Severstal-metiz
Group of Companies

CONSTRUCTOR'S GUIDE

COMPANY
PRODUCTS
SERVICES

official representative

"Stal-metiz logistic Trading House" LLC

Severstal-metiz Group of Companies is one of the largest manufacturers of metal products in Europe (over 55,000 items, and its annual output exceeds 1 million tons) with manufacturing facilities in Russia, Ukraine, Italy and Great Britain.

The facilities of the Group produce a wide range of metal products:

- steel ropes and stabilized reinforcing strands;
- mechanical and railway track fasteners;
- different types of wire;
- specialty nails;
- calibrated steel;
- shaped steel sections;
- fiber;
- welding materials;
- mesh and netting;
- pring units;
- consumer goods;
- cord.

CONSTRUCTION is one of the key sectors for Severstal-metiz Group. In cooperation with customers, design organizations and industry research centers, the Group is constantly working on improving properties of its products, developing innovative products and technical documentation as well as certifying products.

The Group's CONSTRUCTION PRODUCTS include a wide range of standard items extensively used in the industry (reinforcing wire, welded mesh, nails, fasteners) and a line of special and innovative products (fiber, high tensile strands, guy ropes, high tensile fasteners, mesh structures) that simplify the construction process and reduce construction costs significantly.

An EXTENSIVE DEALER NETWORK in Russia and the CIS enables the Group to supply all construction projects with necessary products "just in time".

A WIDE RANGE OF SERVICE PROGRAMS allows the Group to offer optimal credit terms, shipping patterns, etc.

TECHNICAL SUPPORT enables customers to implement modern construction technology efficiently.

Today the construction industry is one of the key industries in Russia. The growth of cities, creation of a comfortable environment for people to live and work in and implementation of infrastructure projects contribute to the active development of the industry. To achieve their objectives, constructors need more materials. And metal goods are just high on the list of their needs.

Understanding the current market requirements, Severstal-metiz is actively working on modifying its existing products and developing new, innovative ones, which allow customers to significantly reduce their costs. The Group pays great attention to its product ranges, services and other aspects of individual work with the customer. We are confident that the long-standing cooperation between constructors and steelmakers will only strengthen in the future for the benefit of our society.

Oleg Veter,
Director General
Severstal-metiz Group of Companies

"Stal-metiz logistic Trading House" LLC is the official representative of "Severstahl-metiz" JSC on the territory of Russian Federation and abroad.

Our products are marked out by the highest product quality, which allows the company to capture and hold the leading position on metal goods market. "Stal-metiz logistic Trading House" LLC professionalism, price-determination flexibility, logistical connectivity illustrate the company growth policy success which is based on the winning relationships focus on the wide range of native and international business structures. The unity of product range quality and price availability – is what we always aim at.

Today with the dead certainty we can assure that "Stal-metiz logistic Trading House" LLC possesses the full range of financial and logistical mechanisms for "Severstahl-metiz" JSC products representation and sales in various regions of Russia and the whole world.

general director
"Stal-metiz logistic Trading House" LLC
Zargaryan Garlem G

REINFORCING PRODUCTS

DEFORMED WIRE FOR REINFORCING CONCRETE STRUCTURES, CLASS VR-1

GOST 6727-80 *standard product*

The wire of class VR-1 is a standard reinforcing element for concrete structures and is also used to manufacture welded masonry mesh. It is produced from low carbon wire rod. Its surface is covered with special dents on two sides for a better bond of wire with mortar.

SIZE RANGE

Wire diameter, mm	Depth of dents, mm	MAX deviation in the depth of dents, mm	Dent spacing, mm	MAX spacing deviation, mm	Ridge length, mm	Limit tolerances, mm
3.0	0.15	+0.05 -0.02	2.0	(+/-) 0.02	0.6	(+/-) 0.02
4.0	0.20		2.5		0.8	
5.0	0.25		3.0		1.0	

MECHANICAL PROPERTIES

Nominal diameter, mm	Breaking load, mm	Load corresponding to conventional yield limit, mm	Number of bends	Elongation, %, not less than	Linear density, kg, not more than
3.0	400	355	4	2.0	0.052
4.0	720	630	4	2.5	0.092
5.0	1085	985	4	3.0	0.144

PACKAGING

Diameter, mm	Type	Weight, kg	Bundle inner diameter, not less than, mm	Supplemental packaging
3.0–5.0	Large bundles	800–1000	380	None

CERTIFICATION

Certificate of conformity for wire used to reinforce concrete structures in accordance with the Russian State Standardization System GOST R No. ROSS RU.AYa64.N01699 issued by Vologda Certification Center.

DEFORMED WIRE FOR REINFORCING CONCRETE STRUCTURES, CLASS VR-1, diameter 3.8 mm and 4.8 mm

GOST 6727-80 *advanced product*

The VR-1 class wire of 3.8 mm and 4.8 mm diameter, manufactured according to TU (Technical Specification) 14-1-5572-2008, is recommended for concrete structures reinforcement and production of welded masonry mesh as a more efficient replacement for VR-1 wire of 4 mm and 5 mm diameter, according to GOST 6727-80 (based on certification tests done by the Concrete and Reinforced Concrete Research Institute (NIIZhB)). In Russia only the Cherepovets plant of Severstal-metiz produces the wire complying with this technical specification.

SIZE RANGE						
Wire diameter, mm	Depth of dents, mm	MAX deviation in the depth of dents, mm	Dent spacing, mm	MAX spacing deviation, mm	Ridge length, mm	Tolerances, mm
3.8	0.20	+ 0.05 - 0.1	2.5	(+/-) 0.02	0.8	(+/-) 0.02
4.8	0.25		3.0		1.0	

MECHANICAL PROPERTIES					
Nominal diameter, mm	Breaking load, mm	Load corresponding to conventional yield limit, mm	Number of bends	Elongation, %, not less than	Linear density, kg, not more than
3.8	720	630	4	2.5	0.082
4.8	1085	985	4	3.0	0.132

PACKAGING				
Diameter, mm	Type	Weight, kg	Bundle inner diameter, not less than, mm	Supplemental packaging
3.8–4.8	Large bundles	700–1100	380	None

ADVANTAGES

The use of certified VR-1 wire of 3.8 mm and 4.8 mm diameter, instead of VR-1 wire of 4 mm and 5 mm diameter, reduces the use of metal in mesh and concrete products by 11% and 8% respectively.

CERTIFICATION

Certificate of conformity for the VR-1 class deformed wire of 3.8 mm and 4.8 mm diameter in accordance with the Russian State Standardization System GOST R No. ROSS RU.0001.11AYa12 issued by VNIIS-Materialtest Certification Center.

