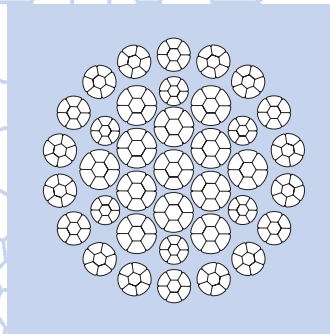




06/2021



**PFEIFER – Your specialist
for ropes for special
foundation equipment**

**PFEIFER
SEIL- UND HEBE-TECHNIK
GMBH**

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Innovativ wire rope systems for special foundation equipment

Moving means to set things in motion, to unfold dynamics, to create things. For us in the PFEIFER group, to move is very specific: it means that with our products from Wire Rope Technology, Rope and Lifting and Building Systems elevators, heavy loads on cranes, sheet metal coils, workpieces and precast concrete elements move. Our cable structure buildings are known all over the world, and so is our extensive knowledge on the dynamics of wire rope in all applications.

Moving also means for us that we don't sit still, we study, we learn, we apply and we invest. There is a reason why the PFEIFER group is one of Europe's leading companies in Structures, Wire Rope Technology, Rope and Lifting and Building Systems.

We get things going – special requests by customers, efficient and practical solutions, technical expertise, quality and dependable service – these are the benefits for you as a partner.



Gerhard Pfeifer,
President of the PFEIFER group



The PFEIFER group is one of Europe's leading companies in Structures, Wire Rope Technology, Rope and Lifting and Building Systems. The headquarters are located in Memmingen, Germany. Numerous service centres and subsidiaries worldwide are responsible for sales and distribution.

Ropes ready to use for all performance classes for cranes and construction machinery are our strength for years. We are the original equipment manufacturer of crawler cranes, drilling machines of all sorts and further large rope appliances of well-known construction machinery manufacturers, e.g. BAUER and SENNEBOGEN and further ones. As system supplier with comprehensive know-how in production and application of crane and construction machinery ropes we would be pleased to advise you on the choice of the right rope system for your construction.

The choice of a specific rope construction of our very extensive portfolio of ropes for your machine requires the special application- and rope-know-how of our consultants, because of the dependence on crane system, operation conditions and abrasion behaviour of the ropes.

Our complete documentation guarantees you traceability for all operations.

We guarantee rapid availability with our fully automatic high rack storage in Memmingen with a capacity of more than 4000 tons and further storages worldwide. Professional logistic partners ensure quick delivery.

Reduce every risk and trust in our longtime experience of correct rope selection!



→ Further information can be found under Products & Services at the PFEIFER web portal: www.pfeifer.info/civil-engineering

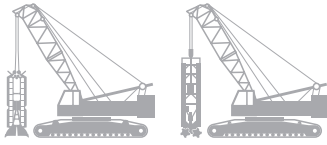


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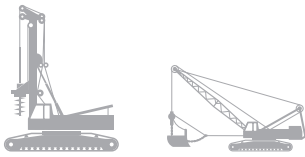
General information

Requirements in wire ropes for special foundation equipment



Technical requirements

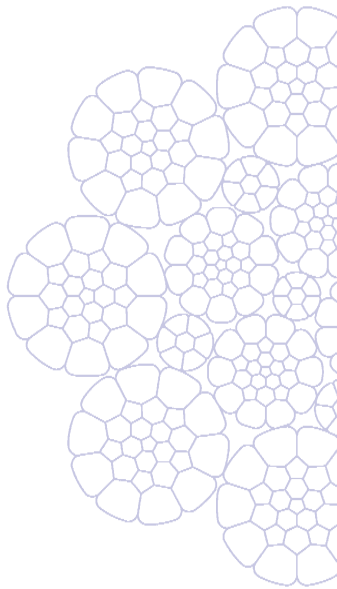
Abrupt load changes caused by the workflow in special foundation construction require high-quality wire ropes, with high resistance and simultaneous with high performance. The choice of the right end-termination is of importance. We will be pleased to advise you!



Maintenance

Condition for a safe operation is regular maintenance of the ropes. Our ropes support you in avoiding accidents by signaling dependable the discarding time with sufficient remaining service life. The packaging as rope ring or on reels on stands enables you easy mounting of the ropes.

PFEIFER rope classification



Premium-Line

- Highest bending cycles performance
- Very good characteristics values of performance also on the limits
- High structure stability
- High breaking force

High-Performance-Line

- High bending cycles performance
- High structure stability

Performance-Line

- High bending cycles performance

Standard-Line

- Standard bending cycles performance

Ropes for rotary drilling rigs and pile drivers

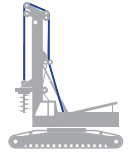
PFEIFER



Main-/Auxiliary ropes

Extract from our in stock rope range

Compacted stranded ropes – Premium-Line



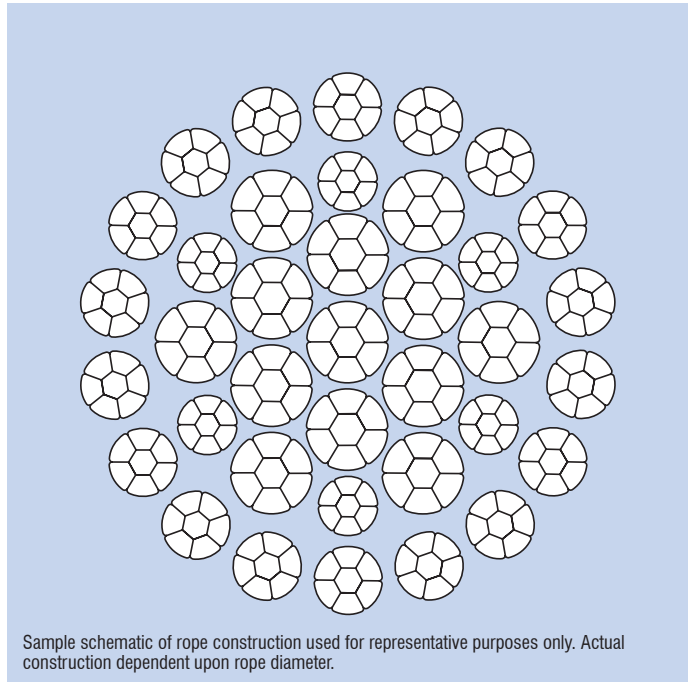
P 1060

Round strand rope, high performance rotation resistant

Technical data

Average fill factor	0,716
average spinning loss factor 1960 N/mm ²	0,85
average spinning loss factor 2160 N/mm ²	0,81
Core	steel core compacted
Lay type	langs lay
Lay direction	choice of right hand or left hand
Compacting	strands compacted – thereby extra wear resistant
Finish	choice of bright or galvanised
Rope diameter tolerance	+0/ +5 %

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO
from 13 – 54	126	23-3



Nominal rope Ø	Weight approx.	Minimum breaking force F _{min}	
		1960	2160
mm	kg/100 m	kN	kN
15	108,8	209,6	220,6
16	124,5	239,4	251,4
17	139,8	269,7	283,4
18	156,2	302,5	317,7
19	175,7	338,9	355,9
20	193	374,2	393
21	213,9	412,2	432,9
22	234,2	452	474,7
23	256	494,8	519,6
24	279	540,3	567,4
25	304,3	587,1	616,6
26	327	634,2	666,1
27	354,4	683,6	717,9
28	380,2	734	770,9
30	439,1	846,3	888,8
32	497,7	959,6	1007,8
34	558,6	1079,3	1133
36	631,4	1221,5	1282,8
38	701,4	1352,4	1418,4
40	774,4	1495	1569
42	851,9	1645,2	1730
44	940	1818,6	1909,9
46	1037,4	1995,7	2095,8

Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

Compacted stranded ropes – Premium-Line

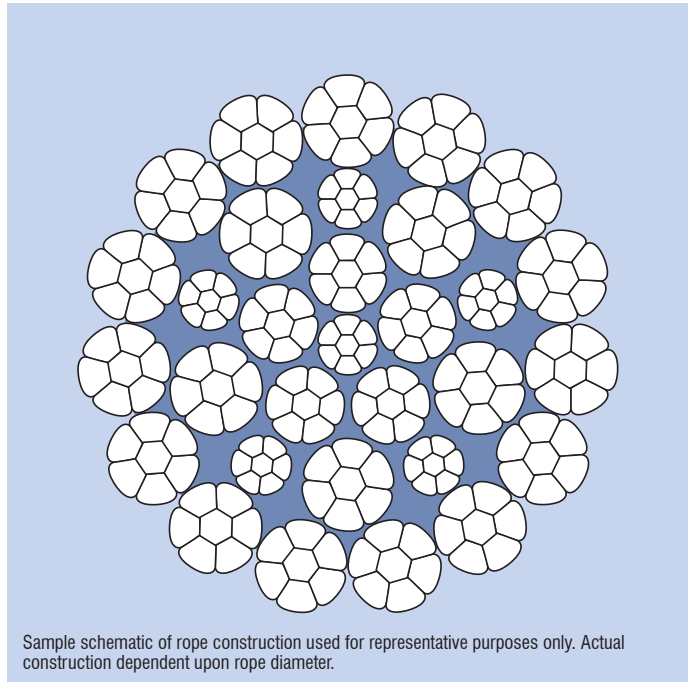


P 1070

Round strand rope, high performance rotation resistant

Technical data

Average fill factor	0,703	
average spinning loss factor 1960 N/mm ²	0,85	
average spinning loss factor 2160 N/mm ²	0,81	
Core	plastic coated steel core – therefore increased structural strength	
Lay type	Ordinary lay	
Lay direction	choice of right hand or left hand	
Compacting	strands compacted – thereby extra wear resistant	
Finish	choice of bright or galvanised	
Rope diameter tolerance	+0/+5 %	
Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO
from 10 – 50	105	23-2



