WIRECO

OLIVEIRA

CASAR
By WireCo

SPECIAL WIRE ROPES

Driving Progress around the World

Edition 10/2023

INTRODUCTION

WIRECO

Strong, enduring, worldwide — It's what today's industries expect from critical wire rope, synthetic rope, wire, synthetic yarns, electromechanical cable and engineered products. And it's what WireCo is all about.

WireCo is the market, manufacturing and technical leader in wire and synthetic rope manufacturing, providing a consultative approach to offer customers a single, reliable source for solutions that fit their specific application and budget needs. But it doesn't stop there. WireCo offers clients the education and expertise needed to enhance product performance and value.

We've endured through 80+ years of market changes, technological advances and raw material supply fluctuations. Why? Because at WireCo, we employ technically minded, determined people committed to quality products and service. Plus, we listen to our customers and stay focused on solving the application challenges they face.

WireCo is on the ground everywhere you are — with locations in North America, South America, Europe, and Asia, and nearly 4,000 global employees supporting these efforts. Our customers enjoy global availability for a consistent, responsive supply no matter where and when they need it.

CASAR
By WireCo

Mission critical applications call for the best rope. The CASAR products engineered in Germany deliver according to your specific needs. Challenge us with your requirements and our specialists will fulfill.

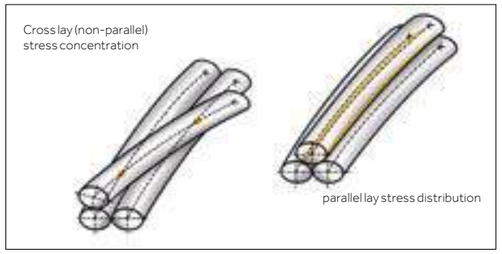
CONTENTS

GENERAL DEFINITIONS

Parallel Construction

PARALLEL LAY ROPES

In a standard rope all wires and strands have different lay lengths. The high stress concentration at the crossover point leads to an early internal failure. In a parallel lay rope all wires and strands have the same lay length. The linear contact leads to an optimal stress distribution. Furthermore the compacted parallel design leads to a higher fill factor and breaking strength.

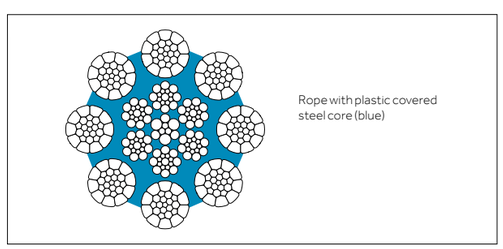


Plast rope

ROPES WITH PLASTIC COVERED STEEL CORE (SINCE 1972)

In a CASAR PLAST rope, the proportion of plastic to the steel components is thoroughly harmonized in order
to fulfill the aspired rope geometry. A plastic coating with a very constant thickness and quality is extruded around the steel core. A thermal aftertreatment just before the closing of the rope ensures that the outer strands are deeply implanted in the plastic jacket, thus forming plastic edges which separate the strands.
The benefit of an internal plastic layer is diversified:

- Prevents internal wire breaks
- Prevents metal-to-metal contact
- Stabilizes the rope structure during installation and operation
- Seals in lubricant, reduces the maintenance effort
- Keeps out water and abrasive elements
- Absorbs dynamic energy
- Resistant to many chemical substances

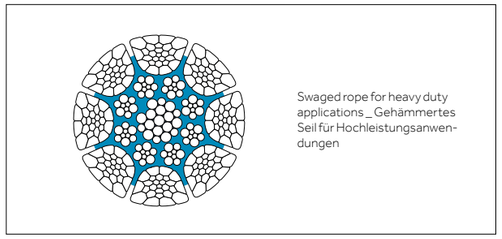


Swaged

SWAGED ROPES (SINCE 2003)

Swaged ropes are designed for heavy duty applications such as multiple layers spooling or scrap metal charging cranes:

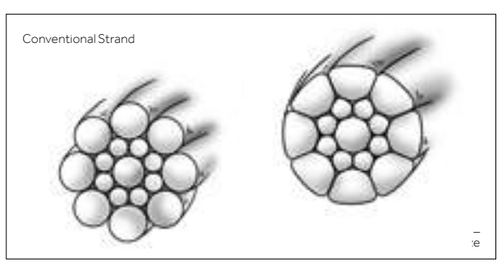
- Extremely high pressure resistance
- Reduced diameter reduction under tension
- Strongly improved crushing resistance in crossovers
- Extremely smooth surface for less indentations or pressure
- High breaking load



Compacted

ROPES WITH COMPACTED STRANDS (SINCE 1978)

Ropes made of compacted strands have a higher breaking load, a greater flexibility and better rope-to-rope contact conditions than comparable ropes made out of conventional strands. Because of the thicker outer wires and the smaller exposed area they are more resistant to abrasion and corrosion. The formation of negative impressions is significantly impaired. The rope life time on multiple layer drums is optimized.
In order to produce a compacted strand, a conventional strand made of round wires is drawn through a compacting tool. During this procedure, the wires are plastically deformed, the strand diameter is reduced and the surface is made smooth. Resulting the contact conditions between the individual wires and the strand-to-strand contacts are improved.



Lubricated

LUBRICATED

As a standard feature, CASAR special wire ropes receive intensive lubrication during the production process. This in-process treatment will provide the rope with ample protection against corrosion and it is meant to reduce the friction between the elements which make up the rope as well as the friction between rope and sheaves or drums. This lubrication, however, only lasts for a limited time and should be reapplied periodically.

Tolerance

PRODUCTION TOLERANCE

CASAR special wire ropes are produced within a tolerance range between +0% and +4%. Generally the standard production tolerance is at the upper limit of the tolerance range, between +2% and +4%. For this reason CASAR special wire ropes fulfill the requirements of famous drum manufacturers. Of course, special tolerances or limited tolerance ranges can also be covered.

Swivel

SWIVEL USE

Rotation resistant ropes can be used with a swivel. All other rope constructions may not be used with a swivel!

No swivel

ISO 21669 – General guidance on swivel use (rotation resistance)

- Less than or equal to 1 turn/1000d lifting a load equivalent to 20%MBF, a swivel can be used
- Greater than 1 turn but no greater than 4 turns/1000d – a swivel may be used subject to the recommendations of the rope manufacturer and/or approval of a competent person
- Greater than 4 turns/1000d – a swivel should not be used

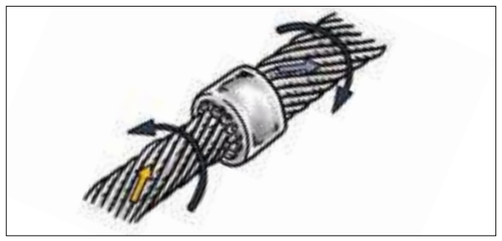
preformed

PREFORMED ROPES

In particular the non-rotating ropes are preformed for better dimensional stability during production.

ROTATION-RESISTANT ROPES (SINCE 1949)

In a conventional rope, an external load creates a torsional moment which tries to un-twist the rope. A rotation resistant steel wire rope has a steel core which is an independent rope, closed in the opposite direction to the outer strands. Under load, the core tries to twist the rope in one direction, the outer strands try to twist it in the opposite direction. The geometrical design of a rotation resistant wire rope is such that the torsional moments in the core and the outer strands compensate each other over a wide load spectrum, so that even with great lifting heights practically no rope twist occurs.



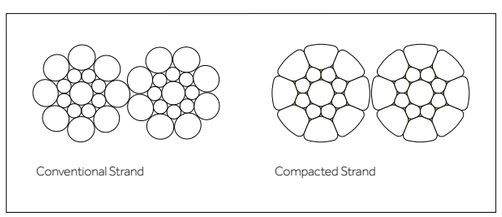
MULTIPLE LAYER SPOOLING

A drum coiling a rope in more than one layer is a multiple layer system with new demands to a wire rope.

- Low diameter reduction under tension
- Crushing resistance in crossovers and layer crossovers
- Extremely smooth surface for less indentations or pressure in crossovers

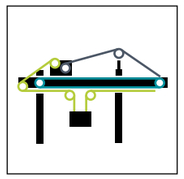
The following rope properties are required for a long service life:

- Lang's lay to prevent indentations
- Compacted outer strands to prevent indentations



ROPE SELECTION BY APPLICATION

CONTAINER CRANE

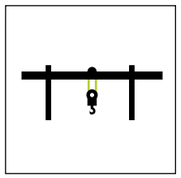


HOIST ROPE
CASAR TURBOPLAST
CASAR STRATOPLAST
CASAR PARAPLAST
CASAR SUPERPLAST8

BOOM HOIST
CASAR TURBOPLAST
CASAR STRATOPLAST
CASAR PARAPLAST

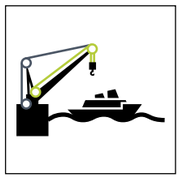
TROLLEY / CATENARY
CASAR STRATOPLAST
CASAR TURBOPLAST

RUBBER TIRED GANTRY / RAIL MOUNTED GANTRY



HOIST ROPE
CASAR TURBOPLAST
CASAR PARAPLAST

DOCKSIDE CRANE

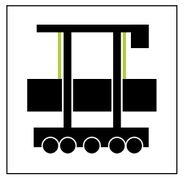


HOIST ROPE
CASAR TURBOPLAST
CASAR STRATOPLAST
CASAR SUPERPLAST8
CASAR SUPERPLAST10MIX
CASAR EUROLIFT

BOOM HOIST
CASAR TURBOPLAST
CASAR PARAPLAST

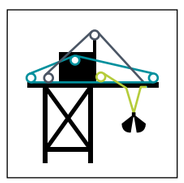
Please note: The use of rotation resistant ropes depends on the lifting height and the receiving system. Please contact your WireCo rope specialist for further advice:

STRADDLE CARRIERS



HOIST ROPE
CASAR TURBOPLAST
CASAR PARAPLAST

SHIP UNLOADER

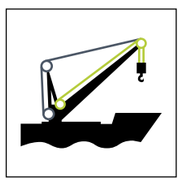


HOIST ROPE
CASAR TURBOPLAST
CASAR STRATOPLAST

BOOM HOIST
CASAR TURBOPLAST
CASAR STRATOPLAST

TROLLEY
CASAR STRATOPLAST
CASAR TURBOPLAST

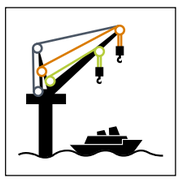
DECK CRANE



HOIST ROPE
CASAR POWERPLAST

BOOM HOIST
CASAR TURBOPLAST
CASAR PARAFIT

OFFSHORE PEDESTAL CRANE

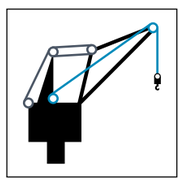


HOIST ROPE _ HUBSEIL
CASAR POWERPLAST
CASAR EUROLIFT

BOOM HOIST
CASAR TURBOPLAST
CASAR PARAPLAST
CASAR SUPERPLAST8
CASAR PARAFIT

AUXILIARY HOIST _
CASAR POWERPLAST
CASAR EUROLIFT

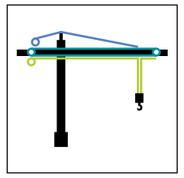
HARBOR MOBILE CRANE



HOIST ROPE
CASAR TURBOPLAST

BOOM HOIST
CASAR TURBOPLAST
CASAR PARAPLAST

TOWER CRANE

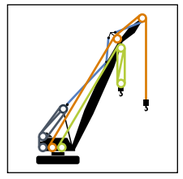


HOIST ROPE
CASAR EUROLIFT
CASAR STARLIFT PLUS
CASAR STARLIFT XTRA
CASAR DOUBLEFIT

BOOM PENDANT
CASAR TURBOLIFT

TROLLEY
CASAR STRATOPLAST
CASAR ALPHALIFT

LATTICE BOOM CRAWLER CRANE



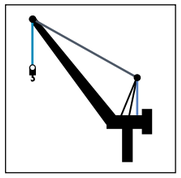
HOIST ROPE
CASAR EUROLIFT
CASAR STARLIFT PLUS
CASAR STARLIFT XTRA
CASAR DOUBLEFIT

BOOM HOIST
CASAR PARAPLAST
CASAR SUPERPLAST8
CASAR PARAFIT

AUXILIARY HOIST
CASAR EUROLIFT

BOOM PENDANT
CASAR TURBOLIFT

LUFFING-JIB TOWER CRANE

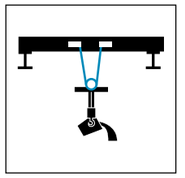


HOIST ROPE
CASAR EUROLIFT
CASAR STARLIFT PLUS
CASAR STARLIFT XTRA

BOOM HOIST
CASAR PARAPLAST
CASAR SUPERPLAST8

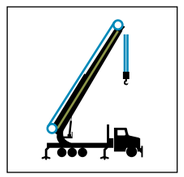
BOOM PENDANT
CASAR TURBOLIFT

STEELWORKS LADLE



HOIST ROPE
CASAR TURBOPLAST
CASAR STRATOPLAST
CASAR TECHNOLIFT
CASAR TECHNOLIFT PLUS

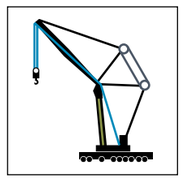
TELESCOPIC MOBILE CRANE



HOIST ROPE
CASAR EUROLIFT
CASAR STARLIFT PLUS

RETRACTION ROPE_
CASAR BETALIFT
CASAR TURBOLIFT

LATTICE BOOM MOBILE CRANE

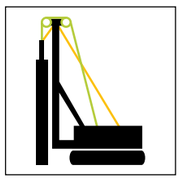


HOIST ROPE
CASAR EUROLIFT
CASAR STARLIFT PLUS
CASAR STARLIFT XTRA
CASAR DOUBLEFIT

BOOM HOIST
CASAR PARAPLAST
CASAR SUPERPLAST8
CASAR PARAFIT

RETRACTION ROPE
CASAR TURBOLIFT
CASAR BETALIFT

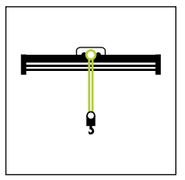
DRILLING / PILING



HOIST ROPE
CASAR POWERPLAST
CASAR EUROLIFT

FEED ROPE
CASAR TURBOPLAST

OVERHEAD CRANE



HOIST ROPE
CASAR TURBOPLAST
CASAR STRATOPLAST
CASAR PARAPLAST
CASAR SUPERPLAST8
CASAR SUPERPLAST10MIX

CASAR EUROLIFT

Please note: The use of rotation resistant ropes depends on the lifting height and the receiving system. Please contact your WireCo rope specialist for further advice. .

ROPE PROPERTIES

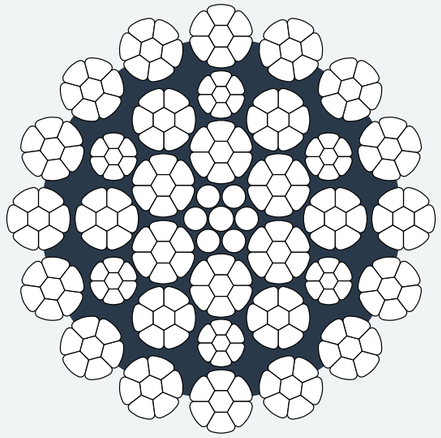
Rope Type		**Rotation-Resistant**					**Non-Rotation-Resistant**						
		EUROLIFT	**POWERPLAST**	**STARLIFT PLUS**	**STARLIFT XTRA**	**DOUBLEFIT**	**ALPHALIFT**	**TURBOPLAST**	**SUPERPLAST8**	**SUPERPLAST10 MIX**	**PARAPLAST**	**BETALIFT**	**PARAFIT**
Rope Properties													
Swaged Ropes						X							X
Compacted Strands		X	X	X	X	X		X	X	X	X	X	X
With internal plastic jacket			X			X		X	X	X	X		X
Parallel Design						X	X			X	X	X	X
Minimum Breaking Load													
Reduction of negative impressions and abrasion		+	+	+	+	++		+	++	++	+	++	++
Modulus of Elasticity [$*10^5$ N/mm^2]		0.95	0.94	*	*	*	1.18	1.02	1.07	*	*	*	*
Torque Factor [k] M = k*F*L		*	*	*	*	*	0.075	0.092	0.080	*	*	0.083	*
Spooling													
Suitable for multiple layer spooling up to 4 layers	Lang's Lay g	X	X	X	X	X	X	X	X	X	X	X	
	Ordinary Lay					X							X
Suitable for multiple layer spooling above 4 layers	Lang's Lay	X	X	X	X	X		X	X	X	X		
	Ordinary Lay					X							X
Right hand lay drum requires left hand lay		X	X	X	X	X	X	X	X	X	X	X	X
Left hand lay drum requires right hand lay		X	X	X	X	X	X	X	X	X	X	X	X
Application													
Can be used with a swivel		X	X	X	X	X							
Suitable for single reeving and unguided load		X	X	X	X	X							
Environment													
Operation temperature with standard lubrication	-50 – 75 °C	X		X	X	X							
	-50 – 115 °C		X					X	X	X	X		X
	-50 – 140 °C						X					X	
On request: Wires with special corrosion protection		X	X	X	X	X	X	X	X	X	X	X	X
On request: Special Lubrication for Sea Water		X	X	X	X	X	X	X	X	X	X	X	X

* on request / TF = torque free _

PERFECT LUBRICATION

The right lubrication is an essential part for the optimal functionality of our special steel wire ropes. Targeted research and development in this particular sector of science lead to better performance, lower friction and higher corrosion resistance.

CASAR **STARLIFT PLUS**



High Breaking Force

PROPERTIES

Swivel

Lubricated

Tolerance

Compacted

APPLICATIONS

A very flexible rope with a core in a special design avoiding crossovers between the strands of core and preventing internal rope destruction. Hoist rope for mobile cranes, electrical hoists and other applications, where rotation resistant ropes are required.

