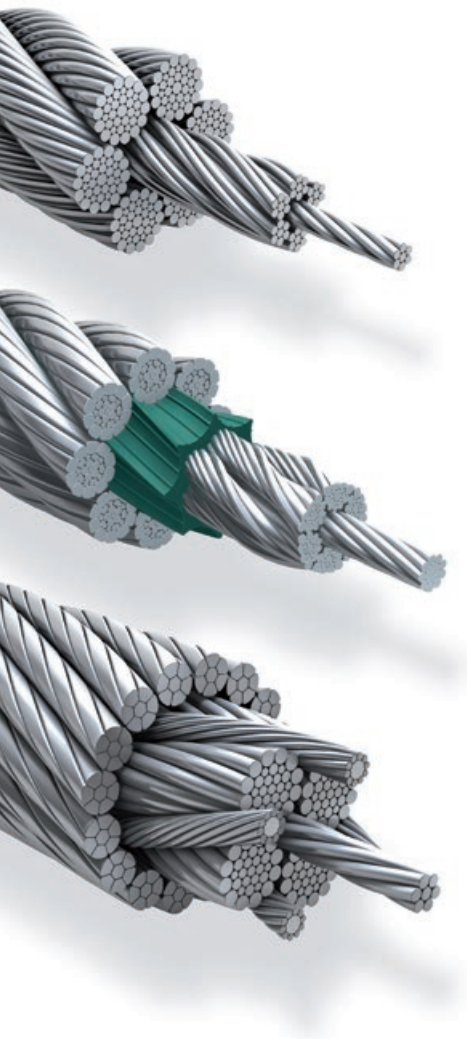
EDITION 2016/17



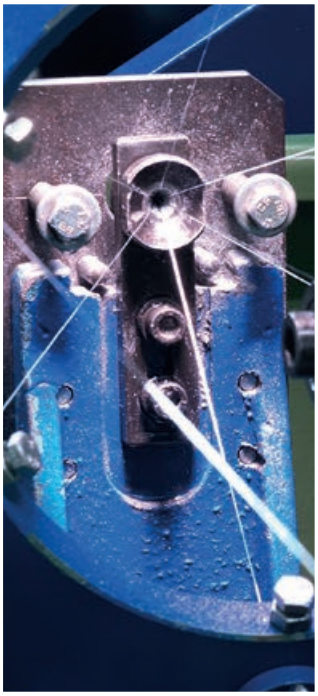
TRADITION.
INNOVATION.
VISION.
SINCE 1889.

Special Ropes
Standard Ropes
Wires

VORNBÄUMEN

Valid from 08/2016 · Subject to technical modifications

EDITION 2016/17



TRADITION.
INNOVATION.
VISION.
SINCE 1889.

COMPANY

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications

COMPANY

KNOW-HOW AND QUALITY – OUR FUTURE

We know from years of experience what we're doing – we win over customers with our know-how in all areas of production, from the drawing mill to the ropery. Continuous improvement processes in production, constant contact with our dealers, insight into the applications and continuous investments in the most modern manufacturing technologies have made us a leading manufacturer of steel rope. Furthermore, we continuously develop new technologies and machines to produce standard and special ropes.

In development and manufacturing, we will continue in the future to rely on the independence created by having our own engineers, doing our own research, and building our own machines in order to live up to the driving principles of our founders. Especially in the area of special ropes, we are always happy to assist you with your specific requirements, not only as a supplier, but also as a development and project partner.

TRADITION. INNOVATION. VISION. SINCE 1889.

Since 1889, our continuous pursuit of progress and the highest quality standards has set the benchmarks that are reflected in our products and services. Johannes and Wilhelm VORNBÄUMEN, the founders of the company, gave utmost priority to developing the company and improving production and technology right from the beginning. Thus, in 1906 they founded their own wire drawing mill to go with the ropery. This was the foundation stone for increased independence from the raw material suppliers, and the term "quality" was thus redefined. Still today we feel obligated to measure up to these standards and to the founders' researching and pioneering spirit.

In the meantime, 10,000 tonnes of steel per year are processed in our plants in Bad Iburg and Allstedt with the most modern production technology. In addition to our main products – wires and steel ropes - today we also produce Bowden spirals, push-pull spirals, and plastic tubing for the automotive industry and others. All products are developed and manufactured with state-of-the-art technology. Wire and steel ropes are used throughout the world. We will contribute to this now and in the future.

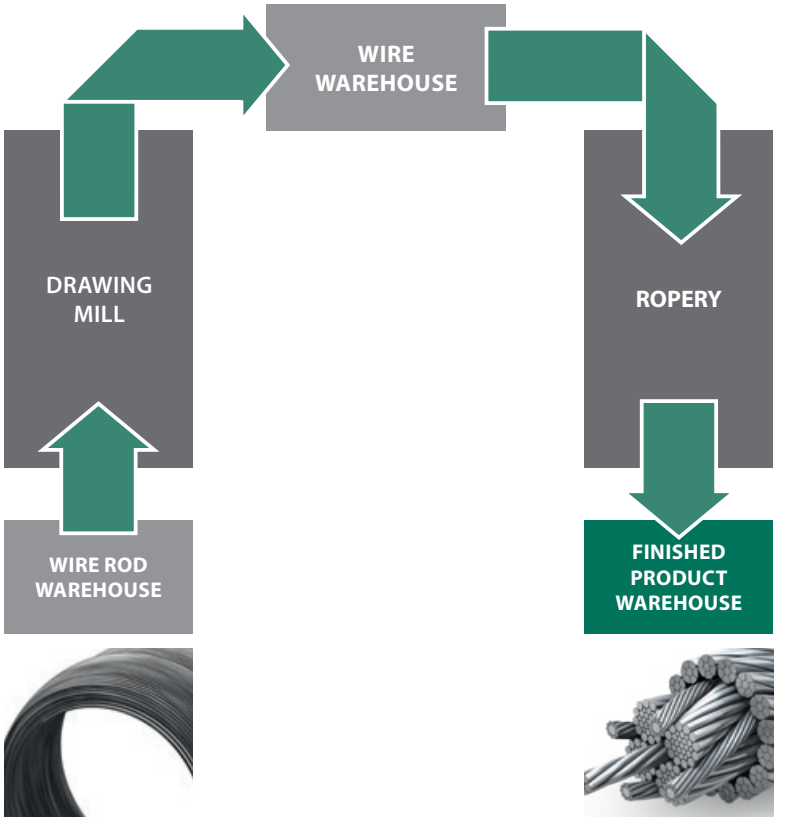
In the ropery

VORNBÄUMEN in Bad Iburg, circa 1905

VORNBÄUMEN STEEL ROPES – A SUCCESS STORY

In the 1980s, a significant expansion was planned for the location in Bad Iburg, and now over 50,000 m^2 of production space are available to the company.
In the middle of the 1990s, we expanded our portfolio with the production location in Allstedt. Today special products for the automotive and bicycle industries are produced there.
Thanks to our close cooperation with our customers and our ability to modify production, we are able to work together with you to establish the conditions for optimal market positioning. Whether through our years of experience in standard wire ropes or our will to innovate in the area of special applications. We will find a solution to your problem.

In the wire drawing mill



FROM WIRE TO ROPE

Through our know-how and control of all production steps, today we can guarantee consistent, especially high quality – from wire rod to rope. Unlike many competitors, we can begin modifying the properties of our products according to customer requirements right in our own drawing mill. Here, via drawing, heat treatment and surface conditioning, the wires are individually prepared for their tasks in the various rope constructions. Depending where the end product will later be used, we process wires in zinc-coated, phosphate-coated or bright finishes. Quick access to various qualities and technically required diameters of pre-drawn and finished wires from our wire warehouse allows us to respond to our customers' individual requests in the shortest time possible. These requirements are then fulfilled to the smallest possible manufacturing tolerances in the modern machine park in our ropery, where the wires are stranded and the strands assembled into rope.

We are thus able to react quickly to our customers' requirements regarding, for instance, length of lay, lubrication, degree of compaction, coating or tracer threads. Challenge us.

EDITION 2016/17

TRADITION.
INNOVATION.
VISION.
SINCE 1889.

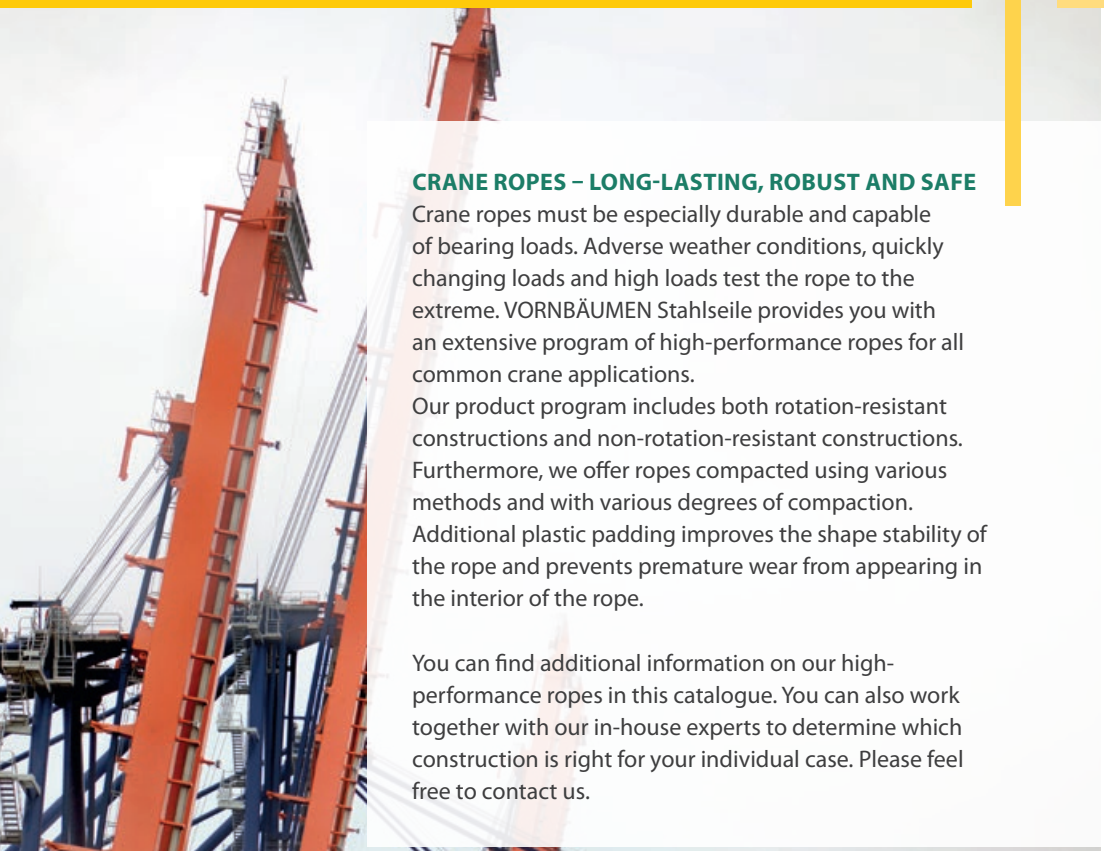
Special Ropes

CRANE ROPES

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications

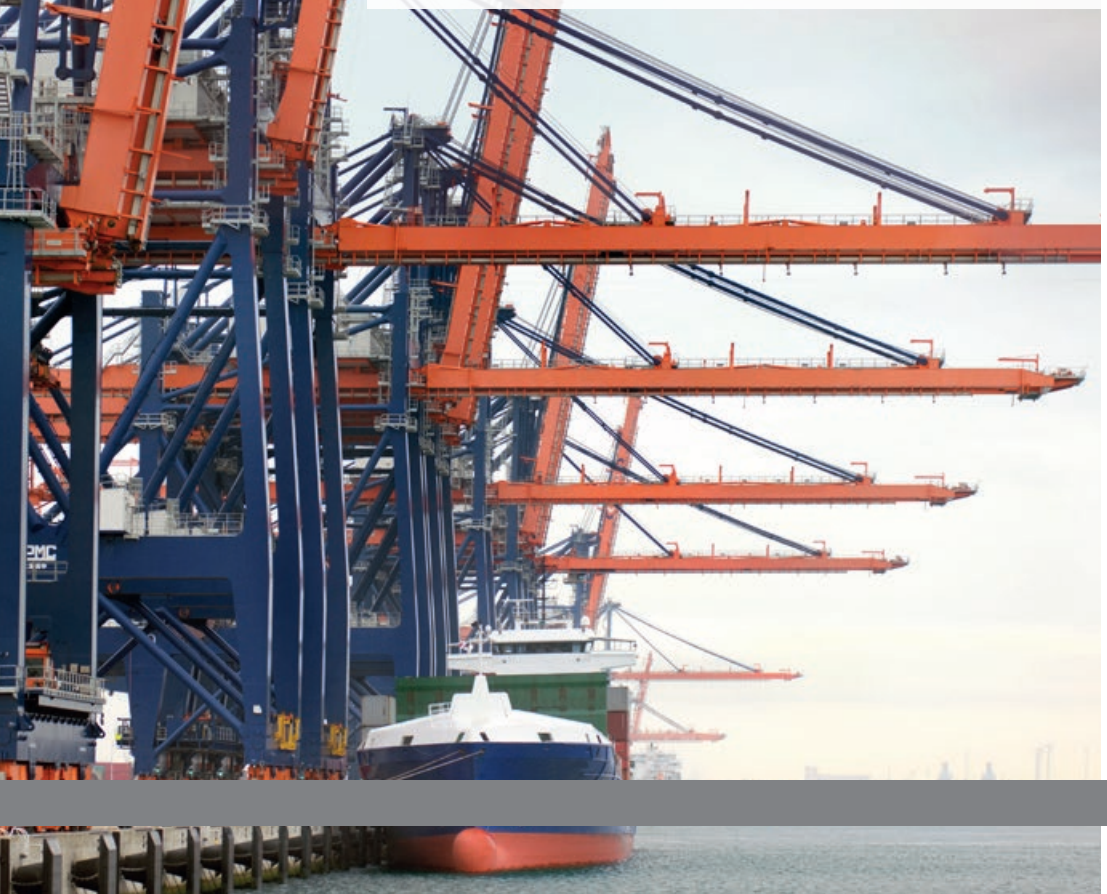
CRANE ROPES



CRANE ROPES – LONG-LASTING, ROBUST AND SAFE

Crane ropes must be especially durable and capable of bearing loads. Adverse weather conditions, quickly changing loads and high loads test the rope to the extreme. VORNBÄUMEN Stahlseile provides you with an extensive program of high-performance ropes for all common crane applications.
Our product program includes both rotation-resistant constructions and non-rotation-resistant constructions. Furthermore, we offer ropes compacted using various methods and with various degrees of compaction. Additional plastic padding improves the shape stability of the rope and prevents premature wear from appearing in the interior of the rope.

You can find additional information on our high-performance ropes in this catalogue. You can also work together with our in-house experts to determine which construction is right for your individual case. Please feel free to contact us.



SPECIAL ROPES: TRADITION WITH THE MOST MODERN TECHNOLOGY

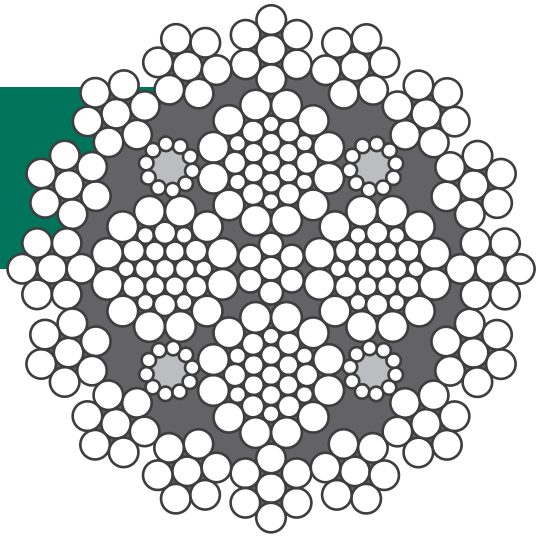
With the development of special ropes, individual application options are at the forefront. Our knowledge and experience are in demand in this area in particular. The complex design of these ropes and the combination of various materials lead to special product properties specific for the area of application.

INDIVIDUAL SOLUTIONS AT THE HIGHEST LEVEL

The numerous requirements and special applications always require new and further technological developments. In this process, our team of experts is always happy to provide you with support as a competent partner. It is not our product program that determines the solution to your problem; rather your individual requirement determines our individual realization to meet your requests. Contact us about the possibility of using special manufacturing to meet your needs.

VS 16-1

∅ 7 – 36 mm



- Rotation-resistant (a) EN 12385-3
- Rope category number (RCN) 23-2 according to ISO 4309
- Lang lay
- Zinc-coated class B standard
- Special lubrication
- Can be used with swivel

∅	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
7	22.1	25.0	37.7	41.6
8	28.9	32.7	49.3	54.3
9	36.5	41.3	62.4	68.7
10	45.1	51.0	77.0	84.9
11	54.6	61.7	93.2	103
12	64.9	73.5	111	122
13	76.2	86.2	130	143
14	88.4	100	151	166
15	101	115	173	191
16	115	131	197	217
17	130	147	223	245
18	146	165	250	275
19	163	184	278	306
20	180	204	308	339
21	199	225	340	374
22	218	247	373	411
23	239	270	407	449
24	260	294	444	489
25	282	319	481	530
26	305	345	521	559
28	354	400	604	648
30	406	459	693	744
32	462	522	789	835
34	521	590	890	943
36	584	661	998	1043

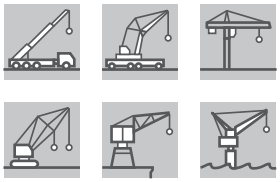
- Diameter tolerance: +0% / +4%
- Number of outer load bearing wires: 112
- Average fill factor: 0.65

SPECIAL FEATURES

Our classic VS 16-1 – a rotation-resistant hoisting rope of class a with the tried and true 16 outer strands – has been established for years as a hoisting rope in a wide range of application areas.

PROPERTIES

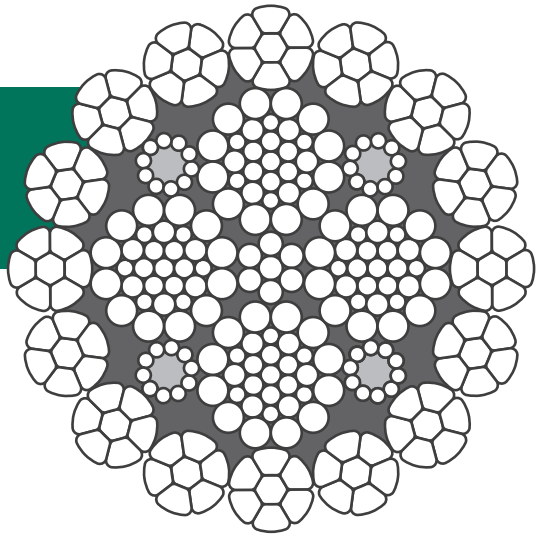
FIELDS OF APPLICATION



Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 16-2 C

∅ 8 – 32 mm



- Rotation-resistant (a) EN 12385-3
- Rope category number (RCN) 23-2 according to ISO 4309
- Lang lay
- Zinc-coated class B standard
- Special lubrication
- Outer strands compacted
- Can be used with swivel

∅	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
8	31.3	35.2	54.9	60.5
9	39.6	44.5	69.4	76.5
10	48.9	55.0	85.7	94.5
11	59.2	66.5	104	114
12	70.4	79.1	123	136
13	82.6	92.9	145	160
14	95.8	108	168	185
15	110	124	193	213
16	125	141	219	242
17	141	159	248	273
18	158	178	278	306
19	177	198	309	341
20	196	220	343	378
21	216	242	378	417
22	237	266	415	457
23	259	291	454	500
24	282	317	494	544
25	306	343	536	590
26	331	371	580	639
28	383	431	672	-
30	440	495	772	-
32	501	563	878	-

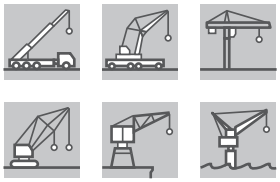
- Diameter tolerance: +0% / +4%
- Number of outer load bearing wires: 112
- Average fill factor: 0.70

SPECIAL FEATURES

In comparison to the classic VS 16-1, the new VS 16-2 C has compacted outer strands which provide better running properties.

PROPERTIES

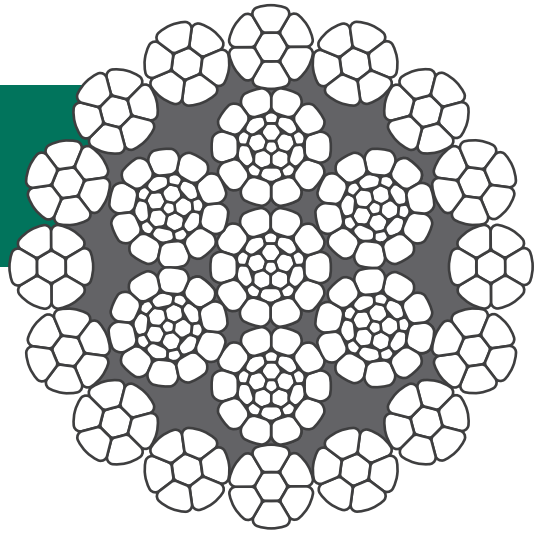
FIELDS OF APPLICATION



Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 16-3 C

∅ 8 – 32 mm



- Rotation-resistant (a) EN 12385-3
- Rope category number (RCN) 23-2 according to ISO 4309
- Lang lay
- Zinc-coated class B standard
- Special lubrication
- All strands compacted
- Can be used with swivel

∅	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
8	31.5	35.4	55.5	61.2
9	39.9	44.8	70.3	77.5
10	49.2	55.3	86.8	95.6
11	59.5	67.0	105	116
12	70.8	79.7	125	138
13	83.1	93.5	147	162
14	96.4	108	170	187
15	111	125	195	215
16	126	142	222	245
17	142	160	251	276
18	159	179	281	310
19	178	200	313	345
20	197	221	347	383
21	217	244	383	422
22	238	268	420	463
23	260	293	459	506
24	283	319	500	551
25	308	346	542	598
26	333	374	587	646
28	386	434	680	-
30	443	498	781	-
32	504	567	889	-

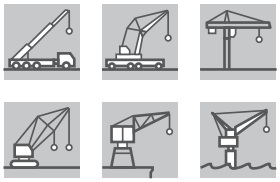
- Diameter tolerance: +0% / +4%
- Number of outer load bearing wires: 112
- Average fill factor: 0.705

SPECIAL FEATURES

The VS 16-3 C is designed for use where very high breaking forces are required. In addition to the compacted outer strands like on the VS 16-2, this construction also has a swaged core to create a larger metallic cross section and even higher breaking forces.

