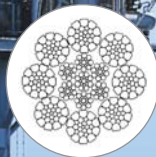
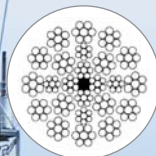
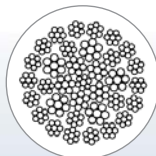
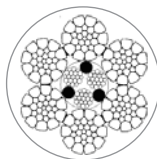


Special Steel Wire Ropes for Oil and Gas Production





Dear Customers!

We would like to introduce you to our new range of multistrand ropes and ropes with compacted strands, developed for oil and gas production to satisfy the special requirements demanded by this industry.

The ropes are of unique design and exceptional mechanical strength, highly resistant to different loads – extension, bend, vibration, contact stress, external and internal wear of the wires, and are characterized by long service life and increased flexibility. These unique properties guarantee efficient operation under the severe conditions of drilling industry.

We believe our brochure will provide you with product solutions that will assist you in making the optimal decision regarding your purchase of wire ropes.



DMITRY SADIKOV,

Commercial Director
of the Severstal-metiz
Group of Companies

A stylized, handwritten signature in black ink, consisting of several fluid, overlapping strokes that form a unique, abstract shape.

About Us

The Severstal-metiz group of companies is one of the European leaders in special wire ropes production.

For about 40 years the companies of the Group have been producing this most high-tech type of wire product.

Due to the modern production technologies, a high level of product quality and reliability is achieved. Our close and continued cooperation with our customers allows us to manufacture the products in accordance with clients' individual requirements, successfully improving product characteristics, developing the manufacture of innovative products, and promoting services and engineering.

Multistrand Ropes

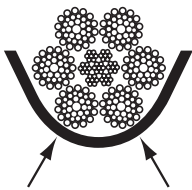
Multistrand ropes are wire ropes where the external layer contains from 12 to 18 strands (standard ropes contain 6 or 8 strands).

A larger number of strands increases support surface of the product and provides larger coefficient of filling cross sectional area with metal.

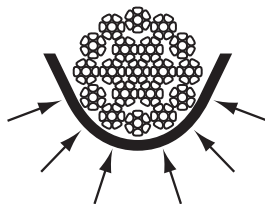
Due to the characteristics of their construction multistrand ropes provide the following advantages over standard wire ropes:

- The reduction in pressure and contact stress allows for improvements in wear-resistance and length of service;
- The increased flexibility of the products provides a high working capacity;
- The ropes have been specially designed for multilayer winding onto drums;
- Different directions of lay of the outer and inner layers of the strands prevent the ropes from rotating about an axis. This is particularly significant for the hoisting of free-suspended loads.

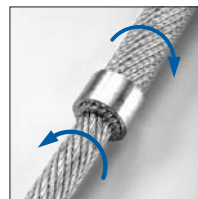
These advantages guarantee effective application of multistrand ropes in hoisting mechanisms.



6 strands in the outer lay



12 strands in the outer lay

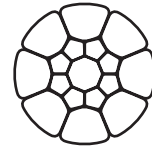
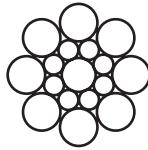


directions of lay

Wire Ropes with Compacted Strands

Compacted wire ropes are constructed from strands which have been compacted through rollers during the production process.

During compacting process the outer diameter of the strand is reduced, the cross sectional area of metal increases as the gaps between the wires in the strand are filled, and the strand surface becomes smoother.



round strand



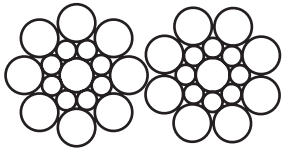
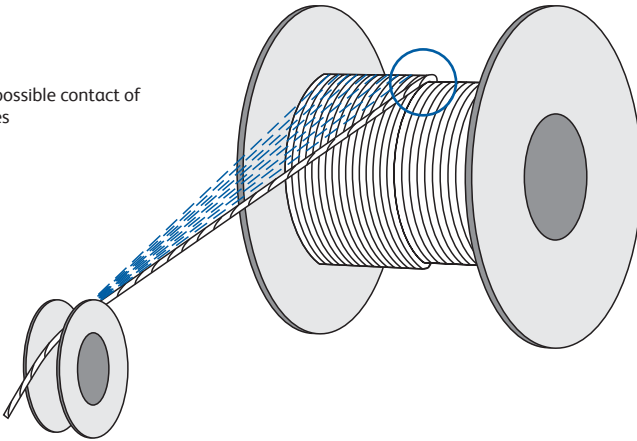
compacted strand