OVERVIEW

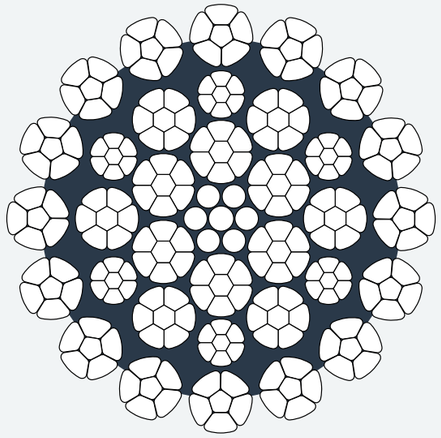
Diameter Range [mm]		10 – 56
RCN		23–2
Number of Outer Strands		16
Number of Wires I		245
Number of Outer Load Bearing Wires		112
Average Fill Factor		0.716
Average Nominal Metallic Area Factor C		0.562
Average Spin Factor r	*N/mm²	0.83 (1960)* / 0.82 (2160)* / 0.76 (2360)*

- Temperature range of use: –50°C to +75°C
- Suitable for multi-layer spooling, preferred in Lang's lay execution
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Available in galvanized and ungalvanized

Nominal Diameter		Weight	Minimum Breaking Force 1960 N/mm²			2160 N/mm²			2360 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
10		0.50	**92.0**	9.38	10.34	**98.0**	9.99	11.02	**103.4**	10.54	11.62
11	7/16	0.61	**111.0**	11.32	12.48	**119.0**	12.13	13.38	**125.2**	12.77	14.07
12		0.73	**132.0**	13.46	14.84	**144.0**	14.68	16.19	**149.0**	15.19	16.75
	1/2	0.81	**147.8**	15.07	16.61	**161.3**	16.45	18.13	**166.9**	17.02	18.76
13		0.85	**155.0**	15.81	17.42	**169.0**	17.23	19.00	**175.0**	17.85	19.67
14		0.99	**179.0**	18.25	20.12	**195.0**	19.88	21.92	**203.0**	20.70	22.82
15		1.13	**206.0**	21.01	23.16	**225.0**	22.94	25.29	**233.0**	23.76	26.19
16	5/8	1.29	**235.0**	23.96	26.42	**257.0**	26.21	28.89	**266.0**	27.12	29.90
17		1.46	**261.0**	26.61	29.34	**285.0**	29.06	32.04	**300.0**	30.59	33.72
18		1.63	**298.0**	30.39	33.50	**325.0**	33.14	36.53	**337.0**	34.36	37.88
19	3/4	1.81	**329.0**	33.55	36.98	**359.0**	36.61	40.35	**375.0**	38.24	42.15
20		2.02	**367.0**	37.42	41.25	**401.0**	40.89	45.07	**416.0**	42.42	46.76
21		2.23	**402.0**	40.99	45.19	**439.0**	44.77	49.35	**458.0**	46.70	51.48
22		2.44	**442.0**	45.07	49.68	**483.0**	49.25	54.29	**502.0**	51.19	56.43
	7/8	2.48	**451.1**	46.00	50.71	**492.9**	50.26	55.40	**512.3**	52.24	57.58
23		2.68	**483.0**	49.25	54.29	**527.0**	53.74	59.24	**549.0**	55.98	61.71
24		2.90	**525.0**	53.54	59.01	**573.0**	58.43	64.41	**598.0**	60.98	67.22
25		3.14	**571.0**	58.23	64.18	**623.0**	63.53	70.03	**649.0**	66.18	72.95
	1	3.25	**589.4**	60.10	66.25	**643.1**	65.58	72.29	**669.9**	68.31	75.30
26		3.42	**615.0**	62.71	69.13	**671.0**	68.42	75.42	**702.0**	71.58	78.91
27		3.68	**669.0**	68.22	75.20	**730.0**	74.44	82.06	**757.0**	77.19	85.09
28		3.95	**719.0**	73.32	80.82	**784.0**	79.95	88.13	**814.0**	83.01	91.50
	1 1/8	4.11	**748.8**	76.36	84.17	**816.5**	83.26	91.78	**847.8**	86.45	95.30
29		4.26	**768.0**	78.32	86.33	**838.0**	85.45	94.19	**873.0**	89.02	98.13
30		4.55	**827.0**	84.33	92.96	**903.0**	92.08	101.50	**935.0**	95.34	105.10
31		4.85	**879.0**	89.63	98.80	**959.0**	97.79	107.80	**998.0**	101.77	112.18
32	1 1/4	5.17	**934.0**	95.24	104.99	**1,019.0**	103.91	114.54	**1,079.8**	110.11	121.37
33		5.49	**1,003.0**	102.28	112.74	**1,095.0**	111.66	123.08	**1,131.0**	115.33	127.13
34		5.83	**1,054.0**	107.48	118.47	**1,150.0**	117.27	129.27	**1,201.0**	122.47	135.00
35	1 3/8	6.19	**1,116.5**	113.85	125.50	**1,218.2**	124.22	136.93	**1,272.2**	129.73	143.00
36		6.54	**1,187.0**	121.04	133.42	**1,296.0**	132.16	145.68	**1,346.0**	137.26	151.30
38	1 1/2	7.31	**1,322.0**	134.81	148.60	**1,443.0**	147.15	162.20	**1,492.0**	152.14	167.71
40		8.06	**1,467.0**	149.59	164.90	**1,601.0**	163.26	179.96	**1,648.0**	168.05	185.24
	1 5/8	8.58	**1,562.0**	159.28	175.58	**1,704.7**	173.83	191.61	**1,754.7**	178.93	197.24
42		8.87	**1,616.0**	164.79	181.65	**1,764.0**	179.88	198.28	**1,818.0**	185.39	204.35
44		9.77	**1,770.0**	180.49	198.96	**1,932.0**	197.01	217.17	**2,014.0**	205.37	226.38
	1 3/4	9.97	**1,806.4**	184.20	203.05	**1,971.7**	201.06	221.63	**2,055.4**	209.59	231.04
46		10.68	**1,935.0**	197.32	217.50	**2,112.0**	215.37	237.40	**2,183.0**	222.61	245.38
48	1 7/8	11.58	**2,115.0**	215.67	237.74	**2,309.0**	235.45	259.54	**2,361.0**	240.76	265.39
50		12.61	**2,297.0**	234.23	258.19	**2,507.0**	255.65	281.80	**2,573.0**	262.38	289.22
	2	12.99	**2,371.0**	241.78	266.51	**2,587.9**	263.90	290.89	**2,656.0**	270.84	298.55
52		13.61	**2,486.0**	253.50	279.44	**2,713.0**	276.65	304.95	**2,790.0**	284.50	313.61
54	2 1/8	14.70	**2,695.0**	274.82	302.93	**2,941.0**	299.90	330.58	**–**	–	–
56		15.81	**2,879.0**	293.58	323.61	**3,142.0**	320.40	353.17	**–**	–	–

Special constructions and diameters available – please contact us directly. .

CASAR **STARLIFT XTRA**



Very High Breaking Force

PROPERTIES


Swivel


Lubricated

Tolerance

Compacted

APPLICATIONS

CASAR Starlift Xtra is the strongest of all compacted ropes in the CASAR high performance rotation-resistant product line. Very good resistance against drum crushing and abrasion on drums. Hoist rope for tower cranes, mobile cranes or crawler cranes: unguided load on a single fall.

OVERVIEW

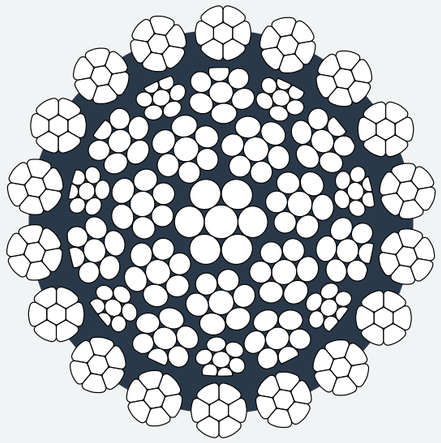
Diameter Range [mm]	14 – 32
RCN	23–2
Number of Outer Strands	16
Number of Wires	245
Number of Outer Load Bearing Wires	112
Average Fill Factor	0.30
Average Nominal Metallic Area Factor C	0.573
Average Spin Factor	

- Temperature range of use: –50°C to +75°C
- Suitable for multi-layer spooling, preferred in Lang's lay execution
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Available in galvanized and ungalvanized

Nominal Diameter		Weight	Minimum Breaking Force		
mm	**inch**	**kg/m**	**kN**	**t [metric]**	**t [2000 lbs]**
14		0.99	**208.0**	21.21	23.38
15		1.13	**235.0**	23.96	26.42
16	5/8	1.34	**272.0**	27.74	30.57
17		1.46	**302.0**	30.80	33.95
18		1.63	**340.0**	34.67	38.22
19	3/4	1.87	**382.0**	38.95	42.94
20		2.02	**421.0**	42.93	47.32
21		2.23	**460.0**	46.91	51.71
22		2.44	**509.0**	51.90	57.21
	7/8	2.48	**519.5**	52.97	58.39
	1	3.25	**675.0**	68.83	75.87
26		3.42	**705.0**	71.89	79.25
27		3.68	**757.0**	77.19	85.09
28		4.04	**815.0**	83.11	91.61
	1 1/8	4.21	**848.8**	86.55	95.41
30		4.78	**934.0**	95.24	104.99
32	1 1/4	5.29	**1,085.0**	110.64	121.96

Special constructions and diameters available – please contact us directly. .

CASAR **EUROLIFT**



PROPERTIES

No swivel | Lubricated | Tolerance | Compacted

APPLICATIONS

Has a core in a special design avoiding crossover between the strands of core and preventing internal rope destruction. Hoist rope for mobile cranes, electrical hoists and other applications, where rotation-resistant ropes are required.

OVERVIEW

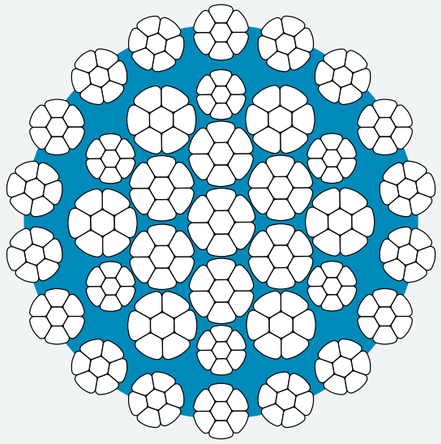
Diameter Range [mm]		10 – 34	34.93 – 60
RCN		23–3	23–3
Number of Outer Strands		18	18
Number of Wires		280	292
Number of Outer Load Bearing Wires		126	126
Average Fill Factor		0.720	
Average Nominal Metallic Area Factor C		0.565	
Average Spin Factor	*N/mm²	0.82 (1960)* / 0.80 (2160)*	

- Temperature range of use: –50°C to +75°C
- Suitable for multi-layer spooling, preferred in Lang's lay execution
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Available in galvanized and ungalvanized

Nominal Diameter		Weight	Minimum Breaking Force					
			1960 N/mm²			2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
10		0.50	**89.6**	9.14	10.07	**97.4**	9.93	10.95
11	7/16	0.61	**108.8**	11.09	12.23	**118.4**	12.07	13.31
12		0.73	**130.8**	13.34	14.70	**139.9**	14.27	15.73
	1/2	0.81	**146.4**	14.93	16.46	**161.4**	16.46	18.14
13		0.84	**152.7**	15.57	17.16	**165.4**	16.87	18.59
14		0.97	**179.1**	18.26	20.13	**190.9**	19.47	21.46
15		1.12	**204.0**	20.80	22.93	**219.5**	22.38	24.67
16	5/8	1.28	**230.6**	23.51	25.92	**249.1**	25.40	28.00
17		1.43	**257.9**	26.30	28.99	**280.6**	28.61	31.54
18		1.61	**293.9**	29.97	33.04	**317.5**	32.38	35.69
19	3/4	1.79	**329.0**	33.55	36.98	**352.8**	35.98	39.66
20		2.01	**362.2**	36.93	40.71	**391.7**	39.94	44.03
21		2.19	**396.1**	40.39	44.52	**430.9**	43.94	48.44
22		2.42	**441.4**	45.01	49.62	**472.0**	48.13	53.05
	7/8	2.47	**450.4**	45.93	50.63	**481.6**	49.11	54.13
23		2.64	**471.8**	48.11	53.03	**513.2**	52.33	57.69
24		2.89	**524.3**	53.46	58.93	**564.1**	57.52	63.41
25		3.07	**567.9**	57.91	63.83	**609.4**	62.14	68.50
	1	3.17	**586.2**	59.78	65.89	**629.0**	64.14	70.70
26		3.35	**614.9**	62.70	69.12	**657.4**	67.04	73.89
27		3.64	**654.2**	66.71	73.53	**711.7**	72.57	80.00
28		3.91	**712.9**	72.70	80.13	**765.6**	78.07	86.06
	1 1/8	4.09	**742.4**	75.70	83.45	**797.3**	81.30	89.62
29		4.19	**754.6**	76.95	84.82	**821.0**	83.72	92.28
30		4.48	**817.4**	83.35	91.88	**877.9**	89.52	98.68
31		4.83	**869.7**	88.69	97.76	**958.4**	97.73	107.73
32	1 1/4	5.12	**930.0**	94.83	104.54	**1,002.8**	102.26	112.72
33		5.47	**992.8**	101.24	111.60	**1,094.1**	111.57	122.98
34		5.76	**1,045.0**	106.56	117.46	**1,130.9**	115.32	127.12
35	1 3/8	6.16	**1,107.3**	112.91	124.47	**1,198.4**	122.20	134.71
36		6.51	**1,185.0**	120.84	133.20	**1,262.3**	128.72	141.89
38	1 1/2	7.21	**1,319.0**	134.50	148.26	**1,412.2**	144.01	158.74
40		8.04	**1,462.0**	149.08	164.34	**1,560.4**	159.12	175.40
	1 5/8	8.41	**1,556.1**	158.68	174.91	**1,610.4**	164.22	181.02
42		8.85	**1,611.2**	164.30	181.11	**1,667.4**	170.03	187.42
44		9.71	**1,767.0**	180.19	198.62	**1,823.0**	185.90	204.91
	1 3/4	9.75	**1,803.4**	183.90	202.71	**1,861.3**	189.80	209.22
46		10.68	**1,935.0**	197.32	217.50	**1,989.7**	202.90	223.65
48	1 7/8	11.58	**2,113.3**	215.50	237.54	**2,187.0**	223.01	245.83
50		12.50	**2,272.8**	231.76	255.47	**2,504.7**	255.41	281.54
	2	13.04	**2,346.1**	239.24	263.71	**2,585.5**	263.65	290.62
52		14.18	**2,500.0**	254.93	281.01	**2,750.0**	280.42	309.11
54	2 1/8	14.69	**2,651.2**	270.35	298.01	**2,921.7**	297.93	328.41
56		15.75	**2,851.2**	290.74	320.49	**3,142.2**	320.42	353.20
	2 1/4	16.32	**2,953.9**	301.22	332.03	**3,255.4**	331.96	365.92
58		16.83	**3,058.5**	311.88	343.79	**3,370.6**	343.71	378.87
60		18.01	**3,273.1**	333.77	367.91	**3,607.1**	367.83	405.45

Special constructions and diameters available – please contact us directly. .

CASAR **POWERPLAST**



PROPERTIES

Swivel | Lubricated | Tolerance | Plast rope | Preformed

APPLICATIONS

Has a high breaking load and a good resistance against drum crushing. Hoist rope for deck cranes and off-shore cranes, pull-in-riser and other applications in the marine environment, where rotation resistant-ropes are required.

OVERVIEW

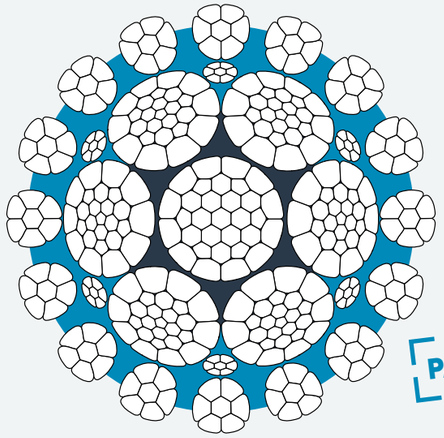
Diameter Range [mm]		12 – 56	57.15 – 72
RCN		23–3	28
Number of Outer Strands		18	18
Number of Wires		259	593
Number of Outer Load Bearing Wires		126	270
Average Fill Factor		0.727	
Average Nominal Metallic Area Factor C		0.571	
Average Spin Factor	*N/mm²	0.81	0.84 (1960)* / 0.81 (2160)*

- Temperature range of use: –50°C to +115°C
- Suitable for multi-layer spooling, preferred in Lang's lay execution
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Only available in galvanized execution

Nominal Diameter		Weight	Minimum Breaking Force					
			1960 N/mm²			2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
12		0.73	**130.8**	13.34	14.70	**142.6**	14.54	16.03
	1/2	1.19	**146.5**	14.94	16.47	**159.7**	16.29	17.95
13		0.87	**152.7**	15.57	17.16	**169.4**	17.27	19.04
14		1.00	**179.1**	18.26	20.13	**194.7**	19.85	21.89
15		1.15	**204.0**	20.80	22.93	**222.4**	22.68	25.00
16	5/8	1.31	**230.6**	23.51	25.92	**256.2**	26.13	28.80
17		1.47	**260.7**	26.58	29.30	**286.2**	29.18	32.17
18		1.65	**293.9**	29.97	33.04	**325.4**	33.18	36.58
19	3/4	1.86	**329.0**	33.55	36.98	**361.1**	36.82	40.59
20		2.04	**362.2**	36.93	40.71	**396.9**	40.47	44.61
21		2.25	**400.0**	40.79	44.96	**439.0**	44.77	49.35
22		2.47	**441.4**	45.01	49.62	**481.4**	49.09	54.11
	7/8	2.51	**450.5**	45.94	50.64	**491.3**	50.10	55.22
23		2.69	**477.6**	48.70	53.68	**524.4**	53.47	58.94
24		2.87	**524.3**	53.46	58.93	**568.7**	57.99	63.92
25		3.18	**567.9**	57.91	63.83	**624.5**	63.68	70.20
	1	3.29	**586.2**	59.78	65.89	**644.6**	65.73	72.46
26		3.48	**614.9**	62.70	69.12	**678.3**	69.17	76.24
27		3.68	**663.5**	67.66	74.58	**728.4**	74.28	81.88
28		3.99	**712.9**	72.70	80.13	**778.4**	79.38	87.50
	1 1/8	4.14	**742.5**	75.71	83.46	**810.7**	82.67	91.13
29		4.21	**765.4**	78.05	86.03	**840.4**	85.70	94.46
30		4.52	**817.4**	83.35	91.88	**896.5**	91.42	100.77
31		4.87	**879.9**	89.73	98.90	**965.9**	98.50	108.57
32	1 1/4	5.14	**930.0**	94.83	104.54	**1,019.4**	103.95	114.59
33		5.46	**991.2**	101.08	111.42	**1,088.1**	110.96	122.31
34		5.77	**1,045.0**	106.56	117.46	**1,144.9**	116.75	128.69
35	1 3/8	6.22	**1,102.6**	112.44	123.94	**1,208.1**	123.19	135.80
36		6.54	**1,185.5**	120.89	133.26	**1,287.3**	131.27	144.70
38	1 1/2	7.26	**1,319.0**	134.50	148.26	**1,440.3**	146.87	161.90
40		8.14	**1,462.0**	149.08	164.34	**1,615.0**	164.69	181.53
	1 5/8	8.66	**1,556.7**	158.74	174.98	**1,719.6**	175.35	193.29
42		8.90	**1,611.2**	164.30	181.11	**1,766.3**	180.11	198.54
44		9.73	**1,767.0**	180.19	198.62	**1,930.4**	196.85	216.99
	1 3/4	10.09	**1,803.4**	183.90	202.71	**1,970.1**	200.90	221.45
46		10.90	**1,935.0**	197.32	217.50	**2,127.4**	216.94	239.13
48	1 7/8	11.82	**2,113.0**	215.47	237.51	**2,307.1**	235.26	259.33
50		12.75	**2,292.0**	233.72	257.63	**2,487.3**	253.64	279.58
	2	13.10	**2,365.9**	241.26	265.94	**2,567.5**	261.81	288.60
52		13.97	**2,436.0**	248.41	273.82	**2,724.2**	277.79	306.21
54	1 1/8	14.64	**2,632.0**	268.39	295.85	**2,896.9**	295.40	325.62
56		15.53	**2,854.3**	291.06	320.84	**3,133.6**	319.54	352.23
	2 1/4	16.36	**2,972.8**	303.14	334.16	**3,263.6**	332.80	366.84
58		16.88	**3,077.9**	313.86	345.97	**3,379.0**	344.57	379.81
60		18.18	**3,292.8**	335.78	370.13	**3,615.0**	368.63	406.34
	2 3/8	18.37	**3,328.6**	339.42	374.15	**3,654.3**	372.64	410.76
62		19.25	**3,546.3**	361.63	398.62	**3,754.2**	382.83	421.99
	2 1/2	20.28	**3,720.0**	379.34	418.14	**3,938.0**	401.57	442.65
64		20.65	**3,803.1**	387.81	427.49	**4,026.0**	410.54	452.54
66		21.91	**4,036.5**	411.61	453.72	**4,273.1**	435.74	480.32
	2 5/8	22.36	**4,119.5**	420.08	463.05	**4,361.0**	444.70	490.19
68		23.19	**4,271.9**	435.62	480.18	**4,522.3**	461.15	508.33
70	2 3/4	24.40	**4,495.5**	458.42	505.31	**4,759.0**	485.29	534.93
72		25.89	**4,780.4**	487.47	537.34	**5,049.4**	514.90	567.58

Special constructions and diameters available – please contact us directly. .

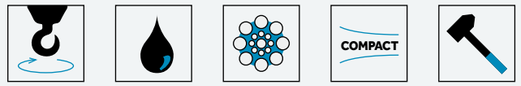
CASAR **DOUBLEFIT**



Very High Breaking Force

PATENTED

PROPERTIES



Swivel | Lubricated | Plast rope | Compacted | Swaged

APPLICATIONS

Latest generation of hoist rope especially developed for all kind of ambitious lifting applications. The swaging procedure generates an extrem circular rope surface providing an extraordinary multilayer spooling behaviour. Furthermore this technique ensures Doublefit to reach the highest breaking loads of all rotation resistant ropes from CASAR by using wires in standard tensile grades.

