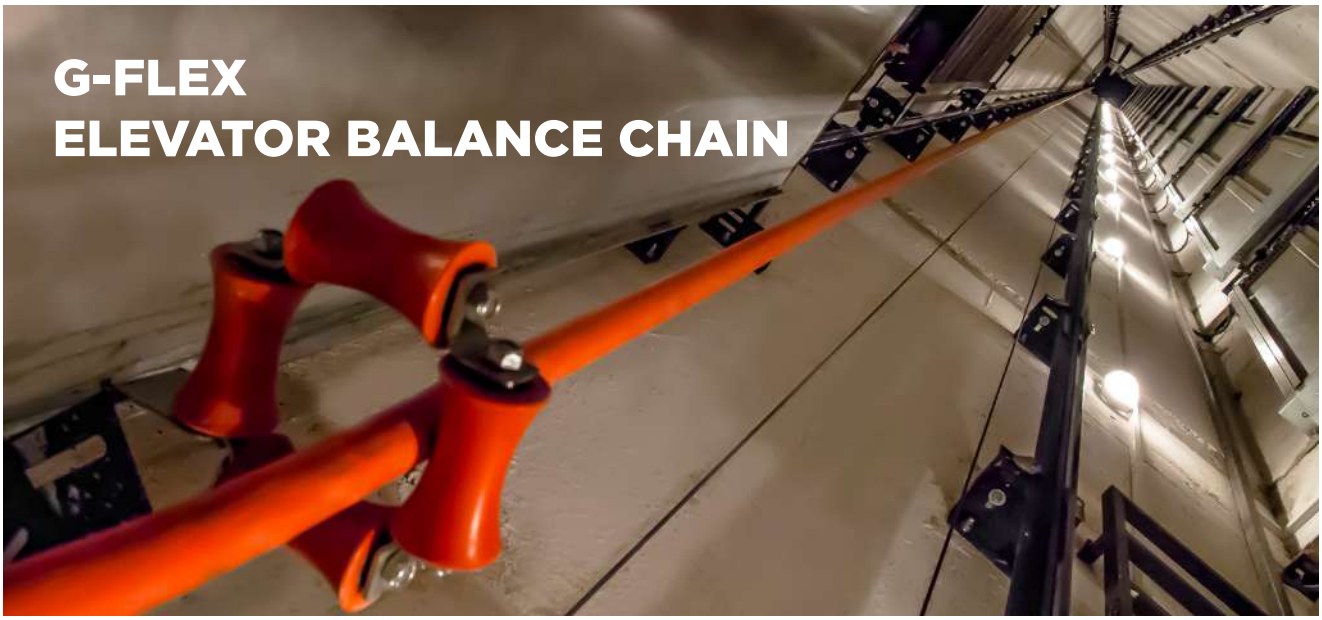
DOUBLE JAW STRAIGHT SHANK WINCH HOOK

Hook Size (Nr.)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	l (mm)	Weight (kg)
8	80,0	67,0	85,0	67,0	103	337	415	25,0
10	90,0	75,0	95,0	75,0	116	377	450	35,0
12	100	85,0	106	85,0	130	421	510	49,0
16	112	95,0	118	95,0	146	471	580	69,0
20	125	106	132	106	163	531	680	97,0
25	140	118	150	118	180	598	715	135
32	160	132	170	132	205	672	790	193
40	180	150	190	150	230	754	885	280
50	200	170	212	170	260	842	965	388



SINGLE JAW

Hook Size (Nr.)	a (mm)	b (mm)	c (mm)	d (mm)	f (mm)	h (mm)	k (mm)	Weight (kg)
0.5	42,0	34,0	95	25,0	172	31,0	26,0	1,40
0.8	48,0	38,0	103	30,0	191	37,0	32,0	2,30
1	50,0	40,0	108	32,0	206	40,0	35,0	2,60
1.6	56,0	45,0	119	36,0	233	48,0	40,0	4,32
2.5	63,0	50,0	135	42,0	263	58,0	48,0	6,96
4	71,0	56,0	152	48,0	297	67,0	54,0	9,9
5	80,0	63,0	170	55,0	332	75,0	62,0	12,3
6	91,0	72,0	195	62,0	390	86,0	67,0	19,5
8	101	81,0	219	69,0	435	96,0	76,0	30,0
10	120	93,0	225	77,0	490	110	90,0	39,0
12	135	112	263	95,0	560	118	102	75,0
16	145	114	290	111	600	132	118	95,0
20	170	130	340	121	680	150	125	136
25	185	145	370	130	750	170	140	150
32	200	170	420	136	830	190	160	200
40	220	180	440	155	930	215	170	310
50	250	210	480	175	1000	236	190	430



G-FLEX ELEVATOR BALANCE CHAIN

Applications:

G-Flex is a balance chain which is produced utilizing the method of coating the high quality electric arc - welded chain with liquid PVC. G-Flex which is used in elevator systems, safely performs the duty of balancing the rope weight while moving upwards and downwards along the cabin space shaft.

WHAT ARE THE BENEFITS OF G-FLEX?

- Balanced rope tension on sheave,
- Constant load on sheave and motor,
- Avoiding from dangerous cases might result because of excessive traction force differentiations,
- Easy installation opportunity for more precise and smooth elevator,
- Opportunity to use low torque motor i.e. low cost of motor and energy and smaller room need,
- Noiseless,
- Cheap and simple installation.

G-FLEX

ELEVATOR BALANCE CHAIN

Model	Weight (kg/m)	Outer Diameter (mm)	Loop Diameter (mm)	Diameter of Chain (mm)	Breaking Load (kN)	Max. Suspension Length (m)
GF075	1,12 ±0,20	24,0 ±2,00	610	6,0 ±0,50	≥ 15,63	160
GF100	1,49 ±0,20	27,0 ±2,10	610	6,0 ±0,50	≥ 15,63	160
GF125	1,88 ±0,20	30,0 ±2,20	610	7,0 ±0,50	≥ 18,13	147
GF150	2,24 ±0,20	32,0 ±2,30	610	7,8 ±0,50	≥ 23,68	130
GF175	2,63 ±0,20	35,0 ±2,20	660	8,5 ±0,50	≥ 29,97	145
GF200	2,98 ±0,20	38,0 ±2,50	660	9,5 ±0,50	≥ 29,97	160
GF250	3,73 ±0,20	42,0 ±2,50	660	10,0 ±0,50	≥ 37,00	142
GF300	4,47 ±0,20	44,0 ±2,70	660	11,0 ±0,50	≥ 44,70	153
GF350	5,22 ±0,20	48,0 ±2,80	690	12,0 ±0,50	≥ 52,28	150
GF400	5,96 ±0,20	52,0 ±2,90	690	13,0 ±0,50	≥ 62,53	150

U-BOLT

U bolt is a connection element that allows the mounting kit to be connected under the cabinet.

ANGLE BRACKET

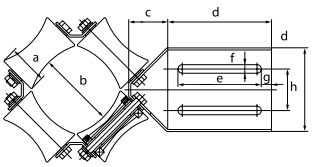
It used to install the balance chain reel on the wall. It have a fixing equipment with adjustable ports on it.

GRIP

Chain Code	Installation Kit
GF 075	Installation Kit- 1,12 kg/m
GF 100	Installation Kit - 1,49 kg/m
GF 125	Installation Kit - 1,88 kg/m
GF 150	Installation Kit - 2,24 kg/m
GF 200	Installation Kit - 2,63 kg/m
GF 250	Installation Kit - 2,98 kg/m
GF 300	Installation Kit - 4,47 kg/m
GF 350	Installation Kit - 5,22 kg/m
GF 400	Installation Kit - 5,96 kg/m

BALANCE CHAIN ROLLER

- Quartet consists of parallel plastic reels.
- Its use reduce vibration.
- It moves along with chain during use and eliminates friction.
- Its gapless structure prevents jamming



a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	i (mm)
57,0	108	59,0	150	120	12,0	15,0	60,0	120

MASTO WIRE ROPE LUBRICANT MACHINE

- It is an equipment used for renewing rope oil lubricant where needed.
- It removes used lubricant from the wire rope and ensures that the new lubricant to penetrate the rope.
- Working on high pressure, it ensures that the lubricant to penetrate the wires inside the strand and core.

Applications:

It strips off the used lubricant from the system and transfers the new lubricant.

Working on high pressure, it ensures that the lubricant to penetrate the wires inside the core.

WIRE ROPE LUBRICANTS

- It penetrates the rope surface and prevents rust.
- Liquid, spray and grease.
- It is applied by machine, spray or brush.
- Lubricant used by the rope manufacturer should be the same as the lubricant used.

Applications:

Wire rope lubricant is a component that prevents the wires from rubbing against each other. It penetrates between the wires and reduces friction during work. Lubrication of rope with certain periods contributes to rope life. It penetrates the rope surface and prevents rust.

HAND WINCH

Applications:
Hand cranes used with the help of hand are used in sizes between 275 kg and 1,150 kg. They are equipment for the pulling of materials and lifting loads by winding steel ropes.

- If there are cracks, fractures and bruises, they should not be used in pulling and lifting operations, they should be taken out of service.
- Safety working load should not be exceeded.
- It should not be used in conjunction with deformed rope and hook.
- No modifications should be made.

STANDARD HAND WINCH

Model	Capacity
8	80,0
10	90,0
12	100
16	112
20	125

HAND WINCH WITH BRAKE

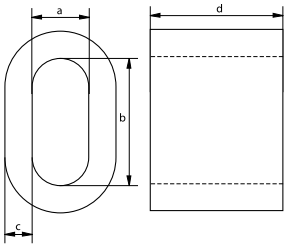
Model	Capacity
8	80,0
10	90,0
12	100
16	112
20	125
25	140

ALUMINUM FERRULE

Applications:

Aluminum ferrule is a material used to manufacture sling in steel ropes and mounted with the help of press machine. Suitable for EN 12385-4 compliant ropes. Made of seamless pipes according to DIN 13411-3. Diameter range up to 1 - 60 mm is available.

- There should not be any cracks, broken and hollow on the ferrule.
- Applications such as repair, modification, heat treatment should be avoided.
- The ferrule should be suitable for the cross section of used the rope.
- Should be used in ropes that constructions of 6x19, 6x36 and 8x36.

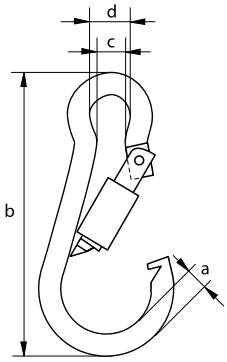


Ferrule Size	a		b		s		l	
	mm	Tolerance	mm	Tolerance	mm	Tolerance	mm	Tolerance
1	1,3		2,6		0,85	±0,02	5	
2	2,4		4,8		0,85	±0,02	7	
3	3,3	+0,20	6,6	+0,20	1,25	±0,03	11	
4	4,4		8,8		1,7	±0,04	14	+0,2 - +0,5
5	5,5		11,0		2,1	±0,05	18	
6	6,6	±0,15	13,2	±0,15	2,5	±0,06	21	
7	7,8		15,6		2,9	±0,07	25	
8	8,8		17,6		3,3	±0,08	28	
9	9,9	±0,20	19,8	±0,20	3,7	±0,09	32	+0,5 - +1
10	10,9		21,8		4,1	±0,10	35	
11	12,1		24,2		4,5	±0,11	39	
12	13,2	±0,30	26,4	±0,30	4,9	±0,12	42	+0,5 - +1
13	14,2		28,4		5,4	±0,13	46	
14	15,3		30,6		5,8	±0,14	49	
16	17,5	±030	35,0	±030	6,7	±0,16	56	+0,5 - +1
18	19,6		39,2		7,6	±0,18	63	
20	21,7		43,4		8,4	±0,20	70	
22	24,3	±0,40	48,6	±0,40	9,2	±0,22	77	+0,7 - +1,5
24	26,4		52,8		10,0	±0,24	84	
26	28,5		57,0		10,9	±0,26	91	
28	31,0	±0,40	62,0	±0,40	11,7	±0,28	98	+0,7 - +1,5
30	33,1		66,2		12,5	±0,30	105	
32	35,2		70,4		13,4	±0,32	112	
34	37,8	±0,40	75,6	±0,40	14,2	±0,35	119	+0,7 - +1,5
36	39,8		79,6		15,0	±0,37	126	
38	41,9		83,8	±0,40	15,8	±0,38	133	
40	44,0	±0,40	88,0	±0,50	16,6	±0,40	140	+0,7 - +1,5
44	43,4		96,8		18,3	±0,44	154	
48	52,8	±0,40	105,6	±0,50	20,0	±0,48	168	+0,7 - +1,5
52	57,2		114,4		21,6	±0,52	183	
56	61,6	±0,50	123,2	±0,60	23,3	±0,56	196	+0,7 - +1,5
60	66,0	±0,50	132,0	±0,60	25,0	±0,60	210	+0,7 - +1,5

CARBINE HOOK

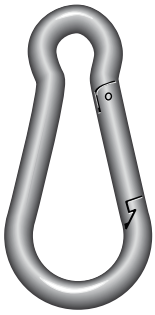
Applications:
Connectors such as carbine are used in many applications like agriculture, industry, transportation, general engineering.

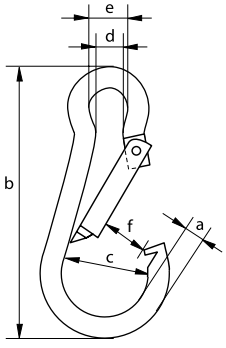
- There should not be any cracks, broken and hollow on the ring.
- There should not be any cracks, broken and hollow on the carbine.
- In such cases it is not suitable for lifting applications and should not be used.
- Applications such as repair, modification, heat treatment should be avoided.



SCREW TYPE

a (mm)	b (mm)	c (mm)	d (mm)	Working Load (kg)
4,00	40,0	4,00	7,00	-
5,00	50,0	5,00	7,00	100
6,00	60,0	6,00	8,00	120
7,00	70,0	7,00	10,0	180
8,00	80,0	10,0	12,0	300
9,00	90,0	12,0	12,0	330
10,0	100	13,0	15,0	460
11,0	120	13,0	16,0	600
12,0	140	15,0	19,0	680
13,0	160	17,0	28,0	800
14,0	180	17,0	28,0	860





NORMAL TYPE

a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Working Load (kg)
4,00	40,0	14,0	5,00	7,00	6,00	-
5,00	50,0	16,0	7,00	8,00	6,00	100
6,00	60,0	18,0	7,00	9,00	7,00	120
7,00	70,0	22,0	9,00	10,0	8,00	180
8,00	80,0	24,0	11,0	12,0	9,00	300
9,00	90,0	26,0	11,0	12,0	10,0	330
10,0	100	30,0	12,0	15,0	11,0	460
11,0	120	36,0	14,0	18,0	15,0	600
12,0	140	40,0	16,0	20,0	19,0	680
13,0	160	44,0	20,0	22,0	24,0	800
14,0	180	48,0	20,0	22,0	28,0	860
15,0	200	60,0	20,0	22,0	35,0	1.370

WIRE ROPE PULLING GRIP

Applications:

Rope grips are used as transmission equipment while making changes in the system or making them reach a point.

- Rope grip prevents the rope from making twist because there is no need for welding process in the transfer or exchanging.
- Prevents transfer of inappropriate properties of the rope to be transferred the new rope.
- Provides easy installation.
- The rope grip should be suitable for diameter of used the wire rope.
- Single way press – one end open products are pulling ropes and cables, middle pressed – both ends open products should be used in rope exchange.

MIDDLE PRESSED MIDDLE - BOTH OPEN

Diameter Range (mm)	Length (m)
05 - 10	1,50
11 - 20	1,50
21 - 30	1,50
31 - 40	1,50
41 - 60	1,50
61 - 80	1,50
81 - 100	1,50
101 - 120	1,50
121 - 140	1,50
141 - 160	1,50

SINGLE WAY PRESS - SINGLE WAY OPEN

Diameter Range (mm)	Length (m)
05 - 10	1,00
11 - 20	1,00
21 - 30	1,00
31 - 40	1,00
41 - 60	1,00
61 - 80	1,00
81 - 100	1,00
101 - 120	1,00
121 - 140	1,00
141 - 160	1,00

No: 7

No: 9

No: 12

No: 16

WIRE ROPE CUTTER

- It has a knife and bolt made of hardened steel.
- The triangular cutting system prevents crushing of the rope end.
- Holding arms are strong and light.
- It is possible to replace worn parts.

Technical Properties	Model No			
	No: 7	No: 9	No: 12	No: 16
Maximum cutting capacities (ø, mm)	7,00	9,00	12,0	16,0
Mild steel strands	7,00	9,00	12,0	16,0
Steel strands	5,00	7,00	8,00	14,0
Pre - stressing strands	4,00	6,00	6,00	7,00
Tempered steel strands and steel braids	3,00	5,00	5,00	6,00
Electric cables with steel core (aluminium, copper)	7,00	9,00	12,0	16,0
Rods (aluminium and copper)	5,00	9,00	10,0	14,0
Steel rods	4,00	7,00	8,00	10,0
Tempered spring wire	2,50	4,00	4,00	5,00
Length (mm)	190	325	500	630
Weight (kg)	0,27	0,70	1,50	2,30

TYPE 1

TYPE 2

TYPE 3

HAND SWAGING TOOL

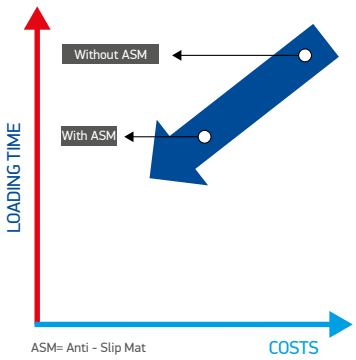
- It is manufactured to meet the need for printing on thin diameter ropes.
- Complies with pressing regulations in EN 13411-3.
- Thanks to the developed molds, changes and adjustments are easily done.
- They are made from high-quality steel and are suitable for fast, simple and inexpensive manufacture of press-fits
- Ensure that ferrule and tool numbers correspond.

Ferrule Size	Type			Fiber Core Rope Diameter (mm)		IWRC Rope Diameter (mm)		Presed Ferrule Diameter (mm)
	Application Area			Min.	Max.	Min.	Max.	
1	TYPE 1	TYPE 2		0,9	1,0	0,5	0,8	2,0
1.5				1,1	1,5	0,9	1,0	3,0
2				1,6	2,2	1,1	1,5	4,0
2.5				2,5	2,7	1,6	2,2	5,0
3			TYPE 3	2,8	3,2	2,5	2,7	6,0
3.5				3,3	3,7	2,8	3,2	7,0
4				3,8	4,3	3,3	3,7	8,0
4.5				4,4	4,8	3,8	4,3	9,0

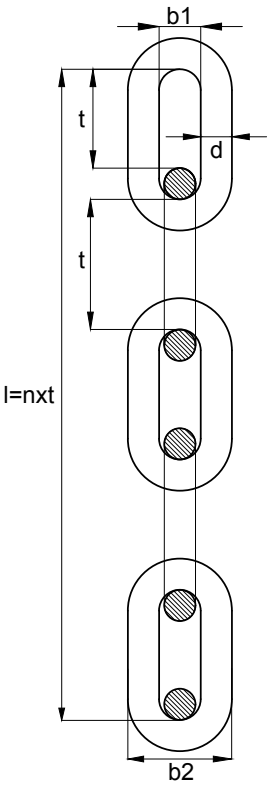
ANTI - SLIP MATS

- Ultra - high tear strength due to additional textile insert with a special coating.
- Only 4.5 mm thick, thus highly flexible, dimensionally stable and trimmable.
- Coefficient of sliding friction > 0.9; you can always count on a value of Q= 0,6 (statutory value).
- Also suitable for heavy loads.
- Easy to clean with standard cleaning agents. The closed surface means that liquids are not absorbed.
- Very good resistance to acids, alkalis, petrol/gasoline, diesel and uncontaminated oils.
- Already complies with the planned labeling requirements (district labeling).
- Eco-friendly and easily disposable (no hazardous waste).
- Temperature resistant from –40 °C to 120 °C.
- Max. contact pressure 82.5 ton/m^2.

Make - up	Thickness (mm)	Width (mm)	Length (mm)
Roll	8,00	250	5.000
Box of 120 pcs.	8,00	100	200
Box of 100 pcs.	10,0	100	200

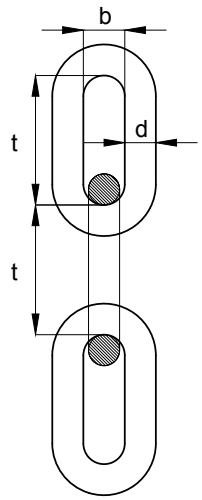


Make - up	Thickness (mm)	Width (mm)	Length (mm)
4 Rolls	4,50	120	4.000
4 Rolls	4,50	200	4.000
Roll	4,50	600	4.000
Roll	4,50	800	4.000
8 Edge pad - 100 pcs.	4,50	150	150
Roll	4,50	800	1.200



DIN 766 SHORT - LINKED CALIBRATED CHAIN

d	Tolerance	t	Tolerance	b1 Min.	b2 Max.	Working Load	Trial Load	Breaking Load	Weight
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kN)	(kN)	(kg/100 m)
4,00	± 0,2	16,0	-0,2 - +0,3	4,80	13,6	200	5,00	8,00	32,0
5,00	± 0,2	18,5	-0,2 - +0,4	6,00	17,0	320	8,00	12,5	50,0
6,00	± 0,2	18,5	-0,2 - +0,4	7,20	20,4	400	10,0	16,0	80,0
7,00	± 0,3	22,0	-0,2 - +0,4	8,40	23,8	630	16,0	25,0	110
8,00	± 0,3	24,0	-0,2 - +0,4	9,60	27,2	800	20,0	32,0	140
10,0	± 0,4	28,0	-0,3 - +0,5	12,0	36,0	1.250	32,0	50,0	230
13,0	± 0,5	36,0	-0,3 - +0,6	15,6	47,0	2.000	50,0	80,0	390
16,0	± 0,6	45,0	-0,4 - +0,8	19,2	58,0	3.200	80,0	125	580
18,0	± 0,9	50,0	-0,4 - +0,8	21,6	65,0	4.000	100	160	740
20,0	± 1,0	56,0	-0,5 - +1,0	24,0	72,0	5.000	125	200	900
23,0	± 1,2	64,0	-0,5 - +1,1	27,6	83,0	6.300	160	250	1.200
26,0	± 1,3	73,0	-0,6 - +1,2	31,2	94,0	8.000	200	320	1.500
28,0	± 1,4	78,0	-0,6 - +1,3	33,6	101	10.000	250	400	1.800
30,0	± 1,5	84,0	-0,7 - +1,4	36,0	108	11.200	280	450	2.000
32,0	± 1,6	90,0	-0,7 - +1,5	38,4	115	12.500	320	500	2.300
36,0	± 1,8	101	-0,8 - +1,7	43,2	130	16.000	400	630	2.900
40,0	± 2,0	112	-0,8 - +1,9	48,0	144	20.000	500	800	3.500
42,0	± 2,1	118	-1,0 - +2,0	50,0	151	22.400	560	900	4.000



DIN 5685 CHAINS

d	Tolerance	t	Tolerance	b1 Min.	Weight
(mm)	(mm)	(mm)	(mm)	(mm)	(kg/100 m)
2,50	± 0,1	14,5	± 0,7	4,60	11,0
3,00	± 0,2	16,0	± 0,8	6,00	17,0
4,00	± 0,2	19,0	± 1,0	7,20	30,0
5,00	± 0,3	21,0	± 1,1	9,10	50,0
6,00	± 0,3	24,0	± 1,2	11,2	73,0
7,00	± 0,4	28,0	± 1,4	12,0	99,0
8,00	± 0,4	32,0	± 1,6	14,0	130
9,00	± 0,5	36,0	± 1,6	17,0	150
10,0	± 0,5	40,0	± 2,0	18,0	200
12,0	± 0,7	44,0	± 2,3	21,0	250
13,0	± 0,7	52,0	± 2,6	23,0	340
14,0	± 0,8	56,0	± 2,6	25,0	390

STEEL WIRE ROPE SLINGS

- Ferrule - Secured Wire Rope Slings
- Hand - Spliced Wire Rope Slings
- Flat Woven Steel Slings
- Endless Steel Wire Rope Slings
- Combination Slings

Steel wire rope slings for general lifting applications

Steel wire rope slings are among the main lifting and extracting materials required by many enterprises today. It is possible to produce many different combinations and varieties. It provides easiness in lifting and extracting operations.

Selection of steel wire rope sling

Steel wire rope slings should be selected in such a way that they carry the load without causing danger according to the requirement and method of application. Otherwise, steel wire rope sling breaks can cause accidents.

Ferrule-secured, hand-spliced, mesh belt, endless and combination slings are possible to produce in accordance with relevant standards.

Application Conditions for steel wire rope slings

Load Capacity	Rope Core	Temperature Range	Working Load Capacity
Ferrule - Secured	Fiber core	-40 °C to 100 °C	100 %
	IWRC	-40 °C to 150 °C	100 %
Hand - Spliced	Fiber core	-40 °C to 100 °C	100 %
	IWRC	-40 °C to 150 °C	100 %
	IWRC	150 °C to 200 °C	90 %
	IWRC	200 °C to 300 °C	75 %
	IWRC	300 °C to 400 °C	65 %

Discard criteria

- In case, there is no label and become illegible.
- In case, wear of materials such as ferrule, thimble, hook, master link and so on used in steel wire rope sling production.
- In case of strand break.
- In case, reduction in the nominal diameter of the rope by 10%.
- In case of corrosion and rust as a result of abrasion of the wires.
- In case, corruption, crushing, birdcage, core protrusion of the rope structure.
- In case, randomly 6 pieces outer wire breaks from 6d rope length, randomly 14 pieces outer wire breaks from 30d rope length are determined.
- There should not be neighbor 3 pieces outer wire breaks in the same strand.
- In case of structural and visual deformation because of heat.

Inspection

Steel wire ropes slings should be checked by visually in certain periods before using according to the company regulations. The sling must be checked by an expert personnel and discarded in the event of any nonconformity. While checking the sling, problems such as illegible tag, abrasion of upper and lower end connections, corruption, breakage, broken wires, core distortions, visual impairment, corrosion and heat damage criteria should be considered.

Maintenance

In case of damage to the replaceable sling products can be exchanged with the products conforming to the standards.

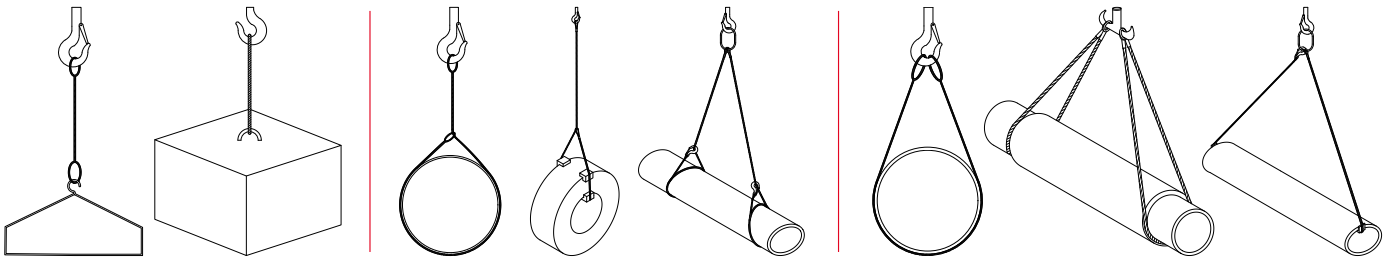
Storage

When the steel wire rope slings are not used, they should be stored in the appropriate designed shelves. It should be kept in closed and suitable areas.
Long - term stored slings should be slightly lubricated to avoid corrosion.

Connection methods

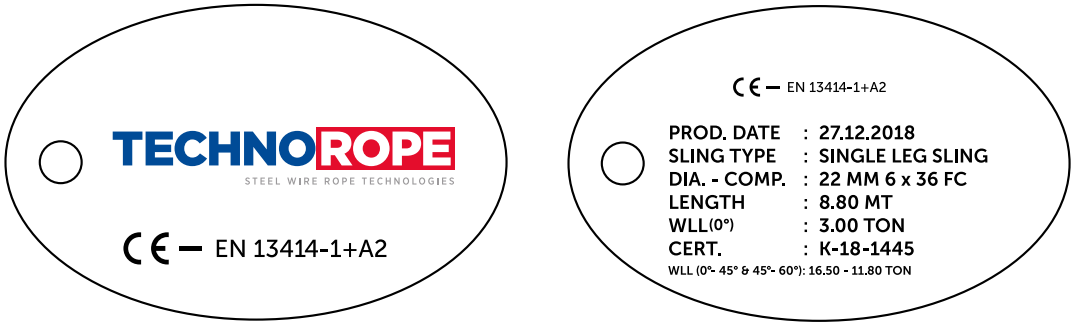
Steel wire rope slings are usually connected to the machine or the load by end connectors. The sling legs can be connected to the load in several ways; vertical, choker and basket.

Vertical Choker Basket



Sling Labeling

Minimum expressions for single leg and multi-leg slings: Sling identifier number, working load limit and legal marking, standard number, production date, company logo, description of sling including components, certificate number.



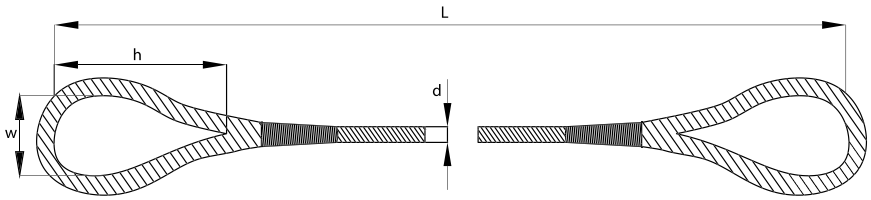
Eye length for slings

w: Eye width (h/2)

h: Eye length (15d)

L: Sling length (effective)

d: Rope diameter



Safety factor

According to EN 13414-1+A2, safety factor is 5 for the steel wire rope slings.

End connection options for steel wire rope slings


Standard Eye


Standard With Thimble


Hand - Spliced Standard


Single Leg With Master Link


2 Leg With Master Link


3 Leg With Master Link


4 Leg With Master Link


With Eye Sling Hook


With Foundry Hook


With Safety Hook


With Swivel Hook


With Master Link


With Shackle

End termination options for steel wire rope slings


Swaged Fitting With Thread


Swaged Fitting With Eye


Swaged Fitting With Open Socket


Swaged Threaded Sleeve


Aluminum Swaged Solid Thimble


Open Socket


Closed Socket


Pear Socket

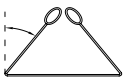
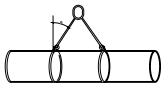
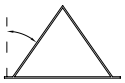
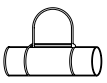

Wire Rope Grip


Wedge Socket

FERRULE - SECURED WIRE ROPE SLINGS

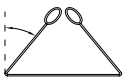
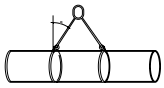
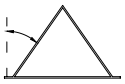
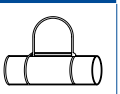
Fiber core ferrule - secured slings working load limits (single leg, 2 leg, 3 or 4 leg / EN 13414-1+A2)

Made of 6x19 and 6x36 class fiber core rope with the quality class 1770 N/mm².

	SINGLE LEG SLING				TWO LEG SLING				THREE AND FOUR LEG SLINGS		ENDLESS SLING	
	VERTICAL LIFTING	CHOKER	BASKET		CHOKER		TWO LEG VERTICAL		THREE OR FOUR LEG VERTICAL		ENDLESS DUAL VERTICAL	CHOKER
Angle with Vertical	0°	0°	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° (Included)	0°	0°
												
Leg Factor	1	0,8	1,4	1	1,2	0,8	1,4	1	2,2	1,5	2x2	1,6
Rope Diameter (mm)	Working Load Limit (ton)											
8	0,70	0,56	0,95	0,70	0,84	0,56	0,95	0,70	1,50	1,05	2,80	1,10
9	0,85	0,68	1,19	0,85	1,02	0,68	1,20	0,85	1,80	1,30	3,40	1,40
10	1,05	0,84	1,47	1,05	1,26	0,84	1,50	1,05	2,25	1,60	4,20	1,70
11	1,30	1,04	1,82	1,30	1,56	1,04	1,80	1,30	2,70	1,95	5,20	2,12
12	1,55	1,24	2,17	1,55	1,86	1,24	2,12	1,55	3,30	2,30	6,20	2,50
13	1,80	1,44	2,52	1,80	2,16	1,44	2,50	1,80	3,85	2,70	7,20	2,90
14	2,12	1,70	2,97	2,12	2,54	1,70	3,00	2,12	4,35	3,15	8,48	3,30
16	2,70	2,16	3,78	2,70	3,24	2,16	3,85	2,70	5,65	4,20	10,80	4,35
18	3,40	2,72	4,76	3,40	4,08	2,72	4,80	3,40	7,20	5,20	13,60	5,65
20	4,35	3,48	6,09	4,35	5,22	3,48	6,00	4,35	9,00	6,50	17,40	6,90
22	5,20	4,16	7,28	5,20	6,24	4,16	7,20	5,20	11,00	7,80	20,80	8,40
24	6,30	5,04	8,82	6,30	7,56	5,04	8,80	6,30	13,50	9,40	25,20	10,00
26	7,20	5,76	10,08	7,20	8,64	5,76	10,00	7,20	15,00	11,00	28,80	11,80
28	8,40	6,72	11,76	8,40	10,08	6,72	11,80	8,40	18,00	12,50	33,60	13,50
30	9,60	7,68	13,44	9,60	11,52	7,68	13,20	9,60	20,50	14,50	38,40	15,80
32	11,00	8,80	15,40	11,00	13,20	8,80	15,00	11,00	23,50	16,50	44,00	18,00
34	12,50	10,00	17,50	12,50	15,00	10,00	16,80	12,40	25,80	18,60	50,00	20,00
36	14,00	11,20	19,60	14,00	16,80	11,20	19,00	14,00	29,00	21,00	56,00	22,50
38	15,30	12,24	21,42	15,30	18,36	12,24	21,20	15,30	32,50	23,50	61,20	25,30
40	17,00	13,60	23,80	17,00	20,40	13,60	23,50	17,00	36,00	26,00	68,00	28,00
42	19,00	15,20	26,60	19,00	22,80	15,20	26,40	19,00	40,00	28,70	76,00	30,50
44	21,00	16,80	29,40	21,00	25,20	16,80	29,00	21,00	44,00	31,50	84,00	33,50
46	23,00	18,40	32,20	23,00	27,60	18,40	32,10	23,00	47,70	34,00	92,00	36,70
48	25,00	20,00	35,00	25,00	30,00	20,00	35,00	25,00	52,00	37,00	100,00	40,00
50	26,80	21,44	37,52	26,80	32,16	21,44	37,00	26,80	57,30	40,60	107,20	43,50
52	29,00	23,20	40,60	29,00	34,80	23,20	40,00	29,00	62,00	44,00	116,00	47,00
54	31,10	24,88	43,54	31,10	37,32	24,88	43,70	31,10	66,00	46,50	124,40	50,20
56	33,50	26,80	46,90	33,50	40,20	26,80	47,00	33,50	71,00	50,00	134,00	54,00
58	36,50	29,20	51,10	36,50	43,80	29,20	50,50	36,45	75,70	54,20	146,00	58,90
60	39,00	31,20	54,60	39,00	46,80	31,20	54,00	39,00	81,00	58,00	156,00	63,00

IWRC Ferrule - secured slings working load limits (single leg, 2 leg, 3 or 4 leg / EN 13414-1+A2)

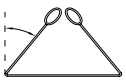
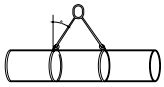
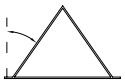
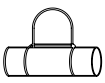
Made of 6x19, 6x36 and 8x36 class IWRC rope with the quality class 1770 N/mm².

	SINGLE LEG SLING				TWO LEG SLING				THREE AND FOUR LEG SLINGS		ENDLESS SLING	
	VERTICAL LIFTING	CHOKER	BASKET		CHOKER		TWO LEG VERTICAL		THREE OR FOUR LEG VERTICAL		ENDLESS DUAL VERTICAL	CHOKER
Angle with Vertical	0°	0°	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° (Included)	0°	0°
												
Leg Factor	1	0,8	1,4	1	1,2	0,8	1,4	1	2,2	1,5	2x2	1,6
Rope Diameter (mm)	Working Load Limit (ton)											
8	0,75	0,60	1,05	0,75	0,90	0,60	1,05	0,75	1,55	1,10	3,00	1,20
9	0,95	0,76	1,33	0,95	1,14	0,76	1,30	0,95	2,00	1,40	3,80	1,50
10	1,15	0,92	1,61	1,15	1,38	0,92	1,60	1,15	2,40	1,70	4,60	1,85
11	1,40	1,12	1,96	1,40	1,68	1,12	2,00	1,40	3,00	2,12	5,60	2,25
12	1,70	1,36	2,38	1,70	2,04	1,36	2,30	1,70	3,55	2,50	6,80	2,70
13	2,00	1,60	2,80	2,00	2,40	1,60	2,80	2,00	4,15	3,00	8,00	3,15
14	2,25	1,80	3,15	2,25	2,70	1,80	3,15	2,25	4,80	3,40	9,00	3,70
16	3,00	2,40	4,20	3,00	3,60	2,40	4,20	3,00	6,30	4,50	12,00	4,80
18	3,70	2,96	5,18	3,70	4,44	2,96	5,20	3,70	7,80	5,65	14,80	6,00
20	4,60	3,68	6,44	4,60	5,52	3,68	6,50	4,60	9,80	6,90	18,40	7,35
22	5,65	4,52	7,91	5,65	6,78	4,52	7,80	5,65	11,80	8,40	22,60	9,00
24	6,70	5,36	9,38	6,70	8,04	5,36	9,40	6,70	14,00	10,00	26,80	10,60
26	7,80	6,24	10,92	7,80	9,36	6,24	11,00	7,80	16,50	11,50	31,20	12,50
28	9,00	7,20	12,60	9,00	10,80	7,20	12,50	9,00	19,00	13,50	36,00	14,50
30	10,40	8,32	14,56	10,40	12,48	8,32	14,50	10,40	22,00	15,40	41,60	16,70
32	11,80	9,44	16,52	11,80	14,16	9,44	16,50	11,80	25,00	17,50	47,20	19,00
34	13,40	10,72	18,76	13,40	16,08	10,72	18,70	13,40	28,00	20,00	53,60	21,00
36	15,00	12,00	21,00	15,00	18,00	12,00	21,00	15,00	31,50	22,50	60,00	23,50
38	16,70	13,36	23,38	16,70	20,04	13,36	23,50	16,70	35,10	25,20	66,80	27,00
40	18,50	14,80	25,90	18,50	22,20	14,80	26,00	18,50	39,00	28,00	74,00	30,00
42	20,50	16,40	28,70	20,50	24,60	16,40	28,70	20,50	42,80	30,50	82,00	32,80
44	22,50	18,00	31,50	22,50	27,00	18,00	31,50	22,50	47,00	33,50	90,00	36,00
46	23,90	19,12	33,46	23,90	28,68	19,12	34,00	23,90	50,50	36,70	95,60	38,50
48	26,00	20,80	36,40	26,00	31,20	20,80	37,00	26,00	55,00	40,00	104,00	42,00
50	29,10	23,28	40,74	29,10	34,92	23,28	40,60	29,10	61,00	43,50	116,40	46,20
52	31,50	25,20	44,10	31,50	37,80	25,20	44,00	31,50	66,00	47,00	126,00	50,00
54	33,50	26,80	46,90	33,50	40,20	26,80	46,50	33,50	70,50	50,20	134,00	54,00
56	36,00	28,80	50,40	36,00	43,20	28,80	50,00	36,00	76,00	54,00	144,00	58,00
58	39,20	31,36	54,88	39,20	47,04	31,36	54,50	39,20	82,20	58,90	156,80	62,60
60	42,00	33,60	58,80	42,00	50,40	33,60	58,00	42,00	88,00	63,00	168,00	67,00

HAND - SPLICED WIRE ROPE SLINGS

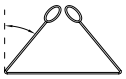
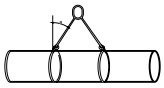
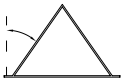
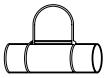
Fiber core hand - spliced sling working load limits (single leg, 2 leg, 3 or 4 leg / EN 13414-1+A2)

Made of 6x19 and 6x36 class fiber core rope with the quality class 1770 N/mm².

	INGLE LEG SLING				TWO LEG SLING				THREE AND FOUR LEG SLINGS		ENDLESS SLING	
	VERTICAL LIFTING	CHOKER	BASKET		CHOKER		TWO LEG VERTICAL		THREE OR FOUR LEG VERTICAL		ENDLESS DUAL VERTICAL	CHOKER
Angle with Vertical	0°	0°	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° ((Included)	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° (Included)	0°	0°
												
Leg Factor	1	0,8	1,4	1	1,2	0,8	1,4	1	2,2	1,5	2x2	1,6
Rope Diameter (mm)	Working Load Limit (ton)											
8	0,62	0,50	0,87	0,62	0,74	0,50	0,84	0,62	1,32	0,92	2,48	0,97
9	0,75	0,60	1,05	0,75	0,90	0,60	1,06	0,75	1,58	1,15	3,00	1,23
10	0,92	0,74	1,29	0,92	1,10	0,74	1,32	0,92	1,98	1,41	3,68	1,50
11	1,14	0,91	1,60	1,14	1,37	0,91	1,58	1,14	2,38	1,72	4,56	1,87
12	1,36	1,09	1,90	1,36	1,63	1,09	1,87	1,36	2,90	2,02	5,44	2,20
13	1,58	1,26	2,21	1,58	1,90	1,26	2,20	1,58	3,39	2,38	6,32	2,55
14	1,87	1,50	2,62	1,87	2,24	1,50	2,64	1,87	3,83	2,77	7,48	2,90
16	2,38	1,90	3,33	2,38	2,86	1,90	3,39	2,38	4,97	3,70	9,52	3,83
18	2,99	2,39	4,19	2,99	3,59	2,39	4,22	2,99	6,34	4,58	11,96	4,97
20	3,83	3,06	5,36	3,83	4,60	3,06	5,28	3,83	7,92	5,72	15,32	6,07
22	4,58	3,66	6,41	4,58	5,50	3,66	6,34	4,58	9,68	6,86	18,32	7,39
24	5,54	4,43	7,76	5,54	6,65	4,43	7,74	5,54	11,88	8,27	22,16	8,80
26	6,34	5,07	8,88	6,34	7,61	5,07	8,80	6,34	13,20	9,68	25,36	10,38
28	7,39	5,91	10,35	7,39	8,87	5,91	10,38	7,39	15,84	11,00	29,56	11,88
30	8,45	6,76	11,83	8,45	10,14	6,76	11,62	8,45	18,04	12,76	33,80	13,90
32	9,68	7,74	13,55	9,68	11,62	7,74	13,20	9,68	20,68	14,52	38,72	15,84
34	11,00	8,80	15,40	11,00	13,20	8,80	14,78	10,91	22,70	16,37	44,00	17,60
36	12,32	9,86	17,25	12,32	14,78	9,86	16,72	12,32	25,52	18,48	49,28	19,80
38	13,46	10,77	18,84	13,46	16,15	10,77	18,66	13,46	28,60	20,68	53,84	22,26
40	14,96	11,97	20,94	14,96	17,95	11,97	20,68	14,96	31,68	22,88	59,84	24,64
42	16,72	13,38	23,41	16,72	20,06	13,38	23,23	16,72	35,20	25,26	66,88	26,84
44	18,48	14,78	25,87	18,48	22,18	14,78	25,52	18,48	38,72	27,72	73,92	29,48
46	20,24	16,19	28,34	20,24	24,29	16,19	28,25	20,24	41,98	29,92	80,96	32,30
48	22,00	17,60	30,80	22,00	26,40	17,60	30,80	22,00	45,76	32,56	88,00	35,20
50	23,58	18,86	33,01	23,58	28,30	18,86	32,56	23,58	50,42	35,73	94,32	38,28
52	25,52	20,42	35,73	25,52	30,62	20,42	35,20	25,52	54,56	38,72	102,08	41,36
54	27,37	21,90	38,32	27,37	32,84	21,90	38,46	27,37	58,08	40,92	109,48	44,18
56	29,48	23,58	41,27	29,48	35,38	23,58	41,36	29,48	62,48	44,00	117,92	47,52
58	32,12	25,70	44,97	32,12	38,54	25,70	44,44	32,08	66,62	47,70	128,48	51,83
60	34,32	27,46	48,05	34,32	41,18	27,46	47,52	34,32	71,28	51,04	137,28	55,44

IWRC hand - spliced slings working load limits (single leg, 2 leg, 3 or 4 leg / EN 13414-1+A2)

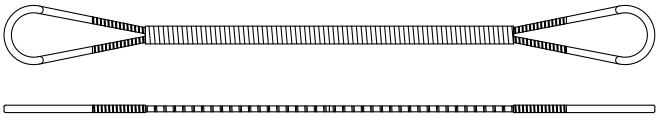
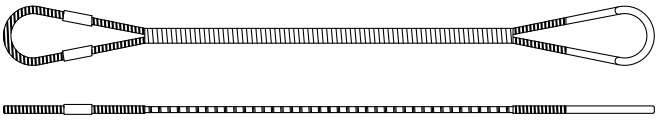
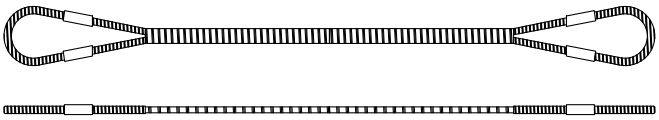
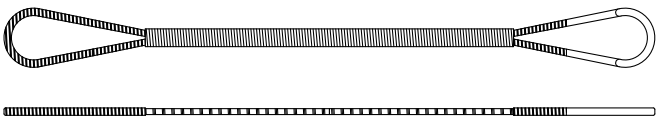
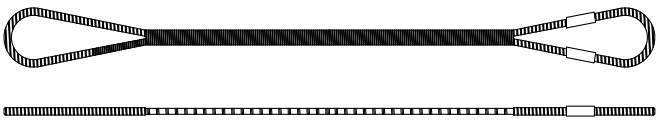
Made of 6x19 and 6x36 class IWRC rope with the quality class 1770 N/mm².

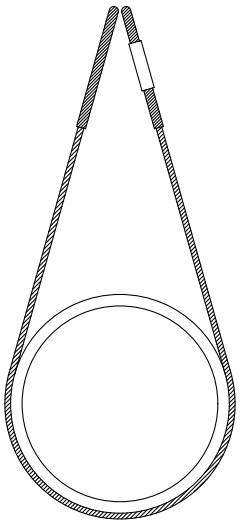
	SINGLE LEG SLING				TWO LEG SLING				THREE AND FOUR LEG SLINGS		ENDLESS SLING	
	VERTICAL LIFTING	CHOKER	BASKET		CHOKER		TWO LEG VERTICAL		THREE OR FOUR LEG VERTICAL		ENDLESS DUAL VERTICAL	CHOKER
Angle with Vertical	0°	0°	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° (Included)	0° - 45° (Included)	45° - 60° (Included)	0°	0°
												
Leg Factor	1	0,8	1,4	1	1,2	0,8	1,4	1	2,2	1,5	2x2	1,6
Rope Diameter (mm)	Working Load Limit (ton)											
8	0,66	0,53	0,92	0,66	0,79	0,53	0,92	0,66	1,36	0,97	2,64	1,06
9	0,84	0,67	1,18	0,84	1,01	0,67	1,14	0,84	1,76	1,23	3,36	1,32
10	1,01	0,81	1,41	1,01	1,21	0,81	1,41	1,01	2,11	1,50	4,04	1,63
11	1,23	0,98	1,72	1,23	1,48	0,98	1,76	1,23	2,64	1,87	4,92	1,98
12	1,50	1,20	2,10	1,50	1,80	1,20	2,02	1,50	3,12	2,20	6,00	2,38
13	1,76	1,41	2,46	1,76	2,11	1,41	2,46	1,76	3,65	2,64	7,04	2,77
14	1,98	1,58	2,77	1,98	2,38	1,58	2,77	1,98	4,22	2,99	7,92	3,26
16	2,64	2,11	3,70	2,64	3,17	2,11	3,70	2,64	5,54	3,96	10,56	4,22
18	3,26	2,61	4,56	3,26	3,91	2,61	4,58	3,26	6,86	4,97	13,04	5,28
20	4,05	3,24	5,67	4,05	4,86	3,24	5,72	4,05	8,62	6,07	16,20	6,47
22	4,97	3,98	6,96	4,97	5,96	3,98	6,86	4,97	10,38	7,39	19,88	7,92
24	5,90	4,72	8,26	5,90	7,08	4,72	8,27	5,90	12,32	8,80	23,60	9,33
26	6,86	5,49	9,60	6,86	8,23	5,49	9,68	6,86	14,52	10,12	27,44	11,00
28	7,92	6,34	11,09	7,92	9,50	6,34	11,00	7,92	16,72	11,88	31,68	12,76
30	9,15	7,32	12,81	9,15	10,98	7,32	12,76	9,15	19,36	13,55	36,60	14,70
32	10,38	8,30	14,53	10,38	12,46	8,30	14,52	10,38	22,00	15,40	41,52	16,72
34	11,79	9,43	16,51	11,79	14,15	9,43	16,46	11,79	24,64	17,60	47,16	18,48
36	13,20	10,56	18,48	13,20	15,84	10,56	18,48	13,20	27,72	19,80	52,80	20,68
38	14,75	11,80	20,65	14,75	17,70	11,80	20,68	13,02	32,45	22,18	590,00	23,60
40	16,28	13,02	22,79	16,28	19,54	13,02	22,88	16,28	34,32	24,64	65,12	26,40
42	18,04	14,43	25,26	18,04	21,65	14,43	25,26	18,04	37,66	26,84	72,16	28,86
44	19,80	15,84	27,72	19,80	23,76	15,84	27,72	19,80	41,36	29,48	79,20	31,68
46	21,03	16,82	29,44	21,03	25,24	16,82	29,92	21,03	44,44	32,30	84,12	33,88
48	22,88	18,30	32,03	22,88	27,46	18,30	32,56	22,88	48,40	35,20	91,52	36,96
50	25,61	20,49	35,85	25,61	30,73	20,49	35,73	25,61	53,68	38,28	102,44	40,66
52	27,72	22,18	38,81	27,72	33,26	22,18	38,72	27,72	58,08	41,36	110,88	44,00
54	29,48	23,58	41,27	29,48	35,38	23,58	40,92	29,48	62,04	44,18	117,92	47,52
56	31,68	25,34	44,35	31,68	38,02	25,34	44,00	31,68	66,88	47,52	126,72	51,04
58	34,50	27,60	48,30	34,50	41,40	27,60	47,96	34,50	72,34	51,83	138,00	55,09
60	36,96	29,57	51,74	36,96	44,35	29,57	51,04	36,96	77,44	55,44	147,84	58,96

FLAT WOVEN STEEL SLINGS

It is used in applications where low contact pressure is required. Used for lifting and suspending materials such as machined surface, soft metal bars, metal pipes that require a solid straight grip.

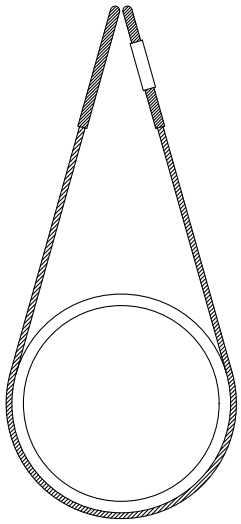
For basket type lifting applications

TYPE - 1A		For general lifting of bundles of tubes, bars, timber, roofing steel in cradle lift.
TYPE - 1B		Used for general work. End with ferrules remains on the crane hook during rigging.
TYPE - 1C		Lowest cost sling where clearances under loads are adequate. For general lifting of steel bars etc. In cradle lift.
TYPE - 1E		Very thin sling, the soft eye is useful where clearance between bundles is limited. Handmade form cord feedstock. More expensive, slow delivery.
TYPE - 1G		Lapped eye with ferrules one end, and other end hand formed soft eye. Entirely hand made from cord feedstock. More expensive, slow delivery.



TYPE 1-A / 1-B / 1-C

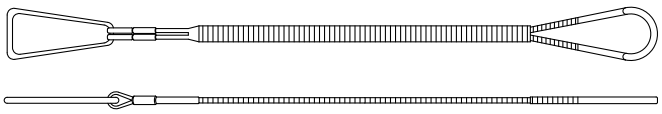
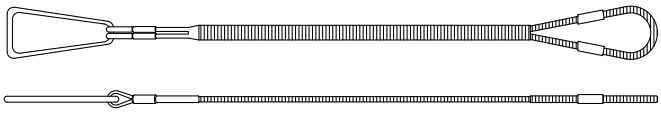
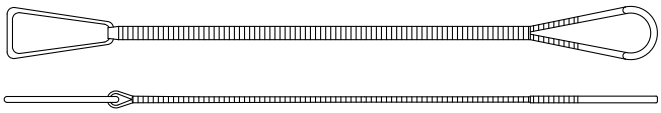
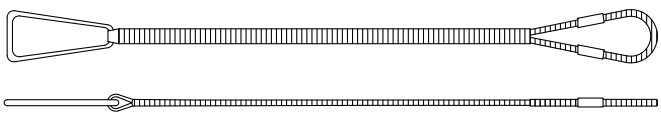
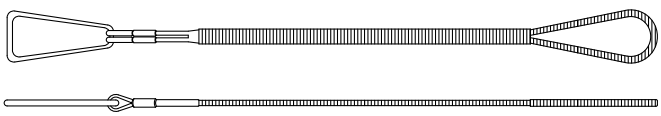
Sling Width (mm)	Flat Woven Steel Slings Properties					Working Load Limit (ton)			
	24 Ply Warp, Fine Cords, 2 Ply Weft, Fine Cords					Basket Lifting (ton)			Proof Load (ton)
	Flat Sling Thickness (mm)	Generic Cord Size (mm)	Weight (kg/m)	Woven Jacket Nom. Dia (mm)	Single Lifting (ton)	< 30°	60°	120°	Single Lifting (ton)
50	5,00	2,00	0,40	32,00	1,00	1,90	1,70	1,00	2,00
64	7,00	2,50	0,60	38,00	1,60	3,00	2,70	1,60	3,20
76	8,00	3,00	1,00	52,00	2,40	4,50	4,00	2,30	4,80
88	10,00	3,50	1,30	62,00	3,20	6,00	5,30	3,10	6,40
100	11,00	4,00	1,60	70,00	4,30	8,10	7,10	4,10	8,60
112	12,00	4,50	2,10	76,00	5,40	10,00	9,00	5,20	10,90
125	14,00	5,00	2,70	102,00	7,20	13,00	12,00	7,00	14,50
160	17,00	6,50	4,30	120,00	11,60	21,00	19,00	11,00	23,20
200	20,00	8,00	6,90	150,00	17,30	32,00	28,00	17,00	34,60
250	25,00	10,00	10,30	170,00	26,00	48,00	43,00	25,00	52,00

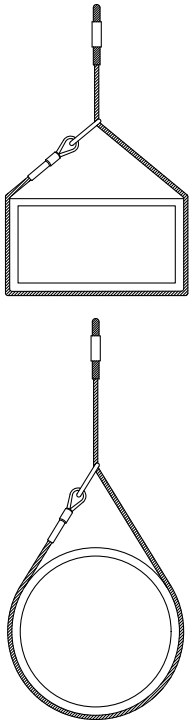


TYPE 1-E / 1-G

Sling Width (mm)	Flat Woven Steel Slings Properties					Working Load Limit (ton)			
	24 Ply Warp, Fine Cords, 2 Ply Weft, Fine Cords					Basket Lifting (ton)			Proof Load (ton)
	Flat Sling Thickness (mm)	Generic Cord Size (mm)	Weight (kg/m)	Woven Jacket Nom. Dia (mm)	Single Lifting (ton)	< 30°	60°	120°	Single Lifting (ton)
50	5,00	2,00	0,40	32,00	0,90	1,60	1,50	0,90	1,80
64	7,00	2,50	0,60	38,00	1,40	2,70	2,40	1,40	2,80
76	8,00	3,00	1,00	52,00	2,10	4,00	3,50	2,10	4,20
88	10,00	3,50	1,30	62,00	2,90	5,40	4,80	2,80	5,80
100	11,00	4,00	1,60	70,00	3,80	7,10	6,30	3,70	7,60
112	12,00	4,50	2,10	76,00	4,70	8,70	7,80	4,60	9,40
125	14,00	5,00	2,70	102,00	6,40	11,80	10,60	6,20	12,80
160	17,00	6,50	4,30	120,00	10,00	18,80	16,80	9,80	20,30
200	20,00	8,00	6,90	150,00	15,20	28,20	25,20	14,70	30,50
250	25,00	10,00	10,30	170,00	23,00	42,30	37,80	22,10	45,80

For choker type lifting applications

TYPE - 2R		Used for general lifting where a choker lift is needed. Made from machine made flat rope.
TYPE - 2S		Needs more clearance under loads. The most economical sling for general usage where a choke hitch is needed.
TYPE - 2T		The slimmest of the type 2 slings. Hand made from cord feedstock, so is more costly and has longer lead time for delivery.
TYPE - 2U		Lapped eye with ferrules in the reeving end, and trapezoidal link fitted with leather sleeve other end. Hand made from cord feedstock.
TYPE - 2W		It provides a slim and flexible eye for passing under loads with limited clearance. More expensive, slow delivery.

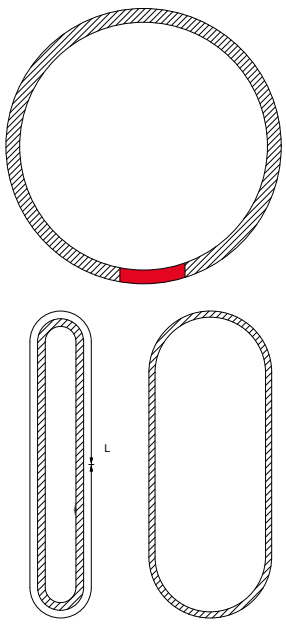


2-R / S / T / U / W

Sling Width (mm)	Flat Woven Steel Slings					Working Load Limit (ton)		
	24 Ply Warp, Fine Cords, 2 Ply Weft, Fine Cords					Basket Lifting (ton)		Proof Load (ton)
	Flat Sling Thickness (mm)	Generic Cord Size (mm)	Weight (kg/m)	Woven Jacket Nom. Dia (mm)	Single Lifting (ton)	< 30°	60°	U Type Lifting (ton)
50	5,00	2,00	0,40	32,00	1,00	0,70	0,50	2,00
64	7,00	2,50	0,60	38,00	1,60	1,20	0,80	3,20
76	8,00	3,00	1,00	52,00	2,40	1,70	1,10	4,80
88	10,00	3,50	1,30	62,00	3,20	2,30	1,50	6,40
100	11,00	4,00	1,60	70,00	4,30	3,10	2,00	8,60
112	12,00	4,50	2,10	76,00	5,40	3,80	2,60	10,90
125	14,00	5,00	2,70	102,00	7,20	5,10	3,40	14,50
160	17,00	6,50	4,30	120,00	11,60	8,20	5,50	23,20
200	20,00	8,00	6,90	150,00	17,30	12,00	8,20	34,60
250	25,00	10,00	10,30	170,00	26,00	18,00	12,00	52,00

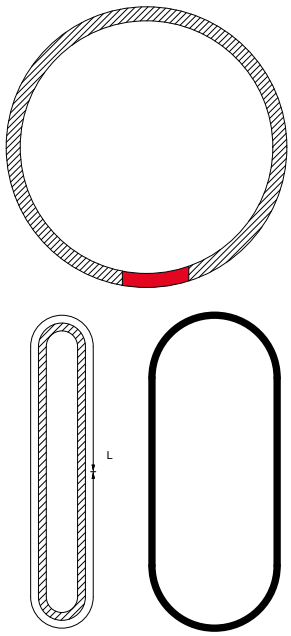
ENDLESS STEEL WIRE ROPE SLINGS

- Maximum loads and the highest reliability.
- With the assistance of endless steel wire rope sling, weights up to 2000 tons are possible when lifting and transporting heavy loads.
- It is available as IWRC and fiber core.
- By combining several endless steel wire rope slings, heavier loads can be lifted.
- The comparatively easy handling due to flexibility even for large diameters.



Fiber core endless steel wire rope slings (EN 13414-3)

Rope Diameter (mm)	Working Load Limits (kg)	Minimum Circumference (m)	Weight (kg/m)
12	2.100	0,42	0,48
15	3.000	0,53	0,61
18	4.300	0,63	0,87
21	6.000	0,74	1,28
24	7.700	0,84	1,58
27	9.700	0,95	1,95
30	11.500	1,05	2,70
33	14.000	1,16	3,08
36	16.500	1,26	3,75
39	19.500	1,37	4,43
42	22.500	1,47	5,25
48	29.500	1,68	6,98
54	37.200	1,89	7,95
60	46.000	2,11	10,05



IWRC endless steel wire rope slings (EN 13414-3)

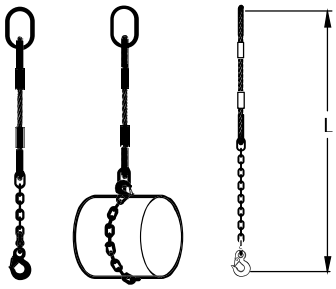
Rope Diameter (mm)	Working Load Limits (kg)	Minimum Circumference (m)	Weight (kg/m)
24	9.500	0,84	1,82
27	12.500	0,95	2,31
30	15.000	1,05	2,85
33	18.500	1,16	3,79
36	21.500	1,26	4,51
39	25.500	1,37	5,30
42	29.600	1,47	6,15
48	39.000	1,68	8,03
54	49.000	1,89	10,20
60	60.000	2,15	12,53
66	75.000	2,36	15,15
72	92.000	2,57	18,08
78	112.000	2,78	21,23
84	132.000	2,99	24,60
90	158.000	3,21	28,20
96	178.000	3,42	32,10
102	216.000	3,64	36,23
108	252.000	3,85	40,56
114	290.000	4,06	45,30
120	333.000	4,29	50,18
126	380.000	4,49	55,35
132	434.000	4,71	60,75
144	560.000	5,14	72,30
156	716.000	5,56	84,75

COMBINATION SLINGS

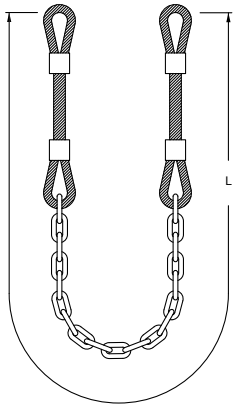
To be used for particularly harsh areas of application when looping around sharp-edged loads. The wearing zones are equipped here with high - tensile chains, which guarantee a particularly long service life of this combination slings.

Choker Type chain – rope combination slings (DIN EN 818)

Consist of steel wire rope slings and chain with hook slings combination.



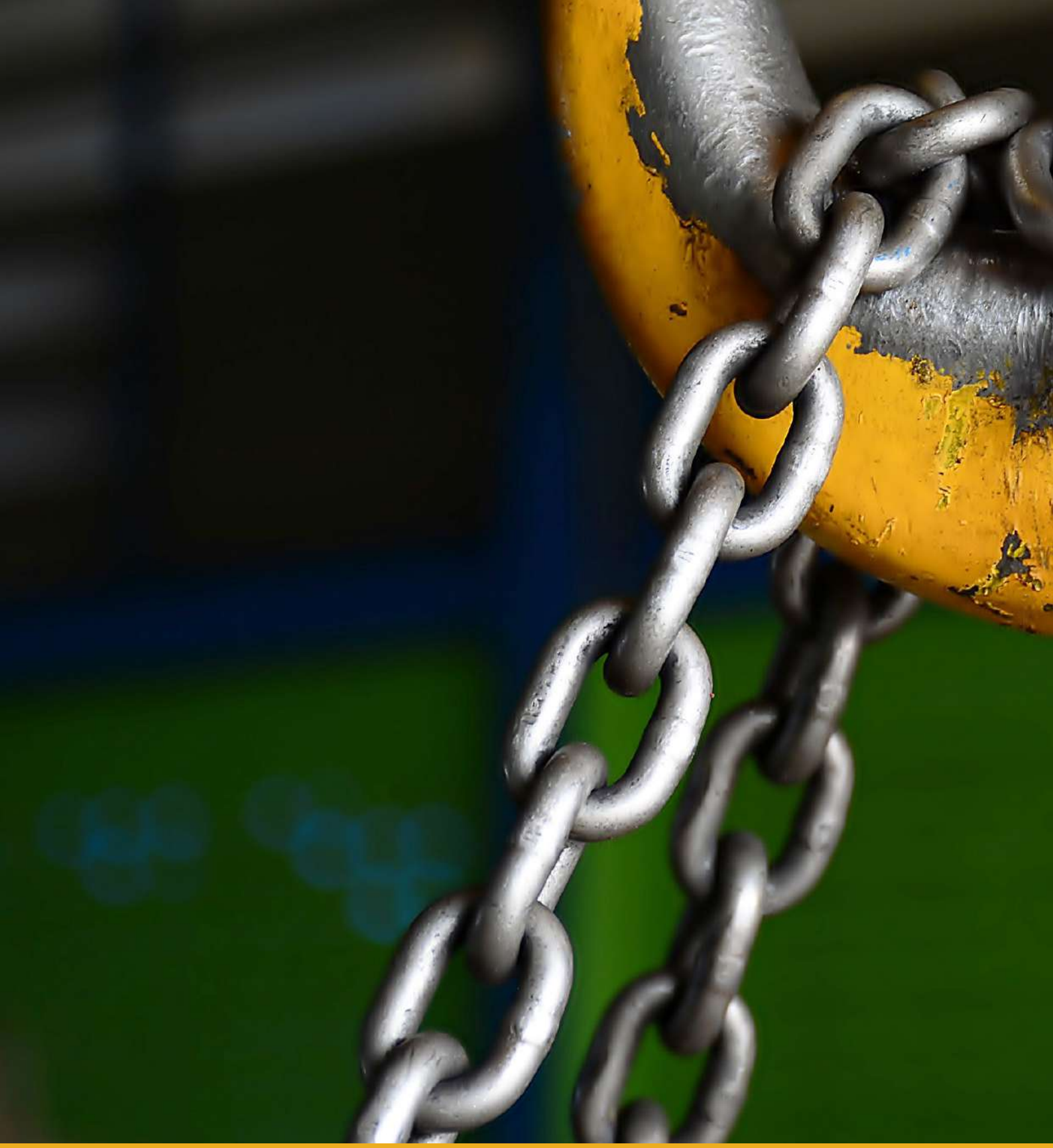
Nominal Diameter (mm)	Nominal Size of Chain (mm)	Vertical Lifting Working Load Limit (kg)	Choker Working Load Limit (kg)
10	6	1.000	800
14	8	2.000	1.600
16	10	2.700	2.150



Basket Type chain – rope combination slings (DIN EN 818)

Consist of steel wire rope slings and chain combination. Do not exceed maximum 60°. Can be producedin desired length (L).

Nominal Diameter (mm)	Nominal Size of Chain (mm)	Working Load Limit (0° – 45°) (kg)	Working Load Limit (0° – 45°) (kg)
10	6	1.400	1.000
14	8	2.800	2.000
16	10	3.800	2.700
22	13	7.000	5.000



LIFTING CHAINS AND CHAIN SLINGS

- > Lifting Chains and Chain Slings
  - Grade 120
  - Grade 100
  - Grade 80
- > Chain Sling Accessories
- > Lifting Points
- > Special Accessories
- > Spare Parts

GRADE 120 LIFTING CHAINS

pewag | GRADE 120

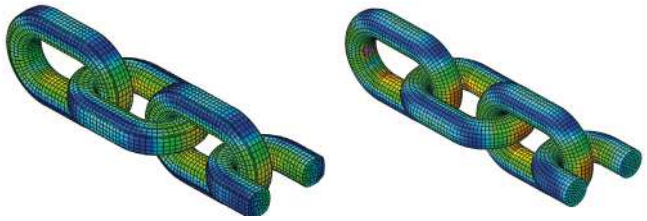
Advantages:

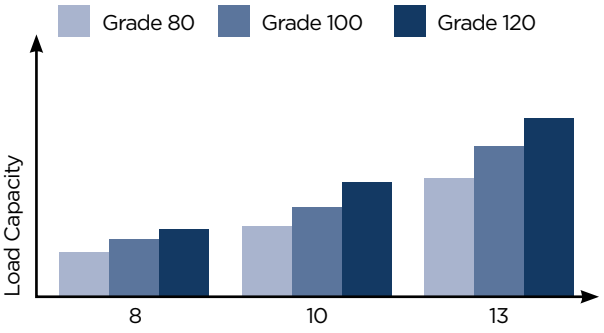
Intelligent profile: Thanks to the intelligent use of material, the same cross - section achieves a marked improvement of the key characteristics of the chain, for instance fatigue resistance and bending resistance, compared to conventional round - steel chains. The use of material was optimised in key areas (blue sections) and reduced in less relevant areas (red sections) to achieve the best possible technical effects.

Optimised bending resistance: This crucial resistance factor that protects the chain from undesirable bending is up to 6% higher with the profile chain than with a round - link chain that has the same cross - section.

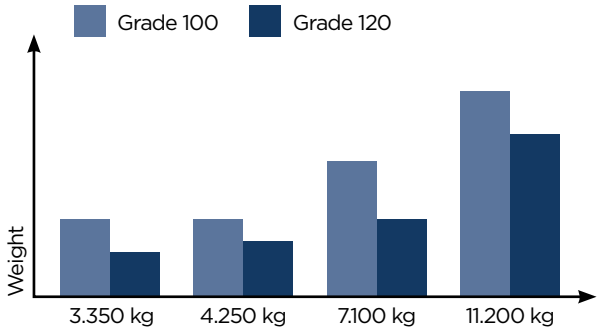
This reduces the maximum tension in the chain (no red sections).

Grade 120 items has 20% higher load capacity compared to Grade 100 items and has 50% higher load capacity compared to Grade 80 items. Significantly reduced weight and easier handling with Pewag Winner Pro for end - users.





Load Capacity (kg)	Pewag Winner Chain Diameter (mm)	Pewag Winner Pro Chain Diameter (mm)
4.250	10	8
7.100	13	10
11.200	16	13



Load Capacity (kg)	G8 Chain Weight (kg)	Pewag Winner Pro Chain (kg)	% Reduction
3.350	16,60	9,37	44 %
4.250	16,60	11,80	29 %
7.100	28,53	19,19	33 %
11.200	43,61	34,10	22 %

- Highly efficient for many load ranges, as the size of the chain slings is reduced by one dimension compared to Grade 80 and Grade 100 chain slings.
- Optimised strength and toughness characteristics at high and low temperatures thanks to patented material.
- High stability and a low level of wear guarantee a longer life span.
- Innovative chain system that may be used for lifting or lashing; also suitable for many other applications thanks to its robust design.
- Complete traceability thanks to identification stamp on chain and components, enabling users to track the entire manufacturing process.
- Easy visual identification thanks to profile chain and Grade 120 stamp on each chain link.
- The light blue powder coating on chains and components for corrosion protection is optionally available in the tried and tested corropro coating (PCP) for maximum corrosion resistance. WINPRO 200 Chains are painted in light gray.
- Maximum safety thanks to innovative load capacity tag made from rust - resistant material and including safety warnings.
- ISO 9001 certification as a testimony to quality - assured, European manufacturing.
- Simple spare parts ordering system and top - quality service provided by a global sales network.
- Pioneering role: Pewag is the first manufacturer to have launched the innovative Grade 120 chain system, based on its wealth of experience.

Chain Qualities

Pewag WINPRO FLEX 200: Based on EN 818-2 with modifications (profile, higher load capacity, reduced operating temperature).

Pewag WINPRO FLEX 300: based on PAS 1061 with modifications (profile, higher load capacity, reduced operating temperature).

Stress at capacity limit: 300 N/mm²

Test stress: 750 N/mm²

Breaking stress: 1200 N/mm²

Breaking elongation: Min. 20%

Bending according to EN 818-2 and PAS 1061: 0.8xd

Quality grade stamping:

pewag WINPRO FLEX 200: PEWAG12 / 200 on every 20th link and 12 on the back of each link.

pewag WINPRO FLEX 300: PEWAG12 every 300 mm and 12 on the back of each link.

Components: 12

Manufacturer's name or symbol: D16 and/or PEWAG

Surface:

Pewag WINPRO FLEX 200: Light gray coating

Pewag WINPRO FLEX 300: Light blue powder - coating or black corropro (PCP) coating.

Components: Light blue powder coating.

Sling tag: Shows required data according to EN 818-4

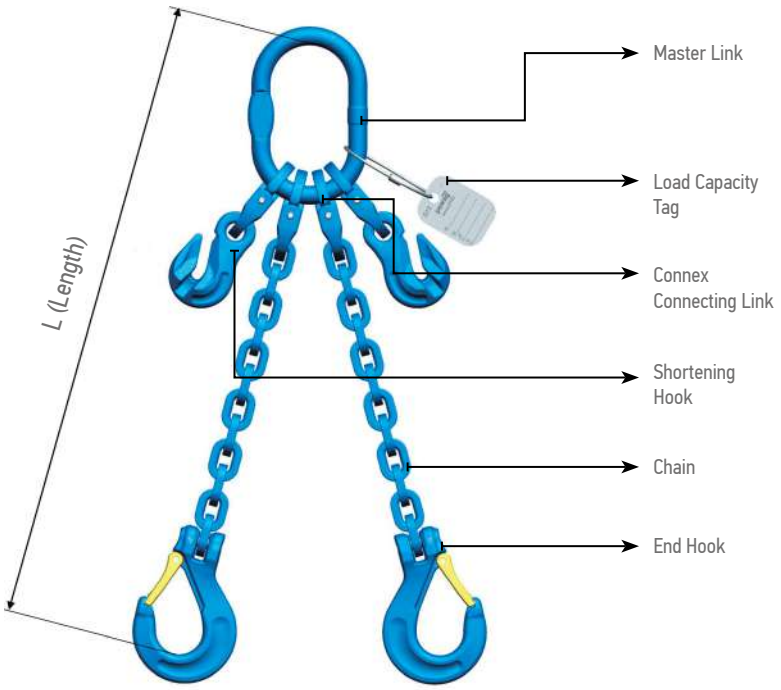
Compatibility:

Please note that the compatibility of Pewag Winner Pro chains and components with those of other grades and from other manufacturers is limited! For this reason, any combinations shall be approved by PEWAG in advance.

Sample order text for pewag winner pro lifting products:

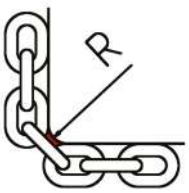
Pewag Winner Pro Flex 200, 8 mm, 2 legs 3.500 mm, with shortening option and safety hook

WINPRO 8	Chain diameter
FLEX 200	Code of Pewag chains
II	Number of legs
AWP	Master link
KHSWP	End hook
PWP	Shortening hook
3.500	Length (mm)



Exceptional conditions of use

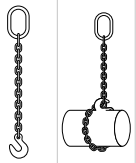
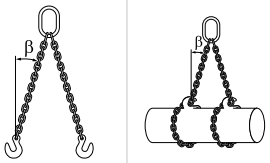
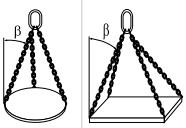
Even premium quality products will lose some of their load capacity when exposed to high temperatures, asymmetrical loading, edge loading, shocks or other severe operating conditions. Please refer to the operating manuals if you think that any of these conditions apply. We are classifying the following factors as severe conditions.

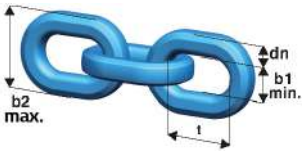
Temparature Range	-60 °C to 200 °C	201 °C to 300 °C	Above 300 °C
Load Factor	1	0,6	Not permitted
Edge Load	R= Larger than 2 times the chain diameter 	R= Larger than chain diameter 	R= Smaller than or equal to chain diameter 
Load Factor	1	0,7	0,5
Shock Loading	Light shocks	Moderate shocks	Strong shocks
Load Factor	1	0,7	Not permitted

Please see the basic usage information for safe usage information.

GRADE 120 - GRADE 100 - GRADE 80 CHAIN SLING COMPARISON

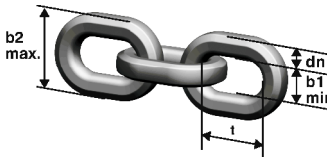
The load capacities as shown in the table are the maximum values of the various sling types, stated according to the standard (Uniform Load) method of rating.

Safety Factor		1 Leg Chain Slings		2 Leg Chain Slings				3 and 4 Leg Chain Sling		4 Leg Chains with Load Distributor		Endless Chain Slings	Single Lifting Sling		Double Lifting Sling	
4																
Angle of Inclination		-	-	0° - 45°	45° - 60°	0° - 45°	45° - 60°	0° - 45°	45° - 60°	0° - 45°	45° - 60°	-	0° - 45°	45° - 60°	0° - 45°	45° - 60°
Load Factor		1	0,8	1,4	1	1,12	0,8	2,1	1,5	2,8	2	1,6	1,4	1	2,1	1,5
Quality Class	Dia. (mm)	Load Capacity (kg)														
Grade 120	7	2.360	1900	3.350	2.360	2.650	1900	5.000	3.550	6.700	4.750	3.750	3.350	2.360	5.000	3.550
Grade 100	7	1.900	1.500	2.650	1.900	2.120	1.500	4.000	2.800	5.300	3.750	3.000	2.650	1.900	4.000	2.800
Grade 80	7	1.500	1.200	2.120	1.500	1.700	1.200	3.150	2.240	4.000	3.000	2.500	2.120	1.500	3.150	2.240
Grade 120	8	3.000	2.360	4.250	3.000	3.350	2.360	6.300	4.500	8.500	6.000	4.750	4.250	3.000	6.300	4.500
Grade 100	8	2.500	2.000	3.550	2.500	2.800	2.00	5.300	3.750	7.100	5.000	4.000	3.550	2.500	5.300	3.750
Grade 80	8	2.000	1.600	2.800	2.000	2.240	1.600	4.250	3.000	5.600	4.000	3.150	2.800	2.000	4.250	3.000
Grade 120	10	5.000	4.000	7.100	5.000	5.600	4.000	10.600	7.500	14.000	10.000	8.000	7.100	5.000	10.600	7.500
Grade 100	10	4.000	3.150	5.600	4.000	4.250	3.150	8.000	6.000	11.200	8.000	6.300	5.600	4.000	8.000	6.000
Grade 80	10	3.150	2.500	4.250	3.150	3.550	2.500	6.700	4.750	8.500	6.300	5.000	4.250	3.150	6.700	4.750
Grade 120	13	8.000	6.300	11.200	8.000	9.000	6300	17.000	11.800	-	-	12.500	11.200	8.000	17.000	11.800
Grade 100	13	6.700	5.300	9.500	6.700	7.500	5.300	14.000	10.000	19.000	13.200	10.600	9.500	6.700	14.000	10.000
Grade 80	13	5.300	4.250	7.500	5.300	5.900	4.250	11.200	8.000	14.000	10.600	8.500	7.500	5.300	11.200	8.000
Grade 120	16	12.500	10.000	17.500	12.500	14.000	10000	26.500	19.000	-	-	20.000	17.500	12.500	26.500	19.000
Grade 100	16	10.000	8.000	14.000	10.000	11.200	8.000	21.200	15.000	28.000	20.000	16.000	14.000	10.000	21.200	15.000
Grade 80	16	8.000	6.300	11.200	8.000	9.000	6.300	17.000	11.800	22.400	16.000	12.500	11.200	8.000	17.000	11.800



GRADE 120
WINPRO FLEX 300

Code	Chain Diameter dn	Pitch t	Inside Width b1 Min.	Outside Width b2 Max.	Load Capacity	Breaking Force	Weight
	(mm)	(mm)	(mm)	(mm)	(ton)	(kN)	(kg/m)
WINPRO FLEX 300 PC/B							
WINPRO 7 FLEX 300	7,00	22,0	10,0	26,0	2,36	92,6	1,36
WINPRO 8 FLEX 300	8,00	25,0	11,3	29,0	3,00	118,0	1,64
WINPRO 10 FLEX 300	10,0	33,0	14,2	37,0	5,00	196,0	2,70
WINPRO 13 FLEX 300	13,0	41,0	18,6	50,0	8,00	314,0	4,80
WINPRO 16 FLEX 300	16,0	51,0	22,8	60,0	12,5	491,0	7,17
WINPRO FLEX 300 PCP							
WINPRO 7 FLEX 300	7,00	22	10,0	26	2,36	92,6	1,36
WINPRO 8 FLEX 300	8,00	25	11,3	29	3,00	118	1,64
WINPRO 10 FLEX 300	10,0	33	14,2	37	5,00	196	2,70
WINPRO 13 FLEX 300	13,0	41	18,6	50	8,00	314	4,80
WINPRO 16 FLEX 300	16,0	51	22,8	60	12,5	491	7,10



GRADE 120
WINPRO FLEX 200

Code	Chain Diameter dn	Pitch t	Inside Width b1 Min.	Outside Width b2 Max.	Load Capacity	Breaking Force	Weight
	(mm)	(mm)	(mm)	(mm)	(kg)	(kN)	(kg/m)
WINPRO 7 FLEX 200	7,00	22,0	10,0	26,0	2.360	92,6	1,36
WINPRO 8 FLEX 200	8,00	25,0	11,0	29,0	3.000	118	1,64
WINPRO 10 FLEX 200	10,0	33,0	14,0	37,0	5.000	196	2,70
WINPRO 13 FLEX 200	13,0	41,0	19,0	50,0	8.000	314	4,80
WINPRO 16 FLEX 200	16,0	51,0	23,0	60,0	12.500	491	7,17

4 DIMENSION CHAIN CONTROL DEVICE

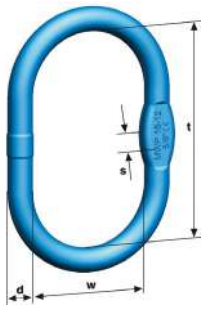
Uygulamalar:

It is used to control the amount of elongation of load chains, electric chain cranes and lifting chains.

- Measurement possibilities from 6 mm to 22 mm in lifting chains offer.
- It is an ideal product for the detection of minimal elongations.
- It has a structure suitable for the type of chain to be tested.
- It is quick and easy to checked.
- It is safe and lightweight.