PROPERTIES

FIELDS OF APPLICATION

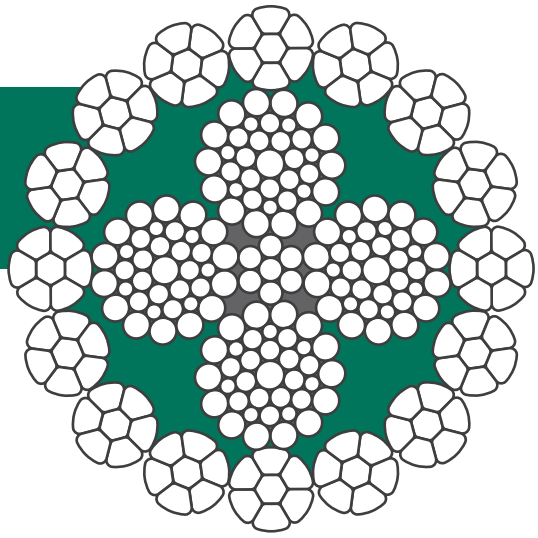


Optimized quality

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 16-4 CP

∅ 8 – 32 mm



- Rotation-resistant (a) EN 12385-3
- Rope category number (RCN) 23-2 according to ISO 4309
- Lang lay
- Zinc-coated class B standard
- Special lubrication
- Outer strands compacted
- Plastic padding
- Can be used with swivel

∅	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
8	29.4	32.7	50.6	55.7
9	37.3	41.3	64.0	70.5
10	46.0	51.0	79.0	87.1
11	55.7	61.7	95.6	105
12	66.2	73.5	114	125
13	77.7	86.2	134	147
14	90.2	100	155	171
15	104	115	178	196
16	118	131	202	223
17	133	147	228	252
18	149	165	256	282
19	166	184	285	314
20	184	204	316	348
21	203	225	348	384
22	223	247	382	421
23	243	270	418	461
24	265	294	455	502
25	288	319	494	544
26	311	345	534	589
28	361	400	619	-
30	414	459	711	-
32	471	522	809	-

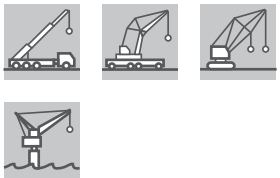
- Diameter tolerance: +0% / +4%
- Number of outer load bearing wires: 112
- Average fill factor: 0.65

SPECIAL FEATURES

The VS 16-4 represents an additional expansion of our product program in the field of crane ropes. The plastic padding of the compacted inner rope can dampen jerky loads and impacts and stabilise the rope structure.

PROPERTIES

FIELDS OF APPLICATION

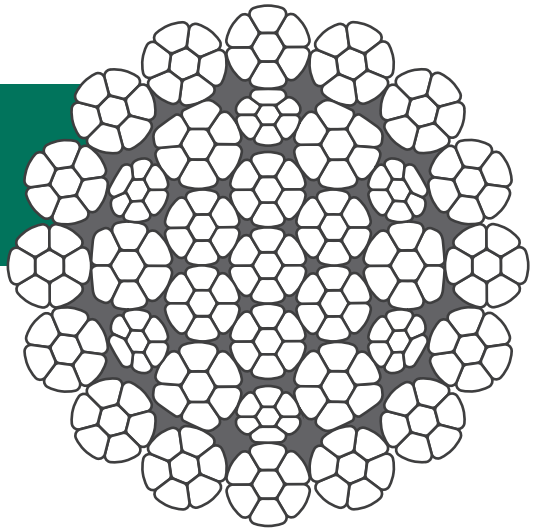


Optimized quality

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 16-5 C

∅ 8 – 32 mm



- Rotation-resistant (a) as per EN 12385-3
- Rope category number (RCN) 23-2 according to ISO 4309
- Lang lay
- Zinc-coated class B standard
- Special lubrication
- All strands compacted
- Inner rope subsequently swaged
- Can be used with swivel

∅	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
8	32.6	37.2	59.4	63.8
9	41.3	47.1	75.2	80.8
10	51.0	58.1	92.8	100
11	61.7	70.3	112	121
12	73.4	83.6	134	144
13	86.2	98.2	157	169
14	100	114	182	196
15	115	131	209	224
16	131	149	238	255
17	147	168	268	288
18	165	188	301	323
19	184	210	335	360
20	204	232	371	399
21	225	256	409	440
22	247	281	449	483
23	270	307	491	528
24	294	335	534	575
25	319	363	580	623
26	345	393	627	674
28	400	455	727	-
30	459	523	835	-
32	522	595	950	-

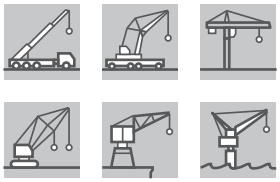
- Diameter tolerance: +0% / +4%
- Number of outer load bearing wires: 112
- Average fill factor: 0.74

SPECIAL FEATURES

The tried and true VS 16-5 C with 35 compacted strands of 7 wires each features very high breaking forces due to the high degree of compaction.

PROPERTIES

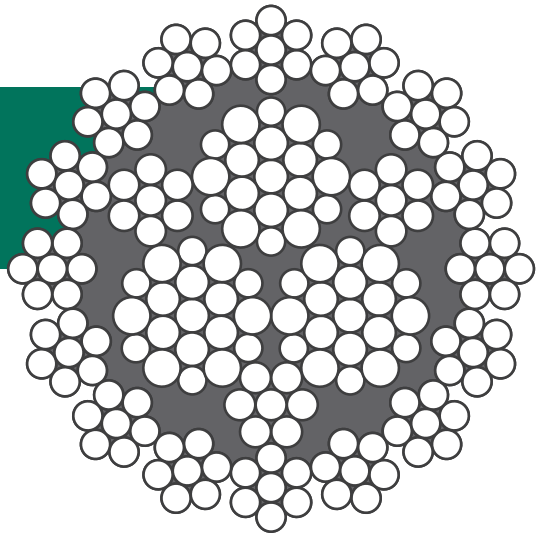
FIELDS OF APPLICATION



Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 16-6

∅ 8 – 20 mm



- Rotation-resistant (a) as per EN 12385-3
- Rope category number (RCN) 23-2 according to ISO 4309
- Lang lay
- Zinc-coated class B standard
- Special lubrication
- Can be used with swivel

∅	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
8	29.1	32.0	47.7	52.5
9	36.9	40.5	60.3	66.5
10	45.5	50.0	74.5	82.1
11	55.1	60.5	90.1	99.0
12	65.5	72.0	107	118
13	76.9	84.5	126	139
14	89.2	98.0	146	161
15	102	113	168	186
16	116	128	191	210
17	131	145	216	238
18	147	162	241	266
19	164	181	270	297
20	182	200	298	328

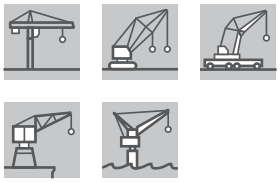
- Diameter tolerance: +0% / +4%
- Number of outer load bearing wires: 112
- Average fill factor: 0.63

SPECIAL FEATURES

The VS 16-6 is a rotation-resistant hoisting rope of class a. Like the VS 16-1, it features the tried and true 16 outer strands of 7 wires each. The interior construction is made of 3 strands that are supported by 3 thinner fill strands in a star shape. This provides the new VS 16-6 with an economic construction combined with good rotational properties.

PROPERTIES

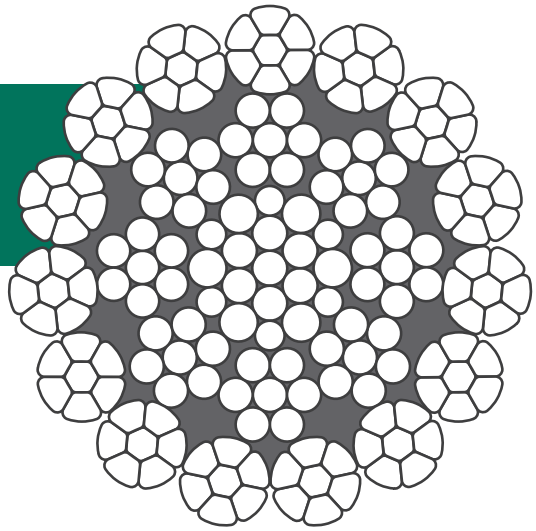
FIELDS OF APPLICATION



Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 15-1 C

∅ 8 – 32 mm



- Rotation-resistant (a) as per EN 12385-3
- Rope category number (RCN) 23-2 according to ISO 4309
- Lang lay
- Bright standard
- Special lubrication
- Outer strands compacted
- High degree of efficiency
- Can be used with swivel

∅	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
8	29.8	32.3	52.6	56.5
9	37.7	40.9	66.5	71.5
10	46.5	50.5	82.1	88.3
11	56.3	61.1	99.4	107
12	67.0	72.7	118	127
13	78.6	85.3	139	149
14	91.1	98.9	161	173
15	105	114	185	199
16	119	129	210	226
17	134	146	237	255
18	151	164	266	286
19	168	182	296	319
20	186	202	328	353
21	205	223	362	380
22	225	244	397	417
23	246	267	434	456
24	268	291	473	496
25	291	315	513	538
26	314	341	555	582
28	365	396	644	-
30	419	454	739	-
32	476	517	841	-

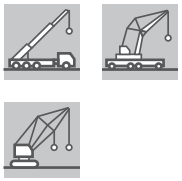
- Diameter tolerance: +0 % / +4 %
- Number of outer load bearing wires: 105
- Average fill factor: 0.645

SPECIAL FEATURES

The VS 15-1 C is a hoisting rope with 15 compacted outer strands. It primarily comes into use when a high degree of efficiency must be achieved due to high hoisting heights and multiple reeving.

PROPERTIES

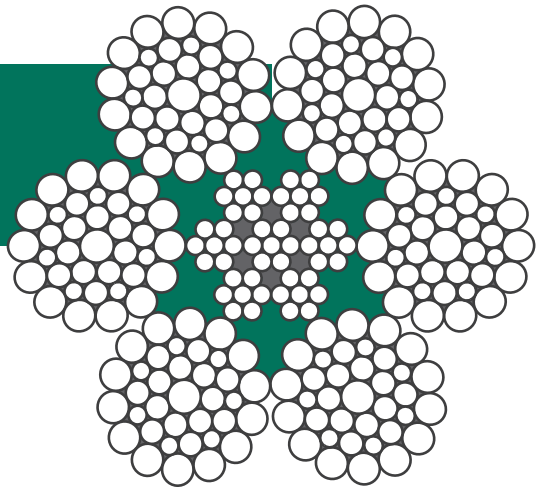
FIELDS OF APPLICATION



Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 6-1 P

∅ 8 – 52 mm



- Rope category number (RCN) 09 according to ISO 4309
- Ordinary lay
- Zinc-coated class B standard
- Special lubrication
- Plastic padding
- Should not be used with a swivel

∅	Weight	Metallic cross section	MBF 1770	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN	kN
8	26.2	29.4	40.3	44.7	49.2
9	33.1	37.3	51.0	56.5	62.3
10	40.9	46.0	63.0	69.8	76.9
11	49.5	55.7	76.2	84.4	93.0
12	58.9	66.2	90.7	100	111
13	69.1	77.7	106	118	130
14	80.2	90.2	124	137	151
15	92.0	104	142	157	173
16	105	118	161	179	197
17	118	133	182	202	222
18	133	149	204	226	249
19	148	166	227	252	278
20	164	184	252	279	308
22	198	223	305	338	372
24	236	265	363	402	443
25	256	288	392	434	478
26	276	311	426	472	520
28	321	361	494	547	603
30	368	414	567	628	692
32	419	471	645	715	787
34	473	539	728	807	889
36	530	596	817	904	997
38	591	664	910	1010	1110
40	654	736	1010	1120	1230
42	721	811	1110	1230	1350
44	792	890	1220	1350	-
46	865	973	1330	1480	-
48	942	1059	1450	1610	-
50	1020	1150	1580	1750	-
52	1110	1240	1700	1880	-

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

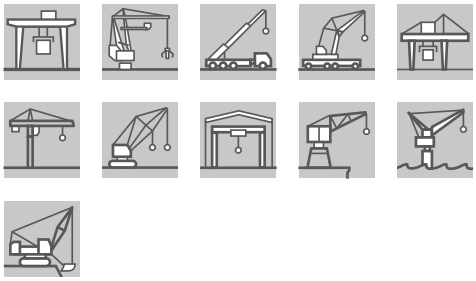
- Diameter tolerance: +2% / +4%
- Number of outer load bearing wires: 216
- Average fill factor: 0.585

SPECIAL FEATURES

The VS 6-1 P is a non-rotation-resistant hoisting rope with 6 outer strands and additional plastic padding.

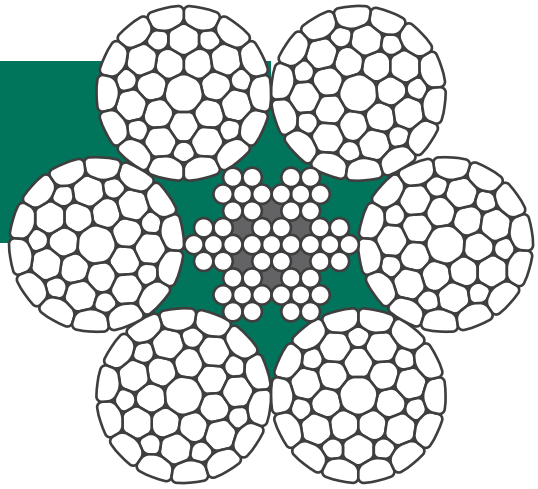
PROPERTIES

FIELDS OF APPLICATION



VS 6-2 CP

Ø 8 – 42 mm



- Rope category number (RCN) 09 according to ISO 4309
- Ordinary lay
- Zinc-coated class B standard
- Special lubrication
- Plastic padding
- Outer strands compacted
- Should not be used with a swivel

Ø	Weight	Metallic cross section	MBF 1770	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN	kN
8	29.0	32.8	45.3	50.1	54.9
9	37.0	41.5	57.3	63.4	69.5
10	46.0	51.3	70.8	78.4	85.9
11	55.0	62.0	85.6	94.8	104
12	66.0	73.8	102	113	124
13	77.0	86.6	120	132	145
14	89.0	101	139	154	169
15	103	115	159	176	193
16	117	131	181	200	219
17	132	148	204	226	248
18	148	166	229	254	278
19	165	185	255	283	310
20	182	205	283	313	343
22	221	248	342	379	415
24	262	294	403	446	489
26	308	345	473	524	574
28	357	400	549	608	665
30	410	459	630	698	764
32	466	522	717	794	869
34	526	590	809	896	981
36	590	661	907	1004	1100
38	657	737	1011	1119	1225
40	728	816	1120	1240	1358
42	803	900	1235	1367	-

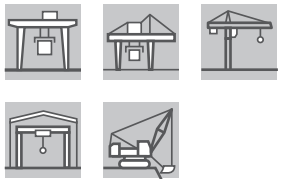
- Diameter tolerance: +2% / +4%
- Number of outer load bearing wires: 216
- Average fill factor: 0.655

SPECIAL FEATURES

The VS 6-2 CP is a non-rotation-resistant hoisting rope with 6 compacted outer strands and additional plastic padding. This rope features high breaking forces.

PROPERTIES

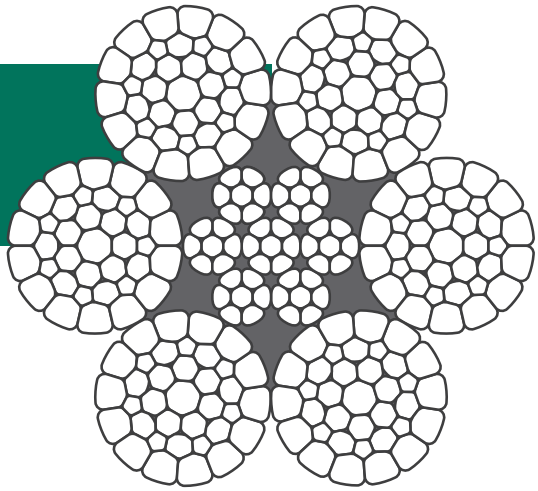
FIELDS OF APPLICATION



Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 6-11 C

∅ 10 – 42 mm



- Rope category number (RCN) 09 according to ISO 4309
- Ordinary lay
- Zinc-coated class B standard
- Special lubrication
- All strands compacted
- Should not be used with a swivel

∅	Weight	Metallic cross section	MBF 1770	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN	kN
10	45.4	52.5	73.6	81.5	89.8
11	55.0	63.5	89.1	98.6	109
12	66.0	76.1	107	118	130
13	77.3	88.7	124	138	151
14	89.2	103	144	160	176
16	116	134	188	209	230
18	147	170	238	264	291
19	165	190	266	294	324
20	183	210	294	326	359
22	221	254	356	394	431
24	263	302	424	469	517
26	310	355	498	551	607
28	359	412	577	639	704
30	409	473	661	732	803
32	476	538	752	832	914
34	526	607	849	940	1032
36	595	682	954	1056	1159
38	660	761	1064	1178	1293
40	732	840	1175	1301	1428
42	803	926	1295	1434	-

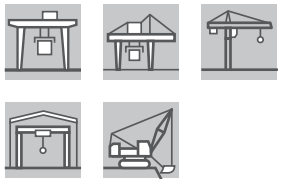
- Diameter tolerance: +2% / +4%
- Number of outer load bearing wires: 216
- Average fill factor: 0.665

SPECIAL FEATURES

The VS 6-11 C is a non-rotation-resistant hoisting rope with complete strand compacting. This rope features high breaking forces.

PROPERTIES

FIELDS OF APPLICATION

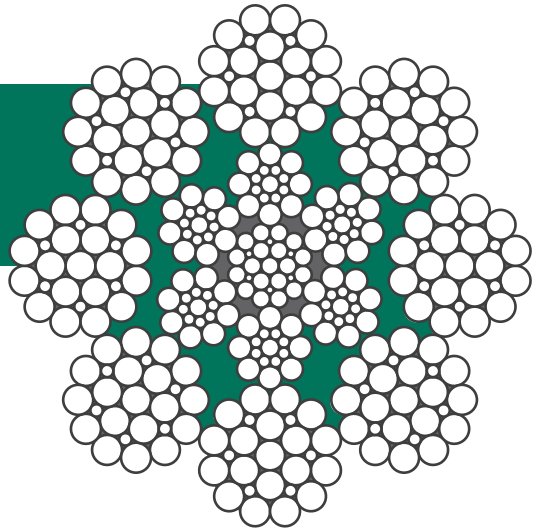


Optimized quality

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 8-1 P

Ø 8 – 50 mm



- Rope category number (RCN) 06 according to ISO 4309
- Ordinary lay
- Zinc-coated class B standard
- Special lubrication
- Plastic padding
- Should not be used with a swivel

Ø	Weight	Metallic cross section	MBF 1770	MBF 1960
mm	kg/100 m	mm²	kN	kN
8	27.5	30.4	47.8	52.7
9	34.8	38.5	60.5	66.6
10	43.0	47.5	74.7	82.3
11	52.0	57.5	90.3	100
12	61.9	68.4	108	118
13	72.7	80.3	126	139
14	84.3	93.1	146	161
15	96.8	107	168	185
16	110	122	191	211
17	124	137	216	238
18	139	154	242	267
19	155	171	270	297
20	172	190	299	329
22	208	230	361	398
24	248	274	430	474
26	291	321	505	556
28	337	372	585	645
30	387	427	672	740
32	440	486	764	842
34	497	549	863	951
36	557	616	968	1066
38	621	686	1078	1188
40	688	760	1194	1316
42	759	838	1317	1451
44	832	919	1445	-
46	910	1005	1580	-
48	991	1094	1720	-
50	1075	1187	1866	-

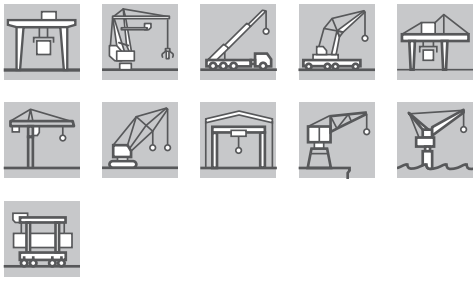
- Diameter tolerance: +2% / +4%
- Number of outer load bearing wires: 152
- Average fill factor: 0.605

SPECIAL FEATURES

Our VS 8-1 P is a non-rotation-resistant hoisting rope with plastic padding and 8 strands in the outer layer.