Wire ropes with compacted strands have a number of advantages over standard round-strand ropes:

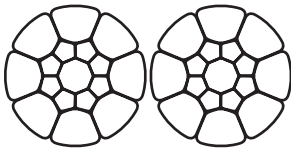
- Higher breaking strength;
- Increased abrasion resistance of the wires due to the better surface contact in the grooves and decreased contact stress;
- Smooth surface that prevents outer wires from sticking during the winding of the rope onto the drum;
- Increased resistance to bending fatigue and a reduction in elongation;
- High resistance to crushing.

The above properties increase rope service life and reduce wear of sheaves and drums, achieving cost savings on parts replacement and equipment refurbishment.

Areas of possible contact of outer wires

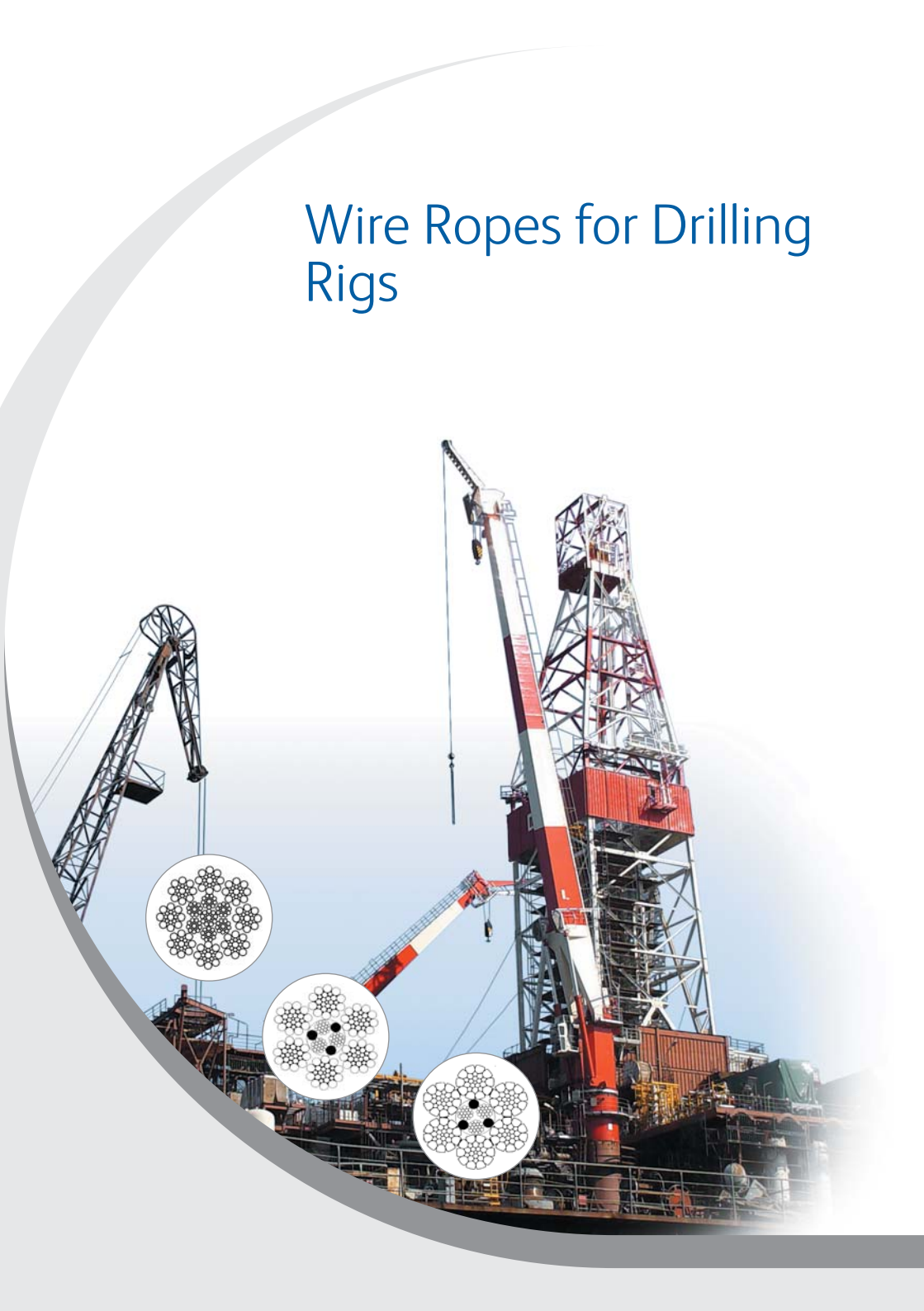


Non-compacted wire ropes. During winding onto the drum point contact between outer wires can occur.

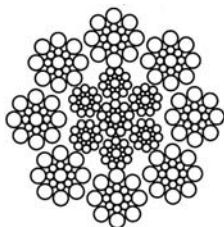


Compacted wire ropes. Due to the smooth surface there is no contact between the wires during winding onto the drum.

Wire Ropes for Drilling Rigs



8-strand Drilling Rope STO 71915393-TU 072-2009



Using 8 strands in the outer layer wire ropes TU 072 (in comparison with 6-stranded ones) provides high flexibility, as the unique design of strands and core guarantees improved operational capability, increased resistance to abrasion and long service life.

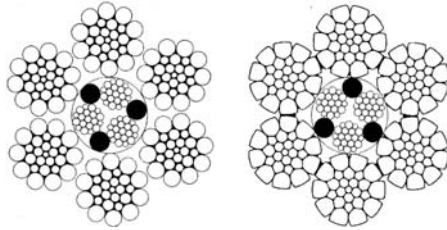
Construction

