

HARBOUR

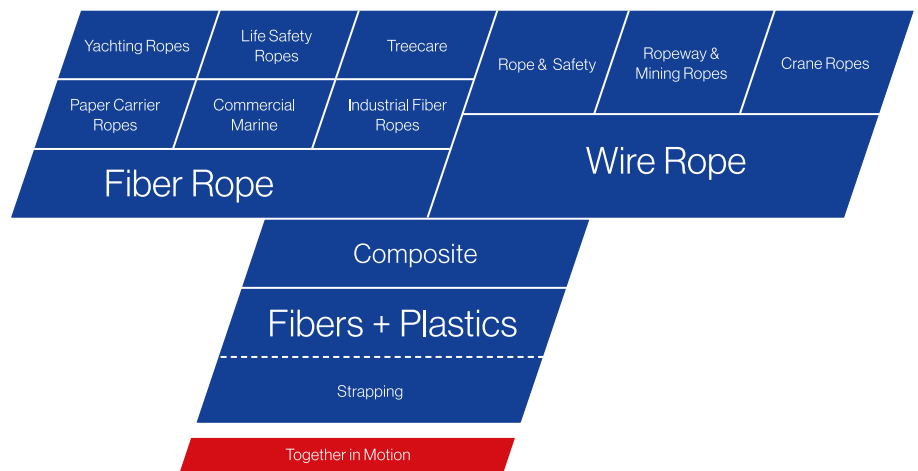
High performance steel wire ropes

EXPERTISE FROM 225 YEARS OF EXPERIENCE

What started back in 1790 with simple hemp ropes has since evolved into a globally successful group of enterprises specializing in the development and production of fiber and steel wire ropes, strapping, and composites.

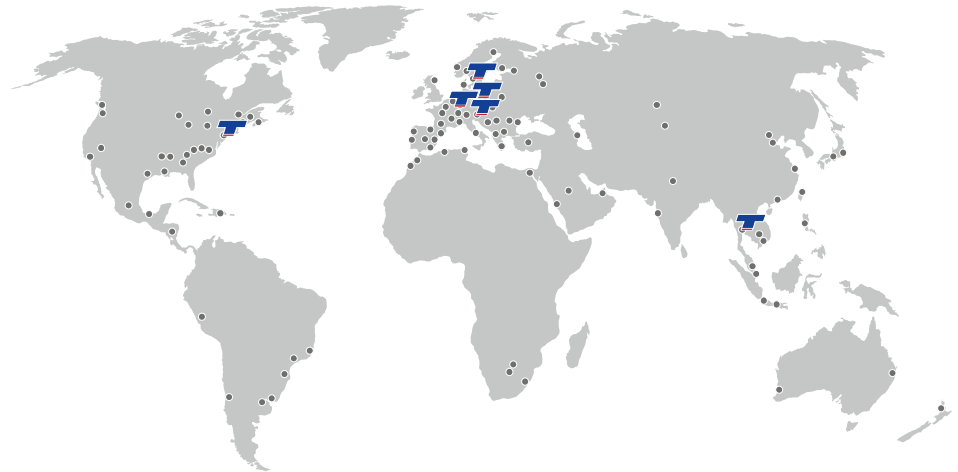
Vast diversity

Its products are designed for a wide variety of applications ranging from cranes and marine applications to packaging and through to the automotive sector. It is the continuity and stability of a family business that makes us the reliable partner who supports you, competently and effectively, in coping with your daily challenges.



Global presence ensures customer proximity

Manufacturing operations in various countries allow us to meet local quality and certification standards as well as customer requirements without difficulty. From our sites in Austria, the Czech Republic, the U.S., Sweden, and Thailand, and backed by a close-knit global network of distribution partners, we continue to satisfy the expectations of our customers.



