Talpa

Industry-based solution
for mining industry

Severstal Metiz

metiz.severstal.com

Severstal Metiz

About company

Severstal is a vertically integrated steel and steel-related mining company.

Severstal-metiz is a Russian corporate group which consolidates metalware assets of Severstal company.

Severstal-metiz is in the TOP-5 of the biggest European companies in its business segment. It has the development strategy aimed at the achievement of shared corporate objectives of Severstal.

Construction industry, oil and gas industry, automotive industry, metallurgy and machinery are principal customers of Severstal-metiz.

Being in a regular dialogue with its customers, developing partnership with suppliers and studying market demands, Severstal-metiz improves the quality of its products and services as well as develops new types of products, allowing customers to reduce operational costs.

Severstal-metiz is an environmentally safe factory, which is confirmed by an ISO 14001:2015 certificate.

Quality management system (QMS) of the Company meets the requirements of the international standard ISO 9001:2015. The Company has also obtained the International Certification Network IQNet Certificate of Conformity.

CERTIFIED ISO 14001:2015 COMPANY

A wide range of Severstal-metiz products has 5 product lines:

Wire and wire products	Wire ropes	Cold-drawn products	Fasteners	Others
■ Wire, nails	■ Special wire ropes	■ Cold-drawn steel	■ General purpose fasteners	■ Consumer goods
■ Cut wire	■ Standard wire ropes	■ Wire for cold heading	■ Fasteners for automotive industry	■ Spring blocks
■ Plaited, woven, welded meshes	■ Cable-stayed systems	■ Steel shaped profiles	■ Special fasteners	
■ Gabions	■ Slings		■ Railway fasteners	
■ Fences				
■ Strands				
■ Fiber				

Export countries 2021

Armenia
Austria
Azerbaijan
Belarus
Belgium
Bulgaria
Croatia
Czech Republic
Denmark
Ecuador
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Moldova
Mongolia
Netherlands
Norway
Panama
Poland
Portugal
Romania
Saudi Arabia
Serbia
Slovakia
Spain
Sweden
Tajikistan
Türkiye
Turkmenistan
UK
USA
Uzbekistan

> 100 000
The number of items in the product line

> 4 500
Clients number

20%
Russian market share

$95,1 million
EBITDA in 2020

5 500
Employees

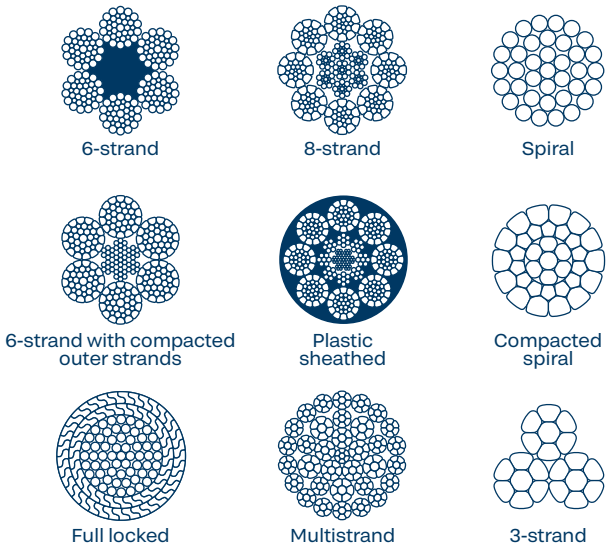
42
Export countries

Steel wire rope

One of the main directions of Severstal-metiz is production and development of steel wire ropes.

The product line of the company includes more than 100 types of ropes, which are produced in accordance with Russian and international standards.

Our clients are more than 500 Russian and foreign companies operating in various business areas: from mining to the production and maintenance of elevators.



Wire ropes production sites

Cherepovets

- Wire ropes diameter: 0.65-65.0 mm
- Grade: 1180-2160 N/mm²
- Production capacity: ≈ 2400-2800 tons per month

Volgograd

- Wire ropes diameter: 0.65-100.0 mm
- Grade: 1180-2160 N/mm²
- Production capacity: ≈ 3000-5500 tons per month

1955 year
Steel wire ropes launch

2008-2017 year
Redaelli Tecna S.p.A. is a part of Severstal-metiz

$23,5 million
Investments in steel wire ropes equipment in 2017–2020

Quality control at all stages of manufacturing

Severstal-metiz is a part of the metallurgical company Severstal.
It allows us to control the rope production process from the moment the ore is mined to the moment the final product is made.
We pay special attention to the quality at every stage of production. Raw materials, wire and wire ropes go through standard compliance tests under laboratory conditions to ensure product quality control.