COLD-DEFORMED REINFORCING BARS, V500S
(CLASS A500S) *advanced product*
GOST 6727-80

Cold-deformed reinforcing bars of class V500S are produced from low carbon steel sections deformed on three sides. Due to strain hardening, they are considerably better than hot-rolled reinforcing bars of class AIII. The Concrete and Reinforced Concrete Research Institute (NIIZhB) recommends using it as an efficient alternative to AIII reinforcing bars for reinforcement of concrete structures and frames of industrial and civil buildings, as well as for manufacturing welded mesh.

PHYSICAL PARAMETERS					
Nominal diameter, mm	Ridge height, mm	Ridge spacing, mm	Ridge width at the top, mm	Non-deformed part of the section, mm	Weight of 1 meter, g
4.0	≥ 0.30	4 ± 0.6	0.40–0.80	< 0.80	99 ± 4
5.0	≥ 0.32	4 ± 0.6	0.50–1.00	< 1.05	156 ± 6
6.0	≥ 0.40	5 ± 0.8	0.60–1.20	< 1.20	222 ± 9
7.0	≥ 0.46	5 ± 0.8	0.70–1.40	< 1.47	302 ± 24
8.0	≥ 0.55	6 ± 0.9	0.80–1.60	< 1.60	395 ± 32

MECHANICAL PROPERTIES		
Tensile strength, N/mm2, not less than	Conventional yield limit, N/mm2, not less than	Elongation, %, not less than
550	500	8

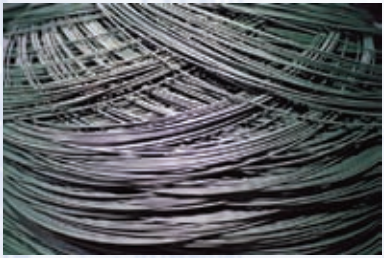
PACKAGING
Large bundles, up to 1000 kg.

ADVANTAGES
Cold-deformed reinforcing bars of class V500S are more durable, have improved weldability and corrosion resistance, increased viscosity, high tensile strength and compressive strength. The consumption of such reinforcing bars is 10–15% lower compared to hot-rolled reinforcing bars of similar diameter.

HEAT TREATED TIE WIRE * *standard product*

GOST 3282-74

Tie wire is soft (annealed) wire with a plain surface. It is produced from general purpose low carbon steel. It is available without a coating or with a zinc coating. It has a wide range of applications. Heat treated annealed uncoated wire of 0.8–1.4 mm diameter is used for joining reinforcing bars in industrial and civil engineering.



MECHANICAL PROPERTIES				
Nominal diameter, mm	Nominal tensile strength, N/mm2		Elongation, %, not less than	
	Uncoated	Coated	Uncoated	Zinc-coated
0.8–1.40	290–490	340–540	15	12

PACKAGING

Coils of up to 90 kg (at the customer's request – coils from 1 kg).

HIGH CARBON STEEL WIRE FOR REINFORCING PRESTRESSED CONCRETE STRUCTURES, CLASS VR-2 *standard product*

GOST 7348-81

The VR-2 class wire is used for reinforcing prestressed concrete structures of significant buildings. The wire may be round stress tempered (stabilized) and deformed (on two or three sides). It is produced from steel grades 75, 80, 85. It has high strength properties and retains them for a long time in concrete structures.

* Severstal-metiz Group of Companies produces the whole range of low carbon wire according to GOST 3282-74; for additional information please visit our website: www.severstalmetiz.com

PHYSICAL PARAMETERS						
Diameter, mm	Round and deformed wire			Deformed wire		
	diameter tolerances, mm, for accuracy groups			Depth of dents, not less than	Dent spacing	
	Group 1	Group 2	Group 3		Nominal, mm	Tolerances, mm
3.0	± 0.04	± 0.06	- 0.12	0.15	6.5	+ 0.5 - 1.0
4.0		± 0.08	- 0.16	0.19		
5.0	± 0.05			0.24		

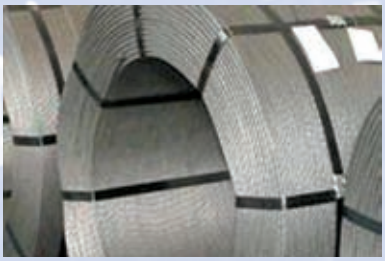
MECHANICAL PROPERTIES						
Diameter, mm	Strength class, N/mm2	Nominal tensile strength, N/mm2	Breaking load, N (kgf)	Elongation S100, %	Number of bends of the 30 mm roller	
					round	deformed
		Not less than				
3.0	1500	1780	12600 (1285)	4.0	9	8
4.0	1400	1700	21400(2180)		7	6
5.0		1670	32800 (3340)		5	3

PACKAGING				
Diameter, mm	Type	Weight, kg	Bundle inner diameter, not less than, mm	Supplemental packaging
3.0	Large bundles	up to 800	400	none
4.0; 5.0		up to 1500	1500	

HIGH TENSILE STABILIZED REINFORCING CABLES (STRANDS) *advanced product*

EN 10138, BS 5896:1980, STO 71915393-TU 047-2008, GOST 13840-68

Stabilized strands are one of the most up-to-date materials used in construction. They are used for reinforcing prestressed concrete structures. Due to their high strength, stabilized strands are recommended for use in construction of important structures, such as floors of parking lots; office, commercial and industrial buildings; building frames in seismically dangerous areas;



airfield pavements; foundations, etc. In Russia, Severstal-metiz is the only manufacturer of high tensile reinforcing cables (1860 MPa) complying with the EN 10138requirements.

MAIN CHARACTERISTICS *

Product characteristics	Name of standard													
	TU 047-2008	GOST 13840-68			BS 5896:1980									
					Standard						Super			
Rated cable diameter, mm	15.2	9.0	12.0	15.0	9.3		12.5		15.2		9.6	12.9	15.7	
Nominal diameter, mm		9.35	12.40	15.20										
Tolerance for diameter, mm	+ 0.20 - 0.40				+ 0.30 - 0.15		+ 0.40 - 0.20				+0.30 - 0.15	+ 0.40 - 0.20		
Tensile strength, not less than, N/mm2	186	1770	1770	1670	1770	1860	1770	1860	1670	1860	1860	1860	1770	1860
Nominal weight of 1,000 meters, kg/m	1099	419	736	1099	408		730		1090		432	785	1180	
Minimum breaking load, kN	259	93.5	164	232	92	97	164	173	232	259	102	186	265	279
Elongation, not less than, %	4.0				3.5									
Relaxation, not more than, %	2.5													

PACKAGING

Coils from 1.8 to 4.0 tons. Polypropylene fabric or antirust paper; anti-corrosion treatment is possible. Row coiling prevents entanglement and overlapping of reinforcing strands in the process of their uncoiling.

ADVANTAGES

High strength, reliability, durability, economy. The use of stabilized reinforcing strands reduces the construction costs (steel & concrete consumption is reduced by 10–15%) and makes it possible to enlarge unsupported spans, reduce floor thickness and make the building much lighter.