Innovative solutions through synergies

TEUFELBERGER is a leading specialist for fiber and steel wire ropes, strapping, and fiber composite components. The spectrum of technologies in TEUFELBERGER's portfolio generates various synergies between the extrusion of thermoplastics, braiding of high performance fibers, and processing of wires into ropes, strapping, and lightweight composite components.

Especially fiber and steel wire products brought about valuable synergies with regard to both application and manufacturing technologies, which have benefited our customers tremendously. This makes TEUFELBERGER your ideal partner right from the project planning phase.

5 % of TEUFELBERGER's employees are active in research and development and make sure that our customers have access to the latest, innovative rope technologies. 10 % of the entire investment volume are committed to development and quality assurance.

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WARNING

Using these products may prove hazardous. Therefore, never use our products for purposes other than those they were designed for. Customers must ensure that all persons using these products are familiar with their correct use and the related necessary safety precautions. Please bear in mind that any of these products may inflict harm when used incorrectly or subjected to excessive loads.

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WE OFFER MORE.

In manufacturing, research & development, and marketing & sales, TEUFELBERGER focuses exclusively on high quality special purpose steel wire ropes. Breakthrough technologies and top quality products are the base of our success.

TEUFELBERGER Service

Expert advice

TEUFELBERGER's network of experts provides competent support close to you. This allows us to find the best possible solution for your needs.

24 h Hotline: +43 (0) 7242 615 388

Customized solutions and products

Joint development efforts with crane and equipment manufacturers and close cooperation with our suppliers ensure that our products satisfy all your requirements. Working together with you, the team from TEUFELBERGER will determine the best solution.

Quality and expertise

Top quality

TEUFELBERGER processes only high quality raw materials in its cutting-edge manufacturing facilities. The comprehensive quality testing of primary materials and final products as well as the certification to ISO 9001 guarantee the consistent high quality of our steel wire ropes.

Competence

Our special ropes are designed to fulfill the requirements of your application. Worldwide reference projects are a testament to the high quality of our work. We provide test certificates to ABS, DNV, BV, RINA, GL, LR, RS, NKK, CCS – depending on your needs.



Research and development

Innovative products

As customer requirements change, our products must satisfy new, higher demands. Our R&D team drives innovation and continuous product improvement in terms of safety, reliability, and durability.

Successful partnerships

Intensive partnerships with a sizable number of key users in the sparepart market are clear examples of our focus on our customers' needs. Also, the long-standing cooperation with universities and research institutions ensure the lively exchange of ideas toward the development of new and existing products.

PLASTFILL® INSERT

The lubricated steel core is covered in a tight synthetic coat. This provides the following advantages:

- Long service life due to the permanent lubrication and the reduction of friction between the rope's core and its outer strands
- Resistance to compression and lateral pressure as well as to environmental influences and the ingress of dirt
- Higher breaking forces due to reduced surface pressures in the rope
- Reduced internal abrasion thanks to the exact positioning of strands with consistent clearances between them

SUPERFILL® COMPACTION TECHNOLOGY

Each rope strand is compacted by a special process, which significantly improves the rope's properties:

- Up to 30 % greater breaking forces than non-compacted ropes
- Prolonged service life due to lower specific loading
- Less abrasion on the rope and on reels and drums due to the rope's smooth surface
- Resistance against crushing in multilayer operations

GALVANIZED WIRES

Our steel wires are galvanized before they are drawn in order to achieve high wire precision. This ensures optimal stability and service life. In combination with the PLASTFILL® technology, this galvanization ensures exceptional corrosion resistance.

PRO ACTIVE CORE LUBRICATION

Temperature resistant special grease with significantly improved lubrication properties especially for high temperature applications (AHC).

- Higher resistance against corrosion of the core
- Improved service life due to optimal lubrication and the reduction of friction of the rope core

Our technology. Your benefit.