Nominal rope Ø mm	Weight approx. kg/100 m	Minimum breaking force F _{min}	
		1960 kN	2160 kN
15	107,5	206,3	216,6
16	121,9	234,1	245,8
17	138,3	265,4	278,7
18	155,3	298,4	313,4
19	171,8	329,5	346,1
20	190,9	370	388,6
21	210,7	406,3	426,7
22	231,5	446,3	468,7
23	251,9	487	511,4
24	275,7	531,5	558,1
25	298,8	576,3	605,2
26	322,9	624,1	655,4
27	346,8	669,1	702,6
28	373,7	721	757,2
30	429,9	828,8	870,4
32	484,8	935,5	982,4
34	551,2	1063,9	1117,3
36	625,3	1202,5	1262,9
38	690,9	1330,8	1397,6
40	766,5	1477,9	1552,1
42	849,3	1644,2	1726,7
44	920,1	1780,5	1868,7
46	1012,8	1949,4	2047,2

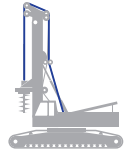
Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

Main-/Auxiliary ropes

Extract from our in stock rope range

Compacted stranded ropes – Premium-Line



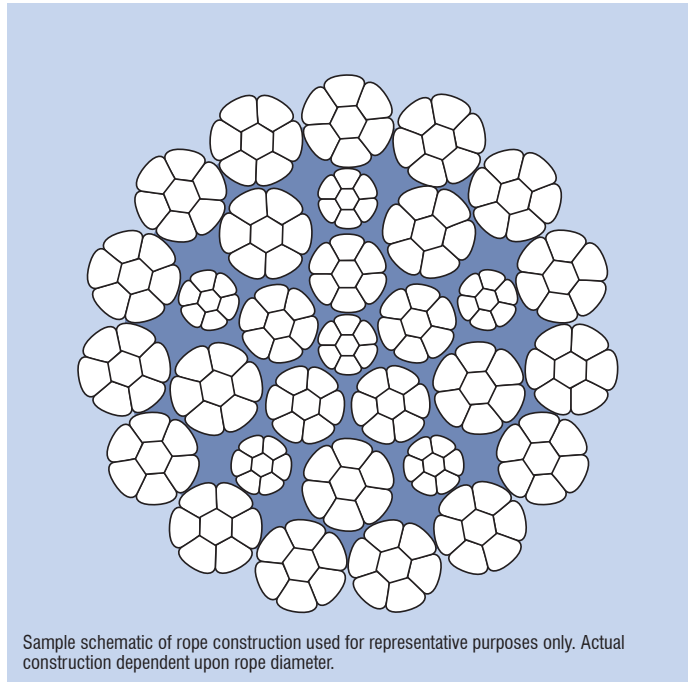
P 1080

Round strand rope, high performance rotation resistant

Technical data

Average fill factor	0,703
average spinning loss factor 1960 N/mm ²	0,85
average spinning loss factor 2160 N/mm ²	0,81
Core	plastic coated steel core – therefore increased structural strength
Lay type	langs lay
Lay direction	choice of right hand or left hand
Compacting	strands compacted – thereby extra wear resistant
Finish	Galvanized
Rope diameter tolerance	+0/+5 %

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO
from 10 – 50	105	4309 23-2



Nominal rope Ø	Weight approx.	Minimum breaking force F _{min}	
		1960	2160
mm	kg/100 m	kN	kN
15	107,5	206,3	216,6
16	121,9	234,1	245,8
17	138,3	265,4	278,7
18	155,3	298,4	313,4
19	171,8	329,5	346,1
20	190,9	370	388,6
21	210,7	406,3	426,7
22	231,5	446,3	468,7
23	251,9	487	511,4
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28	373,7	721	757,2
30	429,9	828,8	870,4
32	484,8	935,5	982,4
34	551,2	1063,9	1117,3
36	625,3	1202,5	1262,9
38	690,9	1330,8	1397,6
40	766,5	1477,9	1552,1
42	849,3	1644,2	1726,7
44	920,1	1780,5	1868,7
46	1012,8	1949,4	2047,2

Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

Compacted stranded ropes – High-Performance-Line



P 929

Round strand rope, non rotation resistant

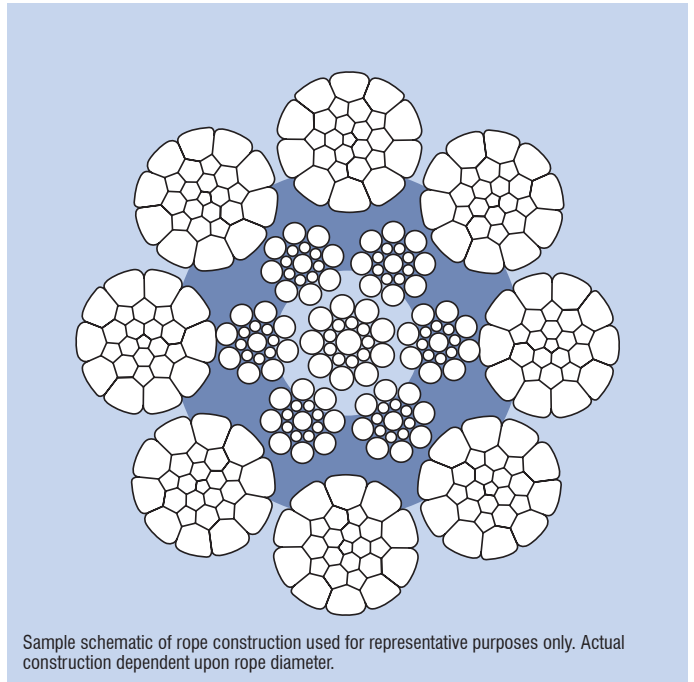
Technical data

Average fill factor	0,66
average spinning loss factor	0,852
Core	plastic coated steel core – therefore increased structural strength
Lay type	choice of regular/ordinary lay or lang's lay
Lay direction	choice of right hand or left hand
Compacting	Compacted rope – therefore particularly resistance to crushing and abrasion
Finish	choice of bright or galvanised
Rope diameter tolerance	+2 %/+4 %

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO 4309
from 12 – 54	208	09
from 56 – 72	328	13+



WARNING: Never use with a swivel – failure to comply may result in serious damages and injuries



Nominal rope Ø	Weight approx.	Minimum breaking force F _{min}	
		1960	2160
mm	kg/100 m	kN	kN
16	116	229	249
17	136	259	281
18	152	290	315
19	169	323	351
20	187	358	389
22	226	434	471
23	247	474	514
24	269	516	560
25	288	544	590,5
26	315	606	657
28	365	701	761
30	412	805	874
32	472	917	995
34	532	1035	1124
35	564	1097	1191
36	597	1161	1260
38	665	1293	1403
40	737	1433	1555
42	813	1580	1715
44	892	1734	1882
46	975	1895	2057

Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

Compacted stranded ropes – Premium-Line



P 129

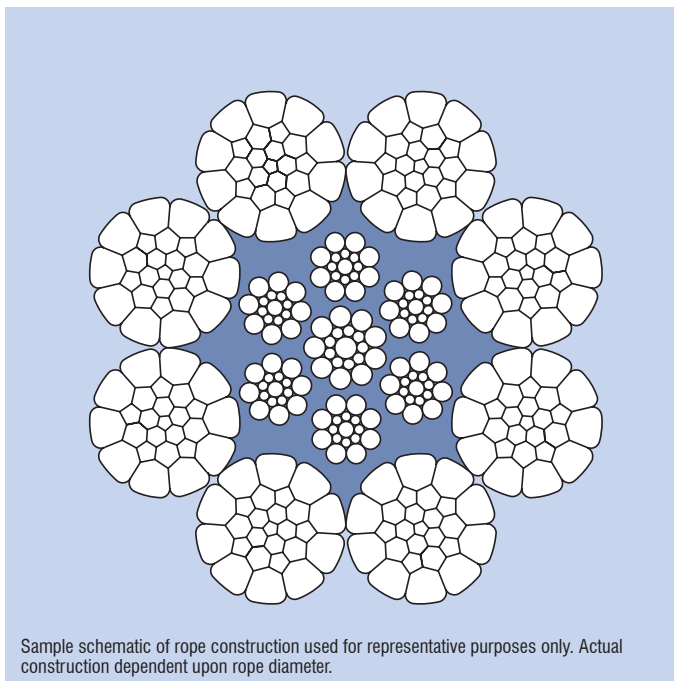
Round strand rope, non rotation resistant

Technical data

Average fill factor	0,675
average spinning loss factor 1770 N/mm ²	0,85
average spinning loss factor 1960 N/mm ²	0,85
average spinning loss factor 2160 N/mm ²	0,84
Core	plastic coated steel core – therefore increased structural strength
Lay type	choice of regular/ordinary lay or langs lay
Lay direction	choice of right hand or left hand
Compacting	strands compacted – thereby extra wear resistant
Finish	choice of bright or galvanised
Rope diameter tolerance	0 / +4,5%

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO 4309
from 4 – 14	152	04
from 15 – 44	208	09
from 45 – 69	288	13
from 70 – 100	328	13

WARNING: Never use with a swivel – failure to comply may result in serious damages and injuries