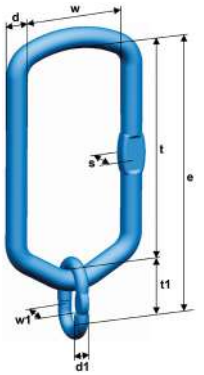
MASTER LINK - AWP

Code	Load Capacity 0° - 45°	Can be Used up to Single Hook According to DIN 15401	For 1 Leg Slings Chain Diameter	For 2 Leg Slings Chain Diameter	t	d	w	s	Weight
	(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/Pc.)
AWP 13	2,36	2.5	7,00	-	110	13,0	60,0	10,0	0,37
AWP 16	3,50	2.5	8,00	7,00	110	17,0	60,0	14,0	0,55
AWP 18	5,30	5	10,0	8,00	135	19,0	75,0	14,0	0,86
AWP 22	8,00	6	13,0	10,0	160	23,0	90,0	17,0	1,60
AWP 27	12,5	10	16,0	13,0	200	28,0	110	21,0	2,92
AWP 33	17,5	10	-	16,0	200	33,0	110	21,0	4,14



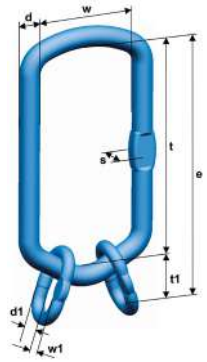
ENLARGED MASTER LINK - MWP

Code	Load Capacity 0°-45°	Can be Used up to Single Hook According to DIN 15401	For 1 Leg Slings Chain Diameter	For 2 Leg Slings Chain Diameter	t	d	w	s	Weight
	(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
MWP 13	2,36	4	7,00	-	120	14,0	70,0	10,0	0,46
MWP 16	3,20	5	8,00	-	140	17,0	80,0	13,0	0,74
MWP 18	5,00	6	10,0	-	160	19,0	95,0	14,0	1,05
MWP 26	10,1	10	13,0	-	190	27,0	110	20,0	2,47
MWP 36	17,5	10	-	16,0	275	38,0	150	29,0	7,48



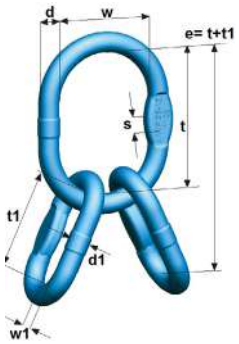
OVERSIZE MASTER LINK - VLWP 1

Code	Consisting of	Load Capacity	For 1 Leg Slings Chain Dia.	e	d	t	w	d1	t1	w1	Weight
		(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VLWP 1-7/8	LWP 22 + BWP 13	3,00	7,00 - 8,00	394	23,0	340	155	13,0	54,0	25,0	3,37
VLWP 1-10	LWP 26 + BWP 16	5,00	10,0	410	27,0	340	155	17,0	70,0	34,0	3,56
VLWP 1-13	LWP 26	8,00	13,0	340	27,0	340	155	-	-	-	4,40
VLWP 1-16	LWP 32	12,5	16,0	340	33,0	340	155	-	-	-	6,60



OVERSIZE MASTER LINK - VLWP 2/4

Code	Load Capacity	For 2 Leg Slings Chain Diameter	For 3 or 4 Leg Slings Chain Diameter	e	d	t	w	d1	t1	w1	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VLWP 2-7/8	4,25	7,00 - 8,00	-	394	23,0	340	155	13,0	54,0	25,0	3,60
VLWP 2-10/ 4-7/8	7,10	10,0	7,00 - 8,00	410	27,0	340	155	17,0	70,0	34,0	5,20
VLWP 2-13/ 4-10	11,2	13,0	10,0	425	33,0	340	155	20,0	85,0	40,0	8,00
VLWP 4-13	17,0	-	13,0	480	38,0	340	155	27,0	140	65,0	12,8
VLWP 2-16	17,5	16,0	-	340	38,0	340	155	-	-	-	8,90
VLWP 4-16	26,5	-	16,0	490	40,0	340	155	33,0	150	70,0	16,3

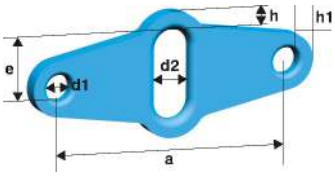


ENLARGED MASTER LINK - VMWP

Code	Load Capacity 0° - 45°	For 2 Leg Slings Chain Diameter	For 3 or 4 Leg Slings Chain Diameter	e	d	t	w	d1	t1	w1	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VMWP 7/8	21,2	-	13,0	415	38,0	275	150	27,0	140	65,0	11,5
VMWP 10/7/8	26,5	-	16,0	425	38,0	275	150	33,0	150	70,0	13,8
VMWP 13/10	4,25	7,00 - 8,00	-	214	19,0	160	95,0	13,0	54,0	25,0	1,47
VMWP-/13	8,80	10,0	7,00 - 8,00	260	27,0	190	110	17,0	70,0	34,0	3,45
VMWP-/16	12,3	13,0	10,0	315	33,0	230	130	20,0	85,0	40,0	6,28
VLWP 4-16	26,5	-	16,0	490	40,0	340	155	33,0	150	70,0	16,3

CONNEX CONNECTING LINK - CWP

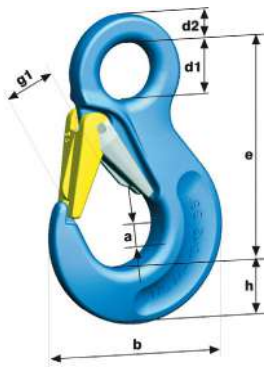
Code	Load Capacity	e	c	s	t	d	b	g	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
CWP 7	2,36	63,0	11,5	13,0	15.50	9	51	17	0.24
CWP 10	5,00	78,0	18,0	21,0	25	13	66	22	0.57
CWP 13	8,00	107	22,0	25,0	34	17	84	25	1.43



LOAD DISTRIBUTOR - AGWP

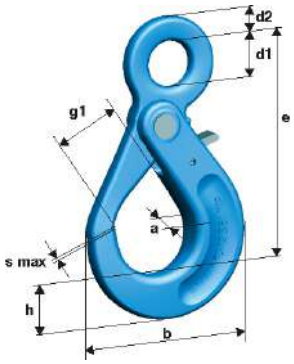
Code	Connecting Link	Load Capacity 0° - 45°	Load Capacity 45° - 60°	a	e	d1	d2	h	h1	s	Weight
		(ton)	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
AGWP 7/8	CWP 10	4,25	3,00	210	51,0	22,0	25,0	15,5	14,0	15,0	1,75
AGWP 10	CWP 13	7,10	5,00	180	32,0	25,0	32,0	23,0	15,5	15,0	1,56

Please use the displayed item in column "Connecting Link" to assemble the load distributor in the four - leg sling. Static test coefficient = 2,5 x load capacity of the respective chain section; safety factor = 4



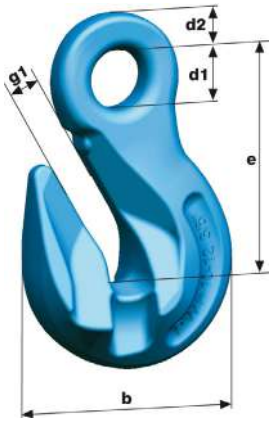
EYE SLING HOOK - HSWP

Code	Load Capacity	e	h	a	d1	d2	g1	b	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
HSWP 7/8	3,00	106	27,0	19,0	25,0	11,0	26,0	88,0	0,65
HSWP 10	5,00	131	33,0	26,0	34,0	16,0	31,0	108	1,29
HSWP 13	8,00	164	43,0	33,0	43,0	19,0	39,0	132	2,43



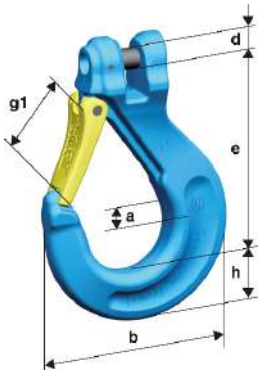
SAFETY HOOK - LHWP

Code	Load Capacity	e	h	a	b	d1	d2	g1	s Max.	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
LHWP 7/8	3,00	126	25,0	25,0	89,0	25,0	14,0	34,0	1,00	0,91
LHWP 10	5,00	158	31,0	28,0	112	31,0	17,0	45,0	1,50	1,56
LHWP 13	8,00	205	41,0	34,0	145	40,0	22,0	54,0	2,00	3,50



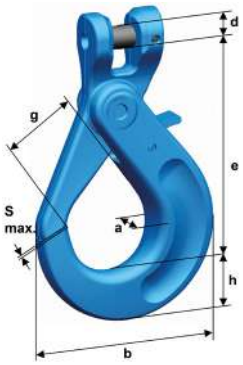
GRAB HOOK - PWP

Code	Load Capacity	e	b	d1	d2	g1	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
PWP 7/8	3,00	68,0	63,0	18,0	11,0	10,0	0,51
PWP 10	5,00	88,0	81,0	22,0	14,0	13,0	1,04
PWP 13	8,00	110	103	26,0	18,0	17,0	2,19



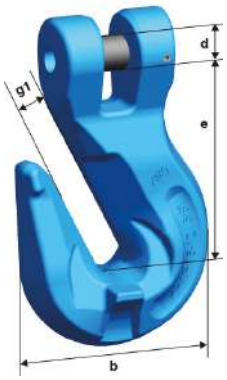
CLEVIS SLING HOOK - KHSWP

Code	Load Capacity	e	h	a	d	g1	b	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KHSWP 7	2,36	105	26,0	19,0	9,50	36,0	101	0,85
KHSWP 8	3,00	105	26,0	19,0	10,7	36,0	101	0,85
KHSWP 10	5,00	121	33,0	26,0	14,0	41,0	118	1,68
KHSWP 13	8,00	148	43,0	30,0	17,5	49,0	147	2,99
KHSWP 16	12,5	173	51,0	35,0	21,0	59,0	176	5,10



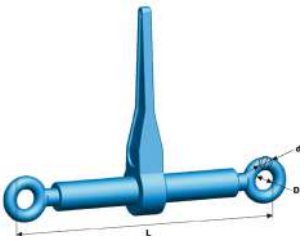
LEVIS SAFETY HOOK - KLHWP

Code	Load Capacity	e	h	a	b	d	g	s Max.	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KLHWP 7	2,36	116	24,5	23,6	90,0	9,50	32,0	1,00	0,89
KLHWP 8	3,00	115	24,5	23,6	90,0	10,7	32,0	1,00	0,90
KLHWP 10	5,00	136	31,5	27,8	113	14,0	45,0	1,00	1,60
KLHWP 13	8,00	179	39,8	33,7	146	17,5	54,0	1,50	3,42



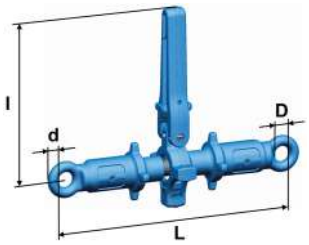
LEVIS GRAB HOOK - KPWP

Code	Load Capacity	e	b	d	g1	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KPWP 16	12,5	124	123	21,0	19,0	4,32



LOAD BINDER - RSWP

Code	Marking / Stamping	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Range	Lever Length L	D	d	Weight
	(kN)	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
RSWP 7/8	Type A	60,0	1.900	355	500	145	237	20,0	16,0	3,20
RSWP 10	Type B	100	3.000	365	510	145	355	26,0	18,0	3,80
RSWP 13	Type C	160	2.500	576	866	290	359	31,0	22,0	9,90



LOAD BINDER - RSKWP

Code	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Range	Lever Length L	D	d	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
RSKWP 7/8	60,0	2.200	536	176	360	237	23,0	16,0	5,20
RSKWP 10	100	2.500	536	176	360	360	23,0	16,0	5,50

LOAD BINDER - RSPSWP

Code	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Range	Lever Length L	Jaw Size g1	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
RSPSWP 7	47,0	1.900	586	741	155	237	10,00	4,60
RSPSWP 8	60,0	1.900	600	755	155	237	10,00	4,90
RSPSWP 10	100	3.000	674	829	155	355	13,00	6,70
RSPSWP 13	160	2.500	981	1.278	297	359	17,00	15,7

LASHING CHAIN SYSTEM
ZRSWP I HSWP – HSWP – PSWP

Code	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Range	Jaw Size g1	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(kg/system)
ZRSWP 7 200 I HSWP-HSWP-PSWP 3500 CONNEX	47,0	1.900	355	500	145	26,0	9,30
ZRSWP 8 200 I HSWP-HSWP-PSWP 3500 CONNEX	60,0	1.900	355	500	145	26,0	10,6
ZRSWP 10 200 I HSWP-HSWP-PSWP 3500 CONNEX	100	3.000	365	510	145	31,0	16,8
ZRSWP 13 200 I HSWP-HSWP-PSWP 3500 CONNEX	160	2.500	576	866	290	39,0	33,0

LASHING CHAIN SYSTEM
ZRSWP I KHSWP – KHSWP – PSWP

Code	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Range	Jaw Size g1	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(kg/system)
ZRSWP 7 200 I KHSWP-KSWP-PSWP 3500 CONNEX	47,0	1.900	355	500	145	36,0	9,80
ZRSWP 8 200 I KHSWP-KHSWP-PSWP 3500 CONNEX	60,0	1.900	355	500	145	36,0	13,8
ZRSWP 10 200 I KHSWP-KHSWP-PSWP 3500 CONNEX	100	3.000	365	510	145	41,0	16,9
ZRSWP 13 200 I KHSWP-KHSWP-PSWP 3500 CONNEX	160	2.500	576	866	290	49,0	33,1

LASHING CHAIN
ZKWP I HSWP – HSWP

Code	Lashing Capacity	Standard Tension Force	Jaw Size g1	Weight
	(kN)	(daN)	(mm)	(kg/system)
ZKWP 7 200 I HSWP-HSWP 3500 CONNEX	47,0	3.500	26,0	5,73
ZKWP 8 200 I HSWP-HSWP 3500 CONNEX	60,0	3.500	26,0	6,79
ZKWP 10 200 I HSWP-HSWP 3500 CONNEX	100	3.500	31,0	11,7
ZKWP 13 200 I HSWP-HSWP 3500 CONNEX	160	3.500	39,0	21,1

LASHING CHAIN
ZKWP I KHSWP – KHSWP

Code	Lashing Capacity	Standard Tension Force	Jaw Size g1	Weight
	(kN)	(daN)	(mm)	(kg/system)
ZKWP 7 200 I KHSWP-KHSWP 3500	47,0	3.500	36,0	6,15
ZKWP 8 200 I KHSWP-KHSWP 3500	60,0	3.500	36,0	7,05
ZKWP 10 200 I KHSWP-KHSWP 3500	100	3.500	41,0	11,8
ZKWP 13 200 I KHSWP-KHSWP 3500	160	3.500	49,0	21,1

SAFETY CATCH SET - SFGWP

Code	Hook Type
SFGWP 7/8	HSWP 7/8
SFGWP 10	HSWP 10
SFGWP 13	HSWP 13

TRIGGER SETS - VLHWP

Code	Hook Type
VLHWP 7/8	LHWP 7/8
VLHWP 10	LHWP 10
VLHWP 13	LHWP 13

SAFETY CATCH SET - SFGWP K

Code	Hook Type
SFGWP-K 7/8	KHSWP 7 + KHSWP 8
SFGWP-K 10	KHSWP 10
SFGWP-K 13	KHSWP 13
SFGWP-K 16	KHSWP 16

CLEVIS LOAD PIN - KBSWP

Code	Hook Type
KBSWP 7	KHSWP 7
KBSWP 8	KHSWP 8
KBSWP 10	KHSWP 10
KBSWP 13	KHSWP 13
KBSWP 16	KHSWP 16 + KPWP 16

BOLTS AND SAFETY BUSH - CBHWP

Code	Connecting Link Type
CBHWP 7	CWP 7
CBHWP 8	CWP 8
CBHWP 10	CWP 10
CBHWP 13	CWP 13
CBHWP 16	CWP 16

SAFETY CATCHES - PSGWP

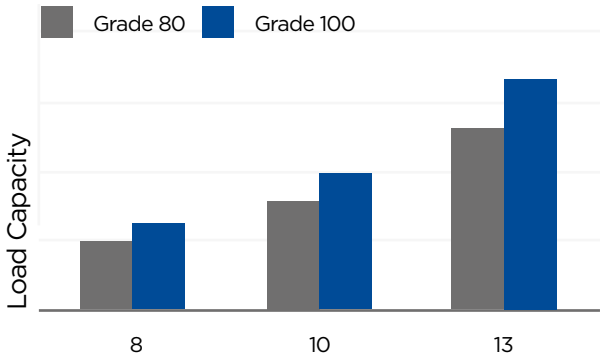
Code	Hook Type
PSGWP 7/8	PSWP 7/8
PSGWP 10	PSWP 10
PSGWP 13	PSWP 13

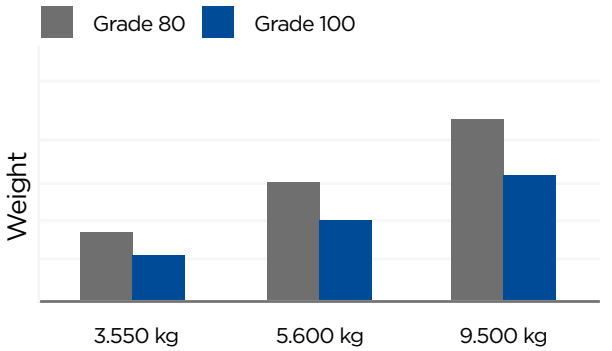
GRADE 100 LIFTING CHAINS

pewag | GRADE 100

Advantages:

- 25% more load capacity compared to Grade 80
- Simplified handling thanks to a 30% weight reduction





Load Capacity (kg)	G8 Chain Diameter (mm)	Pewag Winner Chain Diameter (mm)
3.550	10	8
5.600	13	10
9.500	16	13

Load Capacity (kg)	G8 Chain Weight (kg)	Pewag Winner Chain Weight (kg)	% Weight Reduction
3.550	16,2 kg	11,0 kg	32%
5.600	27,6 kg	17,6 kg	36%
9.500	42,2 kg	29,6 kg	30%

- Attractive price/performance ratio thanks to the small price differential compared to Grade 80.
- One dimension smaller than Grade 80 slings, for many load ranges – thus providing excellent value.
- Extended service life due to higher wear resistance.
- WIN 400 Easy identification – each link is marked with "W". WIN 200 Easy identification – each link is marked with "10".
- Code on chain and component ensures traceability of all manufacturing data
- Distinctive oval-shaped tags with precise information helps avoid confusion with Grade 80.
- High - visibility orange powder - coating for simple visual identification.
- Largest range of components in special Grade 100 quality – for 11 chain dimensions.
- Fastest and simplest assembly of slings thanks to VXKW set with unique shortening element.
- Thanks to XKW and PW, additional safety feature compared to shortening claws, thus reducing risks resulting from improperly attached chains of our shortening hooks.
- Easier and faster annual and daily inspection as fewer components are used.
- Compatible with our Grade 80 range – used slings are easy to repair.

  NOTE: Grade 10 components may be used to repair Grade 80, but not at an increased load capacity!
- First company to offer parallel hooks with 100% load capacity – shortening of the sling chain does not require a reduction in load caused by shear effect of the hook!
- 3 assembly systems of slings: Welded, Connex and Clevis system.

- Pioneer: In 1989, Pewag were the first to sell Grade 100 lifting chains and have a wealth of experience in this field from USA.

Welded System

Connex System

Clevis System

- Quality - approved European production by an ISO 9001 certified company.
- Worldwide distribution network – smooth supply of spare and replacement parts.
- All components comply with EN 1677.
- The Pewag WINNER 400 Chain meets the EN 818-2 with higher working load limit resp. PAS 1061 up to 16 mm and Machinery Directive 2006/42/EG.
- The Pewag WINNER 200 Chain meets the requirements of ASTM A973/A973M-01 and of EN 818-2 but with higher load capacity (however, admissible operating temperature of 200 °C max.) and 2006/42/EG Machinery Directive.

- Pewag winner – enviromentally friendly
- Significantly lowered energy and material consumption during manufacturing
- Reduced amount of materials used – preserving raw materials
- Low weight – ease of shipment
- Less material has to be recycled

Pewag Winner Characteristics Technical Features:

Chain Qualities:

Pewag Winner 200: Meets the requirements of ASTM A973/ A973M-01 and of EN 818-2 but with higher load capacity (however admissible operating temperature of 200 °C max.) and 2006/42/EG Machinery Directive.

Pewag Winner 400: Meets the EN 818-2 with higher working load limit resp. PAS 1061 up to 16 mm and Machinery Directive 2006/42/EC.

Stress at load capacity limit: 250 N/mm²
Test stress: 625 N/mm² – equals 2,5 times the load capacity.

Breaking stress: 1000 N/mm² – equals 4 times load capacity.

Breaking Elongation: Min. 20%

Bending according to EN 818-2 or PAS 1061: 0,8 x nominal diameter

Admissible operating temperature

Pewag Winner 200: 200 °C max.

Pewag Winner 400: 380 °C max.
(See load capacities table for reductions in special cases.)

Quality grade stamps:

Pewag Winner 200: 100 at a spacing of approx. 300 mm till 16 mm chain (0,9 mt for diameters above 16 mm) and 10 additionally on the back of each link.

Pewag Winner 400: "8W" at a spacing of approx. 300 mm up to 16 mm chain (0,9 mt for diameters above 16 mm) and "W" on the back of each link.

Components: Stamped "10" on each.

Manufacturer's name or symbol on the chain and components:

"PW" or "pewag

Surface:

Pewag Winner 200: Shot - blasted and clear coated.

Pewag Winner 400: Blue painted, alternatively PCP – please look at our private folder.

Components: Orange powder - coated.

Welded system: Blue painted, alternatively PCP – please look at our private folder.

Winner Identification Tags

All necessary technical data is attached on the chain ID tag. For easier identification of the chain grade and quality, a separate ID tag is used.

These metal identification labels are only allowed to be used on predetermined pewag winner 200 and pewag winner 400 chain sling types.

In other words, the chain slings that are assembled are required to be completely made up of pewag winner accessories. When you use special lifting accessories on Pewag's Winner Chain Slings, metal labels can be used only when there is no change in Grade 100 lifting capacity.

Compatibility:

Pewag winner chains and components may be combined by a competent person under consideration of the manufacturer specifications with all Grade 80 components that meet the requirements of EN 818 and EN 1677. Furthermore, the pewag winner chains may be combined with all competitor chains and components that are compatible with EN 818 and EN 1677 qualified items. Please note that the products cannot be combined with items that do not comply with EN 818 or EN 1677! The maximum working load capacity of the overall system is always defined by its weakest part.

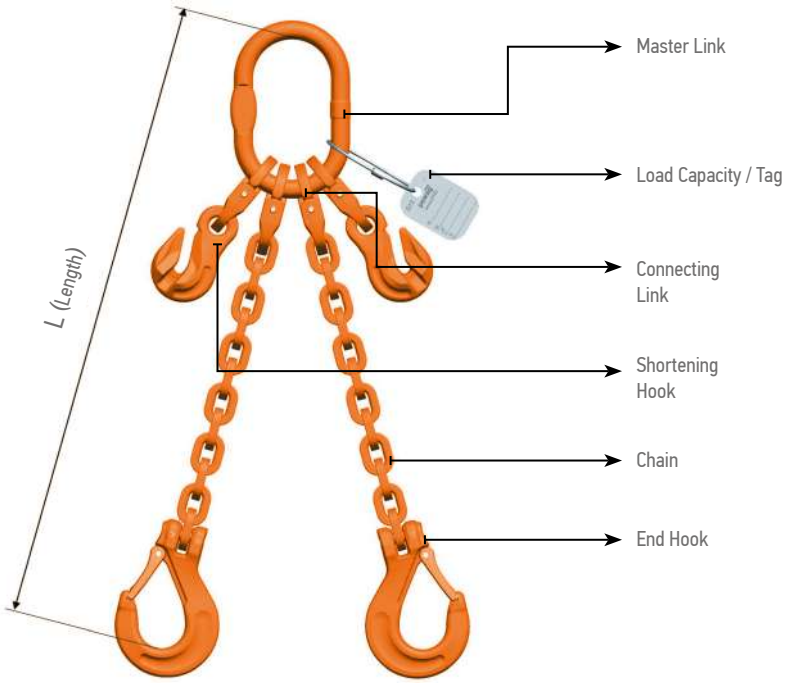
Only original pewag spare parts (e. g. pins and bolts, safety catches, etc.) may be used for pewag products, subject to inspection and approval by the competent person.

Product characteristics for stress crack corrosion are equal to those of Grade 80.

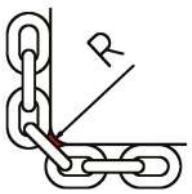
Sample Order Text:

Pewag Winner 200 13 mm 2 leg 3.500 mm with shortening device and hook.

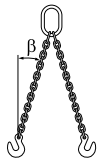
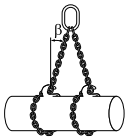
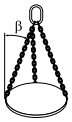
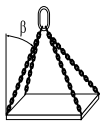
WIN 13 200	Chain dia
II	Number of legs
AW	Master link
KHSW	End hook
PW	Shortening hook
CW	Connecting link
3.500	Length (mm)



Exceptional Conditions of Use:

Temperature		-40 °C to 200 °C	200 °C to 300 °C	300 °C to 380 °C
Load Factor	Pewag Winner 200	1	Not Permitted	Not Permitted
	Pewag Winner 400	1	0,9	0,75
Edge Load		R= Larger than 2 times the chain diameter 	R= Larger than chain diameter 	R= Smaller than or equal to chain diameter 
Load Factor		1	0,7	0,5
Shock Load		Light Shocks	Moderate Shocks	Strong Shocks
Load Factor		1	0,7	Not Permitted
Please see the basic usage information for safe usage information.				

GRADE 100 - GRADE 80 CHAIN SLING COMPARISON

Safety Factor		1 Leg Chains		2 Leg Chains				3 and 4 Leg Chains		4 Leg Chains with Load Distributor		Endless Chain Sling	Single Lifting Sling		Double Lifting Sling	
4																
Angle of Inclination		-	-	0° - 45°	45° - 60°	0° - 45°	45° - 60°	0° - 45°	45° - 60°	0° - 45°	45° - 60°	-	0° - 45°	45° - 60°	0° - 45°	45° - 60°
Load Factor		1	0,8	1,4	1	1,12	0,8	2,1	1,5	2,8	2	1,6	1,4	1	2,1	1,5
Quality Class	Dia. (mm)	Load Capacity (kg)														
Grade 100	5	1.000	800	1.400	1.000	1.120	800	2.000	1.500	2.800	2.000	1.600	1.400	1.000	2.000	1.500
Grade 80	5	800	640	1.120	800	900	640	1.600	1.860	2.240	1.600	1.250	1.120	800	1.600	1.180
Grade 100	6	1.400	1.120	2.000	1.400	1.600	1.120	3.000	2.120	4.000	2.800	2.240	2.000	1.400	3.000	2.120
Grade 80	6	1.120	900	1.600	1.120	1.250	900	2.360	1.700	3.150	2.240	1.800	1.600	1.120	2.360	1.700
Grade 100	7	1.900	1.500	2.650	1.900	2.120	1.500	4.000	2.800	5.300	3.750	3.000	2.650	1.900	4.000	2.800
Grade 80	7	1.500	1.200	2.120	1.500	1.700	1.200	3.150	2.240	4.000	3.000	2.500	2.120	1.500	3.150	2.240
Grade 100	8	2.500	2.000	3.550	2.500	2.800	2.00	5.300	3.750	7.100	5.000	4.000	3.550	2.500	5.300	3.750
Grade 80	8	2.000	1.600	2.800	2.000	2.240	1.600	4.250	3.000	5.600	4.000	3.150	2.800	2.000	4.250	3.000
Grade 100	10	4.000	3.150	5.600	4.000	4.250	3.150	8.000	6.000	11.200	8.000	6.300	5.600	4.000	8.000	6.000
Grade 80	10	3.150	2.500	4.250	3.150	3.550	2.500	6.700	4.750	8.500	6.300	5.000	4.250	3.150	6.700	4.750
Grade 100	13	6.700	5.300	9.500	6.700	7.500	5.300	14.000	10.000	19.000	13.200	10.600	9.500	6.700	14.000	10.000
Grade 80	13	5.300	4.250	7.500	5.300	5.900	4.250	11.200	8.000	14.000	10.600	8.500	7.500	5.300	11.200	8.000
Grade 100	16	10.000	8.000	14.000	10.000	11.200	8.000	21.200	15.000	28.000	20.000	16.000	14.000	10.000	21.200	15.000
Grade 80	16	8.000	6.300	11.200	8.000	9.000	6.300	17.000	11.800	22.400	16.000	12.500	11.200	8.000	17.000	11.800
Grade 100	19	14.000	11.200	20.000	14.000	16.000	11.200	30.000	21.200	-	-	22.400	20.000	14.000	30.000	21.200
Grade 80	19	11.200	8.950	16.000	11.200	12.500	8.950	23.600	17.000	-	-	18.000	16.000	11.200	23.600	17.000
Grade 100	22	19.000	15.000	26.500	19.000	21.200	15.000	40.000	28.000	-	-	30.000	26.500	19.000	40.000	28.000
Grade 80	22	15.000	12.000	21.200	15.000	17.000	12.000	31.500	22.400	-	-	23.600	21.200	15.000	31.500	22.400
Grade 100	26	26.500	21.200	37.500	26.500	30.000	21.200	56.000	40.000	-	-	42.500	37.500	26.500	56.000	40.000
Grade 80	26	21.200	16.950	30.000	21.200	23.700	16.950	45.000	31.500	-	-	33.500	30.000	21.200	45.000	31.500
Grade 100	32	40.000	31.500	56.000	40.000	45.000	31.500	85.000	60.000	-	-	63.000	56.000	40.000	85.000	60.000
Grade 80	32	31.500	25.200	45.000	31.500	35.200	25.200	67.000	47.500	-	-	50.000	45.000	31.500	67.000	47.500

If the chain slings are used in severe conditions (e.g. high temperature, asymmetric load distribution, edge load, impact/shock loads), the maximum load capacity values in the table must be reduced by the load factors.

Please also note the user information on different conditions of use and their effects on the load capacity values!

Standard Chain Sling Types


I AW-HSW CONNEX


I AW-LHW CONNEX


I AW-PSW CONNEX


I AW-AW CONNEX


I PSW CONNEX

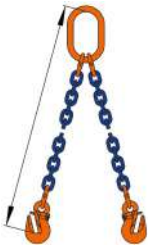

I HSW-HSW CONNEX

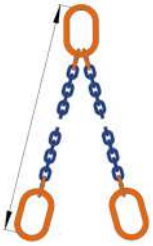

I VXKW-KLHW CONNEX


II AW-S-PW CONNEX


II AW-HSW CONNEX


II AW-LHW CONNEX


II AW-PSW CONNEX


II AW-AW CONNEX


II VXKW-HSW CONNEX


II AW-HSW-AGWW CONNEX


III VW-HSW CONNEX


III VW-LHW CONNEX


III VW-PSW CONNEX


II VW-AW CONNEX

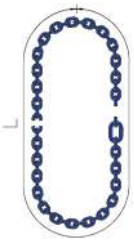

IV VXKW-HSW CONNEX

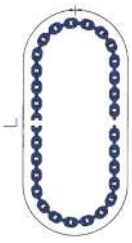

IV VW-HSW-AGWW CONNEX


IV VXKW-KLHW CONNEX


IV VXKW-KLHW CONNEX

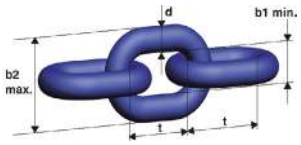

IV VXKW-KLHW CONNEX


S


SK
(up from dimension 8 mm!)


II AW-S CONNEX

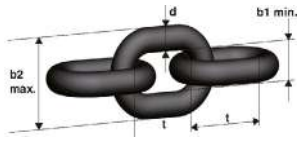

IV AW-S CONNEX



WINNER 400 LIFTING CHAINS

Code	Chain Diameter	Pitch t	Inside Width b1 Min.	Outside Width b2 Max.	Load Capacity	Breaking Force	Weight
	(mm)	(mm)	(mm)	(mm)	(ton)	(kN)	(kg/m)
WIN 5 400	5,00	16,0	7,50	18,5	1,00	39,30	0,61
WIN 6 400	6,00	18,0	8,70	22,2	1,40	56,50	0,96
WIN 7 400	7,00	21,0	9,50	25,2	1,90	77,00	1,20
WIN 8 400	8,00	24,0	10,9	28,8	2,50	101,0	1,57
WIN 10 400	10,0	30,0	13,5	36,0	4,00	157,0	2,46
WIN 13 400	13,0	39,0	17,5	46,8	6,70	265,0	4,18
WIN 16 400	16,0	48,0	21,5	57,6	10,0	402,0	6,28
WIN 19 400	19,0	57,0	26,6	69,4	14,0	567,0	8,92
WIN 22 400	22,0	66,0	29,5	79,2	19,0	760,0	11,9
WIN 26 400	26,0	78,0	35,0	94,0	26,5	1.060	16,2
WIN 32 400	32,0	96,0	43,2	115	40,0	1.610	24,1

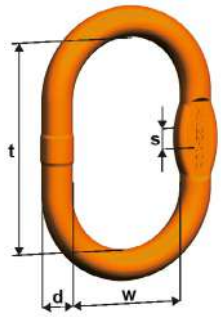
Chain is painted blue, optionally, tried and tested corrosive coating for maximum corrosion resistance can also be supplied with PCP.



WINNER 200 LIFTING CHAINS

Code	Chain Diameter	Pitch t	Inside Width b1 Min.	Outside Width b2 Max.	Load Capacity	Outside Width b2 Max.	Weight
	(mm)	(mm)	(mm)	(mm)	(ton)	(kN)	(kg/m)
WIN 5 200	5,00	16,0	7,50	18,5	1,00	39,30	0,61
WIN 6 200	6,00	18,0	8,70	21,6	1,40	56,50	0,96
WIN 7 200	7,00	21,0	9,50	25,2	1,90	77,00	1,20
WIN 8 200	8,00	24,0	10,9	28,8	2,50	101,0	1,57
WIN 10 200	10,0	30,0	13,5	37,0	4,00	157,0	2,46
WIN 13 200	13,0	39,0	17,5	46,8	6,70	265,0	4,18
WIN 16 200	16,0	48,0	21,5	57,6	10,0	402,0	6,28
WIN 19 200	19,0	57,0	26,6	69,4	14,0	567,0	8,92
WIN 22 200	22,0	66,0	29,5	79,2	19,0	760,0	11,9
WIN 26 200	26,0	78,0	35,0	94,0	26,5	1.060	16,2
WIN 32 200	32,0	96,0	43,2	115	40,0	1.610	24,1

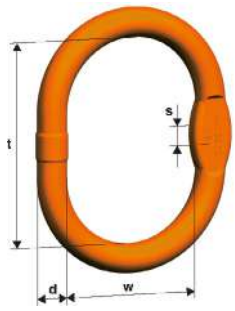
Chain is not coated, optionally, tried and tested corrosive coating for maximum corrosion resistance can also be supplied with PCP.



MASTER LINK - AW

Code	Load Capacity 0° - 45°	Can Be Used Up to Single Hook Acc. to DIN 15401	d	t	w	s	For 1 Leg Chain Slings	For 2 Leg Chain Slings	Weight
	(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
AW 10	1,40	1.6	10,0	10,0	50,0	10,0	5	5	0,14
AW 13	2,30	2.5	13,0	13,0	60,0	10,0	6+7	6	0,34
AW 16	3,50	2.5	16,0	16,0	60,0	14,0	8	7	0,53
AW 18	5,00	5	19,0	19,0	75,0	14,0	10	8	0,92
AW 22	7,60	6	23,0	23,0	90,0	17,0	13	10	1,60
AW 26	10,0	8	27,0	27,0	100	20,0	16	13	2,46
AW 32	14,0	10	33,0	33,0	110	26,0	19	16	4,14
AW 36	25,1	16	36,0	36,0	140	29,0	22	19	6,22
AW 45	30,8	25	45,0	45,0	180	-	26	22	12,8
AW 50	40,0	32	50,0	50,0	190	43,0	32	26	16,6
AW 56	64,0	32	56,0	56,0	200	-	-	32	27,0
AW 72	85,0	50	70,0	70,0	250	-	-	-	45,3

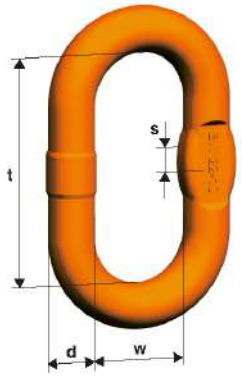
For chain sling load capacities, please refer to the “pewag winner load capacity tables.



ENLARGED MASTER LINK - MW

Code	Load Capacity 0° - 45°	Can Be Used Up to Single Hook Acc. to DIN 15401	d	t	w	s	For 1 Leg Chain Slings	For 2 Leg Chain Slings	Weight
	(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
MW 10	1,40	2.5	11,0	90,0	65,0	10,0	5	5	0,22
MW 13	2,30	4	14,0	120	70,0	10,0	6 - 7	6	0,44
MW 16	3,20	5	16,0	140	80,0	13,0	8	7	0,71
MW 18	4,20	6	19,0	160	95,0	14,0	10	8	1,09
MW 22	6,70	10	23,0	170	105	17,0	13	10	1,74
MW 26	10,1	10	27,0	190	110	20,0	16	13	2,70
MW 32	16,0	12	33,0	230	130	26,0	19	16	4,78
MW 36	21,2	20	38,0	275	150	29,0	22	19	7,48
MW 56	40,0	50	56,0	350	250	46,0	32	26	22,0
SAW 32	10,0	50	33,0	540	250	26,0	-	-	9,30
SAW 45	22,5	50	45,0	540	250	39,0	-	-	18,7
SAW 60	31,5	100	60,0	800	300	55,0	-	-	48,0

For chain sling load capacities, please refer to the “Pewag Winner load capacity tables”.

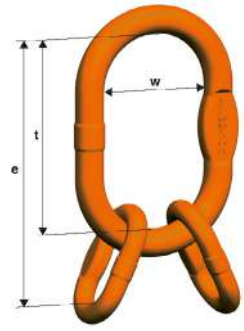


TRANSITION LINK - BW

Code	Load Capacity 0° - 45°	d	t	w	s	Transition Link for 1 and 2 Leg Chains BW I/II
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)
BW 7	1,00	7,00	36,0	16,0	7,00	5
BW 8 [1)]	1,40	8,00	36,0	16,0	-	6
BW 9	1,90	9,00	44,0	20,0	-	7
BW 10	2,50	10,0	44,0	20,0	-	8
BW 13	4,00	13,0	54,0	25,0	10,0	10
BW 16	6,70	17,0	70,0	34,0	14,0	13
BW 20	10,0	20,0	85,0	40,0	14,0	16
BW 22	12,5	23,0	115	50,0	17,0	-
BW 23 [1)]	14,0	23,0	115	45,0	17,0	19
BW 26	16,2	27,0	140	65,0	20,0	-
BW 27 [1)]	19,0	27,0	140	55,0	20,0	22
BW 32	26,5	33,0	150	70,0	26,0	26
BW 36	31,0	36,0	170	75,0	-	-
BW 40	40,4	40,0	170	80,0	-	32
BW 45 [1)]	42,4	45,0	170	80,0	-	-
BW 50	64,0	50,0	200	100	-	-

[1)] Only in welded systems.

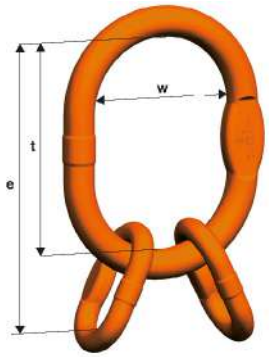
For chain sling load capacities, please refer to the “Pewag Winner load capacity tables”.



MASTER LINK - VW

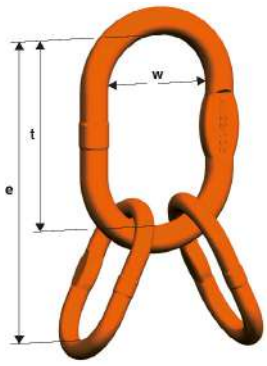
Code	Consist of	Load Capacity 0° - 45°	Can Be Used Up to Single Hook Acc. to DIN 15401	e	t	w	Weight
		(ton)	(Nr.)	(mm)	(mm)	(mm)	(kg/pc.)
VW 5	AW 13 + 2 BW 10	2,30	2.5	154	110	60,0	0,52
VW 6	AW 18 + 2 BW 13	4,20	5	189	135	75,0	1,30
VW 7/8	AW 22 + 2 BW 16	7,60	6	230	160	90,0	2,32
VW 10	AW 26 + 2 BW 20	9,60	8	265	180	100	3,82
VW 13	AW 32 + 2 BW 22	14,0	10	315	200	110	6,46
VW 16	AW 36 + 2 BW 26	21,2	16	400	260	140	10,1
VW 19/20	AW 50 + 2 BW 32	34,1	32	500	350	190	22,6
VW 22	AW 50 + 2 BW 36	40,0	32	520	350	190	24,5
VW 26	AW 56 + 2 BW 45	56,0	32	570	400	200	37,6
VW 32	AW 72 + 2 BW 50	85,0	50	660	460	250	66,6

For chain sling load capacities, please refer to the “Pewag Winner load capacity tables”.



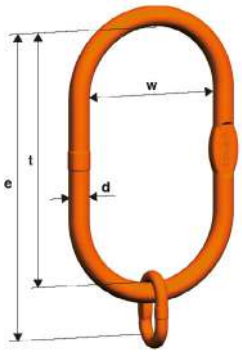
ENLARGED MASTER LINK - VMW

Code	Consist of	Load Capacity 0° - 45°	Can Be Used Up to Single Hook Acc. to DIN 15401	e	t	w	Weight
		(ton)	(Nr.)	(mm)	(mm)	(mm)	(kg/pc.)
VMW 6	MW 18 + 2 BW 13	4,20	6	214	160	95,0	1,43
VMW 7/8	MW 22 + 2 BW 16	6,60	10	240	170	105	2,46
VMW 10	MW 26 + 2 BW 20	10,1	10	275	190	110	4,01
VMW 13	MW 32 + 2 BW 22	15,7	12	345	230	130	7,10
VMW 16	MW 36 + 2 BW 26	21,2	20	415	275	150	11,3
VMW 19/20	MW 56 + 2 BW 32	34,1	50	500	350	250	28,3
VMW 22	MW 56 + 2 BW 36	40,0	50	520	350	250	30,2
VW 22	AW 50 + 2 BW 36	40,0	32	520	350	190	24,5
VW 26	AW 56 + 2 BW 45	56,0	32	570	400	200	37,6
VW 32	AW 72 + 2 BW 50	85,0	50	660	460	250	66,6
For chain sling load capacities, please refer to the “Pewag Winner load capacity tables”.							



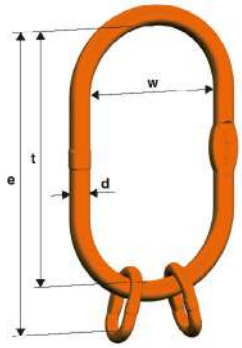
SPECIAL MASTER LINK - VAW

Code	Consist of	Load Capacity 0° - 45°	Can Be Used Up to Single Hook Acc. to DIN 15401	e	t	w	Weight
		(ton)	(Nr.)	(mm)	(mm)	(mm)	(kg/pc.)
VAW 6/7	AW 18 + 2 AW 14	5,00	5	245	135	75,0	1,72
VAW 8	AW 22 + 2 AW 16	6,30	6	270	160	90,0	2,66
VAW 10	AW 26 + 2 AW 18	9,50	8	315	180	100	4,30
VAW 13	AW 32 + 2 AW 26	16,1	10	380	200	110	9,06
VAW 16	AW 36 + 2 AW 32	25,1	16	460	260	140	14,5
VAW 19/20	AW 50 + 2 MW 36	41,1	32	625	350	190	31,5
VAW 22	AW 50 + 2 AW 45	47,4	32	690	350	190	42,2
VAW 26	AW 56 + 2 AW 50	58,0	32	750	400	200	56,4
VAW 32	AW 72 + 2 AW 56	85,0	50	860	460	250	99,0
For chain sling load capacities, please refer to the “Pewag Winner load capacity tables”.							



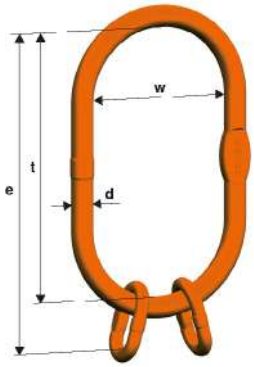
OVERSIZE MASTER LINK - VLW 1

Code	Consists of	Load Capacity	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
		(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VLW 1-6/7/8	LW 22 + BW 13	2,50	25	394	23,0	340	180	3,37
VLW 1-10	LW 27 + BW 16	4,00	25	410	27,0	340	180	4,76
VLW 1-13	LW 27	6,70	25	340	27,0	340	180	4,40
VLW 1-16	LW 32	10,0	25	340	33,0	340	180	6,70
VLW 1-19/22	LW 40	19,0	25	340	40,0	340	180	10,0



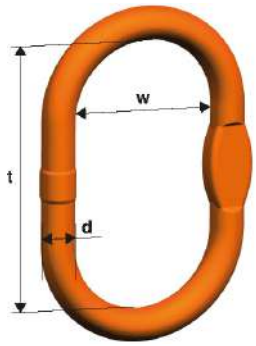
OVERSIZE MASTER LINK - VLW 2/4

Code	Consists of	Load Capacity 0° - 45°	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
		(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VLW 2-6/7/8/4-6	LW 22 + 2 BW 13	3,55	25	394	23,0	340	180	3,54
VLW 2-10/4-7/8	LW 27 + 2 BW 16	5,60	25	410	27,0	340	180	5,12
VLW 2-13/4-10	LW 32 + 2 BW 20	9,50	25	425	33,0	340	180	7,81
VLW 2-16/4-13	LW 40 + 2 BW 22	14,0	25	455	40,0	340	180	12,3
VLW 2-19/4-16	LW 40 + 2 BW 26	21,2	25	480	40,0	340	180	13,8



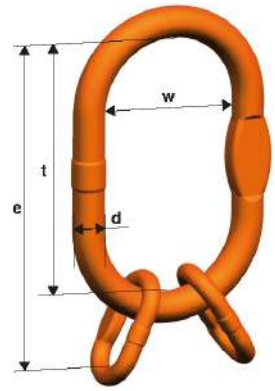
OVERSIZE MASTER LINK - VSW 2/4

Code	Consists of	Load Capacity 0° - 45°	Can be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	s	Weight
		(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VSW 2-10 & 4-8	SW 30 + 2 BW 20	5,60	40	515	30,0	430	220	24,0	8,16
VSW 2-13 & 4-10	SW 33 + 2 BW 20	9,50	40	515	33,0	430	220	26,0	9,66
VSW 2-16 & 4-13	SW 36 + 2 BW 22	14,0	40	545	36,0	430	220	29,0	12,3
VSW 2-19/20 & 4-16	SW 45 + 2 BW 26	21,2	40	570	45,0	430	220	-	19,5



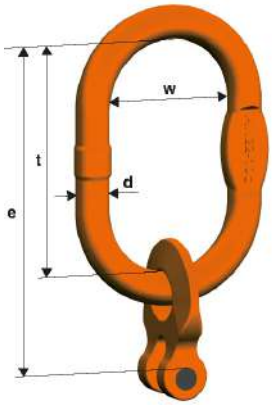
MASTER LINK - VSAW 1

Code	Consists of	Load Capacity	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
		(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VSAW 1-10/13	SAW 32 + BW 20	10,0	50	585	33,0	500	250	10,0
VSAW 1-16	SAW 32	10,0	50	500	33,0	500	250	11,3
VSAW 1-19	SAW 40	16,0	50	460	40,0	460	250	13,1
VSAW 1-22	SAW 45	22,4	50	500	45,0	500	250	17,8
VSAW 1-26	SAW 50	33,6	50	460	50,0	460	250	21,0
VSAW 1-32	SAW 56	40,0	50	460	56,0	460	250	26,7
VSAW 1-32/320	SAW 60	40,0	100	800	60,0	800	320	48,0



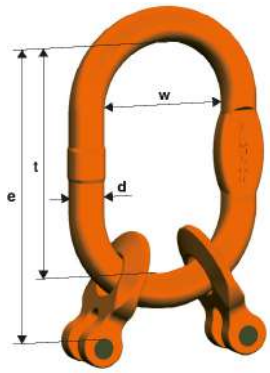
MASTER LINK - VSAW 2

Code	Consists of	Load Capacity 0° - 45°	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
		(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VSAW 2-10/13 & 4-10	SAW 32 + 2 BW 20	9,50	50	585	33,0	500	250	10,7
VSAW 2-16 & 4-13	SAW 40 + 2 BW 22	14,0	50	575	40,0	460	250	15,4
VSAW 2-19/20 & 4-16	SAW 45 + 2 BW 26	21,2	50	640	45,0	500	250	21,6
VSAW 2-22 & 4-19/20	SAW 50 + 2 BW 32	30,0	50	610	50,0	460	250	27,3
VSAW 2-26 & 4-22	SAW 56 + 2 BW 32	40,0	50	610	56,0	460	250	34,9
VSAW 2-26 & 4-22/30	SAW 60 + 2 BW 32	40,0	100	950	60,0	800	320	56,2
VSAW 1-32/320	SAW 60	40,0	100	800	60,0	800	320	48,0



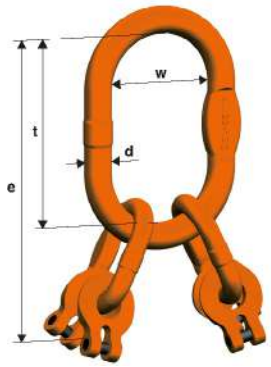
CLEVIS MASTER SET - KAGW 1

Code	Load Capacity	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KAGW 1-6	1,40	6,00	2.5	141	13,0	110	60,0	0,48
KAGW 1-7	1,90	7,00	2.5	153	13,0	110	60,0	0,58
KAGW 1-8	2,50	8,00	2.5	153	16,0	110	60,0	0,77
KAGW 1-10	4,00	10,0	5	186	19,0	135	75,0	1,34
KAGW 1-13	6,70	13,0	6	223	23,0	160	90,0	2,44
KAGW 1-16	10,0	16,0	8	254	27,0	180	100	3,95
KAGW 1-19/20	14,0	19,0	10	294	33,0	200	110	7,41
KAGW 1-22	19,0	22,0	16	362	36,0	260	140	11,1



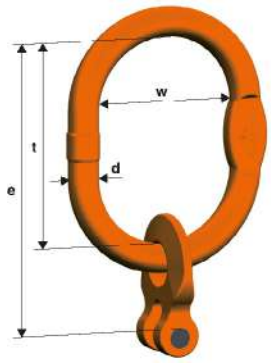
CLEVIS MASTER SET - KAGW 2

Code	Load Capacity 0° - 45°	Load Capacity 45° - 60°	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KAGW 2-6	2,00	1,40	6,00	2.5	141	13,0	110	60,0	0,59
KAGW 2-7	2,65	1,90	7,00	2.5	153	16,0	110	60,0	0,97
KAGW 2-8	3,55	2,50	8,00	5	178	19,0	135	75,0	1,38
KAGW 2-10	5,60	4,00	10,0	6	211	23,0	160	90,0	2,40
KAGW 2-13	9,50	6,70	13,0	8	243	27,0	180	100	4,13
KAGW 2-16	14,0	10,0	16,0	10	274	33,0	200	110	6,97
KAGW 2-19/20	20,0	14,0	19,0	16	354	36,0	260	140	11,8
KAGW 2-22	26,5	19,0	22,0	25	442	45,0	340	180	21,5



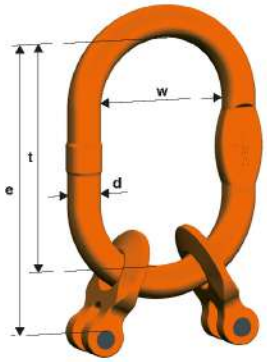
CLEVIS MASTER SET - KAGW 4

Code	Load Capacity 0° - 45°	Load Capacity 45° - 60°	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KAGW 4-6	3,00	2,12	6,00	5	220	19,0	135	75,0	1,77
KAGW 4-7	4,00	2,80	7,00	6	273	23,0	160	90,0	3,21
KAGW 4-8	5,30	3,75	8,00	6	273	23,0	160	90,0	3,22
KAGW 4-10	8,00	6,00	10,0	8	316	27,0	180	100	5,36
KAGW 4-13	14,0	10,0	13,0	10	378	33,0	200	110	10,5
KAGW 4-16	21,2	15,0	16,0	16	474	36,0	260	140	16,4
KAGW 4-19/20	30,0	21,2	19,0	32	594	50,0	350	190	32,9
KAGW 4-22	40,0	28,0	22,0	32	622	50,0	350	190	41,1



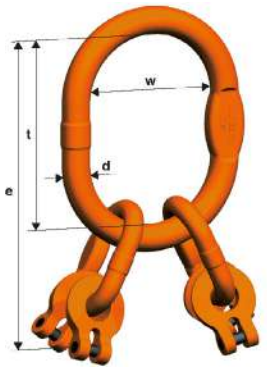
ENLARGED CLEVIS MASTER SET - KMGW 1

Code	Load Capacity	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KMGW 1-6	1,40	6,00	4	151	14,0	120	70,0	0,63
KMGW 1-8	2,50	8,00	5	183	16,0	140	80,0	0,91
KMGW 1-10	4,00	10,0	6	211	19,0	160	95,0	1,53
KMGW 1-13	6,70	13,0	10	233	23,0	170	105	2,58
KMGW 1-16	10,0	16,0	10	264	27,0	190	110	4,14



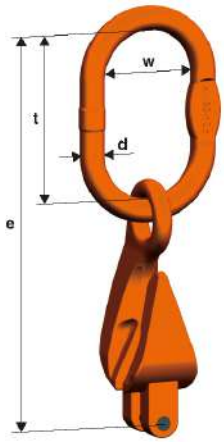
ENLARGED CLEVIS MASTER SET - KMGW 2

Code	Load Capacity 0° - 45°	Load Capacity 45° - 60°	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KMGW 2-6	2,00	1,40	6,00	4	151	14,0	120	70,0	0,69
KMGW 2-8	3,55	2,50	8,00	6	203	19,0	160	95,0	1,58
KMGW 2-10	5,60	4,00	10,0	10	221	23,0	170	105	2,54
KMGW 2-13	9,50	6,70	13,0	10	253	27,0	190	110	4,32
KMGW 2-16	14,0	10,0	16,0	12	304	33,0	230	130	8,47



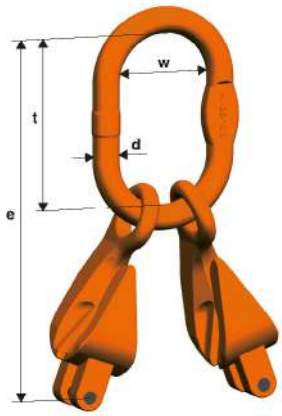
ENLARGED CLEVIS MASTER SET - KMGW 4

Code	Load Capacity 0° - 45°	Load Capacity 45° - 60°	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KMGW 4-6	3,00	2,12	6,00	6	245	19,0	160,0	95,0	1,94
KMGW 4-8	5,30	3,75	8,00	10	283	23,0	170	105	3,36
KMGW 4-10	8,00	6,00	10,0	10	326	27,0	190	110	5,55
KMGW 4-13	14,0	10,0	13,0	12	408	33,0	230	130	11,2
KMGW 4-16	21,2	15,0	16,0	20	489	38,0	275	150	17,7



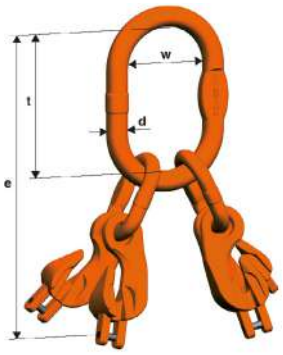
CLEVIS MASTER SET - VXKW 1

Code	Load Capacity	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VXKW 1-5	1,00	5,00	1.6	164	10,0	80,0	50,0	0,38
VXKW 1-6	1,40	6,00	2.5	194	13,0	110	60,0	0,58
VXKW 1-7	1,90	7,00	2.5	232	13,0	110	60,0	1,00
VXKW 1-8	2,50	8,00	2.5	232	16,0	110	60,0	1,21
VXKW 1-10	4,00	10,0	5	294	19,0	135	75,0	2,27
VXKW 1-13	6,70	13,0	6	363	23,0	160	90,0	4,50
VXKW 1-16	10,0	16,0	8	413	27,0	180	100	7,38



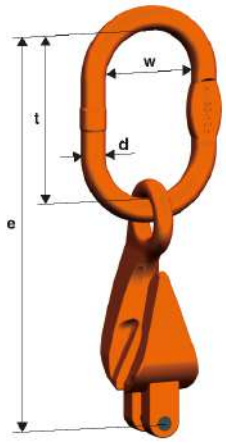
CLEVIS MASTER SET - VXKW 2

Code	Load Capacity 0° - 45°	Load Capacity 45° - 60°	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VXKW 2-5	1,40	1,00	5,00	1.6	164	10,0	80,0	50,0	0,59
VXKW 2-6	2,00	1,40	6,00	2.5	194	13,0	110	60,0	0,79
VXKW 2-7	2,65	1,90	7,00	2.5	232	16,0	110	60,0	1,87
VXKW 2-8	3,55	2,50	8,00	5	257	19,0	135	75,0	2,29
VXKW 2-10	5,60	4,00	10,0	6	319	23,0	160	90,0	4,30
VXKW 2-13	9,50	6,70	13,0	8	383	27,0	180	100	7,98
VXKW 2-16	14,0	10,0	16,0	10	433	33,0	200	110	14,0



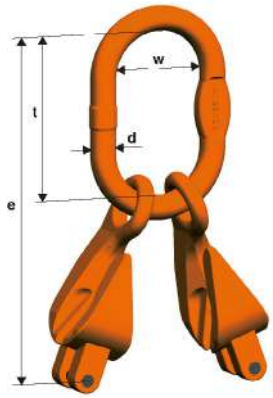
CLEVIS MASTER SET - VXKW 4

Code	Load Capacity 0° - 45°	Load Capacity 45° - 60°	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VXKW 4-5	2,00	1,50	5,00	2.5	238	13,0	110	60,0	1,43
VXKW 4-6	3,00	2,12	6,00	5	273	19,0	135	75,0	2,17
VXKW 4-7	4,00	2,80	7,00	6	352	23,0	160	90,0	4,99
VXKW 4-8	5,30	3,75	8,00	6	352	23,0	160	90,0	5,05
VXKW 4-10	8,00	6,00	10,0	8	424	27,0	180	100	8,88
VXKW 4-13	14,0	10,0	13,0	10	518	33,0	200	110	17,5
VXKW 4-16	21,2	15,0	16,0	16	633	36,0	260	140	29,7



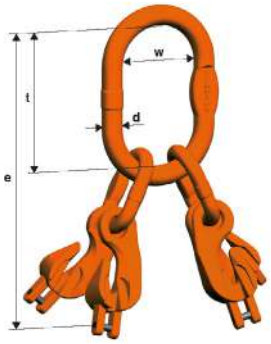
CLEVIS MASTER SET - VMXKW 1

Code	Load Capacity	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VMXKW 1-6	1,40	6,00	4	204	14,0	120	70,0	0,74
VMXKW 1-7	1,90	7,00	4	242	14,0	120	70,0	1,06
VMXKW 1-8	2,50	8,00	5	262	16,0	140	80,0	1,30
VMXKW 1-10	4,00	10,0	6	319	19,0	160	95,0	2,34
VMXKW 1-13	6,70	13,0	10	373	23,0	170	105	4,39
VMXKW 1-16	10,0	16,0	10	424	27,0	190	110	7,45



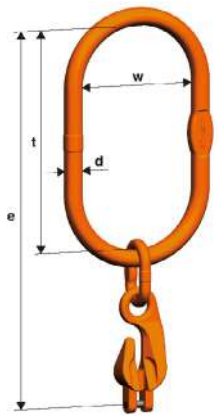
CLEVIS MASTER SET - VMXKW 2

Code	Load Capacity 0° - 45°	Load Capacity 45° - 60°	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VMXKW 2-6	2,00	1,40	6,00	4	204	14,0	120	70,0	1,04
VMXKW 2-7	2,65	1,90	7,00	5	262	16,0	140	80,0	1,91
VMXKW 2-8	3,55	2,50	8,00	6	282	19,0	160	95,0	2,35
VMXKW 2-10	5,60	4,00	10,0	10	329	23,0	170	105	4,19
VMXKW 2-13	9,50	6,70	13,0	10	393	27,0	190	110	8,05
VMXKW 2-16	14,0	10,0	16,0	12	464	33,0	230	130	14,4



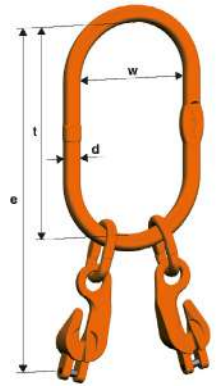
CLEVIS MASTER SET - VMXKW 4

Code	Load Capacity 0° - 45°	Load Capacity 45° - 60°	Chain Diameter	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(ton)	(mm)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VMXKW 4-6	3,00	2,12	6,00	6	298	19,0	160	95,0	2,63
VMXKW 4-7	4,00	2,80	7,00	10	362	23,0	170	105	4,84
VMXKW 4-8	5,30	3,75	8,00	10	362	23,0	170	105	4,93
VMXKW 4-10	8,00	6,00	10,0	10	434	27,0	190	110	9,01
VMXKW 4-13	14,0	10,0	13,0	12	548	33,0	230	130	17,9
VMXKW 4-16	21,2	15,0	16,0	20	649	38,0	275	150	30,5



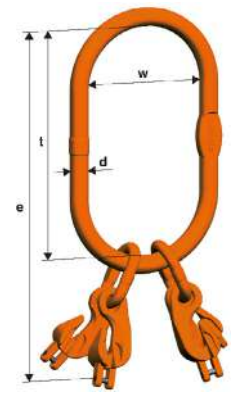
OVERSIZE CLEVIS MASTER - LXKW 1

Code	Load Capacity	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
LXKW 1-6	1,40	25	478	23,0	340	180	3,72
LXKW 1-8	2,50	25	516	23,0	340	180	4,03
LXKW 1-10	4,00	25	569	27,0	340	180	6,05
LXKW 1-13	6,70	25	629	27,0	340	180	8,82
LXKW 1-16	10,0	25	688	33,0	340	180	13,5



OVERSIZE CLEVIS MASTER - LXKW 2

Code	Load Capacity 0° - 45°	Load Capacity 45° - 60°	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
LXKW 2-6	2,00	1,40	25	478	23,0	340	180	3,97
LXKW 2-8	3,55	2,50	25	516	23,0	340	180	4,84
LXKW 2-10	5,60	4,00	25	569	27,0	340	180	7,69
LXKW 2-13	9,50	6,70	25	629	33,0	340	180	14,3
LXKW 2-16	14,0	10,0	25	688	40,0	340	180	23,2



OVERSIZE CLEVIS MASTER - LXKW 4

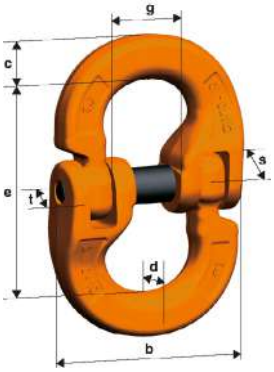
Code	Load Capacity 0° - 45°	Load Capacity 45° - 60°	Can Be Used Up to Single Hook Acc. to DIN 15401	e	d	t	w	Weight
	(ton)	(ton)	(Nr.)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
LXKW 4-6	3,00	2,12	25	478	23,0	340	180	4,38
LXKW 4-8	5,30	3,75	25	532	27,0	340	180	7,71
LXKW 4-10	8,00	6,00	25	584	33,0	340	180	12,9
LXKW 4-13	14,0	10,0	25	659	40,0	340	180	24,4
LXKW 4-16	21,2	15,0	25	713	40,0	340	180	34,5

FOR SIMPLE HOOKS ACC. TO DIN 15401 TRANSITION ASSEMBLIES - ÜW

Code	Single Hook DIN 15401	Load Capacity	Comprising of	Weight
	(Nr.)	(ton)	(mm)	(kg/pc.)
ÜW 32/16 I AW-HSW Connex	32	4,00	AW 50+CW 26+HSW 19/20	11,8
ÜW 32/19 I AW-HSW Connex	32	6,70	AW 50+CW 26+HSW 22	12,9
ÜW 32/26,5 I AW-HSW Connex	32	10,0	AW 50+CW 26+HSW 26	14,2
ÜW 50/4 I VSAW-HSW Connex	50	16,0	AW 1-16+CW 16+HSW 10	29,1
ÜW 50/6,7 I VSAW-HS Connex	50	19,0	VSAW 1-16+CW 16+HSW 13	31,3
ÜW 50/10 I VSAW-HSW Connex	50	26,5	VSAW 1-16+CW 16+HSW 16	36,7
ÜW 50/16 I VSAW-HSW Connex	50	16,0	VSAW 1-22+CW 22+HSW 19/20	27,8
ÜW 50/19 I VSAW-HSW Connex	50	19,0	VSAW 1-22+CW 22+HSW 22	30,0
ÜW 50/26,5 I VSAW-HW Connex	50	26,5	VSAW 1-26+CW 26+HSW 26	41,1
ÜW 50/40 I AW-HSW Connex	50	40,0	AW 72+CW 32+HSW 32	83,7
ÜW 100/26,5 I VSAW-SW Connex	100	26,5	VSAW 1-32/320+CW 26+HSW 26	68,1
ÜW 100/40 I VSAW-HS Connex	100	40,0	VSAW 1-32/320+CW 32+HSW 32	86,7

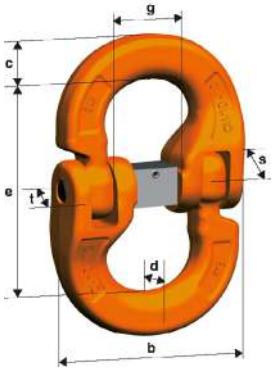
FOR DOUBLE HOOKS ACC. TO DIN 15402 TRANSITION LINK - ÜW

Code	Double Hook DIN 15401	Load Capacity	Comprising of	Weight
	(Nr.)	(ton)	(mm)	(kg/pc.)
ÜW 50/4 II VSAW-HSW Connex	50	4,00	2xVSAW 1-16+AW36+CW16+HSW10	28,1
ÜW 50/6,7 II VSAW-HW Connex	50	6,70	2xVSAW 1-16+AW36/CW16+HSW13	29,3
ÜW 50/10 II VSAW- HW Connex	50	10,0	2xVSAW 1-16+AW36+CW16+HSW16	30,6
ÜW 50/16 II VSAW-HS Connex	50	16,0	2xVSAW 1-16+AW36+CW19/20 +HSW19/20	33,1
ÜW 50/19 II VSAW-HS Connex	50	19,0	2xVSAW 1-22+AW50+CW26+HSW22	67,1
ÜW 50/26,5 II VSAW-SW Connex	50	26,5	2xVSAW 1-22+AW50+CW26+HSW26	73,4
ÜW 50/36 II VSAW-HS Connex	50	36,0	2xVSAW 1-22+AW50+CW32+HSW32	91,8
ÜW 100/26,5 II VSAWHSW Connex	100	26,5	2xVSAW 1-32/320+AW50 +CW26+HSW26	133,4
ÜW 100/40 II VSAW-HW Connex	100	40,0	2xVSAW 1-32/320+AW50+CW32 +HSW32	151,8



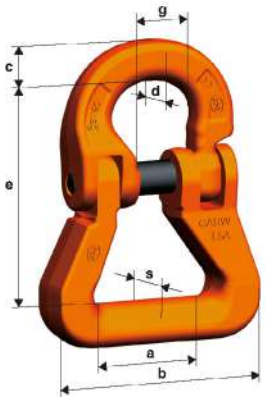
CONNEX CONNECTING LINK - CW

Code	Load Capacity	e	c	s	t	d	b	g	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
CW 5	1,00	38,0	7,00	9,00	12,0	7,00	34,0	13,0	0,06
CW 6	1,40	44,0	8,00	11,0	13,0	8,00	39,0	14,0	0,08
CW 7	1,90	53,0	10,00	13,0	16,0	9,00	46,0	17,0	0,14
CW 8	2,50	62,0	12,0	14,0	20,0	10,0	55,0	19,0	0,24
CW 10	4,00	72,0	15,0	18,0	22,0	13,0	64,0	24,0	0,42
CW 13	6,70	88,0	20,0	22,0	26,0	17,0	79,0	28,0	0,85
CW 16	10,0	112	24,0	29,0	35,0	20,0	105	34,0	1,90
CW 19/20	16,0	126	32,0	35,0	45,0	25,0	126	44,0	3,10
CW 22	19,0	157	36,0	39,0	46,0	26,0	148	52,0	4,60
CW 26	26,5	179	40,0	46,0	57,0	30,0	175	62,0	6,80
CW 32	40,0	206	47,0	56,0	63,0	35,0	216	80,0	11,4



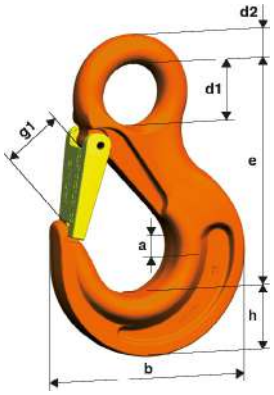
CONNEX CONNECTING LINK - CLW

Code	Load Capacity	e	c	s	t	d	b	g	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
CLW 7	1,90	53,0	10,0	13,0	16,0	9,00	46,0	17,0	0,14
CLW 10	4,00	72,0	15,0	18,0	22,0	13,0	64,0	24,0	0,43
CLW 13	6,70	88,0	20,0	22,0	26,0	17,0	79,0	28,0	0,85
CLW 16	10,0	112	24,0	29,0	35,0	20,0	105	34,0	1,90



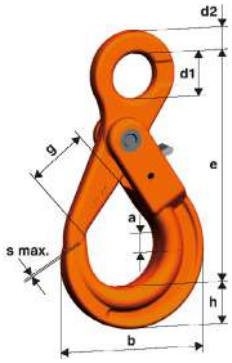
ROUND SLING CONNECTING LINK - CARW

Code	Load Capacity	e	a	c	d	b	s	g	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
CARW 8	2,50	66,0	29,0	12,0	10,0	68,0	18,0	19,0	0,33
CARW 10	4,00	81,0	40,0	15,0	13,0	82,0	21,0	24,0	0,71
CARW 13	6,70	104	44,0	20,0	17,0	101	28,0	28,0	1,34
CARW 16	10,0	113	47,0	24,0	20,0	110	40,0	34,0	1,83
CARW 22	19,0	190	110	36,0	25,0	215	58,0	52,0	7,98



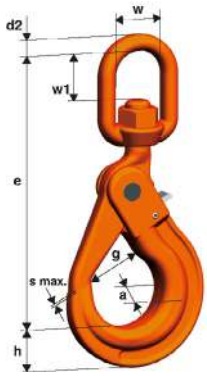
EYE SLING HOOK - HSW

Code	Load Capacity	e	h	a	d1	d2	g1	b	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
HSW 5/6	1,40	85,0	21,0	17,0	20,0	10,0	19,0	68,0	0,30
HSW 7/8	2,50	106	27,0	19,0	25,0	11,0	26,0	88,0	0,57
HSW 10	4,00	131	33,0	26,0	34,0	16,0	31,0	109	1,25
HSW 13	6,70	164	44,0	33,0	43,0	19,0	39,0	134	1,86
HSW 16	10,0	183	50,0	40,0	50,0	25,0	45,0	155	3,86
HSW 19/20	16,0	205	55,0	48,0	55,0	27,0	53,0	178	6,01
HSW 22	19,0	225	62,0	50,0	60,0	29,0	62,0	196	8,19
HSW 26	26,5	259	75,0	70,0	70,0	37,0	73,0	235	13,4
HSW 32	40,0	299	97,0	82,0	66,0	45,0	87,0	291	27,9



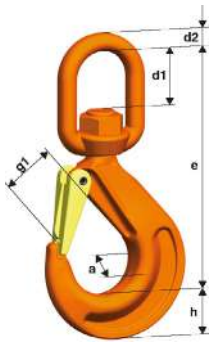
SAFETY HOOK - LHW

Code	Load Capacity	e	h	a	b	d1	d2	g	s Max.	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
LHW 5/6	1,40	110	20,0	17,0	71,0	21,0	11,0	28,0	1,00	0,53
LHW 7/8	2,50	136	26,0	20,0	88,0	25,0	12,0	34,0	1,00	0,92
LHW 10	4,00	169	30,0	29,0	107	35,0	15,0	45,0	1,00	1,57
LHW 13	6,70	205	40,0	35,0	138	40,0	20,0	52,0	1,50	3,19
LHW 16	10,0	251	50,0	41,0	168	50,0	27,0	60,0	2,00	6,24
LHW 19/20	16,0	290	62,0	50,0	194	60,0	30,0	70,0	2,00	9,75
LHW 22	19,0	322	65,0	52,0	211	70,0	32,0	81,0	2,00	12,5
LHW 26	26,5	383	79,0	61,0	253	82,0	42,0	100	2,00	20,0



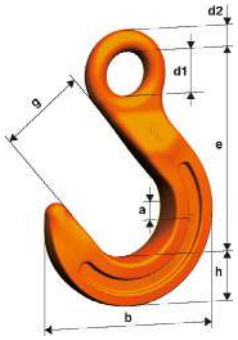
SWIVEL SAFETY HOOK - WLHW

Code	Load Capacity	e	h	a	w	w1	d2	g	s Max.	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
WLHW 5/6	1,40	161	20,0	17,0	35,0	36,0	12,0	28,0	1,00	1,20
WLHW 7/8	2,50	182	26,0	20,0	35,0	36,0	12,0	34,0	1,00	1,54
WLHW 10	4,00	218	30,0	29,0	42,0	41,0	16,0	45,0	1,00	2,14
WLHW 13	6,70	269	40,0	35,0	49,0	47,0	20,0	52,0	1,50	4,42
WLHW 16	10,0	319	50,0	41,0	60,0	60,0	24,0	60,0	2,00	7,34
You can use WLHBW hook above 120°C.										



SWIVEL HOOK - WSBW

Code	Load Capacity	e	h	a	d1	d2	g1	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
WSBW 7/8	2,50	154	28,0	19,0	37,0	12,0	26,0	1,24
WSBW 10	4,00	183	33,0	25,0	41,0	16,0	30,0	1,84
WSBW 13	6,70	221	40,0	30,0	47,0	20,0	38,0	3,45
WLHBW 13	6,70	269	40,0	35,0	49,0	47,0	20,0	52,0
WLHBW 16	10,0	319	50,0	41,0	60,0	60,0	24,0	60,0

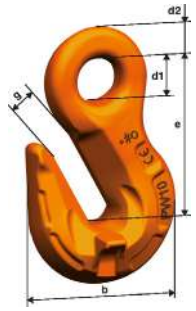


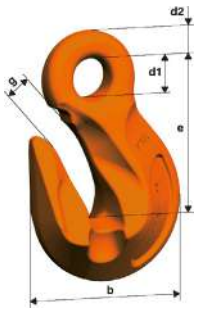
FOUNDRY HOOK - FW

Code	Load Capacity	e	h	a	d1	d2	g	b	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
FW 7/8	2,50	131	29,0	25,0	24,0	11,0	64,0	118	0,94
FW 10	4,00	158	35,0	32,0	31,0	14,0	76,0	143	1,62
FW 13	6,70	190	42,0	40,0	39,0	17,0	89,0	170	3,24
FW 16	10,0	224	50,0	46,0	47,0	22,0	102	200	5,65
FW 19/20	16,0	260	61,0	54,0	56,0	28,0	114	231	9,50
F 22 [1]	15,0	265	70,0	61,0	47,0	30,0	127	260	9,31
F 26 [2]	21,2	305	80,0	72,0	54,0	34,0	136	280	19,2
F 32 [1]	31,5	327	93,0	83,0	60,0	37,0	152	336	28,0

[1] Grade 80

[2] Not suitable for assembly with Unilock (Grade 80).





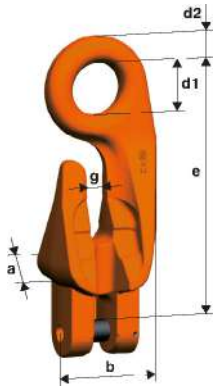
GRAB HOOK - PW

Code	Load Capacity	e	b	d1	d2	g	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
PW 5	1,00	47,0	40,0	11,0	9,00	7,00	0,16
PW 6	1,40	50,0	44,0	12,0	9,00	7,00	0,16
PW 7/8	2,50	65,0	57,0	16,0	12,0	9,00	0,38
PW 10	4,00	77,0	77,0	20,0	14,0	12,0	0,72
PW 13	6,70	101	92,0	26,0	19,0	15,0	1,56
PW 16	10,0	121	113	32,0	23,0	19,0	2,67
PW 19/20 [1]	16,0	151	150	36,0	27,0	25,0	6,16
PW 22 [1]	19,0	170	165	42,0	31,0	27,0	8,30
PW 26 [1]	26,5	201	195	50,0	37,0	32,0	13,7
PW 32 [1]	40,0	243	242	60,0	43,0	38,0	25,0

[1] Shape without saddle.

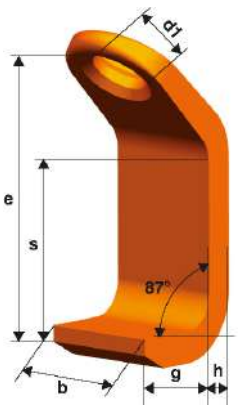
GRAB HOOK WITH SAFETY CATCH - PSW

Code	Load Capacity	e	b	d1	d2	g	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
PSW 7/8	2,50	65,0	57,0	16,0	12,0	9,00	0,40
PSW 16	10,0	121	113	32,0	23,0	19,0	2,73



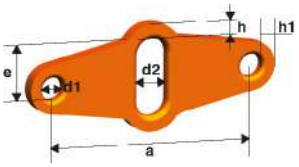
CLEVIS SHORTHENING HOOK - XKW

Code	Load Capacity	e	b	a	d1	d2	g	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
XKW 5/6	1,40	84,0	37,0	29,0	18,0	9,00	8,00	0,22
XKW 7	1,90	122	54,0	39,0	24,0	12,0	11,0	0,66
XKW 8	2,50	122	54,0	39,0	24,0	12,0	11,0	0,67
XKW 10	4,00	160	70,0	50,0	31,0	14,0	13,0	1,31
XKW 13	6,70	203	92,0	64,0	37,0	18,0	15,0	2,83
XKW 16	10,0	234	102	80,0	48,0	24,0	20,0	5,06



SHEET METAL PLATE HOOK - BWW

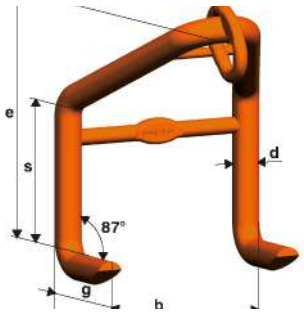
Code	Load Capacity	e	s	b	h	d1	g	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
BWW 7/8	2,50	131	80,0	50,0	15,0	28,0	55,0	1,50
BWW 10	4,00	170	100	70,0	20,0	36,0	65,0	2,80
BWW 13	6,70	209	130	80,0	25,0	40,0	90,0	5,30
BWW 16	10,0	263	160	100	30,0	50,0	110	10,5
BWW 19/20	16,0	306	185	120	40,0	60,0	130	17,5
BWW 22	19,0	368	220	140	50,0	75,0	150	30,5



LOAD DISTRIBUTOR - AGWW

Code	Connex	Load Capacity 0° - 45°	Load Capacity 45° - 60°	e	a	d1	d2	h	h1	s	Weight
		(ton)	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
AGWW 5/6	CW 8	2,00	1,40	35,0	148	16,0	22,0	11,0	9,00	10,0	0,54
AGWW 7/8	CW 10	3,55	2,50	51,0	210	22,0	25,0	15,5	14,0	15,0	1,75
AGWW 10	CW 13	5,60	4,00	32,0	180	25,0	32,0	23,0	15,5	15,0	1,56
AGWW 13	CW 16	9,50	6,70	53,0	240	32,0	40,0	27,0	20,0	20,0	3,60
AGWW 16	CW 19/20	14,0	10,0	77,0	300	40,0	50,0	32,0	25,0	25,0	7,00
AGWW 19/20	CW 32	20,0	14,0	79,0	390	50,0	70,0	45,0	30,0	30,0	13,2
AGWW 22	CW 32	26,5	19,0	124	350	60,0	70,0	50,0	35,0	30,0	14,7
AGWW 26	(**)	37,5	26,5	130	400	70,0	75,0	60,0	40,0	40,0	25,8

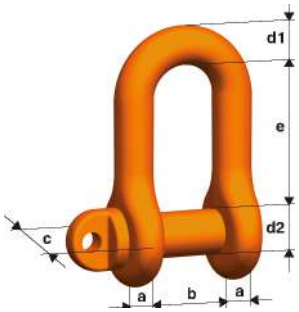
Please use this Connex to assemble the load distributor in the four - leg sling.
(**) GSCHW VB G-4163 WLL 55 t.



FORK HOOK - GHW

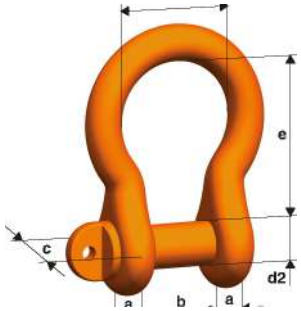
Code	Load Capacity	e	s	b	g	d	BW Link	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)		(kg/pc.)
GHW 5/6	1,40	203	100	190	65,0	23,0	BW 13	2,84
GHW 7/8	2,50	300	150	254	100	30,0	BW 16	7,25
GHW 10	4,00	402	200	380	130	40,0	BW 22	17,0

Custom designs are available upon request!