CERTIFICATION

Certificate of conformity for steel reinforcing cables 1x7 with diameter of 15.2 mm, 1860 MPa strength class, stabilized according to the Russian State Standardization System GOST R No. ROSS RU.SL46.N00037 issued by TRANSSTROISERTIFIKACIYA Certification Center.

UK Certification Authority for Reinforcing Steels.

* Reinforcing strands can be produced from round and deformed wire, as well as from reduced strands (with post-processing), as reduction significantly increases the tensile capacity of cables.

STEEL WIRE FIBER WITH BENT ENDS **HENDIX**™ *standard product*

TU 1211-205-46854090-2005, TU U 28.7-05393145-006:2008

It is the most widespread type of fiber which is an efficient alternative to reinforcing bars and reinforcing mesh. Hendix™ fiber represents sections of steel wire with anchors in the form of bent ends. This fiber can be used for construction of projects with low and medium load (shopping and office centers, warehouses, asphalt pavements, parking lots and bridges).

DIMENSIONS AND MECHANICAL PROPERTIES

Fiber diameter, mm	Fiber length, mm	Length of the ends, mm	Bend height, mm	Bend angle	Tensile strength, MPa	Modulus of elasticity, MPa
1.0 ± 0.03	50 + 2/-3	1.5 – 4	12600 (1285)	450 (min 300)	≥ 1000	≥ 190000

PACKAGING

Corrugated cardboard boxes of 25 kg. Boxes are stacked on pallets. There are 60 boxes on each pallet. Each pallet weighs 1,500 kg.

ADVANTAGES

Adding fiber to concrete in the amount of 20 to 80 kg per 1 m3 increases:

- bending tensile strength – by 2–3 times;
- compressive strength – up to 10–50%;
- axial tensile strength – up to 10–40%;
- impact strength – by 8–12 times;
- abrasion resistance – up to 2 times;
- crack growth resistance – by 2–3 times;
- frost and water resistance – by at least one class.

The time and cost savings, as compared to traditional reinforcement, are achieved by reducing metal and concrete consumption (lower thickness of structures) and required labor (no need for reinforcement work), thus reducing the overall costs by 40%. The properties of Hendix™ fiber allow it to prevent crack growth in concrete and at the same time this fiber is easy to use. As compared to other steel wire fibers, it is the least prone to clumping when added to concrete.

CERTIFICATION

Certificate of conformity for fiber in accordance with the Russian State Standardization System GOST R No. ROSS RU.SL87.N00102 issued by STROITELSTVO Certification Center.

SPECIFICATIONS

Set of rules 52-104-2006 "Steel fiber reinforced concrete structures"

RTM (Specifications) 17-03-2005 "Specifications for engineering, manufacturing and application of steel fiber reinforced concrete structures based on steel wire fiber".

STEEL WIRE FIBER WITH CONE-SHAPED ANCHORS AT THE ENDS **MIXARM**™ innovative product

TU 1211-205-46854090-2005

Steel wire fiber Mixarm™ is an innovative product for reinforcing concrete. It represents sections of steel wire with cone-shaped (head-shaped) anchors at the ends. It is designed for construction of heavily loaded industrial floors, runways, bridges, dams, tunnel roofs, roadbeds and pavements, strip foundations, flooring, concrete structures, etc.

DIMENSIONS AND MECHANICAL PROPERTIES					
Fiber diameter, mm	Fiber length, mm	Head diameter, mm	Cone head angle	Tensile strength, MPa	Modulus of elasticity, MPa
1.0 ± 0.03	54 ± 4	≥ 1.8	700	≥ 1100	≥ 190000

PACKAGING

Corrugated cardboard boxes of 25 kg. Fiber in boxes is oriented in one direction. Boxes are stacked on pallets. There are 60 boxes on each pallet. Each pallet weighs 1500 kg.

ADVANTAGES

Adding fiber to concrete in the amount of 20 to 80 kg per 1m3 increases:

- bending tensile strength – by 2–3 times;
- compressive strength – up to 10–50%;
- axial tensile strength – up to 10–40%;
- impact strength – by 8–12 times;
- abrasion resistance – up to 2 times;
- crack growth resistance – by 2–3 times;
- frost and water resistance – by at least one class.

When using Mixarm™ fiber, as compared to traditional reinforcement, the time and cost savings make up 40% as a result of reducing metal and concrete consumption (lower thickness of structures) and required labor. As compared to other types of fiber, the economy makes up 10% (thanks to the special cone-shaped anchors ensuring the best bond with concrete).

CERTIFICATION

Certificate of conformity for fiber in accordance with the Russian State Standardization System GOST R No. ROSS RU.SL87.N00102 issued by STROITELSTVO Certification Center.

Certificate for steel fiber reinforced concrete mix SFB-G-II with MIXARM fiber in accordance with the Russian State Standardization System GOST R No. ROSS RU.SL46.N00046 issued by TRANSSTROISERTIFIKACIYA Certification Center.

SPECIFICATIONS

Set of rules 52-104-2006 "Steel fiber reinforced concrete structures".

RTM (Specifications) 17-03-2005 "Specifications for engineering, manufacturing and application of steel fiber reinforced concrete structures based on steel wire fiber".

GOST 1545-2007 "Bridge slabs from steel fiber reinforced concrete".

WELDED MESH FOR CONCRETE STRUCTURES standard product

TU 14-1-5272-2006

This product is manufactured from V500S cold-deformed reinforcing bars by means of welding together cross bars. 3-rows of ridges on bars spaced every 2–3 mm ensure a better bond with mortar. This type of mesh is used both for cast-in-place concrete housing construction and for reinforcement of asphalt concrete pavements, floors, ceilings, foundations and other concrete structures.

PHYSICAL PARAMETERS				
Bar diameter, mm	Space between longitudinal and lateral bars, mm	Mesh width, mm	Mesh length, mm	Length of free ends of bars, mm
6.0	100	2000; 2350	6000	not less than 25
6.0	150	2000; 2350	6000	not less than 25
6.0	200	2000; 2350	6000	not less than 25
8.0	150	2000; 2350	6000	not less than 25
8.0	200	2000; 2350	6000	not less than 25

PACKAGING

Sheets.

CERTIFICATION

Certificate of conformity No. ROSS RU.AYa64.10AYa64 issued by Vologda Certification Center.

Certificate of conformity No. ROSS RU.AYaЯ64.NO1555 issued by Vologda Certification Center.

WELDED MESH FOR CONCRETE STRUCTURES standard product

TU 14-178-266-94

This product is manufactured from VR-1 deformed wire by means of welding together cross bars. Notches on bars spaced every 2–3 mm ensure a better bond with mortar. This type of mesh is used for reinforcement of brickwork, floors, ceilings, foundations, asphalt concrete pavements, sections of concrete front fences, in the process of plastering, cast-in-place concrete housing construction, etc.