OVERVIEW

Diameter Range [mm]	18 – 60
RCN	23–2
Number of Outer Strands	16
Number of Wires	341
Number of Outer Load Bearing Wires	112
Average Fill Factor	0.770
Average Nominal Metallic Area Factor C	0.605
Average Spin Factor	0.85

- Temperature range of use: –50°C to +75°C
- Available in right hand and left hand
- Especially suitable for multi-layer spooling
- Wires in standard tensile grades

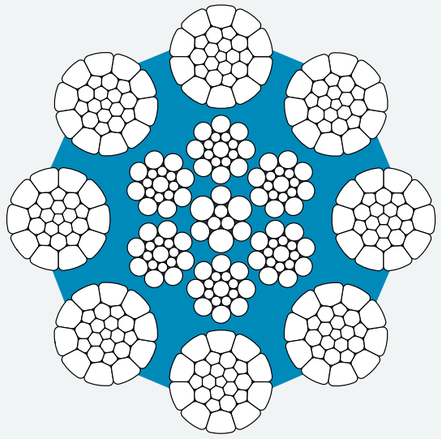
Nominal Diameter		Weight	Minimum Breaking Force 2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]
21		2.35	**478.2**	48.76	53.75
22		2.58	**524.8**	53.51	58.99
	7/8	2.64	**535.6**	54.61	60.20
23		2.82	**573.6**	58.49	64.47
24		3.07	**624.5**	63.68	70.20
25		3.33	**677.7**	69.10	76.17
	1	3.44	**699.5**	71.33	78.63
26		3.61	**732.9**	74.74	82.39
27		3.89	**790.4**	80.60	88.85
28		4.18	**850.0**	86.68	95.55
	1 1/8	4.36	**885.3**	90.28	99.51
29		4.49	**911.8**	92.98	102.50
30		4.80	**975.8**	99.51	109.69
31		5.13	**1,042.0**	106.25	117.12
32	1 1/4	5.46	**1,110.3**	113.22	124.80
33		5.81	**1,180.7**	120.40	132.72
34		6.17	**1,253.4**	127.81	140.89
35	1 3/8	6.54	**1,328.2**	135.44	149.30
36		6.91	**1,405.2**	143.29	157.95
37		7.30	**1,484.3**	151.36	166.85
38	1 1/2	7.70	**1,565.6**	159.65	175.99
39		8.12	**1,649.1**	168.17	185.37
40		8.54	**1,734.8**	176.90	195.00
41		8.97	**1,822.6**	185.86	204.87
	1 5/8	9.09	**1,847.1**	188.36	207.63
42		9.41	**1,912.6**	195.03	214.99
43		9.87	**2,004.8**	204.43	225.34
44		10.33	**2,099.1**	214.05	235.95
	1 3/4	10.54	**2,142.2**	218.45	240.80
45		10.80	**2,195.6**	223.89	246.79
46		11.29	**2,294.3**	233.95	257.88
47		11.79	**2,395.1**	244.23	269.22
48	1 7/8	12.29	**2,498.1**	254.74	280.80
49		12.81	**2,603.3**	265.46	292.62
50		13.34	**2,710.6**	276.41	304.68
	2	13.77	**2,798.0**	285.32	314.51
51		13.88	**2,820.1**	287.57	316.99
52		14.43	**2,931.8**	298.96	329.55
53		14.99	**3,045.6**	310.57	342.34
54	2 1/8	15.56	**3,161.7**	322.40	355.38
55		16.14	**3,279.8**	334.45	368.67
56		16.73	**3,400.2**	346.73	382.20
57	2 1/4	17.33	**3,522.7**	359.22	395.97
58		17.95	**3,647.4**	371.93	409.98
59		18.57	**3,774.2**	384.87	424.24
60		19.21	**3,903.3**	398.03	438.75

Special constructions and diameters available – please contact us directly. .

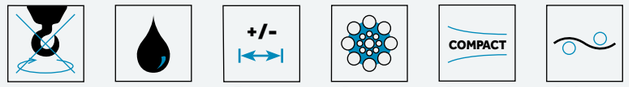
EXPERTS ON PLAST ROPES

CASAR follows its own philosophy when it comes to the use of our high performance synthetics to cover the steel core in our special wire ropes. Particularly strong plastic edges and a closed coating around the core provide hig-hest structural stability, internal corrosion protection and improved friction characteristics to achieve a long service life under tough conditions.

CASAR **TURBOPLAST**



PROPERTIES



APPLICATIONS

High breaking load and good resistance against crushing. Hoisting rope in multiple part reeving for smaller lifting heights as well as for twin hoist systems with left and right hand lay ropes for greater lifting heights.

OVERVIEW

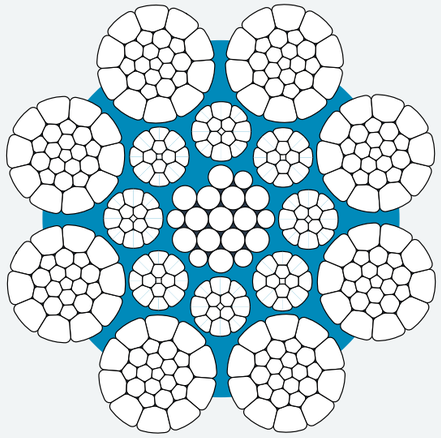
Diameter Range [mm]		8	9 – 24	25 – 48	50 – 72
RCN		09	09	09	11
Number of Outer Strands		8	8	8	8
Number of Wires		259	319	327	367
Number of Outer Load Bearing Wires		208	208	208	248
Average Fill Factor		0.664			
Average Nominal Metallic Area Factor C		0.522			
Average Spin Factor	*N/mm²	0.87 (1770)* / 0.86 (1960)* / 0.86 (2160)*			

- Temperature range of use: –50°C to +115°C
- Suitable for multi-layer spooling, preferred in Lang's lay execution
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Available in galvanized and ungalvanized

Nominal Diameter		WEIGHT	MINIMUM BREAKING FORCE 1960 N/mm²			MINIMUM BREAKING FORCE 2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
8	5/16	0.30	**58.0**	5.91	6.52	**63.5**	6.48	7.14
9		0.38	**74.0**	7.55	8.32	**81.4**	8.30	9.15
10		0.47	**90.0**	9.18	10.12	**101.0**	10.30	11.35
11	7/16	0.57	**109.7**	11.19	12.33	**122.6**	12.50	13.78
12		0.67	**130.0**	13.26	14.61	**144.0**	14.68	16.19
	1/2	0.75	**146.0**	14.89	16.41	**161.8**	16.50	18.19
13		0.76	**153.0**	14.99	16.52	**170.0**	16.49	18.18
14		0.91	**177.0**	18.05	19.90	**196.0**	19.99	22.03
15		1.06	**205.0**	20.90	23.04	**226.0**	23.05	25.40
16	5/8	1.21	**232.0**	23.66	26.08	**252.0**	25.70	28.33
17		1.34	**259.0**	26.41	29.11	**283.0**	28.86	31.81
18		1.51	**292.0**	29.78	32.82	**314.0**	32.02	35.29
19	3/4	1.67	**327.0**	33.35	36.76	**351.0**	35.79	39.45
20		1.87	**361.0**	36.81	40.58	**391.0**	39.87	43.95
21		2.04	**394.0**	40.18	44.29	**421.0**	42.93	47.32
22		2.23	**439.0**	44.77	49.35	**468.0**	47.72	52.61
	7/8	2.25	**449.0**	45.79	50.47	**478.0**	48.74	53.73
23		2.44	**478.0**	48.74	53.73	**511.0**	52.11	57.44
24		2.66	**521.0**	53.13	58.56	**556.0**	56.70	62.50
25		2.84	**566.0**	57.72	63.62	**602.0**	61.39	67.67
	1	2.92	**584.6**	59.61	65.71	**621.6**	63.39	69.87
26		3.13	**616.0**	62.82	69.24	**655.0**	66.79	73.62
27		3.38	**657.0**	67.00	73.85	**702.0**	71.58	78.91
28		3.60	**707.0**	72.09	79.47	**748.0**	76.28	84.08
	1 1/8	3.79	**736.5**	75.10	82.79	**779.2**	79.46	87.59
29		3.87	**760.0**	77.50	85.43	**807.0**	82.29	90.71
30		4.15	**813.0**	82.90	91.38	**871.0**	88.82	97.90
31		4.44	**869.0**	88.61	97.68	**930.0**	94.83	104.54
32	1 1/4	4.75	**938.0**	95.65	105.44	**988.0**	100.75	111.06
33		5.06	**979.0**	99.83	110.04	**1,059.0**	107.99	119.04
34		5.36	**1,055.0**	107.58	118.59	**1,114.0**	113.60	125.22
35	1 3/8	5.66	**1,113.9**	113.59	125.21	**1,175.7**	119.89	132.15
36		5.95	**1,164.0**	118.70	130.84	**1,242.0**	126.65	139.61
38	1 1/2	6.68	**1,301.0**	132.67	146.24	**1,395.0**	142.25	156.80
40		7.40	**1,438.0**	146.64	161.64	**1,552.0**	158.26	174.45
	1 5/8	7.88	**1,531.1**	156.13	172.11	**1,652.5**	168.51	185.75
42		8.11	**1,591.0**	162.24	178.84	**1,694.0**	172.74	190.41
44		8.96	**1,739.0**	177.33	195.47	**1,873.0**	190.99	210.53
	1 3/4	9.08	**1,775.5**	181.05	199.57	**1,911.0**	194.87	214.80
46		9.78	**1,916.0**	195.38	215.37	**2,042.0**	208.23	229.53
48	1 7/8	10.65	**2,079.0**	212.00	233.69	**2,225.0**	226.89	250.10
50		11.57	**2,265.0**	230.97	254.60	**2,423.0**	247.08	272.36
	2	11.94	**2,338.3**	238.44	262.84	**2,501.2**	255.05	281.15
52		12.50	**2,448.0**	249.63	275.17	**2,620.0**	267.17	294.50
54	2 1/8	13.39	**2,641.0**	269.31	296.86	**2,826.0**	288.17	317.65
56		14.45	**2,828.0**	288.38	317.88	**3,027.0**	308.67	340.25
	2 1/4	15.01	**2,945.4**	300.35	331.08	**3,153.2**	321.54	354.43
58		15.43	**3,022.0**	308.16	339.69	**3,234.0**	329.78	363.52
60		16.55	**3,242.0**	330.60	364.42	**3,469.0**	353.74	389.93
	2 3/8	16.73	**3,277.2**	334.19	368.37	**3,506.7**	357.59	394.17
62		17.54	**3,364.0**	343.04	378.13	**3,708.0**	378.11	416.80
64	2 1/2	18.92	**3,597.0**	366.80	404.32	**3,965.0**	404.32	445.68
66		20.16	**3,833.0**	390.86	430.85	**4,225.0**	430.83	474.91
	2 5/8	20.57	**3,911.8**	398.90	439.70	**4,311.9**	439.69	484.67
68		21.35	**4,055.0**	413.50	455.80	**–**	–	–
70	2 3/4	22.51	**4,281.0**	436.54	481.20	**–**	–	–
72		23.86	**4,538.0**	462.75	510.09	**–**	–	–

Special constructions and diameters available – please contact us directly. .

CASAR **PARAPLAST**



Very High Breaking Force

PROPERTIES

No swivel | Lubricated | Tolerance | Parallel Construction | Plast rope | Compacted | Preformed

APPLICATIONS

Very fatigue resistant and very high minimum breaking load. Hoist rope for electrical hoists and lifting devices with multiple part reeving, whereas a rotation resistant rope is not needed due to great lifting heights, low number of falls or guided loads.

OVERVIEW

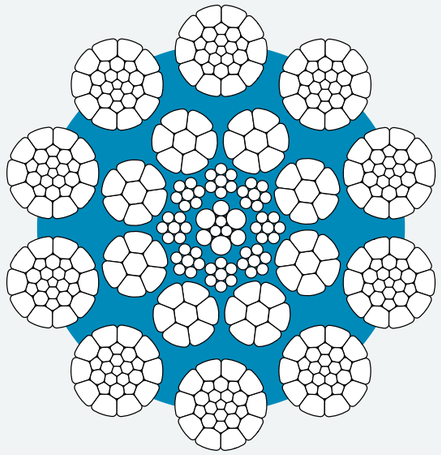
Diameter Range [mm]		11 – 19	20 – 48	50
RCN		09	09	11
Number of Outer Strands		8	8	8
Number of Wires		298	322	362
Number of Outer Load Bearing Wires		208	208	248
Average Fill Factor			0.709	
Average Nominal Metallic Area Factor C			0.557	
Average Spin Factor	*N/mm²		0.87 (1960)* / 0.86 (2160)*	

- Temperature range of use: –50°C to +115°C
- Suitable for multi-layer spooling, preferred in Lang's lay execution
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Available in galvanized and ungalvanized

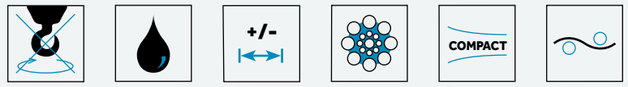
Nominal Diameter		Weight	Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
11	7/16	0.60	**113.4**	11.56	12.75	**122.1**	12.45	13.72
12		0.72	**137.2**	13.99	15.42	**147.8**	15.07	16.61
	1/2	0.80	**152.4**	15.54	17.13	**164.1**	16.73	18.45
13		0.83	**159.7**	16.29	17.95	**172.0**	17.54	19.33
14		0.96	**184.8**	18.84	20.77	**199.0**	20.29	22.37
15		1.12	**212.3**	21.65	23.86	**228.6**	23.31	25.70
16	5/8	1.27	**240.4**	24.51	27.02	**258.9**	26.40	29.10
17		1.42	**273.3**	27.87	30.72	**294.4**	30.02	33.09
18		1.61	**304.3**	31.03	34.20	**327.7**	33.42	36.83
19	3/4	1.78	**342.0**	34.87	38.44	**368.4**	37.57	41.41
20		2.01	**379.7**	38.72	42.68	**408.9**	41.70	45.96
21		2.20	**414.7**	42.29	46.61	**446.6**	45.54	50.20
22		2.40	**456.8**	46.58	51.35	**491.9**	50.16	55.29
	7/8	2.44	**466.1**	47.53	52.39	**502.0**	51.19	56.43
23		2.64	**517.1**	52.73	58.12	**556.9**	56.79	62.60
24		2.87	**561.8**	57.29	63.15	**605.0**	61.69	68.00
25		3.11	**609.0**	62.10	68.45	**655.9**	66.88	73.73
	1	3.18	**628.7**	64.11	70.67	**677.1**	69.05	76.11
26		3.38	**662.2**	67.53	74.43	**713.1**	72.72	80.16
27		3.63	**711.0**	72.50	79.92	**765.8**	78.09	86.08
28		3.89	**760.6**	77.56	85.49	**819.1**	83.53	92.07
	1 1/8	4.08	**792.2**	80.78	89.05	**853.1**	86.99	95.89
29		4.18	**820.3**	83.65	92.21	**883.5**	90.09	99.31
30		4.49	**884.0**	90.14	99.37	**952.0**	97.08	107.01
31		4.78	**921.4**	83.76	92.33	**1,003.6**	102.34	112.81
32	1 1/4	5.11	**978.3**	99.76	109.97	**1,065.6**	108.66	119.78
33		5.45	**1,042.5**	106.31	117.18	**1,135.6**	115.80	127.65
34		5.75	**1,097.0**	111.86	123.31	**1,194.9**	121.85	134.31
35	1 3/8	6.11	**1,163.9**	118.69	130.83	**1,267.7**	129.27	142.50
36		6.42	**1,233.8**	125.81	138.68	**1,343.9**	137.04	151.06
38	1 1/2	7.20	**1,377.2**	140.44	154.80	**1,500.1**	152.97	168.62
40		7.98	**1,533.5**	156.38	172.37	**1,670.3**	170.32	187.75
	1 5/8	8.38	**1,632.8**	166.50	183.53	**1,778.5**	181.36	199.91
42		8.78	**1,680.1**	171.32	188.85	**1,830.1**	186.62	205.71
44		9.64	**1,851.4**	188.79	208.11	**2,016.6**	205.64	226.67
	1 3/4	9.77	**1,889.5**	192.68	212.39	**2,058.1**	209.87	231.34
46		10.54	**2,022.8**	206.27	227.37	**2,203.3**	224.68	247.66
48	1 7/8	11.46	**2,202.0**	224.54	247.51	**2,398.5**	244.58	269.60
50		12.52	**2,365.3**	241.20	265.87	**2,576.4**	262.72	289.60

Special constructions and diameters available – please contact us directly. .

CASAR **SUPERPLAST8**



PROPERTIES



APPLICATIONS

Very high breaking load and good resistance against drum crushing. Hoisting rope in multiple part reeving for smaller lifting heights as well as for twin hoist systems with left and right hand lay ropes for greater lifting heights.

OVERVIEW

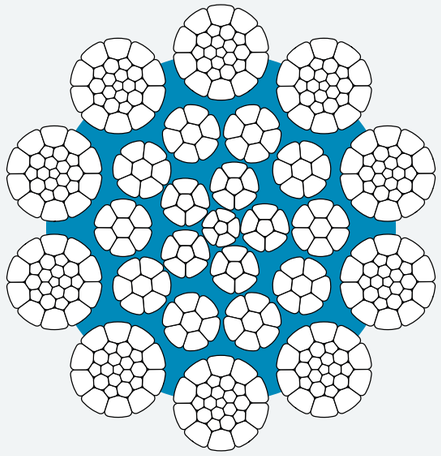
Diameter Range [mm]		10 – 66	68 – 76
RCN		11	>13
Number of Outer Strands		10	10
Number of Wires		381	519
Number of Outer Load Bearing Wires		260	310
Average Fill Factor		0.686	
Average Nominal Metallic Area Factor C		0.539	
Average Spin Factor	*N/mm²	0.85 (1960)* / 0.84 (2160)*	

- Temperature range of use: –50°C to +115°C
- Suitable for multi-layer spooling, preferred in Langs' lay execution
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Available in galvanized and ungalvanized

Nominal Diameter		Weight	Minimum Breaking Force					
			1960 N/mm²			2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
10		0.49	**90.9**	9.27	10.22	**99.6**	10.16	11.20
11	7/16	0.59	**109.0**	11.12	12.25	**119.0**	12.13	13.38
12		0.69	**127.0**	12.95	14.28	**139.0**	14.17	15.62
	1/2	0.77	**142.2**	14.51	15.99	**155.7**	15.88	17.50
13		0.81	**152.0**	15.50	17.09	**166.0**	16.93	18.66
14		0.93	**174.0**	17.74	19.56	**190.0**	19.37	21.36
15		1.07	**200.0**	20.39	22.48	**219.0**	22.33	24.62
16	5/8	1.22	**227.0**	23.15	25.52	**248.0**	25.29	27.88
17		1.39	**260.0**	26.51	29.23	**285.0**	29.06	32.04
18		1.56	**293.0**	29.88	32.93	**321.0**	32.73	36.08
19	3/4	1.74	**320.0**	32.63	35.97	**351.0**	35.79	39.45
20		1.93	**358.0**	36.51	40.24	**395.0**	40.28	44.40
21		2.12	**395.0**	40.28	44.40	**436.0**	44.46	49.01
22		2.33	**432.0**	44.05	48.56	**474.0**	48.34	53.28
	7/8	2.37	**440.9**	44.96	49.56	**483.7**	49.33	54.38
23		2.54	**473.0**	48.23	53.17	**518.2**	52.84	58.25
24		2.78	**517.4**	52.76	58.16	**566.9**	57.81	63.72
25		3.00	**559.6**	57.06	62.90	**613.4**	62.55	68.95
	1	3.10	**577.7**	58.90	64.93	**633.2**	64.57	71.17
26		3.24	**604.9**	61.68	67.99	**662.7**	67.58	74.49
27		3.48	**646.8**	65.96	72.70	**708.6**	72.26	79.65
28		3.74	**698.9**	71.27	78.56	**762.0**	77.70	85.65
	1 1/8	3.89	**727.9**	74.23	81.82	**793.6**	80.93	89.21
29		3.99	**737.8**	75.24	82.93	**808.3**	82.42	90.86
30		4.28	**796.8**	81.25	89.56	**872.9**	89.01	98.12
31		4.53	**846.7**	86.34	95.17	**927.5**	94.58	104.26
32	1 1/4	4.86	**925.9**	94.42	104.08	**1,014.3**	103.43	114.01
33		5.19	**968.4**	98.75	108.85	**1,060.9**	108.18	119.25
34		5.58	**1,046.0**	106.66	117.58	**1,145.9**	116.85	128.80
35	1 3/8	5.89	**1,103.7**	112.55	124.06	**1,209.1**	123.30	135.91
36		6.26	**1,172.5**	119.56	131.79	**1,284.5**	130.98	144.38
38	1 1/2	6.87	**1,282.5**	130.78	144.16	**1,405.0**	143.27	157.93
40		7.67	**1,429.3**	145.75	160.66	**1,565.8**	159.67	176.00
	1 5/8	8.17	**1,521.9**	155.19	171.06	**1,667.2**	170.01	187.40
42		8.45	**1,581.5**	161.27	177.77	**1,732.6**	176.68	194.75
44		9.24	**1,725.8**	175.98	193.99	**1,890.7**	192.80	212.52
	1 3/4	9.43	**1,761.3**	179.60	197.98	**1,929.6**	196.76	216.89
46		10.25	**1,899.3**	193.68	213.49	**2,080.7**	212.17	233.88
48	1 7/8	11.08	**2,068.9**	210.97	232.55	**2,266.6**	231.13	254.78
50		11.95	**2,232.3**	227.63	250.92	**2,445.5**	249.37	274.89
	2	12.33	**2,304.3**	234.98	259.01	**2,524.4**	257.42	283.75
52		12.93	**2,421.3**	246.91	272.16	**2,652.6**	270.49	298.16
54	2 1/8	14.07	**2,626.5**	267.83	295.23	**2,877.4**	293.42	323.43
56		15.11	**2,853.4**	290.97	320.73	**3,126.0**	318.77	351.38
	2 1/4	15.65	**2,956.2**	301.45	332.29	**3,238.6**	330.25	364.04
58		16.12	**3,004.3**	306.36	337.70	**3,291.3**	335.62	369.96
60		17.29	**3,245.0**	330.90	364.75	**3,555.0**	362.51	399.60
	2 3/8	17.48	**3,280.2**	334.50	368.71	**3,593.6**	366.45	403.94
62		18.49	**3,432.1**	349.98	385.78	**3,759.9**	383.41	422.63
64	2 1/2	19.59	**3,646.8**	371.87	409.92	**3,995.1**	407.39	449.07
66		20.96	**3,876.8**	395.33	435.77	**4,247.1**	433.09	477.39
	2 5/8	21.39	**3,956.5**	403.46	444.73	**4,334.4**	441.99	487.21
68		22.03	**4,132.9**	421.44	464.56	**4,527.6**	461.69	508.92
70	2 3/4	23.53	**4,370.1**	445.63	491.22	**4,787.5**	488.19	538.14
72		24.98	**4,544.9**	463.46	510.87	**4,979.1**	507.73	559.67
74	2 7/8	26.28	**4,800.9**	489.56	539.64	**5,259.5**	536.33	591.19
76		27.57	**5,064.0**	516.39	569.22	**5,547.7**	565.71	623.59

Special constructions and diameters available – please contact us directly. .