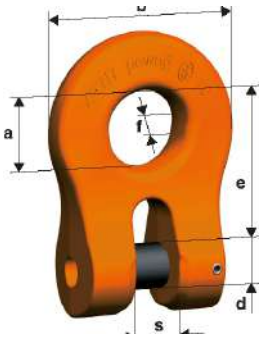
SHACKLE - SCHW

Code	Load Capacity	e	b	a	d1	c	d2	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
SCHW 5	1,00	24,0	11,0	7,00	8,00	16,0	8,00	0,11
SCHW 6	1,40	30,0	14,0	8,00	10,0	20,0	10,0	0,20
SCHW 7/8	2,50	36,0	17,0	10,0	12,0	24,0	12,0	0,41
SCHW 10	4,00	49,0	21,0	13,0	15,0	32,0	16,0	0,61
SCHW 13	6,70	61,0	27,0	17,0	19,0	40,0	20,0	1,42
SCHW 16	10,0	73,0	33,0	21,0	23,0	48,0	24,0	2,62
KHSW 22	19,0	214	62,0	52,0	27,0	62,0	196,0	9.05



CURVED SHACKLE - GSCHW

Code	Load Capacity	e	b	b1	a	c	d2	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
GSCHW 7/8	2,50	51,0	22,0	32,0	13,0	34,0	16,0	0,46
GSCHW 10	4,00	64,0	27,0	43,0	16,0	40,0	19,0	0,85
GSCHW 13	6,70	76,0	31,0	51,0	19,0	46,0	22,0	1,27
GSCHW 16	10,0	95,0	43,0	68,0	25,0	59,0	28,0	2,90

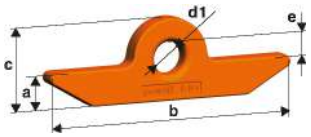


COUPLING RING - KRW

Code	Load Capacity	e	s	a	b	f	d	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KRW 5/6	1,40	31,0	7,00	18,0	38,0	8,00	7,40	0,12
KRW 7	1,90	43,0	10,0	24,0	54,0	11,0	9,00	0,21
KRW 8	2,50	43,0	10,0	24,0	54,0	11,0	10,0	0,21
KRW 10	4,00	51,0	12,0	28,0	63,0	14,0	12,5	0,37
KRW 13	6,70	63,0	15,0	33,0	76,0	17,0	16,0	0,77
KRW 16	10,0	74,0	18,0	40,0	88,0	20,0	20,0	1,36
KRW 19/20	16,0	94,0	23,0	50,0	114	24,0	24,0	2,33
KRW 22	19,0	102	25,0	50,0	122	27,0	27,0	3,95

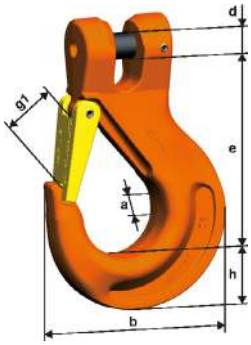
CLEVIS REEVING LINK - KOW

Code	Load Capacity	e	t	w	d	s	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KOW 7	1,90	92,0	70,0	34,0	9,00	9,00	0,33
KOW 8	2,50	91,0	70,0	34,0	10,0	9,00	0,33
KOW 10	4,00	128	102	50,0	12,5	12,0	0,75
KOW 13	6,70	169	136	66,0	16,0	15,0	1,08
KOW 16	10,0	214	172	83,0	20,0	18,0	2,93



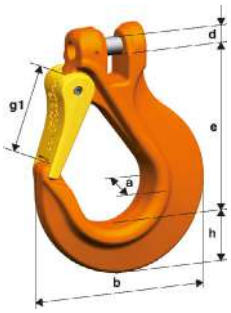
TOGGLE - KNEW

Code	Chain Diameter	Load Capacity	e	a	b	c	d1	d Min.	d Max.	Weight
	(mm)	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KNEW 8	8,00	2,50	10,0	17,0	120	38,0	15,0	40,0	60,0	WIN 10



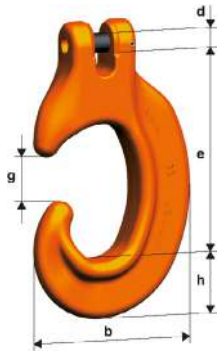
CLEVIS SLING HOOK - KHSW

Code	Load Capacity	e	h	a	d	g1	b	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KHSW 5/6	1,40	69,0	20,0	15,0	7,40	19,0	66,0	0,29
KHSW 8	2,50	95,0	28,0	19,0	10,0	26,0	90,0	0,62
KHSW 10	4,00	109	35,0	25,0	12,5	31,0	108	1,19
KHSW 13	6,70	136	41,0	34,0	16,0	39,0	131	2,12
KHSW 16	10,0	155	49,0	37,0	20,0	45,0	153	3,49
KHSW 19/20	16,0	184	53,0	51,0	24,0	53,0	177	5,64
KHSW 22	19,0	214	62,0	52,0	27,0	62,0	196	9,05



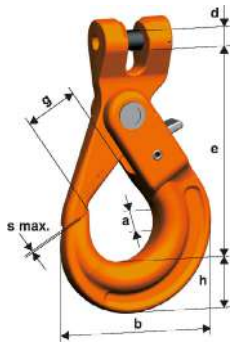
VERSIZE CLEVIS SLING HOOK - BKHSW

Code	Load Capacity	e	h	a	d	g1	b	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
BKHSW 8	2,50	93,0	27,0	25,0	10,0	32,0	98,0	1,01
BKHSW 10	4,00	111	33,0	30,0	12,5	38,0	119	1,57



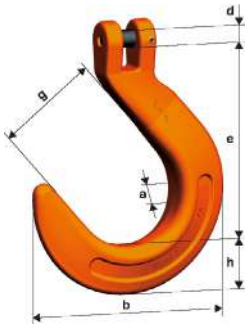
CLEVIS C HOOK - KCHW

Code	Load Capacity	e	h	d	b	g	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KCHW 7	1,90	91,0	28,0	9,00	74,0	20,0	0,52
KCHW 8	2,50	90,0	28,0	10,0	74,0	20,0	0,51
KCHW 10	4,00	129	39,0	12,5	107	28,0	1,51
KCHW 13	6,70	166	51,0	16,0	137	41,0	3,13
KCHW 16	10,0	205	60,0	20,0	166	45,0	5,56



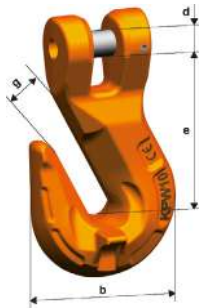
CLEVIS SAFETY HOOK - KLHW

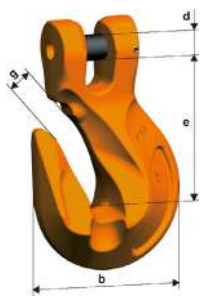
Code	Load Capacity	e	h	a	b	d	g	s Max.	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KLHW 5/6	1,40	94,0	20,0	17,0	71,0	7,40	28,0	1,00	0,56
KLHW 7	1,90	123	26,0	20,0	88,0	9,00	34,0	1,00	0,87
KLHW 8	2,50	123	26,0	20,0	88,0	10,0	34,0	1,00	1,00
KLHW 10	4,00	144	30,0	29,0	107	12,5	45,0	1,00	1,61
KLHW 13	6,70	180	40,0	35,0	138	16,0	52,0	1,50	3,25
KLHW 16	10,0	218	50,0	41,0	168	20,0	60,0	2,00	5,95
KLHW 19/20	16,0	259	62,0	50,0	194	24,0	70,0	2,00	12,9
KLHW 22	19,0	286	65,0	52,0	211	27,0	81,0	2,00	15,9
KLHW 26	26,5	338	79,0	61,0	253	33,0	100	2,00	21,3



CLEVIS FOUNDRY HOOK - KFW

Code	Load Capacity	e	h	a	g	d	b	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KFW 7	1,90	121	29,0	25,0	64,0	9,00	118	1,02
KFW 8	2,50	120	29,0	25,0	64,0	10,0	118	1,04
KFW 10	4,00	140	35,0	32,0	76,0	12,5	143	1,74
KFW 13	6,70	170	42,0	40,0	89,0	16,0	170	3,38

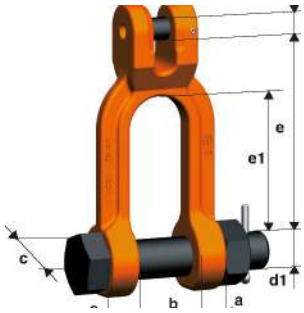




CLEVIS GRAB HOOK - KPW

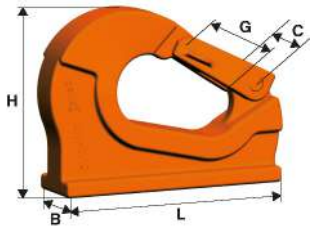
Code	Load Capacity	e	b	d	g	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KPW 6	1,40	47,0	44,0	7,40	7,00	0,19
KPW 7	1,90	63,0	57,0	-	9,00	0,46
KPW 8	2,50	63,0	57,0	10,0	9,00	0,46
KPW 10	4,00	78,0	71,0	12,4	12,0	0,90
KPW 13	6,70	93,0	92,0	16,0	15,0	1,85
KPW 16	10,0	115	113	20,0	19,0	3,49
KPW 19/20 [1)]	16,0	141	150	24,0	25,0	6,88
KPW 22 [1)]	19,0	158	165	27,0	27,0	9,68

[1)] Shape without saddle.



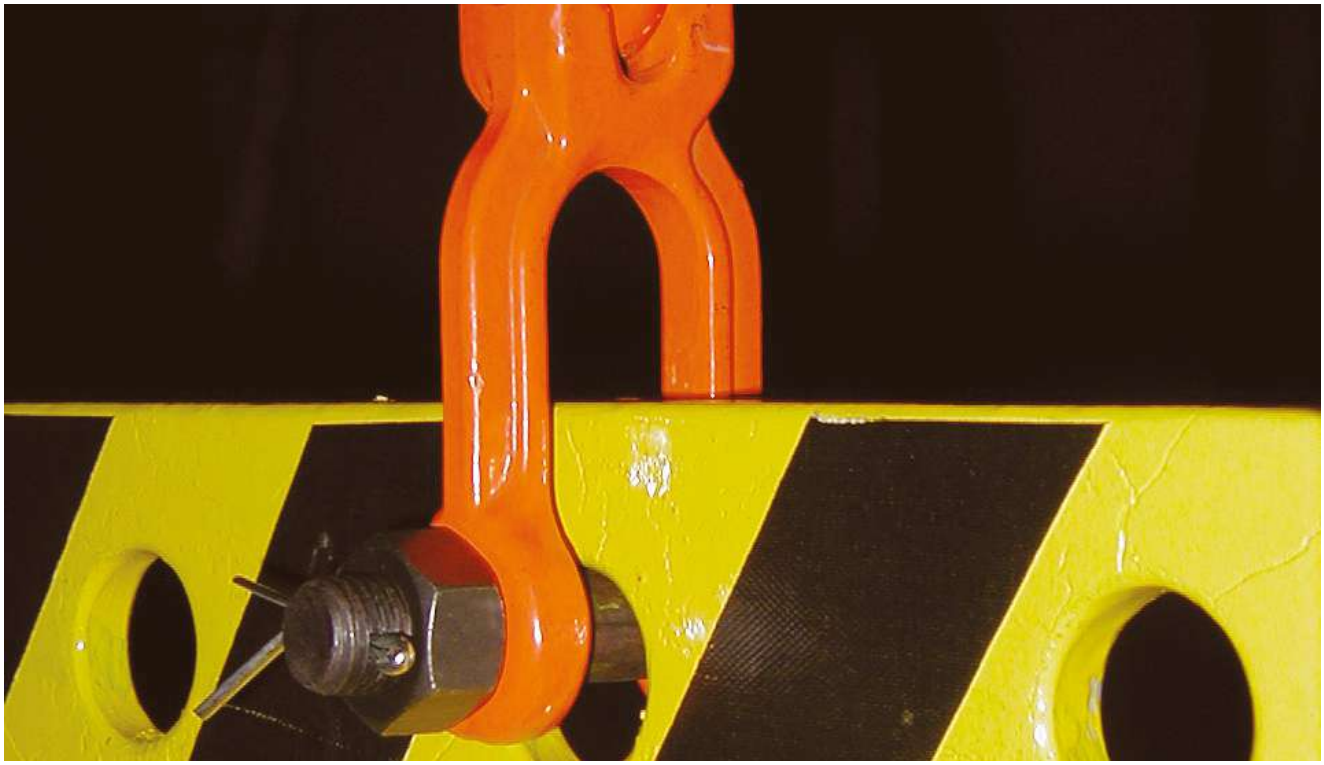
CLEVIS SHACKLE - KSCHW

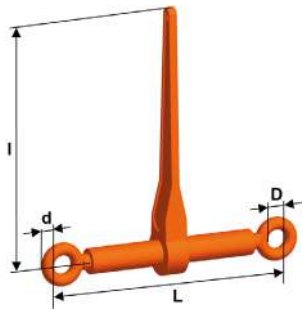
Code	Load Capacity	e	e1	b Min.	a	d	c	d1	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KSCHW 7	1,90	76,0	54,0	26,0	12,0	9,00	31,0	16,0	0,64
KSCHW 8	2,50	76,0	54,0	26,0	12,0	10,0	31,0	16,0	0,66
KSCHW 10	4,00	105	76,0	32,0	16,0	12,5	39,0	20,0	1,22
KSCHW 13	6,70	113	77,0	42,0	21,0	16,0	50,0	24,0	2,64



WELD-ON HOOK - AWHW

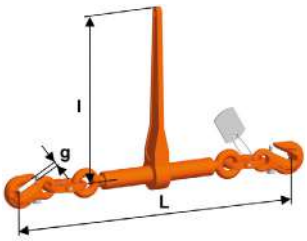
Code	Load Capacity	L	H	G	B	C	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
AWHW 1,3	1,30	95,0	74,0	20,0	25,0	34,0	0,67
AWHW 3,8	3,80	132	106	26,0	35,0	40,0	1,40
AWHW 6,3	6,30	167	133	29,0	45,0	49,0	2,95
AWHW 10	10,0	175	136	29,0	50,0	49	4,02





LOAD BINDER - RSW

Code	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Distance	Lever Length L	D	d	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
RSW 7/8	50,0	1,90	355	500	145	237	20,0	16,0	3,20
RSW 10	80,0	3,00	365	505	140	355	26,0	18,0	3,80
RSW 13	134	2,50	576	866	290	359	31,0	22,0	9,90



LOAD BINDER - RSPSW

Code	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Distance	Lever Length L	g	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
RSPSW 8 [1)]	50,0	1,90	609	754	145	237	11,0	4,40
RSPSW 10	80,0	3,00	663	803	140	355	13,0	6,30
RSPSW 13	134	2,50	954	1.244	290	359	17,0	15,0

[1)] Also useable with a 7 mm chain. LC with 7 mm chain = 38 kN!

CLEVIS TURNBUCKLE – KSSW 16

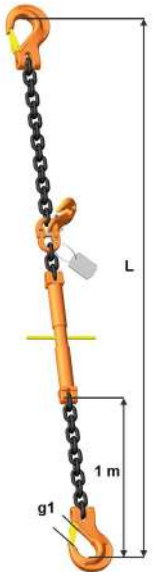
Code	Lashing Capacity	Standard Tension Force	L Min.	L Max.	Tension Distance	d1	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KSSW 16	200	-	530	780	250	20,0	10,0

LASHING CHAIN
ZRSW I KHSW - KHSW - PSW

Code	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Distance	Jaw Size g	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(kg/system)
ZRSW 7 200 I KHSW-KHSW-PSW 3500	38,0	1.900	355	500	145	26,0	8,40
ZRSW 8 200 I KHSW-KHSW-PSW 3500	50,0	1.900	355	500	145	26,0	10,1
ZRSW 10 200 I KHSW-KHSW-PSW 3500	80,0	3.000	365	510	145	31,0	15,3
ZRSW 13 200 I KHSW-KHSW-PSW 3500	134	2.500	576	866	290	39,0	26,1

LASHING CHAIN
ZRSW I KHSW - KHSW - KPSW

Code	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Distance	Jaw Size g1	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(kg/system)
ZRSW 7 200 I KHSW-KHSW-KPSW 3500	38,0	1.900	355	500	145	26,0	8,40
ZRSW 8 200 I KHSW-KHSW- KPSW 3500	50,0	1.900	355	500	145	26,0	10,1
ZRSW 10 200 I KHSW-KHSW-KPSW 3500	80,0	3.000	365	510	145	31,0	15,3
ZRSW 13 200 I KHSW-KHSW-KPSW 3500	134	2.500	576	866	290	39,0	26,1



LASHING CHAIN
ZKSW I KHSW - KHSW - PSW

Code	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Distance	Jaw Size g	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(kg/system)
ZKSW 16 200 I KHSW-KHSW- PSW 3500	200	-	530	780	250	45,0	3,70

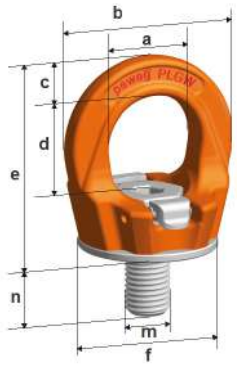
LASHING CHAIN
ZKSW I KHSW - KHSW - KPSW

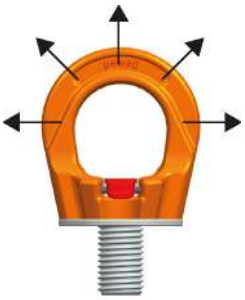
Code	Lashing Capacity	Standard Tension Force	Length Closed L	Length Open L	Tension Distance	Jaw Size g	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(kg/system)
ZKSW 16 200 I KHSW-KHSW-KPSW 3500	200	-	530	780	250	45	37,70

LASHING CHAIN
ZKW

Code	Lashing Capacity	L	g1	Weight
	(kN)	(mm)	(mm)	(kg/system)
ZKW 7 200 I KHSW-KHSW 3500	38,0	3.500	26,0	5,17
ZKW 8 200 I KHSW-KHSW 3500	50,0	3.500	26,0	6,40
ZKW 10 200 I KHSW-KHSW 3500	80,0	3.500	31,0	10,3
ZKW 13 200 I KHSW-KHSW 3500	134	3.500	39,0	17,5

PEWAG WINNER PROFILIFT GAMMA - PLGW

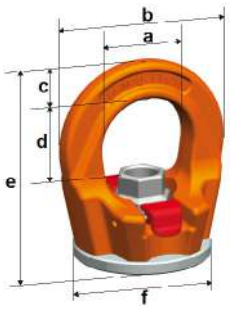


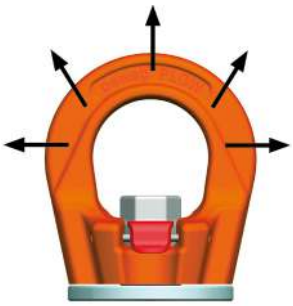


Code	Thread	Load Capacity	a	b	c	d	e	f	n	n Max.	Weight
	(mm)	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
PLGW 0,3 t	M8	0,30	25,0	45,0	10,0	27,0	53,0	35,0	15,0	90,0	0,20
PLGW 0,5 t	M10	0,50	25,0	45,0	10,0	27,0	53,0	35,0	15,0	160,0	0,21
PLGW 0,7 t	M12	0,70	30,0	55,0	12,0	32,0	63,0	43,0	20,0	160,0	0,32
PLGW 1,5 t	M16	1,50	35,0	64,0	14,0	36,0	70,0	50,0	25,0	160,0	0,48
PLGW 2 t	M20	2,00	40,0	73,0	16,0	41,0	81,0	54,0	30,0	160,0	0,90
PLGW 2,3 t	M20	2,30	40,0	73,0	16,0	41,0	81,0	54,0	30,0	160,0	0,58
PLGW 3,2 t	M24	3,20	50,0	86,0	18,0	50,0	93,0	69,0	35,0	1,0	1,10
PLGW 4,9 t	M30	4,90	60,0	110	25,0	60,0	114	90,0	45,0	-	2,20
PLGW 7 t	M36	7,00	70,0	132	31,0	70,0	136	108	55,0	-	3,80
PLGW 9 t	M42	9,00	80,0	152	36,0	72,0	153	126	65,0	-	5,70
PLGW 12 t	M48	12,0	95,0	179	42,0	88,0	179	148	75,0	-	8,70

Code	Thread	Load Capacity 1 Leg 0°	Load Capacity 1 Leg 90°	Load Capacity 2 Leg 0°	Load Capacity 2 Leg 90°	Load Capacity 2 Leg 0° - 45°
	(mm)	(ton)	(ton)	(ton)	(ton)	(ton)
PLGW 0,3 t	M8	1,00	0,30	2,0	0,60	0,42
PLGW 0,5 t	M10	1,50	0,50	3,0	1,00	0,70
PLGW 0,7 t	M12	2,00	0,70	4,0	1,40	0,98
PLGW 1,5 t	M16	4,00	1,50	8,0	3,00	2,10
PLGW 2 t	M20	4,50	2,00	9,0	4,00	2,80
PLGW 2,3 t	M20	5,00	2,30	10,0	4,60	3,20
PLGW 3,2 t	M24	6,50	3,20	13,0	6,40	4,50
PLGW 4,9 t	M30	12,0	4,90	24,0	9,80	6,90
PLGW 7 t	M36	15,0	7,00	30,0	14,0	9,80
PLGW 9 t	M42	22,0	9,00	44,0	18,0	12,6
PLGW 12 t	M48	30,0	12,0	60,0	24,0	16,9

Code	Thread	Load Capacity 2 Leg 45°-60°	Load Capacity 3/4 Leg 0° - 45	Load Capacity 3/4 Leg 45° - 60°	Load Capacity 2 Leg Asymmetrical Load	Load Capacity 3/4 Leg Asymmetrical Load
	(mm)	(ton)	(ton)	(ton)	(ton)	(ton)
PLGW 0,3 t	M8	0,30	0,63	0,45	0,30	0,30
PLGW 0,5 t	M10	0,50	1,06	0,75	0,50	0,50
PLGW 0,7 t	M12	0,70	1,48	1,05	0,70	0,70
PLGW 1,5 t	M16	1,50	3,18	2,20	1,50	1,50
PLGW 2 t	M20	2,00	4,20	3,00	2,00	2,00
PLGW 2,3 t	M20	2,30	4,80	3,40	2,30	2,30
PLGW 3,2 t	M24	3,20	6,70	4,80	3,20	3,20
PLGW 4,9 t	M30	4,90	10,3	7,30	4,90	4,90
PLGW 7 t	M36	7,00	14,8	10,5	7,00	7,00
PLGW 9 t	M42	9,00	19,0	13,5	9,00	9,00
PLGW 12 t	M48	12,0	25,4	18,0	12,0	12,0





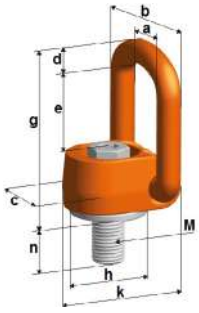
WINNER PROFILIFT GAMMA EYE NUT - PLGW SN

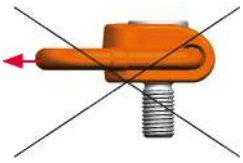
Code	Thread	Load Capacity	a	b	c	d	e	f	Weight
	(mm)	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
PLGW-SN 0,3 t	M8	0,30	25,0	45,0	10,0	21,0	55,0	35,0	0,17
PLGW-SN 0,5 t	M10	0,50	25,0	45,0	10,0	21,0	55,0	35,0	0,17
PLGW-SN 0,7 t	M12	0,70	30,0	55,0	12,0	25,0	65,0	43,0	0,28
PLGW-SN 1,5 t	M16	1,50	35,0	64,0	14,0	29,0	72,0	50,0	0,42
PLGW-SN 2,3 t	M20	2,30	40,0	73,0	16,0	34,0	82,0	54,0	0,50
PLGW-SN 3,5 t	M24	3,50	50,0	86,0	18,0	40,0	95,0	69,0	1,00
PLGW-SN 4,9 t	M30	4,90	60,0	110	25,0	47,0	115	90,0	1,90

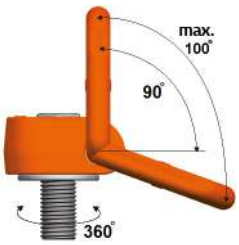
Code	Thread	Load Capacity 1 Leg 0°	Load Capacity 1 Leg 90°	Load Capacity 2 Leg 0°	Load Capacity 2 Leg 90°	Load Capacity 2 Leg 0° - 45°
	(mm)	(ton)	(ton)	(ton)	(ton)	(ton)
PLGW-SN 0,3 t	M8	1,00	0,30	2,00	0,60	0,40
PLGW-SN 0,5 t	M10	1,50	0,50	3,00	1,00	0,70
PLGW-SN 0,7 t	M12	2,00	0,70	4,00	1,40	1,00
PLGW-SN 1,5 t	M16	4,00	1,50	8,00	3,00	2,10
PLGW-SN 2,3 t	M20	5,00	2,30	10,0	4,60	3,20
PLGW-SN 3,5 t	M24	6,50	3,50	13,0	7,00	4,90
PLGW-SN 4,9 t	M30	12,0	4,90	24,0	9,00	6,90

Code	Thread	Load Capacity 2 Leg 45° - 60°	Load Capacity 3/4 Leg 0° - 45°	Load Capacity 3/4 Leg 45° - 60°	Load Capacity 2 Leg Asymmetrical Load	Load Capacity 3/4 Leg Asymmetrical Load
	(mm)	(ton)	(ton)	(ton)	(ton)	(ton)
PLGW-SN 0,3 t	M8	0,30	0,60	0,40	0,30	0,30
PLGW-SN 0,5 t	M10	0,50	1,00	0,70	0,50	0,50
PLGW-SN 0,7 t	M12	0,70	1,40	1,00	0,70	0,70
PLGW-SN 1,5 t	M16	1,50	3,00	2,20	1,50	1,50
PLGW-SN 2,3 t	M20	2,30	4,80	3,40	2,30	2,30
PLGW-SN 3,5 t	M24	3,50	7,40	5,20	3,50	3,50
PLGW-SN 4,9 t	M30	4,90	10,3	7,30	4,90	4,90

WINNER PROFILIFT - PLAW ALPHA



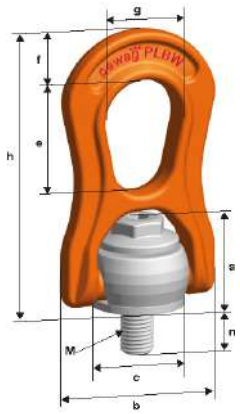




Code	Thread	Load Capacity	a	b	c	d	e	g	h	k	n	n Max.	Weight
	(mm)	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
PLAW 0,63 t	M10	0,63	45,0	67,0	40,0	11,0	41,0	95,0	36,0	55,0	20,0	150	0,58
PLAW 1 t	M12	1,00	45,0	67,0	40,0	11,0	41,0	95,0	36,0	55,0	33,0	170	0,60
PLAW 1,5 t	M16	1,50	45,0	67,0	40,0	11,0	41,0	95,0	36,0	55,0	33,0	260	0,62
PLAW 2,5 t	M20	2,50	54,0	81,0	50,0	13,0	55,0	112	50,0	67,0	33,0	335	1,10
PLAW 4 t	M24	4,00	54,0	87,0	50,0	17,0	67,0	142	45,0	70,0	36,0	361	1,60
PLAW 6 t	M30	6,00	75,0	115	67,0	20,0	68,0	143	67,0	100	49,0	364	3,10
PLAW 7 t	M36	7,00	75,0	115	67,0	20,0	65,0	143	60,0	100	55,0	374	3,30
PLAW 8 t	M36	8,00	93,0	147	85,0	27,0	87,0	188	85,0	120	55,0	365	6,10
PLAW 10 t	M42	10,0	93,0	147	85,0	27,0	87,0	188	85,0	120	65,0	365	6,40
PLAW 15 t	M42	15,0	115	181	105	33,0	108	246	106	150	63,0	340	12,0
PLAW 20 t	M48	20,0	115	181	105	33,0	108	246	106	150	73,0	340	12,3

Code	Thread	Fastening Torque	Load Capacit 1 Leg 0°	Load Capacity 1 Leg 90°	Load Capacity 2 Leg 0°	Load Capacity 2 Leg 90°	Load Capacity 2 Leg 0° - 45°
	(mm)	(Nm)	(ton)	(ton)	(ton)	(ton)	(ton)
PLAW 0,63 t	M10	70,0	0,63	0,63	1,26	1,26	0,85
PLAW 1 t	M12	120	1,00	1,00	2,00	2,00	1,40
PLAW 1,5 t	M16	150	1,50	1,50	3,00	3,00	2,10
PLAW 2,5 t	M20	170	2,50	2,50	5,00	5,00	3,50
PLAW 4 t	M24	400	4,00	4,00	8,00	8,00	5,60
PLAW 6 t	M30	500	6,00	6,00	12,0	12,0	8,50
PLAW 7 t	M36	700	7,00	7,00	14,0	14,0	9,80
PLAW 8 t	M36	800	8,00	8,00	16,0	16,0	11,3
PLAW 10 t	M42	1.500	10,0	10,0	20,0	20,0	14,0
PLAW 15 t	M42	1.500	15,0	15,0	30,0	30,0	21,0
PLAW 20 t	M48	2.000	20,0	20,0	40,0	40,0	28,0

Code	Thread	Fastening Torque	Load Capacity 2 Leg 45° - 60°	Load Capacity 3/4 Leg 0° - 45°	Load Capacity 3/4 Leg 45° - 60°	Load Capacity 2 Leg Asymmetrical Load	Load Capacity 3/4 Leg Asymmetrical Load
	(mm)	(Nm)	(ton)	(ton)	(ton)	(ton)	(ton)
PLAW 0,63 t	M10	70,0	0,30	0,60	0,40	0,30	0,30
PLAW 1 t	M12	120	0,63	1,30	0,90	0,63	0,63
PLAW 1,5 t	M16	150	1,00	2,10	1,50	1,00	1,00
PLAW 2,5 t	M20	170	1,50	3,10	2,20	1,50	1,50
PLAW 4 t	M24	400	2,50	5,30	3,70	2,50	2,50
PLAW 6 t	M30	500	4,00	8,40	6,00	4,00	4,00
PLAW 7 t	M36	700	6,00	12,7	9,00	6,00	6,00
PLAW 8 t	M36	800	7,00	14,8	10,5	7,00	7,00
PLAW 10 t	M42	1.500	8,00	16,9	12,0	8,00	8,00
PLAW 15 t	M42	1.500	10,0	21,0	15,0	10,0	10,0
PLAW 20 t	M48	2.000	15,0	31,5	22,5	15,0	15,0

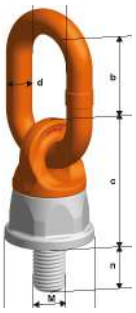


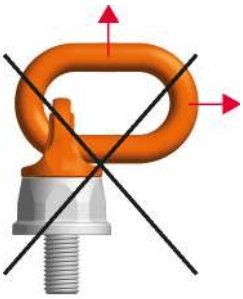
WINNER PROFILIFT - PLBW BETA

Code	Thread	Load Capacity	a	b	c	e	f	g	h	n	n Max.	Weight
	(mm)	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
PLBW 1,6 t	M16	1,60	43,0	79,0	45,0	55,0	25,0	38,0	138	24,0	260,0	1,04
PLBW 2 t	M18	2,00	43,0	79,0	45,0	55,0	25,0	38,0	138	27,0	295,0	1,07
PLBW 2,5 t	M20	2,50	43,0	79,0	45,0	55,0	25,0	38,0	138	30,0	335,0	1,08
PLBW 3 t	M22	3,00	64,0	118	68,0	85,0	38,0	58,0	209	33,0	355,0	3,50
PLBW 4 t	M24	4,00	64,0	118	68,0	85,0	38,0	58,0	209	36,0	355,0	3,60
PLBW 5 t	M27	5,00	64,0	118	68,0	85,0	38,0	58,0	209	40,0	355,0	3,60
PLBW 6,3 t	M30	6,30	64,0	118	68,0	85,0	38,0	58,0	209	45,0	355,0	3,70
PLBW 8 t	M33	8,00	106	188	108	132	60	91	331	54,0	328,0	14,3
PLBW 10 t	M36	10,0	106	188	108	132	60	91	331	59,0	328,0	14,4
PLBW 12,5 t	M42	12,5	106	188	108	132	60	91	331	69,0	328,0	14,7
PLBW 15 t	M48	15,0	106	188	108	132	60	91	331	74,0	328,0	15,0

Code	Thread	Fastening Torque	Load Capacit 1 Leg 0°	Load Capacity 1 Leg 90°	Load Capacity 2 Leg 0°	Load Capacity 2 Leg 90°	Load Capacity 2 Leg 0° - 45°
	(mm)	(Nm)	(ton)	(ton)	(ton)	(ton)	(ton)
PLBW 1,6 t	M16	50,0	2,50	1,60	5,00	3,20	2,20
PLBW 2 t	M18	70,0	3,00	2,00	6,00	4,00	2,80
PLBW 2,5 t	M20	100	3,50	2,50	7,00	5,00	3,50
PLBW 3 t	M22	120	4,50	3,00	9,00	6,00	4,20
PLBW 4 t	M24	160	5,50	4,00	11,0	8,00	5,60
PLBW 5 t	M27	200	6,50	5,00	13,0	10,0	7,00
PLBW 6,3 t	M30	250	7,00	6,30	14,0	12,6	8,80
PLBW 8 t	M33	270	9,00	8,00	18,0	16,0	11,0
PLBW 10 t	M36	320	11,0	10,0	22,0	20,0	14,0
PLBW 12,5 t	M42	400	13,5	12,5	27,0	25,0	17,5
PLBW 15 t	M48	600	16,0	15,0	32,0	30,0	21,0

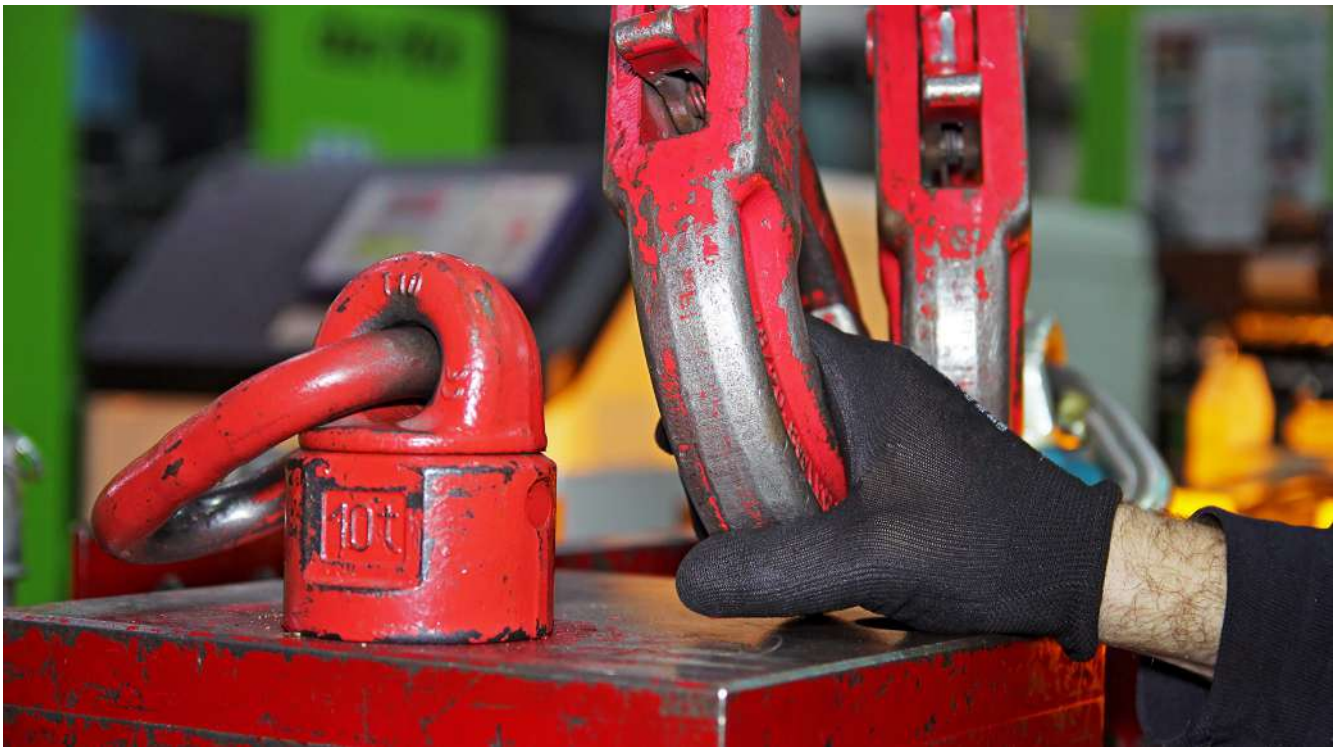
Code	Thread	Fastening Torque	Load Capacity 2 Leg 45° - 60°	Load Capacity 3/4 Leg 0° - 45°	Load Capacity 3/4 Leg 45° - 60°	Load Capacity 2 Leg Asymmetrical Load	Load Capacity 3/4 Leg Asymmetrical Load
	(mm)	(Nm)	(ton)	(ton)	(ton)	(ton)	(ton)
PLBW 1,6 t	M16	50,0	1,60	3,40	2,40	1,60	1,60
PLBW 2 t	M18	70,0	2,00	4,20	3,00	2,00	2,00
PLBW 2,5 t	M20	100	2,50	5,30	3,70	2,50	2,50
PLBW 3 t	M22	120	3,00	6,30	4,50	3,00	3,00
PLBW 4 t	M24	160	4,00	8,40	6,00	4,00	4,00
PLBW 5 t	M27	200	5,00	10,5	7,50	5,00	5,00
PLBW 6,3 t	M30	250	6,30	13,2	9,40	6,30	6,30
PLBW 8 t	M33	270	8,00	16,5	12,0	8,00	8,00
PLBW 10 t	M36	320	10,0	21,0	15,0	10,0	10,0
PLBW 12,5 t	M42	400	12,5	26,3	18,7	12,5	12,5
PLBW 15 t	M48	600	15,0	32,0	22,5	15,0	15,0

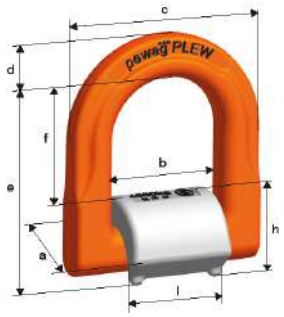




WINNER PROFILIFT DELTA - PLDW

Code	Thread	Load Capacity	a	b	c	d	e	n	n Max.	Weight
	(mm)	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
PLDW 0,3 t	M8	0,30	30,0	38,0	54,0	13,0	38,0	20,0	100	0,45
PLDW 0,5 t	M10	0,30	30,0	38,0	54,0	13,0	38,0	20,0	180	0,45
PLDW 0,7 t	M12	0,70	35,0	48,0	54,0	13,0	38,0	22,0	200	0,48
PLDW 1 t	M14	1,00	35,0	48,0	54,0	13,0	38,0	22,0	200	0,49
PLDW 1,5 t	M16	1,50	35,0	48,0	54,0	13,0	38,0	33,0	250	0,51
PLDW 2,5 t	M20	2,50	35,0	55,0	75,0	16,0	55,0	33,0	250	1,10
PLDW 4 t	M24	4,00	40,0	66,0	82,0	17,0	63,0	40,0	300	1,50
PLDW 6,7 t	M30	6,70	50,0	70,0	92,0	23,0	72,0	40,0	300	2,60
PLDW 8 t	M36	8,00	50,0	91,0	120	23,0	92,0	55,0	300	4,30
PLDW 10 t	M42	10,0	65,0	91,0	120	27,0	92,0	60,0	300	5,10
PLDW 12 t	M45	12,0	65,0	91,0	120	27,0	92,0	68,0	-	5,20
PLDW 12,5 t	M48	12,5	65,0	116	120	27,0	92,0	68,0	300	5,40
PLDW 24 t	M56	24,0	70,0	105	154	33,0	110	84,0	300	10,2
PLDW 25 t	M64	25,0	70,0	105	154	33,0	110	96,0	300	11,0
PLDW 40 t	M72	40,0	90,0	130	213	45,0	170	110	500	29,0
PLDW 45 t	M80	45,0	90,0	130	213	45,0	170	120	500	30,0
PLDW M90 - 55 t	M90	55,0	90,0	130	213	45,0	170	135	500	32,0
PLDW M100 - 55 t	M100	55,0	90,0	130	213	45,0	170	150	500	35,0



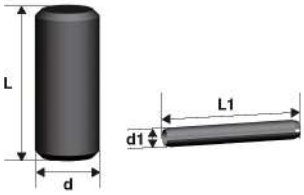


WINNER PROFILIFT - PLEW ETA

Code	Load Capacity	a	b	c	d	e	f	h	l	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
PLEW 1,5 t	1,50	32,0	38,0	65,0	14,0	65,0	40,0	25,0	35,0	0,32
PLEW 2,5 t	2,50	37,0	44,0	75,0	16,0	76,0	47,0	28,0	41,0	0,50
PLEW 4 t	4,00	43,0	48,0	84,0	18,0	83,0	51,0	32,0	45,0	0,75
PLEW 6,7 t	6,70	58,0	60,0	107	24,0	108	64,0	44,0	56,0	1,70
PLEW 10 t	10,0	69,0	66,0	126	27,0	123	69,0	54,0	61,0	2,80
PLEW 19 t	19,0	92,0	95,0	171	38,0	168	100	68,0	89,0	6,50

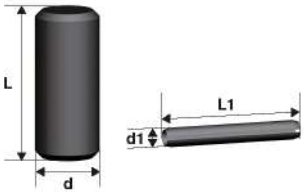
Code	Load Capacity 1 Leg 0°	Load Capacity 1 Leg 90°	Load Capacity 2 Leg 0°	Load Capacity 2 Leg 90°	Load Capacity 2 Leg 0° - 45°
	(ton)	(ton)	(ton)	(ton)	(ton)
PLEW 1,5 t	2,50	1,50	5,00	3,00	2,10
PLEW 2,5 t	4,00	2,50	8,00	5,00	3,50
PLEW 4 t	6,00	4,00	12,0	8,00	5,60
PLEW 6,7 t	10,0	6,70	20,0	13,4	9,40
PLEW 10 t	15,0	10,0	30,0	20,0	14,1
PLEW 19 t	25,0	19,0	50,0	38,0	26,8

Code	Load Capacity 2 Leg 45° - 60°	Load Capacity 3/4 Leg 0° - 45°	Load Capacity 3/4 Leg 45° - 60°	Load Capacity 2 Leg Asymmetrical Load	Load Capacity 3/4 Leg Asymmetrical Load
	(ton)	(ton)	(ton)	(ton)	(ton)
PLEW 1,5 t	1,50	3,10	2,20	1,50	1,50
PLEW 2,5 t	2,50	5,30	3,70	2,50	2,50
PLEW 4 t	4,00	8,40	6,00	4,00	4,00
PLEW 6,7 t	6,70	14,2	10,0	6,70	6,70
PLEW 10 t	10,0	21,2	15,0	10,0	10,0
PLEW 19 t	19,0	40,3	28,5	19,0	19,0



CLEVIS LOAD PIN - KBSW

Code	L	d	L1	d1	Weight
	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KBSW 5/6	16,5	6,00	16,0	2,50	0,01
KBSW 7	23,0	9,00	22,0	3,00	0,02
KBSW 8	23,0	10,0	22,0	3,00	0,02
KBSW 10	29,5	12,5	28,0	3,50	0,03
KBSW 13	37,0	16,0	36,0	4,00	0,06
KBSW 16	52,0	20,0	40,0	4,50	0,12
KBSW 19/20	73,0	24,0	50,0	5,00	0,27
KBSW 22	71,0	27,0	55,0	5,00	0,29
KBSW 26	86,0	33,0	70,0	5,00	0,59



SPECIAL CLEVIS LOAD PIN - KBS / KSS

Code	d x L	d1 x L1	For Accessory Part
	(mm)	(mm)	
KBS-KSS 6/7	8,00 x 22,5	3,00 x 22,0	KSS 6/7
KBS-KSS 8	10,0 x 27,2	3,00 x 26,0	KSS 8
KBS-KSS 10	12,0 x 32,2	4,00 x 32,0	KSS 10

BOLTS AND SAFETY BUSH - SFGW

Code	For Accessory Part
SFGW 5/6	HSW 5/6, KHSW 5/6
SFGW 7/8	HSW 7/8, KHSW 7, KHSW 8, WS 7/8, EHS 7/8, WSBW 7/8
SFGW 10	HSW 10, KHSW 10, WS 10, EHS 10, WSBW 10
SFGW 13	HSW 13, KHSW 13, WS 13, EHS 13, WSBW 13
SFGW 16	HSW 16, KHSW 16
SFGW 19/20	HSW 19/20, KHSW 19/20
SFGW 22	HSW 22, KHSW 22
SFGW 26/32	HSW 26, HSW 32, HS 32

SAFETY CATCH SET - SFGW G

Code	For Accessory Part
SFGW-G 8	GKHSW 8
SFGW-G 10	GKHSW 10

SAFETY CATCH SET - SFGW B

Code	For Accessory Part
SFGW-B 8	BKHSW 8
SFGW-B 10	BKHSW 10

SAFETY CATCH SET - SFG A

Code	For Accessory Part
SFGW-A 1	AWHW 1.3
SFGW-A 3	AWHW 3.8
SFGW-A 6	AWHW 6.3, AWHW 10

SAFETY CATCH SET - SFG W

Code	For Accessory Part
SFG-W 16	WS 16

TRIGGER SETS - VLHW

Code	For Accessory Part
VLHW 5/6 G10	LHW 5/6, KLHW 5/6, WLH(B)W 6
VLHW 7/8 G10	LHW 7/8, KLHW 7, KLHW 8, WLH(B)W 7/8
VLHW 10 G10	LHW 10, KLHW 10, WLH(B)W 10
VLHW 13 G10	LHW 13, KLHW 13, WLH(B)W 13
VLHW 16 G10	LHW 16, KLHW 16, WLH(B)W 16
VLHW 19/20/22/26 G10	LHW 19/20, LHW 22, KLHW 19/20, KLHW 22, KLHW 26

BOLTS AND SAFETY BUSH - CBHW

Code	For Accessory Part
CBHW 5 G10	CW 5
CBHW 6 G10	CW 6
CBHW 7 G10	CW 7
CBHW 8 G10	CW 8, CARW 8
CBHW 10 G10	CW 10, CARW 10
CBHW 13 G10	CW 13, CARW 13
CBHW 16 G10	CW 16, CARW 16
CBHW 19/20 G10	CW 19/20
CBHW 22 G10	CW 22, CARW 22
CBHW 32 G10	CW 32

BOLTS AND SAFETY BUSH - CLBHW

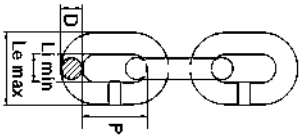
Code	For Accessory Part
CLBHW 7 G10	CLW 7
CLBHW 10 G10	CLW 10
CLBHW 13 G10	CLW 13
CLBHW 16 G10	CLW 16

SAFETY CATCHES - PSGW

Code	For Accessory Part
PSGW 7/8 G10	PSW 7/8, KPSW 7, KPSW 8
PSGW 10 G10	PSW 10, KPSW 10
PSGW 13 G10	PSW 13, KPSW 13
PSGW 16 G10	PSW 16, KPSW 16

pewag | GRADE 80

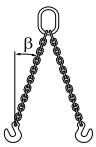
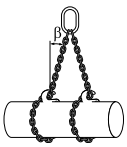
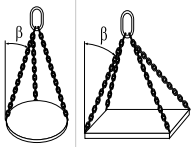
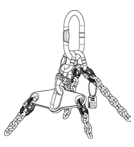
GRADE 80
SUPER ALLOY CHAIN EN 818-2

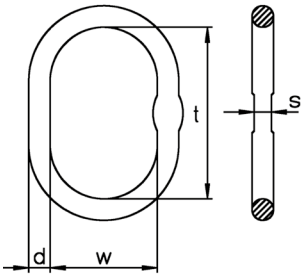


Chain Diameter	Tolerance	P	Tolerance	Li / min.	Le / max.	Working Load Limit	Breaking Load	Weight
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(ton)	(kg/m)
6,00	±0,24	18,0	±0,50	7,80	22,2	1.120	4,60	0,80
7,00	±0,28	21,0	±0,60	9,10	25,9	1.500	6,30	1,10
8,00	±0,32	24,0	±0,70	10,4	29,6	2.000	8,20	1,40
10,0	±0,40	30,0	±0,90	13,0	37,0	3.150	13,0	2,20
13,0	±0,52	39,0	±1,20	16,9	48,1	5.300	22,0	3,80
16,0	±0,64	48,0	±1,40	20,8	59,2	8.000	33,0	5,70
18,0	±0,90	54,0	±1,60	23,4	66,6	10.000	41,0	7,30
20,0	±1,00	60,0	±1,80	26	74,0	12.500	51,0	9,00
22,0	±1,10	66,0	±2,00	28,6	81,4	15.000	62,0	10,9
26,0	±1,30	78,0	±2,30	33,8	96,2	21.200	87,0	15,2
32,0	±1,60	96,0	±2,90	41,6	118	31.500	131	23,0

GRADE 80 CHAIN SLINGS

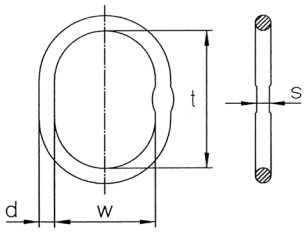
If the chains are used in more demanding conditions (e.g. high temperature, asymmetric load distribution edge loads, impacts) the maximum load capacities in the table must be reduced.

Safety Factor		1 Leg Chains		2 Leg Chains				3 and 4 Leg Chains		4 Leg Chains with Load Distributor		Endless Chain Sling	Single Lifting Sling		Double Lifting Sling	
4																
Angle of Inclination		-	-	0° - 45°	45° - 60°	0° - 45°	45° - 60°	0° -45°	45° - 60°	0° - 45°	45° - 60°	-	0° - 45°	45° - 60°	0° - 45°	45° - 60°
Load Factor		1	0,8	1,4	1	1,12	0,8	2,1	1,5	2,8	2	1,6	1,4	1	2,1	1,5
Quality Class	Dia. (mm)	Load Capacity (kg)														
Grade 80	5,00	800	640	1.120	800	900	640	1.600	1.860	2.240	1.600	1.250	1.120	800	1.600	1.180
	6,00	1.120	900	1.600	1.120	1.250	900	2.360	1.700	3.150	2.240	1.800	1.600	1.120	2.360	1.700
	7,00	1.500	1.200	2.120	1.500	1.700	1.200	3.150	2.240	4.000	3.000	2.500	2.120	1.500	3.150	2.240
	8,00	2.000	1.600	2.800	2.000	2.240	1.600	4.250	3.000	5.600	4.000	3.150	2.800	2.000	4.250	3.000
	10,0	3.150	2.500	4.250	3.150	3.550	2.500	6.700	4.750	8.500	6.300	5.000	4.250	3.150	6.700	4.750
	13,0	5.300	4.250	7.500	5.300	5.900	4.250	11.200	8.000	14.000	10.600	8.500	7.500	5.300	11.200	8.000
	16,0	8.000	6.300	11.200	8.000	9.000	6.300	17.000	11.800	22.400	16.000	12.500	11.200	8.000	17.000	11.800
	19,0	11.200	8.950	16.000	11.200	12.500	8.950	23.600	17.000	-	-	18.000	16.000	11.200	23.600	17.000
	22,0	15.000	12.000	21.200	15.000	17.000	12.000	31.500	22.400	-	-	23.600	21.200	15.000	31.500	22.400
	26,0	21.200	16.950	30.000	21.200	23.700	16.950	45.000	31.500	-	-	33.500	30.000	21.200	45.000	31.500
	32,0	31.500	25.200	45.000	31.500	35.200	25.200	67.000	47.500	-	-	50.000	45.000	31.500	67.000	47.500



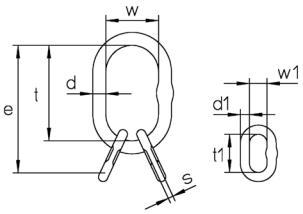
MASTER LINK - TYPE A

Code	Chain Diameter		Measurements				Working Load Limit (0° - 45°)	Weight
	For 1 Leg Chain Slings	For 2 Leg Chain Slings	d	t	w	s		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
A 13	6,00 - 7,00	6,00	13,0	110	60,0	10,0	2.300	0,34
A 16	8,00	7,00	16,5	110	60,0	14,0	3.500	0,58
A 18	10,0	8,00	19,0	135	75,0	14,0	5.000	0,92
A 22	13,0	10,0	23,0	160	90,0	17,0	7.600	1,60
A 26	16,0	13,0	27,0	180	100	20,0	9.600	2,46
A 32	18,0	16,0	33,0	200	110	26,0	13.600	4,04
A 36	20,0	18,0	36,0	260	140	-	25.100	6,22
A 36	22,0	20,0	36,0	260	140	-	25.100	6,22
A/T 45	26,0	22,0	45,0	340	180	-	30.800	12,8
A/T 50	32,0	26,0	50,0	350	190	-	40.000	16,6
A/T 56	36,0	32,0	56,0	400	200	-	60.000	23,3



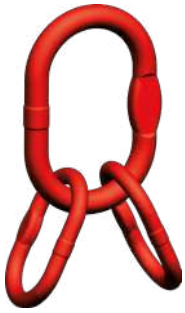
SPECIAL MASTER LINK - TYPE T

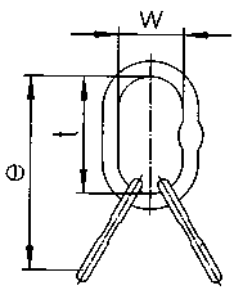
Code	Chain Diameter		Measurements				Working Load Limit (0° - 45°)	Weight
	For 1 Leg Chain Slings	For 2 Leg Chain Slings	d	t	w	s		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
T 13	6/7/8	6,00 - 7,00	14,0	120	70,0	10,0	2.300	0,44
T 16	10,0	8,00	16,5	140	80,0	14,0	3.200	0,67
T 20	13,0	10,0	20,0	160	95,0	14,0	5.400	1,21
T 26	16,0	13,0	27,0	190	110	17,0	10.100	2,65
T 32	18,0 - 20,0	16,0	33,0	230	130	20,0	15.700	4,78
T 38	22,0	18,0 - 20,0	38,0	275	150	26,0	20.500	7,48
A/T 45	26,0	22,0	45,0	340	180	-	30.800	12,8
A/T 50	32,0	26,0	50,0	350	190	-	40.000	16,6
A/T 56	36,0	32,0	56,0	400	200	-	60.000	23,3



MASTER LINK SET – TYPE G

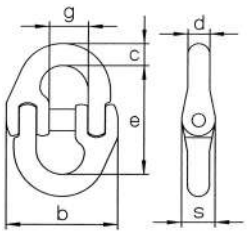
Code	Chain Diameter	Measurements								Working Load Limit (0° - 45°)	Weight
		d	t	w	d1	t1	w1	s	e		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
G 06/7.8	6,00+7,00	19,0	135	75,0	13,0	60,0	38,0	10,0	195	4.200	1,32
G 08.8	8,00	23,0	160	90,0	16,5	70,0	34,0	14,0	230	7.600	2,32
G 10.8	10,0	27,0	180	100	19,5	85,0	40,0	14,0	265	9.600	3,52
G 13.8	13,0	33,0	200	110	23,0	115	50,0	17,0	315	13.780	6,26
G 16.8	16,0	36,0	260	140	27,0	140	65,0	20,0	400	20.800	9,86
G 18.8	18,0	45,0	340	180	33,0	150	70,0	-	490	30.700	18,9
G 20.8	20,0	50,0	350	190	33,0	150	70,0	-	500	34.100	22,7
G 22.8	22,0	50,0	350	190	36,0	170	75,0	-	520	40.000	25,2
G 26.8	26,0	56,0	400	200	40,0	170	80,0	-	570	54.000	38,0
G 32.8	32,0	70,0	460	250	50,0	200	100	-	660	76.000	66,6





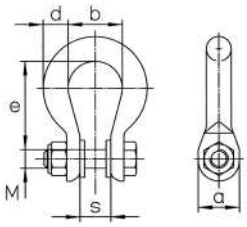
ENLARGED MASTER LINK - TG

Code	Chain Diameter	Measurements			Working Load Limit (0° - 45°)	Weight
		e	t	w	t1	d1
	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
TG 07.8	7,00	280	160	95,0	3.150	2,09
TG 08.8	8,00	310	170	105	4.250	3,08
TG 10.8	10,0	350	190	110	7.000	5,08
TG 13.8	13,0	420	230	130	13.200	10,1
TG 16.8	16,0	505	275	150	20.500	17,1



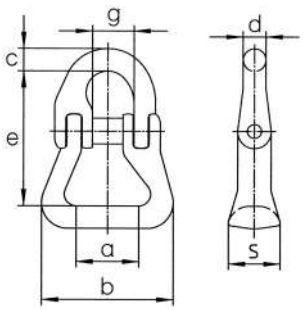
CONNECTING LINK - TYPE V

Code	Chain Diameter	Measurements						Working Load Limit (0° - 45°)	Weight
		g	s	b	e	c	d		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
V 06.8 U	6,00	14,1	11,0	39,0	44,4	7,80	7,60	1.120	0,06
V 07.8 U	7,00	17,0	13,0	47,0	51,0	10,0	9,00	1.500	0,12
V 08.8 U	8,00	18,4	14,0	55,0	61,5	11,5	10,0	2.000	0,18
V 10.8 U	10,0	23,0	18,0	64,0	72,0	12,6	12,6	3.150	0,33
V 13.8 U	13,0	27,6	22,0	79,0	88,0	19,0	16,7	5.300	0,70
V 16.8 U	16,0	33,0	29,0	106	103	21,0	21,0	8.000	1,14
V 20.8 U	20,0	41,7	35,0	123	115	29,5	23,5	12.500	2,10
V 22.8 U	22,0	48,0	39,0	150	133	27,0	27,0	15.000	2,20
V 26.8 U	26,0	61,0	46,0	159	164	32,0	30,0	21.200	5,10
V 32.8 U	32,0	80,0	50,0	195	194	40,0	32,0	31.500	8,50



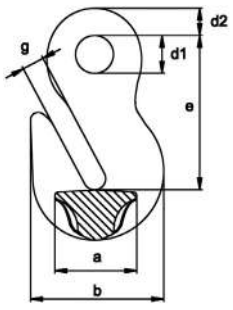
OMEGA SHACKLE - TYPE VU

Code	Chain Diameter	Measurements						Working Load Limit (0° - 45°)	Weight
		e	b	d	s	a	M		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
VU 06.8	6,00	34,0	21,0	9,00	11,0	16,0	7,00	1.120	0,07
VU 07.8	7,00	49,0	28,0	13,0	16,0	22,0	8,00	1.500	0,20
VU 08.8	8,00	48,0	28,0	13,0	16,0	22,0	10,0	2.000	0,22
VU 10.8	10,0	60,0	35,0	16,0	20,0	27,0	12,0	3.150	0,38
VU 13.8	13,0	72,0	39,0	18,0	24,0	34,0	16,0	5.300	0,67
VU 16.8	16,0	80,0	47,0	23,0	32,0	44,0	20,0	8.000	1,21
VU 20.8	20,0	96,0	56,0	26,0	36,0	52,0	24,0	12.500	1,97
VU 26.8	26,0	132	77,0	33,0	49,0	66,0	30,0	21.200	4,06



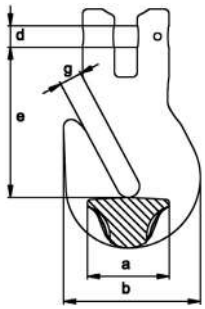
WEBBING COUPLING LINK – RSK

Code	Chain Diameter	Measurements							Working Load Limit	Weight
		b	e	s	a	g	d	c		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
RSK 08.8 U	8,00	68,0	66,0	18,0	29,0	19,0	10,0	12,0	2.000	0,30
RSK 10.8 U	10,0	82,0	81,0	21,0	40,0	23,0	12,6	12,6	3.150	0,50
RSK 13.8 U	13,0	100	104	28,0	50,0	28,0	16,5	19,5	5.300	1,10
RSK 16.8 U	16,0	110	113	40,0	47,0	33,0	21,0	21,0	8.000	2,00



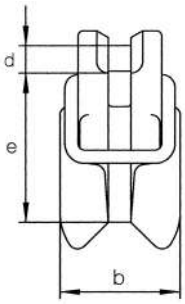
EYE GRAB HOOK – P

Code	Chain Diameter	Measurements						Working Load Limit	Weight
		g	d2	d1	e	a	b		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
P 06.8	6,00	7,00	9,00	12,0	50,0	26,0	41,0	1.120	0,14
P 07/8.8	7,00 - 8,00	9,00	12,0	16,0	65,0	34,0	55,0	2.000	0,34
P 10.8	10,0	12,0	14,0	20,0	77,0	46,0	69,0	3.150	0,65
P 13.8	13,0	15,0	19,0	26,0	101	60,0	89,0	5.300	1,44
P 16.8	16,0	19,0	23,0	32,0	121	70,0	110	8.000	2,60
P 20.8	18,0 - 20,0	25,0	27,0	36,0	151	84,0	150	12.500	6,15
P 22.8	22,0	27,0	31,0	42,0	170	91,0	165	15.000	8,30
P 26.8	26,0	32,0	37,0	50,0	201	107	195	21.200	13,8
P 32.8	32,0	39,0	44,0	60,0	245	139	231	31.500	21,8



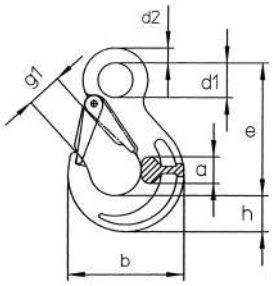
CLEVIS GRAB HOOK - TYPE PK

Code	Chain Diameter	Measurements					Working Load Limit	Weight
		g	d	e	a	b		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
PK 07/8.8	7,00 - 8,00	9,00	9,00	63,0	34,0	55,0	2.000	0,40
PK 10.8	10,0	12,0	12,5	78,0	46,0	69,0	3.150	0,79
PK 13.8	13,0	15,0	16,0	93,0	60,0	89,0	5.300	1,61
PK 16.8	16,0	19,0	20,0	115	70,0	110	8.000	3,10
PK 20.8	20,0	25,0	24,0	141	84,0	150	12.500	6,15



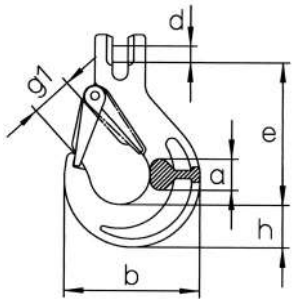
CLEVIS SHORTENING CLUTCH - VKL

Code	Chain Diameter	Measurements			Working Load Limit	Weight
		e	b	d		
	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
VKL 06.8	6,00	45,0	36,0	7,40	1.120	0,27
VKL 07.8	7,00	58,0	44,0	9,00	1.500	0,50
VKL 08.8	8,00	58,0	44,0	10,0	2.000	0,50
VKL 10.8	10,0	70,0	55,0	12,5	3.150	0,80
VKL 13.8	13,0	90,0	70,0	16,0	5.300	1,53



EYE SLING HOOK – HS

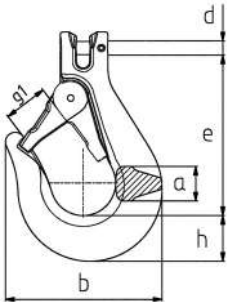
Code	Chain Diameter	Measurements							Working Load Limit	Weight
		g1	d2	d1	e	a	h	b		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
HS 06.8 U	6,00	19,0	10,0	20,0	85,0	17,0	21,0	68,0	1.120	0,30
HS 07/8.8 U	7,00 - 8,00	26,0	11,0	25,0	106	19,0	27,0	88,0	2.000	0,50
HS 10.8 U	10,0	31,0	16,0	34,0	131	26,0	33,0	109	3.150	1,10
HS 13.8 U	13,0	39,0	19,0	43,0	164	33,0	44,0	134	5.300	2,20
HS 16.8 U	16,0	45,0	25,0	50,0	183	40,0	50,0	155	8.000	3,50
HS 20.8 U	18,0 - 20,0	53,0	27,0	55,0	205	48,0	55,0	178	12.500	5,80
HS 22.8 U	22,0	62,0	29,0	60,0	225	50,0	62,0	196	15.000	8,00
HS 26.8 U	26,0	73,0	37,0	70,0	260	70,0	75,0	235	21.200	13,4
HS 32.8 U	32,0	87,0	42,0	66,0	299	87,0	97,0	291	31.500	22,4



CLEVIS SLING HOOK – HKS

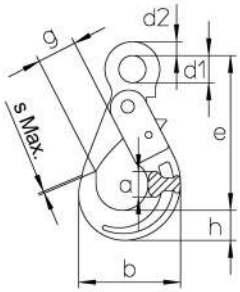
Code	Chain Diameter	Measurements						Working Load Limit	Weight
		g1	a	h	d	e	b		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
HKS 06.8 U	6,00	19,0	15,0	20,0	7,40	69,0	66,0	1.120	0,20
HKS 07/8.8 U	7,00 - 8,00	26,0	19,0	28,0	9,00	95,0	90,0	2.000	0,60
HKS 10.8 U	10,0	31,0	25,0	35,0	12,5	109	108	3.150	1,10
HKS 13.8 U	13,0	39,0	34,0	41,0	16,0	136	131	5.300	2,00
HKS 16.8 U	16,0	45,0	37,0	49,0	20,0	155	153	8.000	3,50
HKS 20.8 U	20,0	53,0	51,0	53,0	24,0	184	177	12.500	5,00
HKS 22.8 U	22,0	62,0	52,0	62,0	27,0	214	196	15.000	9,00

WIDE BOWL CLEVIS SLING HOOK – VHKS

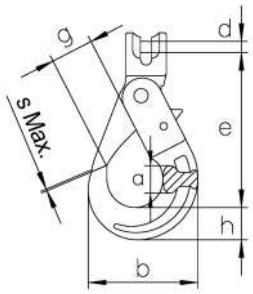


Code	Chain Diameter	Measurements						Working Load Limit	Weight
		e	h	a	d	g1	b		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
VHKS 07/8.8	7,00 - 8,00	116	33,0	25,0	9,00	32,0	113	2.000	1,10
VHKS 10.8	10,0	126	40,0	30,0	12,5	35,0	132	3.150	1,70

EYE SELF LOCKING HOOK – HSB

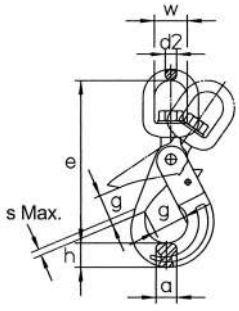


Code	Chain Diameter	Measurements								Working Load Limit	Weight
		g	d2	d1	e	b	a	h	s Max.		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
HSB 06.8	6,00	28,0	11,0	21,0	110	71,0	17,0	20,0	1,00	1.120	0,50
HSB 7/8.8	7,00 - 8,00	34,0	12,0	25,0	136	88,0	20,0	26,0	1,00	2.000	0,90
HSB 10.8	10,0	45,0	15,0	35,0	169	107	29,0	30,0	1,00	3.150	1,50
HSB 13.8	13,0	52,0	20,0	40,0	205	138	35,0	40,0	1,50	5.300	2,70
HSB 16.8	16,0	60,0	27,0	50,0	251	168	41,0	50,0	2,00	8.000	5,70
HSB 18/20.8	18,0 - 20,0	70,0	30,0	60,0	290	194	50,0	62,0	2,00	12.500	9,80
HSB 22.8	22,0	81,0	32,0	70,0	322	211	52,0	65,0	2,00	15.000	12,4



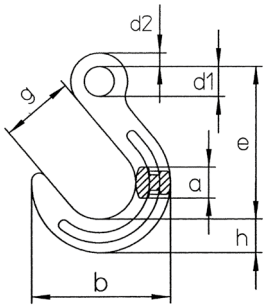
CLEVIS SELF LOCKING HOOK – HKSB

Code	Chain Dia.	Measurements							Working Load Limit	Weight
		g	d	e	a	b	h	s Max.		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
HKSB 06.8 U	6,00	28,0	7,40	94,0	17,0	71,0	20,0	1,00	1.120	0,50
HKSB 07/8.8 U	7,00 - 8,00	34,0	9,00	123	20,0	88,0	26,0	1,00	2.000	0,90
HKSB 10.8 U	10,0	45,0	12,5	144	29,0	107	30,0	1,00	3.150	1,60
HKSB 13.8 U	13,0	52,0	16,0	180	35,0	138	40,0	1,50	5.300	2,90
HKSB 16.8 U	16,0	60,0	20,0	218	41,0	168	50,0	2,00	8.000	5,80



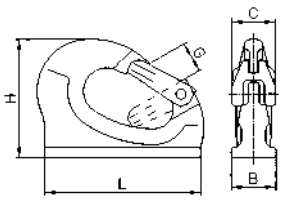
SWIVEL SELF LOCKING HOOK – WSB

Code	Chain Dia.	Measurements							Working Load Limit	Weight
		e	h	d2	w	a	g	s Max.		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
WSB 06.8	6,00	161	20,0	12,0	35,0	16,0	28,0	1,00	1.120	0,60
WSB 07/8.8	7,00 - 8,00	182	26,0	12,0	35,0	20,0	34,0	1,00	2.000	1,10
WSB 10.8	10,0	218	30,0	16,0	42,0	25,0	45,0	1,00	3.150	2,00
WSB 13.8	13,0	269	40,0	20,0	49,0	35,0	52,0	1,50	5.300	4,00
WSB 16.8	16,0	319	50,0	24,0	60,0	35,0	60,0	2,00	8.000	6,80



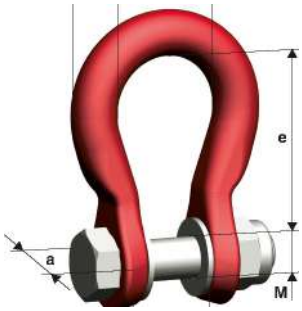
FOUNDRY HOOK – GH

Code	Chain Dia.	Measurements							Working Load Limit	Weight
		g	d1	d2	e	a	h	b		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
GH 07/8.8	7,00 - 8,00	64,0	11,0	24,0	131	25,0	29,0	118	2.000	0,92
GH 10.8	10,0	76,0	14,0	31,0	158	32,0	35,0	143	3.150	1,77
GH 13.8	13,0	89,0	17,0	39,0	190	40,0	42,0	170	5.300	2,82
GH 16.8	16,0	102	22,0	47,0	224	46,0	50,0	200	8.000	5,03
GH 20.8	18,0 - 20,0	114	28,0	56,0	260	54,0	61,0	231	12.500	9,24



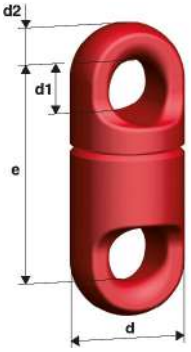
WELD-ON HOOK – HAS

Code	Measurements					Working Load Limit	Weight
	l	h	g	b	c		
	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(kg/pc.)
HAS 1.3	95,0	74,0	25,0	25,0	34,0	1.300	0,60
HAS 3.8	132	106	29,0	35,0	40,0	3.800	1,30
HAS 6.3	167	133	34,0	45,0	49,0	6.300	2,80
HAS 10	175	136	34,0	50,0	49,0	10.000	3,70



UNILOCK CONNECTING LINK - U

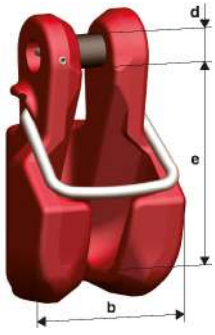
Code	Load Capacity	e	b	d	s	a	M	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
U 5/6	1,12	34,0	21,0	9,00	11,0	16,0	7,00	0,09
U 7	1,50	49,0	28,0	13,0	16,0	22,0	8,00	0,22
U 8	2,00	48,0	28,0	13,0	16,0	22,0	10,0	0,23
U 10	3,15	60,0	35,0	16,0	20,0	27,0	12,0	0,39
U 13	5,30	72,0	39,0	18,0	24,0	34,0	16,0	0,65
U 16	8,00	80,0	47,0	23,0	32,0	44,0	20,0	1,34
U 19/20	12,5	96,0	56,0	26,0	36,0	52,0	24,0	2,03
U 26	21,2	121	77,0	36,0	49,0	74,0	30,0	4,70



SWIVEL - DF

Code	Load Capacity	e	d	d1	d2	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
DF 5/6 [1]	1,12	44,0	22,0	12,0	7,00	0,10
DF 7/8 [1]	2,00	60,0	27,0	16,0	8,00	0,20
DF 10 [1]	3,15	74,0	32,0	20,0	10,0	0,30
DF 13 [1]	5,30	92,0	40,0	25,0	13,0	0,60

[1] Upon request!



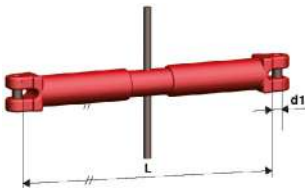
CLEVIS CONNECTOR - KVS

Code	Load Capacity	e	b	d	Weight
	(ton)	(mm)	(mm)	(mm)	(kg/pc.)
KVS 7	1,50	58,0	44,0	9,00	0,50
KVS 8	2,00	58,0	44,0	10,0	0,50
KVS 10	3,15	70,0	55,0	12,5	0,80
KVS 13	5,30	90,0	70,0	16,0	1,53

Safety Warnings: Only load the inside chain. Only use with a safety device. Ensure that the chain fits neatly and securely.

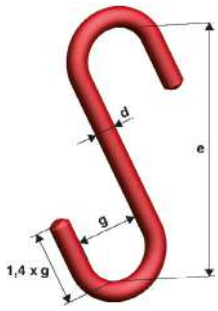
CONCRETE PIPE LIFTING SLING - BRG

Code	Leg Length	Load Capacity Up to 30°	Up to Tube Diameter	Weight
	(mm)	(ton)	(mm)	(kg/pc.)
WIN 7 400 III AW-BRG1500	1.500	2,50	1.300	32,8
WIN 7 400 III AW-BRG1500 Unilock	1.500	2,50	1.300	33,5
WIN 7 400 III AW-BRG2000	2.000	2,50	1.800	34,7
WIN 7 400 III AW-BRG2000 Unilock	2.000	2,50	1.800	35,2
With Grab Hook				
WIN 7 400 III VXKW-BG 2000	2.000	2,50	1.800	38,9
WIN 7 400 III VXKW-BG 2500	2.500	2,50	2.300	39,5
Customs lengths are available upon request!				



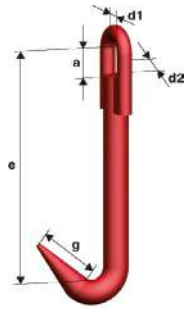
CLEVIS TURNBUCKLE - KSS

Code	Load Capacity	Tension Distance	L Min.	L Max.	d1	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
KSS 8	2,00	120	330	450	10,0	2,01
KSS 10	3,15	225	460	685	12,0	4,24
KSSW 16 *	10,0	250	530	780	20,0	10,0
* KSSW 16: Grade 100						



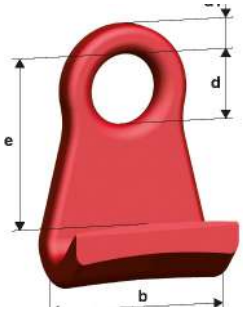
S HOOK - SM

Code	Load Capacity	e	g	d	Weight
	(ton)	(mm)	(mm)	(mm)	(kg/pc.)
SM 5	0,80	180	42,0	16,0	0,60
SM 7/8	2,00	220	53,0	23,0	1,50
SM 10	3,15	280	58,0	31,0	3,40
SM 13	5,30	400	90,0	40,0	8,40
SM 16	8,00	500	120	50,0	16,0
SM 19	11,2	550	130	60,0	26,0
Customs lengths are available upon request!					



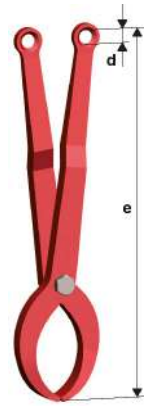
BALE HOOK - BA

Code	Load Capacity	e	d1	g	a	d2	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
BA 5/6	1,12	160	16,0	40,0	24,0	7,00	0,36
BA 7/8	2,00	200	19,0	50,0	30,0	10,0	0,72
BA 10	3,15	260	27,0	65,0	39,0	13,0	1,78



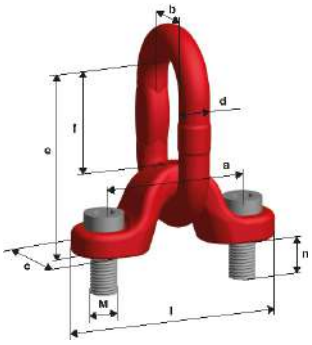
BARREL HOOK - FA

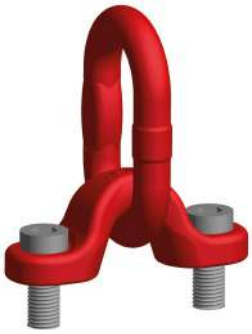
Code	Load Capacity	e	d	d1	b	Weight
	(kg)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
FA 5/6	500	90,0	40,0	17,0	70,0	0,80
Length = Length of sling L as with sling type II AW-S						



HIGH TENSILE LIFTING TONG - HZ

Code	Load Capacity	Range	e	d	Required Chain Sling	Weight
	(ton)	(mm)	(mm)	(mm)		(kg/pc.)
HZ 0,125	0,125	100 - 200	310	15,0	WIN 5 II AW-CW 310	2,43
HZ 0,25	0,250	130 - 300	466	20,0	WIN 6 II AW-CW 410	4,77
HZ 0,5	0,500	160 - 400	629	28,0	WIN 7 II AW-CW 570	12,0
HZ 1	1.000	215 - 500	808	30,0	WIN 8 II AW-CW 730	24,0
HZ 2	2.000	250 - 600	959	30,0	WIN 8 II AW-CW 830	41,0





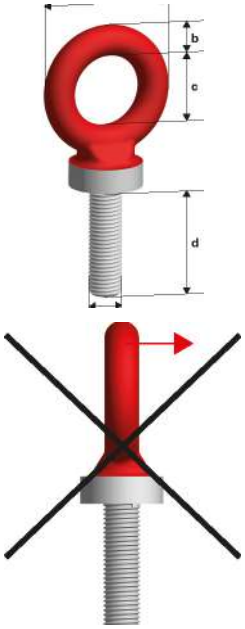
LASHING POINT - AOR

Code	Thread	Load Capacity	Chain Diameter	a	b	c	d	e	f	l	n	Weight
	(mm)	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
AOR 10	M16	3,15	10,0	90,0	40,0	38,0	18,0	112	57,0	130	25,0	1,41
AOR 13	M20	5,30	13,0	115	50,0	48,0	22,0	149	79,0	165	36,0	2,83
AOR 16	M30	8,00	16,0	150	65,0	62,0	26,0	183	93,0	212	50,0	5,78
AOR 22	M36	15,0	22,0	175	75,0	72,0	36,0	226	114	255	54,0	10,9
AOR 26 [1]	M42	21,2	26,0	200	95,0	90,0	45,0	272	142	295	67,0	19,3
AOR 28 [1]	M45	25,0	28,0	200	95,0	90,0	45,0	272	142	295	67,0	20,2
AOR 32 [1]	M56	31,5	32,0	230	110	100	48,0	336	193	330	88,0	31,7
AOR 34 [1]	M56	36,0	34,0	230	110	100	48,0	336	193	330	88,0	31,7

[1] Not stocked product.

Code	Thread	Fastening torque	Load Capacity 1 Leg 0°	Load Capacity 1 Leg 90°	Load Capacity 2 Leg 0°	Load Capacity 2 Leg 90°	Load Capacity 2 Leg 0° - 45°
	(mm)	(Nm)	(ton)	(ton)	(ton)	(ton)	(ton)
AOR 10	M16	170	3,15	3,15	6,30	6,30	4,25
AOR 13	M20	350	5,30	5,30	10,6	10,6	7,50
AOR 16	M30	950	8,00	8,00	16,0	16,0	11,2
AOR 22	M36	1.900	15,0	15,0	30,0	30,0	21,2
AOR 26 [1]	M42	2.100	21,2	21,2	42,4	42,4	30,0
AOR 28 [1]	M45	2.400	25,0	25,0	50,0	50,0	33,5
AOR 32 [1]	M56	3.200	31,5	31,5	63,0	63,0	45,0
AOR 34 [1]	M56	3.200	36,0	36,0	72,0	72,0	50,0

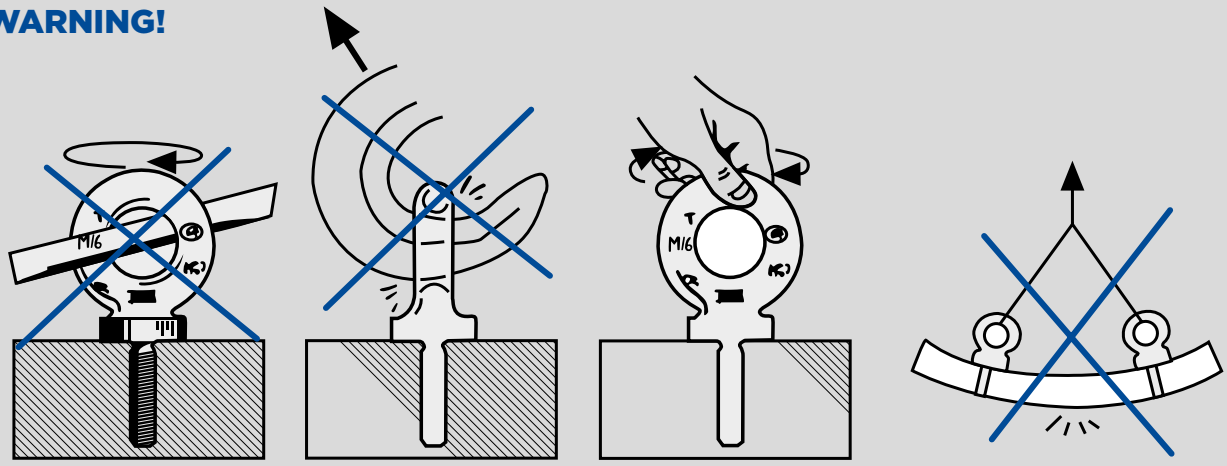
Code	Thread	Fastening torque	Load Capacity 2 Leg 45° - 60	Load Capacity 3/4 Leg 0° - 45°	Load Capacity 3/4 Leg 45° - 60°	Load Capacity 2 Leg Asymmetrical Load	Load Capacity 3/4 Leg Asymmetrical Load
	(mm)	(Nm)	(ton)	(ton)	(ton)	(ton)	(ton)
AOR 10	M16	170	3,15	6,70	4,75	3,15	3,15
AOR 13	M20	350	5,30	11,2	8,00	5,30	5,30
AOR 16	M30	950	8,00	17,0	11,8	8,00	8,00
AOR 22	M36	1.900	15,0	31,5	22,4	15,0	15,0
AOR 26 [1]	M42	2.100	21,2	45,0	31,5	21,2	21,2
AOR 28 [1]	M45	2.400	25,0	50,0	37,5	25,0	25,0
AOR 32 [1]	M56	3.200	31,5	67,0	47,5	31,5	31,5
AOR 34 [1]	M56	3.200	36,0	75,0	53,0	36,0	36,0

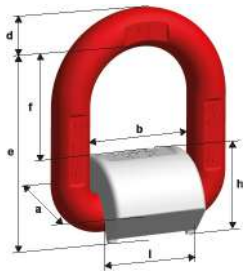


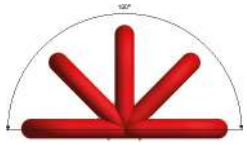
ALLOY STEEL EYEBOLT - RGS

Code	Thread	Load Capacity 1 Leg 0°	Load Capacity 2 Leg 0°	a	b	c	d	e	Weight
	(mm)	(ton)	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
RGS 8	M8	0,40	0,80	34,0	7,00	20,0	24,0	44,0	0,05
RGS 10	M10	0,70	1,40	38,0	8,00	22,0	30,0	49,0	0,10
RGS 12	M12	1,00	2,00	47,0	10,0	26,0	36,0	59,0	0,14
RGS 14	M14	1,20	2,40	57,0	14,0	29,0	40,0	71,0	0,25
RGS 16	M16	1,50	3,00	65,0	14,0	35,0	55,0	79,0	0,36
RGS 18	M18	2,00	4,00	65,0	14,0	35,0	54,0	79,0	0,38
RGS 20	M20	2,50	5,00	73,0	16,0	39,0	59,0	89,0	0,55
RGS 22	M22	3,00	6,00	82,0	19,0	44,0	64,0	101	0,74
RGS 24	M24	4,00	8,00	95,0	20,0	54,0	84,0	114	1,12
Other sizes available on request.									
Attention: Subject to technical changes.									

WARNING!