Nominal rope Ø mm	Weight approx. kg/100 m	Minimum breaking force F _{min} 1770	Minimum breaking force F _{min} 1960	Minimum breaking force F _{min} 2160
		kN	kN	kN
15	106	179	199	217
16	121	204	226	246
17	136	230	255	278
18	153	258	286	312
19	170	288	319	347
20	189	319	354	385
21	208	352	389	424
22	228	386	428	465
23	250	422	468	509
24	272	459	509	554
25	295	498	552	601
26	319	539	597	650
27	344	581	643	701
28	370	626	693	754
29	397	671	743	809
30	425	718	795	866
31	457	772	855	932
32	487	823	911	992
33	518	875	969	1055
34	549	929	1030	1121
35	582	984	1090	1187
36	616	1041	1153	1256
37	651	1100	1221	1328
38	686	1168	1298	1413
39	723	1222	1353	1474
40	761	1285	1424	1551
41	799	1351	1496	1629
42	838	1418	1574	1713
43	879	1486	1645	1792
44	920	1556	1723	1876
45	955	1615	1788	1948
46	1006	1700	1883	2050

Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

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Your specialist for ropes for special foundation equipment 06/2021

Compacted stranded ropes – Performance-Line



P 1165

Non-rotation-free high-performance rope

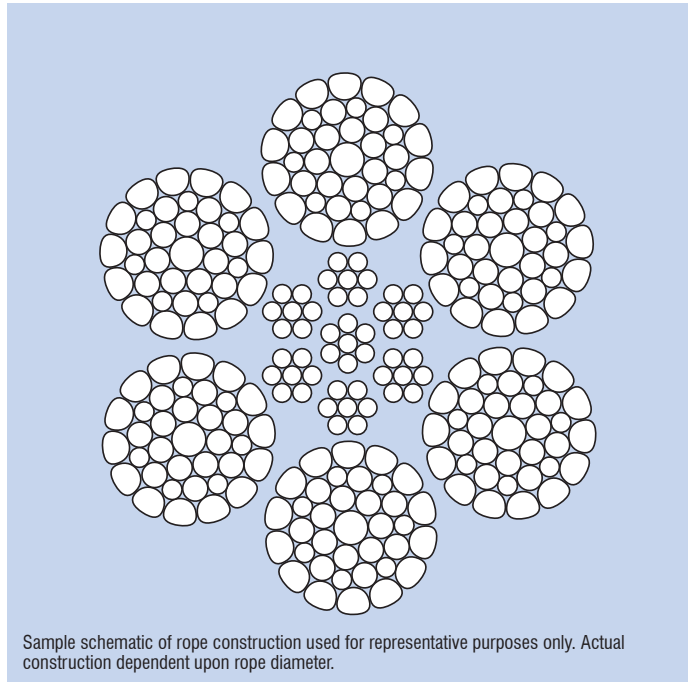
Technical data

Average fill factor	0,67
average spinning loss factor	0,802
Core	Steel core
Lay type	Ordinary lay
Lay direction	choice of right hand or left hand
Compacting	strands compacted – thereby extra wear resistant
Finish	choice of bright or galvanised
Rope diameter tolerance	+1/+4%

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO 4309
	from 12 – 50	216 09



WARNING: Never use with a swivel – failure to comply may result in serious damages and injuries



Sample schematic of rope construction used for representative purposes only. Actual construction dependent upon rope diameter.

Nominal rope Ø mm	Weight approx. kg/100 m	Minimum breaking force F _{min} 1770	Minimum breaking force F _{min} 1960	Minimum breaking force F _{min} 2160
		kN	kN	kN
15	106	176	194	208
16	119	198	219	237
18	152	250	277	298
19	168	275	305	329
20	185	307	340	368
22	226	370	410	441
24	274	447	492	540
26	314	520	581	622
28	368	604	663	722
30	421	689	763	831
32	475	777	861	949
34	545	891	980	1070
36	609	992	1099	1192
38	665	1101	1220	1328
40	743	1222	1353	1455
44	887	1441	1595	1736

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

Feed ropes

Extract from our in stock rope range

Compacted stranded ropes – Premium-Line



P 1025

Round strand rope, non rotation resistant

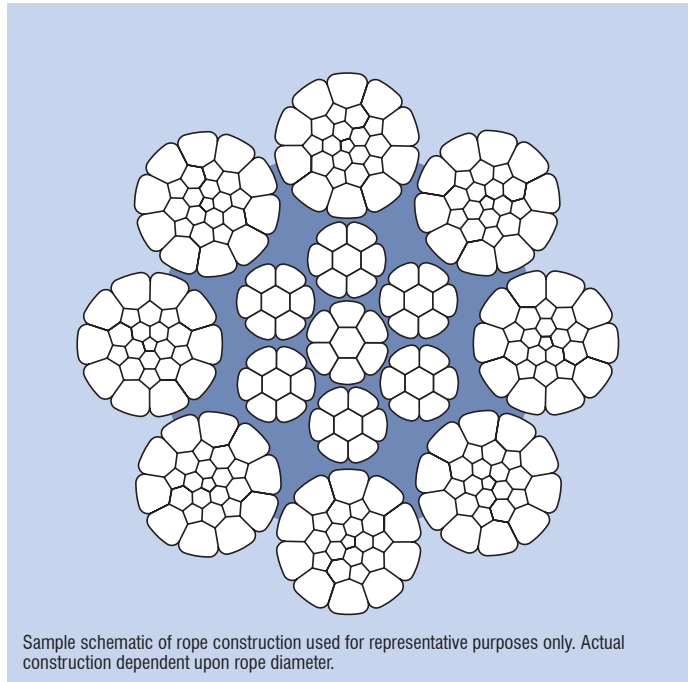
Technical data

Average fill factor	0,672
average spinning loss factor 1960 N/mm ²	0,85
average spinning loss factor 2160 N/mm ²	0,81
Core	full plastic impregnation of the compacted steel core to further extend fatigue life, improve structural stability
Lay type	Ordinary lay
Lay direction	choice of right hand or left hand
Compacting	strands compacted – thereby extra wear resistant
Finish	choice of bright or galvanised
Rope diameter tolerance	+0/+5 %

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO 4309
from 13 – 15	136	03
from 16 – 28	208	09
from 30 – 42	248	11
from 44 – 60	288	13



WARNING: Never use with a swivel – failure to comply may result in serious damages and injuries



Nominal rope Ø	Weight approx.	Minimum breaking force F _{min}	
		1960	2160
mm	kg/100 m	kN	kN
15	103,4	202,7	214
16	114,8	229,4	242,4
18	147,9	288,2	307
19	163,2	323,5	342
20	183,8	355,5	379
22	217,3	433,7	458,5
24	254,8	514,3	556
25	286	558,2	602
26	305,4	607,8	655
28	355,4	697,3	748
30	412,8	803	864
32	469,4	911	968
34	526,1	1024,9	1091
36	596,9	1150	1217
38	661,2	1270,6	1332,5
40	729,8	1409,8	1478,6
42	797,8	1538,4	1613,3
44	892	1735,6	1820,2
46	980	1883,2	1975

Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

Ropes for crawler cranes with diaphragm wall cutters, diaphragm wall grabs and scraper buckets

PFEIFER



Hoisting ropes

Extract from our in stock rope range

Compacted stranded ropes – High-Performance-Line



P 929

Round strand rope, non rotation resistant

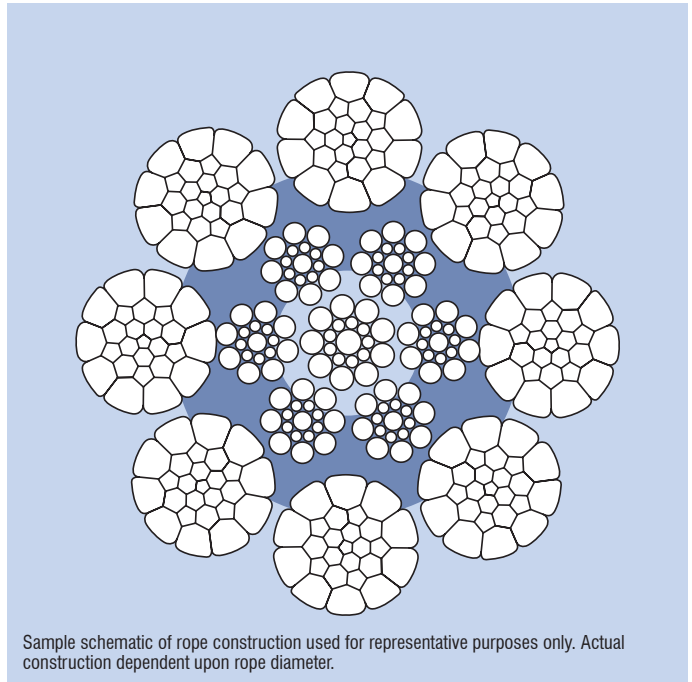
Technical data

Average fill factor	0,66
average spinning loss factor	0,852
Core	plastic coated steel core – therefore increased structural strength
Lay type	choice of regular/ordinary lay or lang's lay
Lay direction	choice of right hand or left hand
Compacting	Compacted rope – therefore particularly resistance to crushing and abrasion
Finish	choice of bright or galvanised
Rope diameter tolerance	+2 %/+4 %

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO 4309
from 12 – 54	208	09
from 56 – 72	328	13+



WARNING: Never use with a swivel – failure to comply may result in serious damages and injuries



Sample schematic of rope construction used for representative purposes only. Actual construction dependent upon rope diameter.