PROPERTIES

FIELDS OF APPLICATION

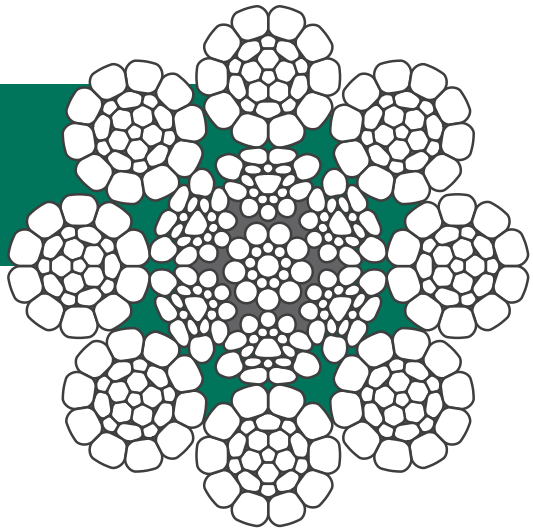


Optimized quality

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 8-2 CP

⌀ 10 – 52 mm



- Rope category number (RCN) 09[1] (up to ø 38 mm), 11[2] (up to ø 46 mm), 13[3] (up to ø 52 mm) according to ISO 4309
- Ordinary lay
- Zinc-coated class B standard
- Special lubrication
- Plastic padding
- Outer strands compacted
- Inner rope swaged
- Should not be used with a swivel

⌀	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
10	50.0	54.2	89.7	92.4
11	60.4	65.5	109	112
12	73.0	78.0	129	133
13	85.0	91.5	152	156
14	97.0	106	176	181
15	111	122	202	208
16	126	139	230	237
17	141	157	259	267
18	157	175	291	299
19	174	196	324	334
20	191	217	359	370
22	229	262	434	447
24	291	312	517	532
25	308	339	561	578
26	337	366	606	625
27	359	395	619	674
28	387	425	666	725
30	440	487	764	821
32	498	555	870	934
33	523	590	925	994
34	555	626	982	1055
36	614	702	1101	-
38	685	782	1226	-
40	759	867	1359	-
42	837	955	1498	-
44	907	1049	1644	-
46	991	1146	1752	-
48	1079	1248	1908	-
50	1171	1354	2070	-
52	1266	1465	2239	-

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

- Diameter tolerance: +2% / +4%
- Number of outer load bearing wires: [1]208 / [2]248 / [3]288
- Average fill factor: 0.690

SPECIAL FEATURES

The VS 8-2 CP is a hoisting rope with 8 compacted outer strands and a swaged inner rope. It also features a plastic padding and high breaking forces.

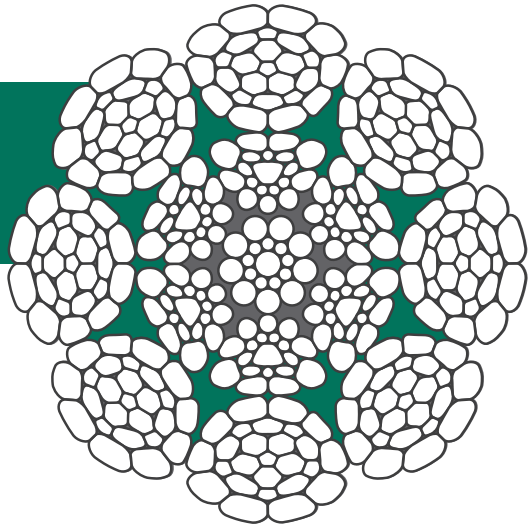
PROPERTIES

FIELDS OF APPLICATION

Optimized quality

VS 8-6 CP

∅ 12 – 32 mm



- Rope category number (RCN) 09 according to ISO 4309
- Ordinary lay
- Zinc-coated class B standard
- Special lubrication
- Plastic padding
- Outer strands compacted
- Inner rope swaged
- Complete rope swaged
- Should not be used with a swivel

∅	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
12	73.0	79.7	130	139
13	85.0	93.5	153	164
14	97.0	108	178	190
15	111	125	204	218
16	126	142	232	248
17	141	160	262	280
18	157	179	293	314
19	174	200	327	350
20	191	221	362	387
22	229	268	438	469
24	291	319	522	558
26	337	374	612	655
28	387	434	680	740
30	440	498	781	850
32	498	567	889	967

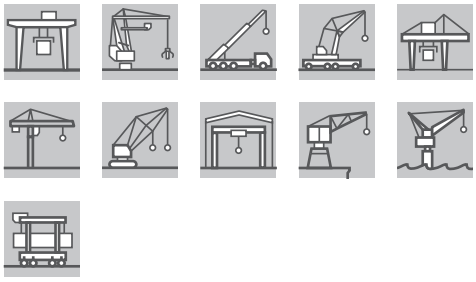
- Diameter tolerance: +2% / +4%
- Number of outer load bearing wires: 208
- Average fill factor: 0.705

SPECIAL FEATURES

The VS 8-6 CP is similar to the VS 8-2 but additionally swaged, which achieves a particularly uniform surface and very high breaking forces.

PROPERTIES

FIELDS OF APPLICATION

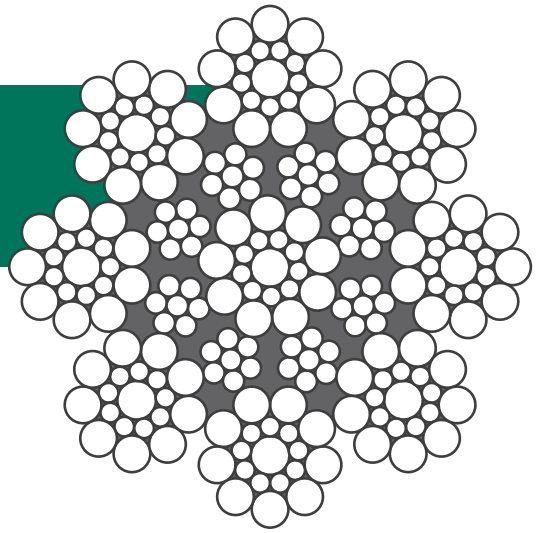


Optimized quality

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 8-3

Ø 8 – 26 mm



- Rope category number (RCN) 04 according to ISO 4309
- Ordinary lay
- Zinc-coated class B standard
- Special lubrication
- Double parallel stranded
- Should not be used with a swivel

Ø	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
8	30.1	34.9	52.6	58.0
9	38.1	44.1	66.6	73.4
10	47.0	54.5	82.3	90.6
11	56.9	65.9	99.5	110
12	67.7	78.5	118	131
13	79.4	92.1	139	153
14	92.1	107	161	178
15	106	123	185	204
16	120	140	211	232
17	134	157	238	262
18	152	177	266	294
19	170	197	297	327
20	188	218	329	363
22	227	264	398	439
24	270	313	474	522
26	317	368	556	613

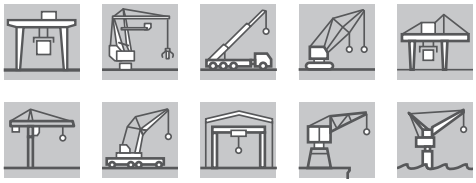
- Diameter tolerance: +2% / +4%
- Number of outer load bearing wires: 152
- Average fill factor: 0.70

SPECIAL FEATURES

The VS 8-3 is a double parallel stranded construction with 8 outer strands.

PROPERTIES

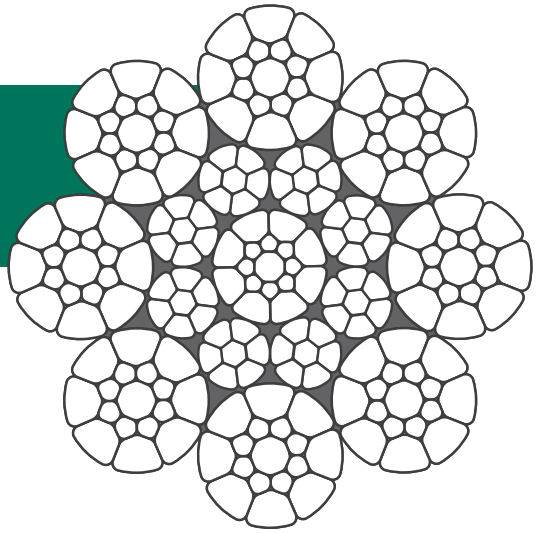
FIELDS OF APPLICATION



Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 8-4 C

Ø 8 – 26 mm



- Rope category number (RCN) 04 according to ISO 4309
- Ordinary lay
- Zinc-coated class B standard
- Special lubrication
- Double parallel stranded
- All strands compacted
- Should not be used with a swivel

Ø	Weight	Metallic cross section	MBF 1960	MBF 2160
mm	kg/100 m	mm²	kN	kN
8	32.0	37.1	61.2	67.5
9	40.5	47.0	77.5	85.4
10	50.0	58.0	95.7	105
11	60.5	70.2	116	128
12	72.0	83.5	135	149
13	84.5	98.0	159	175
14	98.0	114	184	203
15	113	131	212	233
16	128	148	241	265
17	144	166	269	297
18	162	188	305	336
19	181	209	340	374
20	200	232	376	415
22	242	280	455	502
24	288	334	542	597
26	338	392	635	700

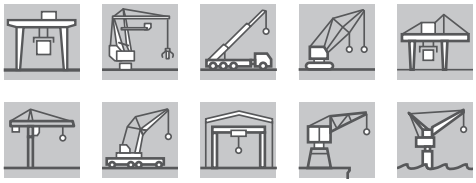
- Diameter tolerance: +2% / +4%
- Number of outer load bearing wires: 152
- Average fill factor: 0.735

SPECIAL FEATURES

The VS 8-4 C is a double parallel stranded construction with 8 compacted outer strands.

PROPERTIES

FIELDS OF APPLICATION



Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

EDITION 2016/17

TRADITION.
INNOVATION.
VISION.
SINCE 1889.

Special Ropes

FORESTRY ROPES

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications

FORESTRY ROPES

VoReX – FORESTRY ROPES FOR PROFESSIONALS

For many years we have developed new types of rope in a close working relationship with experts and scientists. These ropes, which include special ropes for forestry, have expanded our standard rope program. VORNBÄUMEN VoReX ropes not only satisfy users in Germany: we traditionally also supply customers in the Alps region, Scandinavia and elsewhere via our dealers.

COMPACTED SPECIAL ROPES BRING CUSTOMER SATISFACTION WITH THEIR LONG SERVICE LIFE

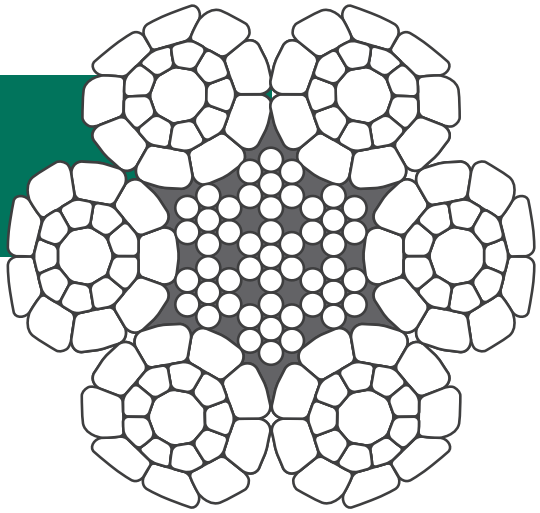
Our forestry ropes are usually swaged, in order to generate a higher metallic cross section and thus higher breaking forces, and in order to create as smooth a rope surface as possible. In particular in rocky terrain, this offers fewer contact surfaces that can be damaged.

The use of swaged ropes is also advantageous with multi-layer winding on rope winches. Furthermore, the service life of the rope can be significantly increased by special lubrication, which substantially reduces friction and corrosion in particular.

Our technical consultants will gladly assist you in selecting a forestry rope ideal for your application.

VS 6-3 C

Ø 8 – 24 mm



- Seale construction
- Ordinary lay
- Outer strands compacted
- Simple rope compaction in addition
- Bright standard
- Special lubrication
- Rope category number (RCN) 04 according to ISO 4309

Ø	Weight	Metallic cross section	MBF 1960
mm	kg/100 m	mm²	kN
8	36.1	42.3	67.2
9	44.1	51.4	81.9
10	52.9	60.8	97.9
11	62.5	74.0	117
12	72.9	85.5	136
13	84.1	97.4	156
14	96.1	115	178
15	109	126	201
16	123	144	235
17	148	161	258
18	164	190	286
19	181	207	312
20	198	224	342
22	237	268	409
24	277	314	476

- Diameter tolerance: +0% / +5%
- Number of outer load bearing wires: 114
- Average fill factor: > 0.70

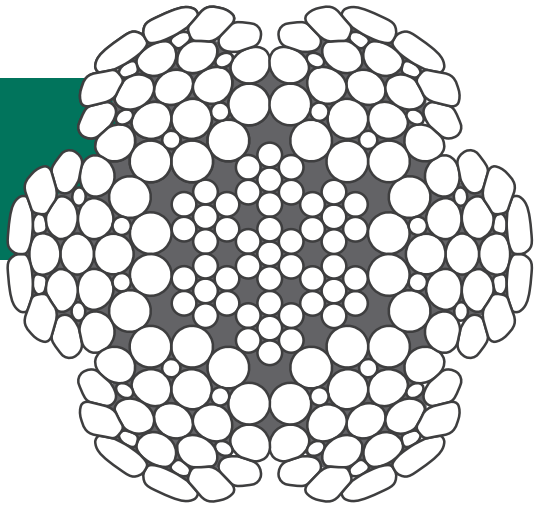
PROPERTIES

FIELDS OF APPLICATION

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 6-4 C

Ø 8 – 24 mm



- Filler construction
- Ordinary lay
- Double rope compaction
- Bright standard
- Special lubrication
- Rope category number (RCN) 04 according to ISO 4309

Ø	Weight	Metallic cross section	MBF 1960
mm	kg/100 m	mm²	kN
8	36.1	43.2	67.7
9	44.1	53.3	83.1
10	52.9	62.6	98.8
11	62.5	73.1	117
12	72.9	86.4	137
13	84.1	98.6	157
14	96.1	115	179
15	109	130	204
16	123	148	236
17	148	161	260
18	164	189	295
19	181	197	315
20	198	230	358
22	237	275	425
24	277	322	484

- Diameter tolerance: +0% / +5%
- Number of outer load bearing wires: 114
- Average fill factor: > 0.71

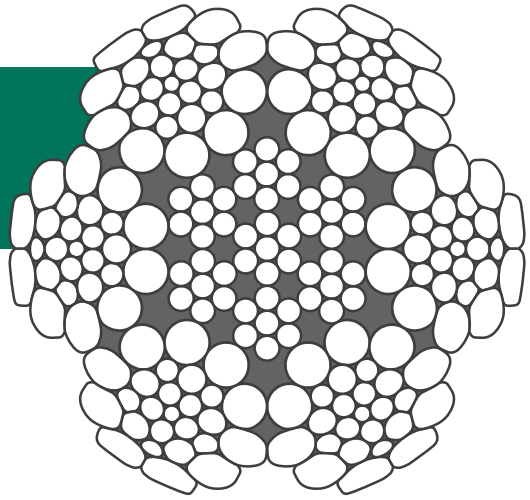
PROPERTIES

FIELDS OF APPLICATION

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 6-5 C

Ø 8 – 24 mm



- Warrington-Seale construction
- Ordinary lay
- Double rope compaction
- Bright standard
- Special lubrication
- Rope category number (RCN) 06 according to ISO 4309

Ø	Weight	Metallic cross section	MBF 1960
mm	kg/100 m	mm²	kN
8	35.3	40.9	69.1
9	45.1	52.3	85.1
10	54.1	62.8	102
11	63.5	73.8	122
12	75.9	88.0	142
13	88.8	103	166
14	103	119	189
15	116	135	214
16	132	153	249
17	148	171	261
18	168	195	297
19	184	213	325
20	207	240	359
22	246	286	436
24	289	336	502

- Diameter tolerance: +0% / +5%
- Number of outer load bearing wires: 156
- Average fill factor: > 0.74

PROPERTIES

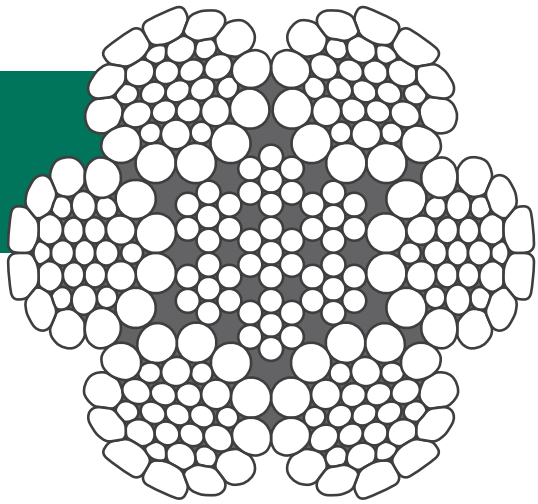
FIELDS OF APPLICATION

Optimized quality

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

VS 6-6 C

Ø 8 – 24 mm



- Warrington-Seale construction
- Ordinary lay
- Double rope compaction
- Bright standard
- Special lubrication
- Rope category number (RCN) 08 according to ISO 4309

Ø	Weight	Metallic cross section	MBF 1960
mm	kg/100 m	mm²	kN
8	36.9	42.3	67.6
9	45.1	54.1	83.2
10	54.1	61.8	98.7
11	63.9	74.7	118
12	74.5	86.0	137
13	86.0	99.7	156
14	98.3	114	180
15	111	125	203
16	125	141	234
17	144	164	260
18	161	182	285
19	178	201	313
20	196	220	344
22	236	262	406
24	280	308	482

- Diameter tolerance: +0% / +5%
- Number of outer load bearing wires: 186
- Average fill factor: > 0.68

PROPERTIES

FIELDS OF APPLICATION

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

EDITION 2016/17

TRADITION.
INNOVATION.
VISION.
SINCE 1889.

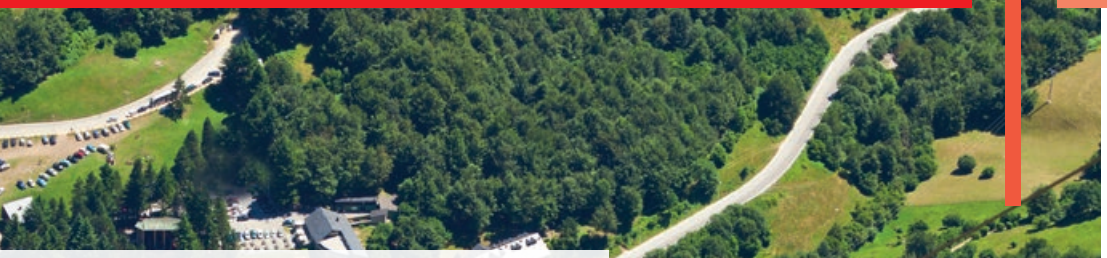
Special Ropes

ALPINE ROPES

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications

ALPINE ROPES



UPHILL, DOWNHILL – SAFELY

In addition to smooth riding comfort, safety is of course of utmost importance for cable car ropes. Special requirements are placed on cable car ropes by European standard 12385-8. Special criteria apply, in particular with regard to construction, the strength of the wires and the special lubrication of steel ropes.

TECHNOLOGY AND HIGHEST QUALITY

Our know-how and the developments of our in-house machine building department guarantee a quality that meets the stringent requirements for cable car ropes with respect to technology and safety.

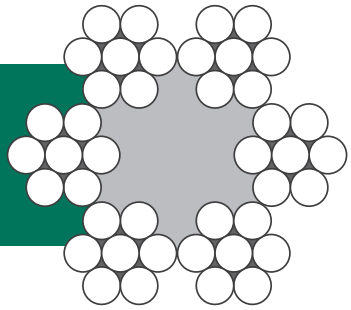
The 6 x 7-FC and 6 x 19S-FC constructions listed on the following pages are examples of steel ropes used in the cable car industry.

In order to complete our product range VORNBÄUMEN is now offering ropes for snow groomers.

You can of course obtain additional diameters, constructions and special designs upon request. Please feel free to contact us!

Ø 8 – 26 mm

6 x 7-FC



- EN 12385-8
- Rope type 6 x 7
- Lang lay
- Zinc-coated class B standard
- Special lubrication

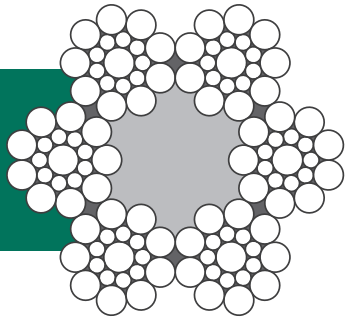
Ø	Weight	MBF 1770	MBF 1960
mm	kg/100 m	kN	kN
8	21.3	37.9	42.0
9	26.9	48.0	53.2
10	33.2	59.3	65.7
11	40.2	71.7	79.4
12	47.9	85.4	94.5
13	56.2	100	111
14	65.2	118	129
15	74.8	133	148
16	85.1	152	168
17	96.1	171	190
18	108	192	213
19	120	214	237
20	133	237	263
22	161	287	318
24	192	342	-
26	225	401	-

PROPERTIES

FIELDS OF APPLICATION

Ø 16 – 34 mm

6 x 19S-FC



- EN 12385-8
- Rope type 6 x 19
- Lang lay
- Zinc-coated class B standard
- Special lubrication

Ø	Weight	MBF 1770	MBF 1960
mm	kg/100 m	kN	kN
16	90.1	159	176
17	102	179	198
18	114	201	222
19	127	224	248
20	141	248	274
22	170	300	332
24	203	357	395
26	238	419	464
28	275	488	538
30	317	558	617
32	360	634	-
34	407	718	-

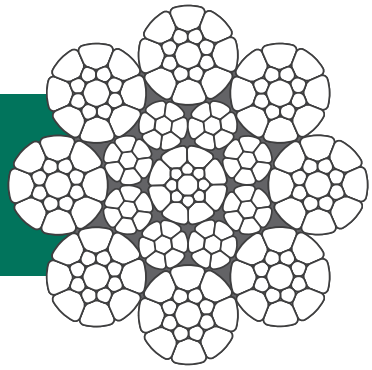
PROPERTIES

FIELDS OF APPLICATION

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

Ø 10 – 11 mm

VS 8-4 C



- Zinc-coated class B standard
- Special lubrication
- Cross lay right
- Strand-compacted
- Double parallel

Ø	Weight	Metallic cross section	MBF 2160
mm	kg/100 m	mm²	kN
10	50.0	58.0	105
11	60.5	70.2	128

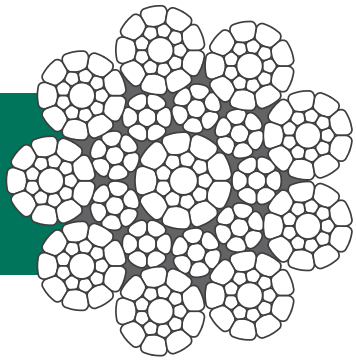
PROPERTIES

FIELDS OF APPLICATION

Used for drum-winches, e. g. Prinoth, Leitner

Ø 11 mm

VS 9-1 C



- Zinc-coated class B standard
- Special lubrication
- Cross lay right
- Strand-compacted
- Double parallel

Ø	Weight	Metallic cross section	MBF 1960
mm	kg/100 m	mm²	kN
11	60.5	69.9	109

PROPERTIES

FIELDS OF APPLICATION

Used for trac-winches, e. g. Kässbohrer

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

CERTIFICATES


DNV·GL

Zertifikat

Vornbäumen
Stahlseile GmbH & Co., KG.
Münsterstrasse 41
D-49186 Bad Iburg

DNV GL SE - Maritime

German language version of certificate DNV-GL


Lloyd's Register LRQA

ZERTIFIKAT

Hiermit wird bescheinigt, dass das Qualitätsmanagementsystem von:

Vornbäumen Stahlseile GmbH & Co. KG
Münsterstr. 41, 49186 Bad Iburg
Deutschland

durch Lloyd's Register Quality Assurance geprüft und bewertet wurde und den folgenden Normen zum Qualitätsmanagement entspricht:

ISO 9001:2008

Das Qualitätsmanagementsystem ist anwendbar für:

Produktion und Vertrieb von Stahlseilen
sowie deren Anwendungsberatung.