Wire manufacturing
Severstal-metiz

Steel wire ropes manufacturing
Severstal Wire Ropes

Lifting equipment and additional services
Severstal Lifting Technologies

Beside wire ropes production we can cut them to required length and terminate with sleeves. We also help our clients with wire rope selection, based on type of equipment, breaking load and exploitation terms. Our own research and development center allows us to design any lifting products for the necessary tasks with the provision of all necessary accompanying documentation.

Certification

The company's quality management system is certified according to international standards ISO 9001:2015, 45001:2018 and 14001:2015.


Certificate of Registration
JSC "Severstal Wire Ropes"
ISO 9001:2015
Production and supply of steel wire ropes, high-carbon wire, cable and wire products, cables, wire made of non-ferrous metals and alloys


Certificate of Registration
JSC "Severstal Wire Ropes"
ISO 45001:2018
Production and supply of steel wire ropes and high-carbon wire


Certificate of Registration
JSC "Severstal Wire Ropes"
ISO 14001:2015
Production and supply of steel wire ropes and high-carbon wire

Severstal Metiz

Industry-based solution

We developed a solution for each area of use. This solution includes:

- Special ropes with improved performance and extended service life;
- Additional services;
- Technical support.

Industry-based solutions help our customers to reduce equipment downtime, to increase the safety of its work, as well as to reduce the cost of maintenance of equipment.

Customers choose our industry-based solutions for:

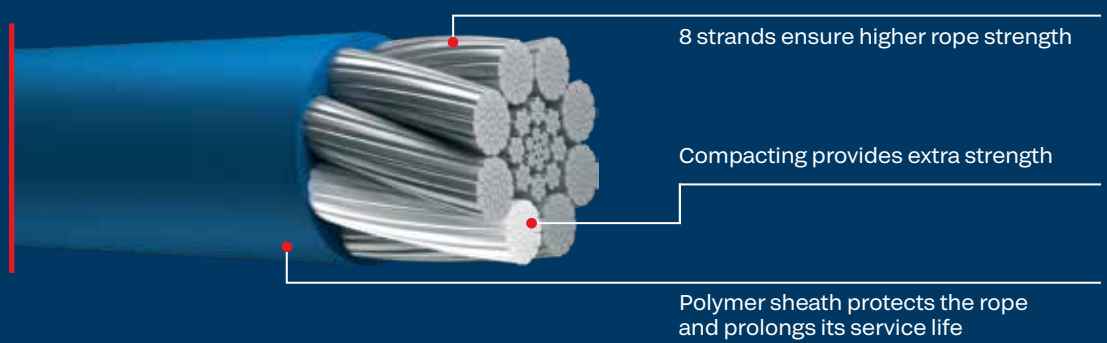
- Oil and gas;
- Mining;
- Production and maintenance of elevators;
- All types of cranes used in any manufacturing industry;
- Cableways.

For each of the areas of application we produce product line of special ropes with unique technical characteristics and construction.

Talpa® is our solution for mining industry.
It includes 6-strand, 8-strand and multi-strand special wire ropes with compacted outer strands and polymer filling of the inner and outer strands.
Thanks to their design, Talpa wire ropes are much stronger and have extended operational life compared to standard and out-dated ropes.
This allows our customers to significantly reduce the number of wire rope replacement operations and cut the cost of servicing excavators and mining systems.

We select ropes for different application conditions of the equipment for the most efficient operation, in a short time we carry out delivery and provide additional services.