PHYSICAL PARAMETERS					
Bar diameter, mm	Space between longitudinal and lateral bars. mm	Mesh width, mm	Mesh length, mm	Length of free ends of bars, mm	
				Longitudinal	Lateral
4.0	50	1500	3000; 6000	multiple of 25	25
4.0	100	2000; 2350	3000; 6000	multiple of 25	50
4.0	150	2000; 2350	3000; 6000	multiple of 25	75
5.0	100	2000; 2350	3000; 6000	multiple of 25	50
5.0	150	2000; 2350	3000; 6000	multiple of 25	75
5.0	200	2000; 2350	3000; 6000	multiple of 25	100

To reduce metal consumption in reinforced concrete structures, the mesh can be manufactured, with the agreement of the customer, from VR-1 wire with diameter of 3.8 mm and 4.8 mm produced according to TU 14-1-5572-2008.

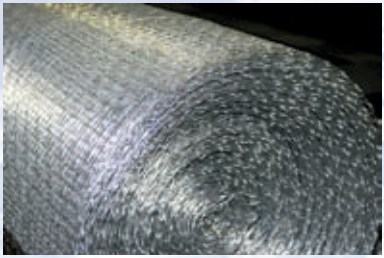
PACKAGING
Sheets.

CERTIFICATION
Certificate of conformity No. ROSS RU.AYa64.10AYa64 issued by Vologda Certification Center.

Certificate of conformity No. ROSS RU.AYa64.NO1555 issued by Vologda Certification Center.

WOVEN WIRE SQUARE MESH *standard product*

TU 14-178-461-2004



This product is designed for reinforcement of plaster and heat insulation. It is produced from low carbon black or galvanized wire. The mesh is produced with 10 mm, 12 mm or 14 mm cells from wire with diameter of 0.8 mm to 1.0 mm. The mesh width is 1000 to 1,500 mm.

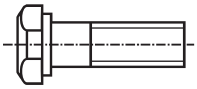
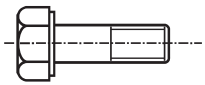
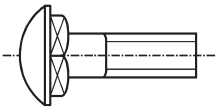
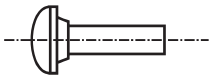
PACKAGING
Coils of not more than 80 kg.

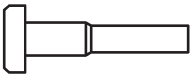
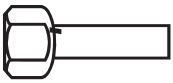
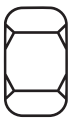
FASTENING PRODUCTS

FASTENERS

For manufacturing fasteners, Severstal-metiz uses advanced technology and high-performance cold-heading, heat-treating and galvanic equipment which allows producing higher strength fasteners as well as products of different complexity from customers' drawings. Severstal-metiz produces uncoated and galvanized fasteners (coated with protective passivating film). The manufacturing process is controlled from raw material to packaging of finished products.

MAIN TYPES OF FASTENERS FOR THE CONSTRUCTION INDUSTRY

Item	Drawing	Application	Parameters
Hexagon bolt GOST 7798-70, 7805-70 *advanced product*		For fastening together elements of metal structures	Property class: 4.8; 5.8; 8.8; 10.9 Accuracy class: A, B Steel grade: 20G2R, ST10, ST20 Thread diameter: M6–M30 Item length: 10–240 mm
High-strength bolts with an enlarged hexagon socket head for metal structures *NVP* GOST 52644-2006		For fastening together elements of significant metal structures in construction and mechanical engineering	Property class: 8.8; 10.9 Accuracy class: B Steel grade: 40H, 40H select Thread diameter: M20–M30 Item length: 60–240 mm
Bolts with an enlarged round head and a square neck GOST 7802-81, TU 14-178-337-99, DIN 603 *advanced product*		For erecting bridge and road safety barriers	Property class: 5.8; 8.8 Accuracy class: C Steel grade: ST10, ST20 Thread diameter: M16 Item length: 35; 45 mm
Bolts with a round head and an elliptic neck TU 14-178-432-2002 *standard product*		For erecting bridge and road safety fences	Property class: 5.8 Accuracy class: C Steel grade: ST10, ST20 Thread diameter: M16 Item length: 35; 45 mm
Hexagon nuts GOST 5915-70, 5927-70 *advanced product*		For erecting bridge and road safety fences	Property class: 6; 8; 10 Accuracy class: A, B Steel grade: ST10, ST20 Thread diameter: M6–M30
Nuts with a spherical bearing surface *NVP* GOST 52645-2006		For fastening together elements of significant metal structures in construction and mechanical engineering	Property class: 8; 10 Accuracy class: B Steel grade: 40H Thread diameter: M20–M30

SPECIAL FASTENERS FOR THE CONSTRUCTION INDUSTRY			
Item	Drawing	Application	Parameters
T-head bolt *standard product*		For erecting scaffolding	Accuracy class C Variants: 1) length 75 ± 1.50 mm 2) length 95 ± 1.50 mm
Bolts with a spherical bearing surface and nibs *standard product*		For erecting bridge and road safety fences and fastening together elements of metal structures	Property class: 8.8 Accuracy class: B Steel grade: 20G2R Item length: 40–55 mm
Nuts with a spherical bearing surface and nibs *standard product*		For erecting bridge and road safety fences and fastening together elements of metal structures	Property class: 8 Accuracy class: B Steel grade: 20G2R Thread diameter: M20–M30

PACKAGING

Wooden boxes of 50 kg on pallets; cardboard boxes of 25 kg also possible.

ADVANTAGES

These are high tensile fasteners as compared to standard ones; they are 3 times more resistant to damage. In addition, smaller fasteners may be used, which reduces metal consumption. It is recommended to use these fasteners in severe weather conditions as well.

CERTIFICATION

CERTIFICATE ISO/TU 16949:2002

CERTIFICATE ISO 9001:2000

CONSTRUCTION NAILS standard product

Round and shaped wire nails are produced by cold forging from non-heat-treated uncoated wire according to GOST 3282-74. Severstal-metiz manufactures a wide range of nails of various sizes for construction and finishing.