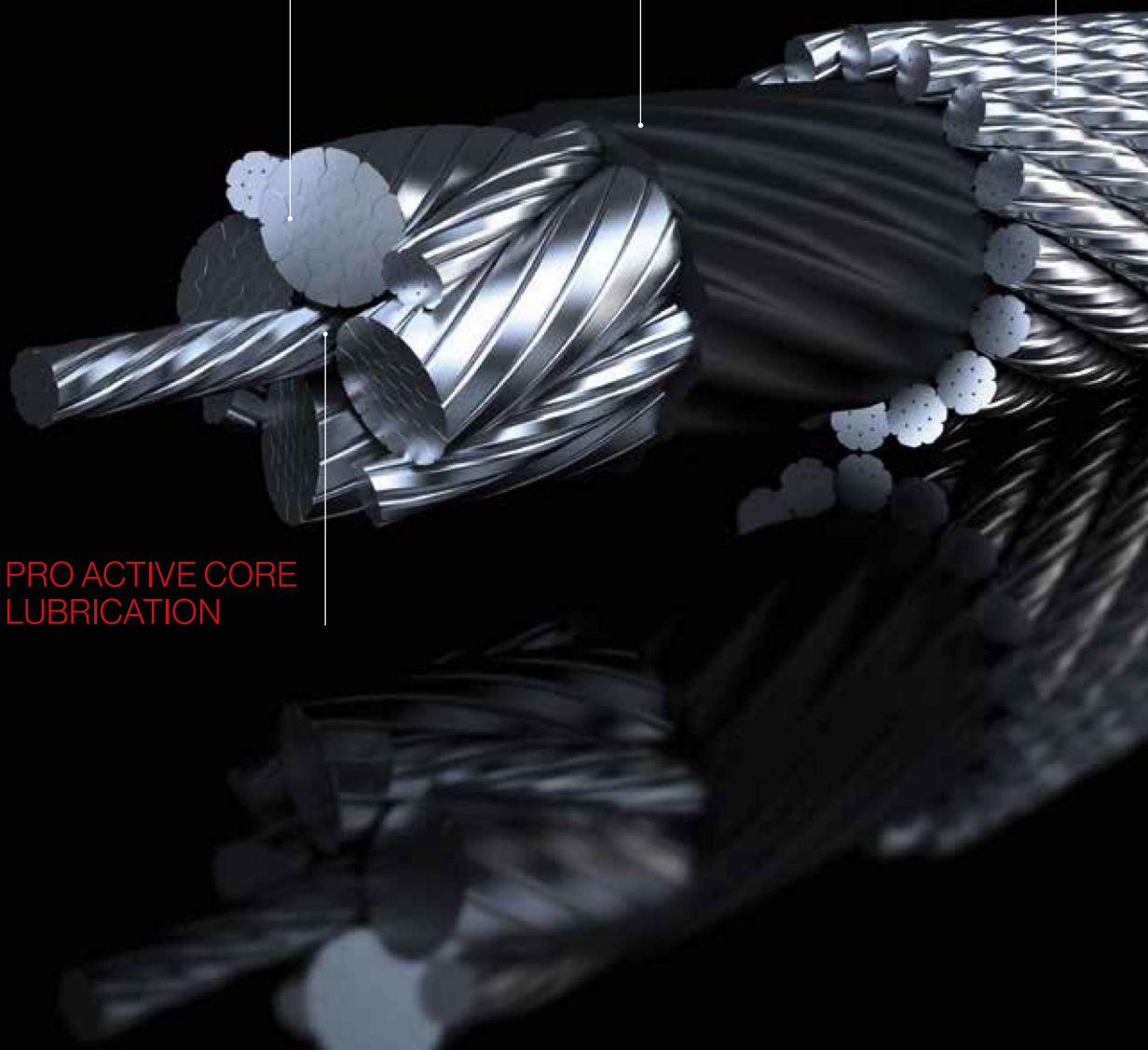
Flexibility, quality, perfect spooling, rotation resistance, breaking force, life time, safe and reliable in use.