CASAR **SUPERPLAST10 MIX**



High Breaking Force

PROPERTIES

No swivel | Lubricated | Tolerance | Parallel Construction | Plast rope | Compacted | Preformed

APPLICATIONS

Very high bending fatigue performance and high minimum breaking load. Mainly overhead and industrial cranes where rotation resistant ropes are not required.

OVERVIEW

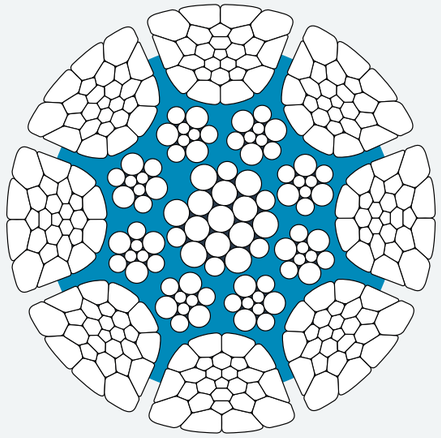
Diameter Range [mm]		16 – 56
RCN		11
Number of Outer Strands		10
Number of Wires		366
Number of Outer Load Bearing Wires		260
Average Fill Factor		0,700
Average Nominal Metallic Area Factor C		0,550
Average Spin Factor	*N/mm²	0.87 (1960)* / 0.85 (2160)*

- Temperature range of use: –50°C to +115°C
- Suitable for multi-layer spooling, preferred in Lang's lay execution
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Available in galvanized and ungalvanized

Nominal Diameter		Weight	Minimum Breaking Force					
			1960 N/mm²			2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
16	5/8	1.24	**237.0**	24.17	26.64	**259.0**	26.41	29.11
17		1.42	**270.0**	27.53	30.35	**291.0**	29.67	32.71
18		1.53	**301.0**	30.69	33.83	**328.0**	33.45	36.87
19	3/4	1.87	**344.0**	35.08	38.67	**375.0**	38.24	42.15
20		2.03	**377.0**	38.44	42.38	**406.0**	41.40	45.64
21		2.16	**412.0**	42.01	46.31	**449.0**	45.79	50.47
22		2.43	**465.0**	47.42	52.27	**507.0**	51.70	56.99
	7/8	2.51	**474.6**	48.40	53.35	**519.7**	53.00	58.42
23		2.65	**507.0**	51.70	56.99	**546.0**	55.68	61.37
24		2.89	**553.0**	56.39	568.70	**602.0**	61.39	67.67
25		3.11	**594.0**	60.57	66.77	**647.0**	65.98	72.73
	1	3.29	**613.2**	62.53	68.93	**670.8**	68.40	75.40
26		3.37	**645.0**	65.77	72.50	**695.0**	70.87	78.12
27		3.63	**692.0**	70.57	77.78	**754.0**	76.89	84.75
28		3.96	**757.0**	77.19	778.40	**825.0**	84.13	92.73
	11/8	4.16	**788.4**	80.40	88.62	**863.2**	88.02	97.03
29		4.23	**808.0**	82.39	90.82	**871.0**	88.82	97.90
30		4.44	**847.0**	86.37	95.21	**923.0**	94.12	103.75
31		4.77	**913.0**	93.10	102.63	**994.0**	101.36	111.73
32	1 1/4	5.13	**982.0**	100.14	110.38	**1,057.0**	107.79	118.81
33		5.41	**1,036.0**	105.64	116.45	**1,129.0**	115.13	126.90
34		5.65	**1,106.0**	112.78	124.32	**1,205.0**	122.88	135.45
35	1 3/8	6.12	**1,167.0**	119.00	131.18	**1,277.4**	130.26	143.59
36		6.45	**1,235.0**	125.94	138.82	**1,330.0**	135.62	149.50
38	1 1/2	7.16	**1,369.0**	139.60	153.88	**1,492.0**	152.14	167.71
40		7.91	**1,496.0**	152.55	168.16	**1,621.0**	165.30	182.21
	1 5/8	8.68	**1,592.9**	162.43	179.05	**1,733.3**	176.75	194.83
42		8.75	**1,654.0**	168.66	185.92	**1,792.0**	182.74	201.43
44		9.62	**1,820.0**	185.59	204.58	**1,972.0**	201.09	221.66
	1 3/4	10.10	**1,857.4**	189.40	208.78	**2,020.9**	206.08	227.16
46		10.53	**1,985.0**	202.42	223.12	**2,150.0**	219.24	241.67
48	1 7/8	11.51	**2,176.0**	221.89	244.59	**2,356.0**	240.25	264.82
50		12.43	**2,350.0**	239.64	264.15	**2,546.0**	259.62	286.18
	2	13.17	**2,425.8**	247.37	272.67	**2,639.2**	269.13	296.66
52		13.40	**2,508.0**	255.75	281.91	**2,716.0**	276.96	305.29
54	2 1/8	14.47	**2,793.0**	284.81	313.95	**2,967.0**	302.55	333.50
56		15.56	**2,931.0**	298.88	329.46	**3,174.0**	323.66	356.77

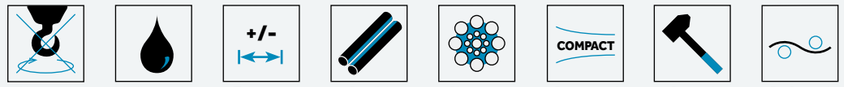
Special constructions and diameters available – please contact us directly. .

CASAR **PARAFIT**



Very High Breaking Force

PROPERTIES



No swivel | Lubricated | Tolerance | Parallel Construction | Plast rope | Compacted | Swaged | Preformed

APPLICATIONS

Boom hoist rope for all kind of crawler cranes and mobile cranes especially suited for multilayer spooling.

OVERVIEW

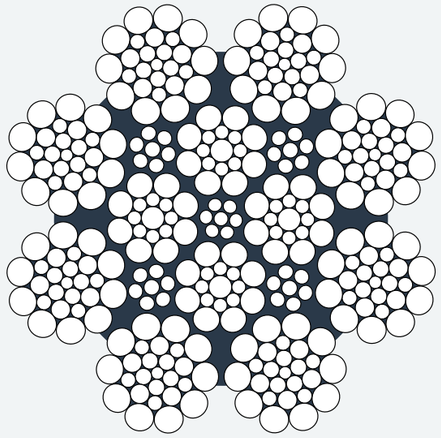
Diameter Range [mm]		14 – 50
RCN		09
Number of Outer Strands		8
Number of Wires		298
Number of Outer Load Bearing Wires		208
Average Fill Factor		0.744
Average Nominal Metallic Area Factor C		0.584
Average Spin Factor	*N/mm²	0.87 (1960)* / 0.86 (2160)*

- Temperature range of use: –50°C to +115°C
- Especially suitable for multi-layer spooling
- Only available in ordinary lay
- Available in right hand and left hand
- Available in galvanized and ungalvanized

Nominal Diameter		Weight	Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [metric]	kN	t [metric]	t [2000 lbs]
14		0.98	**195.8**	19.97	22.01	**213.4**	21.76	23.98
15		1.11	**223.2**	22.76	25.08	**243.1**	24.79	27.33
16	5/8	1.27	**255.1**	26.01	28.67	**277.9**	28.33	31.23
17		1.45	**291.8**	29.75	32.79	**317.8**	32.41	35.72
18		1.61	**322.7**	32.90	36.27	**351.5**	35.84	39.51
19	3/4	1.82	**364.4**	37.16	40.96	**397.0**	40.48	44.62
20		1.99	**398.5**	40.63	44.79	**434.1**	44.26	48.79
21		2.18	**437.5**	44.61	49.17	**476.5**	48.59	53.57
22		2.42	**485.2**	49.47	54.53	**528.5**	53.89	59.41
	7/8	2.47	**495.1**	50.49	55.65	**539.4**	55.00	60.63
23		2.63	**528.3**	53.87	59.38	**575.5**	58.69	64.69
24		2.87	**576.1**	58.75	64.76	**627.6**	64.00	70.55
25		3.11	**624.4**	63.67	70.19	**680.2**	69.36	76.46
	1	3.21	**644.5**	65.73	72.45	**702.2**	71.61	78.93
26		3.35	**671.7**	68.50	75.50	**731.7**	74.62	82.25
27		3.63	**727.2**	74.16	81.74	**792.2**	80.78	89.05
28		3.90	**782.8**	79.82	87.99	**852.7**	86.96	95.85
	1 1/8	4.06	**815.3**	83.13	91.64	**888.2**	90.57	99.83
29		4.18	**838.0**	85.46	94.20	**912.9**	93.09	102.62
30		4.50	**902.2**	92.00	101.42	**982.9**	100.23	110.48
32	1 1/4	5.08	**1,018.9**	103.90	114.53	**1,110.0**	113.19	124.77
		5.40	**1,083.6**	110.50	121.80	**1,065.9**	108.70	119.81
34		5.77	**1,157.3**	118.01	130.09	**1,260.7**	128.56	141.71
	1 3/8	6.09	**1,221.1**	124.52	137.26	**1,330.3**	135.66	149.53
36		6.44	**1,291.6**	131.71	145.18	**1,407.0**	143.48	158.16
38	1 1/2	7.21	**1,446.4**	147.49	162.58	**1,575.6**	160.67	177.11
40		7.95	**1,593.8**	162.53	179.15	**1,736.3**	177.05	195.17
	1 5/8	8.46	**1,697.1**	173.05	190.76	**1,848.8**	188.52	207.81
42		8.76	**1,757.2**	179.19	197.52	**1,914.2**	195.20	215.17
44		9.67	**1,939.8**	197.81	218.04	**2,113.2**	215.49	237.53
	1 3/4	9.87	**1,979.7**	201.88	222.53	**2,156.6**	219.92	242.41
46		10.55	**2,115.8**	215.75	237.82	**2,304.9**	235.03	259.08
	1 7/8	11.31	**2,267.9**	231.26	254.92	**2,470.6**	251.94	277.71
48		11.49	**2,304.2**	234.96	259.00	**2,510.1**	255.96	282.15
50		12.36	**2,480.3**	252.92	278.80	**2,702.0**	275.53	303.71

Special constructions and diameters available – please contact us directly. .

CASAR **ALPHALIFT**



PROPERTIES

No swivel | Lubricated | Tolerance | Parallel Construction | Preformed

APPLICATIONS

Very flexible construction with a high breaking load. Hoist rope for electrical hoist and other lifting devices, where rotation resistant ropes are not required.

OVERVIEW

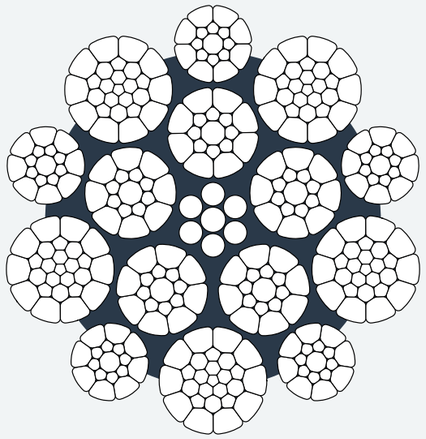
Diameter Range [mm]	4 – 5.5	6 – 6.5	7 – 9.53	10 – 27
RCN	02	07	07	06
Number of Outer Strands	8	8	8	8
Number of Wires	99	211	271	303
Number of Outer Load Bearing Wires	56	168	168	152
Average Fill Factor	0.655			
Average Nominal Metallic Area Factor C	0.514			
Average Spin Factor	0.86			

- Temperature range of use: –50°C to +140°C
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Available in galvanized and ungalvanized

Nominal Diameter		Weight	Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
4		0.07	**13.0**	1.33	1.46	**14.3**	1.46	1.61
4.5		0.09	**16.7**	1.70	1.88	**18.4**	1.88	2.07
	3/16	0.10	**18.7**	1.91	2.10	**20.6**	2.10	2.32
5		0.11	**21.1**	2.15	2.37	**23.4**	2.39	2.63
5.5		0.13	**26.1**	2.66	2.93	**28.8**	2.94	3.24
6		0.16	**31.5**	3.21	3.54	**34.7**	3.54	3.90
6.5	1/4	0.18	**37.9**	3.86	4.26	**41.8**	4.26	4.70
7		0.22	**42.6**	4.34	4.79	**47.0**	4.79	5.28
7.5		0.25	**49.6**	5.06	5.58	**54.6**	5.57	6.14
8	5/16	0.29	**55.0**	5.61	6.18	**60.6**	6.18	6.81
9		0.36	**72.0**	7.34	8.09	**79.3**	8.09	8.91
10		0.45	**87.3**	8.90	9.81	**92.5**	9.43	10.40
11	7/16	0.56	**107.2**	10.93	12.05	**117.0**	11.93	13.15
12		0.66	**126.3**	12.88	14.20	**137.8**	14.05	15.49
	1/2	0.71	**139.9**	14.27	15.73	**152.6**	15.56	17.15
13		0.76	**146.6**	14.95	16.48	**159.9**	16.31	17.97
14		0.88	**168.7**	17.20	18.96	**184.1**	18.77	20.69
15		1.02	**197.0**	20.09	22.14	**214.9**	21.91	24.16
16	5/8	1.15	**222.5**	22.69	25.01	**242.8**	24.76	27.29
17		1.29	**250.3**	25.52	28.13	**273.1**	27.85	30.70
18		1.46	**282.8**	28.84	31.79	**308.5**	31.46	34.68
19	3/4	1.65	**319.9**	32.62	35.96	**349.0**	35.59	39.23
20		1.81	**352.0**	35.89	39.57	**384.0**	39.16	43.16
21		2.02	**391.6**	39.93	44.02	**427.2**	43.56	48.02
22		2.21	**430.2**	43.87	48.36	**469.4**	47.87	52.76
	7/8	2.21	**430.2**	43.87	48.36	**469.4**	47.87	52.76
23		2.40	**467.4**	47.66	52.54	**509.9**	52.00	57.32
24		2.59	**504.7**	51.47	56.73	**550.6**	56.15	61.89
25		2.80	**545.3**	55.61	61.29	**594.9**	60.66	66.87
	1	0.00	**562.9**	57.40	63.27	**614.1**	62.62	69.03
26		3.03	**588.8**	60.04	66.18	**642.4**	65.51	72.21
27		3.27	**635.5**	64.80	71.43	**693.3**	70.70	77.93

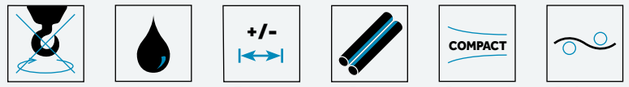
Special constructions and diameters available – please contact us directly. .

CASAR **BETALIFT**



Very High Breaking Force

PROPERTIES



No swivel · Lubricated · Tolerance · Parallel Construction · Compacted · Preformed

APPLICATIONS

Very flexible construction with an extremely high breaking load. Hoist rope for electrical hoist and other lifting devices, where rotation resistant ropes are not required.

OVERVIEW

Diameter Range [mm]	8 – 27
RCN	07
Number of Outer Strands	10
Number of Wires	307
Number of Outer Load Bearing Wires	205
Average Fill Factor	0.754
Average Nominal Metallic Area Factor C	0.592
Average Spin Factor	0.84

- Temperature range of use: –50°C to +140°C
- Suitable for multi-layer spooling, preferred in Lang's lay execution
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Available in galvanized and ungalvanized

Nominal Diameter		Weight	Minimum Breaking Force					
			1960 N/mm²			2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
8	5/16	0.32	**62.1**	6.33	6.98	**68.4**	6.97	7.69
9		0.41	**79.5**	8.11	8.94	**87.6**	8.93	9.85
10		0.50	**97.3**	9.92	10.94	**107.2**	10.93	12.05
11	7/16	0.61	**118.4**	12.07	13.31	**130.5**	13.31	14.67
12		0.74	**140.1**	14.29	15.75	**154.4**	15.74	17.36
	1/2	0.82	**156.9**	16.00	17.64	**172.9**	17.63	19.43
13		0.86	**164.6**	16.78	18.50	**181.4**	18.50	20.39
14		0.99	**190.8**	19.46	21.45	**210.3**	21.44	23.64
15		1.14	**219.1**	22.34	24.63	**241.5**	24.63	27.15
16	5/8	1.30	**250.6**	25.55	28.17	**276.2**	28.16	31.05
17		1.16	**280.5**	28.60	31.53	**309.2**	31.53	34.76
18		1.65	**317.1**	32.34	35.64	**349.5**	35.64	39.29
19	3/4	1.76	**354.5**	36.15	39.85	**390.6**	39.83	43.91
20		2.05	**389.4**	39.71	43.77	**429.1**	43.76	48.23
21		2.23	**432.0**	44.05	48.56	**476.1**	38.35	42.28
22		2.42	**472.0**	48.13	53.05	**520.2**	53.05	58.47
	7/8	2.52	**481.7**	49.12	54.15	**530.9**	54.14	59.68
23		2.66	**515.2**	52.54	57.91	**567.7**	57.89	63.81
24		2.91	**561.8**	57.29	63.15	**619.1**	63.13	69.59
25		3.18	**608.0**	62.00	68.34	**670.1**	68.33	75.32
	1	3.29	**627.6**	64.00	70.55	**691.8**	70.54	77.76
26		3.40	**660.2**	67.32	74.21	**727.6**	74.20	81.79
27		3.65	**712.1**	72.61	80.04	**784.7**	80.02	88.20

Special constructions and diameters available – please contact us directly. .