8x17 (1+8+8) + 6x19 (1+9+9) + 1x19 (1+9+9)

Technical characteristics

Diameter, mm	Weight 1000 m, kg	Minimum breaking load, kN		
		1570	1670	1770
25,0	2630	345	367	388
28,0	3355	441	469	496
30,0	3750	494	524	555
32,0	4285	563	599	634
35,0	5040	667	708	750
38,0	6095	803	853	903

6-strand Drilling Rope with Combined Core STO 71915393-TU 049-2007



These wire ropes represent the design with combined core (3 organic and 3 metal strands).

They are the most effective alternative to a widely spread wire rope according to GOST 16853-88 and present a number of advantages: increased resistance to abrasion, high flexibility and less influence of dynamic load.

The ropes with compacted outer strands TU 049 (type 2) are characterized by higher strength than that of the wire ropes TU 049 (type 1), as well as increased abrasion resistance of the wires in strand and strands in rope, less sheave and drums deterioration (due to the larger contact area with the support surface), high resistance to crushing.

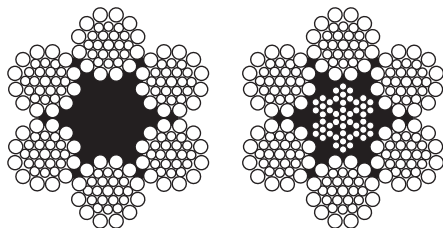
Construction

$6 \times 26(1+5+5/5+10) + 3 \times 19(1+6+6/6) + 3$ organic fillers

Technical characteristics

Diameter, mm	Type 1		Type 2	
	Weight 1000 m, kg	Minimum breaking load, kN	Weight 1000 m, kg	Minimum breaking load, kN
25,0	2556	426	2669	444
28,0	3192	533	3366	561
30,0	3704	620	3886	650
32,0	4229	687	4318	718
35,0	5046	841	5291	881
38,0	5861	978	6149	1 025