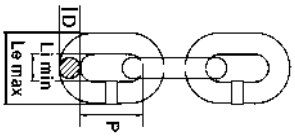


PROFILIFT - PLE/N ETA

Code	Load Capacity	a	b	c	d	e	f	h	l	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
PLE/N 6	1,12	36,0	40,0	62,0	11,0	67,0	42,0	26,0	35,0	0,31
PLE/N 8	2,00	37,0	42,0	69,0	13,0	73,0	45,0	28,0	37,0	0,40
PLE/N 10	3,15	41,0	45,0	78,0	16.50	80,0	47,0	34,0	40,0	0,63
PLE/N 13	5,30	61,0	55,0	99,0	22,0	97,0	53,0	44,0	50,0	1,46
PLE/N 16	8,00	63,0	70,0	120	25,0	120	73,0	48,0	64,0	2,30
PLE/N 22	15,0	89,0	97,0	163	33,0	163	92,0	70,0	90,0	5,40

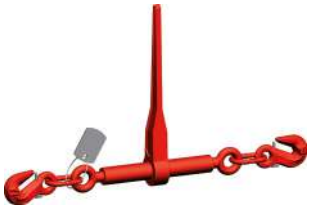
Code	Load Capacity 1 Leg 0°	Load Capacity 1 Leg 90°	Load Capacity 2 Leg 0°	Load Capacity 2 Leg 90°	Weight
	(ton)	(ton)	(ton)	(ton)	(ton)
PLE/N 6	1,12	1,12	2,24	2,24	1,50
PLE/N 8	2,00	2,00	4,00	4,00	2,80
PLE/N 10	3,15	3,15	6,30	6,30	4,40
PLE/N 13	5,30	5,30	10,6	10,6	7,40
PLE/N 16	8,00	8,00	16,0	16,0	11,3
PLE/N 22	15,0	15,0	30,0	30,0	21,0

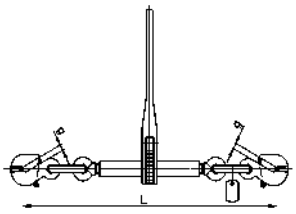
Code	Load Capacity 2 Leg 45°-60°	Load Capacity 3/4 Leg 0°-45°	Load Capacity 3/4 Leg 45°-60°	Load Capacity 2 Leg Asymmetrical Load	Load Capacity 3/4 Leg Asymmetrical Load
	(ton)	(ton)	(ton)	(ton)	(ton)
PLE/N 6	1,12	2,30	1,60	1,12	1,12
PLE/N 8	2,00	4,20	3,00	2,00	2,00
PLE/N 10	3,15	6,60	4,70	3,15	3,15
PLE/N 13	5,30	11,2	7,90	5,30	5,30
PLE/N 16	8,00	16,9	12,0	8,00	8,00
PLE/N 22	15,0	31,8	22,5	15,0	15,0



LASHING CHAIN SUPER ALLOY - EN 818-2

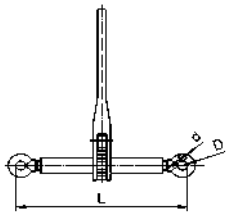
Chain Diameter	Pitch	Li Min.	Le Max.	Lashing Capacity	Breaking Force	Weight
(mm)	(mm)	(mm)	(mm)	(kN)	(ton)	(kg/m)
8,00	24,0	10,4	29,6	40,0	8,20	1,40
10,0	30,0	13,0	37,0	63,0	13,0	2,20
13,0	39,0	16,9	48,1	100	22,0	3,80





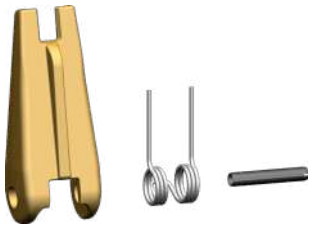
LOAD BINDER WITH GRAB HOOKS – RLSP

Code	Max. Permissible Lashing Capacity	Normal Tension Force	Length Closed L	Length Open L	Tension Range	Width Opening g	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
RLSP 08	40,0	1.900	586	731	145	12,0	4,60
RLSP 10	63,0	1.900	626	771	145	15,0	5,40
RLSP 13	100	3.000	708	853	145	19,5	8,00



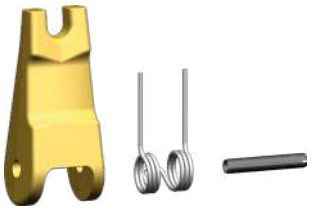
LOAD BINDER – RLS

Code	Max. Permissible Lashing Capacity	Normal Tension Force	Length Closed L	Length Open L	Tension Range	D	d	Weight
	(kN)	(daN)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
RLS 08	40,0	1.900	355	500	145	20,0	16,0	3,20
RLS 10	63,0	1.900	355	500	145	20,0	16,0	3,20
RLS 13	100	3.000	365	510	145	26,0	18,0	3,80



SAFETY CATCH SET – FG

Code	Chain Diameter (mm)	For Accessory Part
FG 06	6,00	HKS/HS 06.8 U
FG 07/8	7,00 - 8,00	HKS/HS 07/8.8 U
FG 10	10,0	HKS/HS 10.8 U
FG 13	13,0	HKS/HS 13.8 U
FG 16	16,0	HKS/HS 16.8 U
FG 20	20,0	HKS/HS 20.8 U
FG 22	22,0	HKS/HS 22.8 U
FG 26	26,0	HS 26.8 U
FG 32	32,0	HS 32.8 U



SAFETY CATCH SET – FG-V

Code	Chain Diameter (mm)	For Accessory Part
FG-V 07/8	7,00 - 8,00	VHKS 07/8.8
FG-V 10	10,0	VHKS 10.8

SAFETY CATCH SET FOR WELD ON HOOKS – SFG

Code	For Accessory Part
SFG-A1	HAS 1.3
SFG-A3	HAS 3.8
SFG-A6	HAS 6.3, HAS 10

TRIGGER SET FOR SELF LOCKING HOOKS – HBG

Code	Chain Diameter (mm)	For Accessory Part
HBG 06.8 U	6,00	HSB/HKSB/WSB 06.8 U
HBG 07/8.8 U	7,00 - 8,00	HSB/HKSB/WSB 7/8.8 U
HBG 10.8 U	10,0	HSB/HKSB/WSB 10.8 U
HBG 13.8 U	13,0	HSB/HKSB/WSB 13.8 U
HBG 16.8 U	16,0	HSB/HKSB/WSB 16.8 U
HBG 20/22.8 U	18,0 - 20,0 - 22,0	HSB 20.8+HSB 22.8 U

LOAD PIN SET FOR CLEVIS SELF LOCKING HOOKS - KGB - HKSB - U

Code	Chain Diameter (mm)	For Accessory Part
KBG-HKSB 06.8 U	6,00	HKSB 06.8 U
KBG-HKSB 07/8.8 U	7,00 - 8,00	HKSB 07/8.8 U
KBG-HKSB 10.8 U	10,0	HKSB 10.8 U
KBG-HKSB 13.8 U	13,0	HKSB 13.8 U
KBG-HKSB 16.8 U	16,0	HKSB 16.8 U
KBG-HKSB 20.8 U	20,0	HKSB 20.8 U
KBG-HKSB 22.8 U	22,0	HKSB 22.8 U

LOAD PIN SET FOR CLEVIS SLING HOOK AND SHORTENING CLUTCH - KBG U

Code	Chain Diameter (mm)	For Accessory Part
KBG 06 U	6,00	HKS 06.8 U, VKL 06.8
KBG 07/8 U	7,00 - 8,00	HKS 7/8.8 U, VKL 07.8
KBG 08 U	8,00	VKL 08.8
KBG 10 U	10,00	HKS 10.8 U, VKL 10.8
KBG 13 U	13,00	HKS 13.8 U, VKL 13.8
KBG 16 U	16,00	HKS 16.8
KBG 20 U	20,00	HKS 20.8
KBG 22 U	22,00	HKS 22.8

LOAD PIN SET FOR CLEVIS SHORTENING HOOK – KBG

Code	Chain Diameter (mm)	For Accessory Part	Code	Chain Diameter (mm)	For Accessory Part
KBG 07/8	7,00 - 8,00	PK 07/8.8	KBG 07/8 U	7,00 - 8,00	PK 07/8.8 NEW design
KBG 10	10,00	PK 10.8	KBG 10 U	10,00	PK 10.8 NEW design
KBG 13	13,00	PK 13.8	KBG 13 U	13,00	PK 13.8 NEW design
KBG 16	16,00	PK 16.8	KBG 16 U	16,00	PK16.8 NEW design
KBG 20	20,00	PK 20.8	KBG 20 U	20,00	-

LOAD PIN SET FOR CONNECTING LINK – BG

Code	Chain Diameter (mm)	For Accessory Part	Code	Chain Diameter (mm)	For Accessory Part
BG-V 06.8 U	6,00	V 06.8 U	BG-V 06.8	6,00	V 06.8
BG-V 07.8 U	7,00	V 07.8 U	BG-V 07.8	7,00	V 07.8
BG-V 08.8 U	8,00	V 08.8 U/RSK 08.8 U	BG-V 08.8	8,00	V 08.8
BG-V 10.8 U	10,00	V 10.8 U/RSK 10.8 U	BG-V 10.8	10,00	V 10.8/RSK 10
BG-V 13.8 U	13,00	V 13.8 U/RSK 13.8 U	BG-V 13.8	13,00	V 13.8/RSK 13
BG-V 16.8 U	16,00	V 16.8 U/RSK 16.8 U	BG-V 16.8	16,00	V 16.8
BG-V 20.8 U	18,0 - 20,0	V 20.8 U	BG-V 20.8	18,0 - 20,0	V 20.8
BG-V 22.8 U	22,00	V 22.8 U	BG-V 22.8	22,00	V 22.8
BG-V 26.8 U	26,00	V 26.8 U	BG-V 26.8	26,00	V 26.8
BG-V 32.8 U	32,00	V 32.8 U	BG-V 32.8	32,00	V 32.8

POLYESTER SLINGS AND LASHING STRAPS

- Webbing Slings
- Round Slings
- Heavy Load Slings
- One Way Slings
- Protection Systems
- Lashing Strips

WEBBING SLINGS (POLYESTER)

G-TEX®

Technical specifications:

Webbing slings are used when a large contact surface is needed and to distribute the load pressure on a large contact surface. Webbing slings are the most appropriate equipment to lift the precision loads thanks to its smooth surface.

G-TEX webbing slings are manufactured according to EN 1492–1 standard.

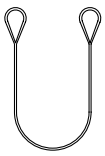
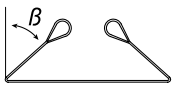
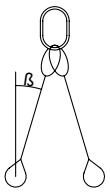
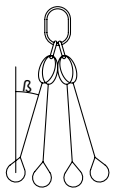
Color Code:

1t	2t	3t	4t	5t	6t	8t	10t and Above

Working load limits express working capacities in accordance with the standard.

G-TEX webbing slings are manufactured with 7:1 safety factor. The minimum force required to break the sling is 7 times greater than the working load limit. All of our products are regularly passed through quality control and tested in accordance with the requirements of European standards.

The working load limit of the webbing sling varies lifting types and number of slings that will be used for lifting. (E.g. In the choker method, 1 ton capacity sling has a 0.8 mode factor. That is, the working load limit of the sling is 1 x 0.8 = 0.8 ton = 800 kg).

TONNAGE (ton)	Color	Working Load Limit (ton)								
		Vertical Lifting	Choker Lifting	Basket Lifting			2 Leg Sling		3 or 4 Leg Sling	
										
				Parallel	ß = 0° - 45°	ß = 45° - 60°	ß= 0° - 45°	ß = 45° - 60°	ß = 0° - 45°	ß = 45° - 60°
		M = 1	M = 0,8	M = 2	M = 1,4	M = 1	M = 1,4	M = 1	M = 2,1	M = 1,5
1	Purple	1,0	0,8	2,0	1,4	1,0	1,4	1,0	2,1	1,5
2	Green	2,0	1,6	4,0	2,8	2,0	2,8	2,0	4,2	3,0
3	Yellow	3,0	2,4	6,0	4,2	3,0	4,2	3,0	6,3	4,5
4	Gray	4,0	3,2	8,0	5,6	4,0	5,6	4,0	8,4	6,0
5	Red	5,0	4,0	10,0	7,0	5,0	7,0	5,0	10,5	7,5
6	Brown	6,0	4,8	12,0	8,4	6,0	8,4	6,0	12,6	9,0
8	Blue	8,0	6,4	16,0	11,2	8,0	11,2	8,0	16,8	12,0
10	Orange	10,0	8,0	20,0	14,0	10,0	14,0	10,0	21,0	15,0
Above 10	Orange	-	-	-	-	-	-	-	-	-

M: Mod factor for symmetric loading.

ROUND SLINGS (POLYESTER)

G-TEX®

Technical specifications

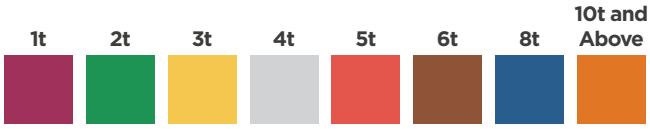
Round slings which are very flexible and light are used for lifting the loads. Round slings do not lose anything from their endurance when they get wet. G-TEX round slings are manufactured according to EN 1492 -2 European standard.

Round slings consist of high strength polyester fibers and endless yarns coated with a protective sheath. Thanks to standard polyurethane coating, the outer protective sheath of round slings is very resistant to abrasion due to friction. This feature is guaranteed by special weaving techniques and special production methods. Polyester core and coating ensure that the sling is extremely flexible and resistant to intense UV radiation. Thus, G-TEX round slings are provided to have a long service life. Core of round sling is finally a main element for lifting the loads.

The outer protective sheath prevents damage to the core. Unlike round slings made of polypropylene material, G-TEX round slings are made of polyester, which absorb frictional heat very well, and allow to operate in a temperature rangeof -40 °C to 100 °C. Each round sling type is defined by a specific color code. Separate colors are defined for each different round sling tonnages. There are labels which show safety instructions on all G-TEX round slings.

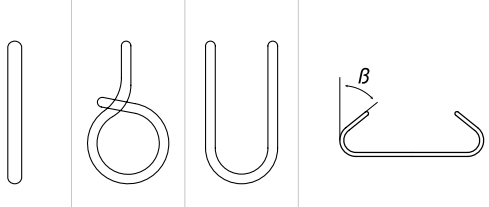
G-TEX round slings have a “Blue” label which shows safety instructions (For polyester ones).

Color Code:



The working load limit indicates the carrying load capacity that round sling can carry directly. Working load limit determines the load capacity in accordance with current European Union norms.

Safety factor is 7:1.

TONNAGE (ton)	Color	Working Load Limit (ton)								
		Vertical Lifting	Choker Lifting	Basket Lifting			2 Leg Sling		3 and 4 Leg Sling	
										
				Parallel	ß = 0° - 45°	ß = 45° - 60°	ß= 0° - 45°	ß = 45° - 60°	ß = 0° - 45°	ß = 45° - 60°
		M = 1	M = 0,8	M = 2	M = 1,4	M = 1	M = 1,4	M = 1	M = 2,1	M = 1,5
1	Purple	1,0	0,8	2,0	1,4	1,0	1,4	1,0	2,1	1,5
2	Green	2,0	1,6	4,0	2,8	2,0	2,8	2,0	4,2	3,0
3	Yellow	3,0	2,4	6,0	4,2	3,0	4,2	3,0	6,3	4,5
4	Gray	4,0	3,2	8,0	5,6	4,0	5,6	4,0	8,4	6,0
5	Red	5,0	4,0	10,0	7	5,0	7,0	5,0	10,5	7,5
6	Brown	6,0	4,8	12,0	8,4	6,0	8,4	6,0	12,6	9,0
8	Blue	8,0	6,4	16,0	11,2	8,0	11,2	8,0	16,8	12,0
10	Orange	10,0	8,0	20,0	14	10,0	14,0	10,0	21,0	15,0
Above 10	Orange	-	-	-	-	-	-	-	-	-

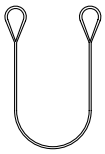
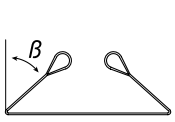
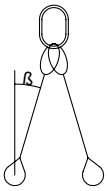
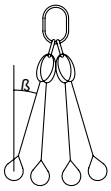
M: Mod factor for symmetric loading.

WEBBING SLINGS (Polyester)

G-TEX+

Technical specifications:

- Manufactured in Europe and safety factor is 7:1.
- Manufactured according to EN 1492-1 standard.
- Made of high quality polyester.
- WLL; between 0,5 ton to 50 ton and band thickness between 25 mm to 1200 mm range can be produced.
- Can be manufactured with different lengths and designs upon request.

TONNAGE (ton)	Sling Width (mm)	Working Load Limit (ton)								
		Vertical Lifting	Choker Lifting	Basket Lifting			2 Leg Sling		3 and 4 Leg Sling	
										
				Parallel	ß = 0° - 45°	ß = 45° - 60°	ß= 0° - 45°	ß = 45° - 60°	ß = 0° - 45°	ß = 45° - 60°
		M = 1	M = 0,8	M = 2	M = 1,4	M = 1	M = 1,4	M = 1	M = 2,1	M = 1,5
1	30	1,0	0,8	2,0	1,4	1,0	1,4	1,0	2,1	1,5
2	60	2,0	1,6	4,0	2,8	2,0	2,8	2,0	4,2	3,0
3	90	3,0	2,4	6,0	4,2	3,0	4,2	3,0	6,3	4,5
4	120	4,0	3,2	8,0	5,6	4,0	5,6	4,0	8,4	6,0
5	150	5,0	4,0	10,0	7,0	5,0	7,0	5,0	10,5	7,5
6	180	6,0	4,8	12,0	8,4	6,0	8,4	6,0	12,6	9,0
8	240	8,0	6,4	16,0	11,2	8,0	11,2	8,0	16,8	12,0
10	300	10,0	8,0	20,0	14,0	10,0	14,0	10,0	21,0	15,0
Above 10		-	-	-	-	-	-	-	-	-

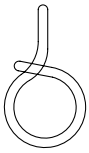
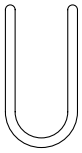
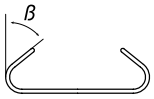
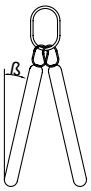
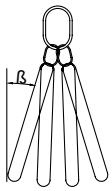
M: Mod factor for symmetric loading.

ROUND SLINGS (POLYESTER)

G-TEX+

Technical specifications:

- Manufactured in Europe and safety factor is 7:1.
- Manufactured according to EN 1492-2 standard.
- Made of high quality polyester yarns.
- Manufactured with herringbone weaving which provides more strength to sharp corners and edges.
- Excellent abrasion resistance.
- WLL; between 1 ton to 200 ton and up to 40 meters working length can be produced.
- Can be manufactured with different lengths and designs upon request.

TONNAGE (ton)	Color	Working Load Limit (ton)								
		Vertical Lifting	Choker Lifting	Basket Lifting			2 Leg Sling		3 and 4 Leg Sling	
										
				Parallel	ß = 0° - 45°	ß = 45° - 60°	ß= 0° - 45°	ß = 45° - 60°	ß = 0° - 45°	ß = 45° - 60°
		M = 1	M = 0,8	M = 2	M = 1,4	M = 1	M = 1,4	M = 1	M = 2,1	M = 1,5
1	Purple	1,0	0,8	2,0	1,4	1,0	1,4	1,0	2,1	1,5
2	Green	2,0	1,6	4,0	2,8	2,0	2,8	2,0	4,2	3,0
3	Yellow	3,0	2,4	6,0	4,2	3,0	4,2	3,0	6,3	4,5
4	Gray	4,0	3,2	8,0	5,6	4,0	5,6	4,0	8,4	6,0
5	Red	5,0	4,0	10,0	7,0	5,0	7,0	5,0	10,5	7,5
6	Brown	6,0	4,8	12,0	8,4	6,0	8,4	6,0	12,6	9,0
8	Blue	8,0	6,4	16,0	11,2	8,0	11,2	8,0	16,8	12,0
10	Orange	10,0	8,0	20,0	14,0	10,0	14,0	10,0	21,0	15,0
Above 10,0	Orange									

M: Mod factor for symmetric loading.

HEAVY LIFT ROUND SLINGS (POLYESTER)

G-TEX+

Technical specifications:

- G-TEX PLUS heavy lift slings are used in many different configurations depending the lifting project. (Engineered or repetitive lifting job, static or dynamic loads, etc.)
- High lifting capacity. (Up to WLL 200 tons)
- Double protection sleeve. (Upon request)
- Various protections for sharp edges, corners etc.
- Diverse sling configurations. (Upon request)
- Private label with unique traceability code.
- Extra protections upon request.
- Manufactured according to EN 1492-2 standard.
- Usable at temperature between -40 °C to 100 °C.

WLL (ton)	12	15	20	25	30	40	50	60	70
Inside Dia. (mm)	43	47	55	60	65	75	85	95	100
WLL (ton)	80	85	90	100	125	150	175	180	200
Inside Dia. (mm)	110	115	120	140	160	180	210	230	240

- Fluorescent inner sleeve (shrinking sock).
- Extra core protection, possibility to repair outer sleeve.
- Extra compact, smaller diameter.

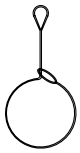
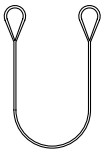
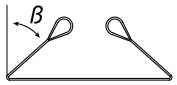
- Heavy duty label protection.

- Additional textile protection sleeves with woven in safe working load. Easy to identify.

ONE WAY SLINGS

Flat Slings

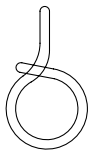
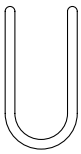
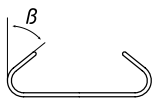
- White or colored production is possible.
- High strength production and safety factor can be determined upon request (4:1, 5:1, 6:1 and 7:1).
- Send on the product in shipping, provide quickness and ease of work.
- It is made of synthetic material in form of band.
- One - way G-TEX flat slings are manufactured in accordance with EN 1492-1 norm.

TONNAGE (ton)	Color	Working Load Limit (ton)				
						
				Paralel	ß = 0° - 45°	ß = 45° - 60°
		M = 1	M = 0,8	M = 2	M = 1,4	M = 1
1	Purple	1,0	0,8	2,0	1,4	1,0
2	Green	2,0	1,6	4,0	2,8	2,0
3	Yellow	3,0	2,4	6,0	4,2	3,0
4	Gray	4,0	3,2	8,0	5,6	4,0
5	Red	5,0	4,0	10,0	7	5,0
6	Brown	6,0	4,8	12,0	8,4	6,0
8	Blue	8,0	6,4	16,0	11,2	8,0

M: Mod factor for symmetric loading.

Round Slings

- White or colored production is possible.
- High strength production and safety factor can be determined upon request (4:1, 5:1, 6:1 and 7:1).
- Send on the product in shipping, provide quickness and ease of work.
- It is made of synthetic material in form of band.
- One - way G-TEX endless band slings are manufactured in accordance with EN 1492-2 norm.

TONNAGE (ton)	Color	Working Load Limit (ton)				
						
				Parallel	ß = 0° - 45°	ß = 45° - 60°
		M = 1	M = 0,8	M = 2	M = 1,4	M = 1
1	Purple	1,0	0,8	2,0	1,4	1,0
2	Green	2,0	1,6	4,0	2,8	2,0
3	Yellow	3,0	2,4	6,0	4,2	3,0
4	Gray	4,0	3,2	8,0	5,6	4,0
5	Red	5,0	4,0	10,0	7	5,0
6	Brown	6,0	4,8	12,0	8,4	6,0
8	Blue	8,0	6,4	16,0	11,2	8,0

M: Mod factor for symmetric loading.

POLYESTER SLING PROTECTION EQUIPMENT

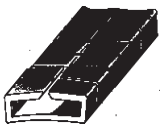
Polyurethane Protection Equipment

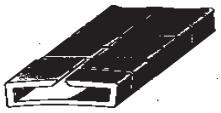
Protection systems offer an optimal and secure protection for round slings, webbing slings and lashing straps. Particularly, suitable for applications with sharp edges and rough surfaces.

Protection systems in different types of polyurethane protect the polyester fabric against premature abrasion and damage and increase the lifetime of the products. The polyurethane material has a high abrasion resistance and extreme cut resistance and offers a very good grip that prevents slippage of the load.

Flexoclip system is available for round slings up to WLL 8 tons, for webbing slings up to bandwidth of 150 mm and lashing straps in standard bandwidths.

After cutting a little bit of polyurethane flexoclip system, open and pull it out. Place and use to product you want to protect.





Working Load Limit (ton)
1,0
2,0
3,0
4,0
5,0
6,0
7,0
8,0

Working Load Limit (ton)	Band Width (mm)
1,0	30
1,0	50
3,0	60
4,0	90
5,0	120

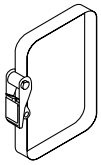
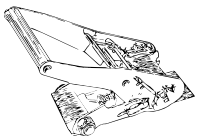
Band Width (mm)
35
50
75

Synthetic Protection Equipment

- Excellent dynamic toughness
- Very low elongation
- Excellent flex fatigue resistance
- Superior cut resistance
- Exceptional flexibility
- Superior tear resistance
- Significantly longer life-time of round slings and webbing slings
- Easy to put on; easy to take of equipped with Velcro
- It's always in the right place; easy to place on the anchoring points, or the most vulnerable place
- Manufactured using Dyneema

LASHING STRAPS

- Lashing straps passing over the load are used to fix the load to the surface on which load is transported, and equipped with a tension mechanism which is called “ratchet”.
- Loads, fixed by using these lashing straps, are not damaged during transportation and storage and they do not damage their surroundings and do not cause injury. They are easy to use and economical and are very suitable for load safety.
- Appropriate lashing operation must be done according to the specified criteria on the label.
- Knot and tie operations must not be done.
- Lashing straps are not suitable for lifting loads. They must be only used for lashing operations.
- Because lashing straps are made of polyester band, they are suitable at working between -40 °C to 100 °C.
- Lashing straps must not be used when the absence of label, cut or damage, color loss, chemical and heat damage.

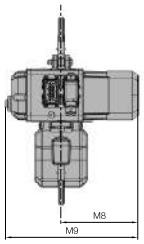
Stretching Capacities According to EN 12195-2			
Band Width (mm)	Flat Use (daN)	Circular Use (daN)	Applied Force (daN)
			
25,0	300	600	30
25,0	500	1.000	50
35,0	1.000	2.000	100
50,0	2.000	4.000	320
50,0	2.000	4.000	420
50,0	2.500	5.000	350
50,0	2.500	5.000	450
75,0	5.000	10.000	500

LIFTING EQUIPMENT

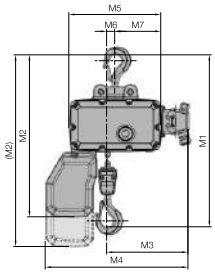
- > Chain Hoist Machine
- > Scissor Clamp for Marble and Concrete Slabs
- > Pewag Levo Hook
- > Lifting Clamps
- > Lifting Magnet
- > Clamps
- > Drum and Barrel Lifting
- > Chain Blocks and Lever Hoists
- > Jacks and Hand Pallet Truck

CHAIN HOIST MACHINE

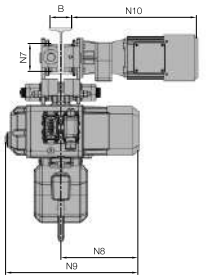
Lifting Capacity		250 kg	500 kg	500 kg	1000 kg	1000 kg	2000 kg
Machine Type		GMD05	GMD05	GMD06	GMD06	GMD07	GMD07
Chain Falls		1/1	2/1	1/1	2/1	1/1	2/1
Fem Classification		1 AM	1 AM	1 AM	1 AM	1 AM	1 AM
Hoisting Speed	m/min.	2/8	1/4	2/8	1/4	2/8	1/4
Hoist Motor Power	kW	0,09/0,36	0,09/0,36	0,18/0,75	0,18/0,75	0,45/1,90	0,45/1,90
Trolley Speed	m/min.	4,40/20,0	4,40/20,0	4,40/20,0	4,40/20,0	4,40/20,0	4,40/20,0
Trolley Motor Power	kW	0,06/0,25	0,06/0,25	0,06/0,25	0,06/0,25	0,06/0,25	0,06/0,25

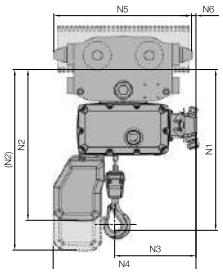


Dimensions of Stationary Chain Hoist	(mm)					
M1		435	571	489	571	568	679
M2		483	523	504	523	600	621
M2*		583	623	604	623	75a	771
M3		242	217	242	217	266	231
M4		425	425	425	425	502	502
M5		280	280	280	280	310	310
M6		25,0	0,00	25,0	0,00	24,0	0,00
M7		140	140	140	140	166	166
M8		165	165	165	165	196	196
M9		327	327	327	327	375	375

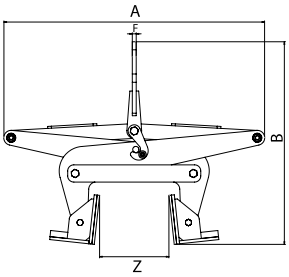


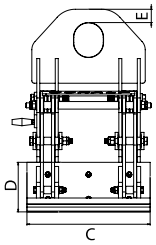
Dimensions of Monorail Trolley Chain Hoist	(mm)					
N1		412	507	445	507	527	617
N2		460	460	460	460	559	559
N2*		560	560	560	560	708	708
N3		242	217	242	217	266	231
N4		425	425	425	425	502	502
N5		420	420	420	420	420	420
N6		14,0	14,0	14,0	14,0	32,0	32,0
N7		85,0	85,0	85,0	85,0	85,0	85,0
N8		165	165	165	165	196	196
N9		327	327	327	327	375	375
N10		381	381	381	381	381	381





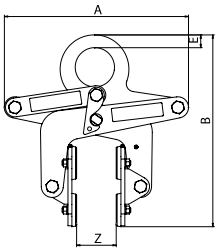
* The valid measurement, if the lifting height > 10 m for 1 fall or the lifting height > 5 m for 2 falls.

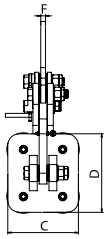




SCISSOR CLAMP FOR CONCRETE SLABS

Model	Safe Working Load (kg)	Grip Range Z (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Weight (kg)
KAB20	1.500	0 - 280	980	115	500	150	54,0	16,0	150



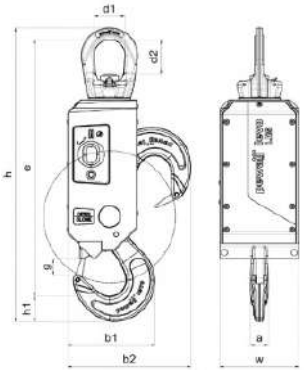


SCISSOR CLAMP FOR MARBLE SLABS

Model	Safe Working Load (kg)	Grip Range Z (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Weight (kg)
KAM03	350	0 - 50	212	352	175	120	20	10,0	9,30
KAM05	500	0 - 70	316	404	175	120	20	10,0	12,5
KAM12	1.200	0 - 100	469	487	185	205	36	12,0	27,0
KAM15	1.500	0 - 124	438	437	205	185	25	14,0	27,0

PEWAG LEVO HOOK

Load Capacity	e	a	b1	b2	d1	d2	g	h	h1	w	Weight
(kg)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
5.000	460	32,0	156	220	54,0	61,0	29,0	528	46,0	142	20,0



Specification:

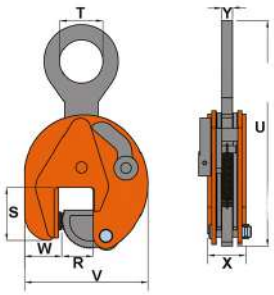
- Without any breakage, the hook can open and close about 8000 times on a single charge and spend 2.5 seconds for this operation.
- The safety factor against breakage is 4:1.
- It is not possible to open the hook under load.
- High Pewag quality.
- Pewag Levo Hook is an innovative lifting device with rotatable lifting hook.
- The Pewag Levo Hook is operated by radio control, which allows easy, safe and fast handling of loads. Loads no longer need to be manually installed and removed.
- By connecting several hooks together, business processes can be simplified and flow lines can be even more.

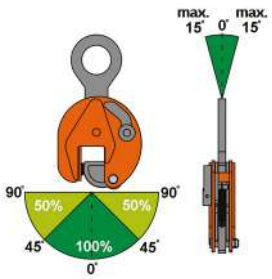
Advantages:

- Loads that are difficult to reach: The levo hook offers optimal support for works performed at great heights, in construction pits or extreme temperatures (-20 ° to 60 °C).
- Works performed in hazard areas: The levo hook increases safety for workers, in particular during speedy work processes. Critical situations are avoided thanks to automated loading and unloading.
- Works that require additional manpower: Thanks to the innovative levo hook, work processes are made easier as the crane operator is able to attach and unhook the load independently.
- Cost and time saving in speedy work processes.
- Increased safety for user and load safety.
- Can be used in many applications.
- Expert support during first use with distance training
- Tool - free locking with tool-free lock and tool-free first assembly.

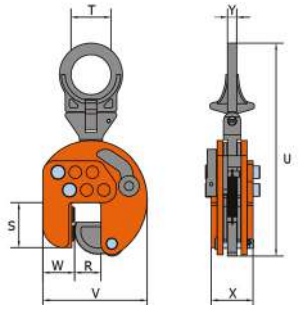
VERTICAL LIFTING CLAMP - VCW / SVCW

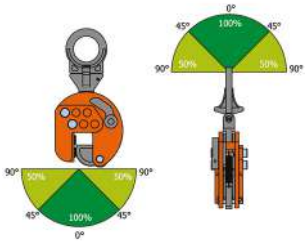
Code	Load Capacity	Jaw Opening R	S	T	U	V	W	X	Y	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VCW/VCEW										
VCW 0.75 t	0,75	0 - 13	47,0	30,0	202	100	37,0	37,0	10,0	1,70
VCEW 1 t	1,00	0 - 25	56,0	45,0	263	141	37,0	47,0	15,0	3,50
VCEW 2 t	2,00	0 - 35	78,0	64,0	336	183	56,0	56,0	16,0	7,00
VCEW 3 t	3,00	0 - 35	78,0	64,0	336	183	56,0	56,0	16,0	7,00
VCW 4.5 t	4,50	0 - 25	85,0	70,0	423	203	60,0	77,0	20,0	15,0
VCEW 4.5 t	4,50	0 - 45	85,0	70,0	425	228	60,0	78,0	20,0	16,0
VCW 6 t	6,00	0 - 32	114	75,0	490	225	78,0	78,0	20,0	19,0
VCEW 6 t	6,00	0 - 50	114	75,0	490	259	82,0	78,0	20,0	21,0
VCW 7.5 t	7,50	0 - 40	111	75,0	530	246	76,0	82,0	20,0	24,0
VCEW 7.5 t	7,50	0 - 55	111	75,0	522	267	70,0	86,0	20,0	26,0
VCW 9 t	9,00	0 - 55	111	75,0	522	267	70,0	86,0	20,0	27,0
VCW 12 t	12,0	0 - 52	148	85,0	617	295	100	94,0	44,0	37,0
VCW 15 t	15,0	0 - 76	209	86,0	810	373	136	106	49,0	70,0
VCW 17 t	17,0	0 - 76	209	86,0	810	373	136	106	49,0	71,0
VCW 20 t	20,0	0 - 80	250	100	933	563	153	140	66,0	149
VCW 25 t	25,0	5 - 85	250	100	925	563	148	140	66,0	149
VCW 30 t	30,0	10 - 90	250	100	918	568	153	142	66,0	156
SVCW										
SVCW 6 t	6,00	40 - 90	114	75,0	486	275	70,0	78,0	20,0	21,0
SVCW 7.5 t	7,50	50 - 100	111	75,0	524	312	70,0	86,0	20,0	26,5
SVCW 9 t	9,00	50 - 100	111	75,0	522	312	70,0	86,0	20,0	27,5
SVCW 12 t	12,0	50 - 100	152	85,0	615	344	100	94,0	44,0	41,0
SVCW 15 t	15,0	80 - 150	224	86,0	800	450	136	106	49,0	76,0
SVCW 20 t	20,0	80 - 150	249	100	924	640	153	140	66,0	160
SVCW 25 t	25,0	80 - 150	249	100	924	640	153	140	66,0	160
SVCW 30 t	30,0	80 - 150	249	100	906	645	156	142	66,0	166





- Safe lifting and moving.
- For vertical lifting and moving of steel plates and structures. The VCW/SVCW lifting clamps are equipped with a safety mechanism, ensuring the clamp does not slip when lifting force is applied and when load is being lowered. The clamp is locked in closed as well as in open position. Lifting capacity and jaw opening are clearly engraved in the body.
- The VCEW clamps have an enlarged jaw opening; the SVCW types had an extra-large grab range.
- Minimum WLL is 10% of the maximum WLL.

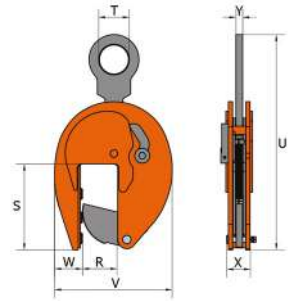


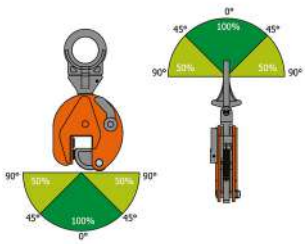


VERTICAL LIFTING CLAMP - VEUW A

Code	Load Capacity	Jaw Opening R	S	T	U	V	W	X	Y	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VEUW-A 3 t	3,00	0 - 95	79,0	70,0	373	183-243	51,0	77,0	16,0	10,0

- One for all.
- Only one clamp is needed for different kind of jobs. The same clamp can be used for different jaw opening widths. For lifting and moving of steel plates and structures from all positions.
- The jaw opening width is adjustable by steps of 30 mm, up to 95 mm.
- Minimum WLL is 10% of the maximum WLL.

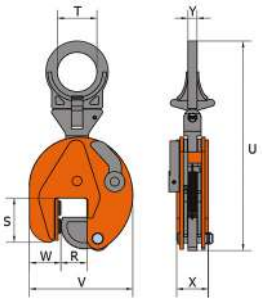




VERTICAL LIFTING CLAMP - VHPW

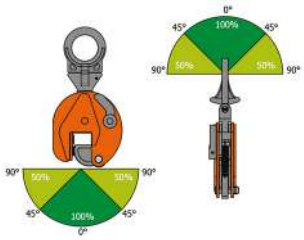
Code	Load Capacity	Jaw Opening R	S	T	U	V	W	X	Y	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VHPW 1 t	1,00	0 - 80	207	70,0	520	283	67,0	64,0	16,0	19,0
VHPW 1.5 t	1,50	0 - 80	207	70,0	520	283	67,0	64,0	16,0	19,0
VHPW-A 1.5 t	1,50	0 - 155	160	70,0	523	256-333	62,0	66,0	16,0	18,0

- All good things come in threes.
- For lifting and moving of Holland - profile (HP) steel rails and structures with HP - profiles. Also useful as a “big - jaw” opening clamp (e.g. serving of lathes with large discs). Equipped as standard with three pivots for extra powerful clamping force.
- VHPW lifting clamps are equipped with a safety mechanism, ensuring the clamp does not slip when lifting force is applied and when load is being lowered. The clamp is locked in closed as well as in open position.
- Minimum WLL is 10% of the maximum WLL.

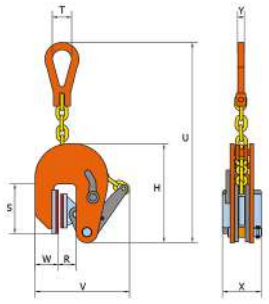


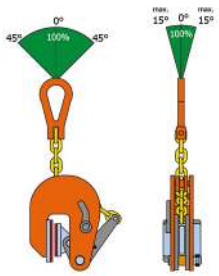
VERTICAL LIFTING CLAMP - VHPUW

Code	Load Capacity	Jaw Opening R	S	T	U	V	W	X	Y	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VHPUW 3 t	3,00	0 - 35	93,0	70,0	369	182	58,0	54,0	16,0	8,00
VHPUW 5 t	5,00	0 - 45	110	70,0	434	228	58,0	86,0	20,0	17,3



- Smart and moveable.
- This special version is equipped with a movable universal lifting eye and two pivots. Further it is designed for the use of moving, lifting and lowering Holland profiles and/or construction units with built - in Holland profiles.
- Minimum WLL is 10% of the maximum WLL.

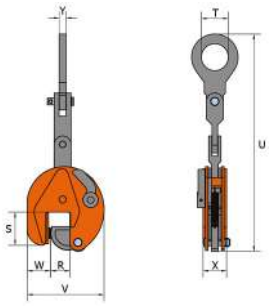


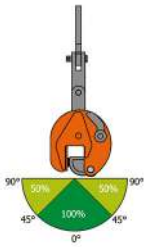


VERTICAL LIFTING CLAMP - VNMW/VSNMW

Code	Load Capacity	Jaw Opening R	H	S	T	U	V	W	X	Y	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VNMW 0.5 t	0,50	1 - 20	205	102	40,0	462	224	48,0	80,0	14,0	6,00
VSNMW 0.5 t	0,50	17 - 37	205	102	40,0	462	241	48,0	80,0	14,0	6,00
VNMW 1 t	1,00	1 - 30	232	105	40,0	470	282	46,0	80,0	14,0	6,50
VNMW 1.5 t	1,50	1 - 40	232	105	40,0	470	282	46,0	80,0	14,0	6,50
VNMW 2 t	2,00	1 - 50	362	124	50,0	704	408	63,0	80,0	18,0	15,0
VNMW 3 t	3,00	1 - 60	362	124	50,0	704	408	63,0	80,0	18,0	15,5

- Without a trace.
- VNMW/VSNMW Pewag winner is a non - marking clamp equipped with two special synthetic pads. Thus the clamp is particularly suitable for lifting, handling and moving (stainless) steel, aluminum, wood and marble plates and will not leave any marks.
- The clamp is mounted in the crane hook by means of a lifting chain with reeving link.
- No minimum WLL required.

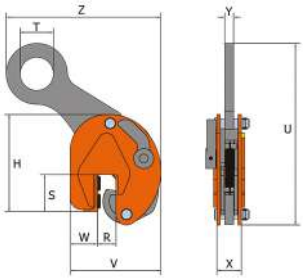


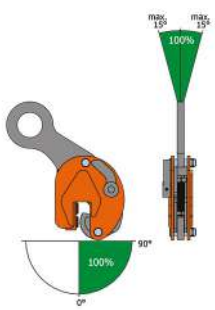


VERTICAL LIFTING CLAMP - VMPW/VEMPW/SVMPW

Code	Load Capacity	Jaw Opening R	S	T	U	V	W	X	Y	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VMPW/VEMPW										
VMPW 0.75 t	0,75	0 - 13	47,0	30,0	307	100	37,0	37,0	10,0	2,00
VEMPW 1 t	1,00	0 - 25	56,0	45,0	403	141	37,0	47,0	15,0	4,50
VEMPW 2 t	2,00	0 - 35	78,0	64,0	516	183	56,0	56,0	16,0	8,00
VEMPW 3 t	3,00	0 - 35	78,0	64,0	516	183	56,0	56,0	16,0	8,00
VMPW 4.5 t	4,50	0 - 25	85,0	70,0	648	203	60,0	77,0	20,0	17,8
VEMPW 4.5 t	4,50	0 - 45	85,0	70,0	650	228	60,0	78,0	20,0	19,0
VMPW 6 t	6,00	0 - 32	114	75,0	760	225	78,0	78,0	20,0	24,0
VEMPW 6 t	6,00	0 - 50	114	75,0	760	259	82,0	78,0	20,0	25,5
VMPW 7.5 t	7,50	0 - 40	111	75,0	800	246	76,0	82,0	20,0	29,0
VEMPW 7.5 t	7,50	0 - 55	111	75,0	792	267	70,0	86,0	20,0	30,5
VMPW 9 t	9,00	0 - 55	111	75,0	792	267	70,0	86,0	20,0	31,0
SVMPW										
SVMPW 6 t	6,00	40 - 90	114	75,0	756	275	70,0	78,0	20,0	26,0
SVMPW 7.5 t	7,50	50 - 100	111	75,0	695	312	70,0	86,0	20,0	31,5
SVMPW 9 t	9,00	50 - 100	111	75,0	792	312	70,0	86,0	20,0	32,5

- The VMPW, VEMPW and SVMPW lifting clamps are equipped with a three way multi-purpose lifting shackle. For lifting and moving of all steel plates and structures.
- When attached to a fixed load bearing arm (e.g. spreader bar) the clamp will retain its flexibility and no chain is needed. Due to the length of the three way linkage arrangement the clamp can be lowered further between standing plates or structures. Lifting capacity and jaw opening are clearly engraved in the body. Type VEMPW is supplied with an enlarged jaw opening; Type SVMPW had an extra-large grab range.

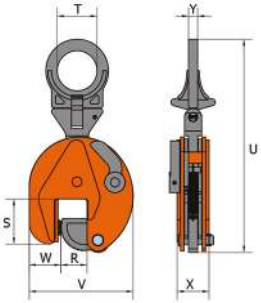


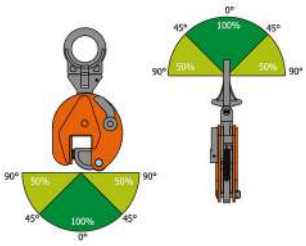


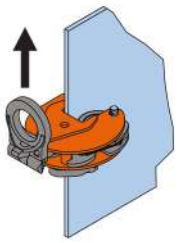
VERTICAL LIFTING CLAMP - BKW

Code	Load Capacity	Jaw Opening R	H	S	T	U	V	W	X	Y	Z	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
BKW 1 t	1,00	0 - 15	154	45,0	35,0	225	136	43,0	47,0	15,0	200	3,00
BKW 1.5 t	1,50	0 - 20	210	67,0	60,0	374	170	56,0	56,0	16,0	312	7,00
BKW 3 t	3,00	0 - 25	252	66,0	70,0	410	208	58,0	77,0	20,0	380	15,0

- For lifting and moving of steel beams, profiles and structures where the load must stay in position. The special shape of the lifting shackle places the center of the gravity of the beam beneath the lifting shackle.
- This maintains the equilibrium of the beam once it has been lifted and keeps the flanges vertical so that the beam can easily be stacked or positioned.
- Lifting capacity and jaw - opening are clearly engraved in the body. Minimum WLL is 10% of the maximum WLL.



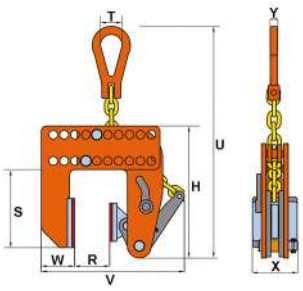


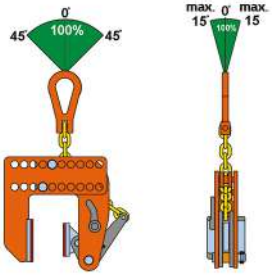


VERTICAL LIFTING CLAMP - VUW/VEUW/SVUW

Code	Load Capacity	Jaw Opening R	S	T	U	V	W	X	Y	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VUW/VEUW										
VUW 0.75 t	0,75	0 - 13	47,0	30,0	203	100	37,0	37,0	10,0	1,80
VEUW 1 t	1,00	0 - 25	56,0	50,0	292	141	37,0	47,0	15,0	3,80
VEUW 2 t	2,00	0 - 35	78,0	70,0	372	183	56,0	56,0	16,0	8,00
VEUW 3 t	3,00	0 - 35	78,0	70,0	372	183	56,0	56,0	16,0	8,00
VUW 4.5 t	4,50	0 - 25	85,0	70,0	429	203	60,0	77,0	20,0	16,0
VEUW 4.5 t	4,50	0 - 45	85,0	70,0	431	228	60,0	78,0	20,0	16,5
VUW 6 t	6,00	0 - 32	114	78,0	528	225	78,0	78,0	32,0	22,0
VEUW 6 t	6,00	0 - 50	114	78,0	527	259	82,0	78,0	32,0	24,0
VUW 7.5 t	7,50	0 - 40	111	78,0	567	246	76,0	82,0	32,0	27,0
VEUW 7.5 t	7,50	0 - 55	111	78,0	560	267	70,0	86,0	32,0	28,0
VUW 9 t	9,00	0 - 55	111	78,0	560	267	70,0	86,0	32,0	29,0
VUW 12 t	12,0	0 - 52	148	85,0	648	295	100	94,0	48,0	41,0
VUW 15 t	15,0	0 - 76	209	85,0	816	373	136	106	48,0	73,0
VUW 17 t	17,0	0 - 76	209	85,0	816	373	136	106	48,0	74,0
VUW 20 t	20,0	0 - 80	250	100	948	563	153	140	71,0	160
VUW 25 t	25,0	5 - 85	250	100	948	563	148	140	71,0	160
VUW 30 t	30,0	10 - 90	250	100	944	568	153	142	71,0	167
SVUW										
SVUW 6 t	6,00	40 - 90	114	78,0	523	275	70,0	78,0	32,0	24,0
SVUW 7.5 t	7,50	50 - 100	111	78,0	560	312	70,0	86,0	32,0	30,0
SVUW 9 t	9,00	50 - 100	111	78,0	560	312	70,0	86,0	32,0	31,0
SVUW 12 t	12,0	50 - 100	152	85,0	644	344	100	94,0	48,0	45,0
SVUW 15 t	15,0	80 - 150	224	85,0	808	450	136	106	48,0	78,0
SVUW 20 t	20,0	80 - 150	249	100	940	640	153	140	71,0	171
SVUW 25 t	25,0	80 - 150	249	100	940	640	153	140	71,0	171
SVUW 30 t	30,0	80 - 150	249	100	946	645	156	142	71,0	177

- Powerful all - rounder.
- Clamp - version with movable lifting shackle for lifting and moving steel plates and structures from all positions (horizontal, vertical and sidelong). VUW/VEUW/SVUW Lifting clamps are equipped with a safety mechanism, ensuring the clamp does not slip when lifting force is applied and when load is being lowered. The clamp is locked in closed as well as in open position. Lifting capacity and jaw openings are clearly engraved in the body.
- The VEUW clamps have an enlarged jaw opening; the SVUW type had an extra-large grab range.
- Minimum WLL is 10% of the maximum WLL.

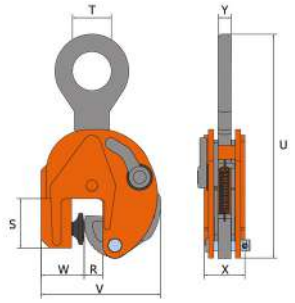


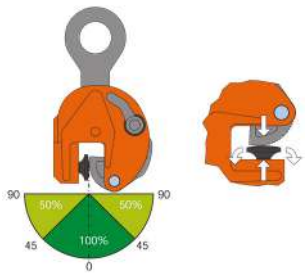


VERTICAL LIFTING CLAMP - VNMAW

Code	Load Capacity	Jaw Opening R	H	S	T	U	V	W	X	Y	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VNMAW 0,5 t	0,50	1 - 180	242	143	40,0	410	235-395	61,0	80,0	14,0	10,0

- Flawless lifting.
- This special clamp is fitted with two clamp jaws made from a synthetic material that leave no imprint on the material to be lifted during use, making it particularly suited for moving, lifting and lowering special materials such as stainless steels (inox), aluminum sheet metal, wooden boards and chipboard.
- The clamp is attached directly to the crane hook using a high-strength chain. The clamp is adjustable by steps of 20 mm.
- No minimum WLL is required.

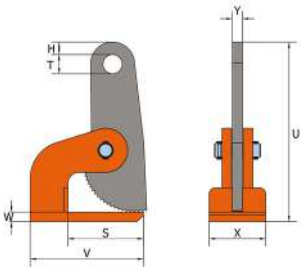


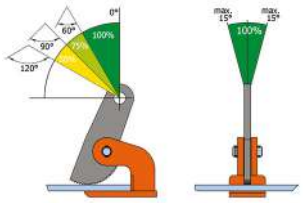


VERTICAL LIFTING CLAMP - VJPW

Code	Load Capacity	Jaw Opening R	S	T	U	V	W	X	Y	Weight
	(ton)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/pc.)
VJPW 0.25 t	0,25	0 - 13	54,0	30,0	202	113	50,0	37,0	10,0	1,90
VJPUW 0.25 t	0,25	0 - 13	54,0	30,0	202	113	50,0	37,0	10,0	2,00

- Perfect hold.
- For vertical lifting and moving of panels and plates. If the clamp is being loaded, the movable pivot will pull out sideways and will grip into the side of the load. As a result, this clamp has no restriction for a minimum working load.
- The VJPW clamp is locked in closed as well as in open position. Lifting capacity and jaw opening are clearly engraved in the body.
- Clamp type VJPUW is equipped with a movable universal lifting eye.

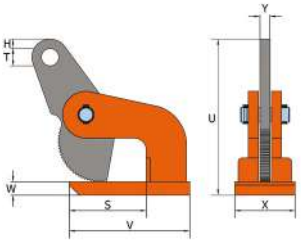


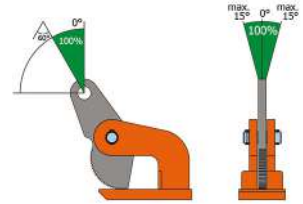


HORIZONTAL LIFTING CLAMP - HXW

Code	Load Capacity (ton/pair)	Jaw Opening R (mm)	H (mm)	S (mm)	T (mm)	U (mm)	V (mm)	W (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
HXW											
HXW 1 t	1,00	0 - 35	11,5	99,0	25,0	188	140	10,0	65,0	15,0	2,60
HXW 2 t	2,00	0 - 60	19,5	118	30,5	287	180	15,0	90,0	16,0	7,00
HXW 3 t	3,00	0 - 60	19,5	118	30,5	291	180	20,0	90,0	16,0	8,00
HXW 4 t	4,00	0 - 60	19,5	145	30,5	304	220	25,0	105	20,0	13,0
HXW 6 t	6,00	0 - 60	19,5	145	30,5	307	220	25,0	110	20,0	14,0
HXW 8 t	8,00	0 - 60	19,5	135	30,5	336	225	35,0	120	30,0	19,0
HXW 10 t	10,0	0 - 60	19,5	135	30,5	336	225	35,0	120	30,0	19,0
HXW 12 t	12,0	0 - 60	19,5	135	30,5	336	225	35,0	120	30,0	19,0
HXW 15 t	15,0	0 - 60	21,5	147	43,0	344	262	35,0	160	35,0	30,0
HXW 25 t	25,0	0 - 60	21,5	147	43,0	349	262	40,0	175	35,0	33,0
HSXW											
HSXW 2 t	2,00	0 - 100	19,5	120	30,5	383	180	15,0	90,0	15,0	9,20
HSXW 3 t	3,00	0 - 100	19,5	120	30,5	387	180	20,0	90,0	15,0	10,0
HSXW 4 t	4,00	0 - 100	19,5	145	30,5	414	220	25,0	105	20,0	15,0
HSXW 6 t	6,00	0 - 100	19,5	145	30,5	414	220	25,0	120	20,0	16,5
HSXW 8 t	8,00	0 - 100	19,5	135	30,5	428	225	35,0	120	30,0	21,0
HSXW 10 t	10,0	0 - 100	19,5	135	30,5	428	225	35,0	120	30,0	22,0
HSXW 12 t	12,0	0 - 100	19,5	135	30,5	428	225	35,0	120	30,0	22,0
HSXW 15 t	15,0	0 - 150	27,5	240	45,0	665	350	35,0	140	35,0	53,0

- The clamps have a compact shape and a relative light unit weight but with a high lifting capacity. They are used for lifting and transporting single sheets or secured stacks of sheets.
- Horizontal lifting clamps should always be used with a minimum of two pieces.
- Type HSXW is supplied with an enlarged jaw opening width.
- The given WLL is valid per pair.

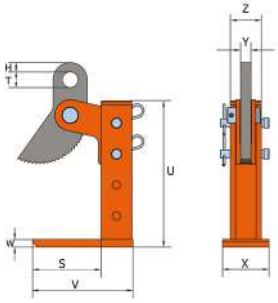


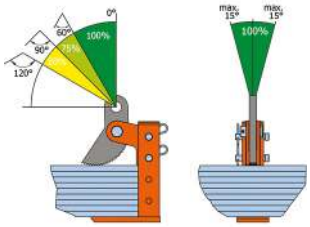


HORIZONTAL LIFTING CLAMP - DHW

Code	Load Capacity (ton/pair)	Jaw Opening R (mm)	H (mm)	S (mm)	T (mm)	U (mm)	V (mm)	W (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
DHW 1 t	1,00	0 - 15	13,5	99,0	22,5	167	140	10,0	65,0	15,0	2,50
DHW 2 t	2,00	0 - 35	14,0	114	26,0	233	180	20,0	80,0	15,0	8,00
DHW 4 t	4,00	0 - 50	25,0	129	40,0	304	235	30,0	130	20,0	18,0
DHW 6 t	6,00	0 - 50	25,0	129	40,0	304	235	30,0	130	20,0	18,0

- For lifting and horizontal moving of thin sheets that deflect when being lifted. Compact shape and relatively low unit weights with a high lifting capacity
- The horizontal lifting clamps DHW have to be used (at least) in pairs (or multiples thereof). Max. apex. angle: 60°
- The given WLL is valid per pair.

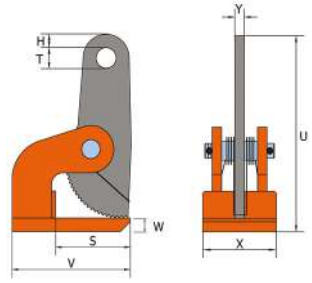


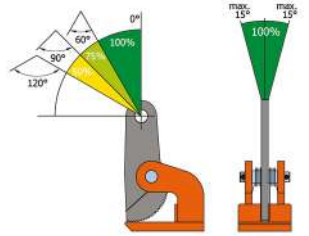


HORIZONTAL LIFTING CLAMP - HSKW

Code	Load Capacity (ton/pair)	Jaw Opening R (mm)	H (mm)	S (mm)	T (mm)	U (mm)	V (mm)	W (mm)	X (mm)	Y (mm)	Z (mm)	Weight (kg/pc.)
HSKW/180 1.5 t	1,50	3 - 180	18,0	135	30,5	289	201	15,0	90,0	20,0	60,0	9,50
HSKW/180 3 t	3,00	3 - 180	18,0	165	30,5	296	241	20,0	105	20,0	69,0	13,0
HSKW/180 4.5 t	4,50	3 - 180	18,0	165	30,5	296	241	20,0	105	20,0	69,0	13,0
HSKW/180 6 t	6,00	3 - 180	18,0	160	30,5	304	256	25,0	120	20,0	75,0	18,0
HSKW/180 9 t	9,00	3 - 180	18,0	160	30,5	304	256	25,0	120	20,0	75,0	18,0
HSKW/300 1.5 t	1,50	3 - 300	18,0	135	30,5	409	201	15,0	90	20,0	60,0	11,0
HSKW/300 3 t	3,00	3 - 300	18,0	165	30,5	416	241	20,0	105	20,0	69,0	15,0
HSKW/420 4.5 t	4,50	3 - 420	18,0	165	30,5	536	241	20,0	105	20,0	69,0	17,0
HSKW/420 6 t	6,00	3 - 420	18,0	160	30,5	544	256	25,0	120	20,0	75,0	24,0
HSKW/420 9 t	9,00	3 - 420	18,0	160	30,5	544	256	25,0	120	20,0	75,0	24,0

- Individually adjustable.
- For lifting, handling and moving of banded/secured stacks and single steel plates. The adjustment of the jaw opening width can be done quickly and easily without any tools.
- Horizontal lifting clamps should always be used with a minimum of two pieces.
- The given WLL is valid per pair.

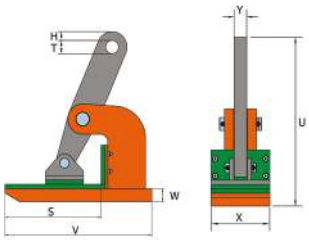


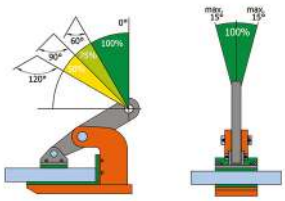


HORIZONTAL LIFTING CLAMP - HXW V

Code	Load Capacity (ton/pair)	Jaw Opening R (mm)	H (mm)	S (mm)	T (mm)	U (mm)	V (mm)	W (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
HXW-V 1 t	1,00	0 - 35	12,0	99,0	26,5	188	140	10,0	85,0	15,0	3,00
HXW-V 2 t	2,00	0 - 60	19,0	114	30,5	286	180	15,0	125	16,0	8,00
HXW-V 3 t	3,00	0 - 60	19,0	125	30,5	302	200	20,0	140	20,0	12,2
HXW-V 4 t	4,00	0 - 60	19,0	139	30,5	316	220	30,0	165	20,0	17,0
HXW-V 6 t	6,00	0 - 60	19,0	139	30,5	316	220	30,0	165	20,0	17,0

- Hold the position.
- The HXW-V horizontal lifting clamps has a torsion spring attached to the cam assembly allowing the clamp to close on any desired spot. The spring allows one operator to place the clamps and guide the hoist.
- Horizontal lifting clamps should always be used with a minimum of two pieces.
- The given WLL is valid per pair.

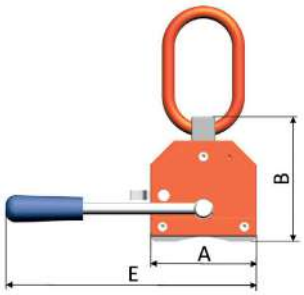


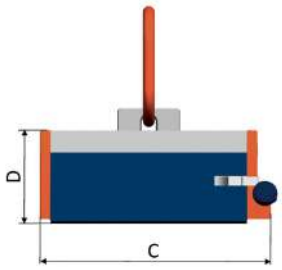


HORIZONTAL LIFTING CLAMP - NMHW

Code	Load Capacity (ton/pair)	Jaw Opening R (mm)	H (mm)	S (mm)	T (mm)	U (mm)	V (mm)	W (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
NMHW 1 t	1,00	0 - 25	10,0	94,0	20,0	155	140	15,0	65,0	15,0	2,40
NMHW 2 t	2,00	0 - 45	15,0	151	30,5	267	225	23,0	90,0	15,0	7,50
NMHW 3 t	3,00	0 - 45	15,0	151	30,5	271	225	20,0	90,0	15,0	8,30
NMHW 4 t	4,00	0 - 50	17,5	161	30,5	300	250	20,0	115	30,0	13,0
NMHW 6 t	6,00	0 - 50	17,5	161	30,5	306	250	25,0	130	30,0	18,0

- Gentle power pack.
- The NMHW lifting clamp is suited for moving and lifting objects with fragile surfaces, like stainless steel, wood panels, aluminum etc. The jaw and cam is covered with a high quality, pressure resistant protective cover.
- Horizontal lifting clamps must always be used in pairs (or multiples thereof). The given WLL is valid per pair.

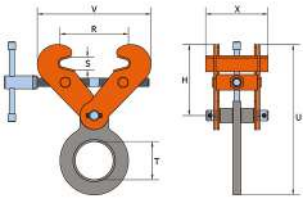


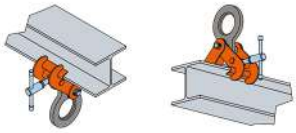


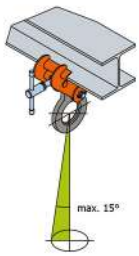
LIFTING MAGNET - PMA

								Smooth Surface			Round Surface	
Code	A	B	C	D	E	Master Link	Weight	Working Load	Min. Material Thickness S	Max. Length L	Working Load	Max. Material Diameter
	(mm)	(mm)	(mm)	(mm)	(mm)		(kg)	(kg)	(mm)	(mm)	(kg)	(mm)
PMA 150	85,0	110	155	85,0	190	AW 13	7,00	150	20,0	2.000	75,0	150
PMA 300	85,0	110	195	85,0	190	AW 13	9,00	300	20,0	2.500	150	150
PMA 500	110	130	260	105	250	AW 13	17,0	500	25,0	3.000	250	250
PMA 1000	130	175	320	135	275	AW 13	40,0	1.000	35,0	3.500	500	300
PMA 2000	205	230	450	180	510	AW 22	112	2.000	45,0	3.500	1.000	500

- Magnetic, compact, reliable.
- Built with Neodymium magnets and thus compatible with a wide range of metallic materials without the need for electricity. Load capacities from 150 kg / 350 lbs to 2,000 kg / 4,400 lbs. Simple and quick to mount to the lifting equipment thanks to permanently mounted master links. Suitable for flat and round material as well as for temperature ranges from -10 °C to +80 °C at 80% maximum humidity. Maximum temperature of the load to be lifted: 60 °C.
- Surface: orange, anodized and electro galvanized. Master links: orange, powder-coated.
- Manufactured according to EN 12100 T1 and T2, EN 13155, ASME B30.20 and Machinery Directive 2006/42/EC.
- Magnetic, compact, reliable.



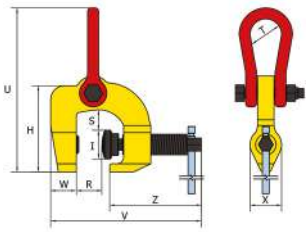


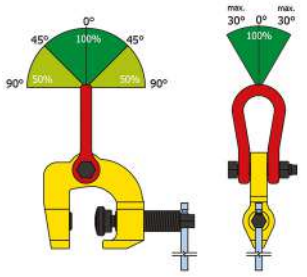


SCREW CLAMPS - SVW

Code	Load Capacity (ton)	Jaw Opening R (mm)	H (mm)	S (mm)	T (mm)	U Max. (mm)	V Max. (mm)	X (mm)	Weight (kg/pc.)
SVW									
SVW 1 t	1,00	75 -190	113 - 192	30,0	73,5	345	357	120	5,00
SVW 2 t	2,00	75 - 190	113 - 192	30,0	73,5	345	357	120	5,00
SVW 3 t	3,00	75 - 190	113 - 192	30,0	73,5	345	357	120	5,00
SVW 4 t	4,00	150 - 300	185 - 240	40,0	80,0	422	450	180	15,0
SVW 5 t	5,00	150 - 300	185 - 240	40,0	80,0	422	450	180	15,0
SVW 10 t	10,0	350 - 450	400 - 447	95,0	88,0	653	695	200	50,0
SVSW									
SVSW 2 t	2,00	75 - 420	114 - 275	30,0	73,5	428	540	120	7,00
SVSW 3 t	3,00	75 - 420	114 - 275	30,0	73,5	428	540	120	7,00
SVSW 4 t	4,00	150 - 560	173 - 362	40,0	80,0	545	708	180	18,0
SVSW 5 t	5,00	150 - 560	173 - 362	40,0	80,0	545	708	180	19,5
SVSUW									
SVSUW 3 t	3,00	75 - 420	114 - 275	30,0	73,5	486	540	120	8,00
SVSUW 4 t	4,00	150 - 560	173 - 362	40,0	80,0	613	708	180	21,0
SVSUW 5 t	5,00	150 - 560	173 - 362	40,0	80,0	622	708	180	22,0

- Equal clamping force. Only suitable for lifting and moving of steel beams and structures. The clamping force is evenly transferred to the jaws by means of a spindle. Can also be attached upside down and be used as a temporary lifting point.
- Has equal opening and closing of both jaws for simple and quick assembly. Lifting capacity and jaw opening are clearly engraved in the body.
- Type SVSW offers an enlarged jaw opening width, type SVSUW is additionally equipped with movable universal lifting eye.

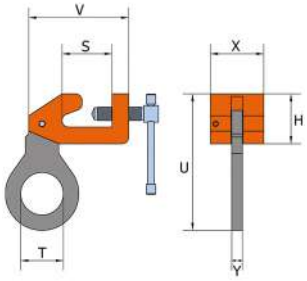


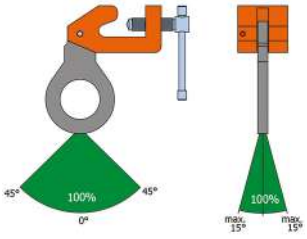


SCREW CLAMPS - SCCW

Code	Load Capacity (ton)	Jaw Opening R (mm)	H (mm)	I (mm)	S (mm)	T (mm)	U (mm)	V (mm)	W (mm)	X (mm)	Z (mm)	Weight (kg/pc.)
SCCW-W												
SCCW-W 1 t	1,00	50 - 100	190	42,0	88,0	45,0	273	225	54,0	46,0	258	6,30
SCCW-W 3 t	3,00	25 - 75	191	49,0	76,0	50,0	291	215	60,0	54,0	250	7,80
SCCW												
SCCW 0.5 t	0,50	0 - 35	82,0	27,5	18,0	25,0	211	108	26,0	27,0	158	1.00
SCCW 1 t	1,00	0 - 30	140	42,0	29,0	46,0	232	150	40,0	46,0	220	3,20
SCCW 1.5 t	1,50	0 - 40	140	42,0	29,0	46,0	232	150	40,0	46,0	220	3,50
SCCW 3 t	3,00	0 - 60	184	50,0	38,0	50,0	278	190	46,0	60,0	280	7,80
SCCW 6 t	6,00	0 - 100	249	53,0	60,0	100	390	296	70,0	75,0	446	22,0

- High clamping force for safe transport.
- Universal screw clamp for vertical and horizontal lifting and moving of a large variety of steel structures. The SCCW screw clamp is fitted with a movable cam on the thread spindle and a fixed pivot on the clamp body.
- This provides a powerful clamping force on the workpiece. The movable lifting eye ensures a secure mounting of the clamp. Can also be attached upside down and be used as a temporary lifting point.
- SCCW-W is supplied with an enlarged jaw opening width.

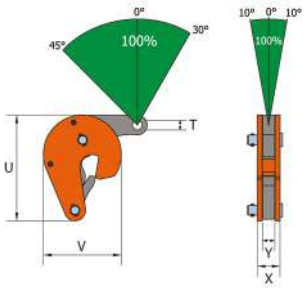




SCREW CLAMPS - BSW

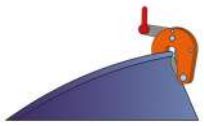
Code	Load Capacity (ton)	Jaw Opening R (mm)	H (mm)	S (mm)	T (mm)	U (mm)	V (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
BSW 1.5 t	1,50	HP 100 - 240	75,0	74,0	45,0	180	150	40,0	16,0	2,90
BSW 3 t	3,00	HP 100 - 240	75,0	75,0	65,0	205	150	80,0	16,0	6,00

- For special occasions.
- For use as a temporary lifting point in any room where Holland profile (HP) is being used, such as sectional ship parts and ship engine rooms.
- The BSW clamp is equipped with a thread spindle for attaching the clamp.
- The clamp is used for HP - 100 to HP - 240 (HP = Holland profile).

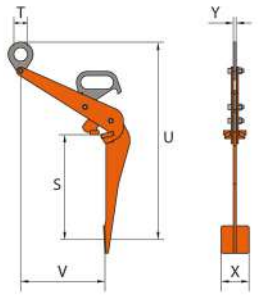


DRUM CLAMPS - VKFW

Code	Load Capacity (ton)	Jaw Opening R (mm)	T (mm)	U (mm)	V (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
VKFW 0.5 t	0,50	0 - 17	12,0	121	96,0	28,0	15,0	1,30

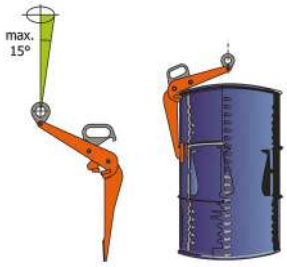


- Unbeatable either alone or in pairs.
- Special clamp for safe lifting and moving of steel (oil) drums.
- The automatic locking mechanism of VKFW clamps ensures a safe transport of drums. VKFW steel drum clamps can be used in pairs or single.

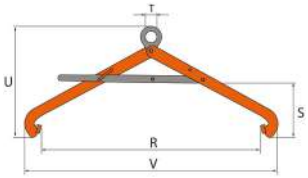


BARREL LIFTING CLAMP - VKHW

Code	Load capacity (ton)	S (mm)	T (mm)	U (mm)	V (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
VKHW 0.6 t	0,60	434	50,0	765	305	100	10,0	7,00



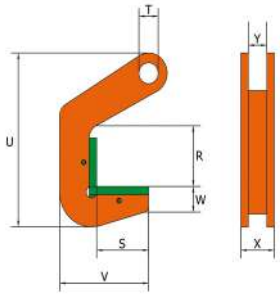
- Comprehensive gripping range.
- For lifting, handling and moving of steel (oil) drums, where the drums have to stay in a vertical position. These VKHW clamps should preferably be used only with closed drums.

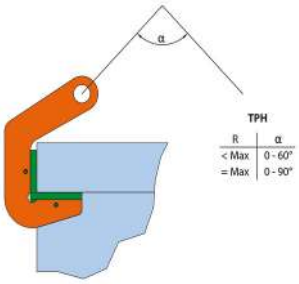


BARREL LIFTING CLAMP - VSHW

Code	Load Capacity (ton)	Jaw Opening R (mm)	S (mm)	T (mm)	U (mm)	V (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
VSHW 0.6 t	0,60	500 - 900	230	50,0	475	1.080	82,0	10,0	7,00

- Great catch
- This barrel gripper is designed for moving, lifting and lowering horizontally stored barrels (horizontal moving). The barrel gripper should preferably be used for closed barrels

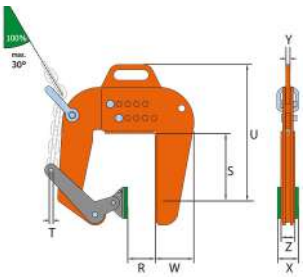




PIPE LIFTING CLAMP - PHW

Code	Load Capacity (ton)	Jaw Opening R (mm)	S (mm)	T (mm)	U (mm)	V (mm)	W (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
PHW										
PHW 1.5 t	1,50	40,0	70,0	16,0	185	120	50,0	41,0	25,0	2,00
PHW 3 t	3,00	40,0	70,0	16,0	185	120	50,0	41,0	25,0	2,00
PHW 4 t	4,00	50,0	70,0	26,0	204	140	58,0	41,0	25,0	3,00
PHW 6 t	6,00	50,0	70,0	26,0	204	140	58,0	41,0	25,0	3,00
PHW 8 t	8,00	70,0	70,0	26,0	224	140	58,0	45,0	25,0	3,40
PHW 10 t	10,0	70,0	70,0	26,0	224	140	58,0	85,0	45,0	7,00
PHW 12 t	12,0	70,0	70,0	26,0	224	140	58,0	85,0	45,0	7,00
PHW 15 t	15,0	70,0	70,0	26,0	250	155	76,0	100	60,0	9,00
PHW 20 t	20,0	70,0	70,0	26,0	250	155	76,0	100	60,0	9,00
PHW-HD										
PHW-HD 5 t	5,00	60,0	100	26,0	232	309	85,0	80,0	20,0	6,70
PHW-HD 10 t	10,0	60,0	100	36,0	236	319	85,0	80,0	30,0	9,70
PHW-HD 20 t	20,0	60,0	100	51,0	285	362	105	80,0	35,0	14,0
PHW-HD 30 t	30,0	60,0	100	58,0	310	387	115	80,0	40,0	19,0
PHW-HD 60 t	60,0	60,0	100	85,0	350	418	115	80,0	60,0	28,5

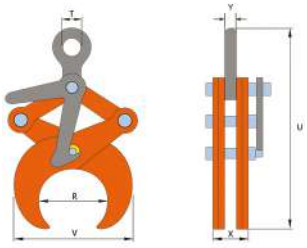
- Compact strength.
- For horizontal lifting and moving of steel and concrete pipes. Compact shape and relatively low unit weight with a high lifting capacity. The surface of the support area is equipped with a special plastic cover which is easy to change.
- Type PHW-HD is designed for extreme heavy duty lifting operations like the loading and unloading of vessels.

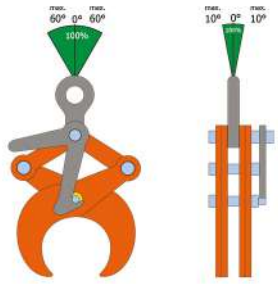


PIPE LIFTING CLAMP - BCW

Code	Load Capacity (ton)	Jaw Opening R (mm)	S (mm)	T (mm)	U (mm)	W (mm)	X (mm)	Y (mm)	Z (mm)	Weight (kg/pc.)
BCW 1 t	1,00	60 - 120	169	12,0	326	97,0	60,0	12,0	40,0	10,0
BCW-A 1 t	1,00	50 - 220	262	12,0	459	106	60,0	12,0	40,0	15,0

- A reliable team player.
- These clamps are preferably used for vertical lifting and moving of concrete pipes and wells. BCW/BCW-A clamps must always be used in pairs or per three clamps in combination with a chain sling. The movable side is fitted with a special high pressure plastic cover to protect load surface. High tensile two - or three leg chain slings available upon request.
- Type BCW-A: The jaw opening width is disable by steps of 25 mm.
- For connecting the chain to the lever the Pewag winner coupling ring KRW 7 can be used.

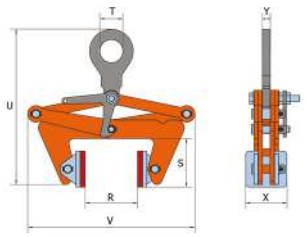


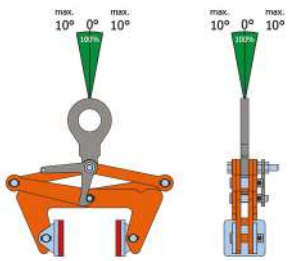


SPECIAL CLAMP - TLW

Code	Load Capacity (ton)	Jaw Opening R (mm)	T (mm)	U Min. - Max. (mm)	V Min. - Max. (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
TLW 0.5 t	0,50	48,3 - 114,3	45,0	300 - 400	146 - 207	47,0	15,0	4,50
TLW 1 t	1,00	114,3 - 219,1	45,0	430 - 615	110 - 170	47,0	15,0	9,00
TLW 2 t	2,00	219,1 - 368	64,0	670 - 955	490 - 610	56,0	16,0	31,0
TLW 3 t	3,00	368 - 508	64,0	875 - 1.165	590 - 710	56,0	16,0	39,0

- A safe grip.
- For lifting of tubes, bundles of tubes and solid round material in horizontal position. The clamp is locked in the open position and it closes automatically after unlocking as soon as the lifting shackle is being pulled.
- Plastic jaw covers for protecting the load available upon request.





SPECIAL CLAMP - BLCW

Code	Load Capacity (ton)	Jaw Opening R (mm)	S (mm)	T (mm)	U Min - Max (mm)	V Min - Max (mm)	X (mm)	Y (mm)	Weight (kg/pc.)
BLCW 0.5 t	0,50	30 - 110	95,0	45,0	305 - 460	270 - 325	80,0	15,0	7,00
BLCW 1 t	1,00	100 - 230	120	45,0	380 - 655	425 - 530	80,0	15,0	12,3
BLCW 2 t	2,00	220 - 360	140	45,0	410 - 735	580 - 675	80,0	15,0	18,0
BLCW 3 t	3,00	350 - 500	178	64,0	530 - 900	725 - 835	100	16,0	33,0

- For vertical lifting and moving of various materials as steel, wood, plastic, concrete, marble etc. which have parallel sides. The clamp is locked in the open position.
- To perform lifting, the operator must activate the handle and hold it up while the force on the lifting eye is going upwards. When laying down the load, the clamp automatically unlocks itself to open. The pads are covered with special plastic to avoid damage of contact surfaces.

CHAIN BLOCK – HS C ANGULAR

- It requires less force than the load that is lifting.
- There is a dual brake lining system.
- There is load limiter model.
- It can be installed wherever desired.

Capacity (ton)	Chain Length (m)	Chain Diameter (mm)	Number of Tackle	Weight (kg)
0,50	3,00	6,00	1,00	10,0
0,50	5,00	6,00	1,00	12,5
1,00	3,00	6,00	1,00	11,0
1,00	5,00	6,00	1,00	14,5
2,00	3,00	6,00	2,00	15,0
2,00	5,00	6,00	2,00	20,0
3,00	3,00	8,00	2,00	24,0
3,00	5,00	8,00	2,00	31,5
5,00	3,00	10,0	2,00	39,5
5,00	5,00	10,0	2,00	46,5
10,0	5,00	10,0	4,00	87,5
20,0	5,00	10,0	8,00	170

CHAIN BLOCK - HS ROUND

- It requires less force than the load that is lifting.
- There is single brake lining system.
- It can be installed wherever desired.

Capacity (ton)	Chain Length (m)	Chain Diameter (mm)	Number of Tackle	Weight (kg)
0,50	3,00	6,00	1,00	10,0
0,50	5,00	6,00	1,00	12,5
1,00	3,00	6,00	1,00	11,0
1,00	5,00	6,00	1,00	14,5
2,00	3,00	6,00	2,00	15,0
2,00	5,00	6,00	2,00	20,0
3,00	3,00	8,00	2,00	24,0
3,00	5,00	8,00	2,00	31,5

CHAIN BLOCK - PLUS LOAD SAFE

- It requires less force than the load that is lifting.
- There is a dual brake lining system.
- They are equipped with an overload protection system for safety.
- When load above standard capacity the security system is activated and disables lifting system for caraskal safety.

Capacity	Chain Length	Chain Diameter	Number of Tackle	Weight
(ton)	(m)	(mm)		(kg)
1,00	5,00	6,00	1,00	11,4
2,00	5,00	8,00	1,00	24,0
3,00	5,00	7,10	2,00	24,0
5,00	5,00	9,00	2,00	39,5

ROPE PULLING

- Used for all types of load lifting and pulling process.
- It has CE certificated and its robustness has been tested.
- It provides very easy operation with its sturdy handles.

Capacity	Standard Rope Length	Rope Diameter	Test Load	Weight
(ton)	(m)	(mm)	(ton)	(kg)
0,80	20,0	8,00	1,00	9,00
1,60	20,0	11,5	2,00	13,3
1,60	30,0	11,5	2,00	13,3
3,20	20,0	16,0	4,00	25,3
3,20	30,0	16,0	4,00	25,3

ELECTRICAL CRANE – 4 MOVING

- May occur due to changes in electrical current has a system that is protected against problems.
- Has a reset function.
- High - impact engine that is cooled with the fan.
- Al loyed forged hook.
- Liquid oily gearbox.

Capacity	Chain Length	Number of Tackle	Engine Power	Lifting Speed	Speed on Rail	Profile Width	Weight
(ton)	(m)		(kw)	(m/min)	(m/min)	(mm)	(kg)
1,00	6,00	1,00	1,10	4,30	20,0	74 - 124	84,0
2,00	6,00	2,00	1,10	2,15	20,0	74 - 124	94,0

ELECTRICAL CRANE

- May occur due to changes in electrical current has a system that is protected against problems.
- Has a reset function.
- A long chain life thanks to its vibration - reducing dislocation system.

Capacity	Chain Length	Chain Diameter	Number of Tackle	Engine Power	Lifting Speed	Weight
(ton)	(m)	(mm)		kw	(m/min)	(kg)
0,50	6,00	7,10	1,00	0,80	5,80	11,4
1,00	6,00	7,10	1,00	1,10	4,30	24,0
2,00	6,00	7,10	2,00	1,10	2,15	24,0
3,00	6,00	7,10	3,00	1,10	1,43	39,5

LEVER HOIST

- Galvanized chain is used.
- There is safety latch.
- A single - nail braking system is available.
- It has a heat - treated forged hook.

Capacity	Chain Length	Chain Diameter	Number of Tackle	Weight
(ton)	(m)	(mm)		(kg)
0,50	1,50	5,00	1,00	4,00
0,75	1,50	6,00	1,00	7,70
1,50	1,50	8,00	1,00	11,8
3,00	1,50	10,0	1,00	21,0
6,00	1,50	10,0	2,00	32,0
9,00	1,50	10,0	3,00	47,0

LEVER HOIST WITH LOAD SAFE

- Galvanized chain is used.
- There is safety latch.
- A single - nail braking system is available.
- It does not attract loads of more than 10% of its capacity.

Capacity	Chain Length	Chain Diameter	Number of Tackle	Weight
(ton)	(m)	(mm)		(kg)
1,50	1,50	8,00	1,00	1,40
3,00	1,50	10,0	1,00	2,20
6,00	1,50	10,0	2,00	4,40

LIFTING MAGNET

- It is used in the lifting of steel plates and other magnetic equipment.
- The magnetic force of the system changes with arm movement.
- Moving hanger ring.
- Compact and lightweight.

For Flat Plate Sheet and Metal

Capacity	Min. Thickness	Max. Length
(kg)	(mm)	(mm)
100	10,0	100
300	20,0	1.500
600	30,0	2.000
1.000	40,0	3.000
1.500	50,0	3.000
2.000	60,0	3.000

For Round and Cylindrical Materials

Capacity	Min. Thickness	Max. Length	Max. Radius	Width	Weight
(kg)	(mm)	(mm)	(mm)	(mm)	(kg)
50,0	10,0	1.000	100	60,0	3,50
150	12,0	1.500	300	87,0	10,0
300	20,0	2.000	400	112	21,0
500	28,0	3.000	450	148	40,0
750	34,0	3.000	500	178	65,0
1.000	40,0	3.000	600	178	83,0

CARRIAGE

- Wheel system that does not require service.
- Closed type bearing properties.
- Bearing wheels provide easy and smooth movement.
- Don't need lubrication.

Capacity	NPI	Weight
(ton)	(mm)	(kg)
0,50	100 - 140	4,60
1,00	100 - 180	7,00
2,00	160 - 220	10,0
3,00	180 - 240	15,0
5,00	180 - 240	21,0

VERTICAL LIFTING CLAMP

- Jaw structure designed to lift metal plates vertically.
- Operating temperature between -40 °C to 100 °C.
- Compact design.
- Highly safe thanks to its sturdy body.

Capacity	Jaw Opening	Weight
(ton)	(mm)	(kg)
1,00	0 - 20	4,50
2,00	0 - 25	7,00
3,00	0 - 30	15,0
4,50	0 - 32	16,0

HORIZONTAL LIFTING CLAMP

- Jaw structure designed to lift metal plates horizontally.
- Operating temperature between -40 °C to 100 °C.
- Compact design.
- Highly safe thanks to its sturdy body.

Capacity	Jaw Opening	Weight
(ton)	(mm)	(kg)
0,75	0 - 25	4,80
1,50	0 - 30	7,80
2,50	0 - 40	26,8
4.50	0 - 32	16

UNIVERSAL JACK

- They are professional and quality vehicle jacks.
- Long service life
- It's robustness tested with load more than as 50% of the load capacity of the jack.
- Highly stability - capable product with its heavy structure.
- Complies with high quality standards.