German language version of certificate LRQA


ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT

EG-ZERTIFIKAT
EC-Certificate

Prüfobjekt: Litzenseil 6x7 FC und 6x19 FC für Schleppliifte und Seilbahnen

Zugehörige EG-Konformitäts-bescheinigung: Reg.-Nr. 507.0036.06.101.20.001

Antragsteller: Vornbäumen Stahlseile GmbH Co. KG
Draht- und Drahtseilwerk
Münsterstraße 41
D-49186 Bad Iburg

Bestätigung: Die Übereinstimmung mit den einschlägigen Anforderungen der Richtlinie 2000/9/EG wurde festgestellt.

Bewertungsverfahren: Richtlinie 2000/9/EG, Anhang V, Modul H

Registrierungsnummer: 507.0036.06.101.10.001

Benannte Stelle: TÜV SÜD Industrie Service GmbH
Zertifizierungsstelle Seilbahnen
Westendstraße 199
80686 München
Kenn.-Nr. 0036

Gültigkeitsdauer: Entspricht der Gültigkeit des ISO 9001:2000 - Zertifikats

München, 2006-06-26

German language version of certificate TÜV


DNV·GL

Certificate

Vornbäumen
Stahlseile GmbH & Co., KG.
Münsterstrasse 41
D-49186 Bad Iburg

DNV GL SE - Maritime

English language version of certificate DNV-GL


Lloyd's Register LRQA

CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

Vornbäumen Stahlseile GmbH & Co. KG
Münsterstr. 41, 49186 Bad Iburg
Germany

has been approved by Lloyd's Register Quality Assurance to the following Quality Management System Standards:

ISO 9001:2008

The Quality Management System is applicable to:

Production and sales of steel wire ropes
as well as advice on their application.

English language version of certificate LRQA

EDITION 2016/17

TRADITION.
INNOVATION.
VISION.
SINCE 1889.

Special Ropes

SAW ROPES

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications

SAW ROPES

WIRE ROPES AS TOOL CARRIERS: STONE SAWS WITH VORNBÄUMEN ROPES

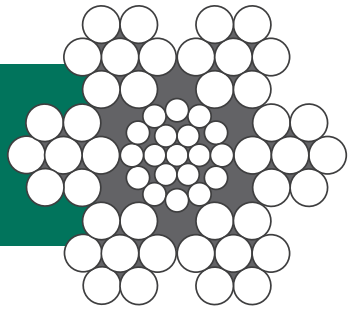
Wire ropes are also used for stone saws in quarries or for cutting tasks in the construction industry. For many years, we have produced center ropes that are used for cutting cables in stone saws. Such saws are primarily used to cut massive work pieces or natural stone. In this process, the wire rope functions as the carrier for the various cutting pearls or diamond beads in the open or closed stone saws, which are custom-made for specific applications.

INDIVIDUAL ROPE PROPERTIES ENSURE CLEAN AND PRECISE WORK

The rope achieves high running speeds during use. The individual properties of VORNBÄUMEN wire ropes ensure that as few vibrations as possible are created during the cutting process, thus allowing work to be done cleanly and precisely.

Ø 3 – 5 mm

VS 6-7



- Center rope for open type saw cables
- Ordinary lay
- Zinc-coated class B standard
- Dry or with special lubrication

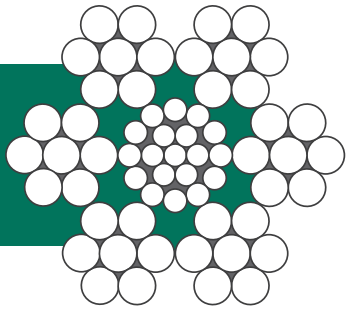
Ø	Weight	Metallic cross section	MBF 1770	MBF 1960
mm	kg/100 m	mm²	kN	kN
3	3.46	3.89	6.18	6.84
3.5	4.70	5.29	8.41	9.32
4	6.14	6.91	11.0	12.2
4.5	7.78	8.75	13.9	15.4
4.6	8.13	9.14	15.4	16.1
4.8	8.85	9.95	15.8	17.5
4.9	9.22	10.4	16.5	18.3
5	9.60	10.8	17.2	19.0

PROPERTIES

FIELDS OF APPLICATION

Ø 3 – 5 mm

VS 6-8 P



- Center rope for closed type saw cables
- Ordinary lay
- Zinc-coated class B standard
- Dry or with special lubrication
- Plastic padding

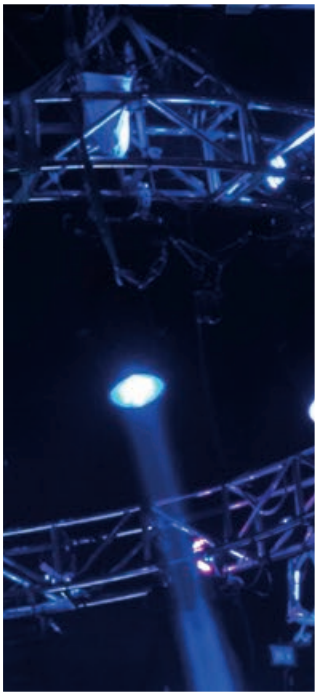
Ø	Weight	Metallic cross section	MBF 1770	MBF 1960
mm	kg/100 m	mm²	kN	kN
3	3.43	3.76	5.77	6.39
3.5	4.67	5.12	7.85	8.69
4	6.10	6.69	10.3	11.4
4.5	7.72	8.46	13.0	14.4
4.6	8.06	8.84	13.6	15.0
4.8	8.78	9.63	14.8	16.4
4.9	9.15	10.0	15.4	17.0
5	9.53	10.5	16.0	17.7

PROPERTIES

FIELDS OF APPLICATION

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

EDITION 2016/17



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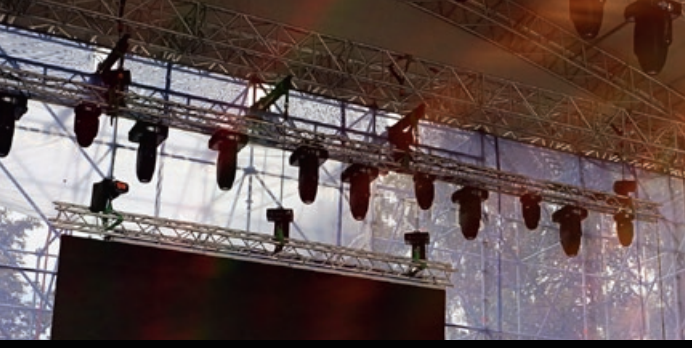
Special Ropes

BLACK ROPES

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications



BLACK ROPES

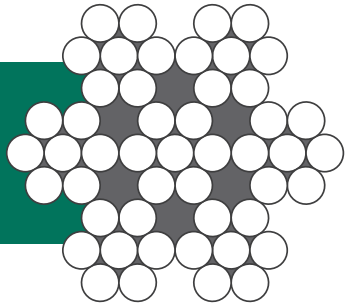
SPECIAL ROPES BLACK STAR®
Our BLACK STAR® ropes are available in various constructions and diameters. You can of course obtain special designs upon request. Please feel free to contact us!

BLACK STAR® – THE INVISIBLE STAR OF THE THEATRE
Black ropes have been part of our special rope program since 2002 and have been sold successfully worldwide under the brand name BLACK STAR®.

For special rope applications, in particular in stage technology and the architecture industry, our engineers have developed a globally unique rope blackening system. Our sophisticated chemical process for colouring the ropes, as well as the special preservation of the rope surfaces, ensures the durability and long service life of our products.

Ø 1.5 – 5 mm

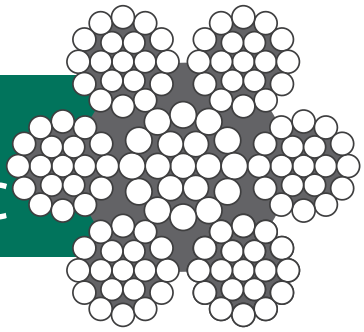
6 x 7-WSC



Ø	Weight	MBF 1960
mm	kg/100 m	kN
1.5	0.86	1.58
2	1.54	2.81
2.5	2.40	4.40
3	3.46	6.33
4	6.14	11.3
5	9.60	17.6

Ø 3 – 10 mm

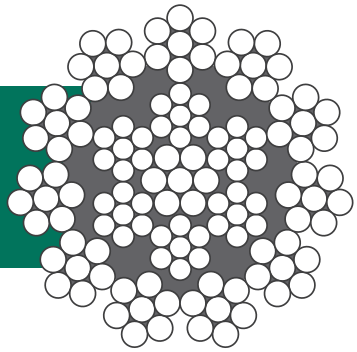
6 x 19M-WSC



Ø	Weight	MBF 1960
mm	kg/100 m	kN
3	3.43	6.39
4	6.10	11.4
5	9.53	17.7
6	13.7	25.5
7	18.7	34.8
8	24.4	45.4
10	38.1	71.0

Ø 4 – 10 mm

17 x 7-WSC

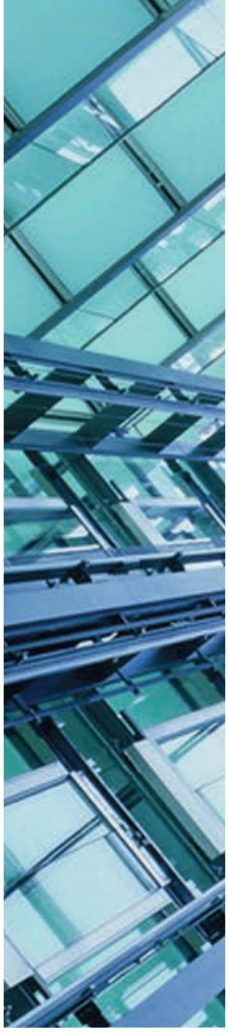


Ø	Weight	MBF 1960
mm	kg/100 m	kN
4	6.42	10.3
5	10.0	16.1
6	14.4	23.1
7	19.6	31.5
8	25.7	41.1
10	40.1	64.3

FIELDS OF APPLICATION

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

EDITION 2016/17



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LIFT ROPES

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications

LIFT ROPES

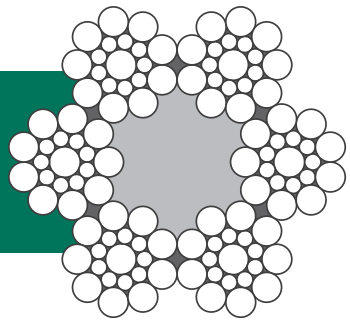
WITH VORNBÄUMEN LIFT ROPES YOU'RE SURE TO ARRIVE SAFELY AT THE TOP

Lift ropes have been part of our special rope program for years and are produced to the highest quality standards. Our products have expertly proved their worth both nationally and internationally, not least because of our demanding quality regulations and safety checks.

Our magnetic induction testing method allows us to test ropes individually. Permanent long-term trials ensure the consistently high quality and continuous further development of our lift ropes.

Ø 6 – 16 mm

6 x 19S-FC



- EN 12385-5
- Rope type 6 x 19
- Parallel lay construction
- Ordinary lay
- Special lubrication
- Bright standard

Ø	Weight	MBF 1570	MBF 1370/1770
mm	kg/100 m	kN	kN
6	12.9	18.7	17.8
8	23.0	33.2	31.7
9	29.1	42.0	40.1
10	35.9	51.8	49.5
11	43.4	62.7	59.9
12	51.7	74.6	71.3
13	60.7	87.6	83.7
14	70.4	102	97.0
15	80.8	117	111
16	91.9	133	127

PROPERTIES

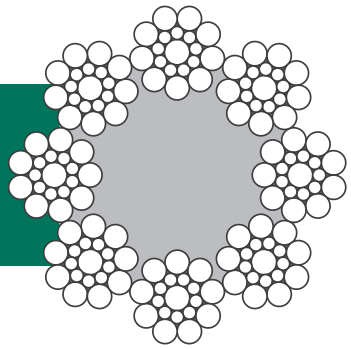
FIELDS OF APPLICATION

SPECIAL FEATURES

Also available with electric conductors.

Ø 8 – 16 mm

8 x 19S-FC



- EN 12385-5
- Rope type 8 x 19
- Parallel lay construction
- Ordinary lay
- Special lubrication
- Bright standard

Ø	Weight	MBF 1570	MBF 1370/1770
mm	kg/100 m	kN	kN
8	21.8	29.4	28.1
9	27.5	37.3	35.6
10	34.0	46.0	44.0
11	41.1	55.7	53.2
12	49.0	66.2	63.3
13	57.5	77.7	74.3
14	66.6	90.2	86.1
15	76.5	104	98.9
16	87.0	118	113

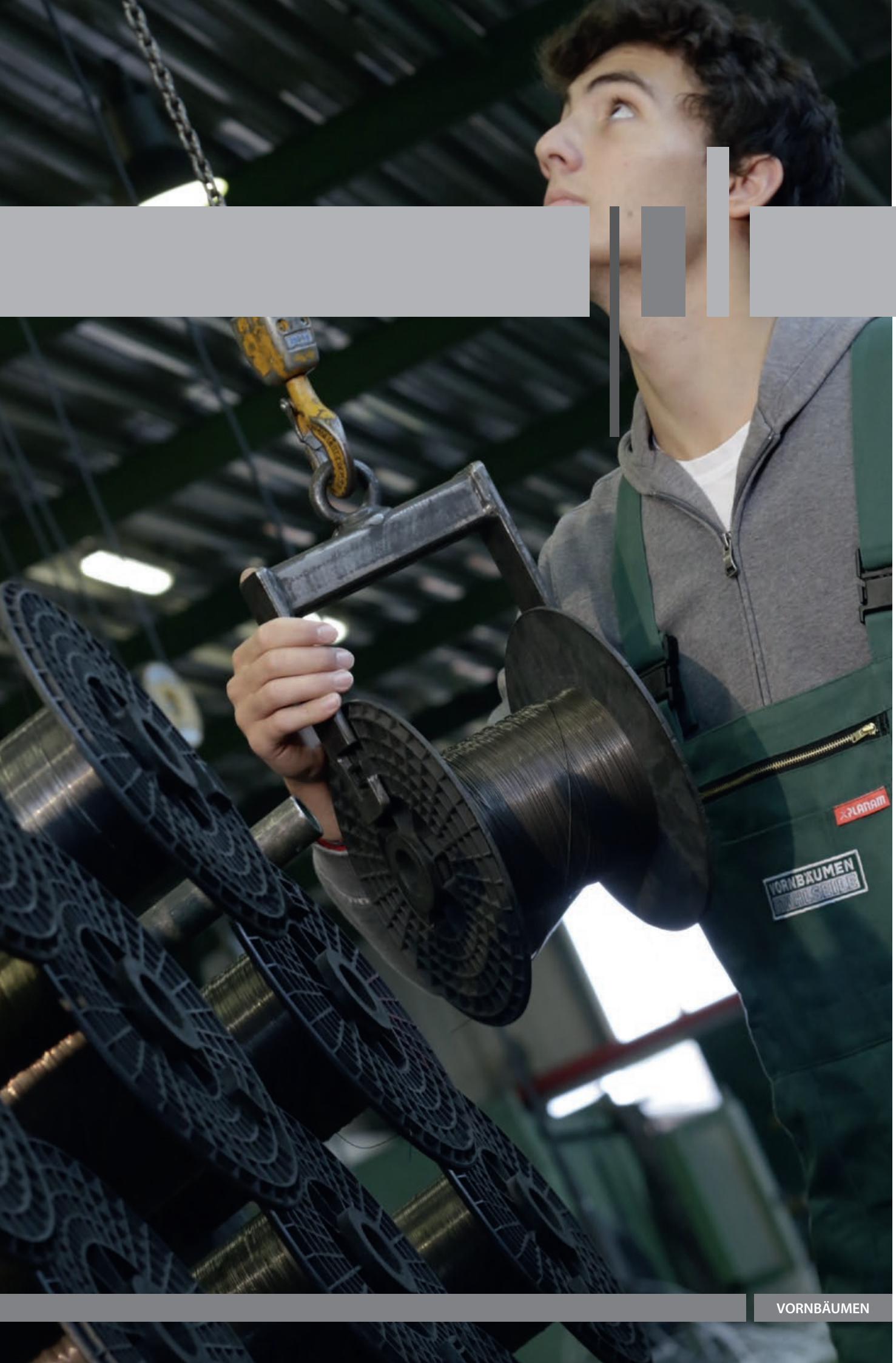
PROPERTIES

FIELDS OF APPLICATION

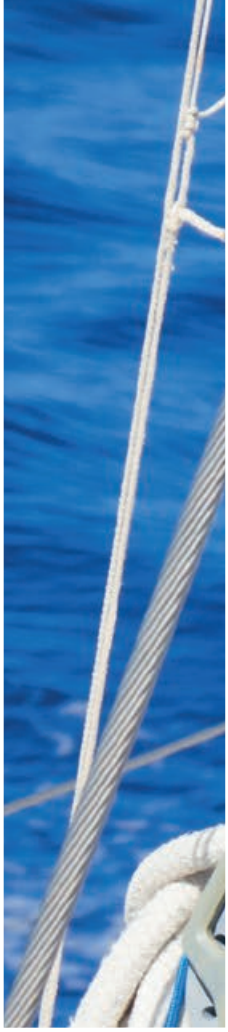
SPECIAL FEATURES

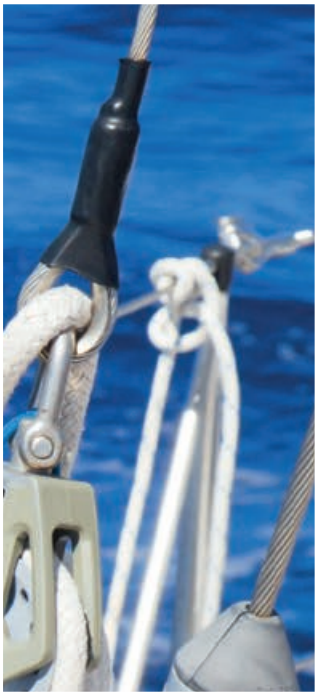
Also available with electric conductors.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".


PLANAM
VORNBÄUMEN

EDITION 2016/17





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STAINLESS STEEL ROPES

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications

STAINLESS STEEL ROPES

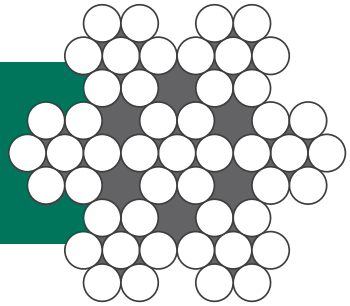
RUST-FREE AND WEATHER-RESISTANT: STAINLESS STEEL ROPES PROVE THEIR WORTH OUTDOORS

It makes sense to use non-rusting stainless steel material in a variety of applications. With stainless steel, a long service can be guaranteed even in extreme areas of application.

Stainless steel ropes are used primarily outdoors or near chemicals or water. Stainless steel ropes also enjoy great popularity indoors due to their appealing surface.