For comparison –
characteristics of the wire rope GOST 16853-88

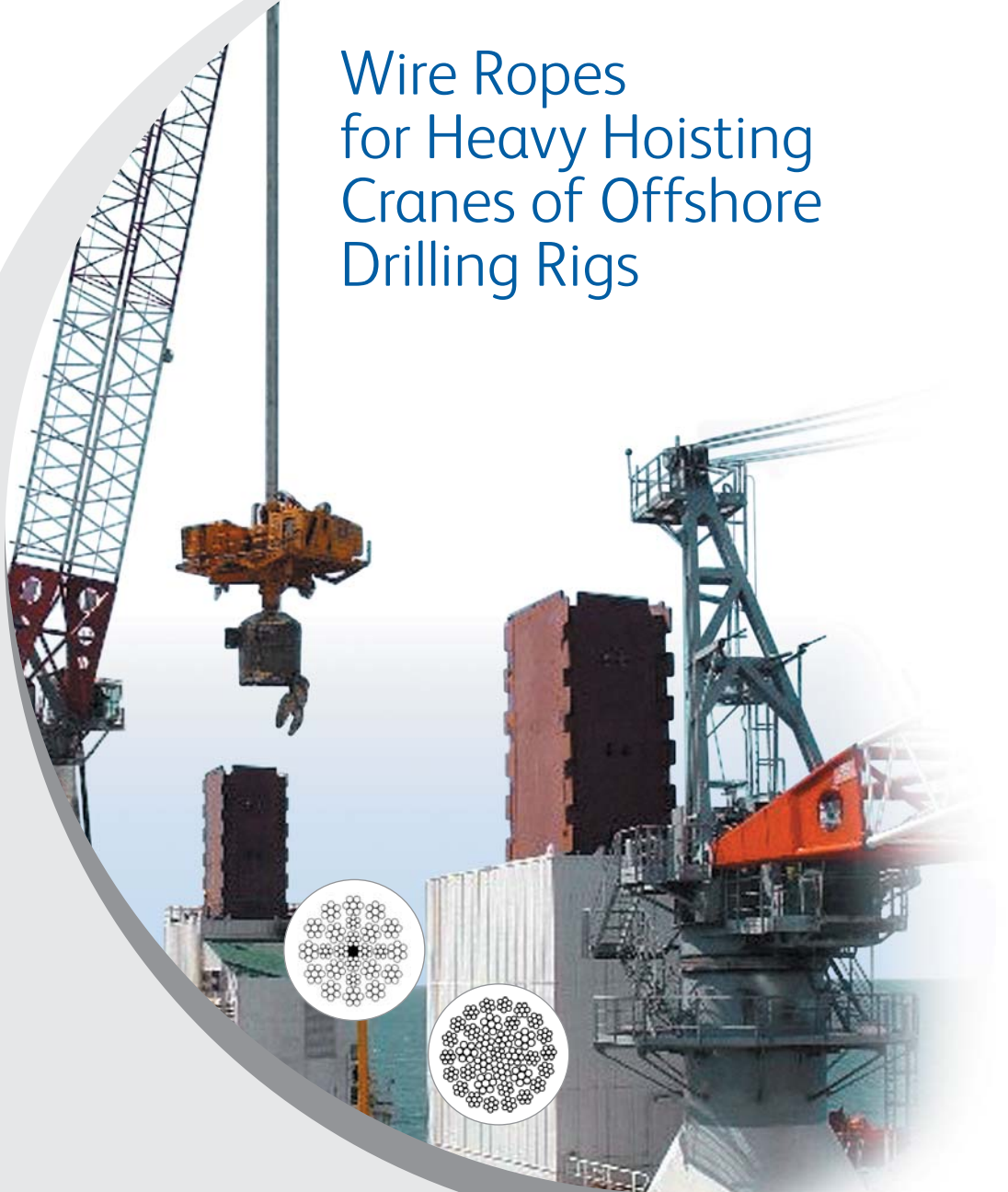


Construction
6x31 (1+6+6/6+12)

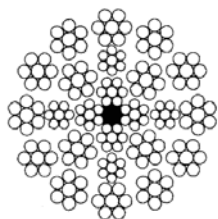
Technical characteristics

Diameter, mm	Weight 1000 m, kg	Minimum breaking load, kN		
		1570	1670	1770
6x31 (1+6+6/6+12) + FC				
25	2450	349	371	393
28	3000	439	467	494
32	3800	546	580	615
35	4640	658	700	741
38	5450	781	830	878
6x31 (1+6+6/6+12) + 7x7				
25	2660	400	426	451
28	3380	502	533	564
32	4200	634	673	713
35	5050	752	799	846
38	5980	896	952	1009

Wire Ropes for Heavy Hoisting Cranes of Offshore Drilling Rigs



Multistrand Rope STO 71915393-TU 064-2008



Increased flexibility and good strength properties of the wire ropes TU 064 are provided due to the greater number of strands.