Nominal rope Ø mm	Weight approx. kg/100 m	Minimum breaking force F _{min}	
		1960 kN	2160 kN
16	116	229	249
17	136	259	281
18	152	290	315
19	169	323	351
20	187	358	389
22	226	434	471
23	247	474	514
24	269	516	560
25	288	544	590,5
26	315	606	657
28	365	701	761
30	412	805	874
32	472	917	995
34	532	1035	1124
35	564	1097	1191
36	597	1161	1260
38	665	1293	1403
40	737	1433	1555
42	813	1580	1715
44	892	1734	1882
46	975	1895	2057

Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

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PFEIFER

Compacted stranded ropes – Premium-Line



P 1025

Round strand rope, non rotation resistant

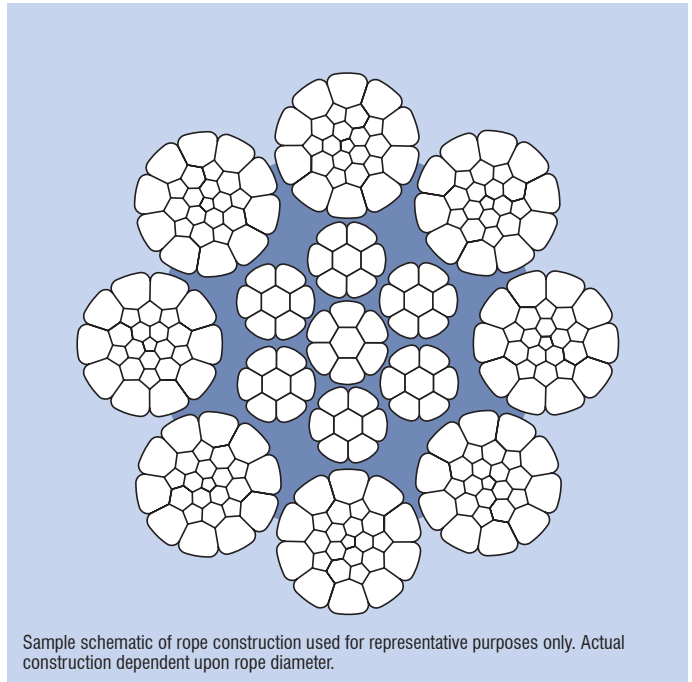
Technical data

Average fill factor	0,672
average spinning loss factor 1960 N/mm ²	0,85
average spinning loss factor 2160 N/mm ²	0,81
Core	full plastic impregnation of the compacted steel core to further extend fatigue life, improve structural stability
Lay type	Ordinary lay
Lay direction	choice of right hand or left hand
Compacting	strands compacted – thereby extra wear resistant
Finish	choice of bright or galvanised
Rope diameter tolerance	+0/+5 %

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO 4309
from 13 – 15	136	03
from 16 – 28	208	09
from 30 – 42	248	11
from 44 – 60	288	13



WARNING: Never use with a swivel – failure to comply may result in serious damages and injuries



Nominal rope Ø	Weight approx.	Minimum breaking force F _{min}	
		1960	2160
mm	kg/100 m	kN	kN
15	103,4	202,7	214
16	114,8	229,4	242,4
18	147,9	288,2	307
19	163,2	323,5	342
20	183,8	355,5	379
22	217,3	433,7	458,5
24	254,8	514,3	556
25	286	558,2	602
26	305,4	607,8	655
28	355,4	697,3	748
30	412,8	803	864
32	469,4	911	968
34	526,1	1024,9	1091
36	596,9	1150	1217
38	661,2	1270,6	1332,5
40	729,8	1409,8	1478,6
42	797,8	1538,4	1613,3
44	892	1735,6	1820,2
46	980	1883,2	1975

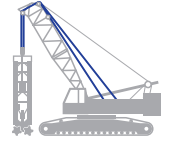
Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

Hoisting ropes

Extract from our in stock rope range

Compacted stranded ropes – Premium-Line



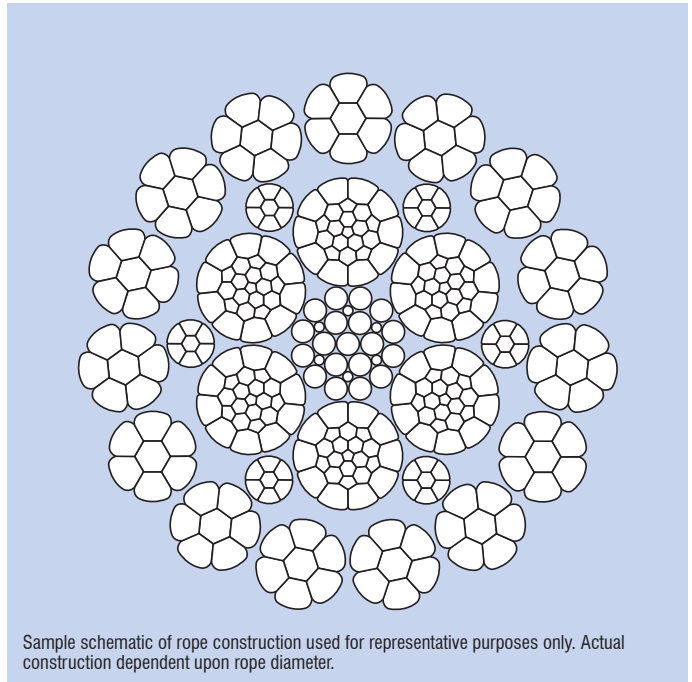
P 115

Round strand rope, high performance rotation resistant

Technical data

Average fill factor	0,7357
average spinning loss factor 1770 N/mm ²	0,845
average spinning loss factor 1960 N/mm ²	0,845
average spinning loss factor 2160 N/mm ²	0,825
Core	steel core compacted
Lay type	langs lay
Lay direction	choice of right hand or left hand
Compacting	strands compacted – thereby extra wear resistant
Finish	bright
Rope diameter tolerance	0/+ 4 %

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO
from 12 – 49	105	23-2
from 50 – 70	255	27

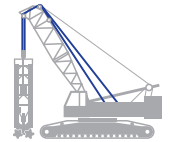


Nominal rope Ø	Weight approx.	Minimum breaking force F _{min}		
		1770	1960	2160
mm	kg/100 m	kN	kN	kN
15	112	194	215	232
16	130	223	248	266
17	145	250	278	299
18	163	281	313	337
19	181	312	347	373
20	201	347	386	416
21	224	386	428	461
22	245	422	470	505
23	267	460	512	550
24	290	500	556	598
25	309	532	592	637
26	334	577	640	689
27	360	620	689	740
28	394	678	754	811
29	417	719	800	860
30	446	770	856	919
31	474	818	909	977
32	509	877	975	1048
33	540	931	1035	1113
34	575	990	1100	1183
35	612	1054	1171	1258
36	647	1115	1240	1332
37	684	1178	1309	1406
38	721	1243	1381	1483
39	759	1309	1455	1562
40	799	1377	1530	1643
41	839	1446	1608	1727
42	880	1518	1687	1812
43	923	1591	1769	1899
44	966	1666	1851	1989
45	1011	1743	1936	2080
46	1056	1821	2023	2173

Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

Compacted stranded ropes – Premium-Line

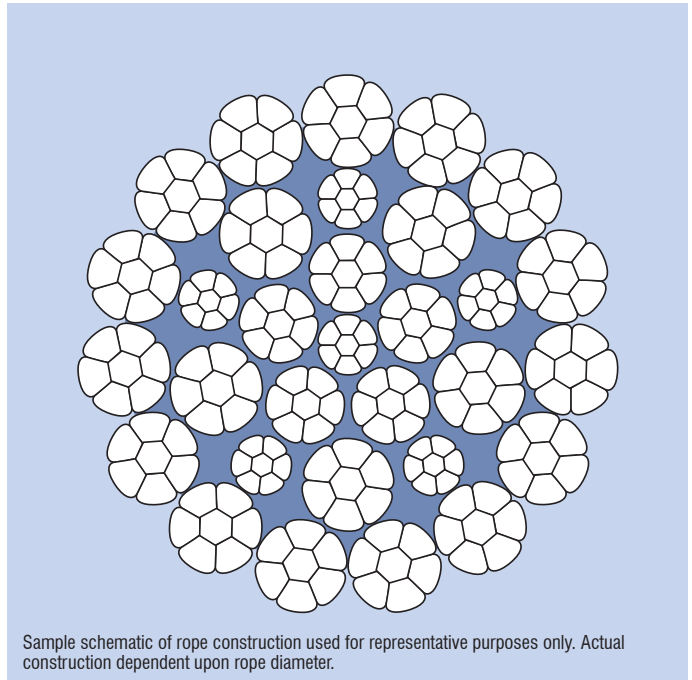


P 1080

Round strand rope, high performance rotation resistant

Technical data

Average fill factor	0,703	
average spinning loss factor 1960 N/mm ²	0,85	
average spinning loss factor 2160 N/mm ²	0,81	
Core	plastic coated steel core – therefore increased structural strength	
Lay type	langs lay	
Lay direction	choice of right hand or left hand	
Compacting	strands compacted – thereby extra wear resistant	
Finish	Galvanized	
Rope diameter tolerance	+0/+5 %	
Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO
from 10 – 50	105	23-2