Capacity	Min. Height	Lifting Height	Adjustable Height	Max. Height	Weight
(ton)	(mm)	(mm)	(mm)	(mm)	(kg)
3,00	195	125	60,0	380	3,30
5,00	197	125	60,0	382	4,40
8,00	205	125	60,0	390	5,40
10,0	205	125	60,0	390	6,00
15,0	225	140	60,0	425	8,50
20,0	244	145	60,0	449	11,5
32,0	285	180	-	465	17,6
50,0	300	180	-	480	33,0
100,0	335	180	-	520	78,0

STEEL JACK

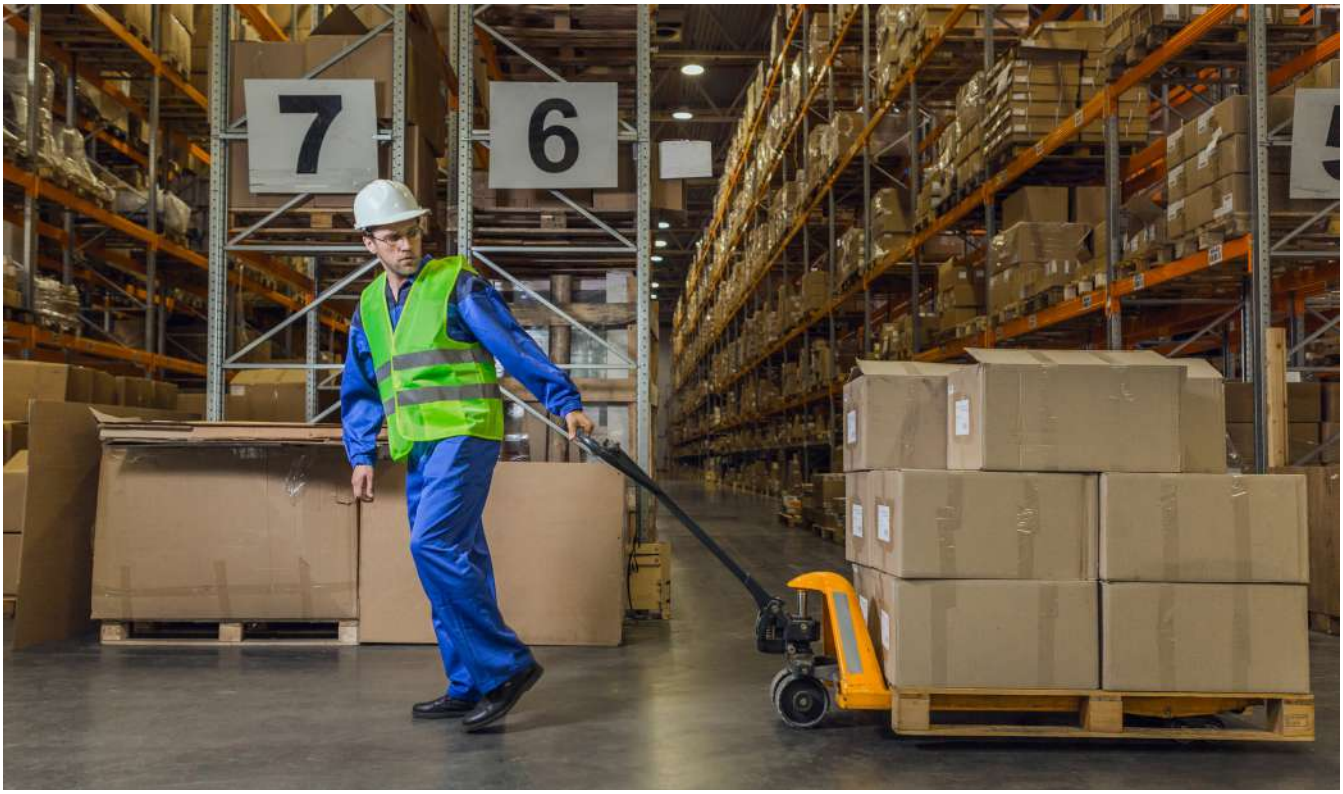
- Easily lifting loads where manpower is not enough with the help of gear wheel system.
- Easy to use.
- There has bottom table for the ground to be firmly pressed.
- Handles for easy transport.
- Durable and long service life and also it is operating at high stability.

Capacity	Min. Height	Stroke	Weight
(ton)	(mm)	(mm)	(kg)
3,00	720	250	21,0
5,00	820	300	26,0
10,0	910	350	42,0
16,0	1.120	420	65,0
20,0	1.180	860	75,0

HAND LIFTING TRUCK

- Eliminates maintenance with reliable sealing pump design and extends service time.
- 210° swivel steering wheel.
- With hand control, its fork can be lowered easily and quickly.
- Entrance and exit roller that offers comfortable driving.
- Provides comfortable operation with ergonomic rubber coated arm.
- Quiet polyurethane wheels that do not damage the floor.
- With hand control and foot pedal, the speed of lowering the fork can be adjusted.
- Hydraulic system that does not leak oil.
- EN 1757-2 complies with the European Standard.

Code	Capacity	Lowered Fork Height	Maximum Fork Height	Fork Lenght	Width Overall Forks	Weight
	(kg)	(mm)	(mm)	(mm)	(mm)	(kg)
ATTP 0.5	500,0	60,0	90,0	800,0	380	35,0
ATTP 2	2.000	75,0	190	1.100	520	55,0
ATTP 2.5	2.500	75,0	190	1.100	550	80,0
ATTP 3	3.000	85,0	200	1.100	550	90,0
ATTP 5	5.000	88,0	205	1.150	550	105



SYNTHETIC ROPES

- Combination Ropes
- Polypropylene Ropes
- Polyester Ropes
- Nylon Ropes
- Polysteel Ropes
- Dyneema Ropes
- Fibre Rope
- Static Rope
- Sızal Rope
- Jute Rope

EUROSTEEL® 4 STRANDS
(Combination Rope)

- Performed with steel core.
- Excellent resistance to abrasion.
- Longer service life.
- Inside to strands wires grade 1770 N/mm².
- Applications; Bottom Trawling, Pelagic Trawling.

Diameter (mm)	Minimum Breaking Load (kgf)	Weight (kg/m)
22	7.400	0,465
28	12.000	0,770
30	12.560	0,810
32	15.280	0,940
34	19.100	1,195
36	21.800	1,350
38	24.040	1,500
40	21.700	1,350
40	26.500	1,680
42	27.700	1,750
44	31.600	2,000
50	40.500	2,500
54	34.500	2,000
60	58.500	3,500

Final Weight Tolerance: 3% - 6%
Final Diameter Tolerance: 2% - 5%

EUROSTEEL® 6 STRANDS
(Combination Rope)

- Performed with fibre core.
- Excellent resistance to abrasion.
- Longer service life.
- Inside to strands and core wires grade 1770 N/mm².
- Applications; Bottom Trawling, Pelagic Trawling.

Diameter (mm)	Minimum Breaking Load (kgf)	Weight (kg/m)
12	3.600	0,210
14	4.880	0,290
16	6.150	0,380
18	8.170	0,470
20	9.780	0,580
22	12.790	0,710
24	15.630	0,860
26	18.080	1,010
28	19.640	1,120
30	21.650	1,240
32	25.270	1,430

Final Weight Tolerance: 0% - 6%
Final Diameter Tolerance: 0% - 5%

- Material: Polypropylene
- Chemical resistance: Good
- Specific gravity: 0.91
- Abrasion resistance: Reasonable
- UV resistance: Good
- Water absorption: < 0,1%
- Melting point: 165 °C
- TCLL value: 52%
- Color: On request

TWISTED POLYPROPYLENE
(3 or 4 Strands)

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
4	2,78	0,28	7,23
6	5,92	0,60	16,30
8	10,10	1,03	28,90
10	15,40	1,57	45,20
12	21,60	2,20	65,10
14	28,90	2,95	88,60
16	37,00	3,77	116,0
18	46,20	4,71	146,0
20	56,10	5,72	181,0
22	67,10	6,84	219,0
24	78,80	8,03	260,0
26	91,50	9,33	306,0
28	105,0	10,70	354,0
30	119,0	12,10	407,0
32	134,0	13,70	463,0
36	167,0	17,00	586,0
40	204,0	20,80	723,0
44	243,0	24,80	875,0
48	286,0	29,20	1.040
52	332,0	33,80	1.220

These are multipurpose mooring ropes, manufactured in accordance to ISO and EN standards.

ROPE WITH LEADED

Diameter (mm)	Weight (kg/m)
28	0,75
30	0,82
32	0,87
34	0,93

- It allows the fishing nets to sink into the water easily and prevents then et from going around.
- Easy to knit on the net, saves you time.

8 STRANDS POLYPROPYLENE

- Material: Polypropylene
- Chemical resistance: Good
- Specific gravity: 0,91
- Abrasion resistance: Reasonable
- UV resistance: Good
- Water absorption: < 0,1%
- Melting point: 165 °C
- TCLL value: 52%
- Color: Blue
- Marker: Orange

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
28	105,00	10,70	354,00
30	119,00	12,10	407,00
32	134,00	13,70	463,00
36	167,00	17,00	586,00
40	204,00	20,80	723,00
44	243,00	24,80	875,00
48	286,00	29,20	1.040,00
52	332,00	33,80	1.220,00
56	381,00	38,80	1.420,00
60	433,00	44,10	1.630,00
64	488,00	49,70	1.850,00
72	608,00	62,00	2.340,00
80	740,00	75,40	2.890,00
88	887,00	90,40	3.500,00
96	1.040,00	106,00	4.170,00
104	1.210,00	123,00	4.890,00
112	1.390,00	142,00	5.670,00
120	1.580,00	161,00	6.510,00
128	1.780,00	181,00	7.410,00
136	2.000,00	204,00	8.360,00
144	2.220,00	226,00	9.370,00

These are multipurpose mooring ropes, manufactured in accordance to ISO and EN standards.

- Material: Polyester polyolefin dual fibre
- Chemical resistance: Good
- Specific gravity: 1,14
- Abrasion resistance: Very good
- UV resistance: Good
- Water absorption: < 0.5%
- Melting point: 165 °C to 265 °C
- TCLL value: 79.6%
- Color: White
- Marker: Yellow

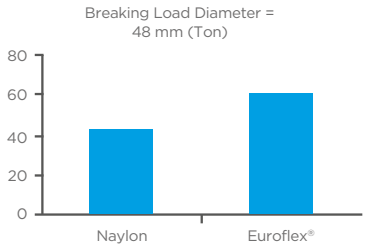
3 STRANDS EUROFLEX®

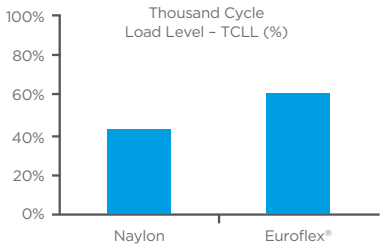
Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
8	13,20	1,35	37,00
10	20,40	2,08	55,00
12	29,40	3,00	80,00
14	40,20	4,10	109,00
16	52,00	5,30	141,00
18	65,70	6,70	178,00
20	81,40	8,30	221,00
22	98,00	10,00	268,00
24	118,00	12,00	319,00
26	137,00	14,00	372,00
28	155,00	15,80	434,00
30	174,00	17,70	495,00
32	196,00	20,00	565,00
36	244,00	24,90	714,00
40	294,00	30,00	884,00
44	351,00	35,80	1.080,00
48	412,00	42,00	1.280,00
52	460,00	46,90	1.500,00

Euroflex® is a rope that has excellent properties of resistance to fatigue caused by tension, abrasion, breaking load and energy absorption. It is one of the best ropes available with a very good cost - performance ratio.

Euroflex® is the answer for the increasing demand of ropes with more resistance and less diameter. Its breaking load is up to 50% higher than the standard Nylon ropes. Its excellent handling and flexibility properties, combined with its great absorption of energy and resistance to abrasion make Euroflex® one of the best ropes currently available.

Unlike nylon, Euroflex® is not influenced by either water or UV radiation, maintaining the rope flexible and soft.





- Material: Polyester polyolefin dual fibre
- Chemical resistance: Good
- Specific gravity: 1,14
- Abrasion resistance: Very good
- UV resistance: Good
- Water absorption: < 0,5%
- Melting point: 165 °C to 265 °C
- TCLL value: 79,6%
- Color: White
- Marker: Yellow

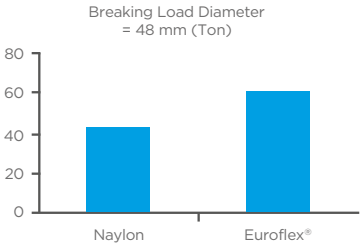
8 STRANDS EUROFLEX®

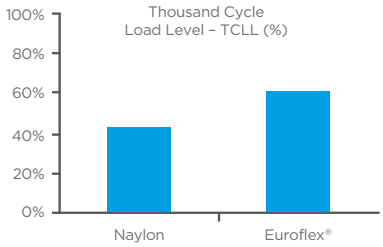
Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
28	207,0	21,10	478,0
30	230,0	23,40	558,0
32	268,0	27,30	625,0
36	336,0	34,20	791,0
40	411,0	41,90	1.020
44	493,0	50,30	1.240
48	583,0	59,40	1.480
52	680,0	69,30	1.730
56	784,0	79,90	2.010
60	896,0	91,30	2.310
64	1.010	103,0	2.630
72	1.270	129,0	3.320
80	1.550	158,0	4.110
88	1.870	191,0	4.970
96	2.210	225,0	5.900
104	2.570	262,0	6.890
112	2.970	303,0	8.030
120	3.380	345,0	9.230
128	3.830	390,0	10.500
136	4.300	438,0	11.870
144	4.800	489,0	13.340

Euroflex® is a rope that has excellent properties of resistance to fatigue caused by tension, abrasion, breaking load and energy absorption. It is one of the best ropes available with a very good cost - performance ratio.

Euroflex® is the answer for the increasing demand of ropes with more resistance and less diameter. Its breaking load is up to 50% higher than the standard Nylon ropes. Its excellent handling and flexibility properties, combined with its great absorption of energy and resistance to abrasion make Euroflex® one of the best ropes currently available.

Unlike nylon, Euroflex® is not influenced by either water or UV radiation, maintaining the rope flexible and soft.





TWISTED POLYESTER
(3 or 4 Strands)

- Material: Polyester
- Chemical resistance: Good
- Specific gravity: 1,38
- Abrasion resistance: Excellent
- UV Resistance: Excellent
- Water absorption: < 1%
- Melting point: 260 °C
- TCLL value: 79,6%
- Color: White
- Marker: On request

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
4	2,80	0,29	12,10
6	6,08	0,62	27,30
8	10,50	1,07	48,50
10	16,20	1,65	75,80
12	23,00	2,34	109,0
14	30,90	3,15	149,0
16	39,80	4,06	194,0
18	49,90	5,09	246,0
20	61,00	6,22	303,0
22	73,10	7,45	367,0
24	86,10	8,78	437,0
26	101,0	10,30	512,0
28	116,0	11,80	394,0
30	132,0	13,50	682,0
32	150,0	15,30	776,0
36	188,0	19,20	982,0
40	230,0	23,40	1.210
44	276,0	28,10	1.470
48	326,0	33,20	1.750
52	380,0	38,70	2.050

These are multipurpose ropes, manufactured in accordance to ISO and EN standards.

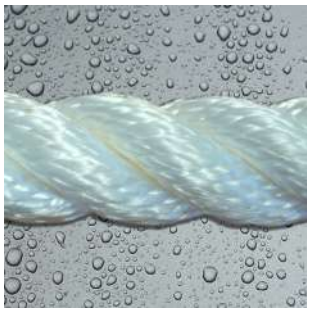
Two of the main properties of these ropes are their strength and their excellent abrasion resistance.

- Material: Polyester
- Chemical resistance: Good
- Specific gravity: 1,38
- Abrasion resistance: Excellent
- UV resistance: Excellent
- Water absorption: < 1%
- Melting point: 260 °C
- TCLL value: 79,6%
- Color: White
- Marker: On request

8 STRANDS POLYESTER

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
28	116,0	11,80	594,0
30	132,0	13,50	682,0
32	150,0	15,30	776,0
36	188,0	19,20	982,0
40	230,0	23,40	1.210
44	276,0	28,10	1.470
48	326,0	33,20	1.750
52	380,0	38,70	2.050
56	437,0	44,50	2.380
60	500,0	51,00	2.730
64	566,0	57,70	3.100
72	708,0	72,20	3.930
80	867,0	88,40	4.850
88	1.040	106,0	5.870
96	1.230	125,0	6.990
104	1.430	146,0	8.220
112	1.650	168,0	9.510
120	1.880	192,0	10.900
128	2.130	217,0	12.400
136	2.390	244,0	14.000
144	2.670	272,0	15.700

These are multipurpose ropes, manufactured in accordance to ISO and EN standards.
Two of the main properties of these ropes are their strength and their excellent abrasion resistance.



TWISTED NYLON
(3 Strands)

- Material: Nylon
- Chemical resistance: Good
- Specific gravity: 1,14
- Breaking load (wet): 85% - 90%
- Abrasion resistance: Very good
- UV resistance: Good
- Water absorption: 4%
- Melting point: 218 °C
- TCLL value: 60%
- Color: White

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
4	3,70	0,38	9,87
6	7,93	0,81	22,20
8	13,80	1,41	39,50
10	21,20	2,16	61,70
12	30,10	3,07	88,80
14	40,00	4,08	121,0
16	51,90	5,29	158,0
18	64,30	6,55	200,0
20	79,20	8,07	247,0
22	94,00	9,58	299,0
24	112,0	11,40	355,0
26	129,0	13,10	417,0
28	149,0	15,20	484,0
30	169,0	17,20	555,0
32	192,0	19,60	632,0
36	240,0	24,50	800,0
40	294,0	30,00	987,0
44	351,0	35,80	1.190
48	412,0	42,00	1.420
52	479,0	48,80	1.670

Rope made of 3 core nylon.

Manufactured in compliance with the latest EN and ISO standards. Provides high strength (dry state) and excellent wear resistance.

TWISTED EUROSTEEL®
(3 Strands)

- Material: Polysteel
- Chemical resistance: Good
- Specific gravity: 0,93 (floats)
- Breaking load (wet): 100%
- Abrasion resistance: Good
- UV resistance: Good
- Water absorption: 0%
- Melting point: 145 °C
- TCLL value: 60%
- Color: Green
- Maximum elongation: 27%

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
4	2,80	0,29	7,00
6	7,40	0,75	17,00
8	12,90	1,31	30,00
10	19,10	1,95	45,00
12	26,90	2,74	65,00
14	36,20	3,69	90,00
16	44,20	4,51	115,0
18	56,80	5,79	148,0
20	67,80	6,91	180,0
22	79,00	8,05	220,0
24	91,90	9,37	260,0
26	107,0	10,90	305,0
28	120,0	12,20	355,0
30	140,0	14,30	405,0
32	151,0	15,40	460,0
36	188,0	19,20	585,0
40	226,0	23,00	720,0
44	264,0	26,90	880,0
48	313,0	31,90	1.040
52	356,0	36,30	1.220

Mooring rope with a good breaking load for marine applications, about 30% higher than a standard Polypropylene line in the same diameter.

These ropes are developed with the highest levels of excellence and quality and are available in the following rope sizes.

8 STRANDS EUROSTEEL®

- Material: Polysteel
- Chemical resistance: Good
- Specific gravity: 0,93 (floats)
- Breaking load (wet): 100%
- Abrasion resistance: Good
- UV resistance: Good
- Water absorption: 0%
- Melting point: 145 °C
- TCLL value: 60%
- Color: Green
- Maximum elongation: 27%

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
28	136,00	13,90	355,00
30	158,00	16,10	405,00
32	172,00	17,50	460,00
36	217,00	22,10	585,00
40	264,00	26,90	720,00
44	312,00	31,80	880,00
48	371,00	37,80	1.040,00
52	424,00	43,20	1.220,00
56	484,00	49,30	1.420,00
60	556,00	56,70	1.630,00
64	629,00	64,10	1.850,00
72	787,00	80,20	2.340,00
80	970,00	98,90	2.900,00
88	1.156,00	118,00	3.510,00
96	1.361,00	139,00	4.170,00
104	1.556,00	159,00	4.900,00
112	1.808,00	184,00	5.700,00
120	2.069,00	211,00	6.500,00
128	2.339,00	238,00	7.400,00
136	2.628,00	268,00	8.400,00
144	2.927,00	298,00	9.400,00

8 Strands Eurosteel® is a special rope for high traction forces work in marine application.

A rope developed with the highest levels of excellence and quality

- Material: Nylon
- Chemical resistance: Good
- Specific gravity: 1,14
- Breaking load (wet): 85% - 90%
- Abrasion resistance: Very good
- UV resistance: Good
- Water absorption: 4%
- Melting point: 218 °C
- TCLL value: 60%
- Color: White

8 STRANDS NYLON

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
28	149,00	15,20	484,00
30	170,00	17,30	556,00
32	192,00	19,60	632,00
36	240,00	24,50	800,00
40	294,00	30,00	987,00
44	351,00	35,80	1.190,00
48	412,00	42,00	1.420,00
52	479,00	48,80	1.670,00
56	550,00	56,10	1.930,00
60	627,00	63,90	2.220,00
64	709,00	72,30	2.530,00
72	887,00	90,40	3.200,00
80	1.080,00	110,00	3.950,00
88	1.300,00	133,00	4.780,00
96	1.530,00	156,00	5.690,00
104	1.780,00	181,00	6.670,00
112	2.050,00	209,00	7.740,00
120	2.340,00	239,00	8.880,00
128	2.650,00	270,00	10.100,00
136	2.980,00	304,00	11.400,00
144	3.320,00	338,00	12.800,00

These are multipurpose ropes, manufactured in accordance to ISO and EN standards.

- Material: High tenacity Polypropylene
- Chemical resistance: Good
- Specific gravity: 0,93
- Abrasion resistance: Very good
- Water absorption: 0%
- Melting point 140 °C
- TCLL value: 70,7%
- Color: Yellow
- Marker: Orange

8 STRANDS TIPTOEIGHT®

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
28	137,0	14,00	373,0
30	157,0	16,00	428,0
32	177,0	18,00	483,0
36	222,0	22,60	614,0
40	269,0	27,40	756,0
44	321,0	32,70	924,0
48	378,0	38,50	1.090
52	441,0	45,00	1.280
56	508,0	51,80	1.490
60	578,0	58,90	1.710
64	651,0	66,40	1.940
72	814,0	83,00	2.460
80	992,0	101,0	3.050
88	1.180	120,0	3.690
96	1.400	143,0	4.380
104	1.620	165,0	5.150
112	1.870	191,0	5.960
120	2.130	217,0	6.860
128	2.410	246,0	7.790
136	2.710	276,0	8.800
144	3.030	309,0	9.870

Very well - known high performance rope.

Its strength, high wear resistance and energy absorption provide a long life and economic advantage.

Its low diameter and low weight make it easy to carry on board.

12 STRANDS TIPTOTWELVE

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
16	48,00	4,90	121,0
20	72,80	7,40	189,0
24	103,0	10,50	273,0
28	137,0	14,00	373,0
32	177,0	18,00	483,0
36	222,0	22,60	614,0
40	269,0	27,40	756,0
44	321,0	32,70	924,0
48	378,0	38,50	1.090

- This rope is available in diameters from 16 mm to 48 mm and is the equivalent of well - known TiptoEight®. Its structure is different but its material is the same.
- The 12 core structure makes the rope more rounded, more compact, more stable and makes its surface more tidier. Thus, it extends wear resistance and life

- Material: High tenacity polypropylene
- Chemical resistance: Good
- Specific gravity: 0,93
- Abrasion resistance: Very good
- UV resistance: Very good
- Water absorption: 0%
- Construction: 12 Strands plaited
- Melting point: 140 °C
- TCLL value: 70,7%
- Color: Yellow
- Marker: Orange

LANKOFORCE SCS
(8 Strands)

Diameter (mm)	Minimum Breaking Force (kN)	Minimum Breaking Force (tf)	Weight (g/m)
20	180,0	18,40	340,0
22	210,0	21,40	380,0
24	275,0	28,00	450,0
28	321,0	32,70	490,0
32	435,0	44,40	535,0
36	595,0	60,70	700,0
40	750,0	76,50	1.080
44	920,0	93,80	1.250
48	1.120	114,2	1.450

- Lankoforce® SCS is a 8x1 construction rope, with Single Covered Strands. In SCS ropes each of their braids have an individual coating, therefore achieving a longer useful life, thanks to this protection, without losing functionality when it comes to splices.

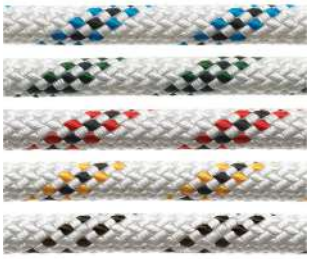
- Material: Dyneema
- Chemical resistance: Good
- Specific gravity: 0,98
- Abrasion resistance: Very good
- UV resistance: Excellent
- Water absorption: 0%
- Melting point: Core: 147 °C Jacket: 140 °C
- TCLL value: 100%
- Color: Yellow
- Marker: Blue

12 STRANDS LANKOFORCE®

- Material: Dyneema
- Specific gravity: 0,98 (floating)
- UV - resistance: Good
- Abrasion resistance: Good
- Chemical resistance: Good
- Melting point: Approx. 147 °C
- TCLL value: 100%
- Color: Yellow
- Water absorption: 0%
- Elongation used rope: 1%

Diameter (mm)	Minimum Breaking Force (kN)	Weight (kg/100 m)
6	35,00	2,30
8	62,00	3,90
10	97,00	5,90
12	137,0	9,30
14	184,0	10,60
16	244,0	14,30
20	374,0	21,50
22	450,0	28,00
24	533,0	33,50
26	612,0	37,50
28	701,0	43,50
30	789,0	51,50
32	887,0	59,00
34	991,0	65,00
36	1.076	71,00
40	1.314	88,50
44	1.559	109,0
48	1.853	126,0
52	2.160	149,0
56	2.490	176,0
60	2.820	202,0
64	3.210	230,0
68	3.610	259,0
72	4.010	290,0
76	4.250	320,0
80	4.510	358,0
88	5.320	430,0
96	6.230	510,0
104	6.800	600,0
112	7.810	695,0
120	8.870	798,0
128	9.970	910,0
136	11.100	1.030
144	12.400	1.150

- It is a 12 core rope made of Dyneema yarns.
- This rope is an excellent alternative to heavy and oily steel wire ropes in cases where the rope needs to be transported manually.
- It is 7 times lighter than steel wire rope with same diameter and steel wire rope according to same diameter.
- It stands out with its unique features especially in tensile and bonding applications.



FIBRE ROPE

- The double - braided structure distributes the load evenly between the inner and outer braid.
- High strength and long life.
- Low elongation, high resistance to abrasion and weather conditions.
- It is resistant to UV rays.
- Easy to connect.

Diameter (mm)	Minimum Breaking Load (kg)	Weight (g/m)
3	180,0	8,00
4	270,0	13,0
5	440,0	20,0
6	667,0	29,0
8	1.160	51,0
10	1.780	80,0
12	2.540	115
14	3.420	156
16	4.420	204
18	5.550	258
20	6.800	319
22	8.160	386
24	9.680	450
25	10.000	480
26	11.300	539
28	13.000	625
30	14.900	717
32	16.800	816

STATIC ROPE

- It provides high resistance against friction.
- High UV resistance for protection from sunlight.
- It has an outer mantle that protects the interior.

Diameter (mm)	Minimum Breaking Load (kg)	Weight (g/m)
8	1.540	49,00
9	2.200	62,00
10	2.900	77,00
11	3.000	93,00
12	3.700	110,0
13	3.850	130,0
14	5.300	150,0
16	7.000	196,0

SIZAL ROPE
(3 or 4 Strands)

- Material: Produced from 100% sisal yarn.
- Property: Good friction resistance.

Diameter (mm)	Minimum Breaking Load (kg)	Weight (g/m)
6	260,0	34,00
8	450,0	53,00
10	690,0	70,00
12	990,0	92,50
14	1.130	118,0
16	1.720	140,0
18	2.160	188,0
20	2.650	235,0
22	3.190	280,0
24	3.780	350,0
26	4.420	400,0
28	5.100	470,0
30	5.800	540,0
32	6.600	610,0
34	7.400	650,0
36	8.290	725,0
38	9.200	800,0
40	10.200	890,0

JUTE ROPE
(3 or 4 Strands)

- Material: Produced from 100% jute yarn.
- Property: Good friction resistance.
- Can be used for decoration purposes.

Diameter (mm)	Minimum Breaking Load (kg)	Weight (g/m)
6	245,0	30,00
7	370,0	35,00
8	410,0	45,00
10	715,0	80,00
12	1.080	110,0
14	1.400	150,0
16	1.800	190,0
18	2.200	240,0
20	2.650	280,0
22	3.140	320,0
24	3.675	380,0
26	4.280	440,0

TECHNICHAL INFORMATION

- Steel Wire Ropes
- Lifting Chains
- Sockets
- Steel Wire Rope Slings
- Web Slings
- Shackles
- Lubrication

STEEL WIRE ROPES

1- Definition of steel wire ropes

Steel wire rope is a machine that consists of a number of moving parts that are designed and manufactured to be in constant interaction with each other. Steel ropes consist of wires, strands and a core. The main element is steel wire. Wire ropes are produced by careful processing and shaping of wires with predetermined physical properties and nominal strength. (Figure 1).

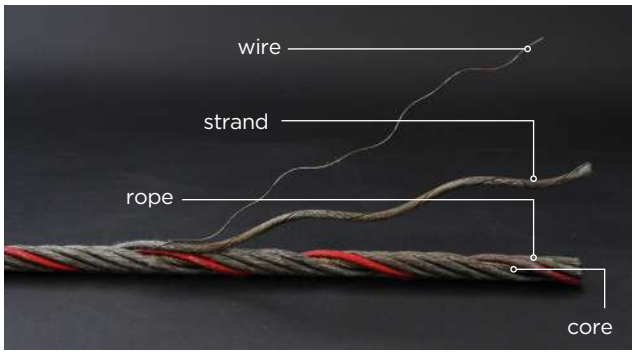


Figure 1: Components of a steel wire rope

2- Steel wire rope structure

Steel ropes are named according to the structures. Special ropes may have their own names (6x19 Seale, 6x36 Warrington Seale, X 53, HD 8 K etc.) extensions like Standard, Filler, Seale, Warrington Seale refers to the thinness, thickness and arrangement of the wires in a strand (Figure 2).

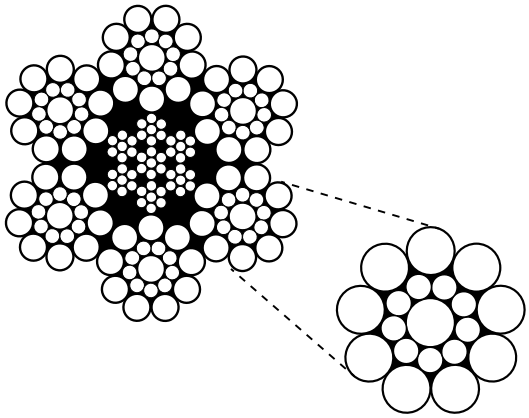


Figure 2: Example of steel wire rope structure

3- Surface finish

Steel ropes are normally made of bright wires that have not been coated. They are galvanized if protection is required due to rust, moisture and steam.

4- Nominal strength

It refers to the amount of load at which the mm^2 of the wires are broken. Some nominal strengths are as follows;

1770 N/mm^2 = 180 $kgf.mm^2$
1960 N/mm^2 = 200 $kgf.mm^2$
2160 N/mm^2 = 220 $kgf.mm^2$

5- Direction of lay

During the production of rope, while the wires and the strands are helically shaped, the selected directions of lay indicates the direction of the rope if lay of the strands and the wires in the strand have the opposite direction, then it is called ordinary lay, if have the same direction, then called lang lay. The lay of the strand determines the lay of the rope. The basic lays are seen to Figure 3.

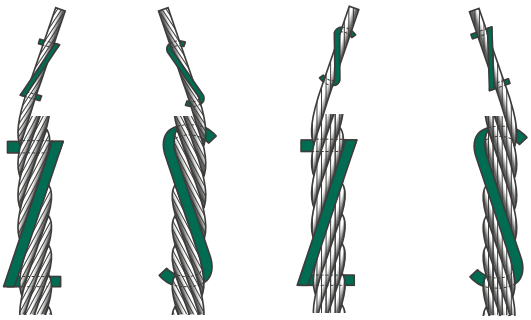


Figure 3: Lay types of steel wire ropes

6- Preforming

Preformed means that the wires and strands have been pre - set during manufacture into the permanent helical form they take in the completed rope.

7- Rope core

There are basically two types of core. There are basically two types of essence. These are called fiber core and steel core. Fiber cores are usually formed from fibers of synthetic products such as sisal and polypropylene. The steel core is again made of steel wires and there are two main types strand core and independent rope core.

8- Cutting of rope

Hand cutting tools up to 8 mm rope diameter can be used. But it is necessary to use mechanical or hydraulic cutters for diameters greater than 8 mm. The best method is cutting with grinding disc. If the rope is not scraped, it is not recommended to cut using flaming cutting tools.

The ropes should be cut with grinding dics by seizing with wire as in the figure 4. Wire should be seized to the right and left with 3 times the wire diameter. This process is important in order not to disturb the physical property of the rope.

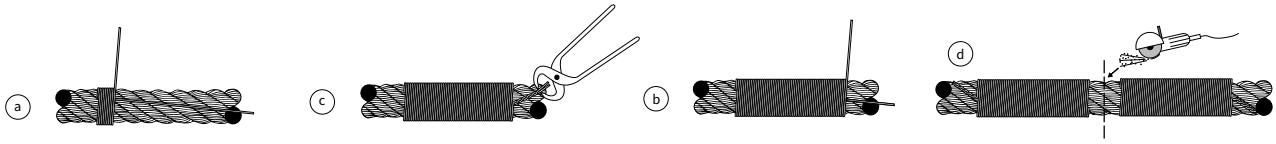
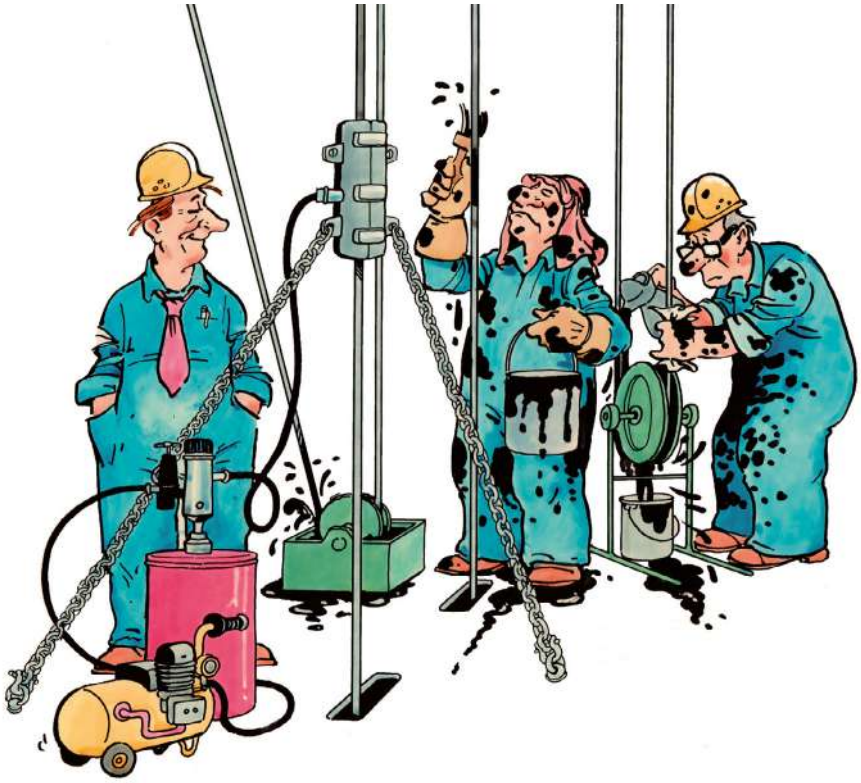


Figure 4: Cutting of rope

9- Rope lubrication

Lubricant applied to steel ropes during production; is used to prevent problems such as corrosion, dust and abrasion due to friction. Lubricants are generally asphalt based.



10- Abrasion flexibility relationship

There are two main features that influence the selection of rope; these are abrasion resistance caused by friction and fatigue resistance due to bending and twisting.

Standart Rope Groups	Rope Constructions	Factors Effecting The Rope Selection				Relative Effects of Rope Constructions Against Wear, Crushing and Bending Fatique	
		Metallic Cross - Section Approx	Percentage of The Total Reserve Strength	Approx diameter of Wires in Outer Strands of 25,4 mm Rope		MINIMUM RESISTANCE to Bending Fatique	MAXIMUM RESISTANCE to Abrasion and Crushing
6x7	6x7 (6/1)	0.385	17,0	2,70	6		
	6x10 F.S (7/3)	0.440	23,0	2,69	7		
6x19	6x17 S. (8/8/1)	0.385	28,0	2,20	8		
	6x24 F.S. (9/12/3)	0.440	31,3	2,26	9		
6x19	6x19 S. (9/9/1)	0.395	32,0	2,03	9		
6x19	6x25 S. (9/9/6/1)	0.395	31,0	2,03	9		
	6x25 F.S. (10/12/3)	0.440	31,3	2,05	10		
6x19	6x21 F. (10/5 & 5/5/1)	0.395	37,0	1,87	10		
6x19	6x26 W.S. (10/5 & 5/5/1)	0.400	38,0	1,87	10		
	6x27 F.S (12/12/3)	0.400	34,0	1,77	12		
6x19	6x19 W. (6 & 6/1)	0.400	41,0	1,87/1,42	12		
	17 or 18x7 N.R. (6/1)	0.426	46,0	1,62/1,72	6		
6x19	6x19 (12/6/1)	0.395	40,4	1,62	12		
8x19	8x19 S. (9/9/1)	0.352	32,0	1,62	9		
6x19	6x25 F. (12/6 + 6/1)	0.405	45,0	1,62	12		
8x19	8x19 W. (6 & 6/6/1)	0.352	41,0	1,52/1,14	12		
6x37	6x31 S.W. (12/6 & 6/6/1)	0.405	42,0	1,62	12		
8x19	8x21 F. (10/5 + 5/1)	0.352	37,0	1,52	100		
	12x6/3 x 24 N.R.	0.370	50,0	1,44	6		
	6x30 F.S. (15/12/3)	0.440	37,5	1,34	15		
6x37	6x36 S.W. (14/7 & 7/7/1)	0.405	50,0	1,44	14		
6x24	6x24 (15/9 LÖ)	0.330	37,5	1,37	15		
6x19	6x26 W. (7 & 7/7/7/4/1)	0.400	48,0	1,67/1,16	14		
6x37	6x37 S. (15/15/6/1)	0.400	51,0	1,34	15		
	34x7 N.R. (6/1)	0.436	59,5	1,19/1,29	6		
	6x33 F.S. (18/12/3)	0.445	53,0	1,24	18		
8x19	6x25 F. (12/6 + 6/1)	0.352	45,0	1,32	12		
6x37	6x41 F. (16/8 & 8/8/1)	0.404	54,0	1,29	16		
6x37	6x41 S.W. (16/8 & 8/8/1)	0.404	55,0	1,29	16		
6x37	6x49 S.W. (16/8 & 8/8/1)	0.405	56,0	1,29	16		
6x37	6x37 (18/12/6/1)	0.388	56,0	1,16/1,34	18	MINIMUM RESISTANCE to abrasion and crushing	MAXIMUM RESISTANCE to bending fatique
6x37	6x43 F. (18/9 + 9/6/4)	0.404	57,0	1,16	18		
6x37	6x46 F. (18/9 + 9/9/1)	0.405	59,0	1,16	18		
Abrasion flexibility table							

11- Determination of equivalent rope

If you cannot supply the current rope you have used or if you need to use an equivalent rope for any reason, you must check the following rope characteristics.

- ★ The diameter of the rope should always be the same.
- ★ The minimum breaking load of the equivalent rope must be equal to or greater than the minimum breaking load of the previous rope.
- ★ Always replace with a rope with the same characteristic. For example, a non-rotating rope should be replaced with a non-rotating rope.

12- Measuring wire rope diameter

Rope diameters are determined by measuring the circle that just touches the extreme outer limits of the strands. In the measurement of the rope, it is necessary for the caliper's jaws to contact the two outerstrands (Figure 5), generally two measurements perpendicular to each other, at least 1 meter apart from two points in the distance. And the average of these four measurement is to be within tolerances. In case of dispute in standarts, it is also foreseen to measure the rope diameter under a certain tension.

Nominal rope diameter Tolerance	Minus	Plus
Up to 3 mm	0%	8%
Between 3 mm and 5 mm	0%	7%
Between 5 mm and 8 mm	0%	6%
Greater than 8 mm	0%	5%

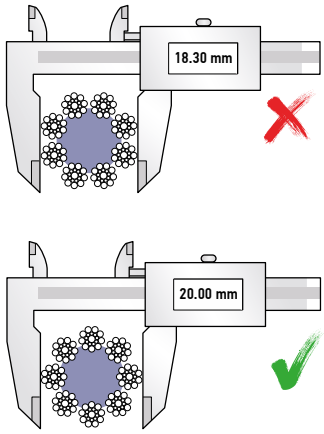


Figure 5: Correct and wrong diameter measurement

13- Groove and rope relation

The diameter of the pulley and drum and the diameter and other characteristics of the grooves on them have a great impact on the rope life. The groove gauges can be used for the diameter and width measurements of the grooves. Drum and pulley made of suitable material are useful for rope life. If the grooves are wider and the rope contact angle is higher, then the rope is ovalized. If grooves are narrower or less than necessary, the wire and strands will get stuck both cases there are inconvenient for the service life of the rope. Generally the rope and groove contact angle should be between 135 - 150 degrees (Figure 6).

a. New rope – new groove
b. New rope – worn groove
c. Worn rope – worn groove

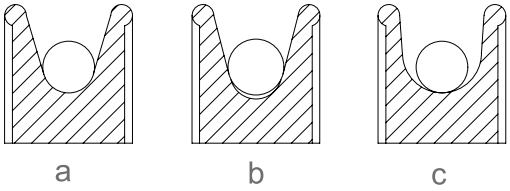


Figure 6: Groove and rope relation

14- Unwinding of ropes

The ropes must be delivered in coils or on reels, when using the rope for the purpose of use or taking into system, the precautions shown in Figure 8 must be complied. Waves occured during the unwinding, cause permanent and undesired damages like kinks and birdcages that lead the rope to be unusable for further applications (Figure 7). It is not possible to repair the ropes that have the damages of kink or birdcage leading the discard of the ropes.

It cannot be the manufacturer's fault in the rope damage caused by such use errors. In order to avoid similar situations, winding machines should be used in the rope unwinding and cutting operations for certain lengths ropes should be rewind under a preload.

Ropes, are part of a working system, should be very carefully handled and stored before use. In all these activities, rope contact with external influences should be avoided. It should not be forgotten that the ropes are composed of a number of thin wires, as will be seen when they are examined closely, and this situation is very sensitive to external influences.

When the ropes are unwinded from the reels or coils during installation, service and rewinding to the reels, that care should be taken not to cause any damage to the rope and create stress on the ropes due to external factors. No matter what the method is unwinding, the sand, gravel and other hard objects should not be adhered to the rope. Otherwise, it can damage the system and rope when the rope passes through the pulleys during the use due to these hard objects.

It has been tested that it is not a practical and efficient method, even if the problem is not seen in the rope unwinding process by rounding the wooden reel on the ground face.

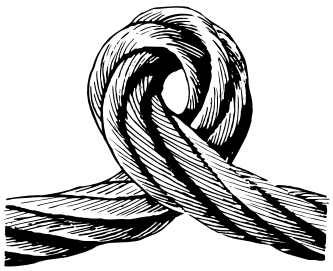


Figure 7: Damages due to wrong unwinding of rope

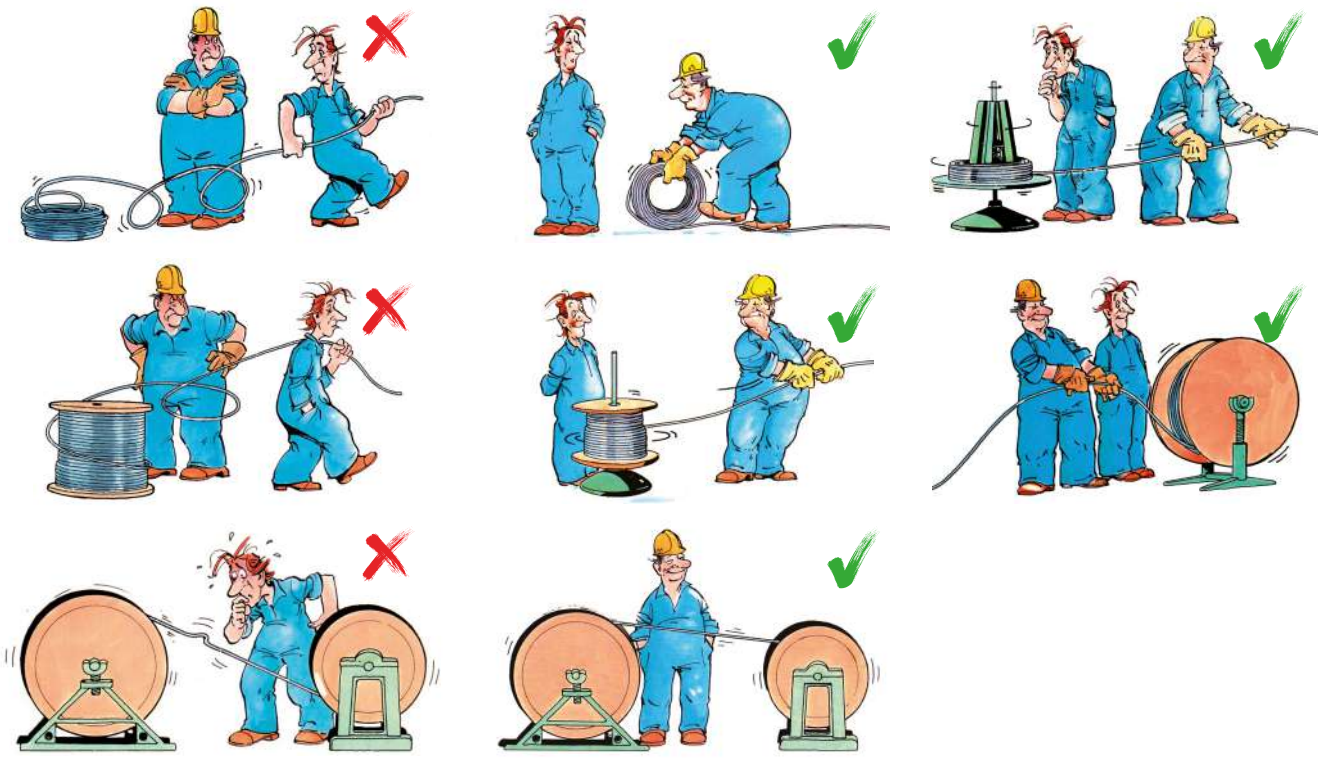


Figure 8: Correct and wrong examples of unwinding of rope

15- Rotation resistant ropes

It should be noted that especially the rotation resistant ropes are more sensitive than the other ropes during opening, transferring, end cutting and use. Therefore;

- Both ends of the rotation resistant ropes must be firmly seized before cutting.
- The winding, unwinding and length cutting operations must be carried out in accordance with the rules.
- Before the rope is to be mounted on a crane, it should be laid on the ground if possible and should be allowed to rotate around its axis in such a way as to eliminate internal stresses.
- The rope mounted to the crane must be operated for at least one hour without load, in order to remove any internal stresses that may occur, the wire and strands are to be allowed to move along the axis of the ropes, then ends of the ropes are cut and mounted to the crane again If the rope is rotated for any reason during use, it is necessary to reapply the above - mentioned end cutting.
- During use, the application of shock loads should be avoided and the rope should not pass through the small diameter pulleys and not to contact with the sharp corners.
- No sudden discharge should be applied while the rotation resistant ropes are working.
- The rotation resistant rope ends must be seized before use and during cutting.
- Rotation resistant ropes should not be rotated under the influence of other external forces under load.

16- Considerations of rope selection

Rope constructions are selected according to the working conditions, the load to be exposed and the probability of life risk. It is useful to consider the following information regarding the selection of rope.

1. Wire grades

Of ropes are depended on;

- Breaking load,
- Resistance to crushing and impact,
- Flexibility,
- Resistance to bending fatique.

2. Constructions

Of ropes should be taken into account according to following information;

- Resistance to abrasion and impact,
- Bending fatique. These characteristics and operating conditions should also be considered for economic rope service life.

3. Rope safety factor and metallic cross sectional area

The purpose of the safety factor is to determine a satisfactory ratio between the sum of the different forces on the rope and the rope breaking load. In determining this ratio, followings should be noticed;

- Rope weight “static weight”,
- Impact load weights “Dynamic weight”,
- Change of forces during acceleration and deceleration “accelerated weight”,
- Stresses caused by bending “rope efficiency ratio”,
- Stresses changes caused by vibration and winding,
- Type of the load (Human, material etc.),
- Usage conditions,
- Difficulties in determination of rope service life,
- Unpredictable changes due to misusage.

4. Lifting angle, lifting capacity and considerations in use

- It should be noted that the lifting capacity of the rope is affected when lifting the sling with a certain angle. The amount of this effect is shown in the table below.

Lifting Angle	Reduction of Rope Capacity (%)
30	5
60	13
90	30
120	50

- The ropes must not be used to touch the sharp corners to prevent wire breaks.
- Fiber core ropes should not be used for lifting molten metals at high temperatures.
- Important parameters like rope diameter, broken wire number, lubrication etc. should be checked continuously and recorded in use.
- The ropes used as pairs must be fitted together, evaluated and take over.

17- Rope damages and examination methods

No matter how high quality the rope is, the rope life depends on;

- The properties of the rope
- Usage area
- Equipment that is in contact or working together
- Type of usage

In addition to the above factors, the factors that cause the ropes to be taken out of service or have an effect on the life of the rope are given below.

These are;

- Unsuitable rope construction, wire breaking strength and diameter,
- Unsuitable wire properties (galvanised - bright),
- Operation on abrasive obstacles and lifting of sharp corner loads by direct contact to the rope,
- Lubrication not suitable for use conditions,
- Working on drums and pulleys of unsuitable sizes,
- Multi-layered and cross winding on drum,
- Operation on misaligned drums and pulleys,
- Operation on unsuitable grooved drums and pulleys,
- Jumping out of pulleys,
- Contact with moisture and acidic environment,
- Use of unsuitable fittings,
- Permission to turn opposite sides,
- Exposure of high temperatures,
- Formation of kink,
- Overloading of ropes in unsuitable conditions,
- Damages due to the entrance of abrasive particles into wires and strands.

When examining a rope, the following points must be noted;

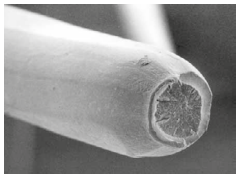
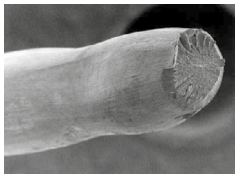
- Reduction in rope diameter,
- Abrasion in inner and outer wires,
- Rope lay length,
- Impact marks on wires and strands,
- Scratch marks,
- Corrosion,
- Broken wires and the type of breaks.

The above considerations should be observed very well and experience should be given great importance. If possible, the route followed by the rope should be monitored until the end of the rope and the non-conforming issues should be eliminated one by one. A careful and conscious eye will not have trouble finding the cause of any errors.

18- Typical properties of broken ropes and wires

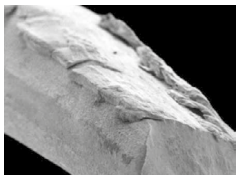
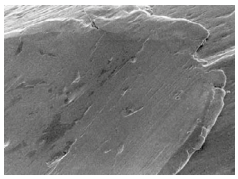
Strain Break

If one end of the broken wire is tapered and the other end is cup-shaped, it indicates that the wire is broken due to stretching. The downward movement of the broken wire ends is typical of such wire breaks. The reason is usually overloading.

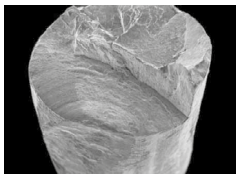
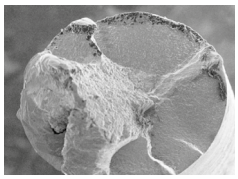
Abrasion break

Breaking wire ends are like knives. Abrasion breakage occurs in areas where the rope comes into contact with anything, in contact with the drum, pulley or grooves. An unexpected wear break; indicates an irregularity, wrong fleet angle, or local abrasive formation in the drum, grooves or sheaves.

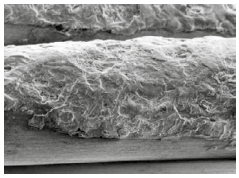
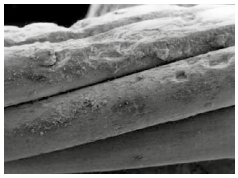
Fatigue break

The most important indication is the transverse or square fractures of a rough structure. When working with such fractures depending on the working environment of the rope, it will become shattered and rough. It is usually formed by repeated use of the rope around an object of very small diameter. Impact, vibration and torsional stress are also the cause of fatigue break. Abrasion and notching due to friction accelerates fatique break.

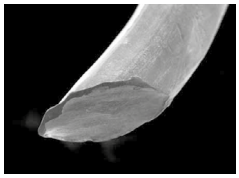
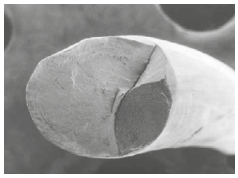
Corrosion break

The pits formed by the rust on the wire surface are indicative of such ruptures. Indicates that lubrication don't influence against corrosion. Very dangerous wire breaks may occur as the corrosion cannot be detected or detected in the inner areas of the rope.

Cut Break

It is caused by external factors. For example, a broken pulley flange may be the cause of such a break.

19- How to order?

In order to prevent unnecessary time loss and misunderstanding, it is useful to give the order information as precisely and accurately as possible. For this purpose, when ordering;

1) Always notify the relevant standard,
2) If standard is not available, then provide the following information
3) Provide the certificate of present rope.

The following table provides information that should be provided when ordering simply.

Length	500 meter
Diameter	26 mm
Number of strands	6
Number of wires in a strand	36
Strand construction	Warrington seale
Lay of the rope	Right hand ordinary lay
Wire grade	1770 N/mm^2
Type of core	Steel
Wire surface finish	Bright
Type of lubricant	Nyrosten T55
Type of lubrication	A2

20- Handling, storage, packing

The ropes should be winded on wooden reel or steel reel (on special order) upon the customer demand according to the rope length and weight. Short ropes must be shipped in coils properly.

When transporting steel ropes, it should not touch hard, sharp, angular surfaces. Doing so could cause serious damage (Figure 9).

Steel wire ropes should be stored in closed, dry and cool environment. Direct contact with the ground must be cut. If open storage is to be done, suitable packaging should be made to prevent rusting due to wet, moisture and humidity.

When placing ropes in the stock area, they should be placed according to the first in first out principle. Thus, there will be no long waiting ropes in stocks.

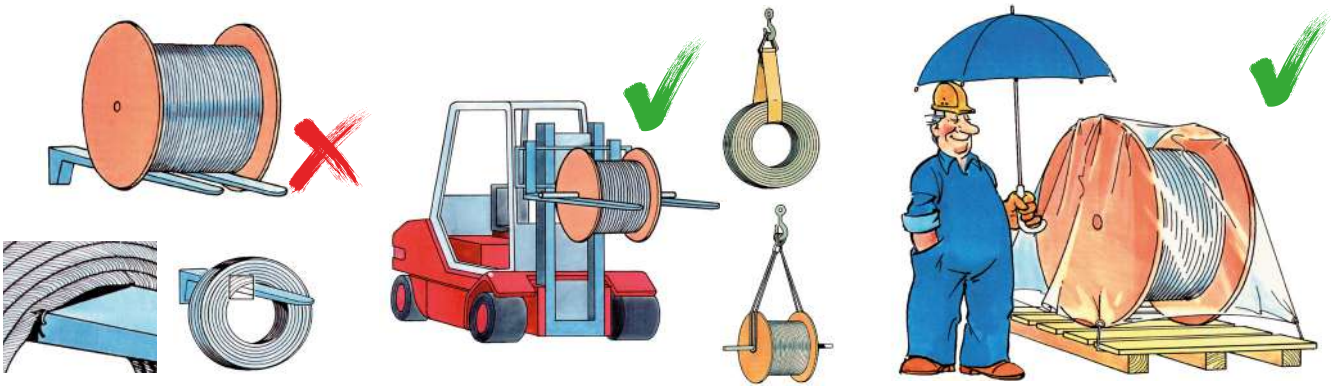


Figure 9: Examples of correct - wrong handling and correct storage

21- Compacted rope

Compacted rope is formed when the wires are compressed and shaped during production. This shape decreases the diameter of the strand, smooth the surface of the strand becomes (Figure 10). The contact between the strands and the wires increases according to the ropes with round strand.

Ropes with compacted strand have more breaking load than conventional stranded ropes. They are more flexible. Due to increases surface area, strands come contact with drums and grooves on larger surface (Figure 11); this reduces the load on the rope. They are also resistant to corrosion and abrasion.

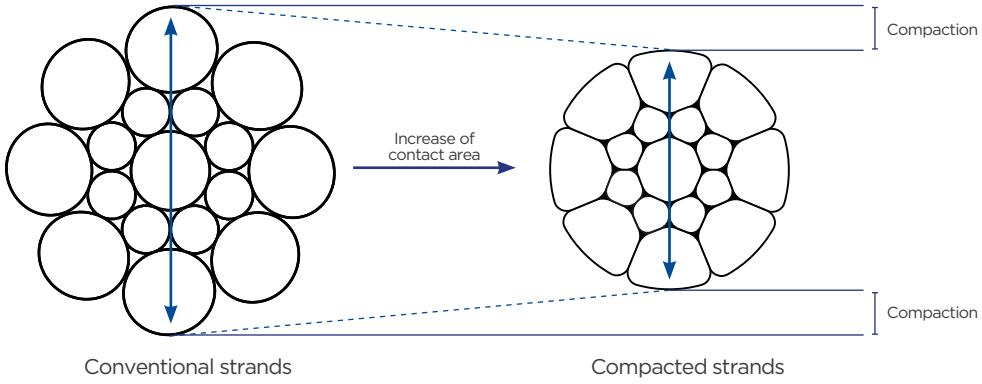


Figure 10: Compacted rope

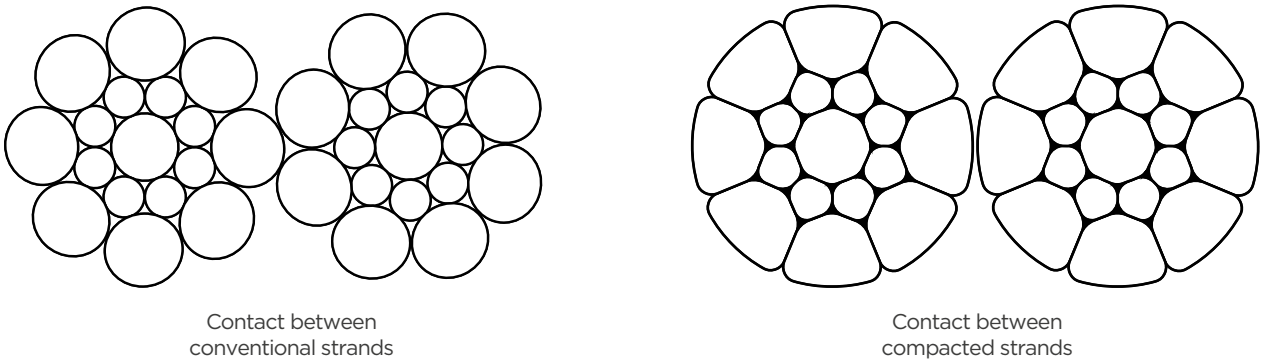


Figure 11: Contact in conventional and compact strands

22- Parallel Laid

All wires have different lengths in cross laid strands. At the same time, they had different lay lengths in the parallel laid strands. They apply pressure each other as a point and early damage occurs because of increased force at these points.

All wires have the same length in parallel laid strands. They also have the same lay length in the strands. Because of the parallel contact, load distribution becomes more homogeneous and thus prevents prior damage (Figure 12).

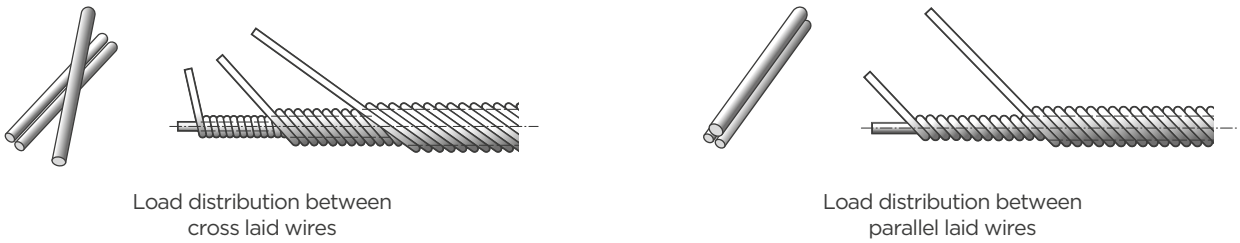


Figure 12: Types of wire rope lays

23- Drum diameter - rope diameter relation D/d

Drum and rollers are important elements in lifting systems. The relationship of the rope with the drum effects the service life of the rope in a positive or negative way. The table below gives the recommended ratio of the minimum drum/rope diameter (D/d) according to the rope constructions.

Rope Construcitons	Recomended D/d Ratio	Minimum D/d Ratio
6x7	72	
6x19 S	51	34
19x7 - 18x7	51	34
6x25 B Flattened Strand	45	30
6x27 H Flattened Strand	45	30
6x30 C Flattened Strand	45	30
6x21 FW	45	30
6x26 WS	45	30
6x25 FW	39	26
6x31 WS	39	26
6x37 SFW	39	26
6x36 WS	35	23
6x43 FWS	35	23
6x41 WS	32	21
6x41 SWF	32	21
6x49 SWS	32	21
6x43 FW	28	18
6x46 SFW	28	18
6x46 WS	28	18
8x19 S	41	27
8x25 FW	32	21

24- Fleet angle

Fleet angle as shown in the figure 13 is the angle between the two lines drawn perpendicular from the drum flange and the drum core to the center of the groove. There are two types of fleet angles, right and left. If a rope enters the pulley with a high fleet angle, first the rope will touch the sides of the pulley (flanges) and then it will be rounded to the bottom of the groove. Thus, the rope will be rotated in this way. Increased fleet angle will increase in rotation.

For rotation resistant ropes, fleet angle should be less than 2° and the B/A ratio should be greater than 15. For non-rotation resistant ropes, the fleet angle must be less than 4° and the B/A ratio between them should be greater than 7.

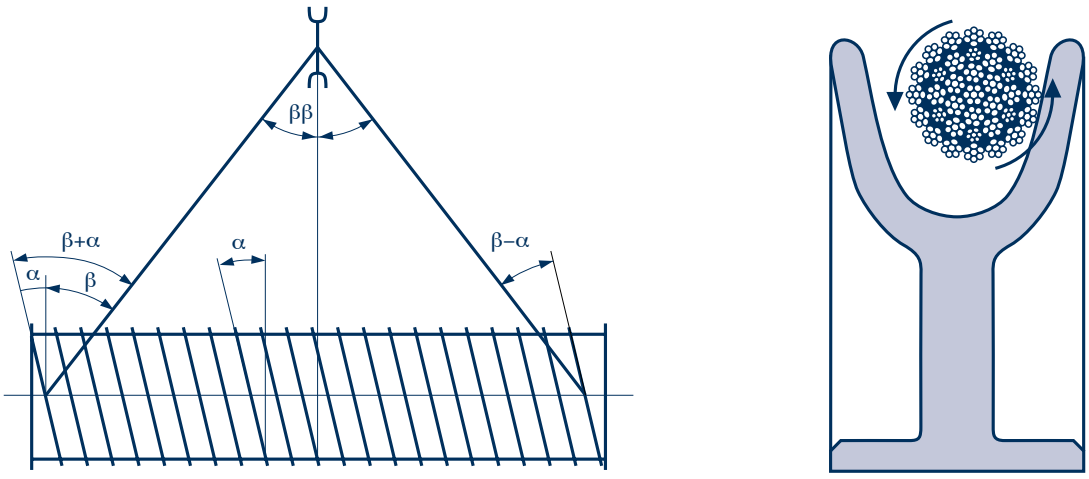


Figure 13: Fleet angle

25- Selection of drum and wire rope lay

Choosing the right rope is important for the proper service of the reeving system. Incorrectly selected rope direction leads to torque formation and causes structural damage to the rope (Figure 14).

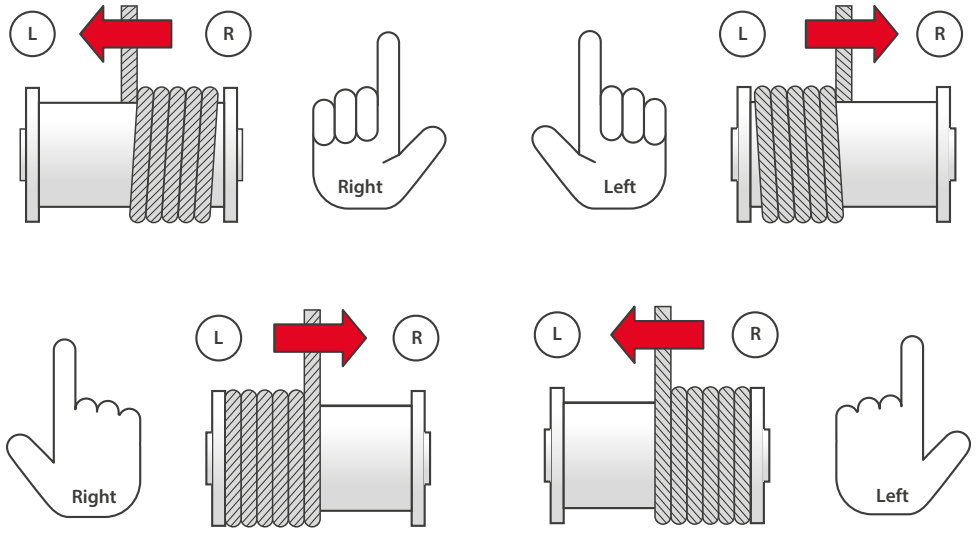


Figure 14: Selection of drum and wire rope lay

26- Installation

Appropriate methods to be applied during installation of the rope can vary from system to system.
In any case, the aim should be to find a method that minimizes the damage caused by the contact of the rope with the external factors and at the same time the minimum possible torsion in the rope while assembling the rope.

Assembly under load; In order to achieve a perfect winding in multi - layer winding drums, it is important to apply pretension on the rope during installation. If the first few rows are not wrapped in a stretched state on the load, these windings may be wrapped very loosely. The subsequent windings will sink into the lower loose windings when they reach the load during use.

After the assembly of the ropes, it is needed to perform systematic movements which will be done several times in light load for a while before applying the rope to the real load. In this way, the new rope is adapted to the genuine working environment. Unfortunately, in practice, often the opposite of this advice is made. Usually the new rope is pulled with a thin rope or an old rope. In both cases, a secure connection should be provided between these two ropes (Figure 15). During the assembly of the rope, the old rope and the new rope should not be welded together in any way. Fasteners must be used to allow the rope to rotate.

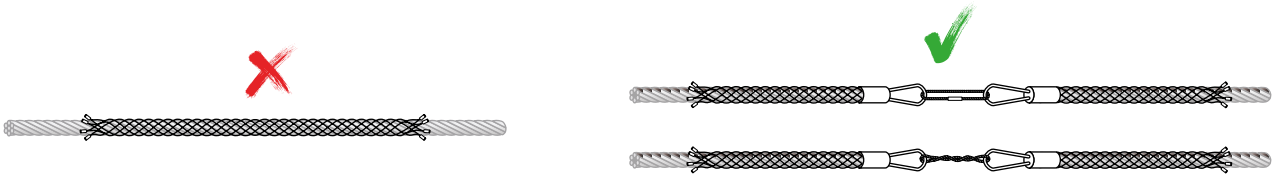


Figure 15: Correct and incorrect installation

27- Maintenance and Lubrication

Steel wire ropes should be regularly maintained. The type of maintenance may vary depending on the machine, the type of use and the selected rope. The service life of a regularly maintained wire rope will increase significantly.

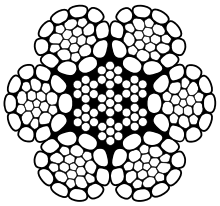
Removal of broken wires; if the ends of the broken wires are detected during the inspection, they must be removed. Because these broken wires can be crossed crosswise on other wires that are not broken and the rope can destroy other wires while passing through the sheeves in the service. For wires with a diameter that is too thick to be handled by a naked hand, the same procedure must be carried out using a tool.

During the production process, steel ropes are heavily lubricated. Thanks to this application made during the production in the factory, the ropes will be provided with adequate protection against corrosion and abrasion. In other words, the friction between wires forming the ropes will reduce the friction between the rope and the drum, pulley and so on. However, the initial lubrication at the factory remains limited for a limited period of time. Then periodic lubrication should be continued.

Steel wire ropes must be lubricated continuously at regular intervals. Depending on their use, they must be lubricated throughout their bending area. If lubrication is not possible for operational reasons, the service life of the rope must be shorter.

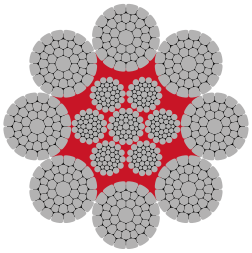
28- Swaged rope

Swaged ropes are produced for use in heavy industry in multi-layer drums. After the rope is made Swage process, the rope is made by the method of hammering of the rope is done. Swaging provides high friction resistance, high strength and smooth surface and high breaking strength. In addition, a complete coating method can be applied to protect the rope from mechanical effect.



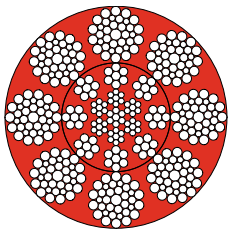
29- Coated and filled wire ropes

Closing the gaps in the rope, ropes designed to avoid the contact between the core and the outer strands. This can be done by spraying or coating. The advantages can be listed as follows.



Advantages listed as below:

- Reduces or disappears completely risk of birdcage.
- Keeps away water and abrasive substances.
- Serves as a buffer between core and outer strands.
- Prevents internal wire breaks due to abrasion.
- Reduces the noise of the rope during operation.
- Absorbs dynamic energy.
- Strengthen the structure of the rope.
- Keeps the lubricant in rope and helps to lubrication.
- Prevents metal to metal contact.
- Allows the rope to stand properly during assembly.



30- Inspection

1- General

If there is no demand from the crane manufacturer, the rope manufacturer and the rope supplier, the following steps related to the inspection should be followed

2- Daily visual inspection

On certain days, the working part of the rope must be observed in order to detect any mechanical damage to the ropes. The connection points of the rope must be included in this observation. Make sure that the rope is correctly positioned in the drum and pulleys. If there is a significant situation, it should be checked and examined by the authorized person. The rope must be visually inspected again when the crane is moved to a different location, reassembled or replaced.

3- Periodic control

a. General

Periodic inspections must be carried out by authorized persons. The data obtained in the periodic examination is used to decide whether or not to use the rope.

- It is decided whether it is proper for using or when is the next periodic inspection to be carried out.
- It can be decided to discard the wire rope immediately or in a period of time.

The following table presents the table of deformation types and measurement methods.

Mode of Deterioration	Assessment Method
Number of visible broken wires (including those which are randomly distributed, localized groupings, valley wire breaks and those that are at, or in the vicinity of, the termination)	By counting
Decrease in rope diameter (resulting from external wear/abrasion, internal wear and core deterioration)	By measurement
Fracture of strand(s)	Visual
Deformations	Visual
Mechanical Damage	Visual
Heat damage (including electric arcing)	Visual and by measurement (wave only)

b. Frequency

The frequency of the periodic inspection shall be determined by the competent person, who shall take account of at least the following.

- The statutory requirements covering the application in the country of use,
- The type of crane and the environmental conditions in which it operates,
- The classification group of the mechanism,
- The results of previous inspection(s),
- Experience gained from inspecting ropes on comparable cranes,
- The length of time the rope has been in service,
- The frequency of use.

c. Extent of inspection

Each rope shall be inspected along its entire length. However, in the case of a long length, and at the discretion of the competent person, the working length plus at least five wraps on the drum may be inspected. In such a case, and where a greater working length is subsequently foreseen after the previous inspection and prior to the next one, that additional length should also be inspected before the additional length of rope is used. Particular care, however, shall be taken at the following critical areas and locations.

- Drum anchorage
- Any section at, and in the vicinity of, a rope termination,
- Any section that travels through one or more sheaves,
- Any section that travels through the hook block,
- Any part of rope that is exposed to heat,
- Any section that is subjected to abrasion by external features,
- That part of the rope which lies over a compensating sheave,
- In the case of cranes performing a repetitive operation, any part of the rope that lies over a sheave while the crane is in a loaded condition,
- Any section that travels through a spooling device,
- Those sections that spool on the drum, particularly cross - over zones that are associated with multi - layer spooling.

d. Inspection at a termination

The rope shall be inspected in the vicinity of the termination, particularly where it enters the termination, as this location is vulnerable to the onset of wire breaks due to vibration and other dynamic effects and, depending on the state of the environment, corrosion. Some probing with a spike may be carried out to establish if there is any looseness in any of the wires, suggesting the existence of a broken wire within the termination. The termination itself should also be inspected for any excessive amounts of distortion and wear.

e. Inspection reports

After each periodic inspection, the competent person shall provide a rope inspection record, and state a maximum time interval that shall not be exceeded before the next periodic inspection takes place.

4- Inspection following an incident

If an incident has occurred that might have caused damage to a rope and/or its termination, the rope and/or its termination shall be inspected as described for a periodic inspection, prior to re-commencement of work or as required by the competent person.

5- Inspection following period with crane out of operation

If the crane has been out of operation for more than three months, the rope(s) shall undergo a periodic inspection, prior to re - commencement of work.

6- Non - destructive testing

Non - destructive testing (NDT) by electro - magnetic means may be used as an aid to visual inspection to determine the location of those sections of rope which could be suffering deterioration. If it is the intention to carry out NDT by electro-magnetic means at some point during the life of the rope, it should be subjected to an initial examination as soon as possible/practicable in the lifetime of the rope (which might be at rope manufacture, during installation of the rope or, preferably, after the rope has been installed) to serve as a reference point (sometimes referred to as "rope signature") for future comparison.

31 - Discard criteria (According to ISO 4309)

1- General

In the absence of any instructions provided by the manufacturer of the crane in his manual or any provided by the supplier or manufacturer of the rope, the individual discard criteria shall apply. As deterioration often results from a combination of different modes at the same position in the rope, the competent person shall assess the "combined effect". If, for whatever reason, there is a noticeable change in the rate of deterioration of the rope, the reason for this shall be investigated and, wherever possible, corrective action taken. In extreme cases, the competent person may decide to discard the rope or amend the discard criteria, for example by reducing the allowable number of visible broken wires.

2- Visible broken wires

a. Criteria for visible broken wires

The discard criteria for the various natures of visible broken wire shall be as specified in table

	Nature of Visible Broken Wire	Discard Criteria
1	Wire breaks occurring randomly in sections of rope	See related tables For single - layer and parallel - closed ropes and rotation - resistant ropes
2	Localized grouping of wire breaks in sections of rope which do not spool on and off the drum	If grouping is concentrated in one or two neighbouring strands it might be necessary to discard the rope, even if the number is lower than the values over a length of 6d
3	Valley wire breaks	Two or more wire breaks in a rope lay length
4	Wire breaks at a termination	Two or more wire breaks

b. Rope Category Number (RCN)

If the rope is a single - layer or parallel - closed rope, then can look at to Table 2. If the rope is a rotation - resistant rope, then refer to Table 1.

c. Wire breaks other than those resulting from service

As a consequence of shipping, storage, handling, installation and manufacturing, an individual wire can be broken. They would not normally be counted when inspecting the rope for broken wires. Their existence, however, if discovered, should be recorded, as this can assist future inspections.

d. Rotation - resistant ropes

Category Number	Total Number of Load - Bearing Wires in The Outer Layer of Strands in The Rope	Number of visible broken outer wires			
		Sections of Rope Working in Steel Sheaves and/or Spooling on a Single - Layer Drum (Wire breaks randomly distributed)		Sections of Rope Spooling on a Multi - Layer Drum	
		Over a Lengthof 6d	Over a Lengthof 30d	Over a Lengthof 6d	Over a Lengthof 30d
21	4 strands n ≤ 100	2	4	2	4
22	3 or 4 strands n ≤ 100	2	4	4	8
23-1	At least 11 outer strands 71 ≤ n ≤ 100	2	4	4	8
23-2	101 ≤ n ≤ 120	3	5	5	10
23-3	121 ≤ n ≤ 140	3	5	6	11
24	141 ≤ n ≤ 160	3	6	6	13
25	161 ≤ n ≤ 180	4	7	7	14
26	181 ≤ n ≤ 200	4	8	8	16
27	201 ≤ n ≤ 220	4	9	9	18
28	221 ≤ n ≤ 240	5	10	10	19
29	241 ≤ n ≤ 260	5	10	10	21
30	261 ≤ n ≤ 280	6	11	11	22
31	281 ≤ n ≤ 300	6	12	12	24
-	n > 300	6	12	12	24

Table 1: Allowed number of broken outer wires for rotation - resistant ropes (d= Rope diameter, n= Number of wire rope outer wires)

e. Single - layer and parallel - closed ropes

Category Number	Total Number of Load - Bearing Wires in The Outer Layer of Strands in The Rope	Number of Visible Broken Outer Wires					
		Sections of Rope Working in Steel Sheaves and/or Spooling on a Single - Layer Drum (Wire breaks randomly distributed)				Sections of Rope Spooling on a Multi - Layer Drum	
		Classes M1 to M4 or Class Unknown				All Classes	
		Ordinary Lay		Lang Lay		Ordinary and Lang Lay	
		Over a Lengthof 6d	Over a Lengthof 30d	Over a Length of 6d	Over a Lengthof 30d	Over a Length of 6d	Over a Lengthof 30d
01	n ≤ 50	2	4	1	2	4	8
02	51 ≤ n ≤ 75	3	6	2	3	6	12
03	76 ≤ n ≤ 100	4	8	2	4	8	16
04	101 ≤ n ≤ 120	5	10	2	5	10	20
05	121 ≤ n ≤ 140	6	11	3	6	12	22
06	141 ≤ n ≤ 160	6	13	3	6	12	26
07	161 ≤ n ≤ 180	7	14	4	7	14	28
08	181 ≤ n ≤ 200	8	16	4	8	16	32
09	201 ≤ n ≤ 220	9	18	4	9	18	36
10	221 ≤ n ≤ 240	10	19	5	10	20	38
11	24 ≤ n ≤ 260	10	21	5	10	20	42
12	261 ≤ n ≤ 280	11	22	6	11	22	44
13	281 ≤ n ≤ 300	12	24	6	12	24	48
	n > 300	0,04 × n	0,08 × n	0,02 × n	0,04 × n	0,08 × n	0,16 × n

Table 2: Allowed number of broken outer wires for single - layer and parallel - closed ropes (d= Rope diameter, n= Number of wire rope outer wires)

3- Decrease in rope diameter

a. Uniform decrease in diameter

Table below is used to determine the decrease in rope diameter.

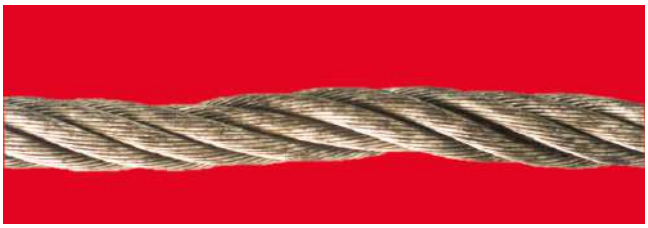
Rope type	Uniform decrease in diameter (expressed as % of nominal diameter)	Description	Severity rating %
Fiber core	Less than 6%	-	0
	6% and over but less than 7%	Slight	20
	7% and over but less than 8%	Medium	40
	8% and over but less than 9%	Very high	60
	9% and over but less than 10%	Very high	80
	10% and over	Discard	100
Steel core or parallel - closed rope	Less than 3,5%	-	0
	3,5% and over but less than 4,5%	Slight	20
	4,5% and over but less than 5,5%		40
	5,5% and over but less than 6,5%	Medium	60
	6,5% and over but less than 7,5%	Very high	80
	7,5% and over	Very high	100
Rotation - resistant rope	Less than 1%	Discard	0
	1% and over but less than 2%	-	20
	2% and over but less than 3%	Slight	40
	3% and over but less than 4%	Medium	60
	4% and over but less than 5%	Very high	80
	5% and over	Very high	100

b. Calculation to determine actual uniform decrease in diameter

[((dref - dm) / d) * 100%]
dref : Reference diameter
dm : Measured diameter
d : Nominal diameter

c. Local decrease

If there is an obvious local decrease in diameter, such as that caused by failure of a core or rope centre, the rope shall be discarded.
[((dref - dm) / d) * 100%]



Warning: If a complete strand fracture occurs, the rope shall be immediately discarded.

4- Corrosion

When assessing the extent of corrosion, it is important to recognize the difference between corrosion of the wires and any corrosion on the rope surface that is associated with the oxidation of foreign particles. Therefore, before making an assessment, the rope sections undergoing inspection shall be wiped or brushed clean. The use of solvents for cleaning should be avoided

a. Beginning of surface oxidation, can be wiped clean, Superficial — rating: 0% towards discard

b. Wires rough to touch, general surface oxidation — rating: 20% towards discard

c. Surface of wire now greatly affected by oxidation - rating: 60% towards discard

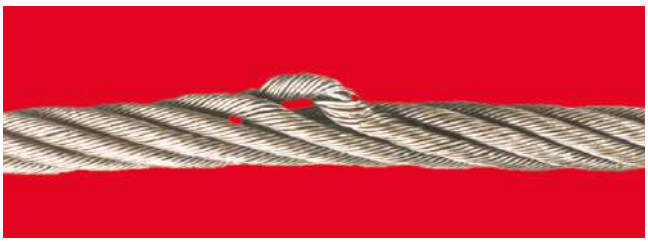
d. Surface heavily pitted and wires quite slack, gaps between wires — discard immediately

5- Deformation and damage

RCN numbers of several types of ropes are shown below.

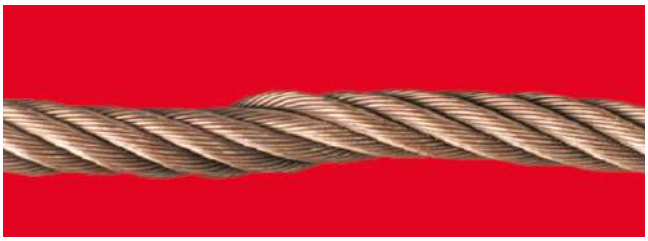
ROPE	Category Number (RCN)
6x7-FC Single layer rope	RCN.01
6x19S-IWRC Single layer rope	RCN.02
6x19M-WSC Single layer rope	RCN.04
6x25F-IWRC Single layer rope	RCN.04
6x25TS-IWRC Single layer rope	RCN.04
6x36WS-IWRC Single layer rope	RCN.09
6x41WS-IWRC Single layer rope	RCN.11
6x37M-IWRC Single layer rope	RCN.10
8x19S-IWRC Single layer rope	RCN.04
8x25F-IWRC Single layer rope	RCN.06
8x19S-PWRC Parallel closed rope	RCN.04
8xK26WS-IWRC Single layer rope with compacted strands	RCN.09
4xK26WS Single layer rope / rotation resistant rope with compacted strands	RCN.22
6xK26WS-IWRC Single layer rope with compacted strands	RCN.06
6xK36WS-IWRC Single layer rope with compacted strands	RCN.09
8xK26WS-PWRC Parallel closed rope with compacted strands	RCN.09
18xK19S-WSC or 19xK19S Rotation resistant rope with compacted strands	RCN.26
4x29F Single layer / rotation resistant rope	RCN.21
K3x40 Single layer compacted (swaged) rope / rotation resistant compacted (swaged) rope	RCN.22
Kx40 Single layer compacted (swaged) rope / rotation resistant compacted (swaged) rope	RCN.22
K3x48 Single layer compacted (swaged) rope / rotation resistant compacted (swaged) rope	RCN.22
Kx48 Single layer compacted (swaged) rope / rotation resistant compacted (swaged) rope	RCN.22
17x7-FC Rotation resistant rope	RCN.23-1
18x7-WSC or 19x7 Rotation resistant rope	RCN.23-1
12xP6:3x02 Rotation resistant rope (Paragon)	RCN.23-1
34(W)x7-WSC or 3(W)x7 Rotation resistant rope	RCN.23-2
39(W)x7-WSC Rotation resistant rope	RCN.23-3
34(W)xK7-WSC Rotation resistant rope with compacted strands	RCN.23-2
39(W)xK7-KWSC Rotation resistant rope with compacted strands	RCN.23-3

6- Typical modes of deterioration
Rope damage types are shown in the following pictures.