These wire ropes help to reduce friction between the outer wires of the strands and the surface of block grooves.

Moreover, different directions of lay of outer and inner layers of the strand prevent the rope from the rotation about the axis.

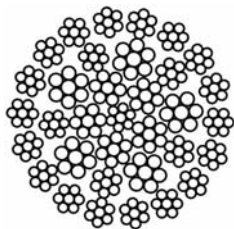
Construction

$12 \times 7(1+6) + 4 \times 7(1+6) / 4 \times 7(1+6) + 4 \times 7(1+6)$

Technical characteristics

Diameter, mm	Weight 1000 m, kg	Minimum breaking load, kN		
		1770	1960	2160
14,0	847	133,0	148,0	163,0
15,0	975	154,4	170,0	187,0
16,0	1099	173,0	193,4	211,0
17,0	1252	197,0	218,0	240,0
18,0	1398	219,0	244,0	268,0
19,0	1558	245,0	272,0	299,0
20,0	1734	272,0	303,0	333,0

Multistrand Rope STO 71915393-TU 061-2008



Wire ropes TU 061 as well as wire ropes TU 064 are characterized by high flexibility, rotation resistance, improved strength and abrasion resistance.

They are applicable for multilayer winding onto a drum and are recommended for applications in heavy duty hoisting cranes with complicated rigging arrangements.

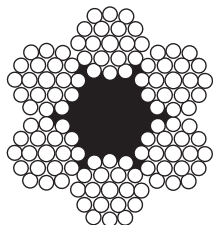
Construction

$18 \times 7(1+6) + 5 \times 7(1+6)/5 \times 7(1+6) + 5 \times 7(1+6) + 1 \times 7(1+6)$

Technical characteristics

Diameter, mm	Weight 1000 m, kg	Minimum breaking load, kN		
		1770	1960	2160
18,0	1452	232,0	254,0	277,0
19,0	1579	259,0	284,0	309,0
20,0	1825	292,0	320,6	348,4
21,0	1967	315,4	346,3	376,2
22,0	2183	350,1	384,4	417,8
23,0	2366	379,9	417,1	453,3
24,0	2579	414,3	454,8	494,3
25,0	2829	454,4	498,9	542,2
26,0	3085	496,0	544,5	591,8
27,0	3316	533,4	585,7	636,4
28,0	3507	564,9	620,2	674,0
30,0	3986	642,6	705,5	766,7
32,0	4567	740,9	813,4	884,0
34,0	5097	839,0	921,0	1002,0
36,0	5723	941,0	1034,0	1124,0

For comparison –
characteristics of the wire rope GOST 2688-88

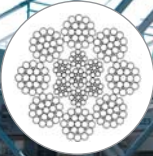
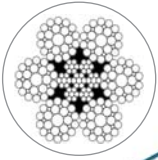


Construction
6x19 (1+6+6/6)+ FC

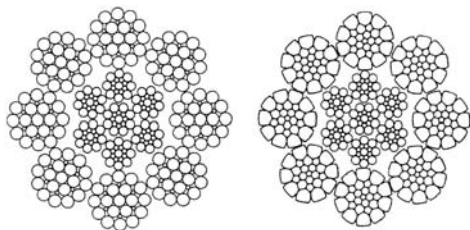
Technical characteristics

Diameter, mm	Weight 1000 m, kg	Minimum breaking load, kN		
		1770	1960	2160
14,0	728	108	118	–
15,0	844	125	137	–
16,5	1025	152	166	–
18,0	1220	181	198	–
19,5	1405	209	228	–
21,0	1635	243	265	–
22,5	1850	275	303	–
24,0	2110	314	343	–
25,5	2390	356	388	–
27,0	2685	399	436	–
28,0	2910	434	473	–
30,5	3490	520	567	–
32,0	3845	573	625	–

Wire Ropes for Docksite Cranes



8-strand Rope STO 71915393-TU 051-2007



Wire ropes TU 051 are of two designs – without compacted strands (type 1) and with compacted strands (type 2).