Special design

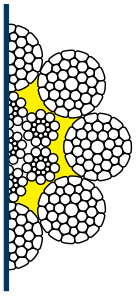


Talpa

Industry-based solution for mining industry

- High-rated quality
- Cost minimization
- Better performance
- Reduced downtime
- More safety

Plastic impregnation



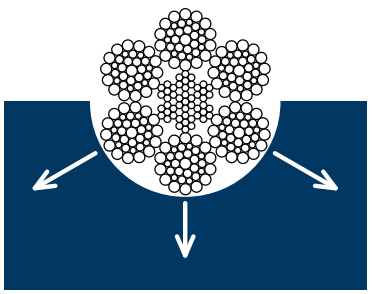
01 Fill all available space between strands and core

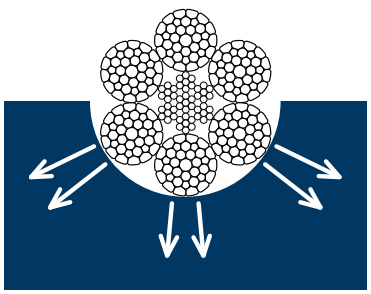
02 Prevent ropes from dimensional changes

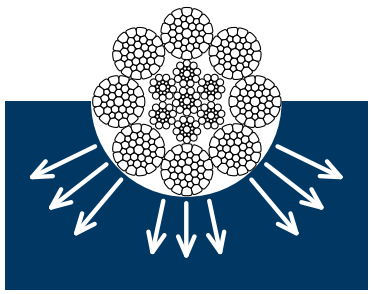
03 Increase resistance to transverse load, rotation, impact loads

Comparison of wire ropes

EN 12385-4 (6x36WS-IWRC)	**Talpa 636K** (6xK36WS-IWRC)	**Talpa 836K** (8xK36WS-IWRC)
Diameter - 39.0 mm	Diameter - 39.0 mm	Diameter - 39.0 mm
Weight - 6.53 kg/m	Weight - 6.72 kg/m	Weight - 6.99 kg/m
Grade - 1770 N/mm²	Grade - 1770 N/mm²	Grade - 1770 N/mm²
MBL - 972 kN	**MBL - 1082 kN**	**MBL - 1160 kN**

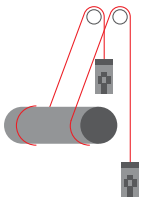




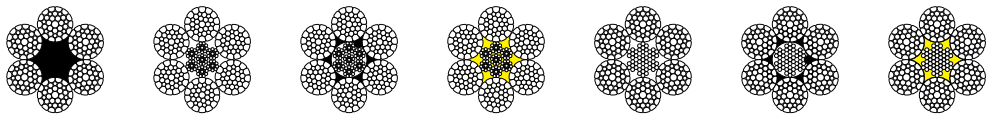


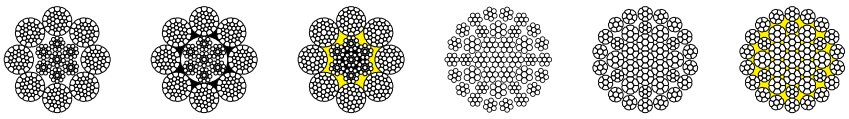
Rope selection guide for **underground mining**