Ø 1 – 10 mm

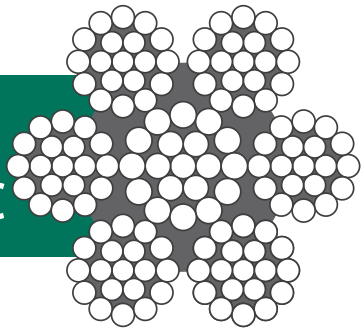
6 x 7-WSC



Ø	Weight	MBF 1570	MBF 1770
mm	kg/100 m	kN	kN
1	0.38	0.56	0.64
2	1.54	2.25	2.54
3	3.46	5.07	5.72
4	6.14	9.02	10.2
5	9.60	14.1	15.9
6	13.8	20.3	22.9
7	18.8	27.6	31.1
8	24.6	36.1	40.7
9	31.1	45.7	51.5
10	38.4	56.4	63.5

Ø 3 – 10 mm

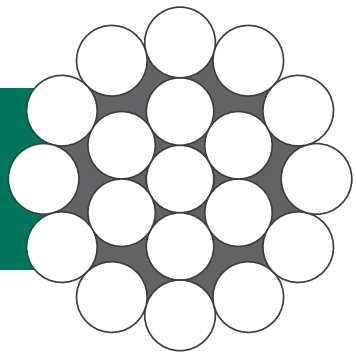
6 x 19M-WSC



Ø	Weight	MBF 1570	MBF 1770
mm	kg/100 m	kN	kN
3	3.43	5.12	5.77
4	6.10	9.09	10.3
5	9.53	14.2	16.0
6	13.7	20.5	23.1
7	18.7	27.8	31.4
8	24.4	36.4	41.0
9	30.9	46.0	51.9
10	38.1	56.8	64.1

Ø 1 – 10 mm

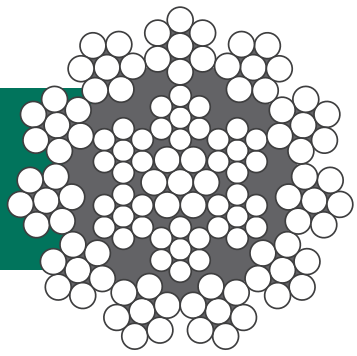
1 x 19



Ø	Weight	MBF 1570	MBF 1770
mm	kg/100 m	kN	kN
1	0.49	0.83	0.93
2	1.94	3.30	3.72
3	4.37	7.43	8.38
4	7.76	13.2	14.9
5	12.1	20.6	23.3
6	17.5	29.7	33.5
7	23.8	40.5	45.6
8	31.0	52.8	59.6
9	39.3	66.9	75.4
10	48.5	82.6	93.1

Ø 3 – 10 mm

17 x 7-WSC



Ø	Weight	MBF 1570	MBF 1770
mm	kg/100 m	kN	kN
3	3.61	4.63	5.23
4	6.42	8.24	9.29
5	10.0	12.9	14.5
6	14.4	18.5	20.9
7	19.6	25.2	28.4
8	25.7	33.0	37.2
9	32.5	41.7	47.0
10	40.1	51.5	58.1

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

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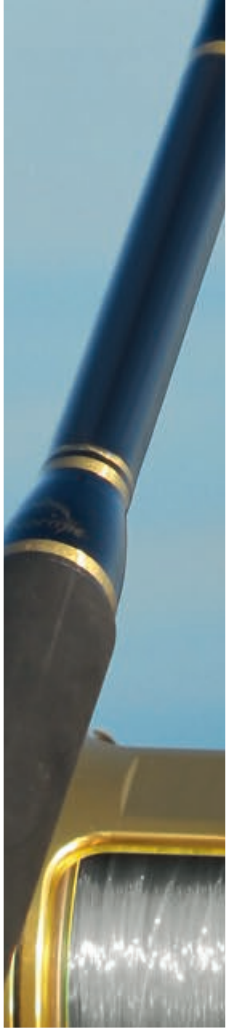

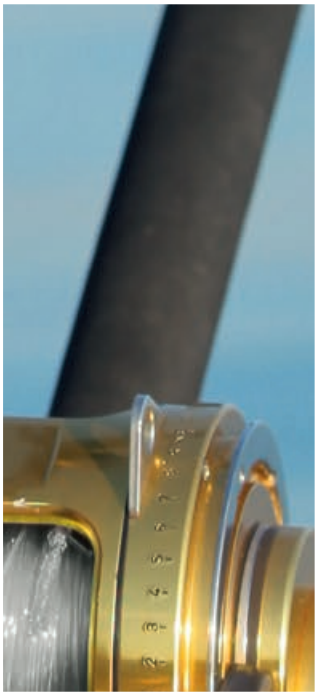

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MICROPE®

MICRO ROPES

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications

MICRO ROPES

MICROPE®

Konstruction	∅	∅
	mm from	mm to
1 x 3	0.06	0.30
1 x 7	0.06	0.42
1 x 19	0.15	0.70
3 + 9	0.12	0.56
3 x 3	0.12	0.56
3 x 7	0.19	0.85
5 x 7 + 1 x 3	0.16	1.10
6 x 7-FC/-WSC	0.27	1.25
6 x 19-FC/-WSC	0.60	*
7 x 7 x 7	0.81	3.75

Additional constructions upon request.

FIELDS OF APPLICATION:

- Fishing
- Automotive
- Lighting
- Shading systems
- Boat construction
- Theft protection
- Machine construction
- Model construction
- Musical instruments
- Optical devices
- Safety ropes
- Bicycles

… and much much more

MICROPE® – A QUALITY BRAND FROM VORNBÄUMEN

Our MICROPE® brand micro ropes are suitable for use in almost all areas of technology and they are used for a wide variety of applications.

The preferred material is tried and true stainless steel due its extremely long service life and versatile nature. For micro ropes, we process wire thicknesses in the range of 0.02 mm to 0.14 mm. And of course we process our micro ropes to the highest quality standards as well.

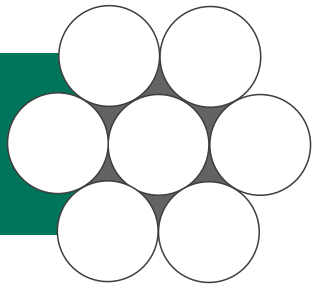
PLASTIC COATING

We coat our MICROPE-brand micro ropes with, among other materials, PVC, LDPE, HDPE, PP, PA 6, PA 6.12, PA 11, PA 12, PUR TPU and POM.

You can find further information in our technical notes.

Ø 0.06 – 0.42 mm

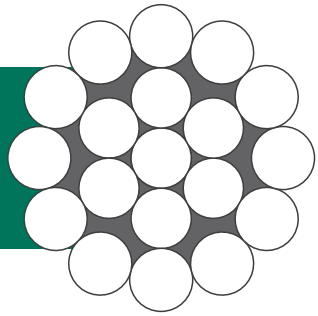
1 x 7



Ø	Weight	MBF 1770
mm	kg/100 m	kN
0.06	0.002	0.003
0.09	0.004	0.008
0.12	0.007	0.014
0.15	0.011	0.021
0.18	0.016	0.030
0.21	0.022	0.041
0.24	0.028	0.054
0.27	0.036	0.068
0.30*	0.044	0.084
0.33*	0.053	0.102
0.36*	0.063	0.122
0.39*	0.074	0.143
0.42*	0.086	0.166

Ø 0.10 – 0.70 mm

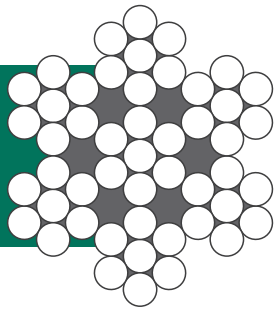
1 x 19



Ø	Weight	MBF 1770
mm	kg/100 m	kN
0.10	0.005	0.009
0.15	0.011	0.021
0.20	0.019	0.037
0.25	0.030	0.058
0.30	0.044	0.084
0.35	0.059	0.114
0.40	0.078	0.149
0.45	0.098	0.188
0.50*	0.121	0.233
0.55*	0.147	0.282
0.60*	0.175	0.335
0.65*	0.205	0.393
0.70*	0.238	0.456

Ø 0.18 – 1.25 mm

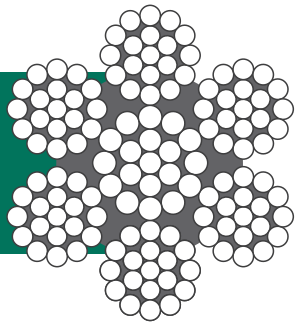
6 x 7



Ø	Weight	MBF 1770
mm	kg/100 m	kN
0.18	0.012	0.021
0.27	0.028	0.046
0.36	0.050	0.082
0.45	0.078	0.129
0.54	0.112	0.185
0.63	0.152	0.252
0.72	0.199	0.329
0.81	0.252	0.417
0.90*	0.311	0.515
1.00*	0.384	0.635
1.20*	0.553	0.915
1.25*	0.600	0.993

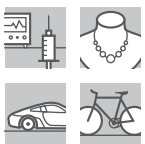
Ø 0.30 – 2.00 mm

6 x 19M



Ø	Weight	MBF 1770
mm	kg/100 m	kN
0.30	0.034	0.058
0.45	0.077	0.130
0.60	0.137	0.231
0.75	0.214	0.360
0.90	0.309	0.519
1.05	0.420	0.706
1.20	0.549	0.923
1.35	0.694	1.168
1.50*	0.857	1.442
1.65*	1.037	1.744
1.80*	1.234	2.076
2.00*	1.524	2.563

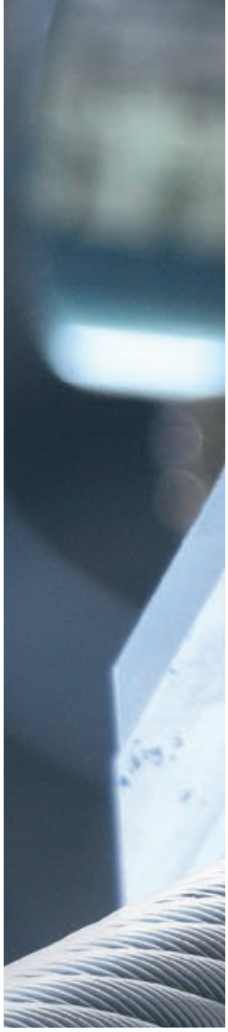
FIELDS OF APPLICATION

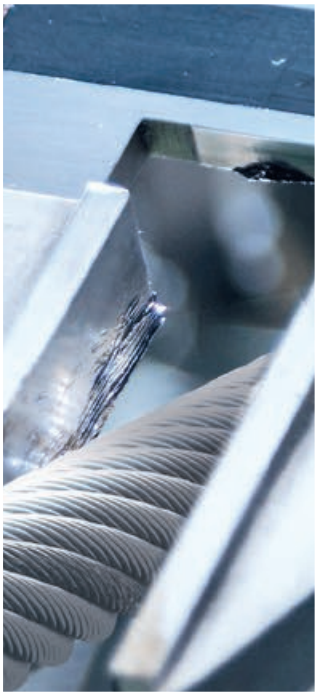


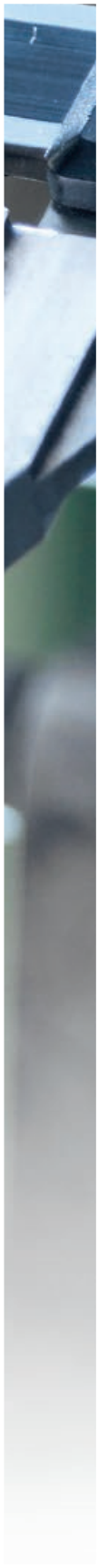
* Diameters are also available zinc-coated!

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

EDITION 2016/17







TRADITION.
INNOVATION.
VISION.
SINCE 1889.

STANDARD ROPES

Spiral Ropes
Stranded Ropes
Stranded Spiral Ropes

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications

STANDARD ROPES

SPIRAL ROPES
STRANDED ROPES
STRANDED SPIRAL ROPES

WE ARE ON OUR MOST FAMILIAR GROUND HERE!

For many decades we have produced various standard wire ropes of steel, stainless steel, brass and iron. With our standard ropes, you profit from our years of experience and high level of quality just like you do with our individual developments. And here too we strive to continuously improve and to develop new manufacturing technologies.

STANDARD WIRE ROPES ACCORDING TO EN SPECIFICATIONS FOR YOUR APPLICATION

In our ropery, we produce ropes in a variety of designs, not just special ropes for individual applications. Standard ropes of standardised rope types according to EN specifications are also part of our portfolio. The normalised constructions of the standard wire ropes are used in various areas of application.

FOR EXAMPLE:

- in various crane applications
- in rope winches and rope pulling devices
- in architecture
- as lifting slings for hoisting applications
- in mining and machine construction
- in shipping
- in the medical field

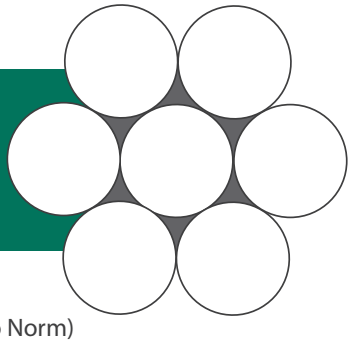
… and in many other areas

The ropes are optionally manufactured with steel cores or with fibre cores (natural fibres or synthetic).

We offer all ropes dry, lightly lubricated or heavily lubricated to meet the needs of your application. We will gladly advise you on our oils and greases to help you to select the right lubricant.

Ø 0.6 – 6 mm

1 x 7

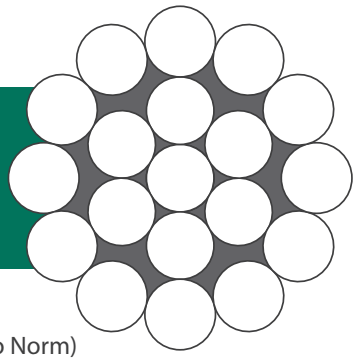


- EN 12385-10
  (Up to 2 mm according to Norm)

Ø	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN
0.6	0.18	0.37	0.41
0.8	0.31	0.67	0.73
1	0.49	1.04	1.15
1.5	1.10	2.34	2.58
2	1.96	4.16	4.58
2.5	3.06	6.49	7.16
3	4.40	9.35	10.3
3.5	5.99	12.7	14.0
4	7.82	16.6	18.3
4.5	9.90	21.0	23.2
5	12.2	26.0	28.6
6	17.6	37.4	41.2

Ø 1 – 10 mm

1 x 19



- EN 12385-10
  (Up to 4 mm according to Norm)

Ø	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN
1	0.49	1.03	1.14
1.25	0.76	1.61	1.77
1.5	1.09	2.32	2.56
2	1.94	4.12	4.54
2.5	3.03	6.44	7.10
3	4.37	9.28	10.2
3.5	5.94	12.6	13.9
4	7.76	16.5	18.2
5	12.1	25.8	28.4
6	17.5	37.1	40.9
7	23.8	50.5	55.7
8	31.0	66.0	72.7
9	39.3	83.5	92.0
10	48.5	103	114

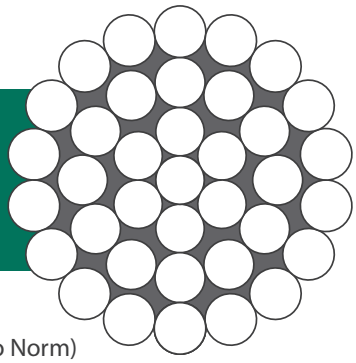
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

Ø 3 – 14 mm

1 x 37



- EN 12385-10
  (Up to 5 mm according to Norm)

Ø	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN
3	4.36	9.05	9.97
4	7.74	16.1	17.7
5	12.1	25.1	27.7
6	17.4	36.2	39.9
7	23.7	49.3	54.3
8	31.0	64.3	70.9
9	39.2	81.4	89.7
10	48.4	101	111
12	69.7	145	160
14	94.8	197	217

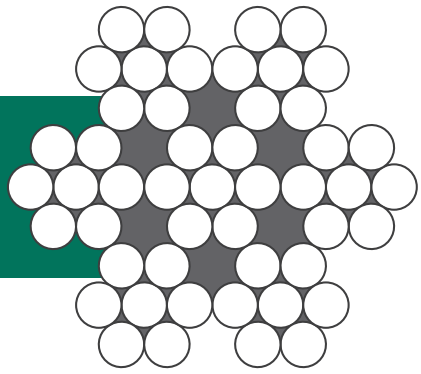
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

6 x 7

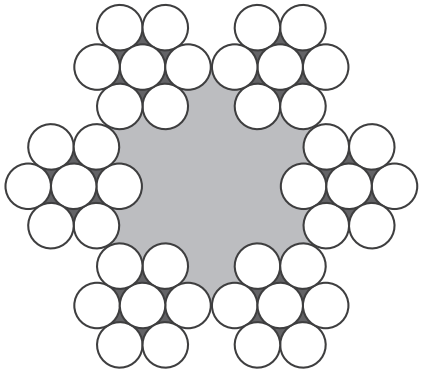
Ø 1.5 – 8 mm



6 x 7-WSC

- EN 12385-4
- Rope type 6 x 7

	WSC			FC		
Ø	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
1.5	0.86	1.58	1.74	0.78	1.46	1.61
2	1.54	2.81	3.10	1.38	2.60	2.87
2.5	2.40	4.40	4.85	2.16	4.07	4.48
3	3.46	6.33	6.98	3.11	5.86	6.45
3.5	4.70	8.62	9.50	4.23	7.97	8.78
4	6.14	11.3	12.4	5.52	10.4	11.5
5	9.60	17.6	19.4	8.63	16.3	17.9
6	13.8	25.3	27.9	12.4	23.4	25.8
7	18.8	34.5	38.0	16.9	31.9	35.1
8	24.6	45.0	49.6	22.1	41.6	45.9



6 x 7-FC

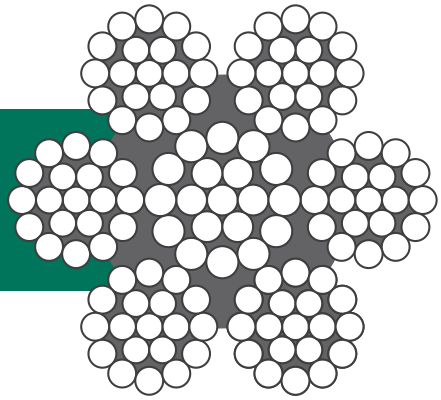
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

6 x 19M

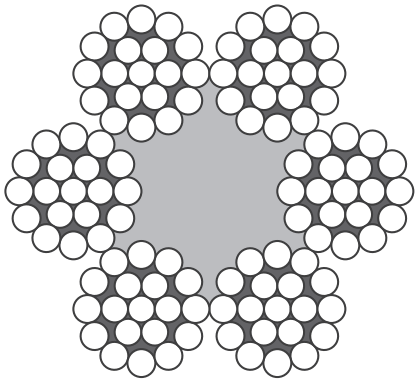
Ø 2.5 – 10 mm



6 x 19M-WSC

- EN 12385-4
- Rope type 6 x 19M

	WSC			FC		
Ø	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
2.5	2.38	4.43	4.89	2.16	3.76	4.14
3	3.43	6.39	7.04	3.11	5.42	5.97
4	6.10	11.4	12.5	5.54	9.63	10.6
5	9.50	17.7	19.5	8.65	15.0	16.6
6	13.7	25.5	28.1	12.5	21.7	23.9
7	18.7	34.8	38.3	17.0	29.5	32.5
8	24.4	45.4	50.0	22.1	38.5	42.4
10	38.1	71.0	78.2	34.6	60.2	66.3



6 x 19M-FC

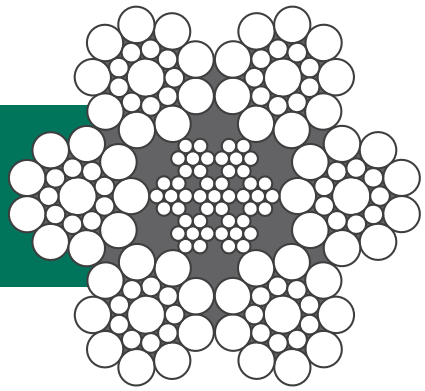
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

6 x 19S

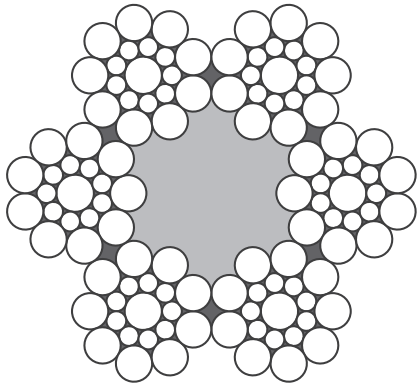
Ø 5 – 32 mm



6 x 19S-IWRC

- EN 12385-4
- Rope type 6 x 19

	IWRC			FC		
∅	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
5	10.0	17.4	19.2	8.98	16.2	17.8
6	14.4	25.1	27.7	12.9	23.3	25.7
7	19.6	34.2	37.7	17.6	31.7	34.9
8	25.6	44.7	49.2	23.0	41.4	45.6
9	32.4	56.5	62.3	29.1	52.4	57.7
10	40.0	69.8	76.9	35.9	64.7	71.3
11	48.4	84.4	93.0	43.4	78.3	86.2
12	57.6	100	111	51.7	93.1	103
13	67.6	118	130	60.7	109	120
14	78.4	137	151	70.4	127	140
15	90.0	157	173	80.8	146	160
16	102	179	197	91.9	166	182
17	116	202	222	104	187	206
18	130	226	249	116	210	231
19	144	252	278	130	233	257
20	160	279	308	144	259	285
22	194	338	372	174	313	345
24	230	402	443	207	373	411
26	270	472	520	243	437	482
28	314	547	603	281	507	559
30	360	628	-	323	582	-
32	410	715	-	368	662	-



6 x 19S-FC

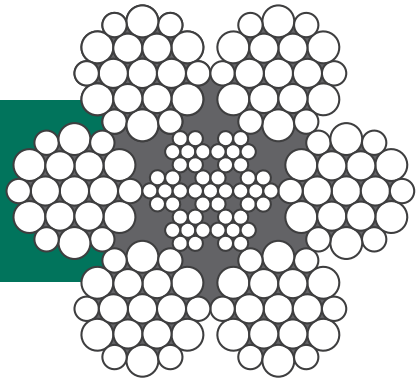
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

6 x 19W

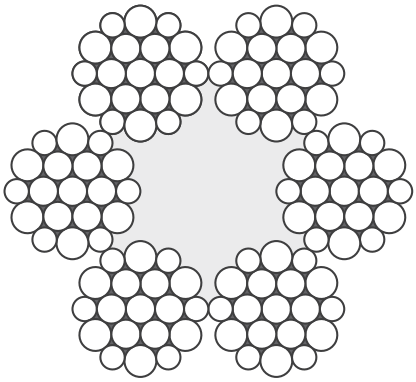
Ø 5 – 36 mm



6 x 19W-IWRC

- EN 12385-4
- Rope type 6 x 19

	IWRC			FC		
Ø	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
5	10.0	17.4	19.2	8.98	16.2	17.8
6	14.4	25.1	27.7	12.9	23.3	25.7
7	19.6	34.2	37.7	17.6	31.7	34.9
8	25.6	44.7	49.2	23.0	41.4	45.6
9	32.4	56.5	62.3	29.1	52.4	57.7
10	40.0	69.8	76.9	35.9	64.7	71.3
11	48.4	84.4	93.0	43.4	78.3	86.2
12	57.6	100	111	51.7	93.1	103
13	67.6	118	130	60.7	109	120
14	78.4	137	151	70.4	127	140
15	90.0	157	173	80.8	146	160
16	102	179	197	91.9	166	182
17	116	202	222	104	187	206
18	130	226	249	116	210	231
19	144	252	278	130	233	257
20	160	279	308	144	259	285
22	194	338	372	174	313	345
24	230	402	443	207	373	411
26	270	472	520	243	437	482
28	314	547	603	281	507	559
30	360	628	692	323	582	642
32	410	715	-	368	662	-
34	462	807	-	415	748	-
36	518	904	-	465	838	-