DISCARD CRITERIA

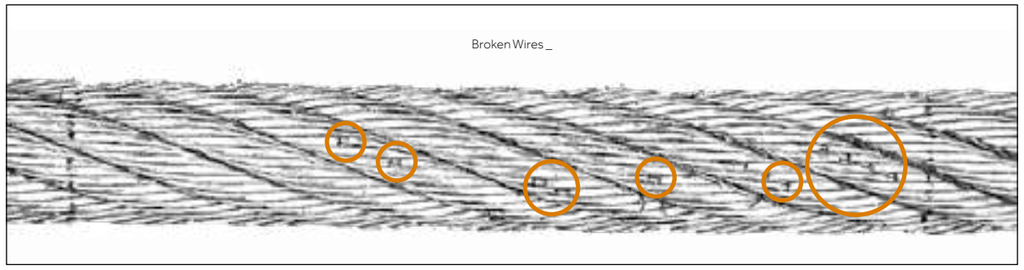
DISCARD CRITERIA ACCORDING TO ISO 4309*

Wire ropes should be visually inspected at frequent intervals by a competent person to make sure that the rope is in a safe condition and has not reached one of the following criteria:

1. Visible broken wires (see the following tables)
2. Reduction in rope diameter
3. Fracture of strands
4. Corrosion
5. Deformation and damage

In the tables on the next page you can find the number of visible broken wires for ropes working in steel sheaves.

NOTE: Ropes having outer strands of Seale construction where the number of wires in each strand is 19 or less (e.g. 6 x 19 Seale for single-layer and parallel-closed ropes and 18 × 19 Seale– WSC for rotation-resistant ropes) are placed in this table two colums to the left of that column in which the construction would normally be placed based on the number of wires in the outer layer of strands.



DISCARD CRITERIA

DISCARD CRITERIA ACCORDING TO ISO 4309*

SINGLE-LAYER AND PARALLEL-CLOSED ROPES

RCN	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	
Number of load-bearing wires in the outer strands of the rope[1] *n*	***n* ≤ 50**	**51 ≤ *n* ≤ 75**	**76 ≤ *n* ≤ 100**	**101 ≤ *n* ≤ 120**	**121 ≤ *n* ≤ 140**	**141 ≤ *n* ≤ 160**	**161 ≤ *n* ≤ 180**	**181 ≤ *n* ≤ 200**	**201 ≤ *n* ≤ 220**	**221 ≤ *n* ≤ 240**	**241 ≤ *n* ≤ 260**	**261 ≤ *n* ≤ 280**	**281 ≤ *n* ≤ 300**	**n > 300**
Number of visible broken outer wires[2]														
Rope Working (Single-Layer Drum)[3] (Classes M1 to M4 or class unknown[4])														
Ordinary Lay (sZ, zS)														
Over a length of 6*d*[5]	2	3	4	5	6	6	7	8	9	10	10	11	12	0.04 × n
Over a length of 30*d*[5]	4	6	8	10	11	13	14	16	18	19	21	22	24	0.08 × n
Lang Lay (sS, zZ)														
Over a length of 6*d*[5]	1	2	2	2	3	3	4	4	4	5	5	6	6	0.02 × n
Over a length of 30*d*[5]	2	3	4	5	6	6	7	8	9	10	10	11	12	0.04 × n
Rope Spooling (Multi-Layer Drum)[6] (All classes)														
Ordinary and Lang lay														
Over a length of 6*d*[5]	4	6	8	10	12	12	14	16	18	20	20	22	24	0.08 × n
Over a length of 30*d*[5]	8	12	16	20	22	26	28	32	36	38	42	44	48	0.16 × n

ROTATION-RESISTANT ROPES

RCN	**21**	**22**	**23–1**	**23–2**	**23–3**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	
Outer Strands	**4**	**3 | 4**						**≥ 11**						
Number of load-bearing wires in the outer strands of the rope[1] *n*	***n* ≤ 100**	***n* ≥ 100**	**71 ≤ *n* ≤ 100**	**101 ≤ *n* ≤ 120**	**121 ≤ *n* ≤ 140**	**141 ≤ *n* ≤ 160**	**161 ≤ *n* ≤ 180**	**181 ≤ *n* ≤ 200**	**201 ≤ *n* ≤ 220**	**221 ≤ *n* ≤ 240**	**241 ≤ *n* ≤ 260**	**261 ≤ *n* ≤ 280**	**281 ≤ *n* ≤ 300**	***n* > 300**
Number of visible broken outer wires[2]														
Rope Working (Single-Layer Drum)[3]														
Over a length of 6*d*[5]	2	2	2	3	3	3	4	4	4	5	5	6	6	6
Over a length of 30*d*[5]	4	4	4	5	5	6	7	8	9	10	10	11	12	12
Rope Spooling (Multi-Layer Drum)[6]														
Over a length of 6*d*[5]	2	4	4	5	6	6	7	8	9	10	10	11	12	12
Over a length of 30*d*[5]	4	8	8	10	11	13	14	16	18	19	21	22	24	24

1) For the purposes of this International Standard, Filler wires are not regarded as load-bearing wires and are not included in the values of *n*.
2) A broken wire has two ends (counted as one wire).
3) Sections of rope working in steel sheaves and/or spooling on a single-layer drum
4) Twice the number of broken wires listed may be applied to ropes on mechanisms whose classification is known to be M5 to M8.
5) *d* = nominal diameter of rope.
6) Sections of rope spooling on a multi-layer drum. The values apply to deterioration that occurs at the cross-over zones and interference between wraps due to fleet angle effects (and not to those sections of rope which only work in sheaves and do not spool on the drum)

Classes M1 to M4 equates to mechanism group $1E_m$ to $1A_m$
Classes M5 to M8 equates to mechanism group 2_m to 5_m
Please pay attention to the country- / application-specific standards.

According to the current valid Version / Edition

SPECIAL WIRE ROPES

INTRODUCTION

WIRECO

Quality Products, Outstanding Service and Comprehensive Technical Support – It's what today's industries expect from their supplier partners. And that's what WireCo WorldGroup is all about.

WireCo WorldGroup is the global market, manufacturing and technical leader in wire and synthetic rope manufacturing, providing a consultative approach to offer customers a single, reliable source for performance matched solutions to fit their specific application and budget needs. But it doesn't stop there. WireCo WorldGroup offers clients the education and expertise needed to enhance product performance and value.

With our comprehensive range of trusted, global brands we deliver unmatched technical expertise and innovation as well as unparalleled quality assurance meeting and exceeding international quality certifications.

WireCo WorldGroup is on the ground everywhere you are - with manufacturing and distribution facilities all around the world and more than 4,000 global employees supporting these efforts. Our customers enjoy global availability for a consistent, responsive supply no matter where and when they need it.

OLIVEIRA

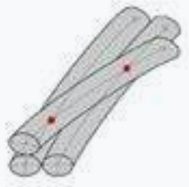
Already in the 6th generation Oliveira's goal is to provide valuable solutions to our customers. Our products meet the international standards and offer an excellent value to your application.

GENERAL DEFINITIONS

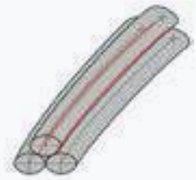
PARALLEL LAY ROPES

Parallel Construction

In a non parallel lay rope all wires and strands have different lay length. The high stress concentration at the crossover point leads to an early internal failure. In a parallel lay rope all wires and strands have the same lay length. The linear contact leads to an optimal stress distribution. Furthermore the compacted parallel design leads to a higher fill factor and breaking strength.



cross lay (non-parallel)
stress concentration



parallel lay
stress distribution

PPI - PLASTIC PROTECTED IMPREGNATION

PPI

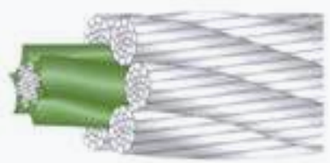
In consequence of being not only a steel wire rope producer but also a synthetic rope manufacturer, Oliveira has a strong and deep know-how of plastic and its applications. The PPI operation is applied during the Oliveira process in one continuous operation which guarantees a perfect impregnation and equal stress and tension of all the components. Resulting the plastic forms only small braces between the strands so they can keep their flexibility to give in to the relative movements within the rope.

Positive effects:

- Allows a homogeneous stress distribution in the rope
- Improves the structural stability
- Encapsulates the lubricant in the core
- Protects the core from corrosion

Resulting in:

- A longer service life
- Keeping its non rotational properties in the most severe conditions
- Internal rope protection against corrosive environment
- Favouring outer maintenance



SWIVEL USE

Swivel

No Swivel

Rotation resistant ropes can be used with a swivel.
All other rope constructions may not be used with a swivel!

ISO 21669 – General guidance on swivel use (rotation-resistance)

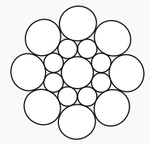
- Less than or equal to 1 turn/1000d lifting a load equivalent to 20% MBF, a swivel can be used
- Greater than 1 turn but no greater than 4 turns/1000d – a swivel may be used subject to the recommendations of the rope manufacturer and/or approval of a competent person
- Greater than 4 turns/1000d – a swivel should not be used

COMPACTING

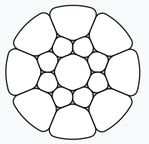
Compacted

OLIVEIRA is using the most improved and updated technology in the world (multiroll system) for compacting the strands, resulting in:

- Perfect control of the calibration and of the cross section
- No outer surface wearing and injuring
- No peel-off of the zinc coating
- No damage of the inner wires, thanks to the gradual lamination
- All these properties lead the ropes to the highest performance and resistance to fatigue, when compared with the other usual compacting technologies.



conventional strand



compacted strand

LUBRICATED

Lubricated

As a standard feature, Oliveira special wire ropes receive intensive lubrication during the production process. This in-process treatment will provide the rope with ample protection against corrosion and it is meant to reduce the friction between the elements which make up the rope as well as the friction between rope and sheaves or drums. This lubrication, however, only lasts for a limited time and should be reapplied periodically.

PRODUCTION TOLERANCE

Tolerance

Oliveira special wire ropes are produced within a tolerance range between +0% and +5%. Generally the standard production tolerance is at the upper limit of the tolerance range, between +1% and +4%. For this reason Oliveira special wire ropes fulfill the requirements of the famous drum manufacturers.

GENERAL DEFINITIONS

ROTATION-RESISTANT ROPES

In a conventional rope, an external load creates a moment which tries to un-twist the rope. A rotation resistant steel wire rope has a steel core which is an independent rope, closed in the opposite direction to the outer strands. Under load, the core tries to twist the rope in one direction, the outer strands try to twist it in the opposite direction. The geometrical design of a rotation resistant wire rope is such that the moments in the core and the outer strands compensate each other over a wide load spectrum, so that even with great lifting heights practically no rope twist occurs.

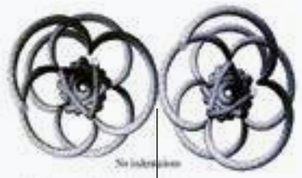
MULTIPLE LAYER SPOOLING

A drum coiling a rope in more than one layer is a multiple layer system with new demands to a wire rope.

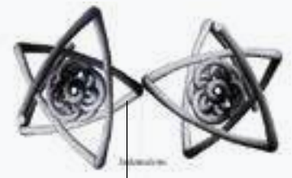
- Low diameter reduction under tension
- Crushing resistance in crossovers and layer crossovers
- Extreme smooth surface for less indentations or pressure in crossovers

The following rope properties are required for a long service life:

- Lang's lay to prevent indentations

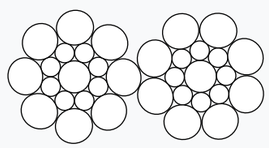


Lang's lay ropes: no indentations of outer wires

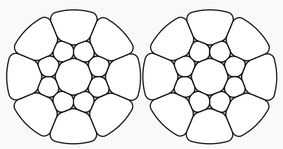


regular lay ropes: indentations of outer wires

- Compacted outer strands to prevent indentations



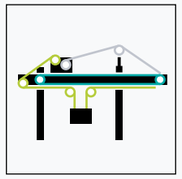
conventional strand



compacted strand

ROPE SELECTION BY APPLICATION

CONTAINER CRANE

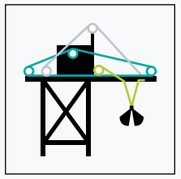


HOIST ROPE
OLIVEIRA **HD 8 K (Option PPI)**

BOOM HOIST
OLIVEIRA **HD 8 K (Option PPI)**

TROLLEY
OLIVEIRA **HD 8 K (Option PPI)**

SHIP UNLOADER

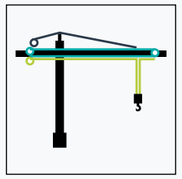


HOIST ROPE
OLIVEIRA **HD 8 K (Option PPI)**

BOOM HOIST
OLIVEIRA **HD 8 K (Option PPI)**

TROLLEY
OLIVEIRA **HD 8 K (Option PPI)**

TOWER CRANE



HOIST ROPE
OLIVEIRA **TOWERLIFT15**
OLIVEIRA **LT 24 K**

BOOM PENDANT
OLIVEIRA **HD 8 K (Option PPI)**

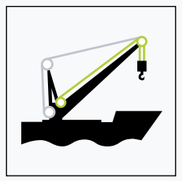
TROLLEY
OLIVEIRA **SC 6 K**

OVERHEAD CRANE

HOIST ROPE
OLIVEIRA **HD 8 K (Option PPI)**
OLIVEIRA **SC 6 K**

Please note: Option PPI if temperature is bellow 115 degrees C on the surface of the rope!

DECK CRANE



HOIST ROPE
OLIVEIRA **NR MAXIPACT (Option PPI)**
OLIVEIRA **NR 15 MAXILIFT (Option PPI)**
OLIVEIRA **DC 4 K**

BOOM HOIST
OLIVEIRA **HD 8 K (Option PPI)**

TELESCOPIC MOBILE CRANE

HOIST ROPE
OLIVEIRA **NR MAXIPACT (Option PPI)**
OLIVEIRA **NR 15 MAXILIFT (Option PPI)**

OFFSHORE PEDESTAL CRANE

HOIST ROPE
OLIVEIRA **NR MAXIPACT (Option PPI)**

BOOM HOIST
OLIVEIRA **HD 8 K (Option PPI)**

AUXILIARY HOIST
OLIVEIRA **NR MAXIPACT (Option PPI)**

LATTICE BOOM CRAWLER CRANE

HOIST ROPE
OLIVEIRA **NR MAXIPACT (Option PPI)**
OLIVEIRA **NR 15 MAXILIFT (Option PPI)**
OLIVEIRA **LT 24 K**

BOOM HOIST
OLIVEIRA **DP 8 K (Option PPI)**
OLIVEIRA **HD 8 K (Option PPI)**

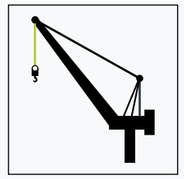
AUXILIARY HOIST
OLIVEIRA **NR MAXIPACT (Option PPI)**
OLIVEIRA **NR 15 MAXILIFT (Option PPI)**

LATTICE BOOM MOBILE CRANE

HOIST ROPE
OLIVEIRA **NR MAXIPACT (Option PPI)**
OLIVEIRA **NR 15 MAXILIFT (Option PPI)**
OLIVEIRA **LT 24 K**

BOOM HOIST
OLIVEIRA **DP 8 K (Option PPI)**
OLIVEIRA **HD 8 K (Option PPI)**

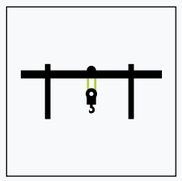
LUFFING-JIB TOWER CRANE



HOIST ROPE
OLIVEIRA **NR MAXIPACT (Option PPI)**
OLIVEIRA **NR 15 MAXILIFT (Option PPI)**

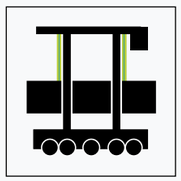
BOOM PENDANT
OLIVEIRA **HD 8 K (Option PPI)**
OLIVEIRA **DP 8 K (Option PPI)**

RUBBER TIRED GANTRY / RAIL MOUNTED GANTRY



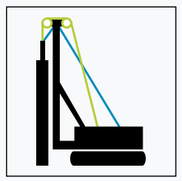
HOIST ROPE
OLIVEIRA **HD 8 K (Option PPI)**
OLIVEIRA **DP 8 K (Option PPI)**

STRADDLE CARRIERS



HOIST ROPE
OLIVEIRA **HD 8 K (Option PPI)**
OLIVEIRA **DP 8 K (Option PPI)**

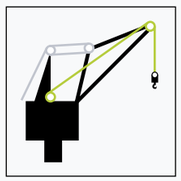
DRILLING / PILING



HOIST ROPE
OLIVEIRA **NR 15 MAXILIFT (Option PPI)**

FEED ROPE
OLIVEIRA **HD 8 K (Option PPI)**

HARBOR MOBILE CRANE



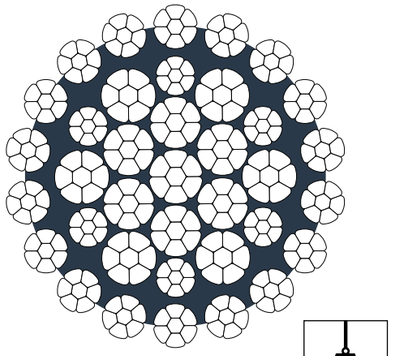
HOIST ROPE
OLIVEIRA **HD 8 K (Option PPI)**

BOOM HOIST
OLIVEIRA **HD 8 K (Option PPI)**

ROTATION-RESISTANT ROPES

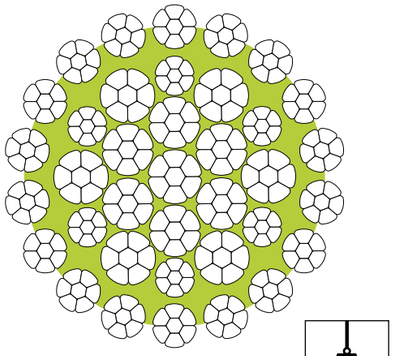
- Designed to generate reduced levels of torque and rotation when loaded.
- Designed with at least two layers of strands laid helically around a center.
- The direction of lay of the outer strands being opposite to that of the underlying layer.

OLIVEIRA
NR MAXIPACT



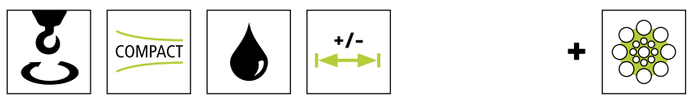
High
breaking force

OLIVEIRA
NR MAXIPACT PPI



High
breaking force

PROPERTIES



Swivel | Compacted | Lubricated | Tolerance

\+

PPI

APPLICATIONS

All cranes and performant lifting devices where non-rotating and high MBL ropes are required.

Recommended for offshore, deck cranes and marine environment.