Drum winders

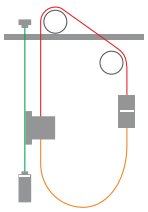


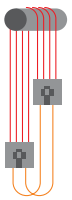
Hoisting ropes



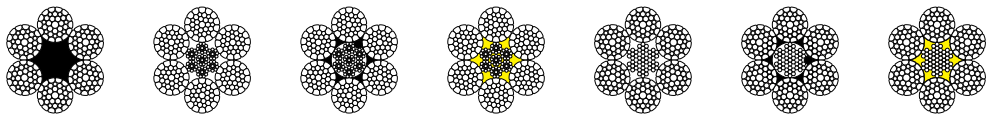


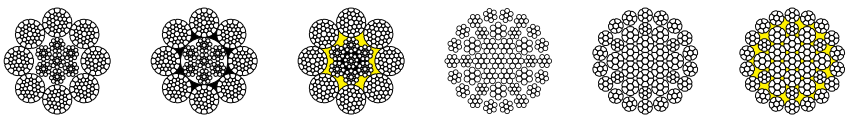
Friction winders



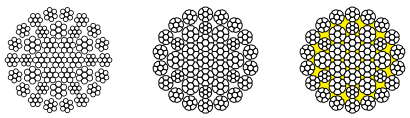


Hoisting ropes

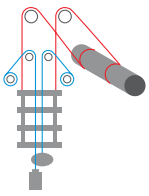




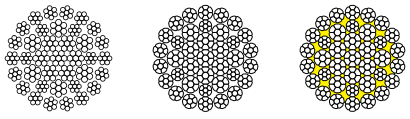
Balance ropes



Shaft sinking



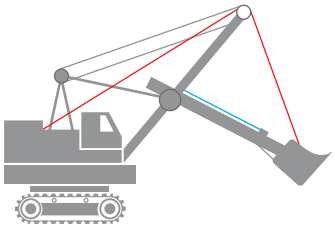
Kibble ropes



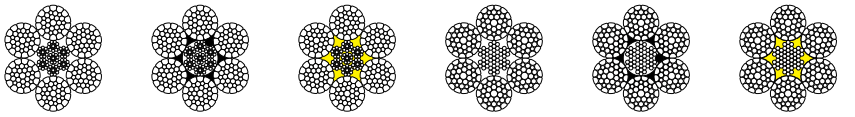
Talpa Industry-based solution for mining industry

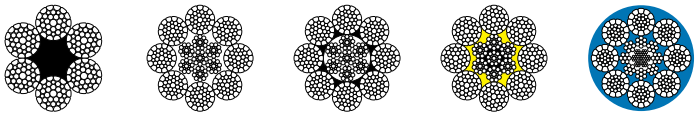
Rope selection guide for **surface mining**

Shovels

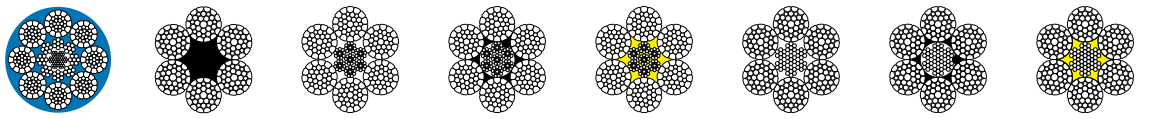


Hoisting ropes

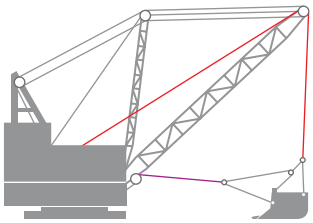




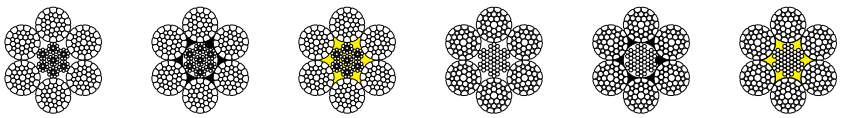
Crowd & retract ropes

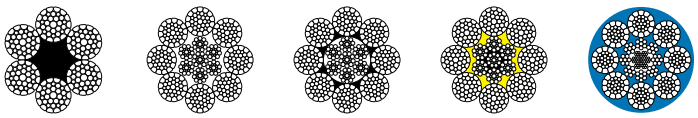


Draglines

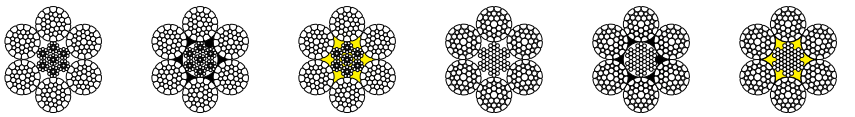


Hoisting ropes





Drag ropes



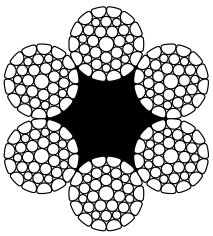
Talpa Industry-based solution for mining industry

Talpa 6K

underground mining
surface mining

6-strand wire ropes with compacted outer strands and fiber core

EN 12385-4



Construction

6x36 (1+7+7/7+14)+ 1 fiber core

Advantages

in comparison with standard solutions

- high flexibility
- increased wear resistance of wires
- less pulley groove wear

Specifications

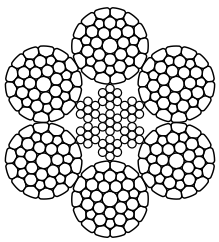
Diameter, mm	Weight of 1000 m, kg	Rope grade, N/mm²			
		1670	1770	1860	1960
		Minimum breaking load, kN			
36.5	5303	765	811	852	898
38.0	5597	809	857	901	949
39.5	6159	890	944	992	1050
42.0	6956	1010	1070	1120	1180
43.0	7290	1050	1120	1170	1240
44.5	7967	1150	1220	1280	1350
46.5	8499	1230	1300	1370	1440
48.5	9177	1330	1410	1480	1560
50.5	9798	1420	1500	1580	1670
53.5	11195	1630	1720	1810	1910
56.0	12393	1790	1900	2000	-
58.5	13088	1900	2010	2120	-
60.5	14959	2170	2290	-	-
63.0	15344	2230	2360	-	-
64.0	16086	2330	2470	-	-
65.0	16592	2410	2550	-	-
68.0	18686	2710	-	-	-