6 x 19W-FC

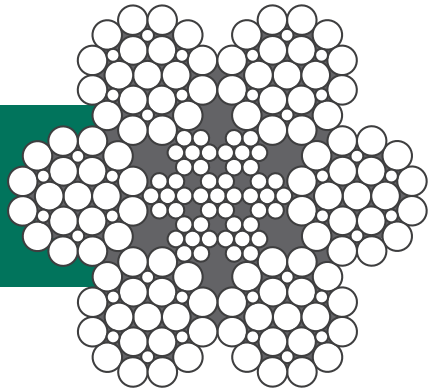
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

6 x 25F

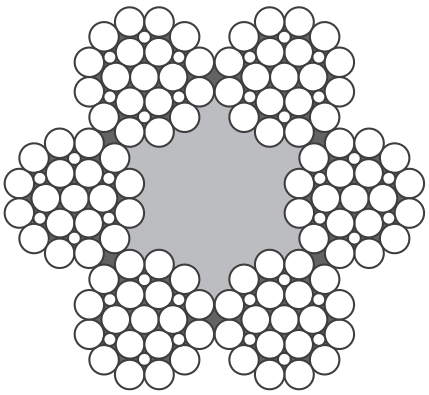
Ø 6 – 42 mm



6 x 25F-IWRC

- EN 12385-4
- Rope type 6 x 19

	IWRC			FC		
∅	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
6	14.4	25.1	27.7	12.9	23.3	25.7
7	19.6	34.2	37.7	17.6	31.7	34.9
8	25.6	44.7	49.2	23.0	41.4	45.6
9	32.4	56.5	62.3	29.1	52.4	57.7
10	40.0	69.8	76.9	35.9	64.7	71.3
11	48.4	84.4	93.0	43.4	78.3	86.2
12	57.6	100	111	51.7	93.1	103
13	67.6	118	130	60.7	109	120
14	78.4	137	151	70.4	127	140
15	90.0	157	173	80.8	146	160
16	102	179	197	91.9	166	182
17	116	202	222	104	187	206
18	130	226	249	116	210	231
19	144	252	278	130	233	257
20	160	279	308	144	259	285
22	194	338	372	174	313	345
24	230	402	443	207	373	411
26	270	472	520	243	437	482
28	314	547	603	281	507	559
30	360	628	692	323	582	642
32	410	715	787	368	662	730
34	462	807	889	415	748	824
36	518	904	997	465	838	924
38	578	1010	-	518	934	-
40	640	1120	-	574	1040	-
42	706	1230	-	633	1140	-



6 x 25F-FC

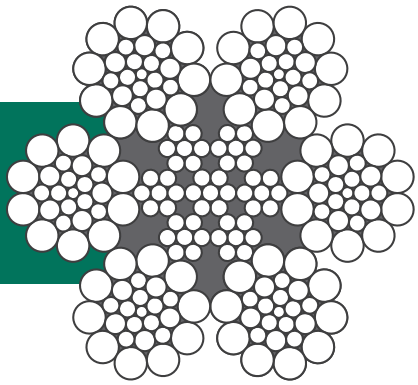
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

6 x 26WS

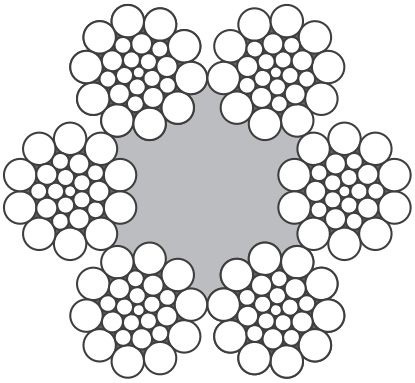
Ø 8 – 36 mm



6 x 26WS-IWRC

- EN 12385-4
- Rope type 6 x 19

	IWRC			FC		
∅	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
8	25.6	44.7	49.2	23.0	41.4	45.6
9	32.4	56.5	62.3	29.1	52.4	57.7
10	40.0	69.8	76.9	35.9	64.7	71.3
11	48.4	84.4	93.0	43.4	78.3	86.2
12	57.6	100	111	51.7	93.1	103
13	67.6	118	130	60.7	109	120
14	78.4	137	151	70.4	127	140
15	90.0	157	173	80.8	146	160
16	102	179	197	91.9	166	182
17	116	202	222	104	187	206
18	130	226	249	116	210	231
19	144	252	278	130	233	257
20	160	279	308	144	259	285
22	194	338	372	174	313	345
24	230	402	443	207	373	411
26	270	472	520	243	437	482
28	314	547	603	281	507	559
30	360	628	692	323	582	645
32	410	715	-	368	662	-
34	462	807	-	415	748	-
36	518	904	-	465	838	-



6 x 26WS-FC

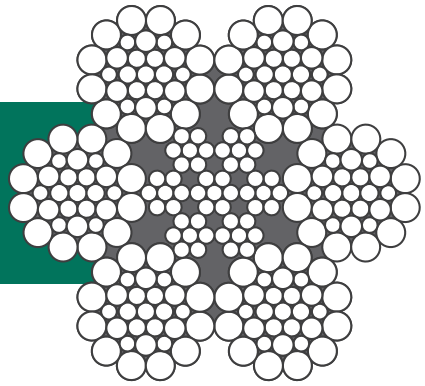
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

6 x 31WS

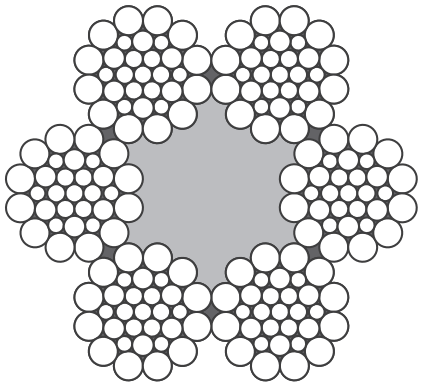
Ø 7 – 42 mm



6 x 31WS-IWRC

- EN 12385-4
- Rope type 6 x 36

	IWRC			FC		
Ø	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
7	20.0	34.2	37.7	18.0	31.7	34.9
8	26.2	44.7	49.2	23.5	41.4	45.6
9	33.1	56.5	62.3	29.7	52.4	57.7
10	40.9	69.8	76.9	36.7	64.7	71.3
11	49.5	84.4	93.0	44.4	78.3	86.2
12	58.9	100	111	52.8	93.1	103
13	69.1	118	130	62.0	109	120
14	80.2	137	151	71.9	127	140
15	92.0	157	173	82.6	146	160
16	105	179	197	94.0	166	182
17	118	202	222	106	187	206
18	133	226	249	119	210	231
19	148	252	278	132	233	257
20	164	279	308	147	259	285
22	198	338	372	178	313	345
24	236	402	443	211	373	411
26	276	472	520	248	437	482
28	321	547	603	288	507	559
30	368	628	692	330	582	642
32	419	715	787	376	662	730
34	473	807	889	424	748	824
36	530	904	997	476	838	924
38	591	1010	-	530	934	-
40	654	1120	-	587	1040	-
42	721	1230	-	647	1140	-



6 x 31WS-FC

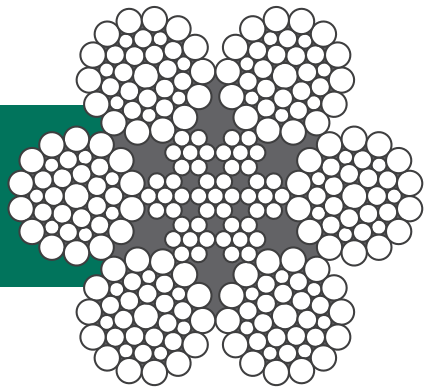
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

6 x 36WS

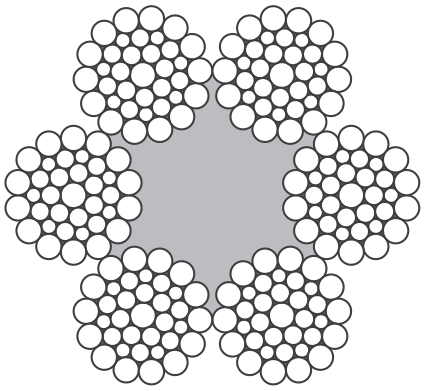
Ø 8 – 54 mm



6 x 36WS-IWRC

- EN 12385-4
- Rope type 6 x 36

	IWRC				FC			
Ø	Weight	MBF 1770	MBF 1960	MBF 2160	Weight	MBF 1770	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kN	kg/100 m	kN	kN	kN
8	26.2	40.3	44.7	49.2	23.5	37.4	41.4	45.6
9	33.1	51.0	56.5	62.3	29.7	47.3	52.4	57.7
10	40.9	63.0	69.8	76.9	36.7	58.4	64.7	71.3
11	49.5	76.2	84.4	93.0	44.4	70.7	78.3	86.2
12	58.9	90.7	100	111	52.8	84.1	93.1	103
13	69.1	106	118	130	62.0	98.7	109	120
14	80.2	124	137	151	71.9	114	127	140
15	92.0	142	157	173	82.6	131	146	160
16	105	161	179	197	94.0	150	166	182
17	118	182	202	222	106	169	187	206
18	133	204	226	249	119	189	210	231
19	148	227	252	278	132	211	233	257
20	164	252	279	308	147	234	259	285
22	198	305	338	372	178	283	313	345
24	236	363	402	443	211	336	373	411
26	276	426	472	520	248	395	437	482
28	321	494	547	603	288	458	507	559
30	368	567	628	692	330	526	582	642
32	419	645	715	787	376	598	662	730
34	473	728	807	889	424	675	748	824
36	530	817	904	997	476	757	838	924
38	591	910	1010	1110	530	843	934	1030
40	654	1010	1120	1230	587	935	1040	1140
42	721	1110	1230	-	647	1030	1140	-
44	792	1220	1350	-	711	1130	1250	-
46	865	1330	1480	-	777	1240	1370	-
48	942	1450	1610	-	846	1350	1490	-
50	1020	1580	-	-	918	1460	-	-
52	1110	1700	-	-	992	1580	-	-
54	1197	1840	-	-	1070	1700	-	-



6 x 36WS-FC

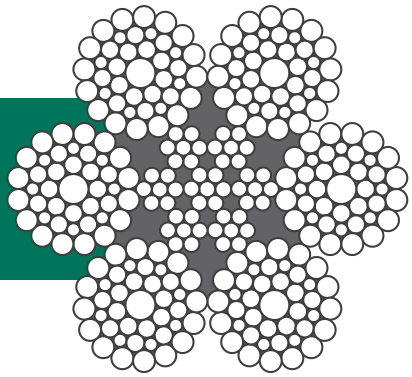
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

6 x 41WS

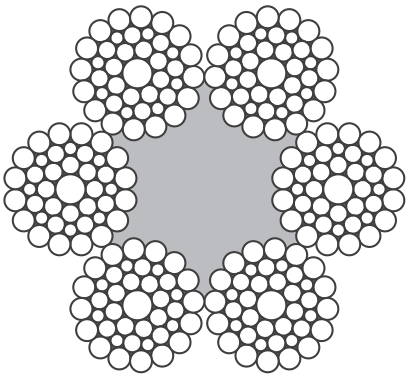
Ø 14 – 54 mm



6 x 41WS-IWRC

- EN 12385-4
- Rope type 6 x36

	IWRC				FC			
Ø	Weight	MBF 1770	MBF 1960	MBF 2160	Weight	MBF 1770	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kN	kg/100 m	kN	kN	kN
14	80.2	124	137	151	71.9	114	127	140
15	92.0	142	157	173	82.6	131	146	160
16	105	161	179	197	94.0	150	166	182
17	118	182	202	222	106	169	187	206
18	133	204	226	249	119	189	210	231
19	148	227	252	278	132	211	233	257
20	164	252	279	308	147	234	259	285
22	198	305	338	372	178	283	313	345
24	236	363	402	443	211	336	373	411
26	276	426	472	520	248	395	437	482
28	321	494	547	603	288	458	507	559
30	368	567	628	692	330	526	582	642
32	419	645	715	787	376	598	662	730
34	473	728	807	889	424	675	748	824
36	530	817	904	997	476	757	838	924
38	591	910	1010	1110	530	843	934	1030
40	654	1010	1120	1230	587	935	1040	1140
42	721	1110	1230	1360	647	1030	1140	1260
44	792	1220	1350	1490	711	1130	1250	1380
46	865	1330	1480	1630	777	1240	1370	1510
48	942	1450	1610	-	846	1350	1490	-
50	1020	1580	1740	-	918	1460	1620	-
52	1110	1700	1890	-	992	1580	1750	-
54	1197	1840	2040	-	1070	1700	1890	-



6 x 41WS-FC

NOTES

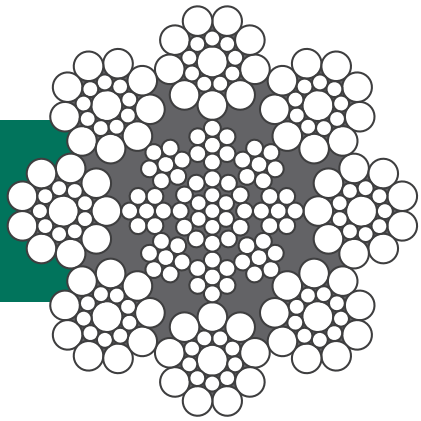
Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

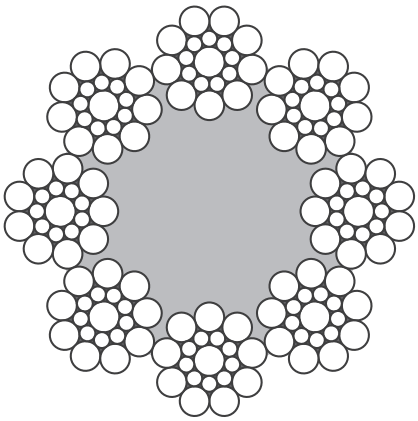
8 x 19S

Ø 6 – 40 mm

- EN 12385-4
- Rope type 8 x 19



8 x 19S-IWRC



8 x 19S-FC

	IWRC			FC		
Ø	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
6	14.7	25.1	27.7	12.2	20.7	22.8
7	19.9	34.2	37.7	16.7	28.1	31.0
8	26.0	44.7	49.2	21.8	36.8	40.5
9	33.0	56.5	62.3	27.5	46.5	51.3
10	40.7	69.8	76.9	34.0	57.4	63.3
11	49.2	84.4	93.0	41.1	69.5	76.6
12	58.6	100	111	49.0	82.7	91.1
13	68.8	118	130	57.5	97.1	107
14	79.8	137	151	66.6	113	124
15	91.6	157	173	76.5	129	142
16	104	179	197	87.0	147	162
17	118	202	222	98.3	166	183
18	132	226	249	110	186	205
19	147	252	278	123	207	228
20	163	279	308	136	230	253
22	197	338	372	165	278	306
24	234	402	443	196	331	365
26	275	472	520	230	388	428
28	319	547	603	267	450	496
30	366	628	692	306	517	570
32	417	715	787	348	588	648
34	470	807	889	393	664	732
36	527	904	-	441	744	-
38	588	1010	-	491	829	-
40	651	1120	-	554	919	-

NOTES

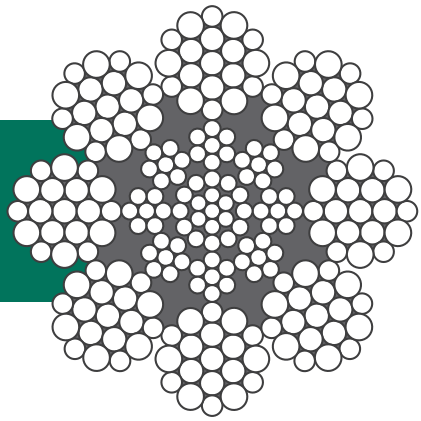
Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

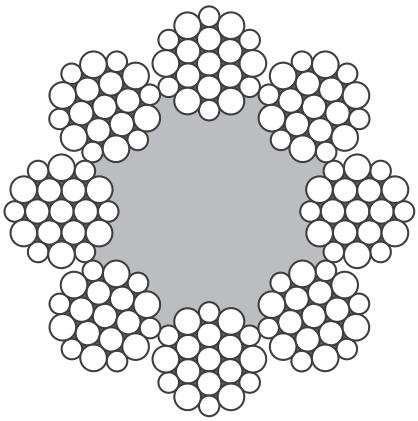
8 x 19W

Ø 6 – 44 mm

- EN 12385-4
- Rope type 8 x 19



8 x 19W-IWRC



8 x 19W-FC

	IWRC			FC		
Ø	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
6	14.7	25.1	27.7	12.2	20.7	22.8
7	19.9	34.2	37.7	16.7	28.1	31.0
8	26.0	44.7	49.2	21.8	36.8	40.5
9	33.0	56.5	62.3	27.5	46.5	51.3
10	40.7	69.8	76.9	34.0	57.4	63.3
11	49.2	84.4	93.0	41.1	69.5	76.6
12	58.6	100	111	49.0	82.7	91.1
13	68.8	118	130	57.5	97.1	107
14	79.8	137	151	66.6	113	124
15	91.6	157	173	76.5	129	142
16	104	179	197	87.0	147	162
17	118	202	222	98.3	166	183
18	132	226	249	110	186	205
19	147	252	278	123	207	228
20	163	279	308	136	230	253
22	197	338	372	165	278	306
24	234	402	443	196	331	365
26	275	472	520	230	388	428
28	319	547	603	267	450	496
30	366	628	692	306	517	570
32	417	715	787	348	588	648
34	470	807	889	393	664	732
36	527	904	997	441	744	820
38	588	1010	1110	491	829	914
40	651	1120	-	544	919	-
42	718	1230	-	600	1010	-
44	788	1350	-	658	1110	-

NOTES

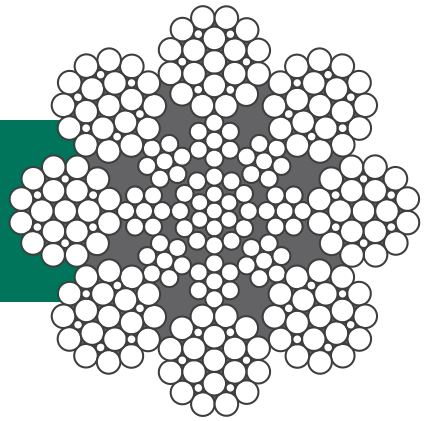
Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

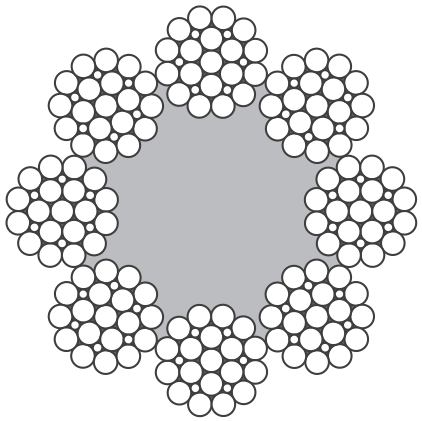
8 x 25F

Ø 10 – 48 mm

- EN 12385-4
- Rope type 8 x 19



8 x 25F-IWRC



8 x 25F-FC

	IWRC			FC		
Ø	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
10	40.7	69.8	76.9	34.0	57.4	63.3
11	49.2	84.4	93.0	41.1	69.5	76.6
12	58.6	100	111	49.0	82.7	91.1
13	68.8	118	130	57.5	97.1	107
14	79.8	137	151	66.6	113	124
15	91.6	157	173	76.5	129	142
16	104	179	197	87.0	147	162
17	118	202	222	98.3	166	183
18	132	226	249	110	186	205
19	147	252	278	123	207	228
20	163	279	308	136	230	253
22	197	338	372	165	278	306
24	234	402	443	196	331	365
26	275	472	520	230	388	428
28	319	547	603	267	450	496
30	366	628	692	306	517	570
32	417	715	787	348	588	648
34	470	807	889	393	664	732
36	527	904	997	441	744	820
38	588	1010	1110	491	829	914
40	651	1120	1230	544	919	1010
42	718	1230	1360	600	1010	1120
44	788	1350	-	658	1110	-
46	861	1480	-	719	1220	-
48	938	1610	-	783	1320	-

NOTES

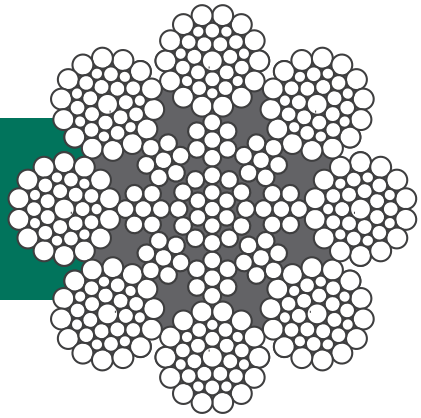
Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