OVERVIEW

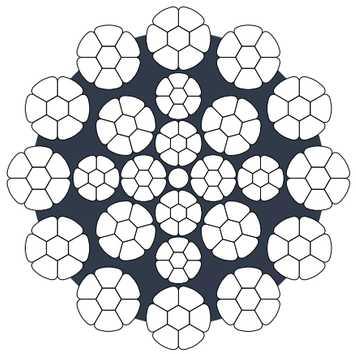
RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor *N/mm²
23–3	12,70 – 52	37xK7	18	259	126	0.716	0.5 (1960*) 0.81 (2160*)
30	54 – 64	37xK19	18	710	342	0.726	0.83 (1960*) 0.79 (2160*)
>31	66 – 70	37xK26	18	1092	468	0.714	0.81 (1960*) 0.78 (2160*)

- Temperature range of use: -50°C to +75°C
- Please add 1.0% on the weight for ropes with PPI
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand

Nominal Diameter		Weight	Minimum Breaking Force 1960 N/mm²			Minimum Breaking Force 2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
12.70	1/2	0.77	**148.0**	15.09	16.64	**155.9**	15.90	17.52
13		0.82	**157.8**	16.09	17.73	**165.7**	16.90	18.62
14		0.95	**183.3**	18.69	20.60	**192.5**	19.63	21.63
15		0.97	**209.6**	21.37	23.56	**220.6**	22.50	24.80
15.88	5/8	1.09	**230.0**	23.45	25.85	**241.0**	24.58	27.09
16		1.24	**239.4**	24.41	26.91	**251.4**	25.64	28.26
17		1.40	**269.7**	27.50	30.32	**283.4**	28.90	31.86
18		1.57	**302.5**	30.85	34.01	**317.7**	32.40	35.71
19	3/4	1.75	**338.9**	34.55	38.09	**355.9**	36.29	40.00
20		1.93	**374.2**	38.16	42.06	**393.0**	40.07	44.17
21		2.13	**412.2**	42.03	46.33	**432.9**	44.14	48.65
22		2.33	**452.0**	46.09	50.81	**474.7**	48.40	53.35
22.23	7/8	2.36	**458.0**	46.70	51.48	**481.0**	49.05	54.07
23		2.55	**494.8**	50.46	55.62	**519.6**	52.99	58.41
24		2.79	**540.3**	55.09	60.73	**567.4**	57.86	63.78
25		3.03	**587.1**	59.87	65.99	**616.6**	62.87	69.30
25.40	1	3.08	**595.4**	60.71	66.93	**625.3**	63.76	70.29
26		3.25	**634.2**	64.68	71.29	**666.1**	67.92	74.87
27		3.54	**683.6**	69.70	76.84	**717.9**	73.20	80.69
28		3.79	**734.0**	74.85	82.51	**770.9**	78.61	86.65
28.58	1 1/8	3.97	**768.3**	78.34	86.36	**806.8**	82.27	90.69
29		4.07	**790.0**	80.56	88.80	**824.4**	84.07	92.67
30		4.37	**846.3**	86.30	95.13	**888.8**	90.63	99.90
31.75	1 1/4	4.84	**930.0**	94.83	104.54	**975.0**	99.42	109.59
32		4.95	**959.6**	97.85	107.87	**1,007**	102.69	113.19
34		5.58	**1,079**	110.03	121.28	**1,133**	115.53	127.35
34.93	1 3/8	5.93	**1,146**	116.86	128.82	**1,202**	122.57	135.11
36		6.30	**1,221**	124.51	137.25	**1,282**	130.73	144.10
38	1 1/2	6.96	**1,352**	137.87	151.97	**1,418**	144.60	159.39
40		7.69	**1,495**	152.45	168.05	**1,568**	159.89	176.25
41.28	1 5/8	8.29	**1,602**	163.36	180.07	**1,682**	171.52	189.06
42		8.48	**1,645**	167.74	184.91	**1,730**	176.41	194.46
44		9.37	**1,818**	185.38	204.35	**1,909**	194.66	214.58
44.45	1 3/4	9.51	**1,838**	187.42	206.60	**1,928**	196.60	216.72
46		10.33	**1,995**	203.43	224.25	**2,095**	213.63	235.49
47.63	1 7/8	10.86	**2,095**	213.63	235.49	**2,190**	223.32	246.17
48		11.32	**2,184**	222.71	245.49	**2,293**	233.82	257.74
50		12.03	**2,331**	237.70	262.01	**2,451**	249.93	275.50
50.80	2	12.42	**2,400**	244.73	269.77	**2,517**	256.66	282.92
52		13.17	**2,548**	259.82	286.41	**2,676**	272.88	300.79
54	2 1/8	14.34	**2,731**	278.48	306.98	**2,868**	292.45	322.38
56		15.33	**2,854**	291.03	320.80	**3,049**	310.91	342.72
57.15	2 1/4	16.07	**2,981**	303.98	335.08	**3,180**	324.27	357.45
58		16.49	**3,063**	312.34	344.29	**3,261**	332.53	366.55
60		17.78	**3,293**	335.79	370.15	**3,500**	356.90	393.42
60.33	2 3/8	17.78	**3,335**	340.08	374.87	**3,520**	358.94	395.66
62		18.74	**3,477**	354.56	390.83	**3,705**	377.80	416.46
63.50	2 1/2	19.66	**3,652**	372.40	410.50	**3,870**	394.63	435.01
64		20.20	**3,750**	382.39	421.52	**4,018**	409.72	451.64
66		21.19	**3,900**	397.69	438.38	**4,135**	421.65	464.79
66.68	2 5/8	21.34	**3,910**	398.71	439.50	**4,150**	423.18	466.48
68		22.26	**4,100**	418.08	460.86	**4,354**	443.98	489.41
70	2 3/4	23.78	**4,322**	440.72	485.81	**4,646**	473.76	522.23

Special constructions and diameters available – please contact us directly.

OLIVEIRA
LT 24 K



PROPERTIES

Compacted | Lubricated | Tolerance

APPLICATIONS

Recommended for intensive use and severe hoist applications where rotation resistance property is required like e.g. tower cranes. If you intend to use a swivel please check first with the manufacturer.

OVERVIEW

RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor *N/mm²
23–1	7,20 – 20	24xK7	12	169	84	0,683	0,84 (1960*)
25	21 – 48	24xK17	12	289	204	0,694	

- Temperature range of use: -50°C to +75°C
- Available in Lang's lay
- Available in right hand and left hand

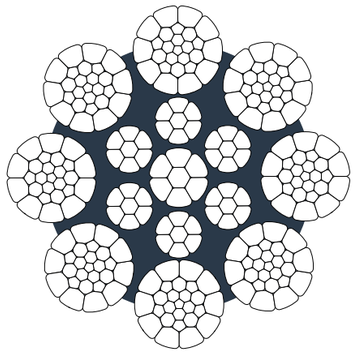
Nominal Diameter		Weight	Minimum Breaking Force 1960 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]
7.20		0.23	**43.7**	4.46	4.91
8	5/16	0.28	**55.1**	5.62	6.19
9		0.36	**69.6**	7.10	7.82
9.53	3/8	0.40	**77.3**	7.88	8.69
10		0.46	**88.2**	8.99	9.91
11	7/16	0.56	**107.6**	10.97	12.09
12		0.67	**128.0**	13.05	14.39
12.70	1/2	0.75	**142.3**	14.51	16.00
13		0.78	**149.1**	15.20	16.76
14		0.91	**175.0**	17.85	19.57
15		1.05	**198.0**	20.19	22.26
15.88	5/8	1.17	**222.5**	22.69	25.01
16		1.20	**229.6**	23.41	25.81
17		1.34	**255.5**	26.05	28.72
18		1.51	**294.1**	29.99	33.06
19	3/4	1.69	**323.5**	32.99	36.36
20		1.88	**353.7**	36.07	39.76
21		2.10	**401.9**	40.99	45.18
22		2.28	**432.7**	44.12	48.64
22.23	7/8	2.29	**436.0**	44.46	49.01
24		2.75	**526.2**	53.66	59.15
25.40	1	3.08	**575.0**	58.63	64.63
26		3.20	**610.0**	62.20	68.57
28		3.71	**705.7**	71.96	79.32
28.58	1 1/8	3.89	**743.8**	75.85	83.61
30		4.24	**807.8**	82.37	90.80
31.75	1 1/4	4.70	**910.0**	92.79	102.29
32		4.80	**934.6**	95.30	105.05
34		5.48	**1,047**	106.76	117.69
34.93	1 3/8	5.77	**1,090**	111.15	122.52
35		5.78	**1,108**	112.98	124.54
36		6.13	**1,165**	118.80	130.95
38	1 1/2	6.78	**1,295**	132.05	145.56
40		7.64	**1,429**	145.72	160.63
41		8.04	**1,498**	152.75	168.38
41.28	1 5/8	8.08	**1,503**	153.26	168.94
42		8.37	**1,572**	160.30	176.70
44		9.17	**1,713**	174.68	192.55
44.45	1 3/4	9.40	**1,765**	179.98	198.39
46		9.95	**1,861**	189.77	209.18
47.63	1 7/8	10.61	**1,990**	202.92	223.68
48		10.94	**2,054**	209.45	230.88

Special constructions and diameters available – please contact us directly.

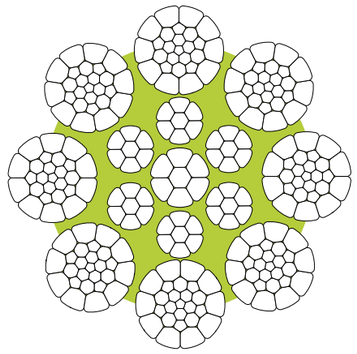
NON-ROTATION-RESISTANT ROPES

- Generate high levels of torque and rotation when loaded. Due to that the non-rotation-resistant ropes (Rotational) must not be used with a swivel.
- Designed with at least two layers of strands laid helically around a center.
- The direction of lay of the outer strands being same to that of the underlying layer.

OLIVEIRA
HD 8 K



OLIVEIRA
HD 8 K PPI



PROPERTIES

No Swivel | Compacted | Lubricated | Tolerance

\+ PPI

APPLICATIONS

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

OVERVIEW

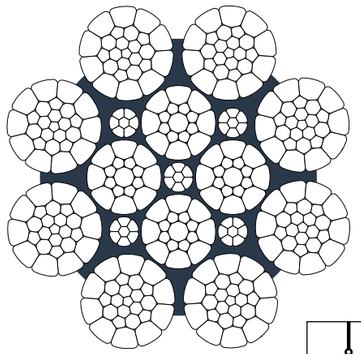
RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor *N/mm²
03	8 – 11	8xK12	8	145	96	0,672	
03	12 – 14	8xK17	8	185	136	0,675	0,85 (1770*)
09	15 – 28,58	8xK26	8	257	208	0,677	0,85 (1960*)
11	30 – 42	8xK31	8	297	248	0,673	0,82 (2160*)
13	44 – 60	8xK36	8	407	288	0,683	
13	62 – 64	8xK36	8	475	288	0,671	0,84 (1770*)
>13	66 – 72	8xK41	8	515	328	0,666	0,83 (1960*) 0,81 (2160*)

- Temperature range of use: -50°C to +75°C
- Please add 1.5% on the weight for ropes with PPI
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand

Nominal Diameter		Weight	Minimum Breaking Force 1770 N/mm²			1960 N/mm²			2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]	kN	t [metric]	t [2000 lbs]
8	5/16	0.30	**50.4**	5.14	5.66	**55.8**	5.69	6.27	**57.7**	5.88	6.49
9		0.37	**63.3**	6.46	7.12	**70.1**	7.15	7.88	**73.6**	7.50	8.27
9.53	3/8	0.39	**66.8**	6.81	7.51	**74.0**	7.54	8.31	**79.6**	8.12	8.95
10		0.45	**78.3**	7.98	8.80	**86.7**	8.84	9.74	**92.4**	9.42	10.39
11	7/16	0.57	**96.7**	9.86	10.87	**107.0**	10.92	12.03	**112.0**	11.42	12.59
12		0.65	**115.1**	11.74	12.94	**126.4**	12.89	14.21	**132.6**	13.52	14.90
12.70	1/2	0.71	**124.4**	12.69	13.98	**138.0**	14.07	15.51	**144.7**	14.76	16.26
13		0.77	**136.6**	13.93	15.35	**149.0**	15.19	16.75	**156.2**	15.93	17.56
14		0.90	**157.9**	16.10	17.75	**174.8**	17.82	19.65	**187.0**	19.07	21.02
15		1.03	**180.0**	18.35	20.23	**202.7**	20.67	22.78	**214.0**	21.82	24.05
15.88	5/8	1.15	**200.0**	20.39	22.48	**220.0**	22.43	24.73	**235.0**	23.96	26.42
16		1.16	**204.0**	20.80	22.93	**229.4**	23.39	25.79	**242.4**	24.72	27.25
17		1.30	**227.0**	23.15	25.52	**250.0**	25.49	28.10	**267.0**	27.23	30.01
18		1.49	**260.2**	26.53	29.25	**288.2**	29.39	32.39	**307.0**	31.31	34.51
19	3/4	1.64	**292.1**	29.79	32.83	**323.5**	32.99	36.36	**342.0**	34.87	38.44
20		1.84	**321.0**	32.73	36.08	**355.5**	36.25	39.96	**379.0**	38.65	42.60
22		2.21	**391.7**	39.94	44.03	**433.7**	44.23	48.75	**458.5**	46.75	51.54
22.23	7/8	2.26	**394.9**	40.27	44.39	**435.0**	44.36	48.90	**462.0**	47.11	51.93
24		2.63	**464.5**	47.37	52.21	**514.3**	52.44	57.81	**556.0**	56.70	62.50
25		2.86	**504.2**	51.41	56.67	**558.2**	56.92	62.74	**602.0**	61.39	67.67
25.40	1	2.94	**519.0**	52.92	58.34	**572.0**	58.33	64.30	**611.0**	62.30	68.68
26		3.13	**548.9**	55.97	61.70	**607.8**	61.98	68.32	**655.0**	66.79	73.62
28		3.60	**629.6**	64.20	70.77	**697.3**	71.10	78.38	**748.0**	76.27	84.08
28.58	1 1/8	3.67	**638.0**	65.06	71.71	**707.0**	72.09	79.47	**751.0**	76.58	84.42
30		4.12	**727.1**	74.14	81.73	**803.0**	81.88	90.26	**864.0**	88.10	97.12
31.75	1 1/4	4.59	**812.0**	82.80	91.27	**895.0**	91.26	100.60	**951.0**	96.98	106.90
32		4.67	**828.0**	84.43	93.07	**911.0**	92.90	102.40	**968.0**	98.71	108.81
34		5.29	**936.4**	95.49	105.26	**1,025**	104.52	115.21	**1,091**	111.25	122.63
34.93	1 3/8	5.51	**954.0**	97.28	107.23	**1,057**	107.78	118.81	**1,109**	113.09	124.66
36		5.84	**1,040**	106.05	116.90	**1,150**	117.27	129.27	**1,217**	124.10	136.80
38	1 1/2	6.58	**1,159**	118.19	130.28	**1,271**	129.61	142.87	**1,332**	135.83	149.72
40		7.30	**1,285**	131.03	144.44	**1,410**	143.78	158.49	**1,478**	150.71	166.13
41.28	1 5/8	7.47	**1,305**	133.07	146.69	**1,464**	149.29	164.56	**1,535**	156.53	172.54
42		7.98	**1,403**	143.07	157.70	**1,538**	156.83	172.88	**1,613**	164.48	181.31
44		9.00	**1,554**	158.46	174.68	**1,736**	177.02	195.13	**1,820**	185.59	204.58
44.45	1 3/4	9.04	**1,572**	160.30	176.70	**1,743**	177.74	195.92	**1,828**	186.40	205.48
46		9.78	**1,713**	174.68	192.55	**1,883**	192.01	211.66	**1,975**	201.39	222.00
47.63	1 7/8	10.40	**1,774**	180.90	199.41	**1,964**	200.27	220.76	**2,112**	215.36	237.40
48		10.61	**1,858**	189.46	208.85	**2,055**	209.55	230.99	**2,155**	219.75	242.23
50		11.62	**1,986**	202.52	223.24	**2,253**	229.74	253.25	**2,362**	240.86	265.50
50.80	2	11.87	**2,044**	208.43	229.75	**2,283**	232.80	256.62	**2,394**	244.12	269.10
52		12.51	**2,147**	218.93	241.33	**2,427**	247.49	272.81	**2,545**	259.52	286.07
54	2 1/8	13.49	**2,316**	236.17	260.33	**2,607**	265.84	293.04	**2,734**	278.79	307.31
56		14.59	**2,480**	252.89	278.76	**2,800**	285.52	314.73	**2,925**	298.27	328.78
57.15	2 1/4	14.92	**2,572**	262.27	289.10	**2,849**	290.52	320.24	**3,010**	306.93	338.34
58		15.67	**2,649**	270.12	297.76	**2,957**	301.53	332.38	**3,102**	316.32	348.68
60		16.71	**2,842**	289.80	319.45	**3,143**	320.50	353.29	**3,297**	336.20	370.60
60.33	2 3/8	16.71	**2,844**	290.01	319.68	**3,147**	320.90	353.74	**3,301**	336.61	371.05
62		17.45	**2,969**	302.75	333.73	**3,277**	334.16	368.35	**3,448**	351.60	387.57
63.50	2 1/2	18.15	**3,092**	315.30	347.55	**3,424**	349.15	384.87	**3,591**	366.18	403.64
64		18.66	**3,200**	326.31	359.69	**3,509**	357.82	394.43	**3,680**	375.26	413.65
66		19.67	**3,389**	345.58	380.94	**3,708**	378.11	416.80	**3,896**	397.28	437.93
66.68	2 5/8	19.94	**3,405**	347.21	382.74	**3,760**	383.41	422.64	**3,954**	403.20	444.45
68		20.81	**3,565**	363.53	400.72	**3,924**	400.14	441.08	**4,117**	419.82	462.77
70	2 3/4	21.69	**3,733**	380.66	419.61	**4,026**	410.54	452.54	**4,330**	441.54	486.71
72		23.26	**3,965**	404.32	445.68	**4,250**	433.38	477.72	**4,570**	466.01	513.69

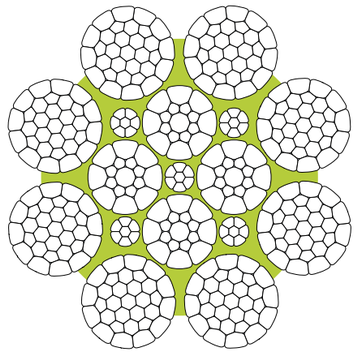
Special constructions and diameters available – please contact us directly.

OLIVEIRA DP 8 K



High breaking force

OLIVEIRA DP 8 K PPI



PROPERTIES

Parallel Construction | No Swivel | Compacted | Lubricated | Tolerance

\+ PPI

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.

OVERVIEW

RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor *N/mm²
03	6,40 – 7,20	8xK12	8	105	96	0,701	
03	8 – 17	8xK17	8	239	136	0,710	0,86 (2160*)
09	18 – 28,58	8xK26	8	311	208	0,712	
11	30 – 38	8xK31	8	351	248	0,721	

- Temperature range of use: -50°C to +75°C
- Please add 1.5% on the weight for ropes with PPI
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Fleet angle must be < 1°30

Nominal Diameter		Weight	2160 N/mm²		
mm	inch	kg/m	kN	t [metric]	t [2000 lbs]
6.40		0.19	**41.4**	4.22	4.65
7		0.23	**50.5**	5.15	5.68
7.20		0.25	**53.2**	5.42	5.98
8	5/16	0.30	**64.1**	6.54	7.21
8.50		0.34	**73.3**	7.47	8.24
9		0.39	**82.3**	8.39	9.25
9.53	3/8	0.43	**92.2**	9.40	10.36
10		0.48	**102.4**	10.44	11.51
11	7/16	0.57	**123.1**	12.55	13.84
12		0.68	**147.3**	15.02	16.56
12.70	1/2	0.76	**159.0**	16.21	17.87
13		0.82	**176.3**	17.98	19.82
14		0.93	**202.6**	20.66	22.77
15		1.09	**236.9**	24.16	26.63
15.88	5/8	1.21	**254.4**	25.94	28.60
16		1.22	**263.9**	26.91	29.66
17		1.40	**302.8**	30.88	34.04
18		1.54	**335.3**	34.19	37.69
19	3/4	1.73	**375.8**	38.32	42.25
20		1.90	**410.9**	41.90	46.18
22		2.31	**500.8**	51.07	56.29
22.23	7/8	2.35	**503.0**	51.29	56.54
24		2.81	**607.0**	61.90	68.23
25.40	1	3.06	**649.0**	66.18	72.95
26		3.23	**701.1**	71.49	78.81
28		3.74	**809.5**	82.55	90.99
28.58	1 1/8	3.89	**820.0**	83.62	92.17
30		4.34	**942.1**	96.06	105.89
31.75	1 1/4	4.85	**1,023**	104.32	114.99
32		4.90	**1,066**	108.70	119.82
34		5.62	**1,220**	124.41	137.13
34.93	1 3/8	5.84	**1,231**	125.53	138.37
36		6.25	**1,357**	138.38	152.53
38	1 1/2	7.00	**1,523**	155.30	171.19

Special constructions and diameters available – please contact us directly.

DISCARD CRITERIA

DISCARD CRITERIA ACCORDING TO ISO 4309:2010

Wire ropes should be visually inspected at frequent intervals by a competent person to make sure that the rope is in a safe condition and has not reached one of the following criteria:

1) Visible broken wires (see the following tables)
2) Reduction in rope diameter
3) Fracture of strands
4) Corrosion
5) Deformation and damage

SINGLE-LAYER AND PARALLEL-CLOSED ROPES

Number of visible broken wires for ropes working in steel sheaves.