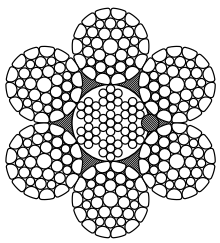
Talpa 636K

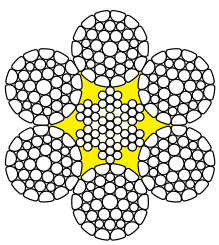
underground mining
surface mining

6-strand wire ropes with compacted outer strands

EN 12385-4







Construction

6x36 (1+7+7/7+14) + 7x7 (1+6)

636K - rope construction with compacted outer strands.

636KF - construction with compaction of rope outer strands and 6 fiber fillers between outer and inner rope layers.

636KP - construction with compaction of rope outer strands and plastic coated core.

Advantages

in comparison with standard solutions

- increased wear resistance of wires
- high strength characteristics
- less pulley groove wear
- increased resistance against transverse crushing

Specifications

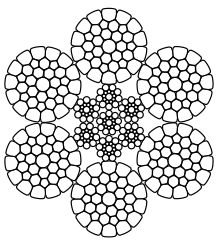
Diameter, mm	Weight of 1000 m, kg			Rope grade, N/mm²		
				1670	1770	1860
	636K	636KF	636KP	Minimum breaking load, kN		
36.0	5910	-	5970	909	964	1013
36.5	6090	-	6160	924	979	1029
39.0	6720	6800	6790	1021	1082	1137
41.0	7600	7690	7680	1153	1222	1284
42.0	7970	8070	8060	1210	1283	1348
45.5	9270	9380	9370	1405	1489	1565
49.0	10790	10920	10900	1637	1735	1823
52.0	12290	12440	12420	1866	1977	2078
57.0	14390	14560	14550	2187	2318	2436
60.5	16410	16610	16590	2492	2642	-
61.5	16910	17110	17090	2569	2723	-
64.0	18220	18430	-	2769	2935	-
66.0	19320	19540	-	2953	-	-
68.0	20520	20760	-	3120	-	-

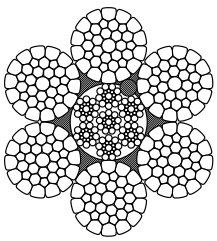
Talpa Optima 636K

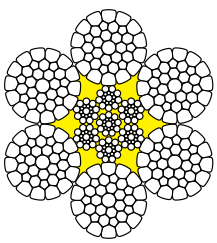
underground mining
surface mining

6-Strand wire ropes with compacted outer strands

EN 12385-4







Construction

6x36(1+7+7/7+14) + 6x19(1+9+9) + 1x19(1+9+9)

636K - rope construction with compacted outer strands.

636KF - construction with compaction of rope outer strands and 6 fiber fillers between outer and inner rope layers.

636KP - construction with compaction of rope outer strands and plastic coated core.

Advantages

in comparison with standard solutions:

- higher flexibility
- increased wear resistance of wires
- high strength characteristics
- less pulley groove wear
- increased resistance against transverse crushing

Specifications

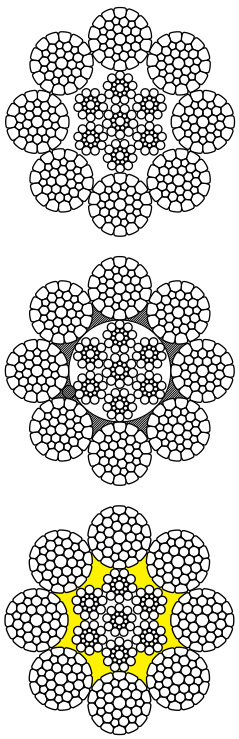
Diameter, mm	Weight of 1000 m, kg			Rope grade, N/mm²			
				1670	1770	1860	1960
	636K	636KF	636KP	Minimum breaking load, kN			
36.5	6153	-	6223	962	1011	1063	1120
39.0	6858	6940	6928	1072	1126	1183	1247
41.0	7716	7809	7796	1202	1263	1327	1399
42.0	8057	8154	8147	1256	1320	1387	1461
45.5	9421	9534	9521	1461	1536	1614	1701
49.0	10999	11131	11109	1703	1789	1881	1982
52.0	12516	12666	12646	1936	2033	2140	2255
57.0	14729	14905	-	2272	2389	2511	2646
60.5	16859	17061	-	2593	2725	2864	3017
61.5	17316	17523	-	2662	2798	2940	-
64.0	18672	18896	-	2870	3018	-	-
68.0	21162	21416	-	3242	3406	-	-