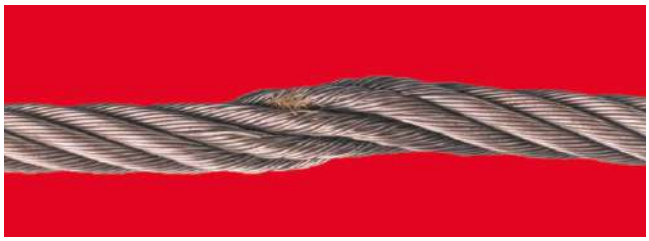


a. Strand protrusion or distortion

b. Flattened portion

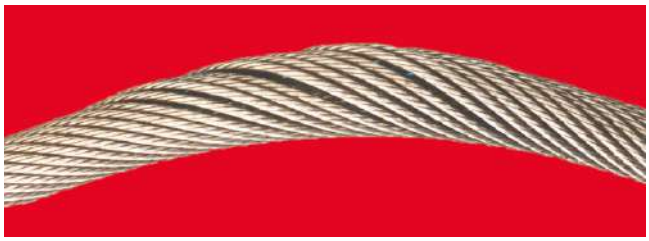


c. Kink (positive)



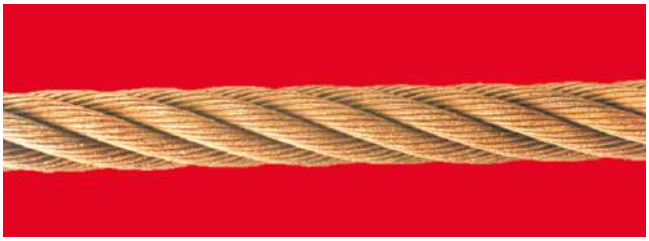
d. Kink (negative)

e. Waviness



f. Basket deformation

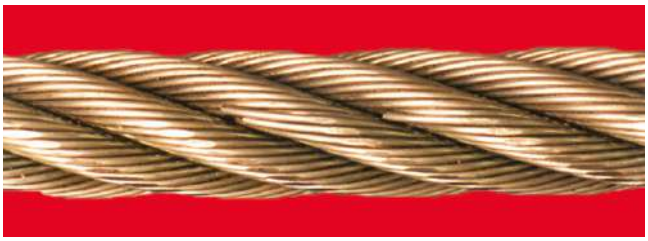
g. External wear



h. External corrosion

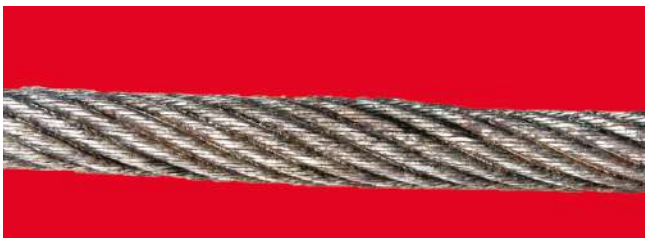
ı. Enlargement of External corrosion

i. Crown wire breaks



j. Valley wire breaks

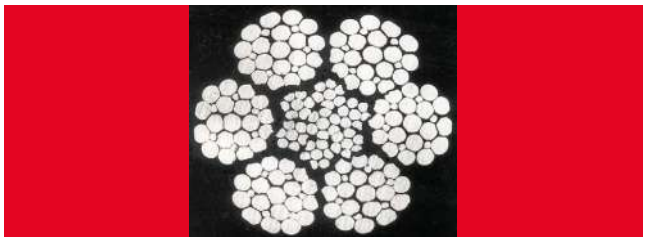
k. Protrusion of inner rope of rotation-resistant rope



l. Local increase in rope diameter due to core distortion

m. Kink

n. Flattened portion

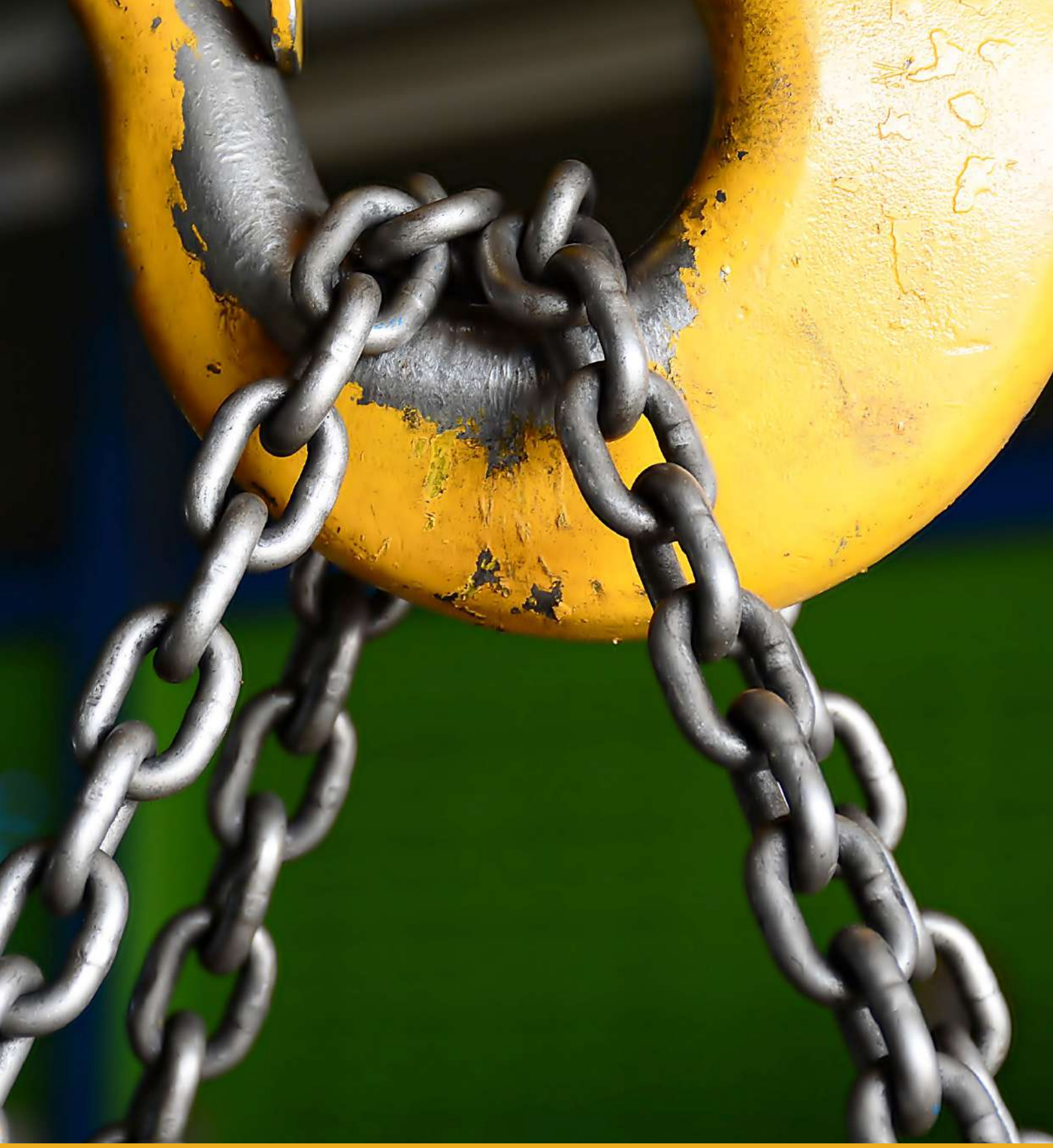


o. Internal corrosion

7- Combined effect assessment

Example	Severity Rating of Individual Modes of Deterioration			Combined Severity Rating %	Comment
	Wire Breaks	Decrease in Diameter	External Corrosion		
1	0	20	20	40	Safe to continue
2	20	20	0	40	Safe to continue
3	20	20	20	60	Safe to continue
4	40	20	20	80	Inspect more frequently
5	40	40	0	80	Inspect more frequently
6	0	80	0	80	Consider discard if reduction in diameter is mainly attributed to external wear
7	60	0	0	60	Inspect (particularly for broken wires) more frequently
8	60	20	0	80	Inspect more frequently (particularly for broken wires) and prepare for replacement

The table is an example and may vary.



LIFTING CHAINS

User information

General information

Pewag prides itself on its versatile and multi-faceted quality products that suit a wide range of applications. Different construction, loading and lashing methods for general lifting applications do not pose a particular challenge for our universally applicable lifting accessories as they were manufactured with precisely these different demands in mind.

All information on design and load capacities in the catalogues (Uniform Load Method) take this range into account. There is also an alternative method in existence for rating the product load capacity, for which the specific application scenario of the chain and all operating conditions must be known. In such a case, please contact the pewag Technical Service team, as the information contained in the catalogues does not apply to such processes.

If the pewag lifting accessories are used correctly and by competent persons, they have a long lifespan and provide the highest possible safety standards. Material and personal damage can be avoided by reading this user information carefully and handling all lifting processes in a responsible, provident manner.

Changes to the condition as delivered

We urgently recommend using only the original parts that are included in the scope of delivery with pewag lifting chains (bolts, safety pins, screws etc.) Modifying the original condition of the lifting accessories by bending, grinding, removal of parts, welding, drilling, stamping etc. means exposing yourself and others to unnecessary danger. In such a case, safety can no longer be guaranteed and usage becomes dangerous.

Risk factors and conditions include heating the chains to a temperature of more than 380 °C (Pewag Winner 400) and removing safety parts such as safety pins, safety catches etc. Do not apply any surface coatings to pewag chain slings, i.e. do not subject them to hot galvanizing or electro galvanizing.

If any surface treatments are required, please make sure to double - check with the pewag service department first.

Dipping or removing a coating with chemicals is potentially dangerous processes that may give rise to hazards. We urgently recommend customers to check with the pewag technical team first.

For hazardous or dangerous conditions, please refer to the table on page 149.

Temperature effects

The table on page 149 lists the load reduction values in case of extreme temperatures. These apply until the chain and/or the lifting accessories have reached room temperature. Pewag lifting accessories must on no account be used outside the indicated temperature range. If this has been the case, the chains must be removed from service.

Effects of acids, caustics and chemicals

Pewag lifting accessories must not be used in acids or caustic solutions or be exposed to their vapors. Please be aware of this requirement at all times as certain production processes release acids and/or vapors! If the use of pewag lifting accessories with highly concentrated chemicals in combination with high temperatures cannot be avoided, please make sure to obtain the express approval of such usage by a pewag expert.

Hazardous conditions

The working load limits in this catalogue have been determined on the basis that the product is not being used in hazardous conditions. Hazardous conditions are present when lifting accessories are used offshore or for the lifting of persons or potentially dangerous goods such as liquid metal, corrosive or caustic substances or nuclear material. If the chain sling is to be used for such purposes, the extent of the risk is to be assessed by an expert, the load capacity must be adjusted accordingly and incorrect usage in hazardous conditions must be avoided at all cost. As a rule, usage in hazardous conditions should be avoided.

Prevention is better than cure!

Before using any lifting accessory, several inspections must be performed:

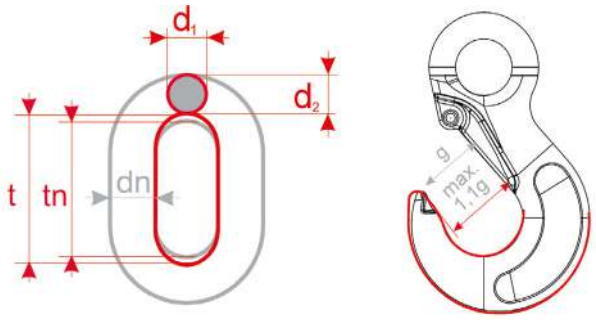
- Does the lifting chain correspond to the order?
- Has the inspection certificate or certificate of conformity been supplied?
- Do the markings and load capacities stated on the chain sling correspond to the information given on the inspection certificate or certificate of conformity?
- Have all the particularities of the chain sling been entered into a register of lifting equipment, if required?
- Has the operating manual outlining the correct use of the chain sling been supplied and read and understood by all personnel?

Please check the lifting accessories for visible signs of damage or wear prior to each use. In case of any doubt or damage, do not use the chain slings and have them inspected by a competent person.
Inspections by a competent person must be performed in accordance with national legislation, but at least once every 12 months. If the chain sling is frequently used at its full load capacity, more frequent inspections are required! Please note that the chain sling must also be inspected after unusual events, for instance uncontrolled exposure to heat. We recommend subjecting the chain sling to a load capacity test with 2 times the load capacity every two years, followed by a visual inspection, or another type of crack test.

Visual inspection criteria

If at least once of the criteria listed below manifests itself during the visual inspection, all parts must be removed from service:

- Breakage of a component
- Illegible or missing marking of the chain sling (i.e. information on identification data and/or load capacity)
- Deformation of suspension or sling parts or the chain itself
- Elongation of the chain resulting in $t > 1{,}05\ t_n$
- Wear as determined by the mean value of two measurements of diameters d1 and d2 carried out at a right angle as shown. The chain must be removed from service life if: $dm = (d_1+d_2)/2 \leq 0{,}9\ d_n$



- Visible damage such as cuts, notches, grooves, surface cracks, discoloration due to excessive heat exposure, signs of subsequent welding, bent or twisted links or other flaws.
- Obvious wear or chemical removal of material if the admissible dimensional changes as outlined in the table supplied has been exceeded, e.g. pitting corrosion
- Cracks and cross - cracks that are visible to the naked eye
- Missing or non - functional safety device as well as signs of widening or twisting of hooks, i.e. noticeable enlargement of the opening or other forms of deformation. The critical point is reached when the opening exceeds 10% of the nominal value or if the safety catch is open, as this indicates that the hook is overloaded.

Correct maintenance

Please note that all maintenance activities of pewag lifting accessories must be handled by competent persons to minimize the risk of improper use.

Precise documentation

All inspections and their results must be recorded and these records be kept throughout the service life of the chain slings. Precise records of this sort constitute the best basis for effective maintenance.

Clean storage

Pewag lifting chains must always be stored in a clean and dried condition and protected against corrosion, i.e. slightly lubricated.

Maximal approved dimensional change:

For Grade 100 chains and accessories

Designation	Dimensions	Admissible deviation
Chain	dm	-10%
	t	5%
Links	d	-15%
	t	10%
Hooks*	e	5%
	d_2 and h	-10%
	g	10%
CW, CARW, CLW	Halves loose	No changing admissible
	e	5%
	c	-10%
BWW, GWH	e	5%
	d	-15%
	d_1	5%
	Δ Angle change	≤ 3%
SCH, GSCH, U	Bolt loose	No changing admissible
	e	5%
	d, d_1, d_2 and M	-10%
SM	e	5%
	g	10%
	d	-10%
BA	d_2	-10%
FA	d_1	-10%
Clevis and Connex - pim	d	-10%
LHW, KLHW, WLH(B)W	dw	-10%
	h	-10%
	Opening of hook	2 x s Max.

* HSW, WS, FW, PW, KHSW, DFW, GKHSW, SH, KSCHW, KCHW, KFW, KPW, KVS, XKW, KOW, KRW

For Grade 120 chains and accessories

Designation	Dimensions	Admissible Deviation
Chain	dn	-10%
	tn	5%
	Wear at edges	d = dn
Links	d	-15%
	t	10%
Hooks	e	5%
	d_2 and h	-10%
	g	10%
Connecting links	Halves must be moveable	No changing admissible
	e	5%
	c	-10%
	d	-10%
Clevis and Connex bolts	d	-10%

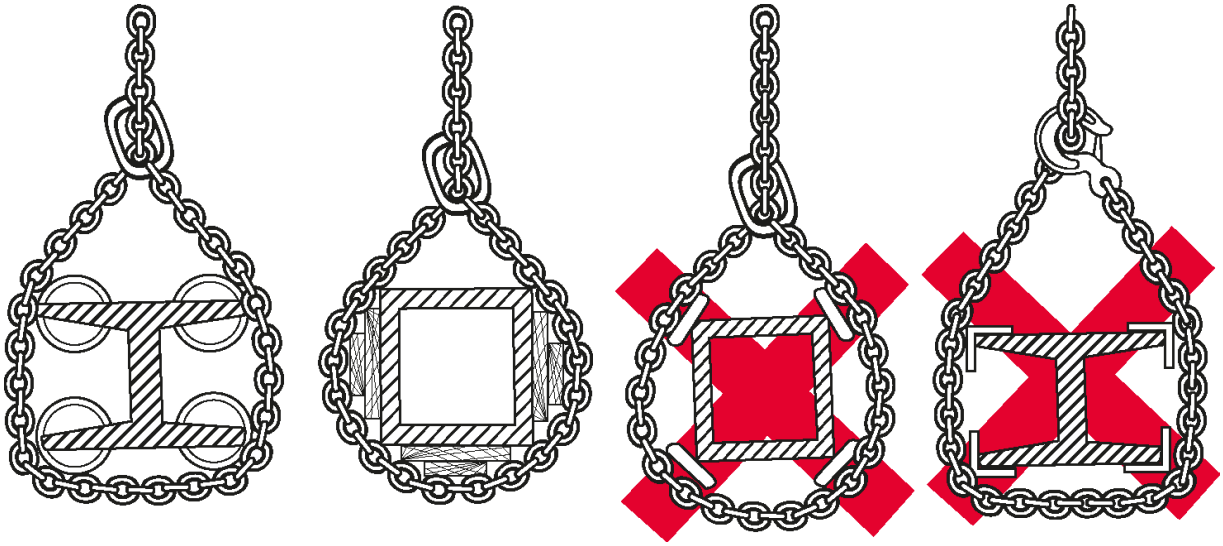
Proper use of chain slings

The right angle of inclination

To ensure safe handling, the slinging points and chain sling types must be selected in such a way that the angles of inclination of all chain strands (legs) lie within the data given on the load capacity tag. Preferably, all angles of inclination should be the same. Avoid angles of inclination of less than 15° because of the high risk of load instability. Never use chain slings with the angle of inclination exceeding 60°!

Edge-loading – know your limits

The maximum load capacity of pewag chain slings assumes that the individual chain legs are pulled straight under load, i.e. that they do not run over edges. However, if edge - loading is unavoidable, load protection (packing) should be used to avoid damage (see illustration):



If chains are guided over edges without proper protection, their load capacity is significantly reduced and safe usage can no longer be guaranteed. Where chain has to be looped around beams or other round - shaped loads, the diameter should be at least twice or 3 times the chain pitch. For smaller diameters, the load capacity of the chains must be reduced by 50%.

Impact/shock loading

For the load capacities of pewag winner pro lifting chains to impact - or shock - loading. In cases of possible impact/shock, the load factors on page 149 apply.

Classification of impacts:

- Slight impact may result from accelerated lifting or lowering operations
- Medium impact may result from the chain slipping while adjusting itself to the shape of the load
- Strong impact results for instance from the load falling into the unloaded chain

Vibrations

If they are used correctly, pewag lifting chains and accessories withstand high load cycles, with a standard rating of 20,000 load cycles. In case of high dynamic loads, there is a risk of the chain or components getting damaged. The employer's liability insurance association Metall Nord Süd recommends reducing stress at WLL by using a larger nominal thickness/size in such a case.

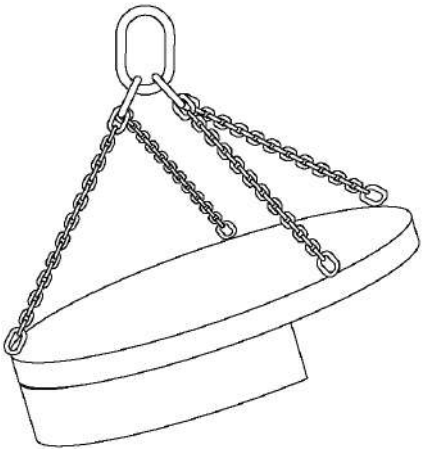
Symmetrical loading

For the load capacities of pewag lifting chains to apply, it is assumed that the individual chain strands are placed under load symmetrically. When the load is lifted, this results in equal angles of inclination and the individual strands are symmetrical to each other.

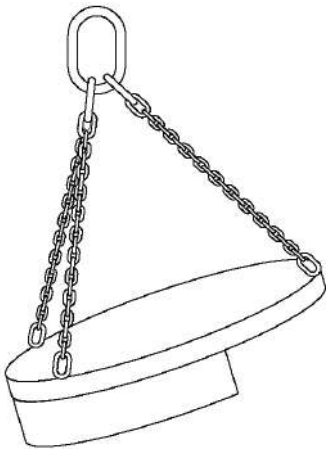
The load may be considered symmetrical when all of the following conditions apply:

- The load is less than 80% of the indicated load capacity
- The angles of inclination of all chain strands are not lower than 15° and are very similar (i.e. only differ by a maximum of 15°).
- For 3 and 4 stranded lifting chains, it must be ensured that the corresponding plan angles are within 15° of each other.

Be careful!



The main part of the load is carried by just one leg.



The main part of the load is carried by two legs.

If not all of these parameters are complied with, the load cannot be considered symmetrical and the classification of the lifting operation must be left to an expert. In case of doubt, only one chain strand (leg) should be considered as load-bearing. For the corresponding load capacity values, please refer to the load capacity table on page 18 and 19 to determine the precise load capacity.

Wrongful use defeats the purpose

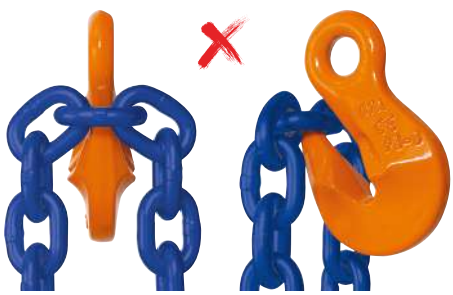
Pewag lifting chains offer perfect quality standards if they are used according to their intended purpose. In cases where not all individual legs are used simultaneously or where several lifting chains are used at the same time, different load capacities apply as outlined in the tables. In case of doubt regarding the intended purpose, the load capacity as indicated on the tag must be amended in accordance with the following table:

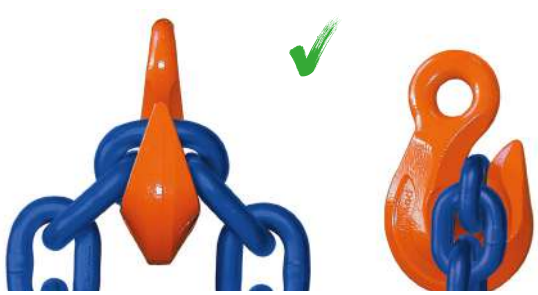
Type of Sling Chain	Number of Individual Strands Used	Use Factor in Relation to The Load Capacity Given on The Tag
2 leg	1	1/2
3 and 4 leg	2	2/3
3 and 4 leg	1	1/3
2 x single leg	2	1.4 up to 45°
2 x 2 leg	3 or 4	1.5 from 45° – 60°

Precautions

- Hang any individual strands (leg) that you do not use back into the master link to prevent hazards caused by freely swinging chains or unintended hooking.
- Before using several chain slings at the same time, make sure that the crane hook is big enough for all the master rings. Make sure that the master rings cannot fall out of the hook during lifting.
- Angles of inclination of more than 45° must be avoided.
- Use only chain slings of the same nominal thickness and grade at the same time.

Never tip - load the hook!





SOCKETS

Open – Closed Spelter Socket

Socket installation must be performed in accordance with EN 13411-4 standard. After socket installation there is no loss of strength in wire and provides 100% performance.

Installation

- Socket selection should be determined according to the rope diameter as well as relevant to work. Oversized socket should not be used.
- During socket installation process the rope must be connected with the appropriate length of wire. This wire should not be aluminum or copper (Figure 1).
- The wire rope wrapped by wire can be placed in the socket in two different ways; the first is before the wires are separated, the second is after the wires are separated. However, It is more practical to place the rope in the socket before the wires are separated.
- Strands should be separated in strands including the core of wire rope. The opening angle of the strands should not exceed 45º (Figure 2).
- After the wires are separated from each other, the oil and the plastic pieces should be cleaned completely if the wire rope is filled by plastic. It is important to separate the wires completely from each other and the resin must be well filled to the base. Most of the load capacity of the termination is concentrated in one third of the socket bottom (Figure 3 - 4).
- After drying the wire rope we have to assure that it is properly placed in the center of the socket. A clamp can be used for this purpose (Figure 5 - 6).
- To prevent resin leakage, it is necessary to seal off the bottom of the socket before casting. To do this, plastic or clay based paste (window or glass paste) should be used (Figure 7).
- After the resin is mixed, it must be poured by the side of the socket to get a good yield. This allows the air to flow out and the spaces to be filled better. The bulk process should be done quickly before the resin get hardened (Figure 8).
- Resin - poured socket should not be moved. Socket slots should not be moved for at least 10 minutes after the material in the socket has hardened.

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Figure 7

Figure 8

Control and re - use

- To check the influence of resin to the socket by visual means, clamp or paste should be removed.
- After removing the rope from the clamp, it should be re - lubricated from the bottom of the socket.
- The rope must be mounted to the system after the hardening process has occurred and recommended to use after working for one hour in a safe load. If possible, try the rope with a test load before giving it to the actual load.
- For re - use of the sockets necessary tests should be done and suitability should be stated by the manufacturer. It is also important to clean the interior of the sockets suitable for reuse.

Removing resin from the socket

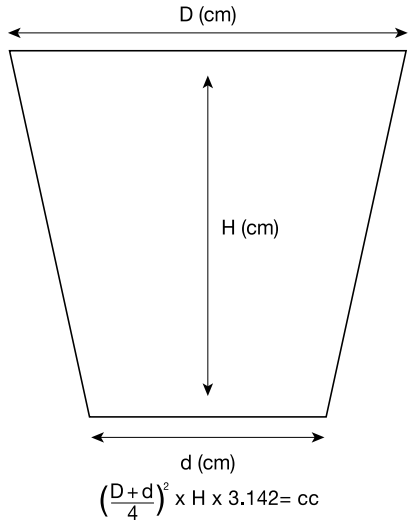
To remove the resin from the socket:

a. Cut the rope off from the end point of the socket.

b. Heat the socket externally and apply pressure from the bottom to remove the material out outside. After heating process wait for 3-4 minutes and remove the material out of the socket.

c. It is recommended that sockets exposed to heat to be cooled down before re-use.

Approximate calculation of the resin required for the socket



Quantity of Glue Required According to The Rope Diameter			
Rope Diameter (mm)	Quantity of Glue (cc)	Rope Diameter (mm)	Quantity of Resin (cc)
6 - 7	9,0	44 - 48	700
8 - 10	17,0	50 - 54	1.275
11 - 13	35,0	56 - 60	1.400
14 - 16	52,0	64 - 68	1.850
20	86,0	70	2.250
22	125,0	76	3.200
26	160,0	82	3.800
28	210,0	88	4.920
32 - 36	350,0	94	6.000
40	420,0	102	7.750
42	500,0	-	-

Heat Effect

The following operating temperature limits applied to sockets, unless specified by the socket designer or socket manufacturer.

For lead - based alloys: -45 °C to 80 °C

Zinc and zinc - based alloys:

- Fiber core braided rope: -40 °C to 80 °C,
- Steel core wire rope: -40 °C to 120 °C,
- Spiral rope: -40 °C to 120 °C.

Resin:

- Fiber core braided rope: -50 °C to 80 °C,
- Steel core wire rope: -50 °C to 110 °C,
- Spiral rope: -50 °C to 110 °C.

Especially to consider installation conditions at a higher temperature, decision should be made by the socket manufacturer or the socket system designer.

The percentages of capacity at certain temperatures are given below in socket installed systems.

Temperature °C	Capacity %
110	100
150	92
200	83
250	75
300	67

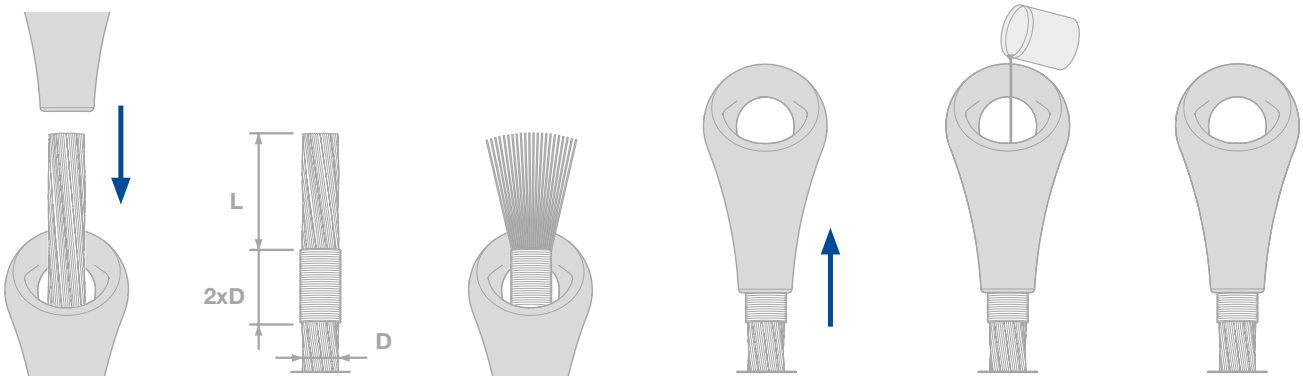
Bonding sockets with metal and resin

Pear type socket

Socket installation must be performed in accordance with EN 13411-4 standard. After socket installation there is no loss of strength in wire and provides 100% performance.

Installation

Pear type socket is mounted in steel wire rope in two ways
1-) Resin 2-) Smelted metal



- Make sure the conical area inside the pear socket does not contain any paint, oil or metal pieces.
- Place the pear socket on the steel wire rope as shown.
- Carefully connect the steel rope with at least 2D diameter length wire. Start to wire down to L range. You can find the distance of L in the following table. (Table 1 – Table 2).
- Seperate the L - length part of the steel wire rope into its strands as shown in Figure.
- Clean the wires thoroughly. While cleaning the wires, the direction should be downwards. Otherwise, the cleaner liquid will flow right into the steel rope. Leave the cleaned end of the steel wire rope to dry.
- Insert the steel wire rope into the socket up to the cast level of the pear socket. Then secure the steel wire rope and socket in a vertical position. Steel wire rope should be centered with the body of pear socket, and should be hung 24 times the length of the diameter.
- If resin is used for casting

  a. First, pour the resin until it is slightly out of the bottom. This will prove that the resin works well inside.
  b. Then seal off the bottom of the pear socket with a flexible sealing material. This will prevent the resin from leaking more.

- If metallic casting is used, block the bottom of the pear socket before casting.
- Pour resin or cast mass from above to level. Also, it is useful to have a look at the instructions that come with the casting material.

S Type Pear Socket Number	Steel Rope Diameter (mm)	L (mm)	Required Casting Quantity (cc)
924	22 - 24	96	205
1026	25 - 27	108	290
1130	28 -30	122	340
1232	31 - 33	118	460
1336	34 - 36	118	700
1440	37 - 40	142	750
3221	42 - 44	144	800
1548	46 - 48	157	970
1648	46 - 48	157	1.150

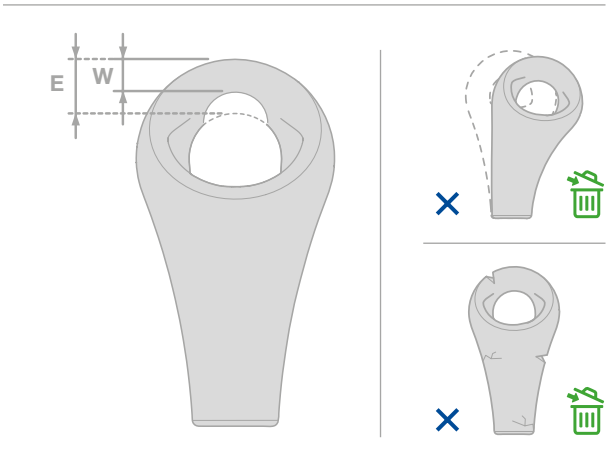
Socket Number	Steel Rope Diameter (mm)	L (mm)	Required Casting Quantity (cc)
4	16 - 17	58	70
5	18 -19	64	85
6	20 - 21	74	125
7	22 - 24	78	150
8	25 - 27	90	175
9	28 - 30	98	195
10	31 - 33	110	200
11	34 - 36	110	400
12	37 - 39	130	400
13	40 - 42	132	700
14	43 - 45	155	700
15	46 - 48	170	700
17	52 - 56	200	1.550

Maintenance

- Lubricating the contact points prolongs the life of both the socket and the connection part. Contact points can be lubricated with greases every 24 hours. Do not lubricate when used in abrasive or dusty ores environments.
- During use, particles that cause corrosion may stick on oil. Therefore, clean the contact point of the socket regularly.
- Visual inspection of the socket should be made every 200 hours.
- Preventing roughness on the contact surfaces will prolong the life of the socket. In the penetrant tests, the limit of EN 1371-1 Level 3 should not be exceeded.

Discard criteria

- If any of the following criteria are exceeded, the pear socket should be removed and destroyed.
- Wear is more than 15% of the nominal dimension at any place.
- Dimension “W” must be ≥ than 85% of the nominal dimension “E”.
- Heting in excess of 350 °C has taken place.
- Any form of welding work or heat treatment has taken place.
- Any permanent deformation or serious damage.
- Any cracks, or indication of cracks, in the material.
- The number of undergone load cycles is more than 250,000 loads at SWL.
- Overloading by more than 200% has taken place.
- When it has become highly magnetic



Storage

The sockets should be kept in a dry environment to conserve againts humidity. Avoid contact with materials that cause corrosion. If this is not possible, the sockets should be checked periodically.

Lifetime indication and Documentation

In the marking of socket systems, the traceability code identifying the installation process with the manufacturer's certificate for socket manufacturing must be legibly and permanently attached to the wide end of the socket. Marking can be done with a stamp or embossed label.

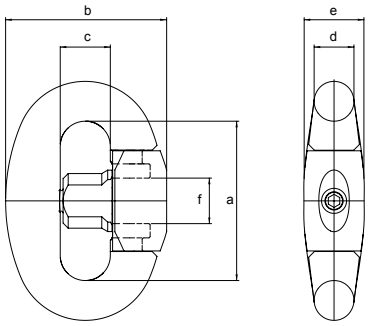
The manufacturer must present at least the following information in the document.

a. Name, address and representative (if necessary) of the company that makes the socket installation
b. Definition of the assembly (rated length, structure)
c. Maximum working load
d. Conformity of the socket installation procedure to the relevant standard

Pear socket lock

Easy and reliable way to connect to bucket and other Lifting Hardware. Fast and reliable clamping method with quality locking system. Through its hardened surface, it provides longer service life. Traceability is provided in quality certificate and the product can be easily supplied in market.

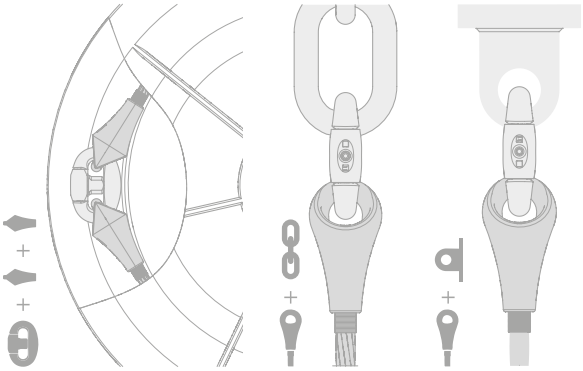
Technical Specifications Table



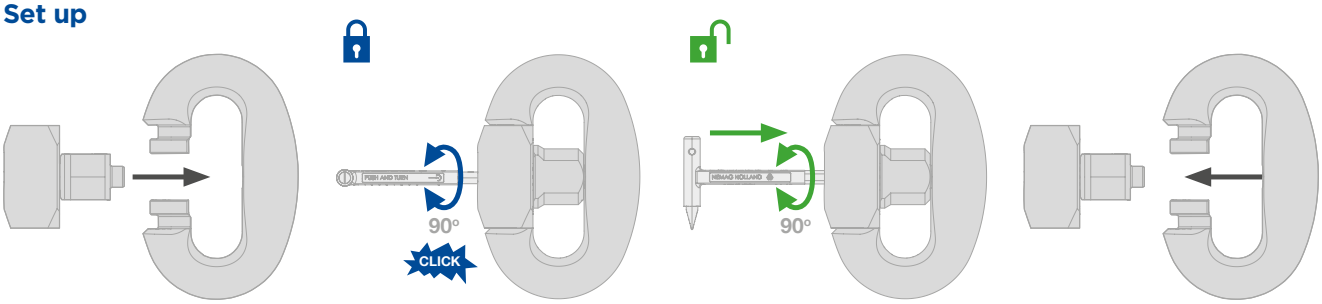
Socket Number	Working Load (kg)	Breaking Load (kg)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Weight (kg)
4	3.000	25.000	76,0	76,0	24,5	19,0	30,0	21,0	0,9
5	4.500	33.000	84,0	84,0	27,0	21,0	32,5	23,0	1,2
6	5.000	37.500	92,0	92,0	29,5	23,0	35,0	25,0	1,5
7	7.000	49.000	100,0	100,0	32,0	25,0	38,0	28,0	2,0
8	8.000	54.000	108,0	108,0	34,5	27,0	40,5	31,0	2,5
9	9.500	60.000	116,0	116,0	37,0	29,0	43,5	34,0	3,1
10	12.000	75.000	128,0	128,0	40,5	32,0	48,0	37,0	4,4
11	15.000	95.000	140,0	140,0	44,0	35,0	53,0	40,0	5,7
12	17.000	110.000	152,0	152,0	47,5	38,0	57,0	43,0	7,2
13	21.000	135.000	164,0	164,0	51,0	41,0	61,5	46,0	8,7
14	26.000	160.000	176,0	176,0	54,0	44,0	66,0	50,0	11,0
15	30.000	175.000	188,0	188,0	58,0	47,0	70,5	52,0	13,5
17	42.500	260.000	222,0	222,0	68,0	56,0	84,0	62,0	23,0

Connection methods

As the connection locks connect two pear sockets, if there is no incompatibility in the working load capacities, the connection can be safely made with the map, ring, chain and other connecting elements.



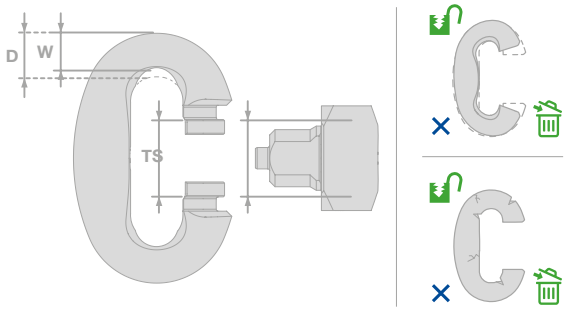
Set up



Discard criteria

Socket locks should be discarded in the following circumstances.

- Physical expansion of locks
- Broken locks, cracks and wear when seen
- In case of measurement values change frequently



Number	S - T (mm)	W (%)	Number of cycle
4	> 0,60	> 85% D	> 250.000
5	> 0,60	> 85% D	> 250.000
6	> 0,80	> 85% D	> 250.000
7	> 0,80	> 85% D	> 250.000
8	> 0,80	> 85% D	> 250.000
9	> 0,80	> 85% D	> 250.000
10	> 0,10	> 85% D	> 250.000
11	> 0,10	> 85% D	> 250.000
12	> 0,10	> 85% D	> 250.000
13	> 0,10	> 85% D	> 250.000
14	> 0,10	> 85% D	> 250.000
15	> 1,25	> 85% D	> 250.000
17	> 1,25	> 85% D	> 250.000


LIEBHERR

STEEL WIRE ROPE SLINGS

Information on usage and maintenance information of steel wire rope slings in general lifting applications

Usage information

1- General

The adequacy of steel wire rope slings; should be decided by checking that it is capable of lifting the load without allowing the load to be released.

2- Use in unsuitable environmental conditions

The steel rope slings in use must be taken into account for the highest possible temperature.

a. High and low temperatures

Reduced working load limit depending on temperature

Termination Type	Clamp Material	Wire Rope Core	(%) Reduced Working Load Limit (WLL)					
Temp. Range T, °C			40 < T ≤ 100	100 < T ≤ 150	150 < T ≤ 200	200 < T ≤ 300	300 < T ≤ 400	400 < T
Back Twisted Eye	Aluminum	Fiber	100	Out of use	Out of use	Out of use	Out of use	Out of use
Back Twisted Eye	Aluminum	Steel	100	100	Out of use	Out of use	Out of use	Out of use
Flemish Eye	Steel	Fiber	100	Out of use	Out of use	Out of use	Out of use	Out of use
Flemish Eye	Steel	Steel	100	100	90	75	65	Out of use
Hand Splice	-	Fiber	100	Out of use	Out of use	Out of use	Out of use	Out of use
Hand Splice	-	Steel	100	100	90	75	65	Out of use

Steel wire rope slings are not affected up to the temperature of -40 °C. If the temperature lower than -40 °C it is advised to refer to the manufacturer for further use.

b. Acidic environments

The steel wire rope slings must not be used in such a way as to be affected by immersion in the acid solution or by the acid vapor. In such cases, advice should be taken from the manufacturer.

c. Chemical - corrosive environments

If the steel wire rope slings are in contact with chemicals especially at high temperature, contact with the manufacturer.

3. Dangerous conditions

Lifting applications on seaside, molten metals, corroded and cracked materials and humans should not be carried out. In such cases, the dangerous situation and the working load limits must be determined by the authorized person.

4. Precautions to be taken before first time use

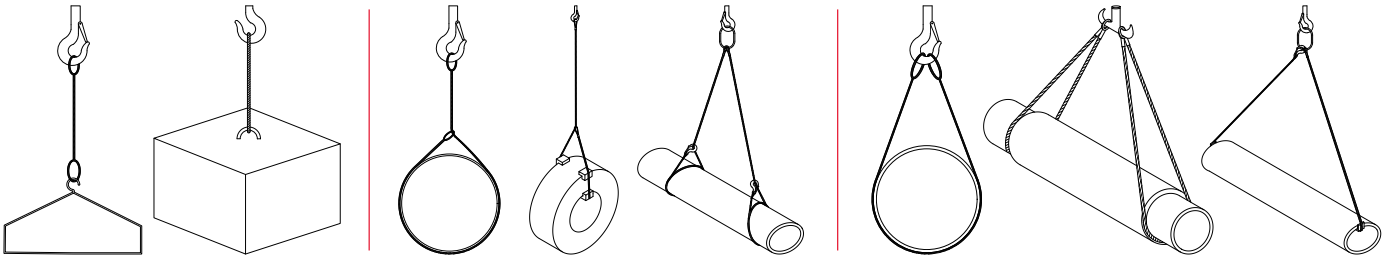
- The received sling should be the same as the sling ordered.
- Manufacturer's certificate should be available.
- The sling label and certificate must be compatible.
- In the sling certificate, all details required in the standard must be available.
- Sling should not be used out of intention.

Practical information on safe use of wire rope slings

- Before starting the lifting operation, it must be ensured that the load is free to move, connected to the lifting points and there are no obstructions.
- Where the rope is in contact with the load, it may damage the rope because the sharp edges of the rigid material may damage the rope, bend or otherwise be subjected to high pressure; The enclosure may be required to protect the rope, the load or both. It is recommended to use corner guards to prevent this type of damage.
- Dangerous oscillation of the load must be avoided during lifting. Damage may occur during release.
- In case of sudden acceleration and deceleration of loads, the tension of the ropes will increase due to dynamic loads. Before starting the lifting operation, the gaps of the slings should be removed and shock loads should be avoided . Shock load will have a negative effect on the service life of the slings.

TECHNICHAL INFORMATION / STEEL WIRE ROPE SLINGS

- The weight of the material to be lifted and the location of the center of gravity should be known. Therefore, it is determined safely that what kind of slings to be used and from which points the load to be lifted.



Vertical Type | Choker Type | Basket Type

- The working load limits in EN 13414-1 are given for rope slings in different configurations and size ranges. The working load limits (WLL) values given here are determined on the basis of the symmetrical loading of the wire rope sling. When this load is lifted, means that the steel wire rope sling legs are at the same angle with vertical and arranged symmetrically.
- During lifting, hands and other parts of the body should be kept away from the sling to prevent accidents until slack is removed. When ready to lift, rope should be tightened. Lift the load slightly and check that the process is safe. The operator must be aware of the potential danger associated with the swinging and overturning of the load.
- If the number of legs in use is less than the number of legs of the sling, the working load limits in the following table should be taken into account.

Type of Sling	Number of Legs	Working Load Limit
2 legs	1	1/2
3 or 4 legs	2	2/3
3 or 4 legs	1	1/3

- Working load limits must be taken into account and selected slings does not exceed the working load limit.
- While unloading, the circumstances must be eleminated which might be harmfull for worker and the environment. Steel wire rope sling disassembly operations should be done without damaging the sling and the load.
- Wire rope slings are not in use should be stored in properly designed shelves. Slings should not be laid on the floor where they might get damaged.
- When wire rope slings are out of use, must be cleaned, dried and protected against corrosion (slightly lubricated).

Inspection, scrapping and maintenance

1- Inspection

Slings are exposed to many factors that will adversely affect their safety during their service life. For this reason, the slings should be checked as long as they are in use. Slings should be checked before each use to determine whether there is a physical deterioration. When any suspicions case of the sling determined, it should be taken out of service and checked. If the sling labels are illegible or lost, the slings should be taken out of service directly.

Before using, the slings must be checked by an expert person in the light of the following criteria and should be discarded when necessary.

- Unlegible sling identification (such as slingshot identification and/or working load limit).
- Wear, deterioration and/or breakage of upper or lower end terminations and/or clamps.
- Detection of broken wires.
- Serious rope distortions such as wire extensions or protrusions.
- Significant rope wear.
- Corrosion.
- Heat damage.

2- Scrapping

A complete review of the slings should be performed at the times specified in the safety rules. This time the sling operating conditions may vary. These inspections must be recorded.

- If the definition of the sling or the marking is illegible
- Wearing and breaking of upper and lower connections
- In case of damage to the rope terminators
- In case of broken wires
- In case of damage to the user and loss of capacity
- Detection of 6 wire breaks in 6d rope length and 14 wire breaks in 20d rope length.
- In case of 3 neighboring wire breaks in one strand
- Formation of kinks, crushes, birdcages, core protrusions and other type of deformations.
- In case of reduction of the diameter of the rope up to 10% of the nominal diameter
- In case of serious corrosion
- Corruption due to corrosion of wires due to electric arc, lubricant loss and color loss of wires in case of proven thermal damage, the slings must be taken out of service

3- Maintenance

Each modified component of the wire rope sling must comply with the standard specified for this component. Cracked or severely corroded, visibly deformed or twisted, components must be scrapped and replaced.

Minor damages, such as notches and cavities, can be removed by careful grinding or filing for the end fittings. The surface must be matched smoothly with the neighboring material without causing an unexpected cross - section change. In order to clean the damage completely, the nominal thickness of the section shall be reduced by no more than 10% or less than the smallest dimensions defined by the manufacturer.

WEBBING SLINGS

Round slings made of man-made fibers for general purpose use (EN 1492-2+A1) (Endless Polyester Slings)

Definition: Round flexible sling with or without connection units, fully covered with a woven core and containing a load bearing thread core. It is a lifting equipment used in general purpose lifting operations for lifting of objects and materials within the scope of safety factors or working load limits. It should not be used for lifting people, molten metals, and acid - based chemicals.

General Information:

Operating Temperature Range: Polyester and polyamide: -40 °C to 100 °C, Polypropylene: -40 °C to 80 °C.

Multi - Leg Sling: It is a round lifting device consisting of two, three or four identical rounded slings connected to the masterlink.

Core: It is the name given to the main thread that forms the load bearing part of the round sling.

Cover: It is a tubular material obtained from woven or woven fabric which takes the sling along its length and includes the yarn.

Nominal length: The distance between the two ends of the sling, including the fittings.

Effective working length: The actual length of the round sling including the fittings from bearing point to bearing point.

Working load limit: The greatest force that the round sling can sustain during vertical lifting applications or multi - leg slings during general lifting applications. This force is obtained by multiplying the straight lift force by the Mode Factor for multi - slings.

Mode factor: The factor applied to the working load limit of a round sling to obtain the working load limit of a specified sling group.

Color coding: The color coding of the cover is as follows.

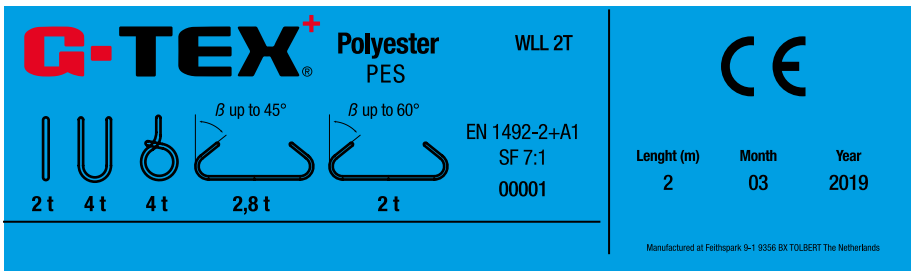
1 ton	2 ton	3 ton	4 ton	5 ton	6 ton	8 ton	10 ton and Above

Breaking force: The minimum breaking force of the round sling in vertical lifting is equal to 7 times the working load limit. The cover material must not break at a load of less than 2 times the working load limit.

Protection from sharp edges: Various protective covers must be used to protect the round slings from sharp edges and corners. If not possible; instead of these covers, a protective material between the unit to be lifted and the sling will prolong the life of the sling.

Indication: The following information must be included in the marking of round slaps.

- Working load limit
- Manufacturing material of the Sling
- Quality grade of the connection unit if used
- Nominal length
- Name, address, symbol, trademark or other explanatory information of the manufacturer
- Traceability code



Label color for woven webbing slings:
The labels on the slings vary according to the type of material in which the slings are made of.

Polyester	Poliamid	Polipropilen

Polyester round sling manufacturer is obliged to give a certificate which contains the following information to the user.

1. Name, address, symbol, trademark or other explanatory information of the manufacturer
2. Working load limit information for single and multi - arm slings (straight and angled)
3. Type of sling, including connection unit, arm count and nominal length
4. Expression that indicates the sling is round
5. Raw material of the sling is made of
6. Quality grade of the connection unit if used (Grade 80 - Grade 100)
7. If any protective material is used
8. Standard number of round sling
9. Type certificate
10. The safety coefficient of the round sling (according to EN 1492-2 is the minimum safety coefficient of 7:1)
11. Identification and signature of the person authorized to sign the document on behalf of the manufacturer and signature date
12. Static test coefficients of these materials when additional materials such as hooks, rings are used

Usage, maintenance and discard criteria:

Limitations due to usage and environmental conditions:

1- Resistance of certain materials against chemicals

Fibers are highly resistant to chemicals which round sling made of;

- Polyester (PES) is resistant to most mineral acids but gets damaged by alkaline materials.
- Polyamide (PA) is resistant to alkalis, but gets damaged by mineral acids.
- Polypropylene (PP) gets damaged by acid or alkali, but is highly resistant to solvent chemicals.

Harmless alkalis and acids become harmful by evaporation. In such cases, the sling should be discarded from use, immersed in cold water and should be used with expert personnel‘s decision.
Round slings combined with grade 8 chain, hook, ring, and these types of products should not be used in acidic environments.

If round slings are to be used in chemical environments, should refer to the manufacturer or supplier.

2- Temperature values

Round slings are suitable for use and storage in the following temperature ranges.
Polyester and polyamide: -40 °C to 100 °C, polypropylene: -40 °C to 80 °C.
At low temperatures ice formation will take place, in hollow structures of Sling mesh. This may act as a cutting agent and an abrasive causing internal damage to the sling. It is not recommended
to use until it reaches to room temperature.
These ranges vary in a chemical environment, in which case the advice of the manufacturer or supplier should be sought.

3- Shear and wear resistance

Slings should not be exposed to sharp edges, friction and abrasion during use. If it is compulsory to use in one of these conditions, protective sheath should be used.

4- Ultraviolet and radiation resistance

Round slings should not be stored directly in sunlight, in the environment where ultraviolet and radiation sources exist.

Pre - use inspection criteria:

1- Manufacturer’s certificate

The identifying information on the sling should be complete and relevant to certificate

2- Instructions and training information

Sling user should be informed on the matter to act according to the instructions

Periodic inspection criteria:

1- Examination

Round slings should be inspected prior to each use to determine defects, ensure that the identification and specification information are correct.

2- Label inspection

A sling without identifying information or a faulty sling should not be ever used and it should be examined by an expert staff.

Discard criteria

1- Surface abrasion
2- Cuts
3- Exposed core
4- Chemical effect
5- Heat and friction damage
6- Damaged or deformed fittings.

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Selection and use of round slings:

- The assignment of the load mass and the determination of the center of gravity should be done. This determination should be done by considering the working load limit of the Sling.
- The selected round sling must be both strong and long enough for the lifting process. If more than one sling is used for lifting should be identical to each other. However if connecting tools are used must be compatible with the sling.
- The mode factor should be taken into consideration while selecting the sling and determining the working load limit.
- Hanging, lifting and unloading procedures should be planned before the round sling is attached to the lifting hook.
- Round slings should never be knotted or bent and the label should not be strangulated in a way which damages the label.
- The load should be distributed homogeneously in multi - arm round slings. Otherwise dangerous situations may occur.
- Actions should be taken to prevent the rotation of the load.
- Round slings should never be exposed to shock loads.
- During lifting there shouldn't be any personnel stands under lifted weight or near to it.
- Round slings should be checked against the damages that may occur during use. Damaged slings must not ever stored as they are.

Periodic maintenance and repair:

Examination periods should be determined by a competent person, taking into account the application type, environment, and frequency of use. Damaged slings should be withdrawn from service. Such slings must not ever tried to be repaired.

Webbing slings made of man-made fibres for general purpose use (EN 1492-1+A1)

Definition:
It is a lifting equipment used for lifting of materials within the framework of safety factors or working load limits in general purpose lifting operations. It should not be used for lifting people, molten metals and acidic - based chemical materials. Width range from 25 mm to 450 mm (inclusive), manufacture of polyester and polypropylene artificial fibers. It can be used as single, two, three and four - leg with or without fittings.

General Information:
Temperature range of use:
Polyester and poliamid: -40 °C to 100 °C
Polipropilen: -40 °C to 80 °C

Eye:
It is the part that is made to add a connection unit to the end parts or make it easier to attach the end part to the hook, which is created by rotating the fabric back to 180°.

Webbing slings:
Webbing slings are manufactured in order to attach easily to such equipment hook etc.

Multi - layer sling:
Webbing sling, which consists of two or more layers.

Multi - leg sling assembly:
Lifting equipment consisting of two, three or four identical webbing slings.

Master link:
It is a lifting accessory which is usually metal unit that can be attached to the end of the sling and/or attached to another lifting accessory.

Nominal length:
Specified length of the sling, inclusive of fittings, from bearing point to bearing point.

Working load limit (WLL):
Maximum mass which the sewn webbing component of a webbing sling is designed to sustain in vertical lifting and which a sling or sling assembly is authorized to sustain in general lifting service. This force is obtained by multiplying the vertical lifting force with the “mod factor” in multiple blades.

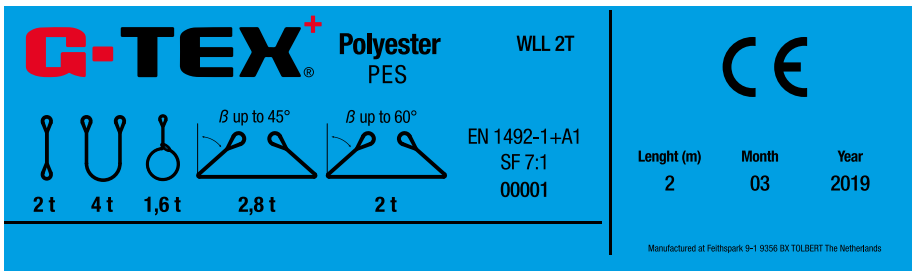
Mode factor (M): Factor applied to the WLL of a webbing sling in order to calcuate the WLL of a group of a webbing sling.

Color coding: The color coding of the coating is as follows.

1 ton	2 ton	3 ton	4 ton	5 ton	6 ton	8 ton	10 ton and Above

Marking: The marking of webbing slings should include the following information.

- Working load limit
- Manufacturing material of the Sling
- Quality grade if connection unit used
- Nominal length
- Name, address, symbol, trademark or other explanatory information of the manufacturer
- Traceability code



Laber color for webbing slings
The labels on the slings vary according to the type of material in which the slings are made.

Polyester	Poliamid	Polipropilen

Certificate to be issued by the manufacturer: Polyester webbing sling manufacturer is obliged to give a certificate which contains the following information to the user.

1. Name, address, symbol, trademark or other explanatory information of the manufacturer
2. Working load limit information for single and multi - arm slings (straight and angled)
3. Type of sling, including connection unit, arm count and nominal length
4. Expression that indicates the sling is webbing sling
5. Raw material of the sling is made of
6. Quality grade of the connection unit if used (Grade 80 - Grade 100)
7. If any protective material is used
8. Standard number of webbing sling
9. Type certificate
10. The safety coefficient of the woven webbing sling (according to EN 1492-1 is the minimum safety coefficient of 7:1)
11. Identification and signature of the person authorized to sign the document on behalf of the manufacturer and signiture date
12. Static test coefficients of these materials when additional materials such as hooks, rings are used

Usage, maintenance and discard criteria:

Limitations due to usage and environmental conditions:

1- Resistance of certain materials against chemicals

Fibers are highly resistant to chemicals which woven webbing sling made of;

- Polyester (PES) is resistant to most mineral acids but gets damaged by alkaline materials.
- Polyamide (PA) is resistant to alkalis, but gets damaged by mineral acids.
- Polypropylene (PP) gets damaged by acid or alkali, but is highly resistant to solvent chemicals.

Harmless alkalis and acids become harmful by evaporation. In such cases, the sling should be discard from use, immersed in cold water and should be used with expert personnel's decision.
Woven webbing slings combined with grade 8 chain, hook, ring, and these types of products should not be used in acidic environments.
If woven webbing slings are to be used in chemical environments, should refer to the manufacturer or supplier.

2- Temperature values

Woven webbing slings are suitable for use and storage in the following temperature ranges.
Polyester and polyamide: -40 °C to 100 °C, polypropylene: -40 °C to 80 °C.
At low temperatures ice formation will take place, in hollow structures of sling mesh. This may act as a cutting agent and an abrasive causing internal damage to the sling. It is not recommended to use until it reaches to room temperature.
These ranges vary in a chemical environment, in which case the advice of the manufacturer or supplier should be sought.

3- Shear and wear resistance

Slings should not be exposed to sharp edges, friction and abrasion during use. İf it is compulsory to use in one of these conditions, protective sheath should be used.

4- Ultraviolet and radiation resistance

Round slings should not be stored directly in sunlight, in the environment where ultraviolet and radiation sources exist.

Pre-use inspection criteria:

1- Manufacturer's certificate

The identifying information on the sling should be complete and relevant to certificate

2- Instructions and training information

Sling user should be informed on the matter to act according to the instructions

Periodic inspection criteria:

1- Examination

Woven webbing slings should be inspected prior to each use to determine defects, ensure that the identification and specification information are correct.

2- Label inspection

A sling without identifying information or a faulty sling should not be ever used and it should be examined by an expert staff.

Discard criteria:

1. Surface abrasion
2. Cuts
3. Chemical effect
4. Heat and friction damage
5. Damaged or deformed fittings.
6. Unreadable label

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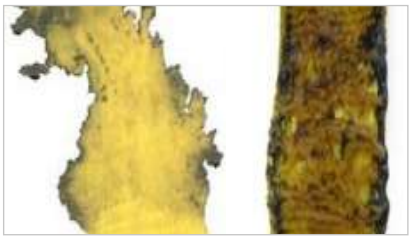

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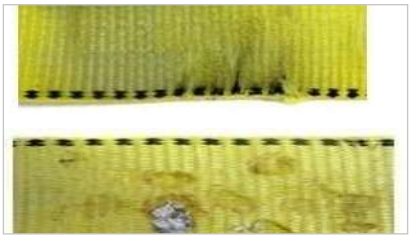

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Selection and use of woven webbing slings:

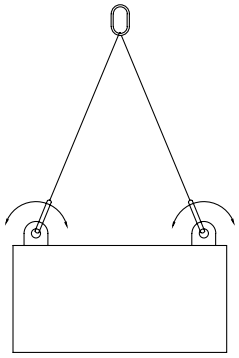
- The assignment of the load mass and the determination of the center of gravity should be done. This determination should be done by considering the working load limit of the Sling.
- The selected woven webbing sling must be both strong and long enough for the lifting process. If more than one sling is used for lifting should be identical to each other. However if connecting tools are used must be compatible with the sling.
- The mode factor should be taken into consideration while selecting the sling and determining the working load limit.
- Hanging, lifting and unloading procedures should be planned before the woven webbing sling is attached to the lifting hook.
- Woven webbing slings should never be knotted or bent and the label should not be strangulated in a way which damages the label.
- The load should be distributed homogeneously in multi-arm woven webbing slings. Otherwise dangerous situations may occur.
- Actions should be taken to prevent the rotation of the load.
- Woven webbing slings should never be exposed to shock loads.
- During lifting there should not be any personnel stands under lifted weight or near to it.
- Woven webbing slings should be checked against the damages that may occur during use. Damaged slings must not ever stored as they are.

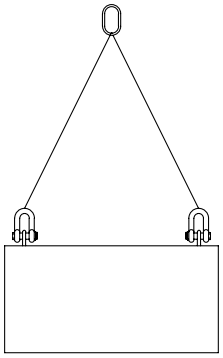
Periodic maintenance and repair:

Examination periods should be determined by a competent person, taking into account the application type, environment and frequency of use. Damaged slings should be withdrawn from service. Such slings must not ever tried to be repaired.

SHACKLES

SHACKLES





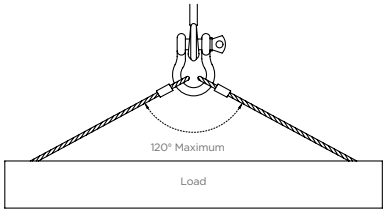
Application Fields: In dynamic systems with lifting operations and in static systems with lashing operations, the shackle is used as a connecting element which can be removed and reattached to connect the steel wire rope, chain and other connection units. Screw pin types are generally used in permanent applications and cotter pin types are generally used in temporary applications. Use between -20 °C and 200 °C. Safety factor is 6.

Application Instructions:

- Must be chosen the correct shackle and tonnage (load) according to the application field.
- The identification marks on the shackle should be readable (legible).
- The pin and body of the shackles to be used must be the same type and should be even the same brands.
- Any other locking system should not be used instead of the pin of the shackle.
- Bolt and body must be free of cracks and grooves (nicks).
- The threads of the screw must be undamaged.
- Corroded material should not be used.
- Never make heat treatment application, don't re-shape the shackle and auxiliary equipments of the shackle.
- When using shackles in connection with 3 - 4 leg slings, angle between the legs of the sling must be taken into consideration.
- Load should be aligned properly.
- Usage information from the manufacturer should be requested for shackles to be used in heat, unfavorable environmental conditions or other dangerous conditions.

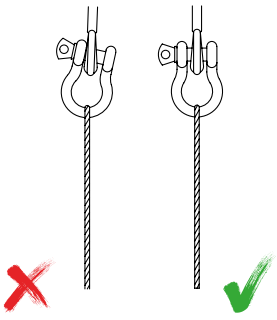
Assembly Instructions:

Ensure that the pin is correctly screwed into the shackle eye, and then you can proceed to the tightening process.



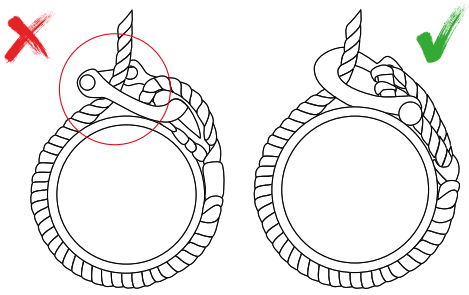
Incorrect seating of the pin may be due to a bent pin, too tight fitting thread or misalignment of the pin holes. Do not use the shackle under these circumstances. Please make sure that the shackle is connected correctly, avoid unaligned load and overloading.

When a shackle is used to connect two slings to the hook of a lifting device, a bow type shackle must be assembled with the slings in the shackle body and the hook engaged with the shackle pin. The angle between the slings should not exceed 120°. Otherwise, the shackle loses its functionality and it will be used in a tonnage (load) above the working load limits.

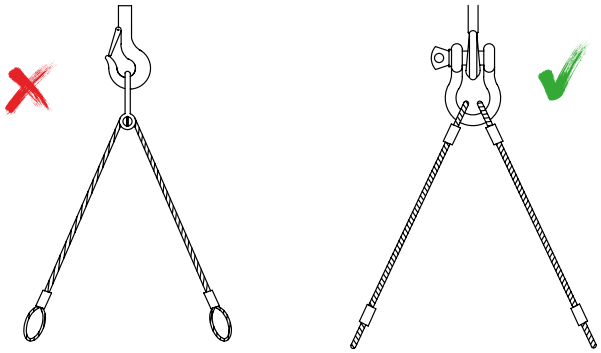


There may be a gap between the shackle and the hook. You can close this gap by using loose spacers. Otherwise, the load will be lifted unbalanced by shackle and lifting capacity of the shackle will reduce. Do not reduce the width between the shackle jaws by welding washers or spacers to the inside faces of the eyes or by closing the jaws.

When a shackle is used to secure the top block of a set of wire rope blocks the load on this shackle is increased by the value of the hoisting (choking) effect

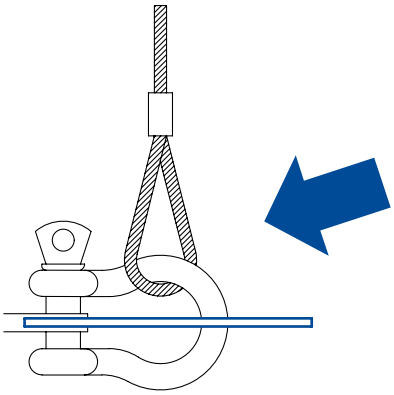


Avoid applications where due to movement (e.g. of the load or the rope) the shackle pin can rotate and possibly be unscrewed. If such an application is necessary or when the shackle is to be left in place for a prolonged period or where maximum pin security is required, use a shackle with a safety bolt, nut and pin cotter pin.



When you do not avoid side loads, there will be reductions in the working load of the shackle. The following table shows the percentage of tonnage (capacity) losses caused by side loaded shackle.

Angle of Side Load	Loss %
0 - 10	0
11 - 20	15
21 - 30	25
31 - 45	30
46 - 55	40
56 - 70	45
71 - 90	50



Inspection and discard criteria: It is required that the shackles are regularly inspected by an expert person and recorded considering operating conditions and frequency of use. Some of the cases where the shackles should not be used and discarded are shown below.

LUBRICATION

Wire rope lubrication

There are many questions coming from the field about lubrication on steel ropes.

- Why?
- When?
- How much?
- By which method?
- What type of lubricant?

the answers of such questions are given below.

Why?

Timely lubrication will have a positive effect on the service life of the rope, as well as the protection of other parts of the equipment. During the manufacturing process, steel wire ropes are lubricated in guidance of certain procedures. By lubrication, ropes are protected against corrosion and wear for a limited period of time. However, in later times, the wires, which are the moving parts in the ropes, especially at friction and bending points, will contact each other more. One of the methods of improving these contact conditions is lubrication. If lubrication is not possible for operational reasons, it should be known that the service life of the wire rope will be shortened.

When?

Steel ropes should be lubricated at the periods determined by the enterprises' experiences by taking into consideration place of use, working environments, environmental factors, rope structure and operational reasons. These periods will vary in each sector and may differ in enterprises that are in different locations for the same sector. The important thing here is that the enterprise determines its lubrication period according to its own conditions after the inspections.

How much?

As it is known, the number of external wire breaks should be determined in steel ropes. In order for this determination to be made appropriately, the outer surfaces of steel ropes should not be completely coated with lubricant. Otherwise, you will have no chance of performing visual examinations. Over lubricating does not mean it is an efficient and a proper way of lubrication. If more professional lubrication is required, this can be controlled by lubricators.

By which method?

Many different methods have been applied from past to the present to lubricate ropes and many of these applications are still being used nowadays.

These applications;

- Brush (The most common lubrication method).
- Drip feeding (Infinite systems in terms of continuity can be preferred. For example cable car systems).
- Portable pressurised spray (Depending on operating conditions may be preferable).
- High pressure (Continuous cleaning of the rope is an ideal system for the removal of moisture, residual lubricant and debris) lubricant penetration into the finest cavities can only be guaranteed if pressurized lubrication is performed.
- Dipping (The application in the fishing industry may be more appropriate).
- Cloth (Can be considered a primitive method).
- Felt (It can be applied between the rope and the drum, but it will have less effect on multilayer spoolings) can be listed.

What type of lubricant?

The lubricant to be used for re - lubrication must be identical with the lubricant used by the manufacturer and should not react with the previous lubricant. It is expected that the lubricant can penetrate into the core when needed and create a film layer outside the rope. Otherwise, the lubrication will not be successful and the lubricant will not reach the strands and the core and will not prevent friction. For such applications, molybdenum sulphur based lubricants are preferred. However, it is useful to consult the manufacturer of the rope for the choice of lubricant, depending on the risk of the purpose of the rope.

What are the types of lubrication?

The following table contains the types of lubrication and the stripping methods. This process can be applied during the rope production.

Lubricating Types	Lubrication method		Rope Type	Instructions
Lubricant free	No lubrication	Galvanised strands and ropes	Galvanised ropes	Grease lubricant ree
A 1 (dry)	Closing	No lubrication applied	Galvanised ropes	Dry - looking surface. Rust preventive lubricantss should be used in storage.
	Stranding	Less lubricant application good stripping		
	Cores	Loose stripping		
A 2	Closing	No lubrication applied	Galvanised and ungalvanised ropes	Less lubricant impression when touched Oil based greases are used.
	Stranding	Less lubricant application good stripping		
	Cores	More lubrication than the strands no stripping applied.		
A 3	Closing	No lubrication applied	Galvanised and ungalvanised ropes	General practise in ungalvanised ropes. Sticky and greasy impression when touched
	Stranding	More lubrication no stripping applied		
	Coreler	Heavy lubrication and stripping		
B	Closing	No lubrication applied	Ungalvanised ropes	Applicable for special purpose and long - term storage conditions. Black asphalt based greases are used.
	Stranding	Less lubricant application good stripping		
	Cores	More lubrication than the strands no stripping applied.		
C	Closing	No lubrication applied	Ungalvanised ropes	The greases used are medium hard density. Black asphalt based greases are used.
	Stranding	Heavy lubrication		
	Cores	Heavy lubrication no stripping		
D	Closing	Heavy lubrication no stripping	Ungalvanised ropes	Suitable for maximum corrosion protection and long term storage conditions. Black asphalt based greases are used.
	Stranding	Heavy lubrication		
	Cores	Heavy lubrication no stripping		

The result of lack of lubrication

Failure to perform of required lubrication will cause lack of performance in the ropes and the worst scenario will occur is the unpredictable internal corrosion. Do not forget that 80% of the wires that form the rope are located in the inner part that we can not see. As a result of internal corrosion, wire breaks in the rope will be seen as shown in the figure.

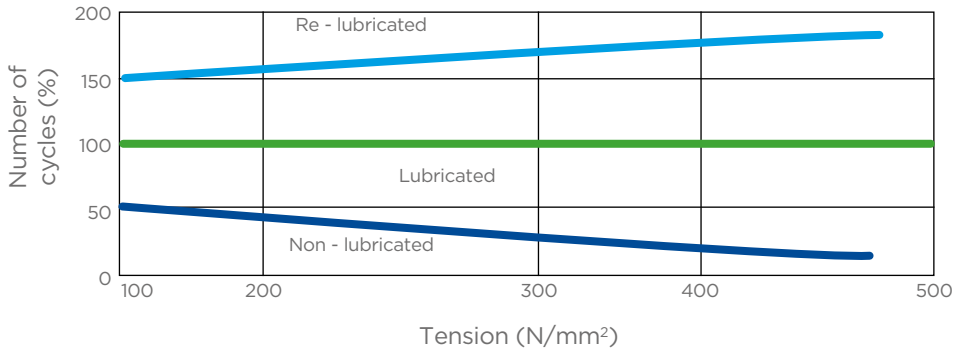
What are the known misunderstandings?

It is misconception that galvanised ropes do not need to be re - lubricated or should be produced without any slippery compound. A lubricant is required to reduce friction when the metal slips on the metal and rubs against it (the wires slide towards each other when the wires are bent over a pulley). No one accepts the idea of galvanizing the pistons of a vehicle engine and then using it without any engine lubricant. The same principle applies for the steel wire ropes

It is assumed that galvanized or stainless ropes will not get rusted. However, these applications only offer anti - corrosive properties. Excessive re - lubrication does not solve corrosion problems in the inner part of the rope. Lubricants used in re-lubrication hardly reach the inner parts of the rope, so, heavy lubrication should be avoided. Excessive and improper lubrication leads to the accumulation of foreign particules on the surface of the rope. This can result in damage on ropes, drums and pulleys caused by wear. The large amount of lubricant remaining on the rope surface makes it difficult to detect wire breaks. It causes difficulty to detect the actual condition of the rope to be taken out of service. There is a misperception that all plastic - filled ropes will prevent the leakage of lubricant from the core evenly. The reflection of this situation will only be proportional to the quality of the plastic material directly. The higher the quality of the plastic filling material, the longer the wear time will be, and the longer the lubricant will be kept.

What are the benefits of lubrication to the rope life?

Steel wire ropes should be lubricated at regular intervals according to their use, especially in areas where the steel wire ropes are exposed to bending. If re-lubrication is not possible due to the operational reasons, it should be known that rope life will be shortened and inspection periods should be adjusted accordingly.

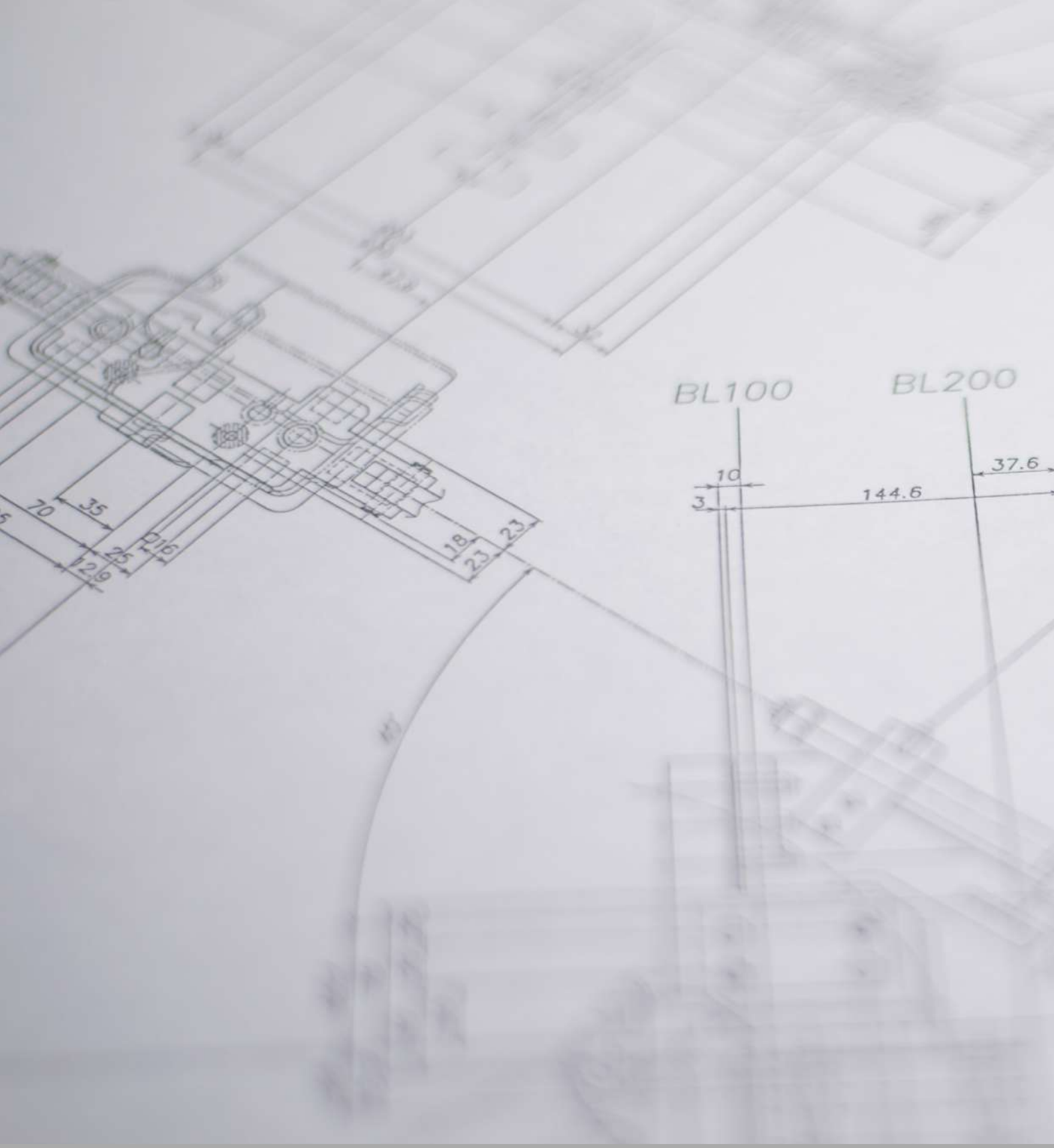


What are the benefits of lubrication?

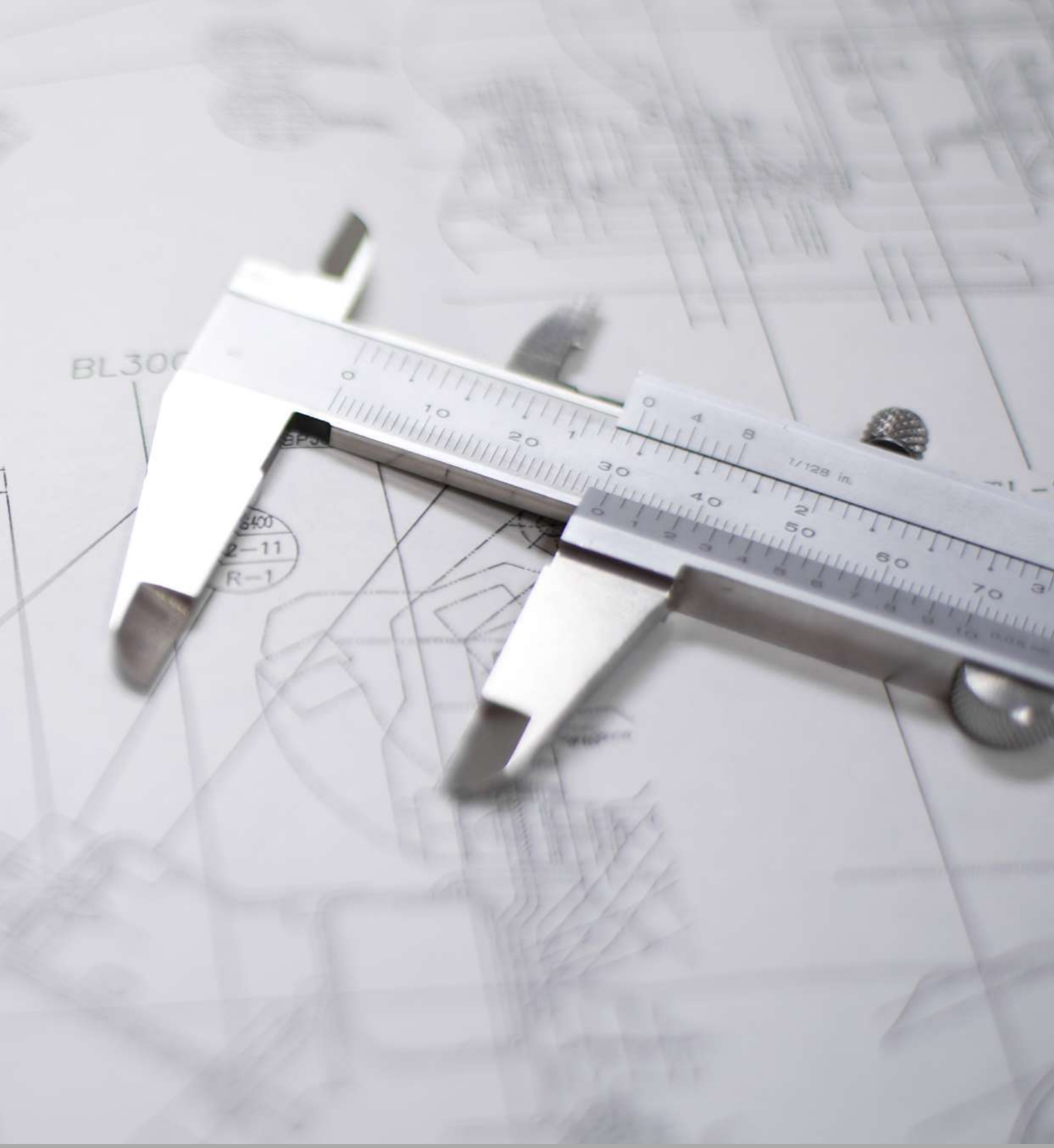
- Delays the wear of metal due to friction.
- Recovers the lubricant lost during the work.
- Protects the resistance of internal and external wires against corrosion.
- Ensures that the wires do not lose their strength due to wear.
- Prevents the formation of notches in the inner wires in case of damages due to bending.

Wire rope lubricator

- The basic of rope lubricator is based on the principle of stripping of the old lubricant of the rope and lubricating with the new lubricant by means of a high pressure spraying method.
- Lubrication must be applied before the wire breaks occur. If broken wires are formed, the gaskets on the rope lubricator will wear out faster.
- Different size of gaskets will be required for each rope diameter. Therefore, the determination of the diameter of the rope is important.
- Semi - liquid and soft lubricants compatible with low and high ambient temperatures can be used.
- It can be used in all types and sizes from 4 mm to 76 mm. Special production - based lubricators are used for larger ropes.
- Gaskets can be used up to a rope length of 3.000 - 4.000 meters (9.000 - 12.000 feet) depending on the condition of the rope.
- Lubricant consumption may differ for various rope diameters and constructions.