NOTE: Ropes having outer strands of Seale construction where the number of wires in each strand is 19 or less (e.g. 6 × 19 Seale) are placed in this table two rows above that row in which the construction would normally be placed based on the number of load bearing wires in the outer layer of strands.

		Number of visible broken outer wires[2]					
		Rope working (single-layer drum)				**Rope spooling (multi-layerdrum)[3]**	
		Sections of rop working in steel sheaves and/or spooling on a single-layer drum				Sections of rope spooling on a multi-layer drum	
		Classes M1 to M4 or class unknown[4]				**All classes**	
		Ordinary lay (sZ, zS)		**Lang lay (sS, zZ)**		**Ordinary and Lang lay**	
RCN	**Number of load-bearing wires in the outer strands of the rope[1] *n***	**Over a length of 6*d*[5]**	**Over a length of 30*d*[5]**	**Over a length of 6*d*[5]**	**Over a length of 30*d*[5]**	**Over a length of 6*d*[5]**	**Over a length of 30*d*[5]**
01	$n \leq 50$	2	4	1	2	4	8
02	$51 \leq n \leq 75$	3	6	2	3	6	12
03	$76 \leq n \leq 100$	4	8	2	4	8	16
04	$101 \leq n \leq 120$	5	10	2	5	10	20
05	$121 \leq n \leq 140$	6	11	3	6	12	22
06	$141 \leq n \leq 160$	6	13	3	6	12	26
07	$161 \leq n \leq 180$	7	14	4	7	14	28
08	$181 \leq n \leq 200$	8	16	4	8	16	32
09	$201 \leq n \leq 220$	9	18	4	9	18	36
10	$221 \leq n \leq 240$	10	19	5	10	20	38
11	$241 \leq n \leq 260$	10	21	5	10	20	42
12	$261 \leq n \leq 280$	11	22	6	11	22	44
13	$281 \leq n \leq 300$	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*

1. For the purposes of this International Standard, Filler wires are not regarded as load-bearing wires and are not included in the values of *n*.
2. A broken wire has two ends (counted as one wire).
3. The values apply to deterioration that occurs at the cross-over zones and interference between wraps due to fleet angle effects (and not to those sections of rope which only work in sheaves and do not spool on the drum).
4. Twice the number of broken wires listed may be applied to ropes on mechanisms whose classification is known to be M5 to M8.
5. d = nominal diameter of rope.

Classes M1 to M4 equates to mechanism group $1E_m$ to $1A_m$ | Classes M5 to M8 equates to mechanism group 2_m to 5_m
Please pay attention to the country- / application-specific standards.

ROTATION-RESISTANT ROPES

Number of visible broken wires for ropes working in steel sheaves.

NOTE: Ropes having outer strands of Seale construction where the number of wires in each strand is 19 or less (e.g. 18 × 19 Seale– WSC) are placed in this table two rows above that row in which the construction would normally be placed based on the number of wires in the outer layer of strands.

		Number of visible broken outer wires[2]			
		Rope working on a single-layer drum		**Rope spooling on a multi-layer drum[3]**	
		Sections of rop working in steel sheaves and/or spooling on a single-layer drum		Sections of rope spooling on a multi-layer drum	
RCN	**Number of outer strands or number of load-bearing wires in the outer strands of the rope[1] *n***	**Over a length of 6*d*[4]**	**Over a length of 30*d*[4]**	**Over a length of 6*d*[4]**	**Over a length of 30*d*[4]**
21	4 strands $n \leq 100$	2	4	2	4
22	3 or 4 strands $n \geq 100$	2	4	4	8
		11 or more outer strands			
23–1	$71 \leq n \leq 100$	2	4	4	8
23–2	$101 \leq n \leq 120$	3	5	5	10
23–3	$121 \leq n \leq 140$	3	5	6	11
24	$141 \leq n \leq 160$	3	6	6	13
25	$161 \leq n \leq 180$	4	7	7	14
26	$181 \leq n \leq 200$	4	8	8	16
27	$201 \leq n \leq 220$	4	9	9	18
28	$221 \leq n \leq 240$	5	10	10	19
29	$241 \leq n \leq 260$	5	10	10	21
30	$261 \leq n \leq 280$	6	11	11	22
31	$281 \leq n \leq 300$	6	12	12	24
	$n > 300$	6	12	12	24

1. For the purposes of this International Standard, Filler wires are not regarded as load-bearing wires and are not included in the values of n.
2. A broken wire has two ends.
3. The values apply to deterioration that occurs at the cross-over zones and interference between wraps due to fleet angle effects (and not to those sections of rope that only work in sheaves and do not spool on the drum).
4. d = nominal diameter of rope.

Please pay attention to the country- / application-specific standards.

PIONEERS IN SWAGING

Already since 2003 CASAR has developed and improved the swaging process of steel wire ropes to achieve perfectly round and smooth surfaces, but also to raise the steel content in the rope itself. Swaged High Performance Ropes deliver with this measure a perfect multi-layer spooling and highest breaking loads.

TECHNICAL SERVICES

OUR PROMISE

We listen closely to your application needs and will find the best rope solution for it. Besides the standard ropes special developments are available and we will find your tailor-made rope for your specific application.

QUICK SUPPORT ON THE JOBSITE

Our experienced engineering specialists bring decades of knowledge in order to improve the performance of your equipment or to help you finding out what causes trouble. Our consulting service includes training, support on the installation, maintenance and inspection of our ropes as well as on-site non-destructive inspection and other ways to investigate in rope damages.

SOPHISTICATED INDOOR SERVICE

With our modern analyzing equipment we can perform in-depth analysis of your rope along with a detailed inspection report. This includes magnetic and microscopic analysis as well as bending fatigue, tensile and other dynamic and static tests. Our deep knowledge in ropes is the foundation to interpret the data in a way that a solid solution to your problem can be determined.

CHALLENGE US

Our team is ready to support you, with extensive experience in rope design, production, research & development and all types of rope applications.
Please contact us for any support from our engineers at: **sales@wireco.com.au**

WIRE ROPE NON DESTRUCTIVE TESTING

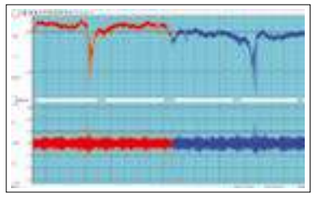
Wire rope visual inspection, no matter how rigorous, could leave your company exposed to the risk of unexpected rope failure.

Visual inspection is not the only method available.

Wire rope Non-Destructive Testing is a method of examination used in conjunction with visual inspection, to inspect the complete cross-sectional area of your wire rope. During visual inspections only the actual visible section of the rope is examined, however this is only a small section of the total rope cross-sectional metallic area. When completing wire rope Non-Destructive Testing **in conjunction with** visual inspection, it allows the inspector to assess **100%** of the wire rope's cross-sectional area.

How It Works.

The wire rope is passed through an electro-magnetic sensor head. Changes in the magnetic field are recorded using a computer-aided testing program and then assessed. The inspector is able to pinpoint either single or multiple internal and external wire breaks or detect other issues such as; abrasion, wear, loss of metallic area, and corrosion (either internal or external).



Testing:

Wire rope Non-Destructive Testing can be carried out either on site and in-situ, or in our accredited testing facility.

Accreditation:

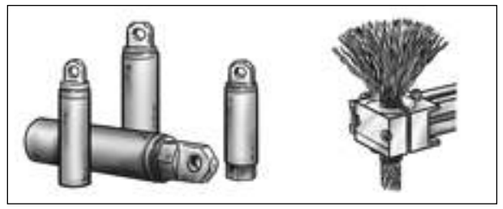
Our wire rope Non-Destructive Testing services are accredited by the National Association of Testing Authorities (**NATA**).

ROPE TERMINATIONS

WireCo Worldgroup serves you with a broad variety of end terminations and services:

- Socketing of ropes with hot metal or resin
- Casting of multi-strand or retraction ropes with high demands on the exact length of each rope
- Loops with pressed aluminum ferrules
- Spliced loops
- Flemish eyes
- Pressed thimbles
- Special designed steel pressings that fulfill a multitude of special specifications
- Becket loops
- Special mounting eyes

WireCo's Resin Spelter Buttons are intended to be a replacement for swaged buttons used on hoist ropes and attached to the original socket. To choose the proper Resin Spelter Button for a mobile crane's hoist, match the button type, the rope diameter, the button diameter and the overall length dimension with the current button on the crane. These buttons are to be attached only to approved hoist ropes from Casar by WireCo WorldGroup or their authorized distributors.



As end terminations are a very sensitive part of wire rope, our development team attaches great importance to the reliability in service. The end terminations that are used at WireCo must go through a number of inspections such as:

- Dimensional accuracy according to the drawings
- Certificate Documentation
- Visual inspection of surface quality (blow hole, cavities, etc. ...)
- Magnetic crack testing
- Destructive tests for new end terminations

Our experience as an OEM supplier to well-known crane manufacturers is reflected in our exceptional expertise with end terminations.

RESIN SPELTER BUTTONS FOR CRANE ROPES

To Suit:

- LIEBHERR
- FAUN
- TEREX
- MANITOWOC

WE SUPPLY, FIT AND TEST ON-SITE AND IN OUR STORE

NATA ACCREDITED FOR TECHNICAL COMPETENCE

CICA

RESIN SPELTER BUTTONS

LIEBHERR CRANE HOIST ROPES

Type A _ Typ A

Type B _ Typ B

LIEBHERR CRANE HOIST ROPES

Resin Spelter Button Description	RSBLEB-15-30-90	RSBLEB-17-36-108	RSBLEB-21-44-126	RSBLEB-23-52-175	RSBLEB-25-52-175	RSBLEB-28-58-203	RSBLEB-32-65-220
Type	A	A	A	B	B	B	B
Rope Diameter [mm]	13,14,15	16,17,18	19,20,21	23	24,25,26	27,28	32
Button Diameter [mm]	30	36	44	52	52	58	65
Button Length [mm]]	90	108	126	175	175	203	220
Maximum Tensile Grade [N/mm²]	2160	2160	2160	2160	2160	2160	1960*
Size Wirelock® Kit Required [cc]	100	100	100	250	250	250	250
Base size rope broom incl. root [mm]	65	80	95	100	100	125	138

*approved just for this wire grade

TADANO DEMAG (TEREX) CRANE HOIST ROPES

Type A

Type B

Type C

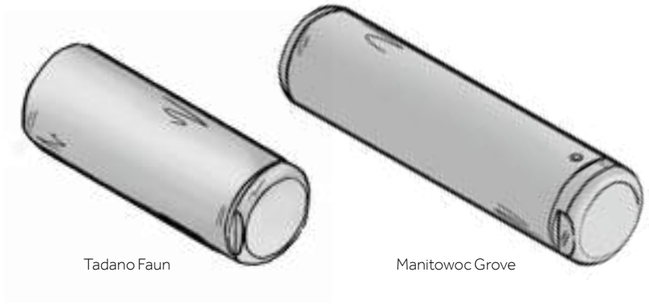
TADANO DEMAG (TEREX) HOIST ROPES

Resin Spelter Button Description	RSBTX 21-42-140	RSBTX 23-48-184	RSBTX-26-52-209	RSBTX-28-56-201	RSBTX-28-58-204	RSBTX-32-64.5-263	RSBTX-40-80-371
Type	–	–	A	C	A	A	B
Rope Diameter [mm]	21	23	26	28	28	32	40
Button Diameter [mm]	42	48	52	56	58	64.5	80
Button Length [mm]	140	184	209	201	204	263	371
Maximum Tensile Grade [N/mm²]	2160	2160	2160	2160	2260*	2260*	2160
Size Wirelock® Kit Required [cc]	250	250	250	250	250	250	500
Base size rope broom incl. root [mm]	110	138	120	120	130	170	215

*increased wire strength

For button dimensions not shown, please inquire. Do not substitute “nearly the same” buttons.

TADANO FAUN AND GROVE MANITOWOC HOIST ROPES



Tadano Faun

Manitowoc Grove

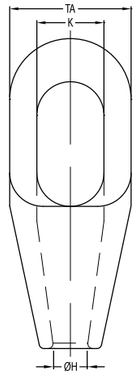
GROVE MANITOWOC AND TADANO FAUN HOIST ROPES

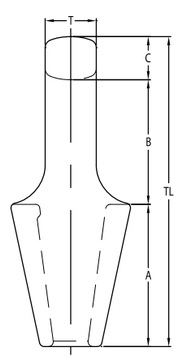
Resin Spelter Button Description	Tadano Faun			Manitowoc Grove		
	RSBFA-14-32-90	RSBFA-18-38-105	RSBFA-23-42-135	RSBMAN 17-36-121"	RSBMAN 19-36-138"	RSBMAN 24-48-165"
Rope Diameter [mm]	14	16, 18	21, 23	16, 17	19	22, 24
Button Diameter [mm]	32	38	42	36	36	48
Button Length [mm]	90	105	135	121	138	165
Maximum Tensile Grade [N/mm²]	2160	2160	2160	2160	2550*	2160
Size Wirelock® Kit Required [cc]	250	250	250	250	250	250
Base size rope broom incl. root [mm]	65	80	105	90	75	105

CLOSED SPELTER SOCKETS

Quenched and tempered cast steel

ROPEBLOCK



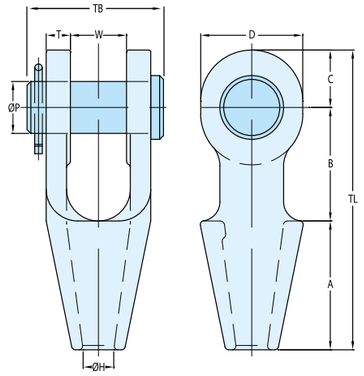


Model No.	Max. Breaking Load	For wire Ø	Strand Ø	Dimensions A	B	C	ØH	K	T	TA	TL	Weight
	t [metric]	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
CSS 296	8	6-7	-	50	40	11	9	22	13	37	101	0,3
CSS 297	12	8-10	-	57	48	14	13	25	18	43	119	0,4
CSS 298	20	11-13	-	64	59	17,5	15	30	23	51	140	0,7
CSS 299	25	14-16	13	76	65	21	18	36	26	67	162	1,4
CSS 200	40	18-19	14-16	89	78	27	22	42	32	76	194	2,2
CSS 201	55	20-22	18-19	101	90	33	25	47	38	92	224	3,8
CSS 204	75	23-26	20-22	114	103	36	29	57	44	104	253	5,4
CSS 207	90	27-30	23-26	127	116	39	33	65	51	114	282	7
CSS 212	125	31-36	27-28	139	130	43	39	71	57	126	312	10
CSS 215	150	37-39	30-32	152	155	51	42	81	63	136	358	13
CSS 217	170	40-42	33-35	165	171	54	45	83	70	146	390	17
CSS 219	225	43-48	36-40	190	198	55	52	93	76	171	443	26
CSS 222	280	49-54	42-45	216	224	62	59	100	82	193	502	37
CSS 224	360	55-60	46-48	228	247	73	64	112	92	216	548	50
CSS 226	425	61-68	50-54	248	270	79	75	140	102	241	597	66
CSS 227	460	69-75	56-62	279	286	79	81	159	124	273	644	91
CSS 228	560	76-80	64-67	315	298	83	88	171	133	292	696	117
CSS 229	625	81-86	69-76	330	311	102	92	184	146	311	743	125
CSS 230	720	87-93	78-86	356	330	102	99	197	159	330	788	176
CSS 231	875	94-102	88-96	381	356	108	108	216	178	362	845	228
CSS 233	1200	108-115	98-110	450	425	125	129	235	190	405	1000	323
CSS 240	1400	120-130	112-124	500	525	125	147	260	200	450	1150	447
CSS 245	1600	135-140	125-132	540	495	150	157	290	220	520	1185	645
CSS 250	2000	142-153	133-143	585	530	170	171	305	240	545	1285	741
CSS 255	2220	154-165	144-154	630	565	175	185	330	250	575	1370	860
CSS 260	2500	166-178	155-166	680	590	180	199	330	270	595	1450	985
CSS 265	2800	180-191	167-179	725	620	190	213	350	290	625	1535	1183
CSS 270	3200	192-204	180-191	775	650	210	229	395	305	690	1635	1487

Please note: All fittings are available ex-stock in galvanised finish, not in blue as shown above – blue available on request.

OPEN SPELTER SOCKETS WITH PIN

Quenched and tempered cast steel



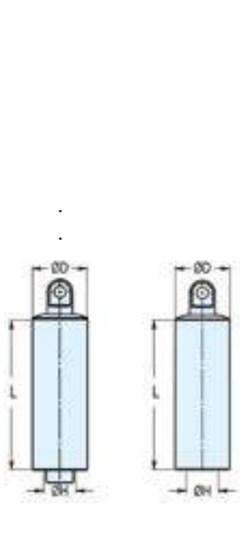
Model No.	Max. Breaking Load	For wire Ø	Strand Ø	Dimensions										Weight
				A	B	C	D	ØH	ØP	T	TL	TB	W	
	t [metric]	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
OSS 196 P	8	6-7	-	50	40	19	34	9	16	9	109	51	19	0.4
OSS 197 P	12	8-10	-	57	45	22	42	13	20	11	124	63	21	0.7
OSS 198 P	20	11-13	-	64	51	27	50	15	25	12	142	67	25	1
OSS 199 P	25	14-16	13	76	63	32	58	18	30	14	171	85	32	1.8
OSS 100 P	40	18-19	14-16	89	76	40	70	22	35	16	205	95	38	3
OSS 104 P	55	20-22	18-19	101	89	45	80	25	41	19	235	110	44	4.6
OSS 108 P	75	23-26	20-22	114	101	60	104	29	51	22	275	128	51	8
OSS 111 P	90	27-30	23-26	127	114	65	114	33	57	25	306	142	57	11
OSS 115 P	125	31-36	27-28	139	127	72	126	39	63	28	338	155	63	15
OSS 118 P	150	37-39	30-32	152	162	80	142	42	70	30	394	177	76	22
OSS 120 P	170	40-42	33-35	165	165	88	156	45	76	33	418	187	76	27
OSS 125 P	225	43-48	36-40	191	178	100	176	52	89	39	469	215	89	41
OSS 128 P	280	49-54	42-45	216	228	108	194	59	95	45	552	244	101	60
OSS 130 P	360	55-60	46-48	229	254	120	210	64	108	53	603	275	113	88
OSS 132 P	425	61-68	50-54	248	273	133	236	75	121	60	654	300	127	118
OSS 135 P	460	69-75	56-62	279	279	138	240	81	127	73	696	335	133	155
OSS 138 P	560	76-80	64-67	305	286	146	252	88	133	76	737	355	146	186
OSS 140 P	625	81-86	69-76	330	298	160	290	92	140	79	788	375	159	227
OSS 142 P	720	87-93	78-86	356	318	178	320	99	152	83	852	400	171	283
OSS 144 P	875	94-102	88-96	381	343	190	350	108	178	89	914	435	191	374
OSS 146 P	1200	108-115	98-110	450	480	215	400	129	195	100	1145	465	205	539
OSS 150 P	1400	120-130	112-124	500	500	250	450	147	220	110	1250	525	225	761
OSS 155 P	1600	135-140	125-132	540	497	263	480	157	240	140	1300	590	230	1067
OSS 160 P	2000	142-153	133-143	585	505	275	500	171	255	140	1365	610	250	1172
OSS 165 P	2220	154-165	144-154	630	530	300	550	185	275	150	1460	640	260	1441
OSS 170 P	2500	166-178	155-166	680	570	310	570	199	295	150	1560	660	280	1615
OSS 175 P	2800	180-191	167-179	725	600	325	600	213	310	155	1650	689	300	1907
OSS 180 P	3200	192-204	180-191	775	620	345	640	229	330	160	1740	720	320	2239

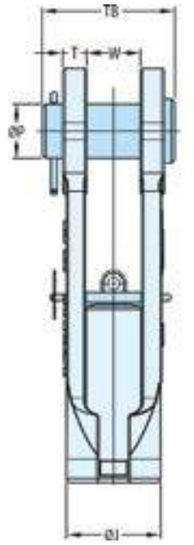
Please note: Also available with bolt & nut

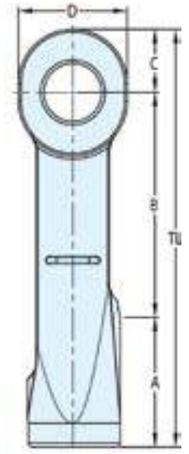
Please note: All fittings are available ex-stock in galvanised finish, not in blue as shown above – blue available on request.