Talpa 836K

underground mining
surface mining

8-Strand wire ropes with compacted outer strands

EN 12385-4



Construction

8x36(1+7+7/7+14) + 6x19(1+9+9) + 1x19(1+9+9)

836K - rope construction with compacted outer strands.

836KF - rope construction with compaction of rope outer strands and 8 fiber fillers between outer and inner rope layers.

836KP - rope construction with compaction of rope outer strands and plastic coated core.

Advantages

in comparison with standard solutions

- high flexibility
- increased wear resistance of wires
- high strength characteristics
- less pulley groove wear
- increased resistance against transverse crushing

Specifications

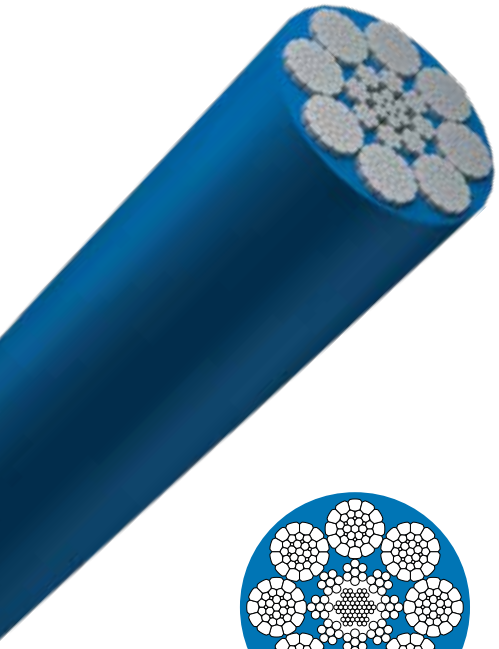
Diameter, mm	Weight of 1000 m, kg	Rope grade, N/mm²			
		1670	1770	1860	1960
		Minimum breaking load, kN			
39	6986	1036	1098	1154	1216
42	8185	1224	1298	1364	1437
45.5	9601	1423	1508	1585	1670
46.5	10176	1508	1599	1680	1770
50	11790	1748	1853	1947	2052
52	12507	1854	1965	2065	2176
56	14630	2157	2287	2403	2532
57	15081	2236	2370	2490	2624
60	16620	2465	2613	2746	-
62	17730	2627	2784	2926	-
64	18728	2766	2932	3081	-
67	20509	3038	3220	3384	-
70	22050	3281	3478	-	-
76	26620	3957	4194	-	-
77	26648	4085	4329	-	-
80	29170	4324	4583	-	-

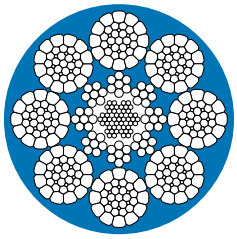
Talpa PM

surface mining

Plastic-sheathed 8-strand wire ropes with compaction of outer strands

EN 12385-4





Construction

8x37(1+6.6+12+12)+8x7(1+6)+6x7(1+6)+1x7(1+6)

Advantages

in comparison with standard solutions

- reduced contact stress between strands as well as between rope and pulley grooves
- increased wear resistance
- increased corrosion resistance, including extended rope lubrication
- increased resistance against transverse crushing
- extended rope service life

Specifications

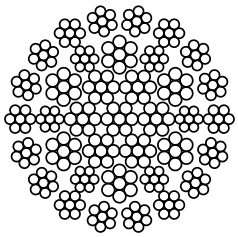
Diameter		Rope weight, kg/m	Minimum breaking load, kN
inch	mm		
2-1/4	57.2	14.9	2344
2-3/8	60.3	16.7	2627
2-1/2	63.5	18.6	2925
2-5/8	66.7	20.3	3193
2-3/4	69.9	22.5	3536

underground mining

Talpa 36

Multistrand non-rotating wire ropes

EN 12385-4



Construction

18x7+6x7/6x7+6x7+1x7

Advantages

in comparison with standard solutions

- high flexibility
- high strength
- reduced friction between outer wires in strands and pulley groove surface
- rotation resistance