SUPERFILL®

PLASTFILL®

GALVANIZED WIRES

PRO ACTIVE CORE
LUBRICATION



ROPES FOR HARBOUR MOBILE CRANES

Worldwide handling of goods is continually increasing every year. Herefore the harbours operate on the boarder to their capacity limit although already working day and night. In order to make profitable use of these devices: Safety and reliability are crucial for ropes used on harbour mobile cranes.

Ropes

■ ■ QS 816 V(G)

Extreme resistant 8-strand ordinary lay or lang's lay rope with PLASTFILL® insert, suited as hoisting and closing rope.

- Long service life due to PLASTFILL® insert and the reduced rope abrasion, resulting from the smooth rope surface
- Resistance against corrosion due to galvanized wires and the permanent lubrication provided by PLASTFILL® insert
- Reliability and safety in operation as a result of the highest breaking forces, especially provided by complete SUPERFILL® compaction technology throughout the whole cross section
- Resistance against shock loads due to the radial-elastic structured rope and PLASTFILL® insert
- Optimal spooling characteristics due to high resistance against radial deformations
- Reduced maintenance effort due to intensive lubrication in each production step
- OEM approved for ages

■ ■ EVOLUTION Q8

Flexible 8-strand rope for long service life, suited as hoisting and closing rope.

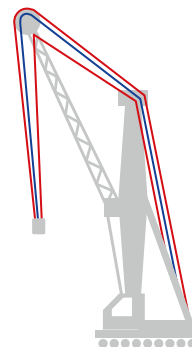
- Longer service life for best profitability due to excellent flexural fatigue properties
- Resistance against corrosion due to galvanized wires in combination with PLASTFILL® insert
- High flexibility due to its innovative rope construction
- Trouble-free operation – due to outstanding absorption of dynamic forces such as shock-loads and vibrations
- OEM approved for ages

Applications

The colored squares preceding the rope's designation refer to the illustration.

Other types of construction on request.

Harbour mobile cranes



ROPES FOR SHIP TO SHORE CRANES

The quick loading and unloading of ships is a requirement for reducing needless costs and for profitable operation. The use of high-performance steel wire ropes significantly contributes to the high reliability of ship to shore cranes: 24 hours a day, 365 days a year.

Ropes

■ ■ ■ QS 816 V(G)

Extreme resistant 8-strand ordinary lay rope or lang's lay rope with PLASTFILL® insert, suited as hoisting rope, as well as boom hoist rope and trolley rope.

- Significant cost reduction due to reduced rope abrasion and increased service life
- Resistant against external influences as fleet angles and used sheaves due to the full compacted rope construction
- Longer service life and less (fatigue) wear of sheaves due to the smooth rope surface
- Highest resistance against shock-load due to PLASTFILL® insert
- Outstanding life-time performance on high-speed applications
- Reliability and safety in operation due to highest breaking forces achieved by complete SUPERFILL® compaction technology throughout the whole cross section
- Reduced maintenance effort due to intensive lubrication in each production step
- Simple handling and best spooling characteristics on the drum
- OEM approved for ages

■ Q 810 V

Flexible 8-strand ordinary lay rope with PLASTFILL® insert suited as hoisting rope.

- Very flexible and robust against shock loads due to its special rope design with the 4-strand core
- High resistance against corrosion due to galvanized wires and the permanent lubrication provided by PLASTFILL® insert
- OEM approved for ages

■ ■ ■ EVOLUTION Q8

High performance 8-strand ordinary lay rope with longest service life, suited as hoisting and trolley rope.