Nominal rope Ø	Weight approx.	Minimum breaking force F _{min}	
		1960	2160
mm	kg/100 m	kN	kN
15	107,5	206,3	216,6
16	121,9	234,1	245,8
17	138,3	265,4	278,7
18	155,3	298,4	313,4
19	171,8	329,5	346,1
20	190,9	370	388,6
21	210,7	406,3	426,7
22	231,5	446,3	468,7
23	251,9	487	511,4
24	275,7	531,5	558,1
25	298,8	576,3	605,2
26	322,9	624,1	655,4
27	346,8	669,1	702,6
28	373,7	721	757,2
30	429,9	828,8	870,4
32	484,8	935,5	982,4
34	551,2	1063,9	1117,3
36	625,3	1202,5	1262,9
38	690,9	1330,8	1397,6
40	766,5	1477,9	1552,1
42	849,3	1644,2	1726,7
44	920,1	1780,5	1868,7
46	1012,8	1949,4	2047,2

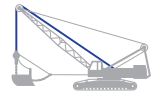
Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

Hoisting ropes

Extract from our in stock rope range

Compacted stranded ropes – High-Performance-Line



P 929

Round strand rope, non rotation resistant

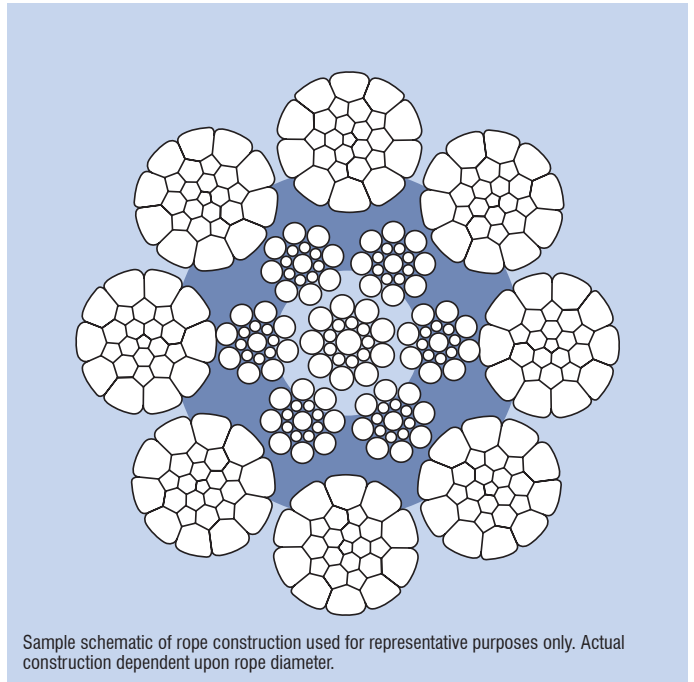
Technical data

Average fill factor	0,66
average spinning loss factor	0,852
Core	plastic coated steel core – therefore increased structural strength
Lay type	choice of regular/ordinary lay or lang's lay
Lay direction	choice of right hand or left hand
Compacting	Compacted rope – therefore particularly resistance to crushing and abrasion
Finish	choice of bright or galvanised
Rope diameter tolerance	+2 %/+4 %

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO 4309
from 12 – 54	208	09
from 56 – 72	328	13+



WARNING: Never use with a swivel – failure to comply may result in serious damages and injuries



Sample schematic of rope construction used for representative purposes only. Actual construction dependent upon rope diameter.

Nominal rope Ø mm	Weight approx. kg/100 m	Minimum breaking force F _{min}	
		1960 kN	2160 kN
16	116	229	249
17	136	259	281
18	152	290	315
19	169	323	351
20	187	358	389
22	226	434	471
23	247	474	514
24	269	516	560
25	288	544	590,5
26	315	606	657
28	365	701	761
30	412	805	874
32	472	917	995
34	532	1035	1124
35	564	1097	1191
36	597	1161	1260
38	665	1293	1403
40	737	1433	1555
42	813	1580	1715
44	892	1734	1882
46	975	1895	2057

Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

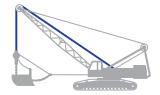
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Your specialist for ropes for special foundation equipment 06/2021

PFEIFER

Of course we have also luffing and pendant ropes for your dragline excavators. Please let us advise you!

Compacted stranded ropes – Premium-Line



P 1025

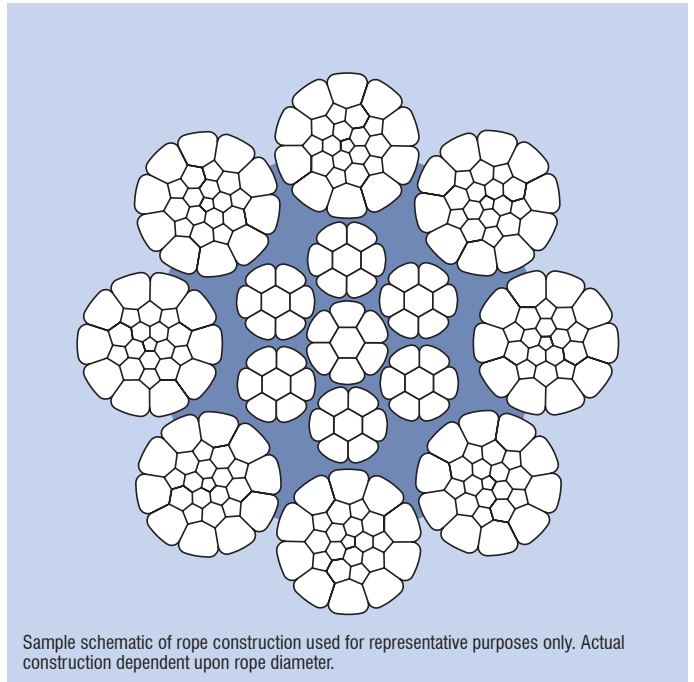
Round strand rope, non rotation resistant

Technical data

Average fill factor	0,672
average spinning loss factor 1960 N/mm ²	0,85
average spinning loss factor 2160 N/mm ²	0,81
Core	full plastic impregnation of the compacted steel core to further extend fatigue life, improve structural stability
Lay type	Ordinary lay
Lay direction	choice of right hand or left hand
Compacting	strands compacted – thereby extra wear resistant
Finish	choice of bright or galvanised
Rope diameter tolerance	+0/+5 %

Diameter range	Number of load-bearing wires in the external strands	RCN according to ISO 4309
from 13 – 15	136	03
from 16 – 28	208	09
from 30 – 42	248	11
from 44 – 60	288	13

WARNING: Never use with a swivel – failure to comply may result in serious damages and injuries



Nominal rope Ø	Weight approx.	Minimum breaking force F _{min}	
		1960	2160
mm	kg/100 m	kN	kN
15	103,4	202,7	214
16	114,8	229,4	242,4
18	147,9	288,2	307
19	163,2	323,5	342
20	183,8	355,5	379
22	217,3	433,7	458,5
24	254,8	514,3	556
25	286	558,2	602
26	305,4	607,8	655
28	355,4	697,3	748
30	412,8	803	864
32	469,4	911	968
34	526,1	1024,9	1091
36	596,9	1150	1217
38	661,2	1270,6	1332,5
40	729,8	1409,8	1478,6
42	797,8	1538,4	1613,3
44	892	1735,6	1820,2
46	980	1883,2	1975

Other rope diameters and constructions on enquiry.

Please refer to our operating manual stranded ropes! Available at www.pfeifer.info/manual-strand-ropes

Rope end terminations

Special end terminations on request

Wedge socket for special civil engineering

13B

Clamps



Technical data

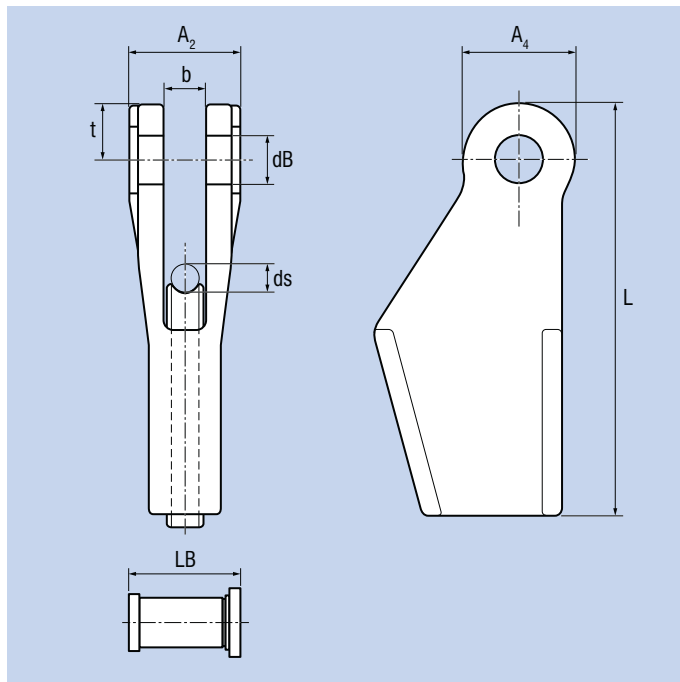
Material bolt	Quenched and tempered steel
Surface bolt	Improx oxidized
Material housing	Cast steel (cold resistant to -40 °C)
Surface housing	Hot-dip galvanised
Material wedge	Cast steel (cold resistant to -40 °C)
Surface wedge	Hot-dip galvanised
Loss factor	0,8

Application area

Round strand ropes

Combination products

13B



! Don't use non-rotation resistant and rotation resistant ropes with a turnable fixed point (e. g. swivel). The end termination has to be fixed against rotation as well. If this is not observed considerable damage, serious injury or death will occur.