Specifications

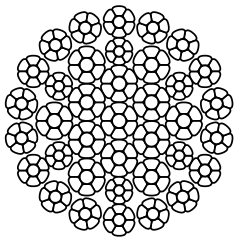
Diameter, mm	Weight of 1000 m, kg	Rope grade, N/mm²		
		1570	1770	1960
		Minimum breaking load, kN		
38	6070	832	938	1040
40	6720	923	1040	1150
42	7390	1020	1150	1270
44	8220	1130	1270	1410
46	8980	1230	1390	1540
48	9670	1330	1500	1656
50	10480	1440	1630	1799
52	11360	1560	1760	1948
54	12360	1700	1920	2122

underground mining

Talpa 36K

Multistrand non-rotating wire ropes with compacted outer strands

EN 12385-4



Construction

18x7+6x7/6x7+6x7+1x7

Advantages

in comparison with standard solutions

- high strength
- high abrasion resistance
- high fatigue failure resistance
- expanded contact with bearing surface area
- less wear of sheaves and capstans
- rotation resistance

Specifications

Diameter, mm	Weight of 1000 m, kg	Rope grade, N/mm²		
		1570	1770	1960
		Minimum breaking load, kN		
38	6970	987	1110	1230
40	7780	1110	1250	1380
42	8530	1210	1370	1510
44	9350	1330	1500	-
46	10270	1460	1640	-
48	11210	1590	1790	-
50	12070	1720	1930	-
52	13070	1850	2090	-
54	14180	2020	2270	-

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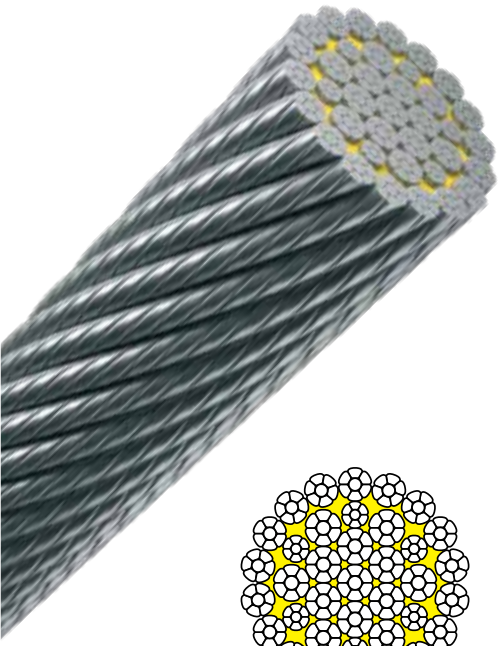
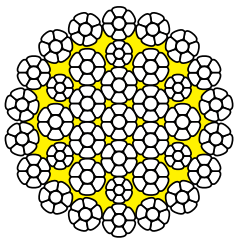
underground mining

Talpa 36KP

Multistrand non-rotating wire ropes with compacted outer strands and plastic coated core

EN 12385-4





Construction

18x7+6x7/6x7+6x7+1x7

Advantages

in comparison with standard solutions

- high strength
- high abrasion resistance
- high fatigue failure resistance
- expanded contact with bearing surface area
- less wear of sheaves and capstans
- rotation resistance

Specifications

Diameter, mm	Weight of 1000 m, kg	Rope grade, N/mm²		
		1570	1770	1960
		Minimum breaking load, kN		
38	6970	987	1110	1230
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44	9350	1330	1500	-
46	10270	1460	1640	-
48	11210	1590	1790	-
50	12070	1720	1930	-
52	13070	1850	2090	-
54	14180	2020	2270	-

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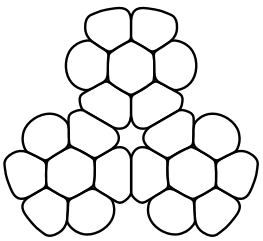
Talpa S3

3-strand wireline ropes

EN 12385-4



Construction

3x7(1+6)

The ropes are used as wirelines for blast-hole drilling rigs.
Ropes are manufactured from galvanized wire class B and are lubricated.