Due to the larger amount of strands this design has advantages over standard 6-strand wire ropes in terms of flexibility and abrasion resistance.

The compacting process used in the production of the strands increases the cross sectional area of the metal, resulting in a smoother shape of the strands which increases the abrasion resistance of the wires, reduces block grooves deterioration, improves strength properties of the rope and its resistance to crushing.

Construction

- Type 1 – $8 \times 25(1+6; 6+12) + 6 \times 17(1+8+8) + 1 \times 17(1+8+8)$
- Type 2 – $8 \times 26(1+5+5/5+10) + 6 \times 17(1+8+8) + 1 \times 17(1+8+8)$ with compacted outer strands

Technical characteristics

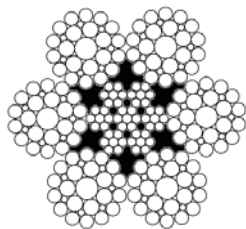
Type 1

Diameter, mm	Weight 1000 m, kg	Minimum breaking load, kN		
		1770	1860	1960
21,0	1937	316	334	352
31,0	4167	687	725	764
37,0	5976	989	1044	1099
42,0	7903	1309	1382	1454

Technical characteristics
Type 2

Diameter, mm	Weight 1000 m, kg	Minimum breaking load, kN		
		1770	1860	1960
14,0	930	150	159	168
15,0	1067	173	183	192
16,0	1215	198	209	220
17,0	1360	221	234	246
18,0	1550	253	267	281
19,0	1695	277	292	308
20,0	1905	312	329	347
21,0	2060	337	356	374
22,0	2280	374	395	416
23,0	2500	411	433	457
24,0	2760	455	480	506
25,0	2940	483	510	537
26,0	3200	529	558	587
27,0	3400	560	592	623
28,0	3730	618	653	687
29,0	3960	653	689	726
30,0	4240	703	742	781
31,0	4535	751	792	834
32,0	4835	800	844	889
33,0	5110	845	892	939
34,0	5490	910	961	1011
35,0	5840	967	1020	1074
36,0	6155	1017	1074	1131
37,0	6355	1052	1112	1170
38,0	6825	1134	1197	1260
39,0	7180	1190	1256	1322
40,0	7480	1247	1315	1384
41,0	7840	1301	1372	1445
42,0	8335	1389	1467	1544

6-strand Rope STO 71915393-TU 059-2008



Increased number of wires in strands guarantees improved flexibility of the wire ropes TU 059 as well as high strength under increased breaking force (in comparison with widely used design GOST 7667-80).

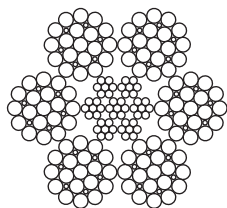
Construction

$6 \times 29(1+7; 7+14) + 6 \times 7(1+6) + 1 \times 7(1+6)$

Technical characteristics

Diameter, mm	Weight 1000 m, kg	Minimum breaking load, kN	
		1860	1960
18,0	1370	241	254
22,0	2035	365	374
22,4	2128	375	394
23,1	2225	392	413
25,0	2672	471	496
29,4	3538	624	657
37,1	5847	1 015	1 069

For comparison –
characteristics of the wire rope GOST 7667-80



Construction
6x25 (1+6;6+12) + 7x7 (1+6)

Technical characteristics

Diameter, mm	Weight 1000 m, kg	Minimum breaking load, kN	
		1860	1960
15,5	1005	167	174
17,0	1210	201	209
19,0	1465	243	253
22,0	1990	320	343
23,5	2275	378	393
25,0	2580	429	446
27,0	2910	484	503
28,0	3290	547	569
31,0	4030	670	697
34,0	4860	807	837
37,0	5740	952	989
41,0	6835	1135	1175

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