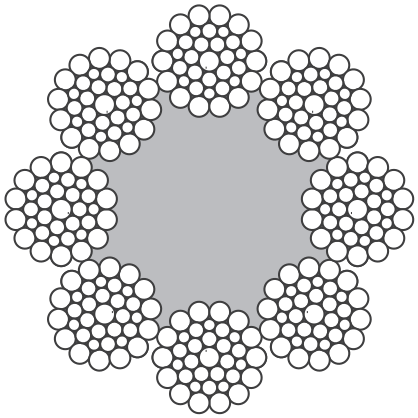
8 x 36WS

Ø 13 – 52 mm

- EN 12385-4
- Rope type 8 x 36



8 x 36WS-IWRC



8 x 36WS-FC

	IWRC			FC		
Ø	Weight	MBF 1960	MBF 2160	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN	kg/100 m	kN	kN
13	70.5	118	130	58.8	97.1	107
14	81.7	137	151	68.2	113	124
15	93.8	157	173	78.3	129	142
16	107	179	197	89.1	147	162
17	121	202	222	101	166	183
18	135	226	249	113	186	205
19	151	252	278	126	207	228
20	167	279	308	139	230	253
22	202	338	372	168	278	306
24	240	402	443	200	331	365
26	282	472	520	235	388	428
28	327	547	603	273	450	496
30	375	628	692	313	517	570
32	427	715	787	356	588	648
34	482	807	889	402	664	732
36	540	904	997	451	744	820
38	602	1010	1110	503	829	914
40	667	1120	1230	557	919	1010
42	736	1230	1360	614	1010	1120
44	807	1350	1490	674	1110	1230
46	882	1480	1630	736	1220	1340
48	961	1610	1770	802	1320	1460
50	1040	1740	-	870	1440	-
52	1130	1890	-	941	1550	-

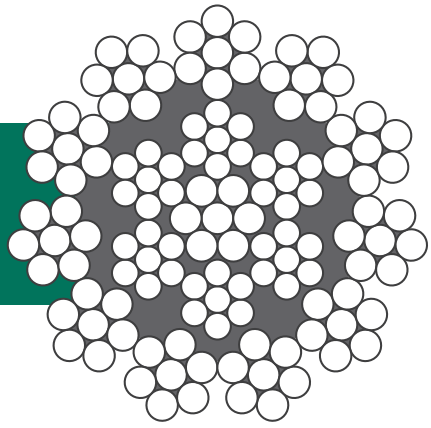
NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

17 x 7-WSC

Ø 3 – 22 mm



17 x 7-WSC

- EN 12385-4
- Rope type 18 x 7
- rotation-resistant (b) EN 12385-3

WSC

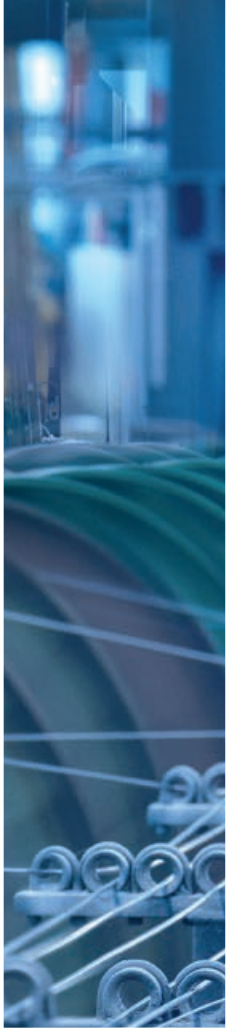
Ø	Weight	MBF 1960	MBF 2160
mm	kg/100 m	kN	kN
3	3.61	5.79	6.38
4	6.42	10.3	11.3
5	10.0	16.1	17.7
6	14.4	23.1	25.5
7	19.6	31.5	34.7
8	25.7	41.1	45.3
9	32.5	52.1	57.4
10	40.1	64.3	70.8
11	48.5	77.8	85.7
12	57.7	92.6	102
13	67.8	109	120
14	78.6	126	139
15	90.2	145	159
16	103	165	181
17	116	186	205
18	130	208	230
19	145	232	256
20	160	257	283
22	194	311	343

NOTES

Diameter tolerances and limiting deviation can be found in the current part of the DIN EN 12385.

Additional diameters and special designs upon request.
Please read our notes on rope selection in "Application".

EDITION 2016/17



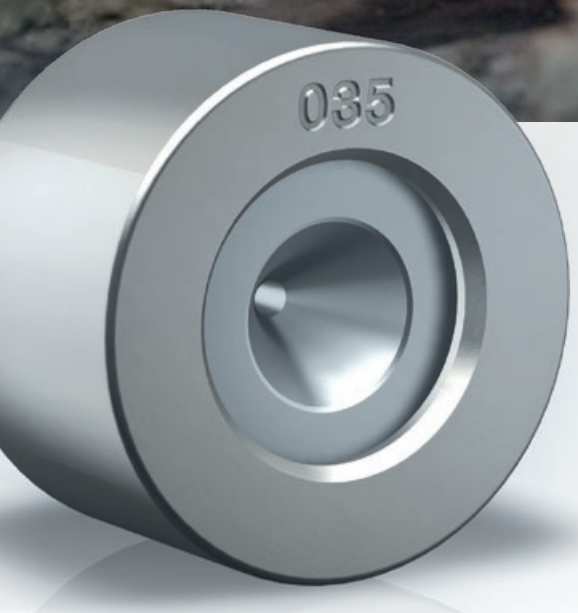
TRADITION.
INNOVATION.
VISION.
SINCE 1889.

WIRES
Wire Standard EN 10264

VORNBÄUMEN

Valid from 08/2016
Subject to technical modifications

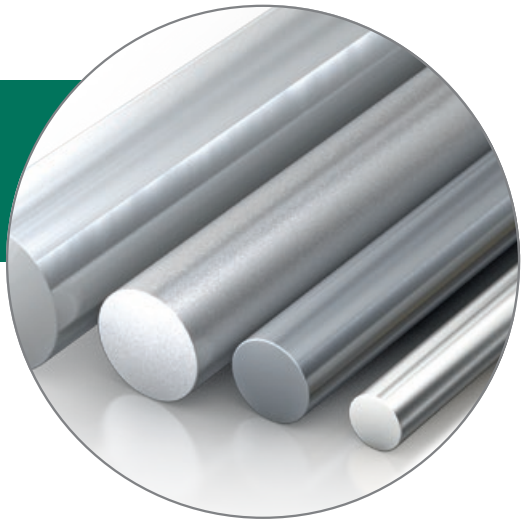
WIRES



WIRES FROM OUR OWN DRAWING MILL: TRADITION SINCE 1906

We produced our first wires 1906 in our own drawing mill in the plant in Bad Iburg. A lot has happened since. Today, thanks to the experience we have gathered in the field for over 100 years, we are competent partners and we produce steel and stainless steel wires with state-of-the-art machines.

That's because reliability, quality and the quick availability of the wires used are decisive in the area of technology in particular. The wires from VORNBÄUMEN make the fine difference here!



- Manufactured according to wire standard EN 10264

Uncoated

Strength N/mm²	MBF 1370	MBF 1570	MBF 1770	MBF 1960	MBF 2160
min. Ø	0.25	0.20	0.20	0.20	0.20
max. Ø	3.50	3.50	3.20	2.70	2.30

Zinc-coated class B

Strength N/mm²	MBF 1370	MBF 1570	MBF 1770	MBF 1960	MBF 2160
min. Ø	0.30	0.20	0.20	0.11	0.11
max. Ø	3.50	3.50	3.20	2.70	2.30

Phosphate-coated

Strength N/mm²	MBF 1370	MBF 1570	MBF 1770	MBF 1960	MBF 2160
min. Ø	0.25	0.20	0.20	0.20	0.20
max. Ø	3.50	3.50	3.20	2.70	2.30

Breaking test in our material laboratory

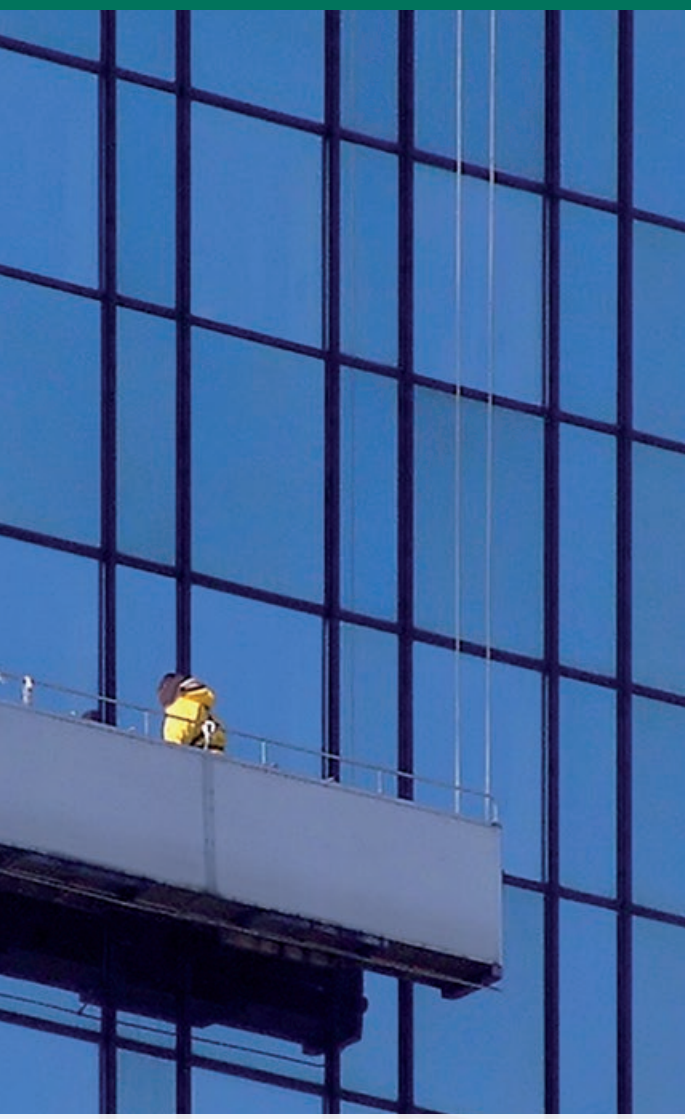
WIRES FOR EVERY APPLICATION IN THE HIGHEST QUALITY

We are able guarantee the highest quality in the production of our wires because we have continuously improved our production processes over many decades. Today our experienced, long-term employees work with a process-controlled manufacturing procedure.
With our individual production possibilities, we are able to offer you our wires in completely different variants, adjusted to your specific application:
our offering includes various wire thicknesses, surfaces, tensile strengths and spool sizes.
In our wire warehouse, you can find all common wire thickness with bright, phosphate-coated and zinc-coated finishes. In addition, in our manufacturing process, we pay very close attention to consistent quality and repeatedly check all wires for strength, torsion, bending and, if applicable, zinc coating.
If requested, we can issue a certificate for every wire.

NOTE

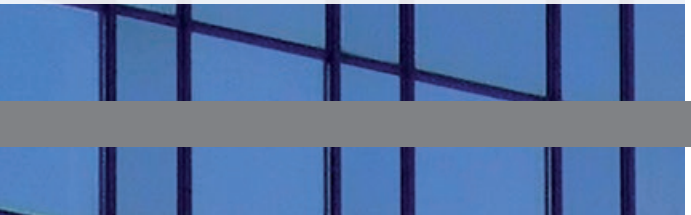
Zinc-coated class A as well as additional diameter and special products upon request.

SPECIAL PRODUCTS



SPECIAL APPLICATIONS WITH VORNBÄUMEN WIRE ROPES

For special applications we work together with our customers to develop specific and individual rope solutions for a wide variety of industries. We produce our ropes ourselves from start to finish. As we have our own wire drawing mill, ropery and a large, comprehensive warehouse, we are also able to process rush orders quickly and flexibly.



AUTOMOTIVE INDUSTRY

Cable pulls are used in the automotive industry in various assemblies: as actuating pulls on window lifts, mirror and handbrake systems or body parts. The rope and roller systems in seats and seat belt tensioners are also important for safety. In the automotive industry, VORNBÄUMEN works as a partner for systems suppliers who profit from our company's know-how and many years of experience.

BICYCLE INDUSTRY

Actuating pulls have long been used in bicycle technology in various types of construction. In particular rope casings of flat or round wires guarantee the direct and precise transmission of force to the brakes or shifting systems.

SPORT AND FITNESS DEVICES

Fitness devices usually have diverse adjustment and modification options. The weights are often moved with plastic-coated wire ropes. Here the ropes and cable casings inside the device provide for friction-free and noiseless operation.

GREENING SYSTEMS

Wire ropes are perfectly suited for durable and flexible greening systems. By using corrosion-resistant materials in combination with UV-resistant plastic coatings, light constructions are created that offer vines and tendrils optimal growing conditions.

ARCHITECTURE AND CONSTRUCTION

Ropes and wires are not only found in engineering construction. Wire ropes are also very popular as decorative and functional elements in stair construction and in the construction of sun protection equipment. In interior architecture, ropes are also used as fastening solutions for textiles, lights and orientation systems.

FISHING

VORNBÄUMEN expertise in the production micro ropes (MICROPE®) allow high-load fishing lines and leaders to be produced for the fishing industry. In comparison to synthetic rope material, micro ropes made of stainless steel are extremely resistant to saltwater and UV radiation. In addition, extremely thin plastic coatings reduce friction and wear.

ROBOTICS AND AUTOMATION TECHNOLOGY

Wire ropes allocate their qualities to industrial robots and automation systems as actuating, moving and safety pulls. In subareas of automation, ropes and computer-controlled winches represent a convenient and maintenance-friendly alternative to complex gearboxes and step motors.

ADDITIONAL AREAS OF APPLICATION FOR WIRE ROPES

- Agricultural technology
- Drive technology
- Jewellery industry
- Snow groomers

VORNBÄUMEN is your reliable partner for all individual questions regarding wire rope, rope casing and rope coating. We look forward to your project.

LONG-LIFE FUNCTIONALITY THANKS TO INDIVIDUALLY ADJUSTED COMPONENTS

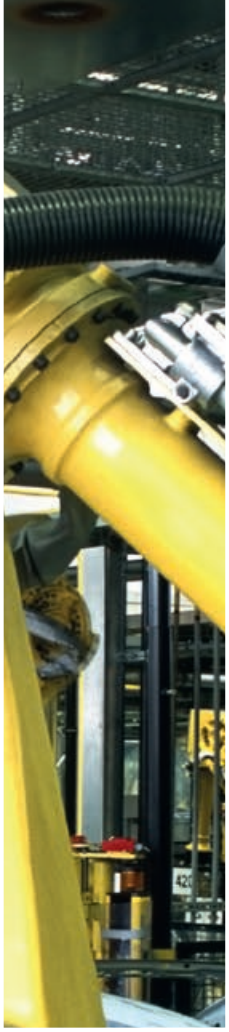
Our production program includes, among other things, flat and round wire spirals of various materials (e.g., zinc-coated, stainless steel, etc.) with and without

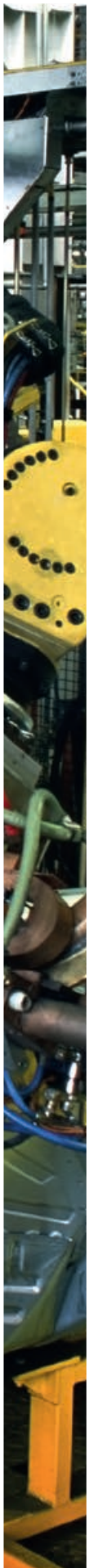
lining and optionally with a plastic coating and tubes of POM and PE.

Furthermore, we manufacture PUSH-PULL spirals and wire guide hoses. In particular for the bicycle industry, we manufacture rope pulls with cable heads (die cast zinc) for brake and shifting systems. We process all common types of plastic (PVC, LDPE, HDPE, PP, PA 6, PA 6 12, PA 12, PUR TPU, POM) on our modern extrusion equipment.

We will find the right coating for your spirals.

EDITION 2016/17





TRADITION.
INNOVATION.
VISION.
SINCE 1889.

APPLICATION

Technical Notes
Explanation of Symbols
Special / Crane Ropes

VORNBÄUMEN

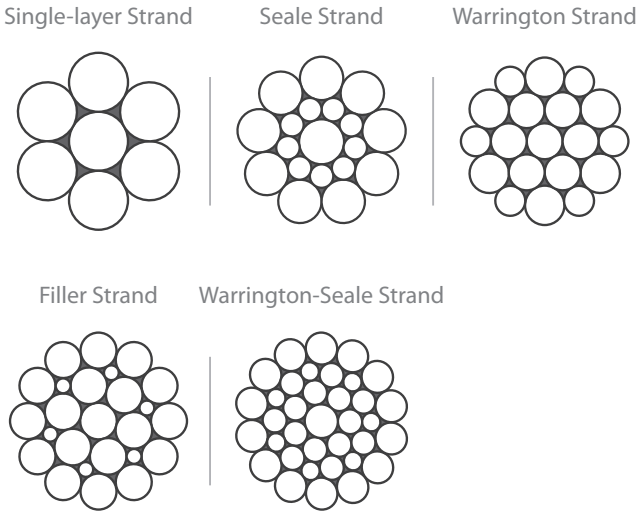
Valid from 08/2016
Subject to technical modifications

TECHNICAL NOTES I

ROPE COMPONENTS

WIRE
The smallest component of a rope.

STRAND
The element of a rope that is composed of a construction of wires which are helically stranded in the same direction in one or more layers around a core.

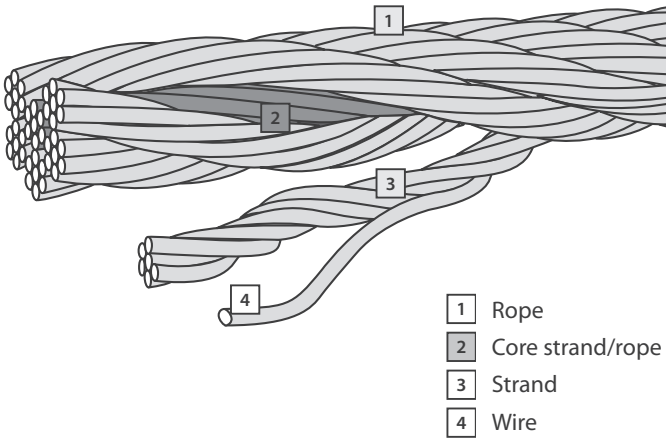


CORE
The element in the middle of a round rope, around which the strands of a stranded rope or the ropes of a cable laid rope are helically stranded.

Fibre core FC
- Natural fibre core NFC
- Synthetic fibre core SFC

Steel core WC
- Wire strand core WSC
- Independent wire rope core IWRC

ROPE
Combination of core and strands.



CLASSIFICATION OF ROPES ACCORDING TO THEIR INTENDED USE

RUNNING ROPES
Ropes that run over rollers, sheaves or reels and thus assume their bend.
Examples: hoisting ropes, crane ropes, lift ropes, scraper ropes and haulage ropes for cable cars.

STATIONARY ROPES
Ropes which are for the most part firmly clamped and not moved over rollers.
Examples: anchoring ropes for masts and booms and guide cables for lifts.

CARRYING ROPES
Ropes on which rolls of conveying devices run.
Examples: carrying ropes for cable cars, cable cranes and gravity return scrapers.

LIFTING SLINGS
Ropes which are used to suspend loads.

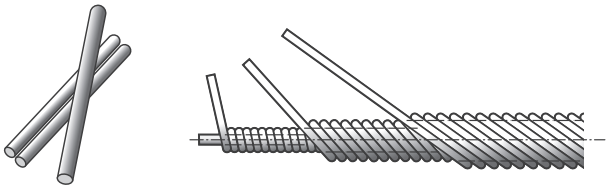
See EN 12385-2

TECHNICAL NOTES II

STRANDING TYPES

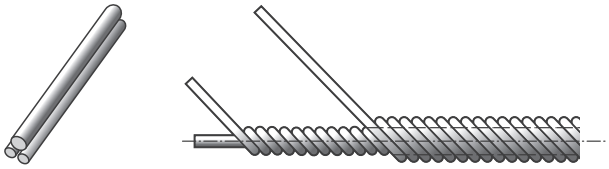
CROSS-LAY

Cross-laid strands consist of at least two layers of wire that are stranded in the same direction, and the wires of two superimposed layers cross and touch at specific points.



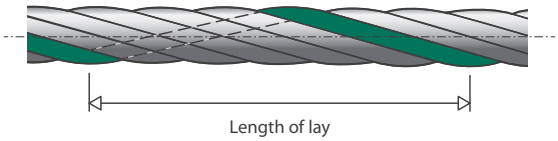
PARALLEL LAY

Parallel-laid strands consists of at least two wire layers that are all laid in one operation in the same direction. The lengths of lay of all wire layers are the same, and the wires from two superimposed layers are parallel, resulting in linear contact. Parallel lay ropes thus consist of at least two strand layers that are all laid helically around a rope core in a single operation.



LENGTH OF LAY

The length of lay of a strand is the lead of an external wire measured parallel to the strand's longitudinal axis as it makes a complete spiral around the axis of the strand.



TYPE OF LAY AND DIRECTION OF LAY

LANG LAY

The wires in the strands have the same direction of lay as the strands in the rope.

Lang lay
Right-hand zZ

Lang lay
Left-hand sS

ORDINARY LAY

The wires in the strands have the opposite direction of lay as the strands in the rope.