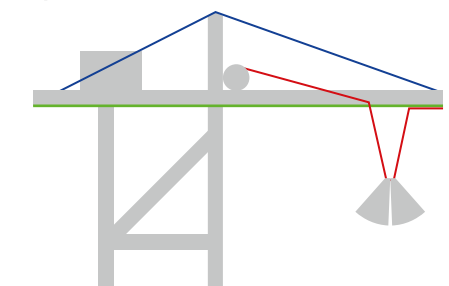
- Best profitability due to its specially designed rope structure for highest bending cycles
- High breaking forces due to its SUPERFILL® compacted outer strands
- Resistance against corrosion due to galvanized wires and the permanent lubrication provided by PLASTFILL® insert
- Reduced maintenance effort due to intensive lubrication in each production step
- OEM approved for ages

Applications

The colored squares preceding the rope's designation refer to the illustration.

Other types of construction on request.

Ship to shore cranes





Customized solutions and products

Working together with you, the team from TEUFELBERGER will determine the best solution.



ROPES FOR PORT CRANES

Different harbour applications such as Straddle-carriers, RTG's or RMG's have one thing in common: a non-scheduled down-time of a crane may cause high costs and loss. Backup cranes are rarely – if ever – available. A steel wire rope requires high service life reserves until the next planned crane inspection. TEUFELBERGER has specialized in these requirements.

Ropes

■ EVOLUTION Q8

High performance 8-strand ordinary lay rope with longest service life, suited as hoisting rope

- Best profitability - highest bending cycles on the market for RTG's, RMG's and Straddle-Carriers
- Highly flexible rope-construction which also provides sufficient life-time results for a small d/D ratio
- High breaking forces due to SUPERFILL® compaction technology
- Resistance against corrosion due to galvanized wires and the permanent lubrication provided by PLASTFILL® insert
- Reduced maintenance effort due to intensive lubrication in each production step
- OEM approved for ages

■ Q 810 V

Flexible 8-strand ordinary lay rope with PLASTFILL® insert suited as hoisting rope for special complex reeving systems.

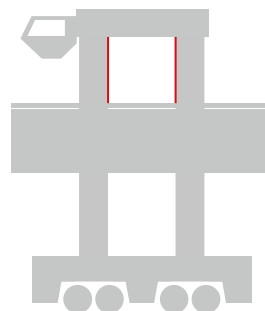
- Resistant against external influences like torsion, fleet angles and small d/D ratios
- Longer service life for selected complex reeving systems
- Very flexible and robust against shock loads due to its special rope design with the 4-strand core
- High resistance against corrosion due to galvanized wires and the permanent lubrication provided by PLASTFILL® insert
- OEM approved for ages

Applications

The colored squares preceding the rope's designation refer to the illustration.

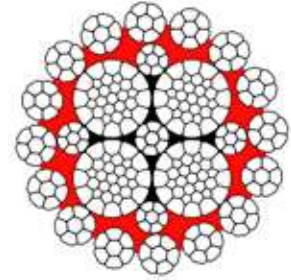
Other types of construction on request.

Van carrier, RTG and RMG



EVOLUTION TK16

Revolutionary design, high quality materials, and perfectly harmonized production processes – EVOLUTION TK16 combines all the characteristics needed for your application: Extremely resistant and best flexibility!



Specifications

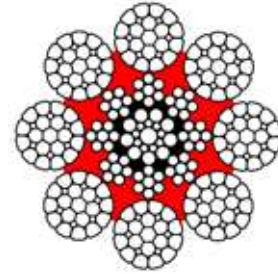
- Ordinary lay or lang's lay, right or left lay
 - 8–30 mm: 16 x K6-EPIWRC (K), RCN 23-1
 - 32–42 mm: 16 x K7-EPIWRC (K), RCN 23-2
- ✓ MULTILAYER SPOOLING
 - ✓ SUPERFILL®
 - ✓ PLASTFILL®