MAIN TYPES OF CONSTRUCTION NAILS *		
Item	Description	Size range (shank diameter/nail length), mm
Construction nails GOST 4028-63	Round nails with a flat or cone head (the surface of the flat head is plain, while the surface of the cone head is corrugated). Designed for fastening together elements of wooden structures.	Round-headed nails: (1.2x16; 20; 25), (1.4x25; 32; 40), (1.6x25; 40; 50) Cone-headed nails: (1.8x32; 40; 50; 60), (2.0x40; 50), (2.5x50; 60), (3.0x70; 80), (3.5x90), (4.0x100; 120), (5.0x120; 150), (6x150; 200), (8x250)
Round clout nails GOST 4029-63	Round nails with a flat head (the surface of the head is plain). The head has enlarged diameter. Designed for fastening together soft sheet material (roofing felt, ruberoid).	(2x20; 25), (2.5x32; 40), (3x40)
Roofing nails GOST 4030-63	Round nails with a cone head (the surface of the head is corrugated). The head has enlarged diameter. Designed for fastening sheet metal to wooden parts.	3.5x40
Double-headed nails TU 14-178-301-97	Designed for temporary fastening of wooden structures. Thanks to the second head the nail can be easily pulled out when the structure is taken apart.	(2.8x55), (3.1x55; 60; 65; 70; 75), (3.4x65; 80)
Screw nails TU 14-4-1161-2003	Round nails with a flat or cone head (the surface of the head is either plain or corrugated). Designed for fastening together wooden elements of europallets and containers, floor boards and other wooden structures where a high-strength joint is critical (it is achieved thanks to the screw surface of the shank).	(3.5x40; 45; 60; 70; 80; 90); (4.5x90; 100; 120)

PACKAGING (TO BE CONTINUED ON PAGE 18)		
Type	Outer dimensions, mm	Capacity, kg
Octagonal ten-layer corrugated cardboard container	1180x780x950	up to 1000
Polypropylene container MKR-1.5	1100x700x(850-1150)	up to 1000
Wooden box	468x302x252	up to 50
Corrugated cardboard box	298x263x184	25
Corrugated cardboard box	398x239x69	10

* The table shows the main types of produced nails, though our equipment can manufacture a broader range of nails of various sizes. For detailed information please visit our website: www.severstalmetiz.com.

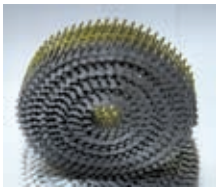
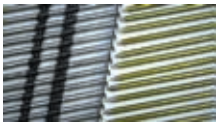
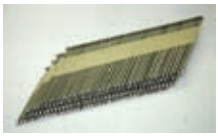
PACKAGING (CONTINUED FROM PAGE 17)		
Type	Outer dimensions, mm	Capacity, kg
Corrugated cardboard box	158x148x130	5
Corrugated cardboard box	238x158x90	5
Corrugated cardboard box	398x117x69	5
Corrugated cardboard box	155x146x94	3
Corrugated cardboard box	158x148x75	2.5
Corrugated cardboard box	135x75x51	1

Boxes are arranged into shipping packages with dimensions of 800x1200 mm and height of not more than 1100 mm which are stacked on wooden pallets. The arranged packages are wrapped in a flexible film.
The packages can be stacked in two levels using wooden panels to strengthen the packaging.

SPECIAL NAILS FOR PNEUMATIC TOOLS

DIN EN 10230-1-2000 *innovative products*

Special nails are used for automated fastening of wooden structures where a high-strength joint is critical: wood paneling, installation of window and door blocks, flooring, manufacturing and repair of pallets and containers, structures and fences, as well as general construction work.

MAIN TYPES OF SPECIAL NAILS		
Item	Photo	Description
Coil nails		Gun nails collated into a coil (roll) using copper-clad wire. We produce plain nails, annular (barbed) nails and screw nails. They are supplied in wire collated coils of two types: flat and cone-shaped. Number of nails per coil: from 200 to 1,000. Diameter range: 2.1–3.4 mm. Nail length: 25–90 mm. Packaging: cardboard boxes.
Pe-Strip		Gun nails in a plastic strip. Number of nails per strip: 20-30. Diameter range: 2.5–5 mm. Nail length: 45–160 mm. Packaging: cardboard boxes.
D-Head		Gun nails with a D-head collated into a strip using paper tape. Number of nails per strip: 38-50. Diameter range: 2.5–3.4 mm. Nail length: from 45 to 100 mm. Packaging: cardboard boxes.

PACKAGING
Corrugated cardboard boxes.

ADVANTAGES
Screw or annular nails have an additional advantage as compared to plain nails. Spiral (helical) threads ensure easier driving of nails into wood preventing wood splitting. Annular nails have annular threads which ensure greater resistance to withdrawal. Annular and screw threads increase the reliability of fastening 4-5 times as compared to common nails.

LANDSCAPING AND FENCING PRODUCTS

LIGHT-COLORED SINGLE-LAYER WOVEN STEEL MESH WITH DIFFERENT TYPES OF PROTECTIVE COATING

GOST 5336-80, TU 14-178-287-2003 *standard product*

Woven steel mesh is widely used as fencing, as well as for reinforcement in the process of plastering. It is produced from non-heat-treated uncoated wire, as well as from galvanized wire and polymer-coated wire. We produce diamond and square mesh.

MESH PHYSICAL PARAMETERS AS PER GOST 5336-80				
Mesh No.	Wire diameter, mm		Width, mm	Estimated weight of 1m2, kg
	Uncoated	Galvanized		
Diamond mesh				
5	1.2	-	1000	3.798
6	1.2	-	1000	3.583
8	1.2	-	1000	2.780
8	1.4	-	1000	3.800
10	1.2	-	1000, 1500	2.045
10	1.4	-	1000, 1500	2.713

MESH PHYSICAL PARAMETERS AS PER GOST 5336-80				
Mesh No.	Wire diameter, mm		Width, mm	Estimated weight of 1m2, kg
	Uncoated	Galvanized		
Square mesh				
20	2.0	2.0	1000, 1500	2.500 (2.660)
25	2.0	2.0	1000, 1500, 2000	2.150 (2.169)
25	2.5	2.5	1000, 1500, 2000	3.360 (3.360)
35	2.0	2.0	1000, 2000	1.429 (1.560)
35	2.5	2.5	1000, 2000	2.440 (2.440)
45	2.0	-		1.190
45	2.5	2.5	1500, 2000	1.870 (1.790)
45	3.0	3.0	1500, 2000	2.465 (2.700)
50	2.5	-		1.680
50	3.0	3.0	1500, 2000	2.352 (2.420)
60	3.0	-	1500-2000	2.000
100	5.0	-	2000, 2500, 3000	3.361

MESH PHYSICAL PARAMETERS AS PER TU 14-178-287-2003					
Mesh No.	Wire diameter, mm			Width, mm	Estimated weight of 1m2, kg
	Uncoated	Galvanized	Polymer-coated		
Diamond mesh					
5	1.4	-	-		5.283
15	1.2	-	-		1.314
Square mesh					
20	1.6	1.6	-	1000, 1500	1.660 (1.605)
35	1.6	1.6	-	1000, 1500, 2000	0.888 (0.937)
35	-	-	2.5	1000, 1500, 2000	[1.324]
45	-	2.0	-	1000, 2000	(1.190)
45	-	-	2.8	1000, 2000	[1.324]
50	-	2.5	-		(1.680)
50	-	-	2.8	1500, 2000	[1.324]
80	5.0	-	-	1500, 2000	3.740

Values in parentheses relate to mesh made from galvanized wire, while values in square brackets relate to mesh made from polymer-coated wire.
Upon agreement with the customer, we can produce mesh of other sizes.

PACKAGING
Packs containing from 10 to 30 rolls.

CERTIFICATION
Certificate of conformity No. ROSS RU.AYa64.NO1550 issued by Vologda Certification Center.