SUPER REEVE CONNECTOR SOCKETS WITH PIN

Quenched and tempered cast steel







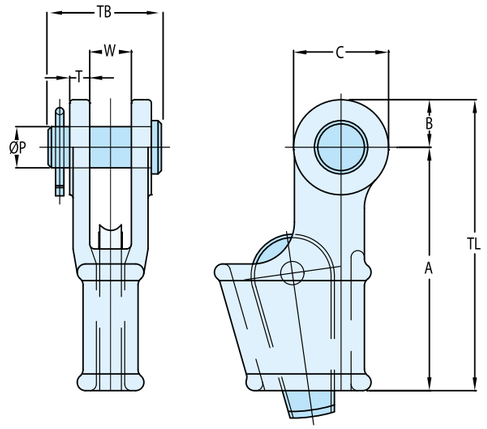
Model No.	Max. Breaking Load	For wire Ø	Dimensions													Weight
			A	B	C	ØH	ØP	T	W	D	ØD	ØJ	L	TB	TL	
	t [metric]	mm	mm	mm	mm	mm	mm	mm	mm	mm				mm	mm	kg
SCS 902 P	25	13-16	85	133	32	19	30	14	32	58	32	56	98	85	250	3.1
SCS 903 P	40	16-19	90	160	40	22	35	16	38	70	40	65	114	95	290	4.8
SCS 904 P	55	20-22	107	184	45	26	41	19	44	80	44	77	130	110	336	8
SCS 905 P	75	23-26	115	211	60	31	50	22	51	104	52	88	142	128	386	12
SCS 906 P	90	27-29	140	215	65	34	57	25	57	114	58	96	159	142	420	16
SCS 907 P	125	30-32	150	260	73	36	63	28	63	126	64	110	177	155	483	23
SCS 908 P	125	33-36	170	260	73	40	64	28	69	126	68	114	197	160	503	25
SCS 902 P.SR	25	13-16	85	133	32	19	30	14	32	58	32	56	98	85	250	3.1
SCS 903 P.SR	40	16-19	90	160	40	22	35	16	38	70	40	65	114	95	290	4.8
SCS 904 P.SR	55	20-22	107	184	45	26	41	19	44	80	44	77	130	110	336	8
SCS 905 P.SR	75	23-26	115	211	60	31	50	22	51	104	52	88	142	128	386	12
SCS 906 P.SR	90	27-29	140	215	65	34	57	25	57	114	58	96	159	142	420	16
SCS 907 P.SR	125	30-32	150	260	73	36	63	28	63	126	64	110	177	155	483	23
SCS 908 P.SR	125	33-36	170	260	73	40	64	28	69	126	68	114	197	160	503	25
SCS 909 P.SR	150	37-39	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCS 910 P.SR	170	40-42	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCS 911 P.SR	225	43-48	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCS 912 P.SR	280	49-54	225	373	108	60	95	45	101	194	105	185	280	244	706	93

Please note: Also available with bolt & nut

Please note: All fittings are available ex-stock in galvanised finish, not in blue as shown above – blue available on request.

OPEN WEDGE SOCKETS WITH PIN

Quenched and tempered cast steel



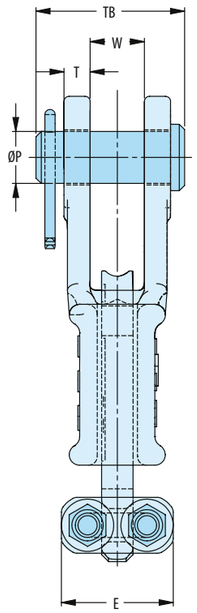
Model No.	Max. Breaking Load	For wire Ø	Dimensions A	B	C	ØP	T	TL	TB	W	Weight
	t [metric]	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
OWS 0.25 P	8	7-8	110	18	36	16	9	128	51	18	0.8
OWS 0.5 P	12	9-10	145	23	46	21	11	168	63	21	1.7
OWS 1 P	20	11-13	146	29	57	25	12	175	67	25	2.1
OWS 2 P	25	14-16	176	35	70	30	15	211	85	31	4
OWS 3 P	40	18-19	210	40	80	35	16	250	95	38	7
OWS 4 P	55	20-22	238	48	95	41	18	285	110	44	10
OWS 5 P	75	23-26	275	55	110	51	22	330	128	51	15
OWS 6 P	90	27-29	310	65	130	57	25	375	142	57	21
OWS 7 P	110	30-32	350	73	146	63	28	423	155	63	31
OWS 8 P	125	34-36	400	74	148	64	28	474	160	70	37
OWS 9 P	150	37-39	450	80	142	70	30	530	177	77	51
OWS 10 P	170	40-42	500	87	160	76	33	587	187	76	64
OWS 11 P	225	43-48	550	100	186	89	39	650	215	89	96
OWS 12 P	280	49-52	640	105	205	95	46	745	244	101	130
OWS 13 P	360	54-58	660	125	250	108	54	785	275	114	180
OWS 14 P	425	60-68	835	135	270	121	60	970	300	127	275
OWS 15 P	460	72-76	1000	150	300	133	76	1150	355	146	440
OWS 16 P	625	81-86	1100	150	300	140	79	1250	375	159	510

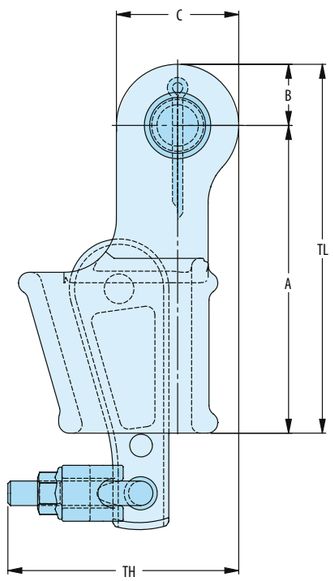
Please note: Also available with bolt & nut

Please note: All fittings are available ex-stock in galvanised finish, not in blue as shown above – blue available on request.

TAILGRIP OPEN WEDGE SOCKETS WITH PIN

Quenched and tempered cast steel





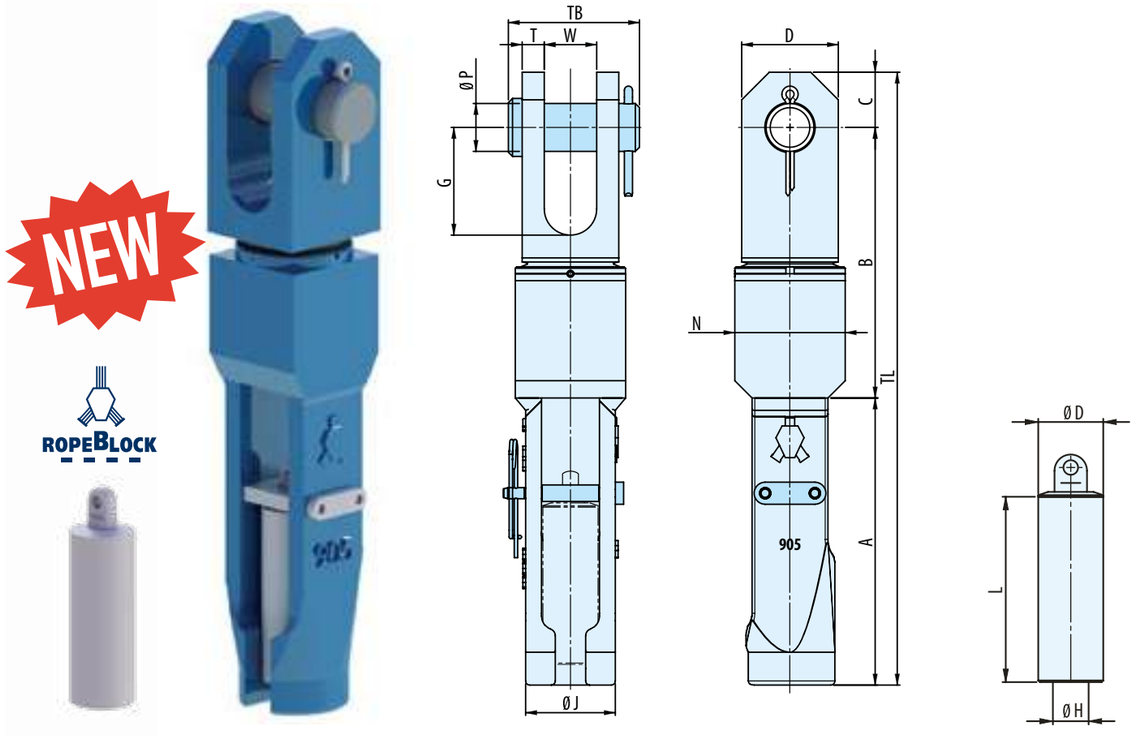
Model No.	Max. Breaking Load	For wire Ø	Dimensions A	B	C	E	ØP	T	TH	TL	TB	W	Weight
	t [metric]	mm	mm	mm	mm	mm	mm	mm	mm	mm			kg
OWS-TG 0.5 P	12	9-10	145	23	46	40	21	11	76	168	63	21	1.9
OWS-TG 1 P	20	11-13	146	29	57	55	25	12	100	175	67	25	2.4
OWS-TG 2 P	25	14-16	176	35	70	64	30	15	125	211	85	31	5
OWS-TG 3 P	40	18-19	210	40	80	68	35	16	142	250	95	38	8
OWS-TG 4 P	55	20-22	238	48	95	74	41	18	164	285	110	44	11
OWS-TG 5 P	75	23-26	275	55	110	84	51	22	189	330	128	51	16
OWS-TG 6 P	90	27-29	310	65	130	95	57	25	217	375	142	57	23
OWS-TG 7 P	110	30-32	350	73	146	105	63	28	238	423	155	63	34

Please note: Also available with bolt & nut

Please note: All fittings are available ex-stock in galvanised finish, not in blue as shown above – blue available on request.

SUPER REEVE CONNECTOR SWIVEL SOCKETS WITH PIN

Quenched and tempered cast steel



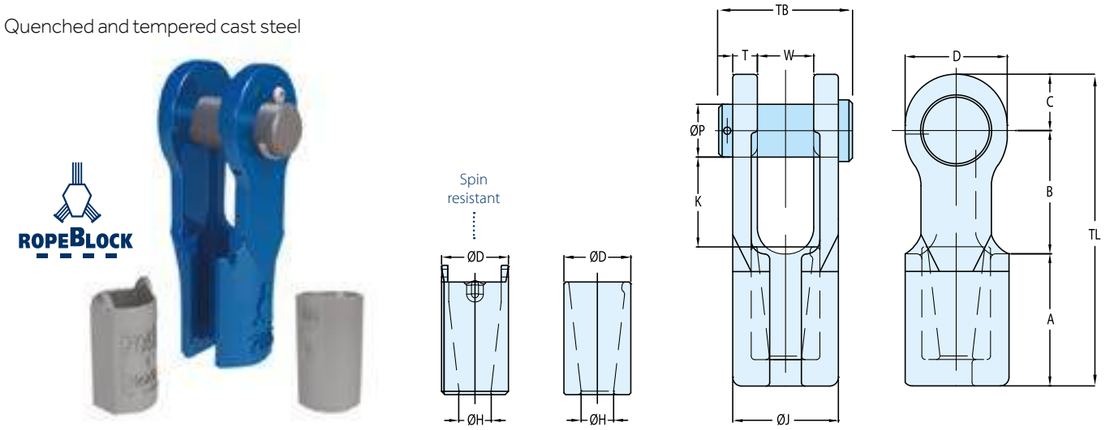
Model No.	Max. Breaking Load	For wire Ø	Dimensions														Weight
			A	B	C	ØH	ØP	T	W	G	D	ØP	ØJ	N	L	TB	TL	
	t [metric]	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
SCS-SW 902 P	25	13-16	186	229	32	19	30	14	32	63	55	32	56	70	98	85	447	6
SCS-SW 903 P	40	16-19	208	274	40	22	35	16	38	78	70	40	65	80	114	95	522	10
SCS-SW 904 P	55	20-22	246	301	50	26	41	19	44	85	80	44	77	85	130	110	597	17
SCS-SW 905 P	75	23-26	266	319	60	31	50	22	51	85	100	52	88	95	142	128	645	22
SCS-SW 906 P	90	27-29	290	361	70	34	57	25	57	95	115	58	96	110	159	142	721	31
SCS-SW 907 P	125	30-32	337	417	70	36	63	28	63	110	125	64	110	130	177	155	844	49
SCS-SW 908 P	125	33-36	357	417	90	40	64	28	69	110	125	68	114	130	197	160	864	-

Please note: Also available with bolt & nut

Please note: All fittings are available ex-stock in galvanised finish, not in blue as shown above – blue available on request.

FAST CONNECTOR SOCKET WITH PIN FOR LUFF ROPES

Quenched and tempered cast steel



Model No.	Reeving Aid	Min. Breaking Load	For wire Ø	Dimensions													Weight
				A	B	C	ØH	ØP	T	W	D	ØD	ØJ	K	TB	TL	
		t [metric]	mm	mm	mm	mm	mm	mm	mm	mm	mm				mm	mm	kg
FCS 701 P	-	20	11-13	62	61	27	15	25	12	25	50	33	49	46	67	150	1.6
FCS 702 P	-	25	13-16	72	78	32	18	30	14	32	58	38	60	59	85	182	2.6
FCS 703 P	-	40	16-19	85	93	40	21	35	16	38	70	45	70	69	95	218	4.5
FCS 704 P	-	55	20-22	102	106	45	24	41	19	44	80	50	82	81	110	253	6.5
FCS 705 P	-	75	23-26	115	123	60	28	51	22	51	104	60	95	90	128	298	11
FCS 706 P	-	90	27-29	140	152	65	32	57	25	57	114	70	107	116	142	357	16
FCS 705 P.SR	T 705	75	23-26	115	123	60	28	51	22	51	104	60	95	90	128	298	11
FCS 706 P.SR	T 706	90	27-29	140	152	65	32	57	25	57	114	70	107	116	142	357	16
FCS 707 P.SR	T 706	125	30-32	150	159	73	36	63	28	63	126	80	119	120	155	382	18
FCS 708 P.SR	T 706	125	33-36	160	171	73	39	64	28	69	126	85	125	130	160	404	23
FCS 709 P.SR	T 709	150	37-39	176	187	80	42	70	30	76	142	90	136	142	177	443	29
FCS 710 P.SR	T 709	170	40-42	188	198	88	45	76	33	76	156	95	142	150	187	474	36
FCS 711 P.SR	T 711	225	43-48	210	232	100	52	89	39	89	176	110	167	175	215	542	58

Please note: Also available with bolt & nut

Please note: All fittings are available ex-stock in galvanised finish, not in blue as shown above – blue available on request.

REEVING TOOL

QUALITY IN EVERYTHING WE DO

OUR REPUTATION FOR QUALITY IS INTERNATIONAL.

WireCo WorldGroup and all their brands focus on delivering you a product with highest quality standards. Our focus on quality starts with the people we employ. In order to fulfill this promise, we have professional engineers work in every aspect of our business – from metallurgists in manufacturing and purchasing to licensed engineers in quality control and product development. The depth and breadth of technical expertise throughout our company is a value-added benefit for our customers.

Our quality processes then drive consistent results, from product engineering to each meticulous step of actual production. Using global best practices, advanced metallurgical and fiber technology, sound engineering, and client feedback, WireCo WorldGroup produces mission critical wire rope, specialized synthetic fiber rope and cable products for diverse industries from marine to aerospace.

For any company, the litmus test of quality is the global recognition of excellence and consistent compliance with top quality standards. WireCo WorldGroup products and processes are certified to key international quality standards. In fact, we are the only wire rope manufacturer worldwide that is QPL qualified, API certified, and registered to ISO 9001, Lloyd's Registry and AS-9100 Quality Systems.

QUALITY PROCESSES

Attention to quality permeates every step of our operations.

It starts with our raw materials – We only use suppliers that meet our ISO-controlled qualification process.

In our day-to-day manufacturing process, our written procedures clearly document how we produce each product. Each person measures and monitors product compliance with specifications at each step in the process. Written sign-offs and random audits ensure accountability. If a product ever fails to meet specifications, a quality-hold process halts production until an engineer decides if the product must be scrapped or recycled.

On an ongoing basis, our quality department works with plant managers to set and attain quality-related goals. We identify best practices in each plant and share them from plant to plant. We monitor and measure quality performance constantly and report it widely throughout the corporation. From random audits of machines and workers, we "grade" operators, supervisors, and plants and track results over time for improvement. Each month, the company publishes a quality scorecard that guides our continuous improvement program.

In the field, we measure and monitor the product itself through observation and sophisticated testing. The results, along with customer feedback, enable our engineers to design new or improved products.

The result: WireCo WorldGroup's products and processes hold more global quality certifications than any other industry supplier.

INTERNATIONAL QUALITY

Global and industry-specific quality certification allows us to serve many industries worldwide.

WireCo WorldGroup is the only producer in its industry whose products and practices meet the global standards of our customers across a variety of industries. Our quality certifications include:

- The International Standards Organization (ISO 9001)
- The U.S. Government's Qualified Producers' List (QPL) from the U.S. Defense Logistics Agency
- The Aerospace Industry (AS-9100 Quality Systems)
- The American Petroleum Institute (API)
- Center for Engineering (CFE)
- PEMEX
- Bureau Veritas
- DNV GL
- Korean Register
- Lloyd's Register
- Russian Maritime Register of Shipping
- Gost Russia
- Gost Ukraine

Certification to standards is not just an achievement, but a smart way of doing business at WireCo WorldGroup. Our customers depend on uncompromising quality; our success depends on never disappointing them.

QUOTATION

We would like to give you a suitable quotation to your request.

To be able to provide you our recommendation and to save your valuable time, it would be very helpful if you sent the following information together with your request:

Necessary:

- Which diameter is required?
- What is the required length?
- Which lay of rope is requested? (Lang's lay or ordinary lay)
- Which lay direction is needed?
- What is the minimum breaking force required?
- What finish is required?

Optional:

- What is your application?
- Which rope construction was used previously?
- Is there a given tensile strength?
- Are there any end terminations required?

Our Sales team is at your disposal, and they will be happy to assist you with any enquiries.

CONTACTS

SALES & TECHNICAL

sales@wireco.com.au

Office: 1300 947 326

Kath Darr: 0438 167 516

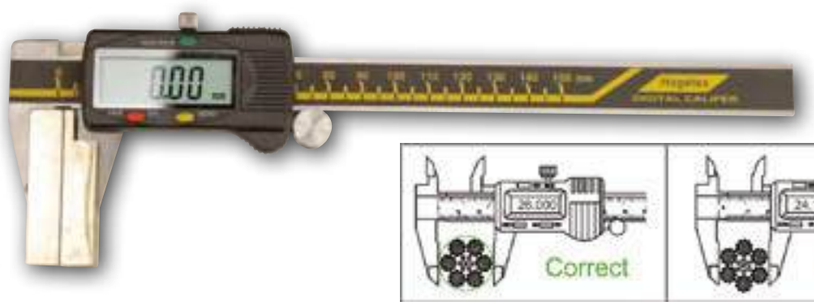
Adrian Paull : 0484 070 117

API Certificate 9A-0087

WIRECO SHEAVE GAUGES

Sizes Available: 8-30mm, 31-50mm, 51-80mm

WIRECO CALIPERS



Product specifications are subject to change without notice or obligation. The shown photographs, drawings or cross sections are only for illustrative purposes, the images can vary depending on requested diameter and current status of technical development.

The information supplied in this brochure is only a guideline for rope selection. Please contact us for any information or advice on the use of our ropes or if you have any doubt in selecting a rope for a specific application.

Any warranty, expressed or implied as to quality, performance or fitness for use of WireCo WorldGroup products is always premised on the condition that the published strengths apply only to new, unused products, that the mechanical equipment on which such products are used is properly designed and maintained, that such products are properly stored, handled, used and maintained, and properly inspected on a regular basis during the period
of use.

Seller shall not be liable under any circumstances for consequential or incidental damages or secondary charges including but not limited to personal injury, labor costs, a loss of profits resulting from the use of said products or from said products being incorporated in or becoming a component of any other product.

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