Technical data

Ø		Weight	Minimum breaking force at rope grade		
			1770 N/mm²	1960 N/mm²	2160 N/mm²
mm	inch	kg/m	kN	kN	kN
8	5/16	0.34	54	59	64
9		0.41	67	74	78
10		0.50	82	91	98
11		0.61	100	111	118
12		0.74	120	133	144
13		0.86	141	156	170
14	9/16	1.01	163	181	197
15		1.16	194	215	231
16	5/8	1.32	221	244	263
17		1.50	241	267	290
18		1.64	279	309	333
19	3/4	1.85	312	345	371
20		2.08	338	374	401
21		2.26	373	413	444
22	7/8	2.51	408	452	487
24		2.94	483	535	580
25	1	3.15	537	595	639
26		3.49	567	627	675
27		3.74	609	674	725
28		4.05	655	725	780
28.57	1 1/8	4.14	668	744	814
29		4.27	701	777	835
30		4.62	749	830	893
32	1 1/4	5.24	853	944	1,016
34		5.90	958	1,061	1,141
36		6.65	1,072	1,187	1,277
38	1 1/2	7.35	1,237	1,369	1,472
40		8.13	1,317	1,458	1,568

EVOLUTION Q8

Endurance is everything. EVOLUTION Q8 – the high-performance hoisting rope for harbour mobile cranes – impresses with its exceptional long service life and high breaking strength due to its innovative SUPERFILL® compaction. EVOLUTION Q8 lasts much longer!



Specifications

- Ordinary lay, right or left lay
 - 12–50 mm: 8 x K25F – EPIWRC, RCN 06
 - 52–54 mm: 8 x K35F – EPIWRC, RCN 10
 - Use without rope swivel
- ✗ MULTILAYER SPOOLING
 - ✓ SUPERFILL®
 - ✓ PLASTFILL®

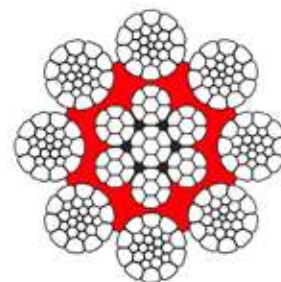
Technical data

Ø		Weight	Minimum breaking force at rope grade	
			1770 N/mm ²	1960 N/mm ²
mm	inch	kg/m	kN	kN
12		0.64	110	122
14	9/16	0.85	150	166
16	5/8	1.13	196	217
18		1.40	247	274
20		1.78	306	339
22	7/8	2.11	370	410
24		2.49	441	502
25	1	2.74	478	529
26		2.94	517	572
28		3.51	600	664
29		3.72	643	712
30		3.94	688	762
32	1 1/4	4.65	783	867
34		5.24	882	977
36		6.02	999	1,097
38	1 1/2	6.69	1,104	1,223
40		7.41	1,223	1,355
42		8.17	1,349	1,494
44	1 3/4	9.00	1,480	1,639
46		9.80	1,618	1,792
48		10.55	1,762	1,951
50	2	11.44	1,912	2,117
52		12.40	2,067	2,289
54	2 1/8	13.41	2,230	2,469

Other rope diameters are available on request.

QS 816 V(G)

Extreme resistance to negative external influences distinguishes this rope from others. SUPERFILL® compaction technology developed by TEUFELBERGER provides high breaking forces and highest safety in use. Compaction in the core and a PLASTIFILL® insert ensure stability against lateral pressure.



Specifications

- Ordinary lay, right or left lay
 - 10–42 mm: 8 x K26WS – EPIWRC (K), RCN 09
 - 44–50 mm: 8 x K31WS – EPIWRC (K), RCN 11
 - 50,8–70 mm: 8 x K42WS – EPIWRC (K), RCN >13
 - Use without rope swivel
- ✓ MULTILAYER SPOOLING
 - ✓ SUPERFILL®
 - ✓ PLASTIFILL®