Certificate of conformity No. ROSS RU.AYa64.NO1551 issued by Vologda Certification Center.

HEXAGONAL TWISTED WIRE MESH *innovative product*

GOST 51285-99, TU 14-178-351-98

This mesh is produced from low carbon galvanized wire by means of double twisting two wires in one direction by one complete revolution (1800). The mesh is used for making mesh structures, for fencing, protecting steep slopes from rock slides, erosion, landslides and avalanches, for protecting coasts, reinforcing road pavements, including in the process of constructing bridges and overpasses. The mesh to be used in a very severe environment (salt water, polluted water, increased levels of acidity, etc.) is covered with a protective polymer coat that ensures its durability.

PHYSICAL PARAMETERS						
Mesh cell size		Wire diameter, mm	Mesh width, mm		Roll length, m	
Nominal, mm	Tolerances, %		Nominal	Tolerances	Nominal	Tolerances
60	(+18) / (-4)	2.4	1000; 2000; 3000; 4000	+/- 60	25; 50; 100	+ 1
80	(+16) / (-4)	2.7	1000; 2000; 3000; 4000	+/- 80	25; 50; 100	+ 1
80	(+16) / (-4)	3.0	1000; 2000; 3000; 4000	+/- 80	25; 50; 100	+ 1

PACKAGING

25 to 100 m long rolls.

CERTIFICATION

Certificate of conformity No. ROSS RU.AYa64.NO1552 issued by Vologda Certification Center.

Certificate of conformity No. ROSS RU.AYa64 issued by Vologda Certification Center.

MESH STRUCTURES *innovative product*

GOST R 52132-2003, TU 14-178-350-98

Mesh structures are box structures made from galvanized steel hexagonal double twisted mesh with zinc or polymer coating. They are used for protecting slopes, embankments, hillsides, banks of water bodies and ravines, for making drainage regulating structures and erosion control structures, as well as in landscaping.

Severstal-metiz produces several types of mesh structures: box structures with and without internal partitions; multicellular structures with internal partitions; and box structures with internal partitions and a reinforcing panel made from double-twisted mesh.

PHYSICAL PARAMETERS *								
Dimensions, m			Weight of one wire structure, kg					
Length	Width	Height	Galvanized				Polymer-coated	
			(Mesh wire diameter) / Binding wire diameter, mm					
			(2.7) / 2.2	(2.8) / 2.2	(3.0) / 2.4	(3.0)/2.5	(2.7/3.7)/2.4	(2.7/ 3.7)/ 2.5
1	1	0.5	6.9	7.3	8.0	8.8	8.4	9.2
1.5	1	0.5	9.6	10.2	11.0	12.1	11.6	12.8
1	1	1	10.4	11.0	12.0	13.2	12.6	13.9
2	1	0.5	13.5	14.3	16.0	17.6	16.5	18.1
3	1	0.5	18.5	19.6	21.7	23.9	22.6	24.9

* For detailed information please visit our website: www.severstalmetiz.com.

PHYSICAL PARAMETERS *								
Dimensions, m			Weight of one wire structure, kg					
Length	Width	Height	Galvanized				Polymer-coated	
			(Mesh wire diameter) / Binding wire diameter, mm					
			(2.7) / 2.2	(2.8)/ 2.2	(3.0) / 2.4	(3.0) /2.5	(2.7/ 3.7) /2.4	(2.7/ 3.7) / 2.5
1.5	1	1	15.1	16.0	17.3	19.0	18.4	20.2
2	1	1	18.5	19.6	21.4	23.5	22.6	24.9
4	1	0.5	23.8	25.2	27.5	30.2	29.2	32.1
3	1	1	25.1	26.6	29.0	31.9	30.9	34.0
4	1	1	31.8	33.7	36.2	39.8	39.2	43.1

PACKAGING

Packs containing from 20 to 40 units.

ADVANTAGES

- high resilience under stress, mechanical strength;
- corrosion resistance;
- permeability and porosity of structures excludes hydrostatic pressure (no need to build additional drainage systems);
- flexibility, resistance to subsidence of unstable soil (the structures ensure soil consolidation);
- ease of transportation (the structures are transported flat-packed);
- reliability, durability;
- the structures can be erected at any time of year in any weather conditions;
- no separate building site or special equipment is needed for their erection;
- environmental friendliness (no impact on the ecosystem of the area);
- aesthetic qualities (the structures fit well in the environment).

CERTIFICATION

Certificate of conformity No. ROSS RU.AYa64.NO1554 issued by Vologda Certification Center.

Certificate of conformity No. ROSS RU.AYa64.NO1549 issued by Vologda Certification Center.

SPECIFICATIONS

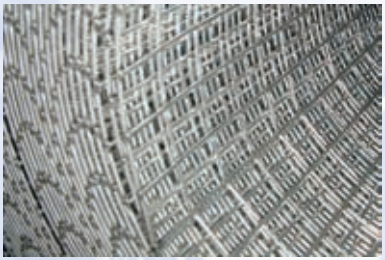
Department of Ways and Structures of the Ministry of Railway Communication of the Russian Federation, Specification No. 22/32 "Technical guidance and an album of typical designs and technologies for protection of roadbed from erosion using mesh structures."

* For detailed information please visit our website: www.severstalmetiz.com.

WELDED METAL MESH WITHOUT COATING AND GALVANIZED *NVP*

TU 127500-245-00187211-96

This mesh is designed for fencing and making barriers. It is also used as a reinforcing material for facade work with additional requirements with respect to corrosion resistance. It is made from low carbon wire and has rectangular or square mesh cells.



PACKAGING

Supplied in rolls with maximum roll length of 150 m.

MAIN CHARACTERISTICS AND DIMENSIONS						
Mesh No.	Wire diameter	Nominal mesh cell size along wire axes, mm		Mesh width, mm	Theoretical weight of 1m2 of mesh, kg	
		Lateral	Longitudinal		Uncoated	Galvanized
48 x 48	2.0					
48 x 48	2.5	48	48	1488	1.01	1.13
48 x 48	3.0	48	48	1488		
48 x 72	2.0	48	48	1488		
48 x 72	2.5	72	48	1488	0.8	1.02
48 x 72	3.0	72	48	1488		
25x12.5	2.0	72	48	1488		
25x12.5	1.7 gal	48	48	1488	1.01	1.13
25x25	1.8 gal	12.5	25	1000		1.5
25x50	1.8 gal	12.5	25	1000		2.5
50x50	1.8 gal	25	25	1000, 1500, 2000		1.64
50x50	1.6	50	25	1000, 1500, 2000		1.24
50x50	1.7 gal	50	50	500, 1500, 2000	0.7	
50x50	1.8	50	50	500, 1500,2000		0.8
50x75	1.8 gal	50	50	500, 1500, 2000	0.84	

Upon agreement with the customer, we can produce mesh of other sizes.