STEEL WIRE ROPES TECHNICAL DATA SHEETS



> Special Steel Wire Ropes
> General Purpose Steel Wire Ropes

DIEPA H 43

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
4		13,80	1.350	2.900	15,30	1.550	3.400	16,90	1.650	3.600	8,00
	3/16	19,00	1.940	4.200	21,30	2.170	4.700	23,10	2.350	5.100	11,00
5		21,60	2.150	4.700	23,90	2.400	5.200	26,40	2.600	5.700	13,00
6		31,10	3.150	6.900	34,50	3.450	7.600	38,00	3.850	8.400	18,00
	1/4	34,20	3.490	7.600	38,20	3.890	8.500	42,10	4.290	9.400	20,00
6.5		36,50	3.650	8.000	40,40	4.100	9.000	44,60	4.500	9.900	21,00
7		42,40	4.250	9.300	46,90	4.700	10.300	51,70	5.250	11.500	25,00
7.5		48,60	4.900	10.800	53,80	5.450	12.000	59,30	6.000	13.200	28,00
	5/16	53,60	5.460	12.000	59,80	6.100	13.400	65,70	6.700	14.700	32,00
8		55,30	5.550	12.200	61,30	6.200	13.600	67,50	6.800	14.900	32,00
8.5		62,50	6.300	13.800	69,20	7.050	15.500	76,20	7.700	16.900	36,00
9		70,00	7.050	15.500	77,50	7.850	17.300	85,70	8.650	19.000	40,00
9.5		78,00	7.850	17.300	86,50	8.750	19.200	94,90	9.650	21.200	45,00
	3/8	78,00	7.900	17.400	86,50	8.800	19.400	95,30	9.710	21.400	45,00
10		86,50	8.750	19.200	95,80	9.700	21.300	106,00	10.700	23.500	49,00
11		105,00	10.600	23.300	116,00	11.800	26.000	128,00	12.950	28.500	60,00
	7/16	106,00	10.790	23.700	118,00	12.010	26.400	129,00	13.180	29.000	62,00
12		123,00	12.450	27.400	136,00	13.850	30.500	150,00	15.200	33.500	71,00
	1/2	136,00	13.900	30.600	152,00	15.470	34.100	167,00	16.990	37.400	81,00
13		143,00	14.550	32.000	159,00	16.200	35.700	175,00	17.800	39.200	83,00
14		168,00	17.100	37.600	187,00	19.050	41.900	206,00	20.950	46.100	98,00
	9/16	174,00	17.750	39.100	194,00	19.750	43.500	213,00	21.720	47.800	102,00
15		191,00	19.400	42.700	212,00	21.550	47.500	233,00	23.700	52.200	111,00
	5/8	217,00	22.110	48.700	241,00	24.530	54.000	265,00	27.030	59.500	126,00
16		221,00	22.500	49.600	245,00	24.950	55.000	270,00	27.500	60.600	128,00
17		248,00	25.200	55.500	275,00	28.000	61.700	302,00	30.800	67.900	144,00
18		281,00	28.550	62.900	311,00	31.700	69.800	343,00	34.900	76.900	163,00
19		308,00	31.400	69.200	343,00	34.900	76.900	377,00	38.400	84.600	179,00
	3/4	310,00	31.580	69.600	344,00	35.100	77.300	379,00	38.610	85.100	181,00
20		344,00	35.100	77.300	383,00	39.000	85.900	421,00	42.850	94.400	200,00
21		387,00	39.450	86.900	430,00	43.800	96.500	474,00	48.250	106.300	225,00
22		422,00	43.000	94.700	469,00	47.750	105.200	516,00	52.500	115.700	245,00
	7/8	430,00	43.790	96.500	477,00	48.640	107.200	525,00	53.490	117.900	247,00
23		456,00	46.500	102.500	507,00	51.700	113.900	559,00	56.900	125.400	265,00
24		496,00	50.500	111.300	550,00	56.100	123.600	606,00	61.700	136.000	287,00
25		534,00	54.450	120.000	593,00	60.450	133.200	653,00	66.550	146.700	310,00
	1	550,00	56.050	123.500	611,00	62.240	137.200	672,00	68.500	151.000	323,00
26		574,00	58.500	128.900	638,00	65.000	143.200	701,00	71.500	157.600	333,00
27		624,00	63.600	140.200	694,00	70.650	155.700	763,00	77.750	171.400	362,00
28		672,00	68.500	151.000	747,00	76.100	167.700	822,00	83.700	184.500	390,00
	1 1/8	708,00	72.150	159.000	787,00	80.180	176.700	865,00	88.210	194.400	408,00

DIEPA H 43

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
29		735,00	74.850	165.000	816,00	83.200	183.400	898,00	91.550	201.800	426,00
30		774,00	78.900	173.900	860,00	87.650	193.200	946,00	96.400	212.500	499,00
31		832,00	84.750	186.800	925,00	94.200	207.600	1.017,00	103.650	228.500	482,00
	1 1/4	868,00	88.520	195.100	965,00	98.380	216.800	1.062,00	108.240	238.600	504,00
32		881,00	89.800	197.900	979,00	99.800	220.000	1.078,00	109.800	242.000	511,00
33		940,00	95.800	211.200	1.045,00	106.500	234.700	1.149,00	117.100	258.100	545,00
34		1.004,00	102.350	225.600	1.116,00	113.700	250.600	1.227,00	125.050	275.600	582,00
	1 3/8	1.047,00	106.710	235.200	1.163,00	118.530	261.300	1.280,00	130.430	287.500	610,00
35		1.050,00	107.050	236.000	1.167,00	118.900	262.100	1.284,00	130.850	288.400	609,00
36		1.121,00	114.300	251.900	1.246,00	127.000	279.900	1.371,00	139.700	307.900	650,00
37		1.194,00	121.750	268.400	1.327,00	135.250	298.100	1.460,00	148.800	328.000	693,00
38		1.273,00	129.750	286.000	1.415,00	144.150	317.700	1.556,00	158.550	349.500	738,00
	1 1/2	1.278,00	130.240	287.100	1.420,00	144.700	319.000	1.561,00	159.150	350.800	726,00
39		1.322,00	134.750	297.000	1.469,00	149.750	330.100	1.616,00	164.700	363.000	767,00
40		1.374,00	140.100	308.800	1.527,00	155.650	343.100	1.680,00	171.200	377.400	797,00
41		1.453,00	147.750	325.700	1.609,00	164.150	361.800	1.773,00	180.600	398.100	841,00
	1 5/8	1.474,00	150.280	331.300	1.638,00	166.980	368.100	1.802,00	183.700	404.900	852,00
42		1.540,00	156.900	345.900	1.711,00	174.350	384.300	1.882,00	191.800	422.800	893,00
43		1.599,00	162.500	358.200	1.770,00	180.600	398.100	1.950,00	198.650	437.900	925,00
44		1.680,00	171.200	377.400	1.866,00	190.250	419.400	2.053,00	209.250	461.300	974,00
	1 3/4	1.709,00	174.210	384.000	1.899,00	193.600	426.800	2.089,00	212.960	469.400	988,00
45		1.751,00	177.950	392.300	1.939,00	197.750	435.900	2.136,00	217.550	479.600	1.013,00
46		1.832,00	186.750	411.700	2.036,00	207.500	457.400	2.239,00	228.300	503.300	1.063,00
47		1.909,00	194.150	428.000	2.114,00	215.750	475.600	2.330,00	237.300	523.100	1.105,00
	1 7/8	1.956,00	199.350	439.400	2.173,00	221.520	488.300	2.390,00	243.660	537.100	1.134,00
48		1.987,00	202.450	446.300	2.207,00	224.950	495.900	2.428,00	247.450	545.500	1.152,00
49		2.076,00	211.050	465.200	2.298,00	234.500	516.900	2.533,00	257.950	568.600	1.201,00
50		2.150,00	219.100	483.000	2.388,00	243.450	536.700	2.628,00	267.800	590.300	1.246,00
	2	2.224,00	226.680	499.700	2.471,00	251.910	555.300	2.718,00	277.100	610.800	1.290,00
51		2.249,00	228.600	503.900	2.490,00	254.050	560.000	2.744,00	279.450	616.000	1.301,00
52		2.312,00	235.600	519.400	2.568,00	261.750	577.000	2.825,00	287.950	634.800	1.340,00
53		2.428,00	246.900	544.300	2.689,00	274.300	604.700	2.964,00	301.800	665.300	1.405,00
	2 1/8	2.489,00	253.700	559.300	2.766,00	281.940	621.500	3.042,00	310.120	683.600	1.457,00
54		2.491,00	253.850	559.600	2.768,00	282.100	621.900	3.044,00	310.300	684.000	1.444,00
55		2.615,00	265.900	586.200	2.895,00	295.450	651.300	3.191,00	324.950	716.300	1.513,00
56		2.727,00	277.950	612.700	3.030,00	308.800	680.700	3.333,00	339.700	748.900	1.581,00
57		2.809,00	285.600	629.600	3.111,00	317.350	699.600	3.427,00	349.050	769.500	1.625,00
	2 1/4	2.816,00	287.050	632.800	3.129,00	318.970	703.200	3.442,00	350.830	773.400	1.633,00
58		2.898,00	295.400	651.200	3.221,00	328.250	723.600	3.542,00	361.050	795.900	1.681,00
59		3.009,00	306.000	674.600	3.332,00	339.950	749.400	3.672,00	374.000	824.500	1.741,00
60		3.053,00	311.100	685.800	3.391,00	345.700	762.100	3.730,00	380.250	838.200	1.770,00

DIEPA H 43

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
	2 3/8	3.146,00	319.920	705.200	3.484,00	355.460	783.600	3.839,00	391.010	862.000	1.820,00
61		3.216,00	327.050	721.000	3.562,00	363.450	801.200	3.925,00	399.750	881.200	1.861,00
62		3.323,00	337.900	744.900	3.680,00	375.450	827.700	4.056,00	413.000	910.400	1.922,00
63		3.431,00	348.850	769.000	3.799,00	387.650	854.600	4.187,00	426.400	940.000	1.985,00
	2 1/2	3.486,00	354.480	781.400	3.860,00	393.860	868.300	4.254,00	433.250	955.100	2.016,00
64		3.541,00	360.050	793.700	3.921,00	400.050	881.900	4.321,00	440.050	970.100	2.048,00
65		3.652,00	371.400	818.700	4.045,00	412.650	909.700	4.457,00	453.900	1.000.600	2.113,00
66		3.766,00	382.900	844.100	4.170,00	425.450	937.900	4.596,00	468.000	1.031.700	2.178,00
	2 5/8	3.843,00	390.810	861.500	4.256,00	434.230	957.300	4.690,00	477.660	1.053.000	2.223,00
67		3.881,00	394.600	869.900	4.297,00	438.450	966.600	4.736,00	482.300	1.063.200	2.245,00
68		3.998,00	406.450	896.000	4.427,00	451.650	995.700	4.878,00	496.800	1.095.200	2.312,00
69		4.116,00	418.500	922.600	4.558,00	465.000	1.025.100	5.022,00	511.550	1.127.700	2.381,00
	2 3/4	4.218,00	428.920	945.500	4.671,00	476.580	1.050.600	5.147,00	524.230	1.155.700	2.440,00
70		4.236,00	430.750	949.600	4.691,00	478.600	1.055.100	5.169,00	526.450	1.160.600	2.450,00
71		4.358,00	443.100	976.800	4.826,00	492.350	1.085.400	5.318,00	541.600	1.194.000	2.521,00
72		4.481,00	455.700	1.004.600	4.963,00	506.350	1.116.200	5.469,00	557.000	1.227.900	2.592,00
73		4.607,00	468.450	1.032.700	5.101,00	520.500	1.147.400	5.622,00	572.550	1.262.200	2.665,00
	2 7/8	4.610,00	468.800	1.033.500	5.105,00	520.890	1.148.300	5.626,00	572.980	1.263.100	2.666,00
74		4.734,00	481.400	1.061.200	5.242,00	534.850	1.179.100	5.777,00	588.350	1.297.000	2.738,00
75		4.863,00	494.450	1.090.000	5.384,00	549.400	1.211.200	5.934,00	604.350	1.332.300	2.813,00
76		4.993,00	507.750	1.119.300	5.529,00	564.150	1.243.700	6.093,00	620.550	1.368.000	2.888,00
	3	5.020,00	510.450	1.125.300	5.558,00	567.160	1.250.300	6.126,00	623.890	1.375.400	2.903,00

DIEPA X 53 and X 50

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
4		12,80	1.250	2.700	14,10	1.400	3.000	15,40	1.550	3.400	8
	3/16	18,10	1.830	4.000	20,00	2.040	4.400	21,80	2.210	4.800	11
5		19,90	1.950	4.200	22,10	2.250	4.900	24,00	2.400	5.200	12
6		28,70	2.850	6.200	31,80	3.200	7.000	34,60	3.450	7.600	17
	1/4	32,20	3.260	7.100	35,60	3.620	7.900	38,80	3.940	8.600	19
6.5		33,70	3.400	7.400	37,30	3.750	8.200	40,60	4.100	9.000	20
7		39,10	3.950	8.700	43,30	4.350	9.500	47,10	4.750	10.400	23
7.5		44,90	4.500	9.900	49,70	5.050	11.100	54,10	5.500	12.100	27
	5/16	50,30	5.100	11.200	55,60	5.670	12.500	60,60	6.160	13.500	30
8		51,00	5.150	11.300	56,50	5.700	12.500	61,60	6.250	13.700	30
8.5		57,60	5.800	12.700	63,80	6.500	14.300	69,50	7.050	15.500	34
9		64,60	6.500	14.300	71,50	7.250	15.900	77,90	7.850	17.300	38
9.5		72,00	7.300	16.000	79,70	8.100	17.800	86,50	8.800	19.400	43
	3/8	72,40	7.350	16.200	80,10	8.160	17.900	87,30	8.880	19.500	43
10		79,80	8.050	17.700	88,40	9.000	19.800	96,60	9.750	21.400	47
11		96,90	9.750	21.400	107,00	10.850	23.900	117,00	11.800	26.000	57
	7/16	98,50	10.010	22.000	109,00	11.120	24.500	119,00	12.090	26.600	58
12		115,00	11.600	25.500	128,00	12.950	28.500	139,00	14.050	30.900	68
	1/2	129,00	13.080	28.800	142,00	14.530	32.000	155,00	15.800	34.800	76
13		135,00	13.650	30.000	150,00	15.200	33.500	163,00	16.500	36.300	80
14		156,00	15.850	34.900	173,00	17.600	38.800	188,00	19.150	42.200	92
	9/16	163,00	16.540	36.400	180,00	18.390	40.500	196,00	19.990	44.000	96
15		179,00	18.200	40.100	199,00	20.250	44.600	217,00	22.000	48.500	106
	5/8	201,00	20.430	45.000	223,00	22.710	50.000	242,00	24.680	54.400	119
16		204,00	20.700	45.600	226,00	23.000	50.700	246,00	25.050	55.200	121
17		230,00	23.400	51.500	255,00	26.000	57.300	278,00	28.300	62.300	136
18		258,00	26.250	57.800	286,00	29.150	64.200	312,00	31.700	69.800	153
19		288,00	29.200	64.300	319,00	32.500	71.600	347,00	35.350	77.900	170
	3/4	289,00	29.430	64.800	321,00	32.690	72.000	349,00	35.540	78.300	171
20		319,00	32.400	71.400	354,00	36.000	79.300	385,00	39.150	86.300	189
21		352,00	35.700	78.700	389,00	39.700	87.500	424,00	43.150	95.100	208
22		386,00	39.200	86.400	428,00	43.600	96.100	465,00	47.350	104.300	228
	7/8	394,00	40.060	88.300	436,00	44.510	98.100	475,00	48.390	106.600	233
23		422,00	42.850	94.400	468,00	47.600	104.900	509,00	51.750	114.000	250
24		459,00	46.700	102.900	509,00	51.850	114.300	554,00	56.400	124.300	272
25		498,00	50.650	111.600	552,00	56.300	124.100	601,00	61.150	134.800	295
	1	515,00	52.320	115.300	570,00	58.140	128.100	621,00	63.200	139.300	304
26		539,00	54.800	120.800	597,00	60.900	134.200	650,00	66.150	145.800	319
27		581,00	59.100	130.200	643,00	65.650	144.700	701,00	71.400	157.400	344
28		626,00	63.550	140.100	693,00	70.600	155.600	754,00	76.750	169.200	370
	1 1/8	651,00	66.220	145.900	721,00	73.580	162.200	785,00	79.990	176.300	385

DIEPA X 53 and X 50

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
29		671,00	68.200	150.300	743,00	75.750	166.900	809,00	82.350	181.500	397
30		718,00	72.950	160.800	795,00	81.050	178.600	866,00	88.150	194.300	425
31		772,00	78.450	172.900	855,00	87.200	192.200	932,00	94.800	208.900	457
	1 1/4	804,00	81.760	180.200	890,00	90.840	200.200	970,00	98.750	217.700	476
32		823,00	83.600	184.300	911,00	92.900	204.800	992,00	101.050	222.700	487
33		875,00	88.950	196.000	969,00	98.850	217.900	1.055,00	107.450	236.800	518
34		929,00	94.450	208.200	1.030,00	104.950	231.300	1.121,00	114.100	251.500	549
	1 3/8	973,00	98.930	218.100	1.077,00	109.920	242.300	1.173,00	119.490	263.400	576
35		984,00	100.050	220.500	1.090,00	111.150	245.000	1.187,00	120.850	266.400	582
36		1.041,00	105.850	233.300	1.153,00	117.600	259.200	1.256,00	127.850	281.800	616
37		1.100,00	111.950	246.800	1.221,00	124.400	274.200	1.328,00	135.250	298.100	651
38		1.168,00	119.050	262.400	1.298,00	132.300	291.600	1.413,00	143.850	317.100	686
	1 1/2	1.173,00	119.560	263.500	1.303,00	132.860	292.900	1.417,00	144.460	318.400	688
39		1.222,00	124.250	273.900	1.353,00	138.050	304.300	1.474,00	150.100	330.900	723
40		1.285,00	130.700	288.100	1.424,00	145.250	320.200	1.551,00	157.850	347.900	761
41		1.351,00	137.300	302.600	1.496,00	152.600	336.400	1.629,00	165.900	365.700	799
	1 5/8	1.359,00	138.180	304.600	1.505,00	153.530	338.400	1.639,00	166.890	367.900	804
42		1.418,00	144.350	318.200	1.574,00	160.400	353.600	1.713,00	174.350	384.300	838
43		1.486,00	151.000	332.800	1.645,00	167.800	369.900	1.792,00	182.400	402.100	879
44		1.556,00	158.150	348.600	1.723,00	175.700	387.300	1.876,00	191.050	421.100	920
	1 3/4	1.576,00	160.250	353.200	1.745,00	178.060	392.500	1.901,00	193.560	426.700	932
45		1.615,00	164.200	361.900	1.788,00	182.450	402.200	1.948,00	198.350	437.200	955
46		1.700,00	172.850	381.000	1.883,00	192.100	423.500	2.050,00	208.800	460.300	1.006
47		1.762,00	179.100	394.800	1.951,00	199.050	438.800	2.125,00	216.350	476.900	1.042
	1 7/8	1.809,00	183.960	405.500	2.003,00	204.400	450.600	2.182,00	222.200	489.800	1.070
48		1.851,00	188.200	414.900	2.050,00	209.150	461.000	2.233,00	227.350	501.200	1.095
49		1.915,00	194.700	429.200	2.121,00	216.350	476.900	2.309,00	235.200	518.500	1.133
50		2.009,00	204.250	450.200	2.224,00	226.950	500.300	2.423,00	246.700	543.800	1.188
	2	2.058,00	209.320	461.400	2.279,00	232.570	512.700	2.482,00	252.820	557.300	1.218
51		2.075,00	210.950	465.000	2.298,00	234.350	516.600	2.502,00	254.800	561.700	1.227
52		2.173,00	220.900	486.900	2.406,00	245.450	541.100	2.620,00	266.850	588.200	1.285
53		2.241,00	227.800	502.200	2.481,00	253.100	557.900	2.702,00	275.150	606.500	1.325
	2 1/8	2.324,00	236.300	520.900	2.573,00	262.550	578.800	2.802,00	285.410	629.200	1.375
54		2.343,00	238.250	525.200	2.594,00	264.700	583.500	2.826,00	287.750	634.300	1.386
55		2.413,00	245.350	540.800	2.672,00	272.550	600.800	2.910,00	296.350	653.300	1.427
56		2.519,00	256.200	564.200	2.791,00	284.700	627.600	3.039,00	309.450	682.200	1.491
57		2.592,00	263.500	580.900	2.870,00	292.750	645.300	3.125,00	318.250	701.600	1.533
	2 1/4	2.605,00	264.910	584.000	2.885,00	294.350	648.900	3.142,00	319.980	705.400	1.541
58		2.703,00	274.800	605.800	2.993,00	305.400	673.200	3.260,00	332.000	731.900	1.599
59		2.776,00	282.300	622.300	3.074,00	313.650	691.400	3.348,00	340.950	751.600	1.642
60		2.893,00	294.100	648.300	3.203,00	326.800	720.400	3.489,00	355.250	783.100	1.711

DIEPA X 53 and X 50

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
	2 3/8	2.903,00	295.170	650.700	3.214,00	327.970	723.000	3.500,00	356.520	785.900	1.717
61		2.968,00	301.750	665.200	3.286,00	335.300	739.200	3.579,00	364.500	803.500	1.756
62		3.089,00	314.050	629.300	3.420,00	348.950	769.200	3.725,00	379.350	836.300	1.827
63		3.165,00	321.850	709.500	3.505,00	357.650	788.400	3.818,00	388.800	857.100	1.873
	2 1/2	3.126,00	327.060	721.000	3.561,00	363.400	801.100	3.879,00	395.030	870.800	1.903
64		3.291,00	334.650	737.700	3.645,00	371.850	819.700	3.969,00	404.250	891.200	1.947
65		3.307,00	342.650	755.400	3.732,00	380.750	839.400	4.064,00	413.900	912.400	1.993
66		3.500,00	355.900	784.600	3.876,00	395.450	871.800	4.221,00	429.900	947.700	2.071
	2 5/8	3.546,00	360.580	794.900	3.926,00	400.640	883.200	4.276,00	435.530	960.100	2.098
67		3.580,00	364.050	802.500	3.964,00	404.550	891.800	4.318,00	439.750	969.400	2.118
68		3.715,00	377.800	832.800	4.114,00	419.800	925.400	4.481,00	456.350	1.006.000	2.198
69		3.798,00	386.150	851.300	4.205,00	429.050	945.800	4.580,00	466.400	1.028.200	2.246
	2 3/4	3.892,00	395.740	872.400	4.309,00	439.710	969.300	4.693,00	477.990	1.053.700	2.302
70		3.937,00	400.350	882.600	4.360,00	444.800	980.600	4.749,00	483.550	1.066.000	2.329
71		4.021,00	408.850	901.300	4.452,00	454.250	1.001.400	4.849,00	493.800	1.088.600	2.378
72		4.134,00	420.450	926.900	4.579,00	467.200	1.029.900	4.986,00	507.850	1.119.600	2.446
73		4.251,00	432.200	952.800	4.706,00	480.250	1.058.700	5.126,00	522.050	1.150.900	2.514
	2 7/8	4.253,00	432.530	953.500	4.710,00	480.590	1.059.500	5.129,00	522.430	1.151.700	2.516
74		4.367,00	444.150	979.100	4.837,00	493.500	1.087.900	5.268,00	536.450	1.182.600	2.584
75		4.486,00	456.200	1.005.700	4.968,00	506.900	1.117.500	5.410,00	551.050	1.214.800	2.654
76		4.607,00	468.450	1.032.700	5.102,00	520.500	1.147.400				2.725
	3	4.631,00	470.960	1.038.200	5.128,00	523.300	1.153.600				2.740
77		4.729,00	480.850	1.060.000	5.237,00	534.300	1.177.900				2.797
78		4.853,00	493.450	1.087.800	5.374,00	548.250	1.208.600				2.871
79		4.978,00	506.200	1.115.900	5.512,00	562.400	1.239.800				2.945
	3 1/8	5.025,00	511.030	1.126.600	5.565,00	567.810	1.251.700				2.973
80		5.104,00	519.050	1.144.200	5.653,00	576.750	1.271.500				3.020
81		5.233,00	532.100	1.173.000	5.794,00	591.300	1.303.500				3.096
82		5.364,00	545.350	1.202.200	5.939,00	605.950	1.335.800				3.173
	3 1/4	5.435,00	552.730	1.218.500	6.019,00	614.150	1.353.900				3.215
83		5.494,00	558.700	1.231.700	6.084,00	620.800	1.368.600				3.250
84		5.628,00	572.300	1.261.600	6.232,00	635.850	1.401.700				3.329
85		5.763,00	586.000	1.291.800	6.381,00	651.100	1.435.400				3.409
	3 3/8	5.861,00	596.070	1.314.000	6.491,00	662.300	1.460.100				3.467
86		5.899,00	599.850	1.322.400	6.532,00	666.500	1.469.300				3.490
87		6.037,00	613.900	1.353.400	6.685,00	682.100	1.503.700				3.571
88		6.177,00	628.100	1.384.700	6.840,00	697.850	1.538.400				3.654
	3 1/2	6.304,00	641.040	1.413.200	6.980,00	712.260	1.570.200				3.729
89		6.318,00	642.450	1.416.300	6.996,00	713.850	1.573.700				3.737
90		6.461,00	657.000	1.448.400	7.154,00	729.950	1.609.200				3.822
91		6.605,00	671.650	1.480.700	7.314,00	746.300	1.645.200				3.907

Upon Request

DIEPA X 53 and X 50

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
92		6.751,00	686.500	1.513.400	7.476,00	762.750	1.681.500	Upon Request			3.994
	3 5/8	6.762,00	687.650	1.515.900	7.488,00	764.050	1.684.400				4.000
93		6.899,00	701.500	1.546.500	7.639,00	779.450	1.718.300				4.081
94		7.047,00	716.650	1.579.900	7.804,00	796.300	1.755.500				4.169
95		7.199,00	732.000	1.613.700	7.971,00	813.350	1.793.100				4.258
	3 3/4	7.236,00	735.880	1.662.300	8.013,00	817.650	1.802.500				4.281
96		7.351,00	747.450	1.647.450	8.140,00	830.550	1.831.000				4.348
97		7.505,00	763.150	1.682.400	8.310,00	847.950	1.869.300				4.439
98		7.660,00	778.950	1.717.200	8.482,00	865.550	1.908.100				4.531
	3 7/8	7.727,00	785.760	1.732.200	8.556,00	873.070	1.924.700				4.571
99		7.817,00	794.950	1.752.500	8.656,00	883.250	1.947.200				4.624
100		7.976,00	811.100	1.788.100	8.832,00	901.200	1.986.700				4.718

DIEPA PZ 299 and Z 299

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
4		12,20	1.200	2.600	13,50	1.300	2.800	14,70	1.450	3.100	7,000
	3/16	17,30	1.750	3.800	19,10	1.940	4.200	20,80	2.110	4.600	10,00
5		19,10	1.900	4.100	21,10	2.100	4.600	22,90	2.300	5.000	11,00
6		27,50	2.750	6.000	30,50	3.100	6.800	33,20	3.350	7.300	16,00
	1/4	30,70	3.120	6.800	34,00	3.460	7.600	37,10	3.760	8.200	18,00
6.5		32,20	3.200	7.000	35,70	3.600	7.900	38,80	3.900	8.500	19,00
7		37,30	3.750	8.200	41,30	4.200	9.200	45,00	4.550	10.000	22,00
7.5		42,90	4.300	9.400	47,50	4.800	10.500	51,70	5.200	11.400	26,00
	5/16	48,00	4.880	10.700	53,20	5.410	11.900	57,90	5.890	12.900	29,00
8		48,80	4.950	10.900	54,00	5.500	12.100	58,80	5.950	13.100	29,00
8.5		55,10	5.550	12.200	61,00	6.200	13.600	66,40	6.700	14.700	33,00
9		61,70	6.250	13.700	68,30	6.950	15.300	74,40	7.550	16.600	37,00
9.5		68,80	6.950	15.300	76,20	7.750	17.000	82,90	8.400	18.500	41,00
	3/8	69,10	7.030	15.400	76,60	7.810	17.200	83,40	8.490	18.700	41,00
10		76,20	7.700	16.900	84,00	8.600	18.900	92,10	9.300	20.500	46,00
11		92,40	9.350	20.600	102,0	10.400	22.900	111,0	11.250	24.800	55,00
	7/16	94,10	9.560	21.000	104,0	10.620	23.400	113,0	11.550	25.400	56,00
12		110,0	11.100	24.400	122,0	12.350	27.200	132,0	13.400	29.500	66,00
	1/2	123,0	12.490	27.500	136,0	13.880	30.500	148,0	15.080	33.200	74,00
13		129,0	13.050	28.700	143,0	14.500	31.900	155,0	15.800	34.800	77,00
14		150,0	15.150	33.300	165,0	16.800	37.000	180,0	18.300	40.300	89,00
	9/16	156,0	15.810	34.800	172,0	17.570	38.700	188,0	19.090	42.000	93,00
15		171,0	17.400	38.300	190,0	19.350	42.600	207,0	21.000	46.200	103,0
	5/8	192,0	19.530	43.000	213,0	21.690	47.800	232,0	23.580	51.900	115,0
16		195,0	19.800	43.600	216,0	22.000	48.500	235,0	23.900	52.600	117,0
17		220,0	22.350	49.200	244,0	24.850	54.700	266,0	27.000	59.500	132,0
18		247,0	25.050	55.200	274,0	27.850	61.300	298,0	30.250	66.600	148,0
19		275,0	27.950	61.600	305,0	31.050	68.400	332,0	33.750	74.400	165,0
	3/4	277,0	28.120	61.900	306,0	31.240	68.800	333,0	33.960	74.800	166,0
20		305,0	30.950	68.200	338,0	34.400	75.800	368,0	37.400	82.400	182,0
21		336,0	34.100	75.100	372,0	37.950	83.600	405,0	41.250	90.900	201,0
22		369,0	37.500	82.600	408,0	41.650	91.800	445,0	45.250	99.700	221,0
	7/8	376,0	38.270	84.300	417,0	42.520	93.700	454,0	46.220	101.800	225,0
23		403,0	40.950	90.200	446,0	45.500	100.300	486,0	49.450	109.000	241,0
24		439,0	44.600	98.300	486,0	49.550	109.200	530,0	53.850	118.700	263,0
25		476,0	48.400	106.700	528,0	53.800	118.600	574,0	58.450	128.800	285,0
	1	492,0	49.990	110.200	544,0	55.540	122.400	593,0	60.370	133.000	294,0
26		515,0	52.350	115.400	570,0	58.200	128.300	621,0	63.200	139.300	308,0
27		555,0	56.450	124.400	615,0	62.700	138.200	670,0	68.200	150.300	333,0
28		597,0	60.700	133.800	662,0	67.450	148.700	720,0	73.300	161.500	358,0
	1 1/8	622,0	63.270	139.400	689,0	70.300	154.900	750,0	76.410	168.400	372,0

DIEPA PZ 299 and Z 299

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
29		641,0	65.100	143.500	710,0	72.400	159.600	773,0	78.650	173.300	384,0
30		686,0	69.700	153.600	759,0	77.450	170.700	827,0	84.200	185.600	411,0
31		732,0	74.450	164.100	811,0	82.700	182.300	883,0	89.900	198.100	438,0
	1 1/4	768,0	78.120	172.200	851,0	86.790	191.300	926,0	94.340	207.900	460,0
32		780,0	79.300	174.800	864,0	88.150	194.300	941,0	95.800	211.200	467,0
33		830,0	84.350	185.900	919,0	93.700	206.500	1.001	101.900	224.600	497,0
34		881,0	89.550	197.400	975,0	99.500	219.300	1.062	108.150	238.400	527,0
	1 3/8	930,0	94.520	208.300	1.029	105.020	231.500	1.121	114.150	251.600	556,0
35		933,0	94.900	209.200	1.034	105.450	232.400	1.125	114.600	252.600	559,0
36		988,0	100.400	221.300	1.094	111.550	245.900	1.191	121.250	267.300	591,0
37		1.043	106.050	233.700	1.155	117.850	259.800	1.258	128.100	282.400	625,0
38		1.100	111.850	246.500	1.219	124.300	274.000	1.327	135.100	297.800	659,0
	1 1/2	1.106	112.490	247.900	1.225	124.990	275.500	1.334	135.850	299.400	662,0
39		1.159	117.850	259.800	1.284	130.950	288.600	1.398	142.300	313.700	694,0
40		1.220	123.950	273.200	1.350	137.750	303.600	1.470	149.700	330.000	730,0
41		1.281	130.200	287.000	1.419	144.700	319.000	1.545	157.300	346.700	767,0
	1 5/8	1.298	132.020	291.000	1.438	146.680	323.300	1.565	159.440	351.500	777,0
42		1.344	136.650	301.200	1.488	151.850	334.700	1.621	165.050	363.800	805,0
43		1.409	143.250	315.800	1.560	159.150	350.800	1.699	173.000	381.300	843,0
44		1.475	150.000	330.600	1.634	166.650	367.300	1.779	181.150	399.300	883,0
	1 3/4	1.506	153.110	337.500	1.667	170.130	375.000	1.816	184.910	407.600	901,0
45		1.543	156.900	345.900	1.709	174.300	384.200	1.861	189.450	417.600	924,0
46		1.613	163.950	361.400	1.786	182.150	401.500	1.945	198.000	436.500	965,0
47		1.683	171.150	377.300	1.864	190.150	419.200	2.030	206.700	455.600	1.008
	1 7/8	1.728	175.770	387.500	1.914	195.300	430.500	2.084	212.270	467.900	1.035
48		1.756	178.500	393.500	1.945	198.350	437.200	2.117	215.550	475.200	1.051
49		1.830	186.050	410.100	2.026	206.700	455.600	2.206	224.650	495.200	1.095
50		1.905	193.700	427.000	2.110	215.250	474.500	2.297	233.950	515.700	1.140
	2	1.967	199.980	440.800	2.178	222.210	489.800	2.371	241.520	532.400	1.177
51		1.982	201.550	444.300	2.195	223.900	493.600	2.390	243.350	536.400	1.187
52		2.061	209.500	461.800	2.281	232.800	513.200	2.485	253.000	557.700	1.233
53		2.140	217.650	479.800	2.370	241.850	533.100	2.581	262.850	579.400	1.281
	2 1/8	2.220	225.760	497.700	2.458	250.850	553.000	2.677	272.650	601.000	1.329
54		2.222	225.950	498.100	2.460	251.050	553.400	2.679	272.900	601.600	1.330
55		2.305	234.400	516.700	2.553	260.400	574.000	2.780	283.100	624.100	1.380
56		2.390	243.000	535.700	2.647	270.000	595.200	2.882	293.450	646.900	1.431
57		2.476	251.750	555.000	2.742	279.750	616.700	2.986	304.050	670.300	1.482
	2 1/4	2.489	253.110	558.000	2.756	281.240	620.000	3.001	305.680	673.900	1.490
58		2.564	260.650	574.600	2.838	289.600	638.400	3.091	314.800	694.000	1.535
59		2.653	269.750	594.600	2.937	299.700	660.700	3.199	325.750	718.100	1.588
60		2.743	278.950	614.900	3.038	309.950	683.300	3.308	336.850	742.600	1.642
	2 3/8	2.773	282.020	621.700	3.071	313.350	690.800	3.344	340.590	750.800	1.660

DIEPA MX

Rope Diameter		DIEPA MX4			DIEPA MX5			DIEPA MX6		
		Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight
(mm)	(inch)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)
12		117,0	26.100,0	65,00	128,0	28.400	68,00	132,0	29.600,0	72,00
	1/2	131,0	29.200,0	73,00	143,0	31.900	76,00	148,0	33.200,0	81,00
13		137,0	30.600,0	76,00	150,0	33.400	80,00	155,0	34.900,0	85,00
14		159,0	35.500,0	88,00	173,0	38.800	93,00	180,0	40.400,0	98,00
	9/16	166,0	37.000,0	92,00	180,0	40.300	97,00	187,0	42.000,0	102,0
15		183,0	40.800,0	101,0	199,0	44.600	106,0	207,0	46.400,0	113,0
	5/8	204,0	45.700,0	113,0	223,0	49.900	119,0	231,0	51.900,0	126,0
16		207,0	46.400,0	115,0	226,0	50.600	121,0	235,0	52.900,0	128,0
17		234,0	52.500,0	130,0	255,0	57.200	137,0	265,0	59.700,0	145,0
18		263,0	58.800,0	146,0	286,0	64.200	153,0	297,0	66.800,0	163,0
19		292,0	65.600,0	162,0	319,0	71.500	171,0	332,0	74.600,0	181,0
	3/4	294,0	65.900,0	163,0	320,0	71.900	172,0	333,0	75.000,0	182,0
20		324,0	72.700,0	180,0	354,0	79.300	189,0	367,0	82.500,0	201,0
21		357,0	80.100,0	198,0	389,0	87.400	209,0	405,0	91.000,0	221,0
22		392,0	87.900,0	218,0	428,0	95.900	229,0	444,0	99.900,0	243,0
	7/8	400,0	89.800,0	222,0	436,0	98.000	234,0	454,0	102.000	248,0
23		428,0	96.100,0	238,0	468,0	104.800	250,0	486,0	109.200	265,0
24		466,0	104.700	259,0	509,0	114.200	272,0	529,0	119.000	289,0
25		506,0	113.600	281,0	552,0	124.000	296,0	574,0	129.100	314,0
	1	522,0	117.200	290,0	570,0	128.000	305,0	592,0	133.200	324,0
26		548,0	122.900	304,0	597,0	134.100	320,0	621,0	139.600	339,0
27		591,0	132.500	328,0	643,0	144.500	345,0	669,0	150.600	366,0
28		635,0	142.600	353,0	693,0	155.500	371,0	720,0	161.900	393,0
	1 1/8	662,0	148.500	367,0	721,0	162.000	386,0	749,0	168.500	410,0
29		681,0	152.900	378,0	743,0	166.800	398,0	772,0	173.700	422,0
30		729,0	163.700	405,0	795,0	178.500	426,0	827,0	185.900	452,0
31		778,0	174.800	432,0	849,0	190.600	454,0	882,0	198.400	482,0
	1 1/4	816,0	183.300	453,0	890,0	200.000	477,0	926,0	208.300	506,0
32		829,0	186.200	460,0	904,0	203.100	484,0	940,0	211.500	514,0
33		882,0	198.100	490,0	962,0	216.000	515,0	1.000	224.900	547,0
34		936,0	210.400	520,0	1.021	229.400	547,0	1.061	238.700	580,0
	1 3/8	988,0	221.800	548,0	1.077	242.000	577,0	1.120	252.000	612,0
35		992,0	222.900	551,0	1.082	243.100	579,0	1.125	253.000	615,0
36		1.049	235.700	583,0	1.145	257.200	613,0	1.189	267.700	650,0
37		1.109	249.100	616,0	1.210	271.700	647,0	1.257	282.800	687,0
38		1.169	262.700	649,0	1.275	286.600	683,0	1.326	298.200	725,0
	1 1/2	1.175	264.100	653,0	1.282	288.000	687,0	1.333	300.000	729,0
39		1.232	276.800	684,0	1.343	301.800	719,0	1.396	314.100	763,0
40		1.295	291.100	719,0	1.414	317.400	757,0	1.469	330.600	803,0

DIEPA MX

Rope Diameter		DIEPA MX4			DIEPA MX5			DIEPA MX6		
		Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight
(mm)	(inch)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)
41		1.361	305.800	756,0	1.485	333.600	795,0	1.543	347.200	844,0
	1 5/8	1.380	310.000	766,0	1.505	338.000	806,0	1.564	351.900	855,0
42		1.429	321.000	793,0	1.558	350.000	834,0	1.620	364.400	885,0
43		1.497	336.400	831,0	1.633	366.900	874,0	1.698	382.000	928,0
44		1.567	352.200	870,0	1.710	384.200	916,0	1.777	400.000	972,0
	1 3/4	1.600	359.500	888,0	1.745	392.100	934,0	1.814	408.100	992,0
45		1.640	368.500	910,0	1.788	401.900	958,0	1.859	418.400	1.016
46		1.714	385.000	951,0	1.869	419.900	1.001	1.943	437.300	1.062
47		1.789	401.900	993,0	1.951	438.400	1.045	2.028	456.300	1.109
	1 7/8	1.837	412.700	1.020	2.003	450.100	1.073	2.082	468.600	1.138
48		1.866	419.200	1.036	2.035	457.200	1.090	2.115	476.000	1.156
49		1.944	436.900	1.080	2.121	476.500	1.136	2.204	496.100	1.205
50		2.025	454.900	1.124	2.208	496.200	1.182	2.295	516.500	1.255
	2	2.090	469.600	1.160	2.279	512.200	1.220	2.370	533.300	1.295
51		2.107	473.300	1.169	2.298	516.200	1.230	2.388	537.500	1.305
52		2.190	492.000	1.216	2.389	536.600	1.279	2.482	558.600	1.357
53		2.275	511.200	1.263	2.481	557.500	1.328	2.579	580.300	1.410
	2 1/8	2.359	530.200	1.310	2.573	578.100	1.378	2.675	601.900	1.462
54		2.362	530.600	1.311	2.576	578.700	1.379	2.677	602.500	1.463
55		2.450	550.500	1.360	2.672	600.300	1.431	2.777	625.000	1.518
56		2.540	570.700,0	1.410	2.770	622.400,0	1.483	2.880	648.000,0	1.574
57		2.631	591.200,0	1.461	2.870	644.800,0	1.537	2.983	671.300,0	1.631
	2 1/4	2.645	594.400,0	1.469	2.885	648.200,0	1.545	2.999	674.900,0	1.639
58		2.724	612.200,0	1.513	2.971	667.600,0	1.591	3.089	695.100,0	1.688
59		2.819	633.400,0	1.565	3.074	690.800,0	1.646	3.196	719.300,0	1.747
60		2.915	655.200,0	1.619	3.180	714.500,0	1.703	3.305	743.900,0	1.807
	2 3/8	2.947	662.300,0	1.636	3.214	722.200,0	1.721	3.341	751.800,0	1.826
61		3.013	677.200,0	1.673	3.286	738.500,0	1.760	3.416	768.800,0	1.867
62		3.113	699.500,0	1.728	3.395	762.900,0	1.818	3.529	794.200,0	1.929
63		3.214	722.300,0	1.785	3.505	787.700,0	1.877	3.644	820.000,0	1.992
	2 1/2	3.266	733.800,0	1.813	3.562	800.300,0	1.907	3.702	833.100,0	2.024
64		3.317	745.400,0	1.842	3.618	812.900,0	1.937	3.761	846.300,0	2.056
65		3.421	768.900,0	1.900	3.732	838.600,0	1.998	3.879	873.000,0	2.120
66		3.528	792.800,0	1.959	3.847	864.600,0	2.060	3.999	900.100,0	2.186
	2 5/8	3.601	809.000,0	1.999	3.926	882.400,0	2.102	4.082	918.600,0	2.231
67		3.635	817.000,0	2.018	3.964	891.000,0	2.123	4.121	927.500,0	2.253
68		3.745	841.600,0	2.079	4.084	917.800,0	2.187	4.245	955.500,0	2.321
69		3.856	866.500,0	2.141	4.205	945.000,0	2.252	4.371	983.800,0	2.389
	2 3/4	3.951	888.000,0	2.194	4.310	968.400,0	2.307	4.480	1.008.200	2.449

DIEPA MX

Rope Diameter		DIEPA MX4			DIEPA MX5			DIEPA MX6		
		Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight
(mm)	(inch)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)
70		3.968	891.800,0	2.203	4.328	972.500,0	2.317	4.499	1.012.600	2.459
71		4.082	917.400,0	2.267	4.452	1.000.600	2.384	4.628	1.041.600	2.530
72		4.198	943.500,0	2.331	4.579	1.029.000	2.452	4.759	1.071.100	2.602
73		4.315	969.900,0	2.396	4.706	1.057.700	2.520	4.892	1.101.000	2.674
	2 7/8	4.319	970.500,0	2.398	4.710	1.058.500	2.522	4.896	1.101.800	2.676
74		4.435	996.600,0	2.462	4.837	1.086.900	2.590	5.027	1.131.400	2.748
75		4.555	1.023.800	2.529	4.968	1.116.500	2.660	5.164	1.162.300	2.823
76		4.678	1.051.200	2.597	5.102	1.146.400	2.732	5.303	1.193.500	2.899
	3	4.702	1.056.800	2.611	5.128	1.152.500	2.746	5.331	1.199.700	2.914
77		4.801	1.079.000	2.666	5.237	1.176.800	2.804	5.443	1.225.100	2.976
78		4.927	1.107.300	2.736	5.374	1.207.600	2.877	5.586	1.257.200	3.053
79		5.054	1.135.900	2.806	5.512	1.238.700	2.952	5.730	1.289.500	3.132
	3 1/8	5.102	1.146.700	2.833	5.565	1.250.600	2.980	5.784	1.301.800	3.162
80		5.183	1.164.900	2.878	5.653	1.270.400	3.027	5.876	1.322.400	3.212
81		5.313	1.194.200	2.950	5.794	1.302.300	3.103	6.024	1.355.700	3.293
82		5.445	1.223.800	3.023	5.939	1.334.600	3.180	6.173	1.389.400	3.375
	3 1/4	5.519	1.240.200	3.064	6.019	1.352.600	3.223	6.256	1.408.000	3.420
83		5.580	1.253.800	3.097	6.084	1.367.400	3.258	6.324	1.423.400	3.457
84		5.715	1.284.300	3.173	6.232	1.400.500	3.337	6.478	1.458.000	3.541
85		5.852	1.314.900	3.249	6.381	1.434.200	3.417	6.633	1.493.000	3.626
	3 3/8	5.951	1.337.500	3.304	6.491	1.458.600	3.476	6.747	1.518.500	3.688
86		5.989	1.346.100	3.325	6.532	1.468.100	3.498	6.791	1.528.300	3.712
87		6.130	1.377.600	3.403	6.685	1.502.400	3.580	6.949	1.564.000	3.799
88		6.272	1.409.400	3.482	6.840	1.537.100	3.662	7.110	1.600.200	3.886
	3 1/2	6.401	1.438.500	3.553	6.980	1.568.800	3.738	7.256	1.633.100	3.966
89		6.415	1.441.700	3.561	6.996	1.572.300	3.746	7.272	1.636.700	3.975
90		6.560	1.474.300	3.642	7.154	1.607.800	3.831	7.437	1.673.700	4.065
91		6.707	1.507.300	3.723	7.314	1.643.800	3.916	7.603	1.711.100	4.156
92		6.855	1.540.600	3.806	7.476	1.680.100	4.003	7.771	1.749.000	4.248
	3 5/8	6.866	1.543.100	3.812	7.488	1.682.800	4.010	7.783	1.751.800	4.255
93		7.004	1.574.300	3.889	7.639	1.716.800	4.090	7.941	1.787.100	4.341
94		7.156	1.608.200	3.973	7.804	1.753.900	4.179	8.112	1.825.700	4.435
95		7.309	1.642.600	4.058	7.971	1.791.500	4.268	8.286	1.864.800	4.529
	3 3/4	7.347	1.651.200	4.079	8.013	1.800.900	4.291	8.329	1.874.700	4.553
96		7.464	1.677.400	4.144	8.140	1.829.400	4.359	8.461	1.904.400	4.625
97		7.620	1.712.500	4.231	8.310	1.867.700	4.450	8.639	1.944.300	4.722
98		7.778	1.748.000	4.318	8.482	1.906.400	4.542	8.817	1.984.500	4.820
	3 7/8	7.846	1.763.200	4.356	8.556	1.923.000	4.582	8.894	2.001.800	4.862
99		7.937	1.783.900	4.407	8.656	1.945.400	4.635	8.998	2.025.200	4.919
100		8.098	1.820.100	4.496	8.832	1.985.000	4.729	9.181	2.066.400	5.019

DIEPA MB

Rope Diameter		DIEPA MB4			DIEPA MB5			DIEPA MB6			DIEPA MB7		
		Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight
(mm)	(inch)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)
18		254,0	56.800	143,0	297,0	66.800	157,0	310,0	69.500	162,0	319,0	71.400	166,0
19		282,0	63.300	160,0	331,0	74.400	175,0	346,0	77.500	180,0	355,0	79.500	185,0
	3/4	284,0	63.700	161,0	333,0	74.800	176,0	347,0	77.900	181,0	357,0	80.000	185,0
20		313,0	70.200	177,0	367,0	82.400	194,0	383,0	85.900	200,0	393,0	88.200	204,0
21		345,0	77.400	195,0	405,0	90.900	214,0	422,0	94.800	220,0	433,0	97.200	225,0
22		378,0	85.000	214,0	444,0	99.800	235,0	463,0	104.000	242,0	476,0	106.800	247,0
	7/8	386,0	86.700	219,0	453,0	101.800	240,0	472,0	106.100	247,0	485,0	108.900	252,0
23		413,0	92.800	234,0	486,0	109.100	257,0	506,0	113.600	264,0	520,0	116.600	270,0
24		450,0	101.100	255,0	529,0	118.700	280,0	551,0	123.700	288,0	565,0	127.000	294,0
25		488,0	109.700	277,0	574,0	128.900	303,0	598,0	134.300	312,0	613,0	137.900	319,0
	1	505,0	113.200	285,0	593,0	133.000	313,0	618,0	138.700	322,0	634,0	142.300	330,0
26		529,0	118.700	299,0	621,0	139.400	328,0	647,0	145.300	337,0	664,0	149.100	346,0
27		570,0	128.000	323,0	670,0	150.300	354,0	698,0	156.600	364,0	716,0	160.800	373,0
28		613,0	137.600	347,0	720,0	161.700	381,0	750,0	168.500	391,0	770,0	172.900	401,0
	1 1/8	638,0	143.400	361,0	750,0	168.400	396,0	782,0	175.500	408,0	802,0	180.100	417,0
29		658,0	147.700	372,0	772,0	173.500	408,0	804,0	180.700	420,0	826,0	185.500	430,0
30		704,0	158.000	398,0	827,0	185.700	437,0	861,0	193.500	449,0	884,0	198.500	460,0
31		751,0	168.700	425,0	883,0	198.300	467,0	919,0	206.600	480,0	944,0	212.000	491,0
	1 1/4	788,0	176.900	446,0	926,0	207.900	489,0	965,0	216.600	503,0	990,0	222.400	515,0
32		800,0	179.800	453,0	940,0	211.200	497,0	980,0	220.100	511,0	1.006	225.900	523,0
33		851,0	191.200	482,0	1.000	224.600	529,0	1.042	234.000	544,0	1.070	240.300	557,0
34		904,0	203.000	512,0	1.061	238.400	561,0	1.106	248.500	577,0	1.136	255.000	591,0
	1 3/8	954,0	214.100	540,0	1.121	251.600	592,0	1.167	262.200	609,0	1.198	269.200	623,0
35		958,0	215.100	542,0	1.125	252.700	595,0	1.172	263.300	612,0	1.203	270.300	626,0
36		1.013	227.600	573,0	1.190	267.400	629,0	1.240	278.600	647,0	1.273	285.900	662,0
37		1.070	240.400	606,0	1.258	282.400	665,0	1.310	294.300	683,0	1.344	302.000	700,0
38		1.129	253.600	639,0	1.326	298.000	701,0	1.382	310.500	721,0	1.418	318.700	738,0
	1 1/2	1.135	254.900	642,0	1.333	299.500	705,0	1.389	312.100	725,0	1.426	320.300	742,0
39		1.189	267.200	673,0	1.397	313.800	739,0	1.456	327.000	759,0	1.494	335.600	777,0
40		1.251	281.000	708,0	1.470	330.100	777,0	1.531	344.000	799,0	1.572	353.100	818,0
41		1.314	295.300	744,0	1.544	346.900	816,0	1.609	361.400	839,0	1.651	370.900	859,0
	1 5/8	1.332	299.200	754,0	1.565	351.600	827,0	1.630	366.300	851,0	1.673	375.900	871,0
42		1.379	309.800	781,0	1.620	364.000	857,0	1.688	379.400	881,0	1.732	389.200	902,0
43		1.445	324.800	818,0	1.698	381.500	898,0	1.769	397.500	923,0	1.816	408.000	945,0
44		1.513	340.100	857,0	1.778	399.500	940,0	1.853	416.300	967,0	1.901	427.300	990,0
	1 3/4	1.544	347.100	874,0	1.814	407.800	959,0	1.891	424.800	986,0	1.940	436.000	1.010
45		1.583	355.700	896,0	1.860	417.900	983,0	1.938	435.500	1.011	1.989	446.900	1.035
46		1.654	371.700	936,0	1.943	436.700	1.027	2.025	455.000	1.056	2.078	466.900	1.082

DIEPA MB

Rope Diameter		DIEPA MB4			DIEPA MB5			DIEPA MB6			DIEPA MB7		
		Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight
(mm)	(inch)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)
47		1.727	388.000	977,0	2.029	455.900	1.073	2.114	475.000	1.103	2.169	487.400	1.129
	1 7/8	1.773	398.500	1.004	2.083	468.100	1.101	2.171	487.800	1.132	2.227	500.500	1.159
48		1.801	404.700	1.020	2.116	475.400	1.119	2.205	495.500	1.150	2.263	508.400	1.178
49		1.877	421.800	1.062	2.205	495.500	1.166	2.298	516.300	1.199	2.358	529.800	1.227
50		1.955	439.200	1.106	2.296	515.900	1.214	2.392	537.600	1.248	2.456	551.700	1.278
	2	2.018	453.300	1.142	2.370	532.500	1.253	2.470	554.900	1.288	2.534	569.600	1.319
51		2.033	457.000	1.151	2.389	536.800	1.263	2.489	559.300	1.299	2.554	574.000	1.329
52		2.114	475.000	1.196	2.483	558.000	1.313	2.587	581.500	1.350	2.656	596.700	1.382
53		2.196	493.500	1.243	2.580	579.700	1.364	2.688	604.000	1.402	2.759	619.900	1.436
	2 1/8	2.278	511.800	1.289	2.675	601.200	1.415	2.788	626500	1.454	2.861	643.000	1.489
54		2.280	512.300	1.290	2.678	601.800	1.416	2.790	627000	1.456	2.864	643.500	1.491
55		2.365	531.400	1.339	2.778	624.300	1.469	2.895	650500	1.510	2.971	667.600	1.546
56		2.452	550.900	1.388	2.880	647.200	1.523	3.001	674400	1.566	3.080	692.100	1.603
57		2.540	570.800	1.438	2.984	670.500	1.578	3.110	698700	1.622	3.191	717.000	1.661
	2 1/4	2.554	573.700	1.445	2.999	674.000	1.586	3.126	702300	1.631	3.208	720.700	1.669
58		2.630	591.000	1.489	3.090	694.300	1.633	3.219	723400	1.679	3.304	742.500	1.719
59		2.721	611.500	1.540	3.197	718.400	1.690	3.331	748600	1.738	3.419	768.200	1.779
60		2.814	632.500	1.593	3.307	742.900	1.748	3.445	774100	1.797	3.535	794.500	1.840
	2 3/8	2.845	639.300	1.611	3.343	751.000,0	1.767	3.482	782.600	1.817	3.574	803.100,0	1.860
61		2.909	653.700	1.647	3.418	768.000,0	1.807	3.561	800.200	1.858	3.655	821.200,0	1.902
62		3.005	675.300	1.701	3.530	793.400,0	1.867	3.678	826.700	1.919	3.775	848.300,0	1.965
63		3.103	697.300	1.757	3.645	819.200,0	1.928	3.798	853.600	1.981	3.898	876.000,0	2.029
	2 1/2	3.152	708.300	1.785	3.703	832.300,0	1.958	3.859	867.200	2.013	3.960	890.000,0	2.061
64		3.202	719.600	1.813	3.762	845.400,0	1.989	3.920	880.900	2.045	4.023	904.000,0	2.094
65		3.303	742.300	1.870	3.880	871.900,0	2.052	4.043	908.700	2.109	4.149	932.500,0	2.160
66		3.405	765.300	1.928	4.000	899.000,0	2.116	4.168	936.800	2.175	4.278	961.400,0	2.227
	2 5/8	3.476	781.000	1.968	4.083	917.400,0	2.159	4.255	956.000	2.219	4.366	981.200,0	2.272
67		3.509	788.700	1.987	4.122	926.500,0	2.180	4.296	965.400	2.241	4.408	990.700,0	2.295
68		3.615	812.400	2.047	4.247	954.400,0	2.246	4.425	994.400	2.308	4.541	1.020.500	2.364
69		3.722	836.400	2.107	4.373	982.600,0	2.312	4.556	1.023.800	2.377	4.675	1.050.800	2.434
	2 3/4	3.814	857.200	2.159	4.481	1.007.000	2.370	4.669	1.049.300	2.436	4.792	1.076.800	2.494
70		3.831	860.800	2.169	4.500	1.011.300	2.380	4.689	1.053.800	2.446	4.812	1.081.500	2.505
71		3.941	885.600	2.231	4.630	1.040.400	2.448	Upon Request			Upon Request		
72		4.053	910.800	2.294	4.761	1.069.900	2.518						
73		4.166	936.300	2.359	4.894	1.099.800	2.588						
	2 7/8	4.169	936.900	2.360	4.897	1.100.600	2.590						
74		4.281	962.100	2.424	5.029	1.130.200	2.660						
75		4.398	988.200	2.490	5.166	1.161.000	2.732						

DIEPA MB

Rope Diameter		DIEPA MB4			DIEPA MB5			DIEPA MB6			DIEPA MB7		
		Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight
(mm)	(inch)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)
76		4.515	1.014.800	2.556	5.305	1.192.200	2.805	Upon Request			Upon Request		
	3	4.540	1.020.200	2.570	5.332	1.198.400	2.820						
77		4.636	1.041.600	2.624	5.445	1.223.700	2.880						
78		4.756	1.068.900	2.693	5.588	1.255.700	2.955						
79		4.879	1.096.500	2.762	5.731	1.288.100	3.031						
	3 1/8	4.926	1.106.900	2.789	5.787	1.300.400	3.060						
80		5.004	1.124.500	2.833	5.878	1.320.900	3.108						
82		5.256	1.181.300	2.975	6.176	1.387.900	3.266						
	3 1/4	5.327	1.197.300	3.015	6.258	1.406.500	3.310						
84		5.516	1.239.700	3.122	6.480	1.456.400	3.427						
	3 3/8	5.745	1.291.100	3.252	6.749	1.516.800	3.569						
86		5.782	1.299.400	3.273	6.793	1.526.600	3.592						
88		6.054	1.360.600	3.427	7.113	1.598.400	3.761						
	3 1/2	6.178	1.388.500	3.497	7.259	1.631.300	3.839						
90		6.333	1.423.100	3.584	7.439	1.671.900	3.934						
92		6.617	1.487.200	3.745	7.773	1.746.900	4.111						
	3 5/8	6.628	1.489.600	3.751	7.786	1.749.900	4.118						
94		6.908	1.552.500	3.910	8.115	1.823.800	4.292						
	3 3/4	7.093	1.594.000	4.015	8.332	1.872.600	4.406						
96		7.205	1.619.300	4.078	8.464	1.902.200	4.476						
98		7.508	1.687.400	4.250	8.820	1.982.300	4.665						
	3 7/8	7.574	1.702.100	4.287	8.897	1.999.600	4.705						
100		7.818	1.757.000	4.425	9.184	2.064.100	4.857						
	4	8.070	1.813.700	4.568	9.481	2.130.600	5.014						
102		8.134	1.828.000	4.604	9.555	2.147.500	5.053						
104		8.456	1.900.400	4.786	9.933	2.232.500	5.253						
	4 1/8	8.582	1.928.800	4.858	10.082	2.265.900	5.332						
106		8.784	1.974.200	4.972	10.319	2.319.200	5.457						
	4 1/4	9.110	2.047.500	5.156	10.702	2.405.300	5.660						
108		9.119	2.049.400	5.161	10.712	2.407.500	5.665						
110		9.460	2.126.000	5.354	11.113	2.497.500	5.877						
	4 3/8	9.654	2.169.800	5.464	11.341	2.548.900	5.998						
112		9.807	2.204.000	5.551	11.520	2.589.200	6.092						
114		10.160	2.283.500	5.751	11.935	2.682.500	6.312						
	4 1/2	10.213	2.295.500	5.781	11.998	2.696.700	6.345						
116		10.520	2.364.300	5.954	12.358	2.777.500	6.535						
	4 5/8	10.789	2.424.800	6.107	12.674	2.848.600	6.703						
118		10.886	2.446.500	6.161	12.788	2.874.000	6.763						
120		11.258	2.530.200	6.372	13.225	2.972.400	6.994						

DIEPA ML

Rope Diameter		DIEPA ML4			DIEPA ML5		
		Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight
(mm)	(inch)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)
20		345,0	77.500	187,0	359,0	80.600	196,0
21		381,0	85.500	206,0	396,0	88.800	216,0
22		418,0	93.800	226,0	434,0	97.500	237,0
	7/8	427,0	95.700	230,0	444,0	99.500	242,0
23		457,0	102.600	247,0	475,0	106.500	260,0
24		497,0	111.600	269,0	517,0	116.000	283,0
25		540,0	121.200	292,0	561,0	126.000	307,0
	1	558,0	125.100	301,0	579,0	130.000	316,0
26		584,0	131.000	315,0	606,0	136.200	332,0
27		630,0	141.400	340,0	654,0	147.000	358,0
28		677,0	152.000	366,0	704,0	158.000	385,0
	1 1/8	706,0	158.400	381,0	732,0	164.600	401,0
29		727,0	163.200	392,0	754,0	169.500	413,0
30		778,0	174.600	420,0	807,0	181.400	442,0
31		830,0	186.400	448,0	863,0	193.700	471,0
	1 1/4	870,0	195.500	470,0	905,0	203.100	495,0
32		885,0	198.700	478,0	919,0	206.400	502,0
33		941,0	211.300	508,0	977,0	219.500	534,0
34		999,0	224.300	539,0	1.037	233.100	567,0
	1 3/8	1.053	236.700	569,0	1.095	245.900	598,0
35		1.058	237.700	572,0	1.100	246.900	601,0
36		1.119	251.500	605,0	1.163	261.300	636,0
37		1.182	265.600	639,0	1.229	276.000	672,0
38		1.247	280.200	674,0	1.296	291.100	708,0
	1 1/2	1.254	281.600	677,0	1.303	292.600	712,0
39		1.314	295.200	710,0	1.365	306.600	746,0
40		1.382	310.500	747,0	1.436	322.600	785,0
41		1.452	326.200	784,0	1.509	339.000	825,0
	1 5/8	1.471	330.500	795,0	1.529	343.500	836,0
42		1.523	342.300	823,0	1.583	355.600	865,0
43		1.597	358.800	863,0	1.659	372.800	907,0
44		1.672	375.700	903,0	1.737	390.300	950,0
	1 3/4	1.707	383.500	922,0	1.773	398.400	969,0
45		1.749	393.000	945,0	1.817	408.400	993,0
46		1.828	410.700	987,0	1.899	426.700	1.038
47		1.908	428.700	1.031	1.982	445.400	1.084
	1 7/8	1.959	440.200	1.058	2.035	457.400	1.113
48		1.990	447.100	1.075	2.067	464.600	1.130
49		2.074	466.000	1.120	2.155	484.100	1.178

DIEPA ML

Rope Diameter		DIEPA ML4			DIEPA ML5		
		Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight
(mm)	(inch)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)
50		2.159	485.200	1.166	2.244	504.100	1.226
	2	2.229	500.900	1.204	2.316	520.400	1.266
51		2.247	504.800	1.214	2.334	524.400	1.276
52		2.336	524.800	1.262	2.427	545.300	1.326
53		2.426	545.200	1.311	2.521	566.400	1.378
	2 1/8	2.516	565.500	1.359	2.614	587.400	1.429
54		2.519	566.000	1.361	2.617	588.000	1.430
55		2.613	587.100	1.411	2.715	610.000	1.484
56		2.709	608.600	1.463	2.814	632.400	1.538
57		2.806	630.600	1.516	2.916	655.200	1.594
	2 1/4	2.821	634.000	1.524	2.931	658.700	1.602
58		2.905	652.900	1.570	3.019	678.400	1.650
59		3.006	675.600	1.624	3.124	701.900	1.708
60		3.109	698.700	1.680	3.231	726.000	1.766
	2 3/8	3.143	706.300	1.698	3.266	733.900	1.785
61		3.214	722.200	1.736	3.339	750.300	1.825
62		3.320	746.100	1.794	3.450	775.200	1.886
63		3.428	770.300	1.852	3.562	800.400	1.947
	2 1/2	3.482	782.600	1.881	3.619	813.200	1.978
64		3.538	795.000	1.911	3.676	826.000	2.009
65		3.649	820.000,0	1.971	3.792	852.000,0	2.073
66		3.762	845.500,0	2.032	3.909	878.500,0	2.137
	2 5/8	3.839	863.000,0	2.074	3.989	896.600,0	2.181
67		3.877	871.400,0	2.095	4.029	905.300,0	2.202
68		3.994	897.600,0	2.158	4.150	932.500,0	2.268
69		4.112	924.200,0	2.221	4.272	960.200,0	2.336
	2 3/4	4.214	947.000,0	2.277	4.378	983.900,0	2.393
70		4.232	951.100,0	2.286	4.397	988.200,0	2.404
71		4.354	978.500,0	2.352	4.523	1.016.600	2.473
72		4.478	1.006.300	2.419	4.652	1.045.500	2.543
73		4.603	1.034.400	2.486	4.782	1.074.700	2.614
	2 7/8	4.606	1.035.100	2.488	4.785	1.075.400	2.616
74		4.729	1.062.900	2.555	4.914	1.104.400	2.686
75		4.859	1.091.800	2.625	5.048	1.134.400	2.759
76		4.989	1.121.200	2.695	5.184	1.164.900	2.833
	3	5.015	1.127.100	2.709	5.211	1.171.000	2.848
77		5.121	1.150.900	2.766	5.321	1.195.700	2.909
78		5.255	1.180.900	2.839	5.460	1.226.900	2.985
79		5.391	1.211.500	2.912	5.600	1.258.700	3.062

DIEPA ML

Rope Diameter		DIEPA ML4			DIEPA ML5		
		Minimum Breaking Force 1960 N/mm²		Weight	Minimum Breaking Force 1960 N/mm²		Weight
(mm)	(inch)	(kN)	(lbs)	(kg/100 m)	(kN)	(lbs)	(kg/100 m)
	3 1/8	5.442	1.222.900	2.940	5.654	1.270.600	3.091
80		5.528	1.242.300	2.986	5.743	1.290.700	3.140
82		5.808	1.305.100	3.137	6.034	1.356.100	3.299
	3 1/4	5.886	1.322.700	3.180	6.115	1.374.400	3.343
84		6.095	1.369.600	3.292	6.332	1.423.000	3.461
	3 3/8	6.347	1.426.500	3.429	6.595	1.482.100	3.605
86		6.388	1.435.600	3.451	6.637	1.491.600	3.628
88		6.689	1.503.300	3.613	6.949	1.561.800	3.799
	3 1/2	6.826	1.534.100	3.688	7.092	1.593.900	3.877
90		6.996	1.572.300	3.779	7.269	1.633.700	3.974
92		7.311	1.643.000	3.949	7.595	1.707.000	4.152
	3 5/8	7.323	1.645.600	3.956	7.608	1.709.800	4.159
94		7.632	1.715.200	4.123	7.930	1.782.000	4.335
	3 3/4	7.836	1.761.200	4.233	8.141	1.829.800	4.451
96		7.960	1.788.900	4.300	8.271	1.858.700	4.521
98		8.295	1.864.300	4.481	8.618	1.937.000	4.711
	3 7/8	8.367	1.880.500	4.520	8.693	1.953.900	4.752
100		8.637	1.941.200	4.666	8.974	2.016.900	4.906
	4	8.916	2.003.700	4.816	9.264.0	2.081.900	5.064
102		8.986	2.019.600	4.854	9.337.0	2.098.400	5.104
104		9.342	2.099.500	5.047	9.706.0	2.181.400	5.306
	4 1/8	9.482	2.131.000	5.122	9.852.0	2.214.100	5.385
106		9.704	2.181.100	5.243	10.083.0	2.266.200	5.512
	4 1/4	10.065	2.262.100	5.437	10.457.0	2.350.400	5.717
108		10.074	2.264.200	5.442	10.467.0	2.352.500	5.722
110		10.451	2.348.800	5.646	10.859.0	2.440.400	5.936
	4 3/8	10.666	2.397.100	5.762	11.082.0	2.490.600	6.058
112		10.835	2.435.000	5.853	11.257.0	2.530.000	6.154
114		11.225	2.522.800	6.064	11.663.0	2.621.100	6.375
	4 1/2	11.284	2.536.100	6.096	11.724.0	2.635.000	6.409
116		11.622	2.612.100	6.279	12.075.0	2.713.900	6.601
	4 5/8	11.920	2.678.900	6.439	12.384.0	2.783.400	6.770
118		12.027	2.703.000	6.497	12.495.0	2.808.300	6.831
120		12.437	2.795.300	6.719	12.923.0	2.904.300	7.064
	4 3/4	12.572	2.825.700	6.792	13.063.0	2.935.800	7.141
122		12.855	2.889.300	6.945	13.357.0	3.001.900	7.301
	4 7/8	13.243	2.976.400	7.154	13.759.0	3.092.500	7.522
124		13.280	2.984.800	7.174	13.799.0	3.101.100	7.543
126		13.712	3.081.900	7.408	14.247.0	3.202.000	7.788
	5	13.931	3.130.900	7.526	14.474.0	3.253.000	7.912

DIEPA B 55

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
4		13,30	1.300	2.800	14,70	1.450	3.100	15,80	1.550	3.400	8,00
	3/16	18,10	1.850	4.000	20,30	2.070	4.500	21,70	2.210	4.800	11,00
5		20,70	2.050	4.500	23,00	2.300	5.000	24,70	2.450	5.400	12,00
6		29,90	3.000	6.600	33,10	3.300	7.200	35,60	3.550	7.800	17,00
	1/4	32,80	3.340	7.300	36,40	3.710	8.100	39,10	3.990	8.700	20,00
6.5		35,00	3.500	7.700	38,80	3.900	8.500	41,70	4.200	9.200	21,00
7		40,60	4.050	8.900	45,00	4.550	10.000	48,40	4.850	10.600	24,00
7.5		46,70	4.700	10.300	51,70	5.250	11.500	55,60	5.600	12.300	27,00
	5/16	51,60	5.260	11.500	57,50	5.860	12.900	61,80	6.300	13.800	31,00
8		53,10	5.350	11.700	58,80	5.950	13.100	63,20	6.400	14.100	31,00
8.5		59,90	6.050	13.300	66,40	6.750	14.800	71,40	7.250	15.900	35,00
9		67,20	6.800	14.900	74,40	7.550	16.600	80,00	8.150	17.900	39,00
9.5		74,90	7.550	16.600	82,90	8.400	18.500	88,80	9.000	19.800	44,00
	3/8	74,90	7.590	16.700	82,90	8.450	18.600	88,90	9.060	19.900	44,00
10		82,40	8.400	18.500	91,70	9.350	20.600	98,60	10.050	22.100	49,00
11		101,00	10.300	22.700	112,00	11.450	25.200	120,00	12.250	27.000	59,00
	7/16	103,00	10.490	23.100	114,00	11.660	25.700	122,00	12.480	27.500	60,00
12		119,00	12.100	26.600	132,00	13.450	29.600	142,00	14.450	31.800	70,00
	1/2	134,00	13.650	30.000	149,00	15.170	33.400	160,00	16.280	35.800	78,00
13		141,00	14.350	31.600	156,00	15.950	35.100	168,00	17.100	37.600	83,00
14		162,00	16.550	36.400	181,00	18.400	40.500	194,00	19.750	43.500	95,00
	9/16	169,00	17.220	37.900	188,00	19.140	42.100	202,00	20.550	45.300	99,00
15		186,00	18.950	41.700	207,00	21.050	46.400	222,00	22.600	49.800	109,00
	5/8	211,00	21.490	47.300	234,00	23.850	52.500	251,00	25.620	56.400	122,00
16		214,00	21.850	48.100	238,00	24.250	53.400	256,00	26.050	57.400	126,00
17		240,00	24.500	54.000	267,00	27.250	60.000	287,00	29.250	64.400	141,00
18		271,00	27.600	60.800	301,00	30.650	67.500	323,00	32.900	72.500	159,00
19		300,00	30.550	67.300	333,00	33.950	74.800	358,00	36.450	80.300	176,00
	3/4	301,00	30.720	67.700	335,00	34.140	75.200	360,00	36.650	80.700	176,00
20		334,00	34.050	75.000	371,00	37.850	83.400	398,00	40.600	89.500	196,00
21		371,00	37.800	83.300	412,00	42.000	92.500	442,00	45.100	99.400	218,00
22		406,00	41.400	91.200	451,00	46.000	101.400	485,00	49.400	108.900	238,00
	7/8	414,00	42.230	93.100	460,00	46.920	103.400	494,00	50.390	111.000	240,00
23		442,00	45.100	99.400	491,00	50.100	110.400	528,00	53.800	118.600	260,00
24		481,00	49.000	108.000	534,00	54.450	120.000	573,00	58.450	128.800	282,00
25		512,00	52.200	115.000	569,00	58.000	127.800	611,00	62.300	137.300	301,00
	1	529,00	53.880	118.700	587,00	59.870	131.900	631,00	64.290	141.700	313,00
26		554,00	56.450	124.400	616,00	62.750	138.300	661,00	67.350	148.400	325,00
27		596,00	60.750	133.900	662,00	67.500	148.800	711,00	72.450	159.700	350,00
28		652,00	66.500	146.600	725,00	73.900	162.900	778,00	79.350	174.900	383,00
	1 1/8	675,00	68.800	151.600	750,00	76.460	168.500	805,00	82.080	180.900	396,00

DIEPA B 55

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
29		692,00	70.500	155.400	769,00	78.350	172.700	825,00	84.100	185.400	406,00
30		740,00	75.450	166.300	822,00	83.800	184.700	883,00	90.000	198.400	434,00
31		786,00	80.150	176.600	874,00	89.050	196.300	938,00	95.650	210.800	461,00
	1 1/4	829,00	84.520	186.300	921,00	93.900	207.000	989,00	100.800	222.200	489,00
32		844,00	86.000	189.500	937,00	95.550	210.600	1.006,00	102.550	226.000	495,00
33		895,00	91.250	201.100	995,00	101.400	223.500	1.068,00	108.900	240.000	525,00
34		952,00	97.000	213.800	1.058,00	107.800	237.600	1.136,00	115.750	255.100	559,00
	1 3/8	1.009,00	102.850	226.700	1.121,00	114.250	251.800	1.204,00	122.710	270.500	592,00
35		1.013,00	103.300	227.700	1.126,00	114.750	252.900	1.209,00	123.250	271.700	595,00
36		1.072,00	109.300	240.900	1.191,00	121.450	267.700	1.279,00	130.400	287.400	629,00
37		1.132,00	115.400	254.400	1.258,00	128.250	282.700	1.351,00	137.700	303.500	665,00
38		1.194,00	121.750	268.400	1.327,00	135.300	298.200	1.425,00	145.250	320.200	701,00
	1 1/2	1.201,00	122.390	269.800	1.334,00	136.010	299.800	1.432,00	146.010	321.800	705,00
39		1.258,00	128.250	282.700	1.398,00	142.500	314.100	1.501,00	153.000	337.300	738,00
40		1.323,00	134.900	297.400	1.471,00	149.900	330.400	1.579,00	160.950	354.800	777,00
41		1.390,00	141.700	312.300	1.545,00	157.500	347.200	1.659,00	169.100	372.700	816,00
	1 5/8	1.409,00	143.650	316.600	1.566,00	159.650	351.900	1.682,00	171.410	377.800	827,00
42		1.459,00	148.750	327.900	1.621,00	165.250	364.300	1.741,00	177.450	391.200	856,00
43		1.529,00	155.900	343.600	1.700,00	173.250	381.900	1.825,00	186.000	410.000	898,00
44		1.601,00	163.250	359.900	1.780,00	181.400	399.900	1.910,00	194.750	429.300	940,00
	1 3/4	1.634,00	166.600	367.200	1.816,00	185.130	408.100	1.950,00	198.770	438.200	959,00
45		1.675,00	170.750	376.400	1.861,00	189.750	418.300	1.999,00	203.750	449.100	983,00
46		1.750,00	178.400	393.300	1.945,00	198.250	437.000	2.088,00	212.850	469.200	1.027,00
47		1.827,00	186.250	410.600	2.030,00	206.950	456.200	2.180,00	222.250	489.900	1.072,00
	1 7/8	1.877,00	191.300	421.700	2.085,00	212.530	468.500	2.239,00	228.210	503.100	1.101,00
48		1.906,00	194.300	428.300	2.117,00	215.850	475.800	2.273,00	231.750	510.900	1.118,00
49		1.986,00	202.450	446.300	2.207,00	224.950	495.900	2.370,00	241.550	532.500	1.165,00
50		2.068,00	210.800	464.700	2.298,00	234.250	516.400	2.467,00	251.500	554.400	1.214,00
	2	2.135,00	217.620	479.700	2.372,00	241.790	533.000	2.547,00	259.600	572.300	1.253,00
51		2.152,00	219.350	483.500	2.391,00	243.700	537.200	2.567,00	261.650	576.800	1.263,00
52		2.237,00	228.000	502.600	2.485,00	253.350	558.500	2.668,00	272.000	599.600	1.313,00
53		2.323,00	236.850	522.100	2.582,00	263.200	580.200	2.772,00	282.600	623.000	1.364,00
	2 1/8	2.410,00	245.710	541.600	2.679,00	273.040	601.900	2.876,00	293.180	646.300	1.414,00
54		2.412,00	245.900	542.100	2.681,00	273.250	602.400	2.878,00	293.400	646.800	1.415,00
55		2.503,00	255.100	562.300	2.781,00	283.450	624.800	2.986,00	304.350	670.900	1.468,00
56		2.594,00	264.450	583.000	2.883,00	293.850	647.800	3.095,00	315.500	695.500	1.522,00
57		2.695,00	274.000	604.000	2.984,00	304.400	671.000	3.209,00	326.850	720.500	1.577,00
	2 1/4	2.702,00	275.430	607.200	3.002,00	306.010	674.600	3.223,00	328.570	724.300	1.585,00
58		2.790,00	283.650	625.300	3.090,00	315.250	695.000	3.324,00	338.450	746.100	1.633,00
59		2.887,00	293.550	647.100	3.197,00	326.150	719.000	3.438,00	350.200	772.000	1.690,00
60		2.986,00	303.600	669.300	3.307,00	337.300	743.600	3.557,00	362.150	798.300	1.747,00

DIEPA B 55

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
60		2.986,00	303.600	669.300	3.307,00	337.300	743.600	3.557,00	362.150	798.300	1.747,00
	2 3/8	3.011,00	306.940	676.600	3.345,00	341.020	751.800	3.592,00	366.150	807.200	1.766,00
61		3.086,00	313.800	691.800	3.418,00	348.650	768.600	3.676,00	374.350	825.200	1.806,00
62		3.188,00	324.150	714.600	3.530,00	360.200	794.000	3.797,00	386.750	852.600	1.866,00
63		3.292,00	334.750	737.900	3.645,00	371.950	820.000	3.921,00	399.350	880.400	1.927,00
	2 1/2	3.336,00	340.050	749.600	3.707,00	377.850	833.000	3.980,00	405.690	894.300	1.957,00
64		3.397,00	345.400	761.400	3.762,00	383.800	846.100	4.046,00	412.100	908.500	1.988,00
65		3.504,00	356.300	785.400	3.880,00	395.900	872.800	4.174,00	425.100	937.100	2.051,00
66		3.613,00	367.400	809.900	4.000,00	408.150	899.800	4.303,00	438.250	966.100	2.114,00
	2 5/8	3.678,00	374.960	826.600	4.087,00	416.620	918.400	4.388,00	447.300	986.100	2.158,00
67		3.723,00	378.550	834.500	4.122,00	420.650	927.300	4.434,00	451.600	995.500	2.179,00
68		3.835,00	389.950	859.600	4.247,00	433.300	955.200	4.568,00	465.200	1.025.500	2.245,00
69		3.949,00	401.550	885.200	4.373,00	446.100	983.400	4.703,00	479.000	1.056.000	2.311,00
	2 3/4	4.037,00	411.480	907.100	4.485,00	457.180	1.007.800	4.815,00	490.840	1.082.100	2.368,00
70		4.064,00	413.250	911.000	4.500,00	459.150	1.012.200	4.840,00	492.950	1.086.700	2.379,00
71		4.181,00	425.100	937.100	4.630,00	472.400	1.041.400				2.447,00
72		4.299,00	437.200	963.800	4.761,00	485.800	1.070.900				2.516,00
73		4.420,00	449.400	990.700	4.894,00	499.350	1.100.800				2.587,00
	2 7/8	4.423,00	449.770	991.500	4.898,00	499.740	1.101.700				2.589,00
74		4.542,00	461.800	1.018.000	5.029,00	513.100	1.131.100				2.658,00
75		4.665,00	474.400	1.045.800	5.166,00	527.100	1.162.000				2.730,00
76		4.790,00	487.100	1.073.800	5.305,00	541.250	1.193.200				2.804,00
	3	4.816,00	489.730	1.079.600	5.333,00	544.140	1.199.600				2.819,00
77		4.917,00	500.000	1.102.300	5.445,00	555.600	1.224.800				2.878,00
78		5.046,00	513.100	1.131.100	5.588,00	570.100	1.256.800				2.953,00
79		5.176,00	526.350	1.160.300	5.731,00	584.850	1.289.300				3.029,00
	3 1/8	5.225,00	531.390	1.171.500	5.786,00	590.430	1.301.600				3.058,00
80		5.308,00	539.750	1.189.900	5.878,00	599.700	1.322.000				3.107,00
81		5.442,00	553.350	1.219.900	6.025,00	614.850	1.355.400				3.185,00
82		5.577,00	567.050	1.250.100	6.176,00	630.100	1.389.100				3.264,00
	3 1/4	5.652,00	574.750	1.267.000	6.258,00	638.610	1.407.800				3.308,00
83		5.714,00	581.000	1.280.800	6.327,00	645.550	1.423.100				3.344,00
84		5.852,00	595.100	1.311.900	6.480,00	661.200	1.457.600				3.425,00
85		5.992,00	609.300	1.343.200	6.636,00	677.050	1.492.600				3.507,00
	3 3/8	6.095,00	619.820	1.366.400	6.749,00	688.680	1.518.200				3.567,00
86		6.134,00	623.750	1.375.100	6.793,00	693.050	1.527.800				3.590,00
87		6.278,00	638.350	1.407.300	6.951,00	709.250	1.563.600				3.674,00
88		6.423,00	653.100	1.439.800	7.113,00	725.650	1.599.700				3.759,00
	3 1/2	6.555,00	666.580	1.469.500	7.258,00	740.640	1.632.800				3.836,00
89		6.570,00	668.050	1.472.700	7.275,00	742.300	1.636.400				3.845,00
90		6.718,00	683.150	1.506.000	7.439,00	759.050	1.673.400				3.932,00

Upon Request

DIEPA B 55

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
89		6.570,00	668.050	1.472.700	7.275,00	742.300	1.636.400				3.845,00
90		6.718,00	683.150	1.506.000	7.439,00	759.050	1.673.400				3.932,00
91		6.868,00	698.400	1.539.600	7.605,00	776.000	1.710.700				4.020,00
92		7.020,00	713.850	1.573.700	7.773,00	793.150	1.748.500				4.109,00
	3 5/8	7.031,00	715.040	1.576.300	7.786,00	794.490	1.751.500				4.115,00
93		7.173,00	729.450	1.608.100	7.943,00	810.500	1.786.800				4.198,00
94		7.329,00	745.200	1.642.800	8.115,00	828.000	1.825.400				4.289,00
95		7.485,00	761.150	1.678.000	8.289,00	845.750	1.864.500				4.381,00
	3 3/4	7.525,00	765.210	1.686.900	8.332,00	850.230	1.874.400				4.404,00
96		7.644,00	777.300	1.713.600	8.464,00	863.600	1.903.800				4.474,00
97		7.804,00	793.550	1.749.400	8.641,00	881.750	1.943.900				4.567,00
98		7.965,00	810.000	1.785.700	8.820,00	900.000	1.984.100				4.662,00
	3 7/8	8.035,00	817.070	1.801.300	8.897,00	907.860	2.001.400				4.702,00
99		8.129,00	826.650	1.822.400	9.001,00	918.500	2.024.900				4.758,00
100		8.294,00	843.400	1.859.300	9.184,00	937.100	2.065.900				4.854,00
101		8.460,00	860.350	1.896.700	9.369,00	955.900	2.107.300				4.952,00
	4	8.561,00	870.630	1.919.300	9.480,00	967.370	2.132.600				5.011,00
102		8.629,00	877.500	1.934.500	9.555,00	974.950	2.149.300				5.050,00
103		8.799,00	894.750	1.972.500	9.744,00	994.150	2.191.700				5.150,00
104		8.970,00	912.200	2.011.000	9.933,00	1.013.600	2.234.500				5.250,00
	4 1/8	9.105,00	925.900	2.041.200	10.082,00	1.028.770	2.268.000				5.329,00
105		9.144,00	929.850	2.049.900	10.125,00	1.033.150	2.277.600				5.352,00
106		9.319,00	947.650	2.089.100	10.319,00	1.052.950	2.321.300				5.454,00
107		9.496,00	965.600	2.128.700	10.515,00	1.072.900	2.365.300				5.557,00
	4 1/4	9.665,00	982.870	2.166.800	10.702,00	1.092.070	2.407.500				5.657,00
108		9.673,00	983.750	2.168.700	10.712,00	1.093.050	2.409.700				5.662,00
109		9.854,00	1.002.050	2.209.100	10.912,00	1.113.350	2.454.400				5.767,00
110		10.036,00	1.020.500	2.249.700	11.113,00	1.133.900	2.499.700				5.873,00
111		10.219,00	1.039.150	2.290.900	11.316,00	1.154.600	2.545.400				5.981,00
	4 3/8	10.242,00	1.041.530	2.296.100	11.341,00	1.157.250	2.551.200				5.994,00
112		10.404,00	1.057.950	2.332.300	11.520,00	1.175.550	2.591.600				6.089,00
113		10.590,00	1.076.950	2.374.200	11.727,00	1.196.600	2.638.000				6.198,00
114		10.779,00	1.096.100	2.416.400	11.935,00	1.217.850	2.684.800				6.308,00
	4 1/2	10.835,00	1.101.890	2.429.200	11.999,00	1.224.330	2.699.100				6.342,00
115		10.969,00	1.115.400	2.459.000	12.146,00	1.239.300	2.732.100				6.420,00
116		11.160,00	1.134.850	2.501.800	12.358,00	1.261.000	2.780.000				6.532,00
117		11.353,00	1.154.550	2.545.300	12.572,00	1.282.850	2.828.100				6.645,00
	4 5/8	11.446,00	1.163.960	2.566.000	12.674,00	1.293.290	2.851.100				6.699,00
118		11.548,00	1.174.350	2.588.900	12.788,00	1.304.850	2.876.600				6.759,00
119		11.745,00	1.194.350	2.633.000	13.006,00	1.327.050	2.925.600				6.874,00
120		11.943,00	1.214.500	2.677.400	13.225,00	1.349.450	2.974.900				6.990,00