Ordinary lay
Right-hand sZ

Ordinary lay
Left-hand zS

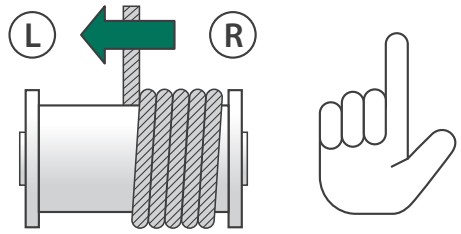
See EN 12385-2

TECHNICAL NOTES III

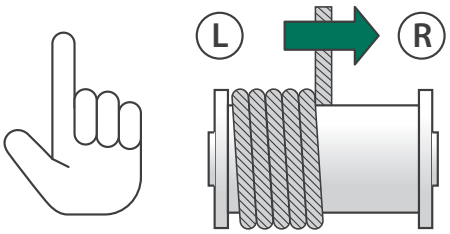
SELECTING THE DIRECTION OF LAY

WINDING FROM BELOW

Right-hand lay rope

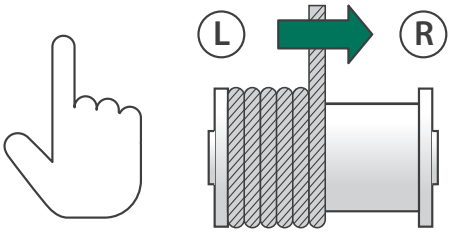


Left-hand lay rope

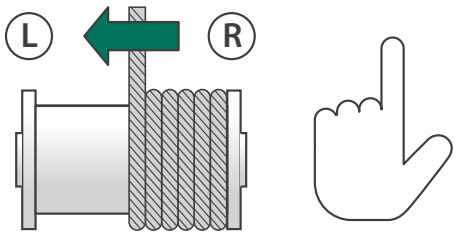


WINDING FROM ABOVE

Right-hand lay rope



Left-hand lay rope



See EN 12385-3

CALCULATION VARIABLES

FILLING FACTOR (f)

The relationship between the sum of the metallic nominal cross sections of all wires in the rope (A) and the area (Au) of the circle circumscribed by the rope with nominal diameter (d).

$$f = \frac{A}{Au}$$

METALLIC CROSS SECTION (A)

The product of the factor for the metallic nominal cross section (C) and the square of the rope's nominal diameter.

$$A = C \cdot d^2$$

MINIMUM BREAKING FORCE (F_{min})

A defined value in kN which must not be undershot by the measured breaking force (Fm) in a prescribed breaking force test. It is usually calculated as the product of the square of the nominal diameter (d), the rope grade (Rr) and the break force factor (K).

$$F_{min} = \frac{d^2 \cdot Rr \cdot K}{1.000}$$

CALCULATED BREAKING FORCE ($F_{e.min}$)

A defined value in kN which must not be undershot by the breaking force determined in a test. It is usually calculated as the product of the square of the rope diameter (d), the factor for the metallic cross section (C) and the rope grade (Rr).

$$F_{e.min} = \frac{d^2 \cdot C \cdot Rr}{1.000}$$

ACTUAL BREAKING FORCE (F_m)

The breaking force determined in a test according to a prescribed procedure.

CALCULATED LENGTH MASS (M)

A value which is calculated as the product of the factor for the calculated length mass (W) and the square of the rope's nominal diameter.

$$M = W \cdot d^2$$

See EN 12385-2

TECHNICAL NOTES IV

TABLE OF CALCULATION FACTORS

	FC			IWRC			WSC		
	W1	C1	K1	W2	C2	K2	W3	C3	K3
6 x 7	0.345	0.369	0.332	0.384	0.432	0.359	0.384	0.432	0.388
6 x 19	0.359	0.384	0.330	0.400	0.449	0.356	-	-	-
6 x 19M	0.346	0.357	0.307	-	-	0.332	0.381	0.418	0.362
6 x 36	0.367	0.393	0.330	0.409	0.460	0.356	-	-	-
6 x 37M	0.346	0.357	0.295	0.381	0.418	0.319	0.381	0.418	0.346
8 x 36	0.348	0.357	0.293	0.417	0.468	0.356	-	-	-
18 x 7	0.382	-	0.328	-	-	-	0.401	0.433	0.328

See EN 12385-4

K = minimum breaking force factor
C = factor for the metallic nominal cross section
W = factor for the calculated length mass

LIFTING CAPACITY

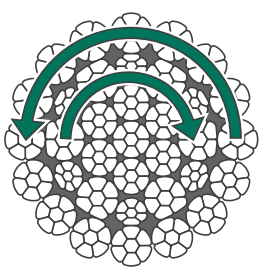
The lifting capacity of a rope is calculated from the minimum breaking force. This is divided by the prescribed safety factor for the respective application.

Example:

$$\text{safety factor 5} = \frac{\text{minimum breaking force}}{5}$$

ROTATIONAL PROPERTIES

Rotation-resistant ropes are ropes that are designed such that they create a reduced torque and a reduced rotation under load. In general, they are composed of a construction of at least two strand layers that are helically stranded around a core. The outer strand layers in this construction are stranded opposite to the strand layer below.



ROTATION-RESISTANT A

The rotational property is less than or equal to 1 rotation/1,000 d, when a load corresponding to 20% of the minimum breaking force is lifted; a swivel may be used.

ROTATION-RESISTANT B

The rotational property is greater than 1 rotation but less than 4 rotations/1,000 d, when a load corresponding to 20% of the minimum breaking force is lifted; a swivel may be used in accordance with the recommendations of the rope manufacturer and/or with the approval of a competent person.

NOT ROTATION-RESISTANT

The rotational property is greater than 4 rotations/1,000 d under a load corresponding to 20% of the minimum breaking force; a swivel should not be used.

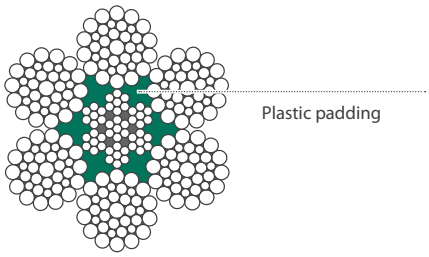
1 rotation = 360°
d = rope diameter
F_{min} = minimum breaking force of the rope

See EN 12385-3

TECHNICAL NOTES V

PLASTIC PADDING

The plastic padding supports the strands and stabilises the rope structure. The plastic encases the lubricated steel core and thus provides double protection. On the one hand, it encloses the lubricant on the inside and, on the other hand, it simultaneously keeps humidity and dirt particles away from the core. Furthermore, the plastic padding prevents direct friction between the strands in the rope and thus also helps to prevent premature wear. In addition, the rope structure is stabilised by the layer of plastic.



ADVANTAGES

- Counteracts interior wire breaks
- Preserves the lubrication on the steel core
- Protects the core from humidity and dirt particles
- Minimises friction losses
- Improves shape stability
- Absorbs vibrations

PLASTIC COATING

As an additional added value, we can coat our ropes with various common types of plastic on modern extrusion equipment. The following materials, among others, are processed: PVC, LDPE, HDPE, PP, PA 6, PA 6.12, PA 11, PA 12, PUR TPU and POM. These plastics can be laid around the rope in various processes, depending on the customer requirement and further use of the product.

Hose process: Simple coating, e.g., when the end fittings are later applied to the rope.

Pressure process: Very smooth, high-quality surface on the final coated product; very good connection between the coating and the rope.

Semi-process: Smoother surface than with the hose process but, depending on the rope construction, easier to strip than a coating in the pressure process.

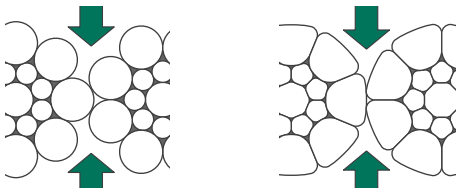
By adding colour granules, almost any colour setting is possible. Furthermore, the technical properties of the coating, e.g., friction values, can also be positively influenced with the appropriate additives. Here too we will gladly place our know-how at your disposal.

COMPACTION

To increase the breaking force of our products without increasing the diameter of the rope, we compact the strands, the rope or both in combination. In addition to higher metal cross section and the resulting higher breaking force, compacted ropes also have smoother strand and rope surfaces.
Compacted strands provide the rope with greater flexibility and minimise both friction and corrosion in the rope. In addition, they reduce the risk of negative imprints in the grooves of the rollers and improve the service life of the rope in the case of multi-layer winding.
Furthermore, the rope compaction increases the pressure stability and, due to a lower tendency to indent and optimised pressure distribution, again improves the properties of the rope for winding in multiple layers.

ADVANTAGES

- Increases the metallic cross section and the breaking forces
- Increases the surface contact between individual wires
- Achieves a smoother rope surface
- Improves the contact ratio between the rope and the rope groove
- Reduces the indenting of adjacent rope strands
- Improves the structure stability in the case of multi-layer windings



NOTES

ATTENTION

Selecting the right rope for the appropriate application requires great care. Using the wrong rope might have serious consequences, such as property damage or personal injury. The users must always be familiar with the correct procedures and pertinent safety regulations. If a product is used improperly or is overloaded, dangerous situations can arise. Selecting the correct rope is essential for special applications. Our experts will gladly advise you on selecting the right rope.

IMPORTANT

The maintenance, monitoring and discard criteria of wire ropes are described in detail in currently valid standards, such as DIN ISO 4309 and the guideline VDI 2358. In addition, please follow all regulations set by public authorities and by employer's liability insurance associations and follow the regulations of the respective device manufacturer as well.

The nominal tensile strengths of the wires listed in the product tables are specified in N/mm².

You can find additional notes in our printed operating instructions for wire ropes or in the electronic version on our website.

We reserve the right to make technical changes and we accept no liability for typographical and printing errors.

SPECIAL ROPE DESIGNATIONS

VS · 16-4 · C · P

- P — Plastified
- C — Compacted
- 16-4 — Type of construction (-1, -2, -3, ...)
- 16 — Number of outer strands
- VS — **VORNBÄUMEN** Stahlseile

QUALITY MANAGEMENT

KNOW-HOW AND QUALITY

Thanks to our years of experience and the close cooperation with our customers, we are familiar with a number of areas of applications for wire ropes. We have often been able to bring about significant improvements in the application by making technical modifications. However, we are unable to make explicit statements about selecting the correct rope due to the sheer number of applications possible. We will gladly assist you in finding the right rope in consideration of the special features of your equipment. Please feel free to contact us.

CERTIFICATION

The safety and quality of our products are a matter of course. Independent of the actual application, each product is subject to the same high quality standards that are defined in our certified quality assurance system.

Constant inspections by **LLOYD'S REGISTER QUALITY ASSURANCE** and **TÜV** ensure compliance with the specifications of the quality assurance system at both of our locations.

Within our quality management system, we place great value on continuously improving all processes. The insights gained from our close cooperation with our customers on site and from various scientific research institutions, the ideas from the plant suggestions scheme, and the results from our laboratory and the final inspection flow together into the current manufacturing process after critical analysis.

So you can be sure that products from VORNBÄUMEN are always reliable. We promise you that.

EXPLANATION OF SYMBOLS

FIELDS OF APPLICATION


Revolving tower crane


Grabbing crane


Telescoping crane


Mobile crane


Container crane (STS)


Gantry crane (RTG/RMG)


Lattice boom crane


Bridge crane


Offshore crane


Straddle carrier


Excavating bucket / Scrapers


Harbour crane


Forestry


Lift


Cable car


Snow groomer


Stone saw


Stage technology


Automotive industry


Bicycle industry


Medical technology


Jewellery industry

PROPERTIES


Optimized quality


Rotation-resistant


With swivel

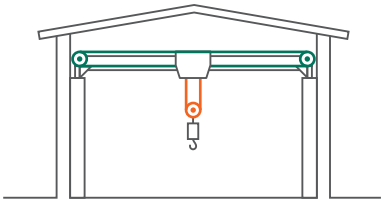

Compacted


Plastic padding


Double parallel lay


Special lubrication

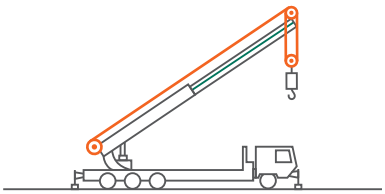
APPLICATION CRANE ROPES I



BRIDGE CRANE

Hoisting rope
VS 6-1 P
VS 6-2 CP
VS 8-1 P
VS 8-2 CP
VS 8-3
VS 8-4 C

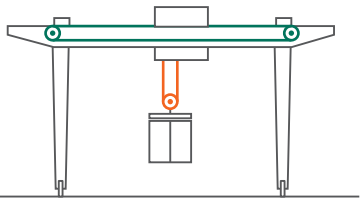
Trolley rope
VS 6-1 P
VS 8-1 P
VS 8-3
VS 8-4 C



TELESCOPING CRANE

Hoisting rope
VS 15-1 C
VS 16-1
VS 16-2 C
VS 16-3 C
VS 16-4 CP
VS 16-5 C

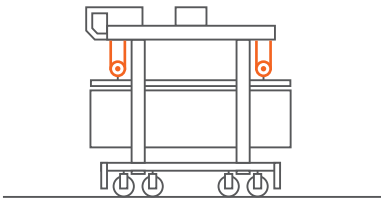
Telescope rope
VS 6-1 P
VS 8-1 P
VS 8-3
VS 8-4 C



GANTRY CRANE (RTG/RMG)

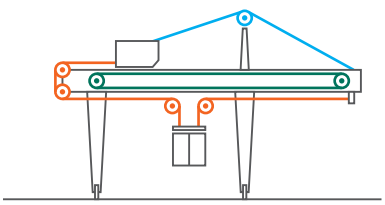
Hoisting rope
VS 6-1 P
VS 6-2 CP
VS 6-11 C
VS 8-1 P
VS 8-2 CP
VS 8-3
VS 8-4 C

Trolley rope
VS 8-1 P
VS 8-2 CP
VS 8-3
VS 8-4 C



STRADDLE CARRIER

Hoisting rope
VS 8-1 P
VS 8-2 CP



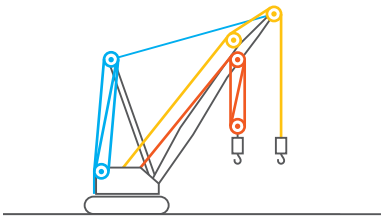
CONTAINER CRANE (STS)

Hoisting rope
VS 6-1 P
VS 6-2 CP
VS 6-11 C
VS 8-1 P
VS 8-2 CP
VS 8-3
VS 8-4 C

Trolley rope
VS 8-1 P
VS 8-2 CP
VS 8-3
VS 8-4 C

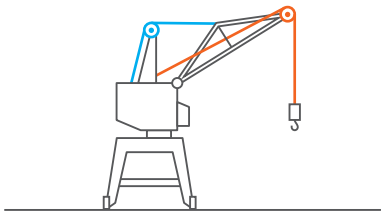
Boom pendant rope and adjusting rope
VS 6-1 P
VS 8-1 P
VS 8-2 CP
VS 8-3
VS 8-4 C

APPLICATION CRANE ROPES II



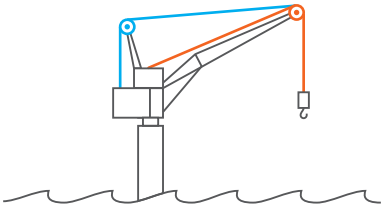
LATTICE BOOM CRANE

Main hoisting rope	Auxiliary hoisting rope	Boom pendant rope and adjusting rope
VS 16-1	VS 16-1	VS 6-1 P
VS 16-2 C	VS 16-2 C	VS 8-1 P
VS 16-3 C	VS 16-3 C	VS 8-2 CP
VS 16-4 CP	VS 16-4 CP	VS 8-3
VS 16-5 C	VS 16-5 C	VS 8-4 C
VS 16-6	VS 16-6	
VS 15-1 C	VS 15-1 C	



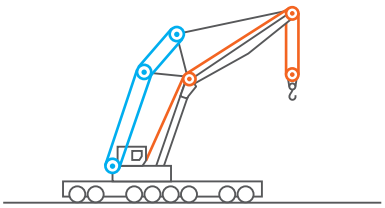
HARBOUR CRANE

Hoisting rope	Boom pendant rope and adjusting rope
VS 16-1	VS 6-1 P
VS 16-2 C	VS 8-1 P
VS 16-3 C	VS 8-2 CP
VS 16-5 C	VS 8-3
VS 16-6	VS 8-4 C



OFFSHORE CRANE

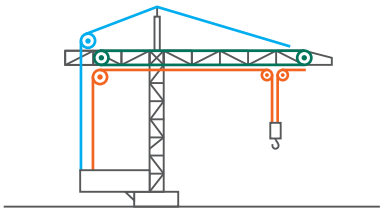
Hoisting rope	Boom pendant rope and adjusting rope
VS 16-1	VS 6-1 P
VS 16-2 C	VS 6-2 C
VS 16-3 C	VS 6-11 C
VS 16-4 CP	VS 8-1 P
VS 16-5 C	VS 8-2 CP
VS 16-6	VS 8-3
	VS 8-4 C



MOBILE CRANE

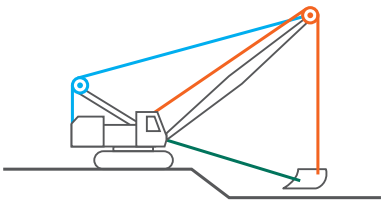
Hoisting rope	Boom pendant rope and adjusting rope
VS 15-1 C	VS 6-1 P
VS 16-1	VS 6-2 C
VS 16-2 C	VS 6-11 C
VS 16-3 C	VS 8-1 P
VS 16-4 CP	VS 8-2 CP
VS 16-5 C	VS 8-3
VS 16-6	VS 8-4 C

APPLICATION CRANE ROPES III



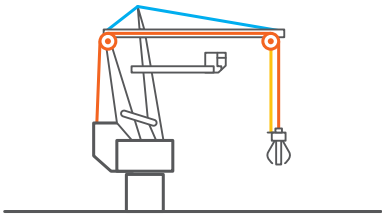
REVOLVING TOWER CRANE

Hoisting rope	Boom pendant rope and adjusting rope	Assembly rope
VS 16-1	VS 6-1 P	VS 6-1 P
VS 16-2 C	VS 8-1 P	VS 6-2 CP
VS 16-3 C	VS 8-3	VS 6-11 C
VS 16-5 C	VS 8-4 C	
VS 16-6		



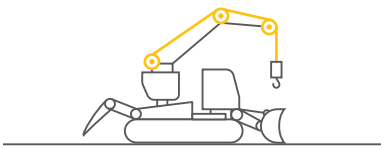
EXCAVATING BUCKET/SCRAPERS

Haulage rope	Boom pendant rope and adjusting rope	Back haul rope
VS 6-1 P	VS 6-1 P	VS 6-1 P
VS 6-2 CP	VS 6-2 CP	VS 6-2 CP
	VS 6-11 C	



GRABBING CRANE

Hoisting rope	Boom pendant rope and adjusting rope	Closing rope
VS 8-1 P	VS 6-1 P	VS 8-1 P
VS 8-2 CP	VS 8-1 P	VS 8-2 CP
VS 8-3	VS 8-3	VS 8-3
VS 8-4 C	VS 8-4 C	VS 8-4 C



SNOW GROOMER

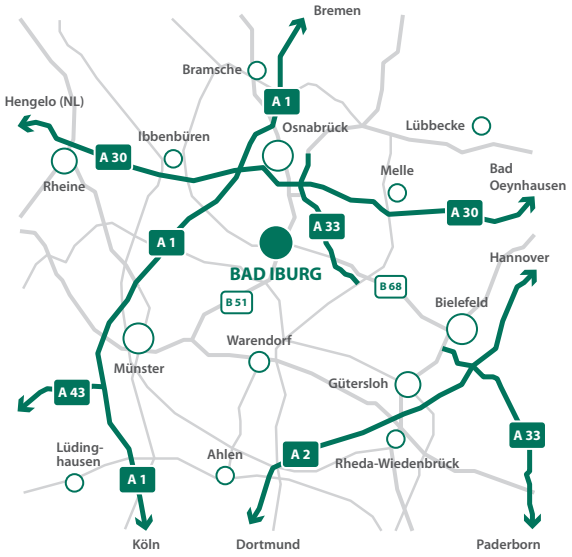
Drum-winch	Trac-winch
VS 8-4 C	VS 9-1 C

Selecting the right rope for the appropriate application requires great care. Using the wrong rope might have serious consequences, such as property damage or personal injury.

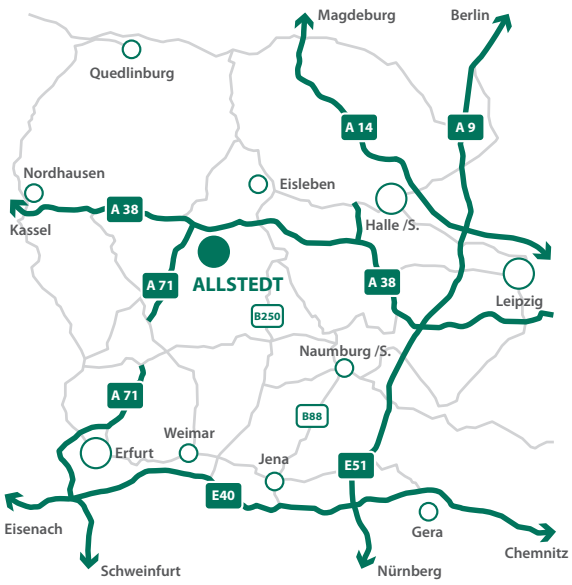
Selecting the correct rope is essential for special applications. For further information refer to our notes. The classification above and the applications listed in the following are only intended as general guidelines. Please contact us for help in selecting the right rope for your application.

CONTACT INFORMATION

MANUFACTURING SITE FOR WIRE ROPES, WIRE DRAWING MILL AND SALES OFFICE



MANUFACTURING SITE FOR ACTUATING PULLS



VORNBÄUMEN
Stahlseile GmbH & Co. KG

Münsterstraße 41
49186 Bad Iburg
GERMANY

Phone: + 49 5403 4009 - 0
Fax: + 49 5403 4009 - 99

www.vornbaeumen.de
sales@vornbaeumen.de

Google Maps

VORNBÄUMEN
Stahlseile GmbH & Co. KG

Fabrikstraße 5
06542 Allstedt
GERMANY

Phone: + 49 34652 6709 - 0
Fax: + 49 34652 6709 - 59

www.vornbaeumen.de
sales@vornbaeumen.de

Google Maps

SPECIAL ROPES · STANDARD ROPES · WIRES

Please contact us.
We look forward to hearing from you!

VORNBÄUMEN Stahlseile GmbH & Co. KG

Münsterstraße 41
49186 Bad Iburg
GERMANY

Phone: + 49 5403 4009 - 0
Fax: + 49 5403 4009 - 99

www.vornbaeumen.de
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Subject to technical modifications