WELDING MATERIALS

The variety of types of metal structures and steel grades, as well as modern strength standards applying to welded joints mean that the quality of welding materials and their production technologies become critical. Since 2008 Severstal-metiz has been implementing full-scale modernization of equipment for manufacturing welding products. This allows us to produce high-tech materials complying with current global standards:

- welding wire characterized by improved straightness and equilibrium, stable physical parameters, durable copper coating and high-quality winding;
- electrodes characterized by improved composition which ensures arc stability, good slag separation and re-ignition.

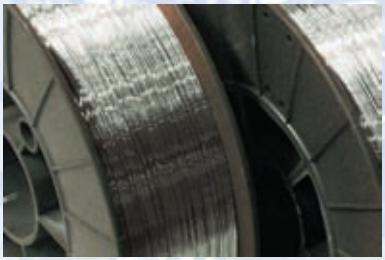
WELDING WIRE WITH SOLID CROSS-SECTION AND FOR SUBMERGED ARC WELDING *standard product*

Sv-08, Sv08A, Sv-08G2S, Sv-08G2S-O, Sv-08GA, Sv-08G1NMA, Sv-10GAA, Sv-08HM-O, Sv-08G1NMA-O

This welding wire is used for machine welding of carbon and low carbon structural steel, structures from cold-resistant high-strength steel, as well as for machine and automatic arc welding of pipes of various diameters.

ADVANTAGES

This welding wire ensures reliable and accurate joints which are resistant to corrosion and withstand high external loads (static, dynamic and alternating), as well as arc stability. Row winding ensures stable unwinding, reduces wire waste and increases operational life of equipment.



MAIN CHARACTERISTICS (TO BE CONTINUED ON PAGE 27)

Product	Main application	Diameter range, mm	Chemical composition of wire, %	Packaging	Certificates
Sv-08 GOST 2246	For machine submerged or gas-shielded arc welding of low carbon and carbon structural steel, as well as for production of manual electrodes.	0.6; 0.7; 0.8; 1.0; 1.2; 1.4; 1.6; 2.0; 2.5; 3.0; 4.0; 5.0; 6.0 mm	C ≤ 0.1 Si ≤ 0.03 Mn 0.35–0.60 S ≤ 0.04 P ≤ 0.04	Coils of 8-40 kg (Ø 0.6–2.5 mm), bundles of up to 1,000 kg (Ø 3.0–6.0 mm), waterproof two-layer paper or film, packing cloth or wooden containers.	Russian River Register
Sv08A GOST 2246	For machine submerged or gas-shielded arc welding of low carbon and carbon structural steel, as well as for production of manual electrodes.	0.6; 0.7; 0.8; 0.9; 1.0; 1.2; 1.4; 1.6; 2.0; 2.5; 3.0; 3.25; 4.0; 5.0; 6.0 mm	C ≤ 0.1 Si ≤ 0.03 Mn 0.35–0.60 S ≤ 0.03 P ≤ 0.03	Coils of 8–40 kg (Ø 0.6–2.5 mm), bundles of up to 1,000 kg (Ø 3.0–6.0 mm), waterproof two-layer paper or film, packing cloth or wooden containers.	Russian River Register
Sv-08G2S, Sv-08G2S-0 GOST 2246 EN 440 DIN 8559	For machine gas-shielded, CO2-shielded or submerged arc welding of structures from cold-resistant high-strength steel of AB type.	0.8; 1.0; 1.2; 1.4; 1.6; 2.0; 2.5; 3.0; 3.8; 4.0; 5.0 mm	C 0.05-0.11 Si 0.70–0.95 Mn 1.8–2.1 S ≤ 0.025 P ≤ 0.03	Frame cassettes of 18 kg, plastic cassettes of 5 kg and 15 kg, wooden boxes, europallets, stretch film. Coils are wrapped in waterproof two-layer paper and packing cloth.	Russian Maritime Register of Shipping (2YMS category) Russian River Register NAKS (Ø 1.2, 1.6 and 2.0 mm for MP, MADP, AADP welding methods) NAKS (Ø 3.0 mm for RAD and ESh welding methods) UkrSEPRO BelSt
Sv-08G2S-0 GOST 2246 TУ 14-178-220-99 EN 440 DIN 8559	For machine gas-shielded arc welding of carbon and low-alloy structural steel.	0.8; 1.0; 1.2 mm	C 0.05–0.11 Si 0.70-0.95 Mn 1.8–2.1 S ≤ 0.025 P ≤ 0.03		
Sv-08GA GOST 2246	For machine submerged arc welding of low carbon and carbon structural steel, as well as for production of electrodes.	2.0; 3.0; 4.0; 5.0 mm	C ≤ 0.10 Si ≤ 0.06 Mn 0.8–1.1 S 0.025 P 0.03	Coil of not more than 80 kg, reels. Wax paper, polymer film.	

MAIN CHARACTERISTICS (CONTINUED FROM PAGE 26)

Product	Main application	Diameter range, mm	Chemical composition of wire, %	Packaging	Certificates
Sv-08G1NMA TU 1227-001-10531968-2003 EN 10016	For machine and automatic submerged arc welding of pipes of various diameters.	2.0; 3.0; 4.0 mm	C ≤ 0.10 Si ≤ 0.06 Mn 0.8–1.1 S 0.025 P 0.03	Reels of up to 650 kg. Three-layer packaging: wax paper, cloth tape, polymer film.	NAKS (Ø 3 mm and 4 mm for AF welding)
Sv-10GAA TU 1227-001-10531968-2003	For machine and automatic submerged arc welding of pipes of various diameters.	3.0; 4.0 mm	C 0.06–0.10 Si ≤ 0.06 Mn 1.1–1.3 S ≤ 0.01 Mo ≤ 0.02	Reels of up to 650 kg. Three-layer packaging: wax paper, cloth tape, polymer film.	NAKS (Ø 3 mm for AF welding)
Sv-08HM-O GOST 2246 DIN 12070	For machine submerged arc welding of low carbon and carbon structural steel and HM type steel, as well as for production of electrodes.	2.0; 2.2; 3.3; 4.0 mm	C 0.06–0.10 Si 0.12–0.30 Mn 0.3–0.6 S 0.025 P 0.03	Coils or reels. Three-layer packaging: wax paper, cloth tape, polymer film.	NAKS (Ø 4 mm for AF welding)
Sv-08G1NMA-O	For machine and automatic submerged arc welding of pipes of various diameters.	3.0; 4.0; 5.0 mm	C ≤ 0.09 Si 0.20–0.45 Mn 1.0–1.5 S ≤ 0.01 P 0.015 Mo 0.60–0.85	Reels of up to 650 kg. Three-layer packaging: wax paper, cloth tape, polymer film.	NAKS (Ø 4 mm for AF welding)

Other types of packaging may be provided at the customer's request.