Upon Request

DIEPA C 45

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
6		26,80	2.650	5.800	29,60	2.950	6.500	31,90	3.200	7.000	17,00
	1/4	30,00	3.040	6.700	33,20	3.370	7.400	35,70	3.620	7.900	19,00
6.5		31,40	3.150	6.900	34,80	3.500	7.700	37,40	3.800	8.300	20,00
7		36,40	3.700	8.100	40,30	4.100	9.000	43,40	4.400	9.700	23,00
7.5		41,80	4.200	9.200	46,30	4.650	10.200	49,80	5.050	11.100	26,00
	5/16	46,80	4.750	10.400	51,80	5.280	11.600	55,80	5.670	12.500	29,00
8		47,60	4.800	10.500	52,70	5.350	11.700	56,60	5.750	12.600	30,00
8.5		53,70	5.400	11.900	59,50	6.050	13.300	63,90	6.450	14.200	34,00
9		60,20	6.100	13.400	66,70	6.800	14.900	71,70	7.250	15.900	38,00
9.5		67,10	6.800	14.900	74,30	7.550	16.600	79,90	8.100	17.800	42,00
	3/8	67,40	6.850	15.100	74,70	7.610	16.700	80,30	8.170	18.000	42,00
10		74,30	7.550	16.600	82,30	8.350	18.400	88,30	8.950	19.700	47,00
11		89,90	9.100	20.000	99,60	10.150	22.300	107,00	10.850	23.900	56,00
	7/16	91,80	9.320	20.500	102,00	10.360	22.800	109,00	11.120	24.500	57,00
12		107,00	10.850	23.900	119,00	12.050	26.500	127,00	12.950	28.500	67,00
	1/2	120,00	12.180	26.800	133,00	13.530	29.800	143,00	14.530	32.000	75,00
13		126,00	12.750	28.100	139,00	14.150	31.100	150,00	15.200	33.500	79,00
14		146,00	14.800	32.600	161,00	16.450	36.200	173,00	17.650	38.900	91,00
	9/16	152,00	15.420	33.900	168,00	17.130	37.700	181,00	18.390	40.500	95,00
15		167,00	17.000	37.400	185,00	18.850	41.500	199,00	20.250	44.600	105,00
	5/8	187,00	19.040	41.900	207,00	21.150	46.600	223,00	22.710	50.000	117,00
16		190,00	19.300	42.500	211,00	21.450	47.200	227,00	23.000	50.700	119,00
17		215,00	21.800	48.000	238,00	24.250	53.400	256,00	26.000	57.300	135,00
18		241,00	24.450	53.900	267,00	27.200	59.900	287,00	29.200	64.300	151,00
19		268,00	27.250	60.000	297,00	30.300	66.700	319,00	32.500	71.600	168,00
	3/4	270,00	27.420	60.400	299,00	30.460	67.100	321,00	32.700	72.000	169,00
20		297,00	30.200	66.500	329,00	33.550	73.900	354,00	36.000	79.300	186,00
21		328,00	33.300	73.400	363,00	37.000	81.500	390,00	39.700	87.500	205,00
22		360,00	36.550	80.500	398,00	40.600	89.500	428,00	43.600	96.100	225,00
	7/8	367,00	37.320	82.200	407,00	41.470	91.400	437,00	44.520	98.100	230,00
23		393,00	39.950	88.000	435,00	44.400	97.800	468,00	47.650	105.000	246,00
24		428,00	43.500	95.900	474,00	48.350	106.500	509,00	51.900	114.400	268,00
25		464,00	47.200	104.000	514,00	52.450	115.600	553,00	56.300	124.100	291,00
	1	479,00	48.750	107.400	531,00	54.170	119.400	571,00	58.150	128.100	300,00
26		502,00	51.050	112.500	556,00	56.750	125.100	599,00	60.900	134.200	315,00
27		542,00	55.050	121.300	600,00	61.200	134.900	646,00	65.650	144.700	339,00
28		583,00	59.250	130.600	645,00	65.800	145.000	694,00	70.650	155.700	365,00
	1 1/8	607,00	61.710	136.000	672,00	68.560	151.100	723,00	73.600	162.200	380,00
29		625,00	63.550	140.100	692,00	70.600	155.600	744,00	75.750	166.900	391,00
30		669,00	68.000	149.900	741,00	75.550	166.500	796,00	81.100	178.700	419,00
31		714,00	72.600	160.000	791,00	80.700	177.900	851,00	86.600	190.900	447,00

DIEPA C 45

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
	1 1/4	749,00	76.180	167.900	830,00	84.650	186.600	892,00	90.870	200.300	469,00
32		761,00	77.350	170.500	843,00	85.950	189.400	906,00	92.250	203.300	477,00
33		809,00	82.300	181.400	896,00	91.400	201.500	964,00	98.100	216.200	507,00
34		859,00	87.350	192.500	951,00	97.050	213.900	1.023,00	104.200	229.700	538,00
	1 3/8	907,00	92.170	203.100	1.004,00	102.420	225.700	1.080,00	109.940	242.300	568,00
35		910,00	92.550	204.000	1.008,00	102.850	226.700	1.085,00	110.400	243.300	570,00
36		963,00	97.900	215.800	1.067,00	108.800	239.800	1.147,00	116.800	257.400	603,00
37		1.018,00	103.450	228.000	1.126,00	114.950	253.400	1.212,00	123.400	272.000	637,00
38		1.073,00	109.100	240.500	1.189,00	121.200	267.100	1.278,00	130.150	286.900	672,00
	1 1/2	1.079,00	109.700	241.800	1.195,00	121.890	268.700	1.285,00	130.850	288.400	676,00
39		1.130,00	114.900	253.300	1.252,00	127.650	281.400	1.346,00	137.050	302.100	708,00
40		1.189,00	120.850	266.400	1.316,00	134.300	296.000	1.416,00	144.200	317.900	745,00

DIEPA K 43

Rope Diameter		Minimum Breaking Force 1770 N/mm²			Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²			Weight
(mm)	(inch)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kN)	(kp)	(lbs)	(kg/100 m)
18		256,00	26.000	57.300	284,00	28.900	63.700				157,00
19		286,00	29.000	63.900	316,00	32.200	70.900				175,00
	3/4	287,00	29.160	64.200	318,00	32.400	71.400				176,00
20		316,00	32.100	70.700	350,00	35.650	78.500				194,00
21		349,00	35.400	78.000	386,00	39.350	86.700				214,00
22		383,00	38.850	85.600	423,00	43.200	95.200				234,00
	7/8	390,00	39.690	87.500	432,00	44.100	97.200				239,00
23		418,00	42.450	93.500	463,00	47.200	104.000				256,00
24		456,00	46.250	101.900	504,00	51.400	113.300				279,00
25		494,00	50.200	110.600	547,00	55.750	122.900				303,00
	1	510,00	51.850	114.300	565,00	57.610	127.000				312,00
26		535,00	54.300	119.700	592,00	60.300	132.900				327,00
27		576,00	58.550	129.000	638,00	65.050	143.400				353,00
28		620,00	62.950	138.700	686,00	70.000	154.300				380,00
	1 1/8	645,00	65.620	144.600	715,00	72.910	160.700				395,00
29		665,00	67.550	148.900	736,00	75.050	165.400				407,00
30		711,00	72.300	159.300	788,00	80.300	177.000				436,00
31		759,00	77.200	170.100	841,00	85.800	189.100				465,00
	1 1/4	797,00	81.020	178.600	882,00	90.020	198.400				488,00
32		809,00	82.250	181.300	896,00	91.400	201.500				496,00
33		861,00	87.500	192.900	953,00	97.200	214.200				527,00
34		914,00	92.850	204.600	1.012,00	103.200	227.500				560,00
	1 3/8	964,00	98.030	216.100	1.068,00	108.920	240.100				591,00
35		969,00	98.400	216.900	1.072,00	109.350	241.000				593,00
36		1.024,00	104.150	229.600	1.135,00	115.700	255.000				628,00
37		1.082,00	110.000	242.500	1.199,00	122.250	269.500				663,00
38		1.141,00	116.000	255.700	1.264,00	128.900	284.100				699,00
	1 1/2	1.147,00	116.670	257.200	1.270,00	129.630	285.700				703,00
39		1.202,00	122.200	269.400	1.331,00	135.800	299.300				736,00
40		1.265,00	128.550	283.400	1.400,00	142.850	314.900				775,00
41		1.329,00	135.050	297.700	1.472,00	150.100	330.900				814,00
	1 5/8	1.347,00	136.920	301.800	1.491,00	152.130	335.300				825,00
42		1.394,00	141.750	312.500	1.544,00	157.500	347.200				854,00
43		1.462,00	148.600	327.600	1.619,00	165.100	363.900				895,00
44		1.531,00	155.550	342.900	1.694,00	172.850	381.000				937,00
	1 3/4	1.562,00	158.800	350.000	1.729,00	176.440	388.900				957,00
45		1.600,00	162.750	358.700	1.772,00	180.800	398.500				981,00
46		1.672,00	170.050	374.800	1.852,00	188.900	416.400				1.025,00

Upon Request

OLIVEIRA DP 8 K PPI

Rope Diameter		Minimum Breaking Force 2160 N/mm²				Weight	
(mm)	(inch)	(kN)	(ton)	(lbs)	t (2000 lbs)	(kg/m)	(lb/ft)
6.4		41,40	4,22	9.307	4,65	0,19	0,13
7		50,50	5,15	11.353	5,68	0,23	0,16
7.2		53,20	5,42	11.960	5,98	0,25	0,16
8	5/16	64,10	6,54	14.410	7,21	0,30	0,20
8.5		73,30	7,47	16.478	8,24	0,34	0,23
9		82,30	8,39	18.502	9,25	0,39	0,26
9.53	3/8	92,20	9,40	20.727	10,36	0,43	0,29
10		102,40	10,44	23.020	11,51	0,48	0,32
11	7/16	123,10	12,55	27.674	13,84	0,57	0,38
12		147,30	15,02	33.114	16,56	0,68	0,46
12.7	1/2	159,00	16,21	35.745	17,87	0,76	0,51
13		176,30	17,98	39.634	19,82	0,82	0,55
14		202,60	20,66	45.546	22,77	0,93	0,63
15		236,90	24,16	53.262	26,63	1,09	0,73
15.88	5/8	254,40	25,94	57.191	28,60	1,21	0,82
16		263,90	26,91	59.325	29,66	1,22	0,82
17		302,80	30,88	68.072	34,04	1,40	0,94
18		335,30	34,19	75.374	37,69	1,54	1,04
19	3/4	375,80	38,32	84.491	42,25	1,73	1,16
20		410,90	41,90	92.364	46,18	1,90	1,27
22		500,80	51,07	112.584	56,29	2,31	1,55
22.23	7/8	503,00	51,29	113.079	56,54	2,35	1,58
24		605,70	61,76	136.167	68,08	2,81	1,89
25.4	1	649,00	66,18	145.901	72,95	3,06	2,05
26		701,10	71,49	157.618	78,81	3,23	2,17
28		809,50	82,55	181.983	90,99	3,74	2,51
28.58	1 1/8	820,00	83,62	184.343	92,17	3,89	2,61
30		942,10	96,06	211.782	105,89	4,34	2,92
31.75	1 1/4	1.023,00	104,32	229.980	114,99	4,85	3,26
32		1.066,20	108,72	239.691	119,85	4,90	3,29
34		1.220,30	124,44	274.334	137,17	5,62	3,77
34.93	1 3/8	1.231,00	125,53	276.740	138,37	5,84	3,93
36		1.357,60	138,44	305.201	152,60	6,25	4,20
38	1 1/2	1.523,60	155,36	342.519	171,26	7,00	4,71

OLIVEIRA HD 8 K PPI

Rope Diameter		Minimum Breaking Force 1960 N/mm²				Minimum Breaking Force 2160 N/mm²				Weight	
(mm)	(inch)	(kN)	(ton)	(lbs)	(ton, 2000 lbs)	(kN)	(ton)	(lbs)	(ton, 2000 lbs)	(kg/m)	(lb/ft)
8	5/16	55,80	5,69	12.544	6,27	57,70	5,88	12.971	6,49	0,30	0,20
9		70,10	7,15	15.763	7,88	73,60	7,50	16.535	8,27	0,37	0,25
9.53	3/8	74,00	7,54	16.627	8,31	79,60	8,12	17.899	8,95	0,39	0,26
10		86,70	8,84	19.489	9,74	92,40	9,42	20.772	10,39	0,46	0,31
11	7/16	107,00	10,92	24.064	12,03	112,00	11,42	25.179	12,59	0,57	0,38
12		126,40	12,89	28.415	14,21	132,60	13,52	29.800	14,90	0,65	0,44
12.7	1/2	138,00	14,07	31.015	15,51	144,70	14,76	32.530	16,26	0,71	0,48
13		149,00	15,19	33.491	16,75	156,20	15,93	35.123	17,56	0,77	0,52
14		174,80	17,82	39.297	19,65	187,00	19,07	42.039	21,02	0,90	0,61
15		202,70	20,67	45.569	22,78	214,00	21,82	48.109	24,05	1,03	0,69
15.88	5/8	220,00	22,43	49.458	24,73	235,00	23,96	52.830	26,42	1,15	0,77
16		229,40	23,39	51.571	25,79	242,40	24,72	54.494	27,25	1,16	0,78
18		288,20	29,39	64.790	32,39	307,00	31,31	69.016	34,51	1,49	1,00
19	3/4	323,50	32,99	72.726	36,36	342,00	34,87	76.885	38,44	1,64	1,10
20		355,50	36,25	79.920	39,96	379,00	38,65	85.203	42,60	1,84	1,23
22		433,70	44,23	97.500	48,75	458,50	46,75	103.075	51,54	2,21	1,49
22.23	7/8	435,00	44,36	97.792	48,90	462,00	47,11	103.862	51,93	2,26	1,52
24		514,30	52,44	115.619	57,81	556,00	56,70	124.994	62,50	2,63	1,77
25		558,20	56,92	125.488	62,74	602,00	61,39	135.335	67,67	2,86	1,92
25.4	1	572,00	58,33	128.591	64,30	611,00	62,30	137.358	68,68	2,94	1,98
26		607,80	61,98	136.639	68,32	655,00	66,79	147.250	73,62	3,11	2,09
28		697,30	71,10	156.759	78,38	748,00	76,27	168.157	84,08	3,57	2,40
28.58	1 1/8	707,00	72,09	158.940	79,47	751,00	76,58	168.831	84,42	3,67	2,46
30		803,00	81,88	180.522	90,26	864,00	88,10	194.235	97,12	4,12	2,77
31.75	1 1/4	895,00	91,26	201.204	100,60	951,00	96,98	213.793	106,90	4,59	3,09
32		911,00	92,90	204.801	102,40	968,00	98,71	217.615	108,81	4,67	3,14
34		1.024,90	104,51	230.407	115,20	1.091,00	111,25	245.267	122,63	5,29	3,56
34.93	1 3/8	1.057,00	107,78	237.623	118,81	1.109,00	113,90	249.313	124,66	5,51	3,70
36		1.150,00	117,27	258.530	129,27	1.217,00	124,10	273.592	136,80	5,84	3,93
38	1 1/2	1.270,60	129,56	285.634	142,82	1.332,50	135,88	299.553	149,78	6,58	4,42
40		1.409,80	143,76	316.946	158,47	1.478,60	150,77	332.392	166,20	7,30	4,90
41.28	1 5/8	1.464,30	149,32	329.183	164,59	1.535,60	156,59	345.226	172,61	7,47	5,02
42		1.538,40	156,87	345.835	172,92	1.613,30	164,51	362.688	181,34	7,98	5,36
44		1.735,60	176,98	390.183	195,09	1.820,20	185,61	409.198	204,60	9,00	6,05
44.45	1 3/4	1.743,40	177,78	391.939	195,97	1.828,40	186,44	411.038	205,52	9,06	6,09
46		1.883,20	192,03	423.356	211,68	1.975,00	201,39	443.987	221,99	9,78	6,57
47.63	1 7/8	1.964,00	200,27	441.525	220,76	2.112,00	215,36	474.796	237,40	10,40	6,99
48		2.055,30	209,58	462.054	231,03	2.155,50	219,80	484.571	242,29	10,61	7,13
50		2.252,90	229,73	506.469	253,23	2.362,70	240,93	531.150	265,57	11,62	7,81
50.8	2	2.283,40	232,84	513.324	256,66	2.394,70	244,19	538.341	269,17	11,87	7,98
52		2.426,90	247,48	545.594	272,80	2.545,20	259,54	572.182	286,09	12,51	8,41

OLIVEIRA NR MAXIPACT PPI

Rope Diameter		Minimum Breaking Force 1960 N/mm²				Minimum Breaking Force 2160 N/mm²				Weight	
(mm)	(inch)	(kN)	(ton)	(lbs)	(ton, 2000 lbs)	(kN)	(ton)	(lbs)	(ton, 2000 lbs)	(kg/m)	(lb/ft)
12.7	1/2	148,00	15,09	33.272	16,64	155,90	15,90	35.048	17,52	0,77	0,52
13		157,80	16,09	35.468	17,73	165,70	16,90	37.248	18,62	0,82	0,55
14		183,30	18,69	41.198	20,60	192,50	19,63	43.266	21,63	0,95	0,64
15		209,60	21,37	47.116	23,56	220,60	22,50	49.603	24,80	1,09	0,73
15.88	5/8	230,00	23,45	51.706	25,85	241,00	24,58	54.179	27,09	1,20	0,81
16		239,40	24,41	53.820	26,91	251,40	25,64	56.521	28,26	1,25	0,84
17		269,70	27,50	60.637	30,32	283,40	28,90	63.719	31,86	1,40	0,94
18		302,50	30,85	68.015	34,01	317,70	32,40	71.428	35,71	1,57	1,06
19	3/4	338,90	34,55	76.180	38,09	355,90	36,29	80.002	40,00	1,76	1,18
20		374,20	38,16	84.120	42,06	393,00	40,07	88.341	44,17	1,94	1,30
21		412,20	42,03	92.659	46,33	432,90	44,14	97.309	48,65	2,13	1,43
22		452,00	46,09	101.610	50,81	474,70	48,40	106.709	53,35	2,34	1,57
22.23	7/8	458,00	46,70	102.962	51,48	481,00	49,05	108.133	54,07	2,37	1,59
23		494,80	50,46	111.236	55,62	519,60	52,99	116.818	58,41	2,56	1,72
24		540,30	55,09	121.461	60,73	567,40	57,86	127.556	63,78	2,79	1,87
25		587,01	59,87	131.985	65,99	616,60	62,87	138.608	69,30	3,04	2,04
25.4	1	595,40	60,71	133.851	66,93	625,30	63,76	140.573	70,29	3,08	2,07
26		634,20	64,68	142.584	71,29	666,10	67,92	149.739	74,87	3,27	2,20
27		683,60	69,70	153.670	76,84	717,90	73,20	161.382	80,69	3,54	2,38
28		734,00	74,85	165.019	82,51	770,90	78,61	173.299	86,65	3,80	2,55
28.58	1 1/8	768,30	78,34	172.721	86,36	806,80	82,27	181.376	90,69	3,98	2,67
29		790,00	80,56	177.599	88,80	824,40	84,07	185.335	92,67	4,07	2,73
30		846,30	86,30	190.262	95,13	888,80	90,63	199.809	99,90	4,39	2,95
31.75	1 1/4	930,00	94,83	209.072	104,54	975,00	99,42	219.189	109,59	4,84	3,25
32		959,60	97,85	215.730	107,87	1.007,80	102,76	226.556	113,28	4,98	3,34
34		1.079,30	110,06	242.645	121,32	1.133,00	115,53	254.710	127,35	5,59	3,75
34.93	1 3/8	1.146,80	116,94	257.811	128,91	1.202,00	122,57	270.220	135,11	5,94	3,99
36		1.221,50	124,56	274.607	137,30	1.282,80	130,81	288.386	144,19	6,31	4,24
38	1 1/2	1.352,40	137,90	304.026	152,01	1.418,40	144,64	318.869	159,43	7,01	4,71
40		1.495,00	152,45	336.094	168,05	1.569,00	159,99	352.724	176,36	7,74	5,20
41.28	1 5/8	1.602,10	163,37	360.166	180,08	1.682,50	171,57	378.241	189,12	8,30	5,58
42		1.645,20	167,76	369.850	184,92	1.730,00	176,41	388.913	194,46	8,52	5,72
44		1.818,60	185,45	408.839	204,42	1.909,90	194,75	429.354	214,68	9,37	6,30
44.45	1 3/4	1.838,60	187,49	413.334	206,67	1.928,20	196,62	433.477	216,74	9,51	6,39
46		1.995,70	203,50	448.651	224,33	2.095,80	213,72	471.165	235,58	10,33	6,94
47.63	1 7/8	2.095,00	213,63	470.975	235,49	2.190,00	223,32	492.331	246,17	10,86	7,29
48		2.184,30	222,74	491.048	245,52	2.293,90	233,91	515.689	257,84	11,32	7,61
50		2.331,70	237,77	524.194	262,10	2.451,20	249,95	551.042	275,52	12,03	8,09
50.8	2	2.400,10	244,74	539.564	269,78	2.517,10	256,67	565.866	282,93	12,42	8,34
52		2.548,80	259,90	572.988	286,49	2.676,40	272,91	601.670	300,84	13,17	8,85
54	2 1/8	2.731,20	278,51	614.007	307,00	2.868,30	292,48	644.818	322,41	14,34	9,63

OLIVEIRA NR15 MAXILIFT PPI

Rope Diameter		Minimum Breaking Force 1960 N/mm²				Minimum Breaking Force 2160 N/mm²				Weight	
(mm)	(inch)	(kN)	(ton)	(lbs)	(ton, 2000 lbs)	(kN)	(ton)	(lbs)	(ton, 2000 lbs)	(kg/m)	(lb/ft)
10		92,20	9,40	20.727	10,36	96,90	9,88	21.784	10,89	0,48	0,32
11	7/16	108,40	11,05	24.365	12,18	113,90	11,61	25.604	12,80	0,56	0,38
12		130,80	13,34	29.401	14,70	137,30	14,01	30.876	15,44	0,68	0,46
12.7	1/2	145,30	14,82	32.665	16,33	152,60	15,56	34.306	17,15	0,76	0,51
13		152,40	15,54	34.257	17,13	160,00	16,32	35.976	17,99	0,79	0,53
14		178,80	18,23	40.187	20,09	187,70	19,14	42.204	21,10	0,93	0,62
15		206,30	21,03	46.367	23,18	216,60	22,09	48.694	24,35	1,08	0,72
15.88	5/8	229,00	23,35	51.481	25,74	240,00	24,47	53.954	26,98	1,19	0,80
16		234,10	23,87	52.622	26,31	245,80	25,07	55.262	27,63	1,22	0,82
17		265,40	27,06	59.663	29,83	278,70	28,42	62.657	31,33	1,38	0,93
18		298,40	30,43	67.079	33,54	313,40	31,95	70.445	35,22	1,55	1,04
19	3/4	329,50	33,60	74.082	37,04	346,10	35,29	77.800	38,90	1,72	1,15
20		370,00	37,73	83.183	41,59	388,60	39,62	87.358	43,68	1,92	1,29
21		406,30	41,43	91.348	45,67	426,70	43,51	95.932	47,97	2,11	1,42
22		446,30	45,51	100.337	50,17	468,70	47,80	105.372	52,69	2,31	1,55
22.23	7/8	454,70	46,37	102.221	51,11	477,50	48,69	107.346	53,67	2,35	1,58
23		487,00	49,66	109.476	54,74	511,40	52,15	114.969	57,48	2,53	1,70
24		531,50	54,19	119.476	59,74	558,10	56,91	125.471	62,74	2,76	1,85
25		576,30	58,76	129.550	64,78	605,20	61,71	136.051	68,03	2,99	2,01
25.4	1	594,90	60,66	133.739	66,87	624,80	63,71	140.461	70,23	3,08	2,07
26		624,10	63,64	140.300	70,15	655,40	66,83	147.340	73,67	3,22	2,17
27		669,10	68,23	150.412	75,21	702,60	71,65	157.960	78,98	3,47	2,33
28		721,00	73,53	162.097	81,05	757,20	77,22	170.231	85,12	3,73	2,50
28.58	1 1/8	756,20	77,11	170.000	85,00	794,10	80,98	178.521	89,26	3,92	2,63
30		828,80	84,52	186.329	93,16	870,40	88,76	195.680	97,84	4,30	2,89
31.75	1 1/4	920,00	93,81	206.824	103,41	965,00	98,40	216.941	108,47	4,79	3,22
32		935,50	95,39	210.300	105,15	982,40	100,18	220.852	110,43	4,84	3,25
34		1.063,90	108,49	239.176	119,59	1.117,30	113,93	251.178	125,59	5,51	3,70
34,93	1 3/8	1.119,40	114,15	251.651	125,83	1.175,60	119,88	264.285	132,14	5,80	3,90
36		1.202,50	122,62	270.337	135,17	1.262,90	128,78	283.902	141,95	6,24	4,19
38	1 1/2	1.330,80	135,70	299.176	149,59	1.397,60	142,51	314.189	157,09	6,91	4,64
40		1.477,90	150,70	332.247	166,12	1.552,10	158,27	348.919	174,46	7,66	5,15
41.28	1 5/8	1.586,90	161,82	356.749	178,37	1.666,50	169,94	374.644	187,32	8,23	5,53
42		1.644,20	167,66	369.625	184,81	1.726,70	176,07	388.173	194,09	8,49	5,71
44		1.780,50	181,56	400.273	200,14	1.868,70	190,56	420.111	210,06	9,20	6,18
44.45	1 3/4	1.868,30	190,51	420.010	210,01	1.962,00	200,07	441.075	220,54	9,69	6,51
46		1.949,40	198,78	438.239	219,12	2.047,20	208,76	460.230	230,12	10,13	6,81
47.63	1 7/8	2.078,00	211,90	467.153	233,58	2.180,00	222,30	490.083	245,04	10,78	7,24
48		2.106,30	214,79	473.520	236,76	2.212,00	225,56	497.282	248,64	10,90	7,33
50		2.314,90	236,05	520.412	260,21	2.431,10	247,90	546.526	273,26	12,02	8,08
50.8	2	2.372,20	241,90	533.292	266,65	2.491,30	254,04	560.066	280,03	12,29	8,26

OLIVEIRA TOWERLIFT 15

Rope Diameter		Minimum Breaking Force 1960 N/mm²				Minimum Breaking Force 2160 N/mm²				Weight	
(mm)	(inch)	(kN)	(ton)	(lbs)	(ton, 2000 lbs)	(kN)	(ton)	(lbs)	(ton, 2000 lbs)	(kg/m)	(lb/ft)
8	5/16	51,60	5,26	11.600	5,80	53,50	5,46	12.027	6,01	0,27	0,18
9		64,30	6,56	14.455	7,23	67,50	6,88	15.175	7,59	0,35	0,24
9.53	3/8	76,30	7,78	17.153	8,58	80,00	8,16	17.985	8,99	0,40	0,27
10		83,70	8,54	18.817	9,41	87,80	8,95	19.738	9,87	0,43	0,29
11	7/16	101,50	10,35	22.818	11,41	106,40	10,85	23.920	11,96	0,53	0,36
12		120,80	12,32	27.157	13,58	126,60	12,91	28.461	14,23	0,62	0,42
12.7	1/2	137,00	13,97	30.799	15,40	144,00	14,68	32.372	16,19	0,73	0,49
13		142,40	14,52	32.013	16,01	149,30	15,22	33.564	16,78	0,75	0,50
14		164,70	16,79	37.026	18,51	172,70	17,61	38.824	19,41	0,85	0,57
15		193,40	19,72	43.478	21,74	202,80	20,68	45.591	22,80	1,01	0,68
15.88	5/8	213,00	21,72	47.884	23,94	222,00	22,64	49.908	24,95	1,13	0,76
16		218,90	22,32	49.211	24,61	229,60	23,41	51.616	25,81	1,14	0,77
17		247,70	25,26	55.685	27,84	259,80	26,49	58.405	29,20	1,28	0,86
18		277,40	28,29	62.362	31,18	290,90	29,66	65.397	32,70	1,44	0,97
19	3/4	310,20	31,63	69.736	34,87	325,40	33,18	73.153	36,58	1,61	1,08
20		339,60	34,63	76.345	38,17	356,20	36,32	80.077	40,04	1,80	1,21
21		377,20	38,46	84.798	42,40	395,60	40,34	88.934	44,47	1,96	1,31
22		421,40	42,97	94.734	47,37	441,90	45,06	99.343	49,67	2,19	1,47
22.23	7/8	435,00	44,36	97.792	48,90	455,00	46,40	102.288	51,14	2,26	1,52
23		459,80	46,89	103.367	51,68	482,20	49,17	108.403	54,20	2,38	1,60
24		496,90	50,67	111.708	55,85	521,20	53,15	117.170	58,59	2,58	1,74
25		540,90	55,16	121.599	60,80	567,20	57,84	127.512	63,76	2,80	1,88
25.4	1	560,00	57,10	125.893	62,95	590,00	60,16	132.637	66,32	2,92	1,96
26		578,00	58,94	129.940	64,97	606,20	61,82	136.279	68,14	2,99	2,01
27		634,60	64,71	142.664	71,33	665,50	67,86	149.610	74,81	3,29	2,21
28		684,60	69,81	153.904	76,95	717,90	73,21	161.390	80,70	3,54	2,38
28.58	1 1/8	710,00	72,40	159.614	79,81	744,00	75,87	167.258	83,63	3,69	2,48
30		782,10	79,75	175.823	87,91	820,30	83,65	184.411	92,21	4,05	2,72
31.75	1 1/4	870,00	88,72	195.584	97,79	913,00	93,10	205.251	102,63	4,53	3,04
32		877,80	89,51	197.337	98,67	920,60	93,88	206.959	103,48	4,54	3,05
34		1.009,30	102,92	226.900	113,45	1.058,50	107,94	237.960	118,98	5,21	3,50
34.93	1 3/8	1.060,00	108,09	238.297	119,15	1.112,00	113,39	249.987	124,99	5,54	3,73
36		1.124,90	114,71	252.888	126,44	1.179,80	120,31	265.230	132,61	5,82	3,91
38	1 1/2	1.240,90	126,54	278.965	139,48	1.301,40	132,71	292.566	146,28	6,40	4,30
40		1.371,30	139,83	308.280	154,14	1.438,20	146,66	323.320	161,66	7,14	4,80
41.28	1 5/8	1.483,00	151,22	333.392	166,70	1.555,00	158,57	349.578	174,79	7,70	5,17
42		1.503,90	153,36	338.090	169,05	1.577,20	160,83	354.569	177,28	7,83	5,26
43		1.611,80	164,36	362.347	181,17	1.690,30	172,36	379.994	190,00	8,29	5,57
44		1.678,00	171,11	377.229	188,61	1.759,80	179,45	395.619	197,81	8,64	5,80
44.45	1 3/4	1.719,00	175,29	386.446	193,22	1.802,00	183,75	405.106	202,55	8,92	5,99
45		1.749,40	178,39	393.281	196,64	1.834,60	187,08	412.434	206,22	9,09	6,11

OLIVEIRA LP5

Rope Diameter	Metallic Cross - Section Area	Calculated Breaking Force				Minimum Breaking Force				Weight
		1960 N/mm²		2160 N/mm²		1960 N/mm²		2160 N/mm²		
(mm)	(mm²)	(kN)	(ton)	(kN)	(ton)	(kN)	(ton)	(kN)	(ton)	(kg/m)
6	17,9	35,1	3,58	38,6	3,94	30,20	3,08	31,7	3,23	0,154
8.3	29,9	-	-	64,6	6,59	-	-	54,3	5,63	0,262
9	36,9	-	-	79,6	8,12	-	-	66,9	6,82	0,324
9.5	38,1	-	-	82,3	8,39	-	-	69,1	7,05	0,338
10.3	45,2	-	-	97,6	9,95	-	-	82,0	8,36	0,400
11.5	55,6	109	11,1	-	-	93,9	9,58	-	-	0,494
11.6	56,4	111	11,3	-	-	95,2	9,71	-	-	0,501
14	87,0	-	-	188	19,2	-	-	158	16,1	0,773
16.3	111	218	22,2	-	-	188	19,2	-	-	0,987

OLIVEIRA SUPER YELLOW - FC

Rope Diameter	Minimum Breaking Force 1570 N/mm²	Weight
(mm)	(ton)	(kg/m)
14	11,82	0,77
16	15,90	1,01
18	20,18	1,29
19	22,12	1,43
20	23,96	1,55
21	26,87	1,72
22	29,87	1,90
24	35,47	2,26
25	38,63	2,47
26	42,30	2,70
28	47,30	3,05
30	51,48	3,34
30	51,48	3,34
32	61,16	3,95
34	69,62	4,51
36	77,47	5,04

OLIVEIRA ZINCAL COMPACT - FC

Rope Diameter	Minimum Breaking Force 1570 N/mm²	Weight
(mm)	(ton)	(kg/m)
19	23,00	1,46
20	25,32	1,61
22	30,33	1,93
24	36,14	2,29
25	39,79	2,52
26	42,40	2,69
28	50,28	3,18
30	56,95	3,62
32	64,82	4,12
34	73,12	4,64
36	82,06	5,21

OLIVEIRA ZINCAL COMPACT - IWRC

Rope Diameter	Minimum Breaking Force 1570 N/mm²	Weight
(mm)	(ton)	(kg/m)
20	28,75	28.720
22	34,56	34.550
24	41,28	41.330
25	45,06	45.070
26	48,22	48.220
28	56,88	56.940
30	64,53	64.540
32	73,70	73.710
34	83,38	83.400
36	93,07	93.110
38	103,47	103.460
40	115,29	115.360
42	126,71	126.700
44	139,35	139.440

CASAR TURBOLITE M

Rope Diameter	Minimum Breaking Load				Metallic Area	Weight
	1770 N/mm²		1960 N/mm²			
(mm)	(kN)	(ton)	(kN)	(ton)	(mm²)	(kg/m)
20	310,0	31,60	343,2	34,98	191,8	1,67
21	341,7	34,83	378,4	38,57	211,4	1,85
22	375,1	38,24	415,3	42,33	232,0	2,03
23	409,9	41,78	453,9	46,27	253,6	2,21
24	446,4	45,50	494,3	50,39	276,1	2,41
25	484,3	49,37	536,3	54,67	299,6	2,61
26	523,9	53,40	580,1	59,13	324,1	2,83
27	564,9	57,58	625,6	63,77	349,5	3,05
28	607,6	61,94	672,8	68,58	375,8	3,28
29	651,7	66,43	721,7	73,57	403,2	3,52
30	697,4	71,09	772,3	78,73	431,4	3,77
31	744,7	75,91	824,7	84,07	460,7	4,03
32	793,5	80,89	878,7	89,57	490,9	4,29
33	843,9	86,02	934,5	95,26	522,0	4,56
34	895,8	91,31	992,0	101,1	554,2	4,85
35	949,3	96,77	1.051	107,2	587,2	5,13
36	1.004	102,4	1.112	113,4	621,3	5,43
37	1.061	108,1	1.175	119,8	656,3	5,73
38	1.119	114,1	1.239	126,3	692,2	6,05
39	1.179	120,2	1.305	133,1	729,1	6,37
40	1.240	126,4	1.373	140,0	767,0	6,70
41	1.303	132,8	1.443	147,0	805,8	7,04
42	1.367	139,4	1.514	154,3	845,6	7,38
43	1.433	146,1	1.587	161,7	886,4	7,75
44	1.500	152,9	1.661	169,4	928,1	8,11
45	1.569	160,0	1.738	177,1	970,7	8,48
46	1.640	167,2	1.816	185,1	1.014	8,86
47	1.712	174,5	1.896	193,2	1.059	9,25
48	1.786	182,0	1.977	201,5	1.105	9,65
49	1.861	189,7	2.060	210,0	1.151	10,1
50	1.937	197,5	2.145	218,7	1.198	10,5
51	2.016	205,5	2.232	227,5	1.247	10,9
52	2.095	213,6	2.320	236,5	1.296	11,3
53	2.177	221,9	2.411	245,7	1.347	11,8
54	2.260	230,4	2.502	255,1	1.398	12,2
55	2.344	239,0	2.596	264,6	1.450	12,7
56	2.430	247,7	2.691	274,3	1.503	13,1
57	2.518	256,7	2.788	284,2	1.558	13,6
58	2.607	265,7	2.887	294,3	1.613	14,1
59	2.698	275,0	2.987	304,5	1.669	14,6
60	2.790	284,4	3.089	314,9	1.726	15,1

CASAR STRATOPLAST M

Rope Diameter	Minimum Breaking Load				Metallic Area	Weight
	1770 N/mm²		1960 N/mm²			
(mm)	(kN)	(ton)	(kN)	(ton)	(mm²)	(kg/m)
25	446,5	45,53	494,5	50,42	293,8	2,59
26	483,0	49,25	534,8	54,53	317,7	2,80
27	520,8	53,11	576,7	58,81	342,6	3,02
28	560,1	57,12	620,2	63,25	368,5	3,25
29	600,8	61,27	665,3	67,85	395,3	3,49
30	643,0	65,57	712,0	72,61	423,0	3,73
31	686,6	70,01	760,3	77,53	451,7	3,98
32	731,6	74,60	810,1	82,61	481,3	4,24
33	778,0	79,34	861,5	87,85	511,8	4,51
34	825,9	84,22	914,5	93,26	543,3	4,79
35	875,2	89,24	969,1	98,82	575,8	5,08
36	925,9	94,42	1.025	104,6	609,1	5,37
37	978,1	99,73	1.083	110,4	643,4	5,68
38	1.032	105,2	1.142	116,5	678,7	5,99
39	1.087	110,8	1.203	122,7	714,9	6,31
40	1.143	116,6	1.266	129,1	752,0	6,63
41	1.201	122,5	1.330	135,6	790,1	6,97
42	1.260	128,5	1.396	142,3	829,1	7,31
43	1.321	134,7	1.463	149,2	869,0	7,66
44	1.383	141,0	1.532	156,2	909,9	8,03
45	1.447	147,5	1.602	163,4	951,8	8,39
46	1.512	154,2	1.674	170,7	994,5	8,77
47	1.578	160,9	1.748	178,2	1.038	9,16
48	1.646	167,9	1.823	185,9	1.083	9,55
49	1.715	174,9	1.900	193,7	1.129	9,95
50	1.786	182,1	1.978	201,7	1.175	10,4
51	1.858	189,5	2.058	209,8	1.223	10,8
52	1.932	197,0	2.139	218,1	1.271	11,2
53	2.007	204,6	2.222	226,6	1.320	11,6
54	2.083	212,4	2.307	235,2	1.371	12,1
55	2.161	220,4	2.393	244,0	1.422	12,5
56	2.241	228,5	2.481	253,0	1.474	13,0
57	2.321	236,7	2.570	262,1	1.527	13,5
58	2.403	245,1	2.661	271,4	1.581	14,0
59	2.487	253,6	2.754	280,8	1.636	14,4
60	2.572	262,3	2.848	290,4	1.692	14,9
61	2.658	271,1	2.944	300,2	1.749	15,4
62	2.746	280,0	3.041	310,1	1.807	15,9
63	2.836	289,2	3.140	320,2	1.865	16,5
64	2.926	298,4	3.241	330,4	1.925	17,0
65	3.019	307,8	3.343	340,8	1.986	17,5

CASAR TURBOPLAST M

Rope Diameter	Minimum Breaking Load				Metallic Area	Weight
	1770 N/mm²		1960 N/mm²			
(mm)	(kN)	(ton)	(kN)	(ton)	(mm²)	(kg/m)
20	310,0	31,60	343,2	34,98	207,0	1,80
21	341,7	34,83	378,4	38,57	228,3	1,99
22	375,1	38,24	415,3	42,33	250,5	2,18
23	409,9	41,78	453,9	46,27	273,8	2,38
24	446,4	45,50	494,3	50,39	298,1	2,59
25	484,3	49,37	536,3	54,67	323,5	2,81
26	523,9	53,40	580,1	59,13	349,9	3,04
27	564,9	57,58	625,6	63,77	377,3	3,28
28	607,6	61,94	672,8	68,58	405,8	3,53
29	651,7	66,43	721,7	73,57	435,3	3,79
30	697,4	71,09	772,3	78,73	465,8	4,05
31	744,7	75,91	824,7	84,07	497,4	4,33
32	793,5	80,89	878,7	89,57	530,0	4,61
33	843,9	86,02	934,5	95,26	563,7	4,90
34	895,8	91,31	992,0	101,1	598,3	5,21
35	949,3	96,77	1.051	107,2	634,1	5,52
36	1.004	102,4	1.112	113,4	670,8	5,84
37	1.061	108,1	1.175	119,8	708,6	6,16
38	1.119	114,1	1.239	126,3	747,4	6,50
39	1.179	120,2	1.305	133,1	787,3	6,85
40	1.240	126,4	1.373	140,0	828,1	7,20
41	1.303	132,8	1.443	147,0	870,1	7,57
42	1.367	139,4	1.514	154,3	913,0	7,94
43	1.433	146,1	1.587	161,7	957,0	8,33
44	1.500	152,9	1.661	169,4	1.002	8,72
45	1.569	160,0	1.738	177,1	1.048	9,12
46	1.640	167,2	1.816	185,1	1.095	9,53
47	1.712	174,5	1.896	193,2	1.143	9,95
48	1.786	182,0	1.977	201,5	1.193	10,4
49	1.861	189,7	2.060	210,0	1.243	10,8
50	1.937	197,5	2.145	218,7	1.294	11,3
51	2.016	205,5	2.232	227,5	1.346	11,7
52	2.095	213,6	2.320	236,5	1.400	12,2
53	2.177	221,9	2.411	245,7	1.454	12,7
54	2.260	230,4	2.502	255,1	1.509	13,1
55	2.344	239,0	2.596	264,6	1.566	13,6
56	2.430	247,7	2.691	274,3	1.623	14,1
57	2.518	256,7	2.788	284,2	1.682	14,6
58	2.607	265,7	2.887	294,3	1.741	15,2
59	2.698	275,0	2.987	304,5	1.802	15,7
60	2.790	284,4	3.089	314,9	1.863	16,2

CASAR TURBOFIT M

Rope Diameter	Minimum Breaking Load				Metallic Area	Weight
	1770 N/mm²		1960 N/mm²			
(mm)	(kN)	(ton)	(kN)	(ton)	(mm²)	(kg/m)
20	338,5	34,51	374,8	38,21	222,4	1,93
21	373,2	38,04	413,2	42,12	245,2	2,13
22	409,6	41,75	453,5	46,23	269,1	2,34
23	447,6	45,63	495,7	50,53	294,1	2,56
24	487,4	49,68	539,7	55,02	320,2	2,79
25	528,9	53,91	585,6	59,69	347,4	3,02
26	572,0	58,31	633,4	64,57	375,8	3,27
27	616,9	62,88	683,1	69,63	405,3	3,53
28	663,4	67,62	734,6	74,88	435,8	3,79
29	711,7	72,55	788,0	80,33	467,5	4,07
30	761,6	77,64	843,3	85,96	500,3	4,35
31	813,2	82,90	900,5	91,79	534,2	4,65
32	866,5	88,33	959,5	97,81	569,2	4,95
33	921,5	93,93	1.020	104,0	605,4	5,27
34	978,2	99,71	1.083	110,4	642,6	5,59
35	1.037	105,7	1.148	117,0	681,0	5,92
36	1.097	111,8	1.214	123,8	720,5	6,27
37	1.158	118,1	1.283	130,8	761,0	6,62
38	1.222	124,6	1.353	137,9	802,7	6,98
39	1.287	131,2	1.425	145,3	845,5	7,36
40	1.354	138,0	1.499	152,8	889,4	7,74
41	1.423	145,0	1.575	160,6	934,5	8,13
42	1.493	152,2	1.653	168,5	980,6	8,53
43	1.565	159,5	1.733	176,6	1.028	8,94
44	1.638	167,0	1.814	184,9	1.076	9,36
45	1.714	174,7	1.898	193,4	1.126	9,79
46	1.791	182,5	1.983	202,1	1.176	10,2
47	1.869	190,6	2.070	211,0	1.228	10,7
48	1.950	198,7	2.159	220,1	1.281	11,1
49	2.032	207,1	2.250	229,3	1.335	11,6
50	2.116	215,7	2.343	238,8	1.390	12,1
51	2.201	224,4	2.437	248,4	1.446	12,6
52	2.288	233,2	2.534	258,3	1.503	13,1
53	2.377	242,3	2.632	268,3	1.562	13,6
54	2.468	251,5	2.732	278,5	1.621	14,1
55	2.560	260,9	2.835	288,9	1.682	14,6
56	2.654	270,5	2.939	299,5	1.743	15,2
57	2.749	280,3	3.044	310,3	1.806	15,7
58	2.847	290,2	3.152	321,3	1.870	16,3
59	2.946	300,3	3.262	332,5	1.935	16,8
60	3.046	310,5	3.373	343,9	2.001	17,4

CASAR STARPLAST M / MV

Rope Diameter	Minimum Breaking Load				Metallic Area	Weight
	1770 N/mm²		1960 N/mm²			
(mm)	(kN)	(ton)	(kN)	(ton)	(mm²)	(kg/m)
20	267,6	27,28	296,3	30,20	184,4	1,73
21	295,0	30,07	326,7	33,30	203,3	1,91
22	323,8	33,01	358,6	36,55	223,1	2,09
23	353,9	36,08	391,9	39,95	243,8	2,29
24	385,3	39,28	426,7	43,50	265,5	2,49
25	418,1	42,62	463,0	47,20	288,1	2,70
26	452,2	46,10	500,8	51,05	311,6	2,93
27	487,7	49,71	540,1	55,06	336,0	3,15
28	524,5	53,47	580,8	59,20	361,4	3,39
29	562,6	57,35	623,0	63,51	387,6	3,64
30	602,1	61,38	666,7	67,96	414,8	3,89
31	642,9	65,54	711,9	72,57	443,0	4,15
32	685,1	69,84	758,6	77,33	472,0	4,43
33	728,5	74,26	806,7	82,23	502,0	4,71
34	773,4	78,84	856,4	87,30	532,8	5,00
35	819,5	83,54	907,5	92,51	564,6	5,29
36	867,0	88,38	960,1	97,87	597,4	5,60
37	915,9	93,36	1.014	103,4	631,0	5,91
38	966,0	98,47	1.070	109,0	665,6	6,24
39	1.018	103,7	1.127	114,9	701,1	6,57
40	1.070	109,1	1.185	120,8	737,5	6,91
41	1.125	114,6	1.245	126,9	774,8	7,26
42	1.180	120,3	1.307	133,2	813,1	7,62
43	1.237	126,1	1.370	139,6	852,3	7,99
44	1.295	132,0	1.434	146,2	892,4	8,36
45	1.355	138,1	1.500	152,9	933,4	8,74
46	1.416	144,3	1.568	159,8	975,3	9,15
47	1.478	150,6	1.637	166,8	1.018	9,55
48	1.541	157,1	1.707	174,0	1.062	9,95
49	1.606	163,7	1.779	181,3	1.107	10,4
50	1.673	170,5	1.852	188,8	1.152	10,8
51	1.740	177,4	1.927	196,4	1.199	11,2
52	1.809	184,4	2.003	204,2	1.246	11,7
53	1.879	191,6	2.081	212,1	1.295	12,1
54	1.951	198,9	2.160	220,2	1.344	12,6
55	2.024	206,3	2.241	228,4	1.394	13,1
56	2.098	213,9	2.323	236,8	1.446	13,5
57	2.174	221,6	2.407	245,4	1.498	14,0
58	2.251	229,4	2.492	254,0	1.551	14,5
59	2.329	237,4	2.579	262,9	1.605	15,0
60	2.408	245,5	2.667	271,9	1.659	15,6

CASAR MINEPLAST M

Rope Diameter	Minimum Breaking Load				Metallic Area	Weight
	1770 N/mm²		1960 N/mm²			
(mm)	(kN)	(ton)	(kN)	(ton)	(mm²)	(kg/m)
20	272,6	27,79	301,8	30,76	188,2	1,71
21	300,5	30,63	332,8	33,92	207,5	1,88
22	329,8	33,62	365,2	37,23	227,7	2,06
23	360,5	36,75	399,2	40,69	248,9	2,26
24	392,5	40,01	434,6	44,30	271,0	2,45
25	425,9	43,41	471,6	48,07	294,0	2,67
26	460,6	46,95	510,1	52,00	318,0	2,88
27	496,7	50,63	550,1	56,08	343,0	3,11
28	534,2	54,45	591,6	60,31	368,8	3,35
29	573,1	58,42	634,6	64,69	395,7	3,58
30	613,3	62,52	679,1	69,23	423,4	3,84
31	654,8	66,75	725,1	73,91	452,1	4,10
32	697,8	71,13	772,7	78,77	481,7	4,37
33	742,0	75,64	821,7	83,76	512,3	4,65
34	787,7	80,30	872,3	88,92	543,8	4,93
35	834,7	85,09	924,3	94,22	576,3	5,22
36	883,1	90,02	977,9	99,68	609,7	5,53
37	932,8	95,09	1.033	105,3	644,1	5,84
38	983,9	100,3	1.090	111,1	679,3	6,16
39	1.036	105,7	1.148	117,0	715,6	6,49
40	1.090	111,1	1.207	123,1	752,7	6,82
41	1.145	116,8	1.268	129,3	790,8	7,13
42	1.202	122,5	1.331	135,7	829,9	7,52
43	1.260	128,4	1.395	142,2	869,9	7,88
44	1.319	134,5	1.461	148,9	910,8	8,26
45	1.380	140,7	1.528	155,8	952,7	8,63
46	1.442	147,0	1.597	162,8	995,5	9,02
47	1.505	153,4	1.667	169,9	1.039	9,42
48	1.570	160,0	1.739	177,2	1.084	9,83
49	1.636	166,8	1.812	184,7	1.130	10,2
50	1.704	173,7	1.886	192,3	1.176	10,7
51	1.772	180,7	1.963	200,1	1.224	11,1
52	1.843	187,8	2.040	208,0	1.272	11,5
53	1.914	195,1	2.120	216,1	1.322	12,0
54	1.987	202,6	2.200	224,3	1.372	12,4
55	2.061	210,1	2.283	232,7	1.423	12,9
56	2.137	217,8	2.366	241,2	1.475	13,4
57	2.214	225,7	2.452	249,9	1.529	13,9
58	2.292	233,7	2.538	258,8	1.583	14,4
59	2.372	241,8	2.627	267,8	1.638	14,8
60	2.453	250,1	2.716	276,9	1.694	15,4

CASAR TRIANGULAR

Rope Diameter	Minimum Breaking Load				Metallic Area	Weight
	1770 N/mm²		1960 N/mm²			
(mm)	(kN)	(ton)	(kN)	(ton)	(mm²)	(kg/m)
20	267,6	27,28	296,3	30,20	184,4	1,73
21	295,0	30,07	326,7	33,30	203,3	1,91
22	323,8	33,01	358,6	36,55	223,1	2,09
23	353,9	36,08	391,9	39,95	243,8	2,29
24	385,3	39,28	426,7	43,50	265,5	2,49
25	418,1	42,62	463,0	47,20	288,1	2,70
26	452,2	46,10	500,8	51,05	311,6	2,93
27	487,7	49,71	540,1	55,06	336,0	3,15
28	524,5	53,47	580,8	59,20	361,4	3,39
29	562,6	57,35	623,0	63,51	387,6	3,64
30	602,1	61,38	666,7	67,96	414,8	3,89
31	642,9	65,54	711,9	72,57	443,0	4,15
32	685,1	69,84	758,6	77,33	472,0	4,43
33	728,5	74,26	806,7	82,23	502,0	4,71
34	773,4	78,84	856,4	87,30	532,8	5,00
35	819,5	83,54	907,5	92,51	564,6	5,29
36	867,0	88,38	960,1	97,87	597,4	5,60
37	915,9	93,36	1.014	103,4	631,0	5,91
38	966,0	98,47	1.070	109,0	665,6	6,24
39	1.018	103,7	1.127	114,9	701,1	6,57
40	1.070	109,1	1.185	120,8	737,5	6,91
41	1.125	114,6	1.245	126,9	774,8	7,26
42	1.180	120,3	1.307	133,2	813,1	7,62
43	1.237	126,1	1.370	139,6	852,3	7,99
44	1.295	132,0	1.434	146,2	892,4	8,36
45	1.355	138,1	1.500	152,9	933,4	8,74
46	1.416	144,3	1.568	159,8	975,3	9,15
47	1.478	150,6	1.637	166,8	1.018	9,55
48	1.541	157,1	1.707	174,0	1.062	9,95
49	1.606	163,7	1.779	181,3	1.107	10,4
50	1.673	170,5	1.852	188,8	1.152	10,8
51	1.740	177,4	1.927	196,4	1.199	11,2
52	1.809	184,4	2.003	204,2	1.246	11,7
53	1.879	191,6	2.081	212,1	1.295	12,1
54	1.951	198,9	2.160	220,2	1.344	12,6
55	2.024	206,3	2.241	228,4	1.394	13,1
56	2.098	213,9	2.323	236,8	1.446	13,5
57	2.174	221,6	2.407	245,4	1.498	14,0
58	2.251	229,4	2.492	254,0	1.551	14,5
59	2.329	237,4	2.579	262,9	1.605	15,0
60	2.408	245,5	2.667	271,9	1.659	15,6

CASAR HALF LOCK GUIDE ROPE

Rope Diameter	Calculation Breaking Load		Weight
(mm)	(kN)	(ton)	(kg/m)
29	455,4	46,40	4,60
32	554,1	56,50	5,60
35	663,4	67,60	6,70
38	784,4	80,00	7,90
41	909,7	92,70	9,30
45	1.093	111,4	11,1
48	1.242	126,6	12,7
51	1.412	143,9	14,3

CASAR 34x7 and 34x17

Rope Diameter		Minimum Breaking Force	Approx. Weight
Without Plastic Diameter	With Plastic Diameter		
(mm)	(mm)	(kN)	(kg/m)
30	37	467,0	3,7
32	38	512,0	4,8
33	40	534,0	5,1
35	41	649,0	5,7
37	43	734,0	6,1
40	46	823,0	7,1
41	48	912,0	7,9
43	49	979,0	8,1
44	51	1.032	8,8
48	54	1.192	10,04
51	57	1.352	11,43

CASAR DOUZEPLAST VM

Rope Diameter	Minimum Breaking Load				Metallic Area	Weight
	1770 N/mm²		1960 N/mm²			
(mm)	(kN)	(ton)	(kN)	(ton)	(mm²)	(ton)
24	437,3	44,59	484,3	49,38	297,7	2,65
25	474,5	48,39	525,4	53,58	323,0	2,88
26	513,2	52,34	568,3	57,95	349,4	3,11
27	553,5	56,44	612,9	62,50	376,7	3,35
28	595,2	60,70	659,1	67,21	405,2	3,61
29	638,5	65,11	707,0	72,10	434,6	3,87
30	683,3	69,68	756,6	77,16	465,1	4,14
31	729,6	74,40	807,9	82,39	496,6	4,42
32	777,4	79,28	860,9	87,79	529,2	4,71
33	826,8	84,31	915,5	93,36	562,8	5,01
34	877,7	89,50	971,9	99,10	597,4	5,32
35	930,0	94,84	1.030	105,0	633,1	5,63
36	983,9	100,3	1.090	111,1	669,8	5,96
37	1.039	106,0	1.151	117,4	707,5	6,30
38	1.096	111,8	1.214	123,8	746,3	6,64
39	1.155	117,8	1.279	130,4	786,0	7,00
40	1.215	123,9	1.345	137,2	826,9	7,36
41	1.276	130,1	1.413	144,1	868,7	7,73
42	1.371	139,8	1.501	153,1	921,1	8,11
43	1.404	143,2	1.555	158,5	955,6	8,50
44	1.470	149,9	1.628	166,0	1.001	8,91
45	1.537	156,8	1.703	173,6	1.047	9,31
46	1.607	163,8	1.779	181,4	1.094	9,73
47	1.677	171,0	1.857	189,4	1.142	10,2
48	1.749	178,4	1.937	197,5	1.191	10,6
49	1.823	185,9	2.019	205,8	1.241	11,0
50	1.898	193,6	2.102	214,3	1.292	11,5
51	1.975	201,4	2.187	223,0	1.344	12,0
52	2.053	209,3	2.273	231,8	1.397	12,4
53	2.133	217,5	2.362	240,8	1.452	12,9
54	2.214	225,8	2.452	250,0	1.507	13,4
55	2.297	234,2	2.543	259,3	1.563	13,9
56	2.381	242,8	2.637	268,9	1.621	14,4
57	2.467	251,5	2.732	278,5	1.679	14,9
58	2.554	260,4	2.828	288,4	1.739	15,5
59	2.643	269,5	2.927	298,4	1.799	16,0
60	2.733	278,7	3.027	308,6	1.861	16,6
61	2.825	288,1	3.128	319,0	1.923	17,1
62	2.918	297,6	3.232	329,5	1.987	17,7
63	3.013	307,3	3.337	340,3	2.051	18,3
64	3.110	317,1	3.444	351,2	2.117	18,8

CASAR FLAT BALANCE ROPES

Nominal Values Width w x Thickness s mm		Nominal Diameter of Load - Bearing Wires	Sum of Nominal Cross Sectional Area of Load - Bearing Wires	Minimum Aggregate Breaking Force fe.min		Nominal Rope Length Mass of Lubricated Rope		
				Rope Grade				
Double Stitched (mm)	Single Stitched or Riveted (mm)	(mm)	(mm²)	1370 N/mm² (kN)	1570 N/mm² (kN)	Double Stitched (kg/100 m)	Single Stitched (kg/100 m)	Riveted / Clamped (kg/100 m)
Rope class: 6 x 4 x 7 = 6 unit ropes each of 4 strands each of 1+6 wires = 168 wires								
70x17	70x15	1,60	338	463	531	342	328	322
74x18	74x16	1,70	381	522	598	385	370	362
78x19	78x17	1,80	428	586	672	433	416	407
82x20	82x18	1,90	476	652	747	481	462	453
87x21	87x19	2,00	526	723	829	534	513	502
91x22	91x20	2,10	582	797	914	588	565	553
95x23	95x21	2,20	639	875	1.003	646	620	607
Rope class: 8 x 4 x 7 = 8 unit ropes each of 4 strands each of 1+6 wires = 224 wires								
110x20	110x18	1,90	635	870	997	642	616	604
113x20	113x18	1,95	669	917	1.050	676	649	636
116x21	116x19	2,00	704	964	1.105	711	683	669
119x21	119x19	2,05	739	1.010	1.160	747	717	702
122x22	122x20	2,10	776	1.060	1.220	784	753	738
125x22	125x20	2,15	813	1.110	1.280	822	789	773
128x23	128x21	2,20	851	1.170	1.340	860	826	809
Rope class: 6 x 4 x 12 = 6 unit ropes each of 4 strands each of 3+9 wires = 288 wires								
112x26	112x23	1,90	817	1.120	1.280	826	793	768
115x26	115x23	1,95	860	1.180	1.350	869	835	809
118x27	118x24	2,00	905	1.240	1.420	914	878	851
121x27	121x24	2,05	951	1.300	1.490	961	923	894
124x28	124x25	2,10	998	1.370	1.570	1.010	968	939
127x28	127x25	2,15	1.046	1.430	1.640	1.060	1.020	984
130x29	130x26	2,20	1.095	1.500	1.720	1.110	1.070	1.030
Rope class: 8 x 4 x 12 M= 8 unit ropes each of 4 strands each of 3+9 wires = 384 wires								
146x25	146x23	1,90	1.089	1.490	1.710	1.100	1.060	1.030
149x26	149x23	1,95	1.147	1.570	1.800	1.160	1.120	1.080
154x27	154x24	2,00	1.206	1.650	1.890	1.220	1.170	1.140
157x27	157x24	2,05	1.267	1.740	1.990	1.280	1.230	1.190
160x28	160x25	2,10	1.330	1.820	2.090	1.350	1.290	1.250
165x28	165x25	2,15	1.394	1.910	2.190	1.410	1.360	1.310
168x29	168x26	2,20	1.460	2.000	2.290	1.480	1.420	1.380

CASAR FLAT BALANCE ROPES

Nominal Values Width w x Thickness s mm		Nominal Diameter of Load - Bearing Wires	Sum of Nominal Cross Sectional Area of Load - Bearing Wires	Minimum Aggregate Breaking Force fe.min Rope Grade		Nominal Rope Length Mass of Lubricated Rope		
Double Stitched (mm)	Single Stitched or Riveted (mm)	(mm)	(mm^2)	1370 N/mm^2 (kN)	1570 N/mm^2 (kN)	Double Stitched (kg/100 m)	Single Stitched (kg/100 m)	Riveted / Clamped (kg/100 m)
Rope class: 8 x 4 x 14 M= 8 unit ropes each of 4 strands each of 4+10 wires = 448 wires								
168x28	168x25	2,00	1.407	1.930	2.210	1.430	1.370	1.330
172x29	172x26	2,05	1.479	2.030	2.320	1.500	1.440	1.390
176x29	176x26	2,10	1.552	2.130	2.440	1.570	1.510	1.460
180x30	180x27	2,15	1.626	2.230	2.550	1.650	1.580	1.530
184x30	184x27	2,20	1.703	2.330	2.670	1.720	1.660	1.600
Rope class: 8 x 4 x 19 M= 8 unit ropes each of 4 strands each of 1+6+12 wires = 608 wires								
186x31	186x28	1,90	1.724	2.360	2.710	1.750	1.680	1.620
190x32	190x29	1,95	1.816	2.490	2.850	1.840	1.780	1.700
194x33	194x30	2,00	1.910	2.620	3.000	1.930	1.860	1.800
200x34	200x31	2,05	2.007	2.750	3.150	2.030	1.950	1.890
204x34	204x31	2,10	2.106	2.890	3.310	2.130	2.040	1.980
210x36	210x32	2,15	2.207	3.020	3.460	2.230	2.140	2.080
216x37	216x33	2,20	2.311	3.170	3.630	2.330	2.240	2.180

Values according to EN 12385-6:2004. Product specifications are subject to change without notice or obligation. The shown drawings or cross sections are only for illustrative purposes; the images can vary depending on requested diameter and current status of technical development. This table is for reference only. Additional sizes available upon request.

CASAR 6x36

Rope Diameter	Minimum Breaking Force				Metallic Cross Section Area	Weight
	1770 N/mm^2		1960 N/mm^2			
(mm)	(kN)	(ton)	(kN)	(ton)	(mm^2)	(kg/m)
20	207,0	252,0	230,0	279,0	139,0	167,0
22	251,0	305,0	278,0	338,0	168,0	202,0
24	299,0	363,0	331,0	402,0	200,0	240,0
26	351,0	426,0	388,0	472,0	235,0	282,0
28	407,0	494,0	450,0	547,0	273,0	327,0
32	531,0	645,0	588,0	715,0	356,0	427,0
36	672,0	817,0	744,0	904,0	451,0	540,0
40	830,0	1.010	919,0	1.120	557,0	667,0
44	1.000	1.220	1.110	1.350	674,0	807,0
48	1.200	1.450	1.320	1.610	802,0	961,0
52	1.400	1.700	1.550	1.890	941,0	1.130
56	1.630	1.980	1.800	2.190	1.090	1.310
60	1.870	2.270	2.070	2.510	1.250	1.500

UNION 6 - STRAND PFV

Rope Diameter		Minimum Breaking Force		Approximate Weight	
(mm)	(inch)	(kN)	(ton)	(kg/m)	(lb/ft)
44.5	1 3/4	1.361	153,00	8,40	5,67
47.6	1 7/8	1.548	174,00	9,70	6,50
50.8	2	1.762	198,00	11,00	7,39
54	2 1/8	1.966	221,00	12,40	8,35
57.2	2 1/4	2.198	247,00	13,90	9,36
60.3	2 3/8	2.438	274,00	15,50	10,40
63.5	2 1/2	2.687	302,00	17,30	11,60
66.7	2 5/8	2.945	331,00	19,00	12,80
69.9	2 3/4	3.212	361,00	20,80	14,00
73	2 7/8	3.488	392,00	22,80	15,30
76.2	3	3.781	425,00	24,70	16,60
79.4	3 1/8	4.075	458,00	26,80	18,00
82.6	3 1/4	4.377	492,00	29,00	19,50
85.7	3 3/8	4.706	529,00	31,30	21,00
88.9	3 1/2	5.018	564,00	33,80	22,70
92.1	3 5/8	5.356	602,00	36,20	24,30
95.3	3 3/4	5.703	641,00	38,70	26,00
98.4	3 7/8	6.050	680,00	41,20	27,70
101.6	4	6.406	720,00	44,00	29,60
104.8	4 1/8	6.735	757,00	47,20	31,70
108	4 1/4	7.109	799,00	49,60	33,30
111.1	4 3/8	7.509	844,00	52,70	35,40
114.3	4 1/2	7.918	890,00	55,70	37,50

UNION POWERMAX® PFV

Rope Diameter		Minimum Breaking Force		Approximate Weight	
(mm)	(inch)	(kN)	(ton)	(kg/m)	(lb/ft)
60.3	2 3/8	2.438	274,00	15,60	10,50
63.5	2 1/2	2.687	302,00	17,40	11,70
66.7	2 5/8	2.945	331,00	19,20	12,90
69.9	2 3/4	3.212	361,00	21,00	14,10
73	2 7/8	3.488	392,00	22,90	15,40
76.2	3	3.781	425,00	25,00	16,80
79.4	3 1/8	4.075	458,00	27,10	18,20
82.6	3 1/4	4.377	492,00	29,30	19,70
85.7	3 3/8	4.706	529,00	31,70	21,30
88.9	3 1/2	5.018	564,00	34,10	22,90
92.1	3 5/8	5.356	602,00	36,50	24,50
95.3	3 3/4	5.703	641,00	39,00	26,20
98.4	3 7/8	6.050	680,00	41,60	28,00
101.6	4	6.415	721,00	44,40	29,80
104.8	4 1/8	6.779	762,00	47,20	31,70
108	4 1/4	7.144	803,00	50,10	33,70
111.1	4 3/8	7.527	846,00	53,10	35,70
114.3	4 1/2	7.918	890,00	56,10	37,70
117.5	4 5/8	8.310	934,00	59,30	39,90
120.7	4 3/4	8.701	978,00	62,60	42,00
123.8	4 7/8	9.119	1.025,00	65,90	44,30
127	5	9.528	1.071,00	69,30	46,60

UNION TUF-MAX®

Rope Diameter		Minimum Breaking Force		Approximate Weight	
(mm)	(inch)	(kN)	(ton)	(kg/m)	(lb/ft)
50.8	2	1.762	198,00	11,00	7,40
54	2 1/8	1.966	221,00	12,50	8,40
57.2	2 1/4	2.198	247,00	14,00	9,40
60.3	2 3/8	2.438	274,00	15,50	10,40
63.5	2 1/2	2.687	302,00	17,30	11,60
66.7	2 5/8	2.945	331,00	19,00	12,80
69.9	2 3/4	3.212	361,00	20,80	14,00
73	2 7/8	3.488	392,00	22,80	15,30

İZMİT 6x7 (STD)

Rope Diameter (mm)	Minimum Breaking Load (kN)				Approximate Weight of 100 Mtrs. (kg)	
	1770 N/mm²		1960 N/mm²			
	Fiber Core	IWRC	Fiber Core	IWRC	Fiber Core	IWRC
2	2,35	2,54	2,60	2,81	1,38	1,54
3	5,29	5,72	5,86	6,33	3,11	3,46
4	9,40	10,20	10,40	11,30	5,52	6,14
5	14,70	15,90	16,30	17,60	8,63	9,60
6	21,20	22,90	23,40	25,30	12,40	13,80
7	28,80	31,10	31,90	34,50	16,90	18,80
8	37,60	40,70	41,60	45,00	22,10	24,60
9	47,60	51,50	52,70	57,00	27,90	31,10
10	58,80	63,50	65,10	70,40	34,50	34,80
11	71,10	76,90	78,70	85,10	41,70	46,50
12	84,60	91,50	93,70	101,00	49,70	55,30
13	99,30	107,00	110,00	119,00	58,30	64,90
14	115,00	125,00	128,00	138,00	67,60	75,30
16	150,00	163,00	167,00	180,00	88,30	98,30
18	190,00	206,00	211,00	228,00	112,00	124,00
20	235,00	254,00	260,00	281,00	138,00	154,00
22	284,00	308,00	315,00	341,00	167,00	186,00
24	338,00	366,00	375,00	405,00	199,00	221,00
26	397,00	430,00	440,00	476,00	233,00	260,00
28	461,00	498,00	510,00	552,00	270,00	301,00
32	602,00	651,00	666,00	721,00	353,00	393,00
36	762,00	824,00	843,00	912,00	447,00	498,00
40	940,00	1.020,00	1.040,00	1.130,00	552,00	614,00

İZMİT 6x19 M CLASS

Rope Diameter (mm)	Minimum Breaking Load (kN)				Approximate Weight of 100 Mtrs. (kg)	
	1770 N/mm²		1960 N/mm²			
	Fiber Core	IWRC	Fiber Core	IWRC	Fiber Core	IWRC
3	4,89	5,77	5,42	6,39	3,11	3,43
4	8,69	10,30	9,63	11,40	5,54	6,10
5	13,60	16,00	15,00	17,70	8,65	9,53
6	19,60	23,10	21,70	25,50	12,50	13,70
7	26,60	31,40	29,50	34,80	17,00	18,70

İZMİT 6x19 CLASS

Rope Diameter (mm)	Minimum Breaking Load (kN)					Approximate Weight of 100 Mtrs. (kg)	
	1770 N/mm²		1960 N/mm²		2160 N/mm²		
	Fiber Core	IWRC	Fiber Core	IWRC	IWRC	Fiber Core	IWRC
6	21,00	22,70	23,30	25,10	27,70	12,90	14,40
7	28,60	30,90	31,70	34,20	37,70	17,60	19,60
8	37,40	40,30	41,40	44,70	49,20	23,00	25,60
9	47,30	51,00	52,40	56,50	62,30	29,10	32,40
10	58,40	63,00	64,70	69,80	76,90	35,90	40,00
11	70,70	76,20	78,30	84,40	93,00	43,30	48,40
12	84,10	90,70	93,10	100,00	111,00	51,70	57,60
13	98,70	106,00	109,00	118,00	130,00	60,70	67,60
14	114,00	124,00	127,00	137,00	151,00	70,40	78,40
16	150,00	161,00	166,00	179,00	197,00	91,90	102,00
18	189,00	204,00	210,00	226,00	249,00	116,00	130,00
20	234,00	252,00	259,00	279,00	308,00	144,00	160,00
22	283,00	305,00	313,00	338,00	372,00	174,00	194,00
24	336,00	363,00	373,00	402,00	443,00	207,00	230,00
26	395,00	426,00	437,00	472,00	520,00	243,00	270,00
28	458,00	494,00	507,00	547,00	603,00	281,00	314,00
32	598,00	645,00	662,00	715,00	787,00	368,00	410,00
36	757,00	817,00	838,00	904,00	997,00	465,00	518,00
40	935,00	1.010,00	1.040,00	1.120,00	1.230,00	574,00	640,00
44	1.130,00	1.220,00	1.250,00	1.350,00	1.490,00	695,00	774,00
48	1.350,00	1.450,00	1.490,00	1.610,00	1.770,00	827,00	922,00
52	1.580,00	1.700,00	1.750,00	1.890,00	2.080,00	971,00	1.080,00
56	1.830,00	1.980,00	2.030,00	2.190,00	2.410,00	1.130,00	1.250,00
60	2.100,00	2.270,00	2.330,00	2.510,00	2.770,00	1.290,00	1.440,00

İZMİT 6x36 CLASS

Rope Diameter (mm)	Minimum Breaking Load (kN)					Approximate Weight of 100 Mtrs. (kg)	
	1770 N/mm²		1960 N/mm²		2160 N/mm²		
	Fiber Core	IWRC	Fiber Core	IWRC	IWRC	Fiber Core	IWRC
8	37,40	40,30	41,40	44,70	49,20	23,50	26,20
9	47,30	51,00	52,40	56,50	62,30	29,70	33,10
10	58,40	63,00	64,70	69,80	76,90	36,70	40,90
11	70,70	76,20	78,30	84,40	93,00	44,40	49,50
12	84,10	90,70	93,10	100,00	110,00	52,80	58,90
13	98,70	106,00	109,00	118,00	130,00	62,00	69,10
14	114,00	124,00	127,00	137,00	151,00	71,90	80,20
16	150,00	161,00	166,00	179,00	197,00	94,00	105,00
18	189,00	204,00	210,00	226,00	249,00	119,00	133,00
20	234,00	252,00	259,00	279,00	308,00	147,00	164,00
22	283,00	305,00	313,00	338,00	372,00	178,00	198,00
24	336,00	363,00	373,00	402,00	443,00	211,00	236,00
26	395,00	426,00	437,00	472,00	520,00	248,00	276,00
28	458,00	494,00	507,00	547,00	603,00	288,00	321,00
32	598,00	645,00	662,00	715,00	787,00	376,00	419,00
36	757,00	817,00	838,00	904,00	997,00	476,00	530,00
40	935,00	1.010,00	1.040,00	1.120,00	1.230,00	587,00	654,00
44	1.130,00	1.220,00	1.250,00	1.350,00	1.490,00	711,00	792,00
48	1.350,00	1.450,00	1.490,00	1.610,00	1.770,00	846,00	942,00
52	1.580,00	1.700,00	1.750,00	1.890,00	2.080,00	992,00	1.110,00
56	1.830,00	1.980,00	2.030,00	2.190,00	2.410,00	1.150,00	1.280,00
60	2.100,00	2.270,00	2.330,00	2.510,00	2.770,00	1.320,00	1.470,00

İZMİT 8x36 WS

Rope Diameter (mm)	Minimum Breaking Load (kN)					Approximate Weight of 100 Mtrs. (kg)	
	1770 N/mm²		1960 N/mm²		2160 N/mm²		
	Fiber Core	IWRC	Fiber Core	IWRC	IWRC	Fiber Core	IWRC
8	33,20	40,30	36,80	44,70	49,20	22,30	26,70
9	42,00	51,00	46,50	56,50	62,30	28,20	33,80
10	51,90	63,00	57,40	69,80	76,90	34,80	41,70
11	62,80	76,20	69,50	84,40	93,00	42,10	50,50
12	74,70	90,70	82,70	100,00	111,00	50,10	60,00
13	87,60	106,00	97,10	118,00	130,00	58,80	70,50
14	102,00	124,00	113,00	137,00	151,00	68,20	81,70
16	133,00	151,00	147,00	179,00	197,00	89,10	107,00
18	168,00	204,00	186,00	226,00	249,00	113,00	135,00
20	207,00	252,00	230,00	279,00	308,00	139,00	167,00
22	251,00	305,00	278,00	338,00	372,00	168,00	202,00
24	299,00	363,00	331,00	402,00	443,00	200,00	240,00
26	351,00	426,00	388,00	472,00	520,00	235,00	282,00
28	407,00	494,00	450,00	547,00	603,00	273,00	327,00
32	531,00	645,00	588,00	715,00	787,00	356,00	427,00
36	672,00	817,00	744,00	904,00	997,00	451,00	540,00
40	830,00	1.010,00	919,00	1.120,00	1.230,00	557,00	667,00
44	1.000,00	1.220,00	1.110,00	1.350,00	1.490,00	674,00	807,00
48	1.200,00	1.450,00	1.320,00	1.610,00	1.770,00	802,00	961,00
52	1.400,00	1.700,00	1.550,00	1.890,00	2.080,00	941,00	1.130,00
56	1.630,00	1.980,00	1.800,00	2.190,00	2.410,00	1.090,00	1.310,00
60	1.870,00	2.270,00	2.070,00	2.510,00	2.770,00	1.250,00	1.500,00

İZMİT 8x19 CLASS

Rope Diameter (mm)	Minimum Breaking Load (kN)					Approximate Weight of 100 Mtrs. (kg)	
	1770 N/mm²		1960 N/mm²		2160 N/mm²		
	Fiber Core	IWRC	Fiber Core	IWRC	IWRC	Fiber Core	IWRC
8	33,20	40,30	36,80	44,70	49,20	21,80	26,00
9	42,00	51,00	46,50	56,50	62,30	27,50	33,00
10	51,90	63,00	57,40	69,80	76,90	34,00	40,70
11	62,80	76,20	69,50	84,40	93,00	41,10	49,20
12	74,70	90,70	82,70	100,00	110,00	49,00	58,60
13	87,60	106,00	97,10	118,00	130,00	57,50	68,80
14	102,00	124,00	113,00	137,00	151,00	66,60	79,80
16	133,00	161,00	147,00	179,00	197,00	87,00	104,00
18	168,00	204,00	186,00	226,00	249,00	110,00	132,00
20	207,00	252,00	230,00	279,00	308,00	136,00	163,00
22	251,00	305,00	278,00	338,00	372,00	165,00	197,00
24	299,00	363,00	331,00	402,00	443,00	196,00	234,00
26	351,00	426,00	388,00	472,00	520,00	230,00	275,00
28	407,00	494,00	450,00	547,00	603,00	267,00	319,00
32	531,00	645,00	588,00	715,00	787,00	348,00	417,00
36	672,00	817,00	744,00	904,00	997,00	441,00	527,00
40	830,00	1.010,00	919,00	1.120,00	1.230,00	544,00	651,00
44	1.000,00	1.220,00	1.110,00	1.350,00	1.490,00	658,00	788,00
48	1.200,00	1.450,00	1.320,00	1.610,00	1.770,00	783,00	938,00
52	1.400,00	1.700,00	1.550,00	1.890,00	2.080,00	919,00	1.100,00
56	1.630,00	1.980,00	1.800,00	2.190,00	2.410,00	1.070,00	1.280,00
60	1.870,00	2.270,00	2.070,00	2.510,00	2.770,00	1.220,00	1.470,00

İZMİT 18x7 NUFLEX

Rope Diameter	Minimum Breaking Load (kN)		Approximate Weight of 100 Mtrs. (kg)	
	1770 N/mm²	1960 N/mm²		
	Fiber Core or IWRC	Fiber Core or IWRC	Fiber Core	IWRC
6	20,90	23,10	13,80	14,40
7	28,40	31,50	18,70	19,60
8	37,20	41,10	24,40	25,70
9	47,00	52,10	30,90	32,50
10	58,10	64,30	38,20	40,10
11	70,20	77,80	46,20	48,50
12	83,60	92,60	55,00	57,70
13	98,10	109,00	64,60	67,80
14	114,00	126,00	74,90	78,60
16	149,00	165,00	97,80	103,00
18	188,00	208,00	124,00	130,00
20	232,00	257,00	153,00	160,00
22	281,00	311,00	185,00	194,00
24	334,00	370,00	220,00	231,00
26	392,00	435,00	258,00	271,00
28	455,00	504,00	299,00	314,00

İZMİT 35Wx7 NUFLEX

Rope Diameter	Minimum Breaking Load (kN)		Approximate Weight of 100 Mtrs. (kg)
	1770 N/mm²	1960 N/mm²	
	Fiber Core or IWRC	Fiber Core or IWRC	Fiber Core
13	119,00	128,00	76,70
14	138,00	148,00	89,00
16	181,00	194,00	116,00
18	229,00	245,00	147,00
20	282,00	302,00	182,00
22	342,00	366,00	220,00
24	406,00	435,00	262,00
26	477,00	511,00	307,00
28	553,00	593,00	356,00
32	723,00	774,00	465,00
36	914,00	980,00	588,00
38	1.020,00	1.090,00	656,00
40	1.130,00	1.210,00	726,00

İZMİT 8x19 FIBER CORE CLASS

Rope Diameter (mm)	Minimum Breaking Load (kN)			Approximate Weight of 100 Mtrs. (kg)
	Dual Tensile Rope Grade		Mono Tensile Rope Grade	
	Dual Tensile Rope Grade Class (1180/1770 N/mm²)	Dual Tensile Rope Grade Class (1370/1770 N/mm²)	Mono Tensile Rope Grade Class (1570 N/mm²)	
8	25,70	28,10	29,40	21,80
9	32,50	35,60	37,30	27,50
10	40,10	44,00	46,00	34,00
11	48,60	53,20	55,70	41,10
12	57,80	63,30	66,20	49,00
13	67,80	74,30	77,70	57,50
14	78,70	86,10	90,20	66,60
15	90,30	98,90	104,00	76,50
16	103,00	113,00	118,00	87,00
18	130,00	142,00	149,00	110,00
19	145,00	159,00	166,00	123,00
20	161,00	176,00	184,00	136,00
22	194,00	213,00	223,00	165,00

İZMİT 8x19 IWRC CLASS

Rope Diameter (mm)	Minimum Breaking Load (kN)				Approximate Weight of 100 Mtrs. (kg)
	Dual Tensile Rope Grade		Mono Tensile Rope Grade		
	Dual Tensile Rope Grade Class (1180/1770 N/mm²)	Dual Tensile Rope Grade Class (1370/1770 N/mm²)	Mono Tensile Rope Grade Class 1570 N/mm²	Mono Tensile Rope Grade Class 1770 N/mm²	
8	35,80	38,00	35,80	40,30	26,00
9	45,30	48,20	45,30	51,00	33,00
10	55,90	59,50	55,90	63,00	40,70
11	67,60	71,90	67,60	76,20	49,20
12	80,50	85,60	80,50	90,70	58,60
13	94,50	100,00	94,50	106,00	68,70
14	110,00	117,00	110,00	124,00	79,80
15	126,00	134,00	126,00	142,00	91,60
16	143,00	152,00	143,00	161,00	104,00
18	181,00	193,00	181,00	204,00	132,00
19	202,00	215,00	202,00	227,00	147,00
20	224,00	238,00	224,00	252,00	163,00
22	271,00	288,00	271,00	305,00	197,00

ICONS AND ABBREVIATIONS

WLL : Working Load Limit
min : Minute
daN : Dekanewton
F : Filler
FC : Fibre Core
gr : Gram
IWRC : Steel Core
kg : Kilogram
kgf : Kilogram Force
kN : Kilonewton
Kp : Kilopond
kW : Kilowatt
lbs : Libre
m : Meter
mm : Milimeter
N : Newton
Nr. : Number
PPI : Plastic Procteced Impregnated
RCN : Rope Category Number
S : Seale
SFC : Sentetic Fibre Core
STD : Standard
tf : Ton Force
W : Warrington
WS : Warrington Seale
WSC : Wire Strand Core
m^2 : Square Meters
m^3 : Cubic Meters
°C : Centigrade Degree
° : Degree

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