Reference no.	NG	ds	A	A ₂	A ₄	A ₅	b	dB	LB	L	t	t ₆	WLL	MBL	Weight
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kg
332400	36 / 34	34	235	137	140	90	53	62	133	515	70	231	385	1366	53,7
332337	36 / 36	36	235	137	140	90	53	62	133	515	70	231	385	1366	53,7

WLL = maximum payload

Different spare bolts on demand

Dimensions correspond to nominal sizes without tolerance and without coating. Please contact us for exact measurements!

Open wedge socket PSH 95A

Clamps



Technical data

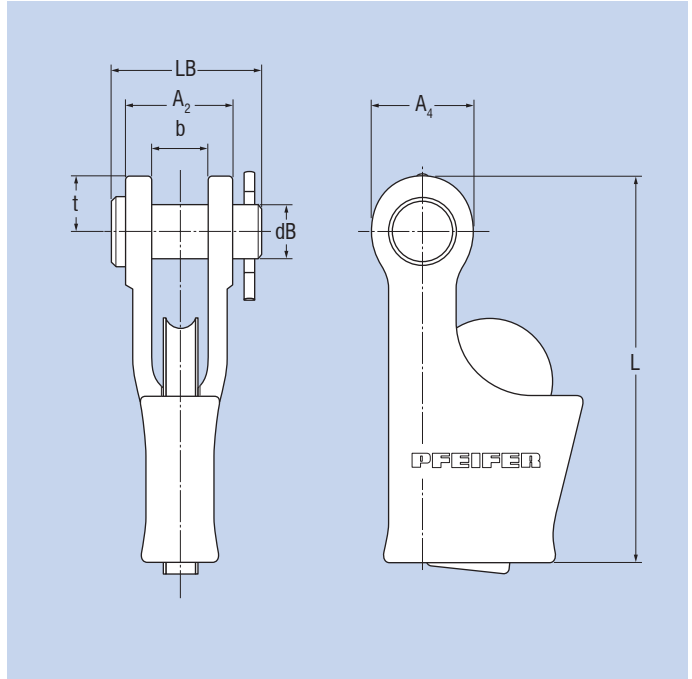
Material bolt	Quenched and tempered steel
Material housing	Cast steel (cold resistant to -40°C)
Surface housing	Hot-dip galvanised
Material wedge	Cast steel (cold resistant to -40°C)
Surface wedge	Hot-dip galvanised
Loss factor	0,8

Application area

Round strand ropes

Combination products

Pouch Socket LH 570/85A
Swivel Pouch Socket LH 571/86A



Don't use non-rotation resistant and rotation resistant ropes with a turnable fixed point (e. g. swivel). The end termination has to be fixed against rotation as well. If this is not observed considerable damage, serious injury or death will occur.

Reference no.	NG	ds	A ₂	A ₄	b	dB	LB	L	t	WLL	MBL	Weight
		mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kg
270736	17 / 15	15 – 16	60	58	32	30	85	225	31	95	316	4,7
270737	17 / 17	17	60	58	32	30	85	225	31	95	316	4,7
270720	19 / 16	16 – 17	72	67	38	35	99	255	36,5	120	395	6,5
270738	19 / 18	18 – 19	72	67	38	35	99	255	36,5	120	395	6,5
270721	23 / 19	19 – 20	83	80	45	41	115	300	44	170	580	9,8
270739	23 / 21	21 – 23	83	80	45	41	115	300	44	170	580	9,8
270722	26 / 23	23 – 24	96	96	51	50	129	330	53	220	740	14,5
270741	26 / 25	25 – 26	96	96	51	50	129	330	53	220	740	14,5
270724	29 / 27	27 – 29	107	108	57	57	145	375	59	275	920	20
270726	33 / 30	30 – 31	120	115	63	63,5	159	425	63,5	355	1190	31
270728	33 / 32	32 – 33	120	115	63	63,5	159	425	63,5	355	1190	31

Additional sizes on enquiry.

Dimensions correspond to nominal sizes without tolerance and without coating. Please contact us for exact measurements!

Rope end terminations

Special end terminations on request

Pouch Socket PSH 22A

Pouch socket systems



Technical data

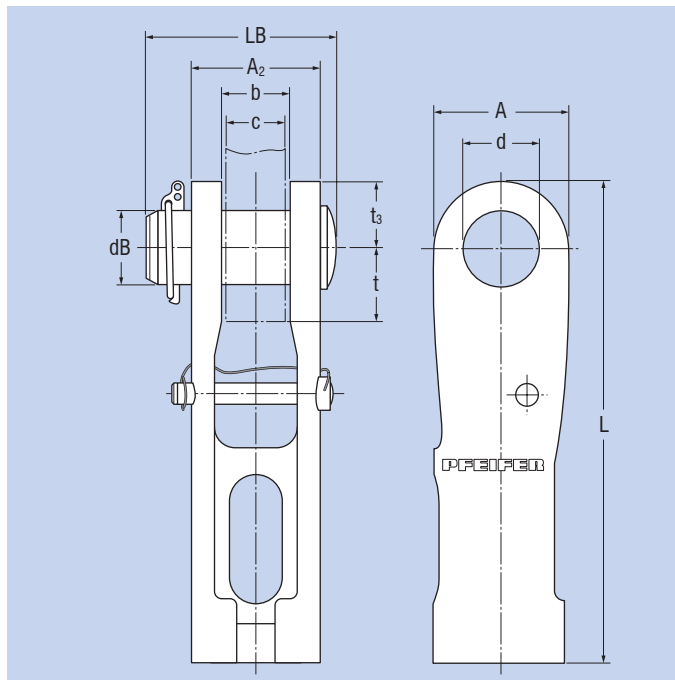
Material bolt	Quenched and tempered steel
Surface bolt	Plasma nitrided
Material housing	Cast steel (cold resistant to -40 °C)
Surface housing	Hot-dip galvanised or painted
Surface hinged safety pin	zinc-plated

Application area

Round strand ropes

Combination products

- Swivel PSH 42A
- Swivel 96A
- Swaged sleeve rotary locked PSH 12A
- Resin Socket PSH 13A
- Resin Socket rotary locked PSH 14A
- Swaged Sleeve PSH 11A



! Don't use non-rotation resistant and rotation resistant ropes with a turnable fixed point (e. g. swivel). The end termination has to be fixed against rotation as well. If this is not observed considerable damage, serious injury or death will occur.

Reference no.	NG	ds	A	A ₂	b	d	dB	LB	L	t _{max}	t ₃	c max	WLL	Weight
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kg
237744	16	14 – 16	58	60	32	31,5	30	97,75	246,5	57,5	29	31	85	2,81
237745	19	17 – 19	70	72	38	36,5	35	114,75	285,5	62,5	35	37	120	4,68
237746	22	20 – 22	80	83	45	42,5	41	128,75	310,5	67,5	40	44	160	4,68
237747	26	23 – 26	95	95	51	51,5	50	148,75	357	72,5	47,5	50	220	10,84
237748	29	27 – 29	107	107	57	58,5	57	163,75	398	77,5	53,5	56	275	15,55
237749	32	30 – 32	120	120	63	65	63,5	179,75	436,5	82,5	58,82	62	335	21,81
237750	36	33 – 36	134	134	70	75	73,5	202,25	487	90	67	69	425	29,74
237751	40	37 – 40	150	150	77	82,5	81	221,75	543	100	75	75	520	42,29
237752	44	41 – 44	165	165	85	86,5	85	241,75	545,5	110	82,5	83	630	55,93
237753	48	45 – 48	180	180	94	91,5	90	262,25	659	120	90	92	755	71,39
237754	52	49 – 52	196	196	104	96,5	95	281,75	710	130	98	102	885	90,09
273711	56	53 – 56	213	213	115	101,5	100	304	771,5	140	106,5	112	1025	116,6
272359	60	57 – 60	233	233	127	106,5	105	314	828,5	150	116,5	124	1180	150

Please note that these are castings with tolerances. Detailed measurements on request!

Dimensions correspond to nominal sizes without tolerance and without coating. Please contact us for exact measurements!

PFEIFER-reels and PFEIFER-stands for reels –
the perfect combination for your ropes:

- Optimized packaging sizes
- Simplified transport –
to be taken by forklift
- Stands for reels are gently
for reels and ropes
- Prevention of transport mistakes
and resulting damages
- Heat treatment according to ISPM 15

Further possibilities of packaging
of ropes on reels:

- Planked reels
- Seaworthy packing



- Depending on your needs we can pack your ropes
in wooden boxes according to ISPM 15.
- Of course we follow your special requirements as
well.
- All our shipments are insured to provide maximum
customer service.

Further products and services

Rope accessories



Connecting links

For fast and simple connection and fastening options of steel wire ropes

Available in various versions



Swivels

To avoid the rope torque being transmitted to the load and thus causing great damage



Bolts

For fast and stable securing in the most diverse areas of application



Manual strand ropes

Detailed manual for the proper use of your strand ropes with useful tips to extend the rope lifetime

Further languages on request

Included in each Rope Service Starter Kit and the measurement equipment cases 75/150 or available as PDF in the PFEIFER download centre at:



→ www.pfeifer.info/manual-strand-ropes

Rope service and rope handling



Rope lubrication RL-S & RL-B

Product		Part.-No.
12 x Spray 600 ml		245066
Bucket	10 l	212406
Bucket	30 l	212405

Maintain your wire ropes with the proper re-lubricant and extend the lifetime.

Save costs for new ropes and rope changes by extended lifetime.

We can offer re-lubricating large rope lengths using a special re-lubrication device. Our service team comes to you worldwide and saves you cost intensive trips with your crane.



Rope measurement

- Groove gauges
- Caliper gauges
- Sets

Use our special measurement devices from the rope specialist to reduce costs by extending the lifetime.