Technical data

Ø		Weight	Minimum breaking force at rope grade		
			1770 N/mm ²	1960 N/mm ²	2160 N/mm ²
mm	inch	kg/m	kN	kN	kN
10		0.46	81	89	98
11	7/16	0.55	97	107	118
12		0.69	117	129	143
13		0.81	141	156	172
14	9/16	0.93	162	179	198
15		1.06	185	205	226
16	5/8	1.20	210	232	256
17		1.35	235	261	287
18		1.55	263	291	321
19	3/4	1.71	302	335	369
20		1.89	330	365	402
21		2.15	374	414	457
22	7/8	2.34	408	451	497
23		2.54	445	492	543
24		2.75	467	517	570
25	1	2.97	518	574	633
26		3.19	555	615	678
27		3.51	595	659	727
28		3.76	656	726	800
28.57	1 1/8	4.04	672	745	820
29		3.98	694	768	847

Other rope diameters are available on request.



Technical data

Ø		Weight	Minimum breaking force at rope grade		
			1770 N/mm ²	1960 N/mm ²	2160 N/mm ²
mm	inch	kg/m	kN	kN	kN
30		4.37	764	846	897
32	1¼	4.90	864	957	1,072
34		5.59	945	1,046	1,153
36		6.36	1,071	1,186	1,284
38	1½	7.03	1,222	1,354	1,431
40		7.81	1,342	1,486	1,545
42		8.60	1,482	1,641	1,736
44	1¾	9.27	1,596	1,768	
46		10.30	1,760	1,949	
48		10.78	1,848	2,050	
50	2	11.60	2,016	2,232	
52		12.50	2,180	2,414	
54	2¼	13.91	2,287	2,532	
56		14.50	2,529	2,850	
58		15.60	2,712	3,004	
60	2½	16.70	2,903	3,214	
62		17.80	3,099	3,432	
64		19.74	3,303	3,657	
66	2¾	20.63	3,495	3,870	
68		21.40	3,728	4,128	
70	2¾	22.70	3,951	4,375	

Other rope diameters are available on request.

Q 810 V

Optimizes the absorption of shock loads, knocks and vibrations due to its especially developed rope construction with the 4-strand core. PLASTFILL® insert provides permanent lubrication of the steel core and results into extreme long service life.



Specifications

- Ordinary lay, right or left lay
- 12–32 mm: 8 x 26WS – EPIWRC, RCN 09
- Use without rope swivel
- ✗ MULTILAYER SPOOLING
- ✗ SUPERFILL®
- ✓ PLASTFILL®

Technical data

Ø		Weight	Minimum breaking force at rope grade	
			1770 N/mm ²	1960 N/mm ²
mm	inch	kg/m	kN	kN
12		0.62	105	116
13		0.73	123	136
14	9/16	0.82	140	155
16	5/8	1.09	188	208
18		1.35	230	253
20		1.68	281	311
22	7/8	2.00	349	386
24		2.41	413	457
26		2.82	483	535
28		3.28	569	630
30		3.67	628	695
32	1 1/4	4.39	729	807

Other rope diameters are available on request.

DISCARD CRITERIA

The discard criteria for TEUFELBERGER special steel wire ropes are defined according to:

- ISO 4309
- API 2D FIFTH EDITION

This includes: reduction of rope diameter, corrosion and wire breaks. For assessing the discard condition based on wire breaks, the rope category number (RCN) is used. For TEUFELBERGER special steel wire ropes, this number is listed in the following tables. For further details regarding the discard criteria and general handling for wire ropes to ISO 4309 or API 2D FIFTH EDITION, see the “Application Handbook – High Performance Offshore Ropes” at www.teufelberger.com

Rotation resistant ropes

Type of design	Diameter range mm	RCN*	n**
EVOLUTION TK16	9-30	23-1	96
	32-42	23-2	112

Non-rotation resistant ropes

Type of design	Diameter range mm	RCN*	n**
EVOLUTION Q8	12-50	6	152
	52-54	10	224
QS 816 V(G)	10-42	9	208
	44-50	11	248
	52-70	>13	336
Q 810 V	12-32	9	208

* RCN = Rope Category Number **n = Number of outer strands and total number of load-bearing wires in the outer layer of strands in the rope