Specifications

Diameter		Rope weight, kg/m	Minimum breaking load, kN
inch	mm		
3/16	4.76	0.110	24.5
1/4	6.35	0.195	40.0

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Severstal Metiz

Service center

Our experience shows that the more accurately the rope is selected, the longer its service life is. The specialists of the service center have already helped dozens of customers in the selection and maintenance of ropes on various equipment: from cranes to drilling platforms.
When working with a new object, they take into account many aspects:
scope of use, equipment features, operating conditions, etc.

To ensure the durability of ropes, the specialists of the service center provide the following services:

- Rope selection for specific operating conditions.
- Consultations on the features of the application, mounting and operation of ropes.
- Development of special rope construction (together with the Technological department).
- Supply of experimental batches of products.
- Selection of the end fittings and fasteners.
- Technical support of the rope installation.
- Rope running time monitoring and warranty period calculation.
- Organization of seminars.

tel.: +7 (8202) 53-91-91
e-mail: helpdesk.ssk@severstal.com

Severstal Metiz

Polymer-sheathed wire ropes

For maximum surface protection of steel ropes, we have designed wire ropes with a polymer sheath covering outer strands.

For coating, we use an ultra-strong polymer that reliably adheres to the rope surface and retains its structure for a long time during operation.

Thanks to their design, Talpa wire ropes have longer operational life compared to standard ropes, which significantly reduces the number of rope replacements and leads to less maintenance activities and lower cost of equipment ownership.

Manufacture of guy ropes

In addition to steel ropes, Severstal Wire Ropes produces guy ropes structures and products that are used on mining excavators. We produce guy ropes for almost all models of domestic and foreign excavators, including walking excavators - draglines. In contrast with comparable products, the products manufactured by Severstal Wire Ropes provide adjustable stretch, which reduces time necessary for installation of guy ropes on an excavator. Our own engineering department and wide experience in this area allow us to manufacture individual products for a specific client's request.

Mesh grips for steel wire ropes

For easier installation of a new rope, we offer our customers special steel wire mesh grips.

They are tightened securely on the free ends of the old rope and the new one connecting them firmly.

After that, the rope is installed on the winding hoist drum.

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+7 (8202) 53-91-91 ⁄ metiz.severstal.com

Severstal Metiz

Prestretching

Prestretching is a service that allows to minimize the residual elongation of the rope arising during its lifespan.

We use a special equipment which provides a load applied on a rope that simulates the working process on the client's equipment. All the granulations and deformations occurred in product during its manufacturing disappears after such operation. Prestretching also provides even load distribution.

Prestretching reduces the cost of putting the rope into operation, because in this case, there is no need to carry out a long preliminary running-in of the rope coming from its fitting, shortening and pulling.

Dynamic stretching for mid-diameters
Ø 15-35 mm

Static stretching for big diameters
Ø 19-90 mm

- Lower residual elongation
- Higher modulus of elasticity
- Low torque
- Efficient performance

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Severstal Metiz

Magnetic non-destructive testing

During production

During operation

- Only instrumental non-destructive testing can give a full assessment of the degree of damage and residual life of the rope.
- Non-destructive testing allows to detect the loss of the section of the rope, external and internal local damages and their location.
- Magnetic non-destructive testing is used in industries such as metallurgy, mining, cableways, elevators, cable-stayed bridges.

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Severstal Metiz

Relubrication

- During operation, rope lubrication loses its properties. In order to prevent premature failure of a rope, it should be lubricated periodically, uniformly distributing the lubricant over the entire surface of the product.
- We offer our customers wire rope relubrication service.
- Our specialists select the necessary lubricant, visit the production site and re-lubricate the wire rope on the client's equipment.

Tests

Each batch of products undergoes a mandatory test for compliance with the declared technical characteristics.

The test stand for elongation and breakdown allows to perform product testing with certificate confirming the quality.

We have 3 test benches:

- 160 tons
- 250 tons
- 500 tons

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Talpa
Industry-based solution for mining industry

JSC Severstal-Metiz

1/33, ul. 50-letiya Oktyabrya, Cherepovets,
Vologda region, 162608, Russia

+7 (8202) 53-91-91

talpa@severstal.com

metiz.severstal.com/talpa

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