Based on our long-term practical experience of rope drive inspection, we created a measurement devices program.

These measurement devices are used by our rope experts for each inspection and thereby approved for general use.



Tools for working on ropes

- Crimping pliers
- Wire rope cutter

So that you can also easily carry out minor work on ropes, PFEIFER offers you a selection of different tools for working on ropes.



Rope assembly aids

- Winding blocks
- Rope tensioning clamps
- Cable grips

PFEIFER rope assembly aids assist you reliably in the attachment and replacement of your steel ropes.



Innovative packaging solutions

- Reels
- Stand for reels

PFEIFER-reels and PFEIFER-stands for reels – the perfect combination for your ropes:

- Optimized packaging sizes
- Simplified transport – to be taken by forklift
- Stands for reels are gently for reels and ropes
- Prevention of transport mistakes and resulting damages
- Heat treatment according to ISPM 15

Rope services



Rope assembly

PFEIFER is expert in all kinds of rope assembly – from the high-precision manufacturing of the finest ropes for medical technology to the precise cutting to length of crane hoisting ropes and the casting of ropes with the largest of diameters.



End connection design

Standard or tailor-made – through our own development and production every rope receives the optimal connection.



Rope stocking



Rope inspection



Technical rope seminar

Interested in a seminar at your premises?

We would be pleased to provide you with an individual offer.



Rope application consultancy

Through the correct selection of ropes and end connections to suit the conditions of use you can achieve the most economical lifetime, reduce possible dangers and avoid high failure costs.



Repair service

Steel wire ropes are subject to wear in tough continuous use and can be damaged by external influences. PFEIFER offers you a rope repair in original rope quality at your premises.

PFEIFER guarantees fast availability in one of the industry's largest stock assortments and a capacity of well over 4000 tonnes in a fully automatic rope warehouse in Memmingen and in further warehouses all over the world. High-performance logistics partners guarantee fast delivery. Thanks to optimised packaging, every reel reaches its destination worldwide well protected.

After the delivery of the optimum rope we support our customers and are happy to assist with all questions regarding the rope application.

We analyse optimization potentials at rope winches and drives, check ropes for damages and abrasion to extend the lifetime and reduce rope change and down time costs.

We do this job on a daily basis – worldwide.

Using discarded products or disregarding basics of proper application by the use of wire ropes can cause enormous danger for humans and material.

Trained employees increase safety in your company, avoid accidents and reduce costs.

In our established technical seminars, our competent and experienced instructors train your staff in latest standards and in all theoretical and practical issues.

Rope services

Rope analysis

- PFEIFER analyses with extensive tests in the central Rope and Material Test Centre all properties of wire ropes and applied materials at the headquarter in Memmingen as well as at further machines at PFEIFER DRAKO in Mülheim/Ruhr. Also necessary tests can be done locally in our global subsidiaries.
- Aware that not only the usual catalog values such as weight per meter and minimum breaking force decide on the performance of wire ropes, all properties of the ropes are determined at PFEIFER in extensive tests.
- Equipped with this knowledge, we will choose the right wire rope for your application and so we optimize the lifetime of your equipment.



Test Facility for Determining Bending Fatigue



Spectral Analysis



Magnaflux Test



Rope Efficiency Test Facility

Multi Layer Spooling Test Tower

Further Offers:

Test Facility for Lateral Pressure Resistance

Coat Thickness Measuring

Ultrasonic

Torsion Test Facility

Microscopic Analysis

Elongation and Pull Test Facility

Hardness Test

Notch Impact Test

Dye Penetrate Test

Pull Test Facility
800 kN



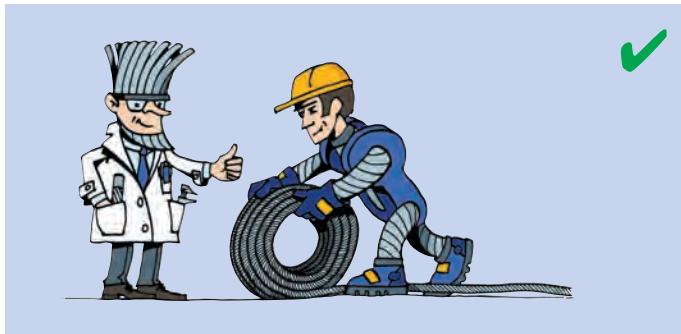
Tension Fatigue Test Facility



Pull Test Facility
6,000 kN

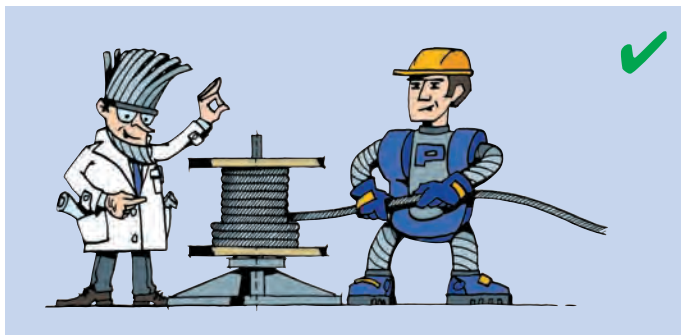
Correct handling of wire ropes

Spooling of wire ropes



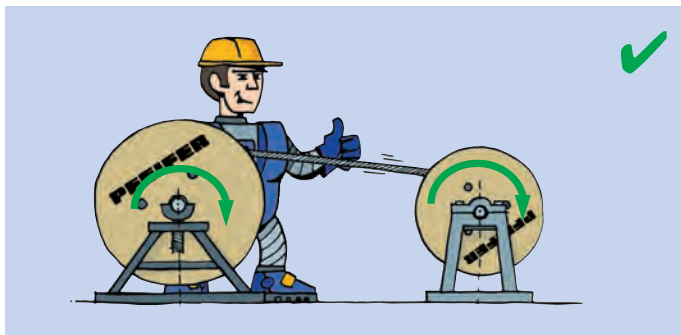
Correct

Lay wire rope rings on clean ground. Please consider the preferred bending direction when rewinding the rope.



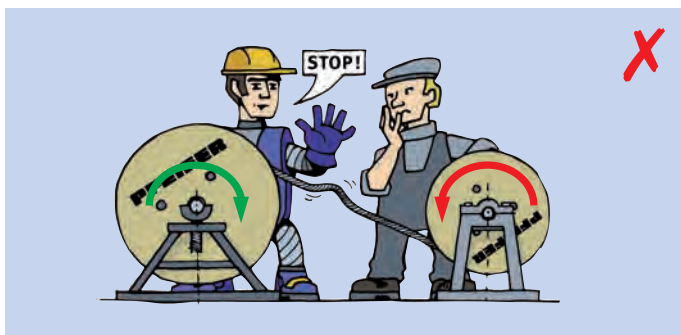
Correct

Place reel on a suitable frame or spike, draw-off straight. Make absolutely sure that the rope is not fouled.



Correct

When winding on a rope drum, pay attention to the direction of rotation and the right distance between reel and drum. A too small distance can cause torsional damage in the rope during later operation.



Wrong

Drawing-off the rope of a ring or over the flange of the reel as well as counterwinding cause "twist" for each winding in the rope. Loops may occur, which may result in bends under tension.

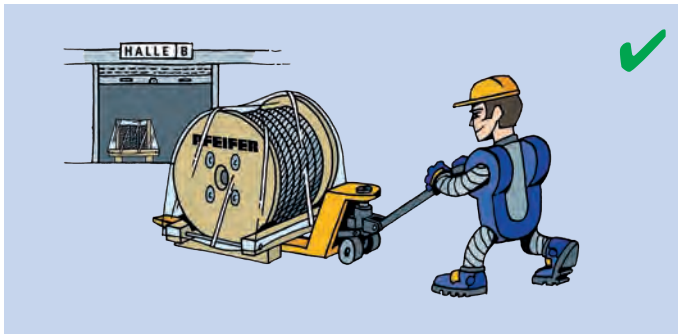


Detailed handling constructions you will find in our operating manual for stranded ropes in the PFEIFER download centre at:

→ www.pfeifer.info/manual-strand-ropes

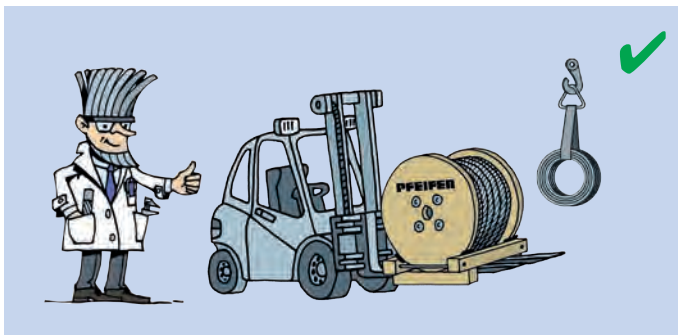


Storage and transport of wire ropes



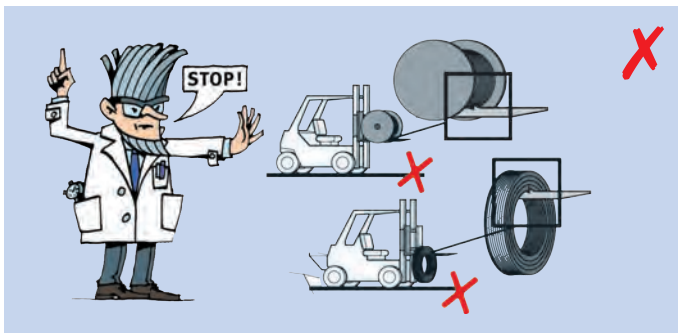
Correct

Store wire ropes dry and cool. Avoid ground contact, so that humidity can not taper the rope. Take off air and water tight transport packing. Humidity causes oxidation.



Correct

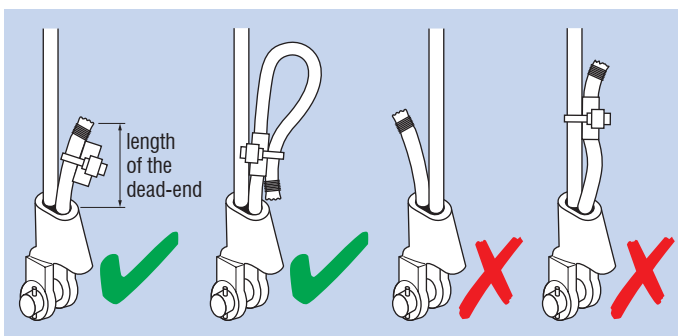
Protect the rope of crushes and kinks.



Wrong

Improper transportation of wire rope reels and rings will cause irreparable damage to wires, strands or the rope structure.

Instructions for use



! Instruction

When a rope is to be re-terminated with a wedge socket assembly this can only be achieved by shortening the rope. No part of any previous flattening and/or damaged rope should be on the standing part of the rope or within the clamping area between either side of the socket body and the wedge.

With the use of wedge sockets the rope is introduced on the balanced side so that under load the center line of the rope is in-line with the bolt hole. The dead end is passed through the asymmetric side and is secured with a rope clip.

The length of the dead-end should be 10 x the nominal rope diameter, at least 150 mm. The rope clip must be applied only to the loose, unloaded rope end, never on both strands. The maximum operating temperature for wedge sockets is 200 °C / 400 F.

Detailed handling constructions you will find in our operating manual for wedge sockets in the PFEIFER download centre at:

→ www.pfeifer.info/manual-wedge-socket



Installation of wire ropes

Wire ropes can easily be damaged and must therefore be handled with utmost care during transport and unloading.

Only the installation of an untwisted and undamaged rope will guarantee a trouble-free operation. Ropes must always be uncoiled from the reel or the ring in the direction of winding. Lateral uncoiling of the rope causes twisting and can lead to destruction by kink formation. It is recommended to use a frame-mounted reel for coiling the rope onto the drum. Coiling in the direction of bend gives an excellent fit on the drum and avoids that any additional tension is built-up in the rope. Never drag ropes over soil or dirt.

For installing the new rope it has to be fixed to the still mounted old one or an auxiliary rope. Connection between the two ropes can be achieved either by a cable grip or two welded pad eyes connected with a swivel. Any transmission of torsion to the new rope from either the old one or the auxiliary rope must be definitively avoided. Nonrotating ropes must be protected from torsion by insertion of a swivel.

Multi-layer operation requires that even the lower layers must be tightly coiled with a pretension of 1–2% of the minimum breaking load of the rope. It is attained by braking the reel.

The end termination of non-rotation resistant and rotation resistant ropes has to be fixed on both end terminations against rotation.

It is NOT allowed to use non-rotation resistant or rotation resistant ropes with a turnable fixed point (e. g. swivel).

If the lower layers on the drum are hardly or seldom used the pretension of the entire rope has to be renewed from time to time. To renew the pretension in the hoist ropes the complete rope has to be spooled off and wound up again with tension of approximately 2% of the minimum breaking force or 10% of the maximum line pull force in operation. Ropes work most efficient if it is always used the entire rope length.

If the rope areas are used unequal the rope can be turned after a certain time. In multi-layer spooling the lifetime of the rope can be significantly extended by cutting away the length of half the drum diameter from the rope at the fastening point of the drum. Through this procedure the predamaged rope areas are relocated from the climbing zones on the drum into the parallel zones. The shortening procedure can be carried out, at most, two times.

Discarding time for wire ropes according to ISO 4309

Exemplary for single layer and parallel-closed ropes

Number of visible wire breaks, reached or exceeded, occurring in single-layer and parallel-closed ropes, signalling discard of rope

RCN	Total number of load-bearing wires in the outer layer of strands in the rope ^a <i>n</i>	Number of visible outer wire breaks ^b					
		Sections of rope, running over steel sheaves and/or spooled on a single layer drum (random distribution of wire breaks)				Sections of wire rope spooled onto a multilayer drum ^c	
		Classes M1 to M4 or class unknown ^d				All Classes	
		Ordinary lay		Langs lay		Ordinary and langs lay	
		over a length of					
		6 <i>d</i> ^e	30 <i>d</i> ^e	6 <i>d</i> ^e	30 <i>d</i> ^e	6 <i>d</i> ^e	30 <i>d</i> ^e
01	<i>n</i> ≤ 50	2	4	1	2	4	8
02	51 ≤ <i>n</i> ≤ 75	3	6	2	3	6	12
03	76 ≤ <i>n</i> ≤ 100	4	8	2	4	8	16
04	101 ≤ <i>n</i> ≤ 120	5	10	2	5	10	20
05	121 ≤ <i>n</i> ≤ 140	6	11	3	6	12	22
06	141 ≤ <i>n</i> ≤ 160	6	13	3	6	12	26
07	161 ≤ <i>n</i> ≤ 180	7	14	4	7	14	28
08	181 ≤ <i>n</i> ≤ 200	8	16	4	8	16	32
09	201 ≤ <i>n</i> ≤ 220	9	18	4	9	18	36
10	221 ≤ <i>n</i> ≤ 240	10	19	5	10	20	38
11	241 ≤ <i>n</i> ≤ 260	10	21	5	10	20	42
12	261 ≤ <i>n</i> ≤ 280	11	22	6	11	22	44
13	281 ≤ <i>n</i> ≤ 300	12	24	6	12	24	48
	<i>n</i> > 300	0,04 × <i>n</i>	0,08 × <i>n</i>	0,02 × <i>n</i>	0,04 × <i>n</i>	0,08 × <i>n</i>	0,16 × <i>n</i>

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

RCN = Rope category number

^a For the purpose of this International Standard, filler wires are not regarded as load-bearing wires and are not included in the values of *n*.

^b A broken wire has two ends (counted as one wire).

^c The values apply to deterioration that occurs at the cross-over zones and interference between wraps due to fleet angle effects (and not to those sections of rope which only work in sheaves and do not spool on the drum).

^d Twice the number of broken wires listed may be applied to ropes on mechanisms whose classification is known to be M5 to M8.

^e *d* = nominal rope diameter

Detailed handling constructions you will find in our operating manual for stranded ropes in the PFEIFER download centre at:

→ www.pfeifer.info/manual-strand-ropes



Discard

⚠ Warning: Considering security ropes should be taken off operation in time, if one of the following criterias apply:

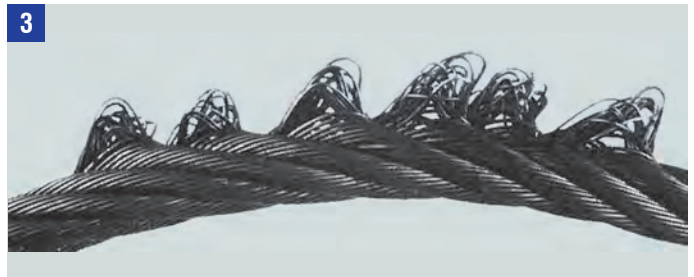
- Broken strand
- Local concentration of wire breaks
- Achievement of type and number of wire breaks according to the tablets
- Corkscrew deformation (fig. 1)
- Corkscrew (fig. 2)
- Hairpin like escape of wires (fig. 3)
- Decrease of diameter – regarding the nominal rope diameter
- Local increase of diameter
- Heavy corrosion: The surface of the wires is strongly affected or rusty dust comes out of the rope
- Loose rope structure (fig. 4)
- Constriction (fig. 5)
- Kinks or flattened areas (fig. 6 + 8)
- Bends or other deformations (fig 7)
- bluish discoloration, broken or fused wires due to heat effects or electric arc

If several of the above mentioned criterias apply, they need to be considered in their entirety. Therefore ropes need to be discarded, if none of the criteria are completely but some partially fulfilled. For example: Light Corkscrew with some broken wires.

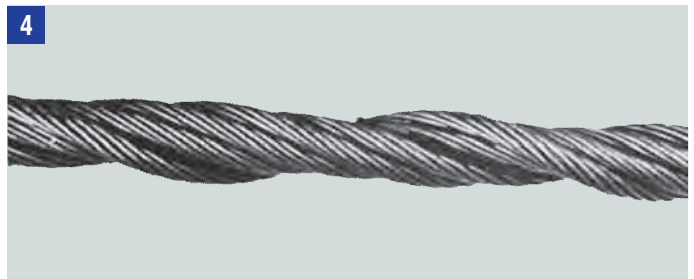
The above criteria are an excerpt from the ISO 4309 maintenance and care, inspection and storage. Consequently, these criteria do not replace the instructions and requirements for inspection and maintenance of wire ropes as written in the standard. For evaluation of the discard criteria please refer to our original operating manual for strand ropes!

If in doubt on the estimation of the cable damage, the rope must be discarded or your rope specialist needs to be contacted: wirerope@pfeifer.de or via phone +49 (0) 83 31-937-301.

Looping on a wire rope



Through corrosion and wear heavy loose strand



Constriction due to a broken rope core



Flattened wire rope caused by over-ride



Corkscrew deformation



Basket deformation



Bend caused by a pinched rope sling



Kind caused by mechanical impact



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