GENERAL-PURPOSE ELECTRODES *standard products*

ANO-21, ANO-4, ANO-4I, MR-3, MR-3M, OZS-12

These electrodes are used for welding carbon steel structures. As the weld metal is not prone to pore formation, the electrodes can be used for welding unprepared edges of the weld joint (rust, oil).

ADVANTAGES

These electrodes ensure improved productivity of the welding process. The arc is easily controlled during welding, which ensures deep penetration despite small capacity of the weld pool and good slag separation.

MAIN CHARACTERISTICS (TO BE CONTINUED ON PAGE 29)

Product	Main application	Characteristics of electrodes			Packaging	Certificates
		Coating	Deposition rate, g/Ah	Consumption of electrodes per 1 kg of deposited metal, kg		
ANO-21 GOST 9466, GOST 9467 TU 14-4-1449-87 TU U 05416923.001-95 (DZ) AWS A5.1: E6013 ISO 2560 (EN 499): E352R11	For all-position welding of carbon steel structures according to GOST 380 and GOST 1050.	rutile-cellulosic	7.0–8.0	1.65	Corrugated cardboard pack of 5 kg for electrodes with diameter of 3.0–5.0 mm, europallet, stretch film.	UkrSEPRO BelSt
ANO-4 GOST 9466, GOST 9467 TU 14-178-427-2002 TU U 05416923.001-95 (DZ) AWS A5.1: E6012 ISO 2560 (EN 499): E352R12 DIN 1913: E433024R	For all-position welding (except for vertical-downward welding) of structures from carbon steel with carbon content of up to 0.25% according to GOST 380 and GOST 1050.	ilmenite	8.5	1.6–1.65	Corrugated cardboard pack of 5 kg for electrodes with diameter of 3.0–5.0 mm, europallet, stretch film.	BelSt

MAIN CHARACTERISTICS (CONTINUED FROM PAGE 28)

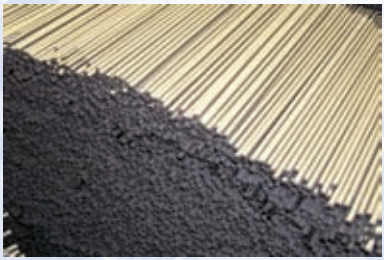
Product	Main application	Characteristics of electrodes			Packaging	Certificates
		Coating	Deposition rate, g/Ah	Consumption of electrodes per 1 kg of deposited metal, kg		
ANO-4I GOST 9466, GOST 9467 TU 14-178-427-2002 AWS A5.1: E6012 ISO 2560 (EN 499): E352RA12	For all-position welding (except for vertical-downward welding) of structures from low carbon steel with carbon content of up to 0.22%.	ilmenite	8.0–8.5	1.6–1.65	Corrugated cardboard pack of 5 kg for electrodes with diameter of 3.0–5.0 mm, europallet, stretch film.	BelSt
MR-3 GOST 9466, GOST 9467 TU 1272-299-00187211-2001 TU U 14288312.001-96 (DZ) AWS A5.1: E6012 ISO 2560 (EN 499): E352R12	For all-position welding (except for vertical-downward welding) of significant structures from carbon steel with carbon content of up to 0.25%.	rutile	8.0–8.5	1.7	Corrugated cardboard pack of 5 kg for electrodes with diameter of 3.0–5.0 mm, europallet, stretch film.	NAKS (Ø 3, 4, 5 mm) UkrSEPRO BelSt
MR-3M GOST 9466, GOST 9467 TU 1272-303-00187211-2002 AWS A5.1: E6012 ISO 2560 (EN 499): E352 RA12 DIN 1913: E4330AR726	For all-position welding (except for vertical-downward welding) of low carbon steel structures.	ilmenite	8.0–8.5	1.7	Corrugated cardboard pack of 5 kg for electrodes with diameter of 3.0–5.0 mm, europallet, stretch film.	
OZS-12 GOST 9466, GOST 9467, TU 14-178-384-2000 AWS A5.1: E6013 ISO 2560 (EN 499): E352R11	For welding carbon and low-alloy structural steel with carbon content of up to 0.25% according to GOST 380 and GOST 1050.	rutile	8.0–8.5	1.7	Corrugated cardboard pack of 5 kg for electrodes with diameter of 3.0–5.0 mm, europallet, stretch film.	

Other types of packaging may be provided at the customer's request.

ELECTRODES

UONI 13/55*, UONI 13/45 *standard products*

These electrodes are used for welding very significant structures from carbon and low-alloy steel grades. It is recommended to use them when there are strict requirements concerning the plasticity and impact strength of the weld metal. They are suitable for welding structures working at low temperatures. When using these electrodes, the welding is done only at short arc length on cleaned edges.



MAIN CHARACTERISTICS

Product	Main application	Characteristics of electrodes			Packaging	Certificates
		Coating	Deposition rate, g/Ah	Consumption of electrodes per 1 kg of deposited metal, kg		
UONI 13/55 GOST 9466, GOST 9467 TU 1272-174-00187211-97	For welding very significant carbon and low-alloy steel structures when there are strict requirements concerning the plasticity and impact strength of the weld metal.	basic	8.5–9.5	1.6	Corrugated cardboard pack of 5 kg for electrodes with diameter of 3.0–5.0 mm, europallet, stretch film.	Russian Maritime Register of Shipping (2N10 category) UkrSEPRO BelSt
UONI 13/45 GOST 9466, GOST 9467 TU 1272-175-0018 7211-97 AWS A5.1: E6015 ISO 2560 (EN 499): E353B22H10 DIN 1913: E434020B	For manual arc welding of very significant carbon and low-alloy steel structures when there are strict requirements concerning the plasticity and impact strength of the weld metal.	basic	8.5–9.5	1.6	Corrugated cardboard pack of 5 kg for electrodes with diameter of 3.0–5.0 mm, europallet, stretch film.	Russian Maritime Register of Shipping (2N10 category) UkrSEPRO BelSt

Other types of packaging may be provided at the customer's request.

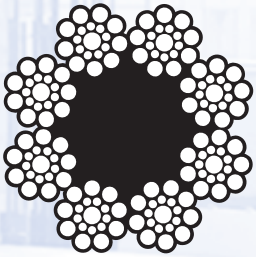
* Electrodes UONI 13/55 received a diploma of the final stage of the program "Russia's 100 best goods."

PRODUCTS FOR LIFTING DEVICES

HOISTING ELEVATOR ROPES

DIN 3062 / DIN EN 12385-4

It is recommended to use them as hoisting ropes of elevators.



CONSTRUCTION
8x19(1+9+9) + fiber core

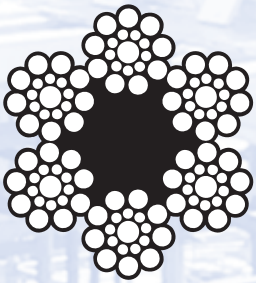
DIAMETER RANGE
10.0 – 40.0 mm

STRENGTH GROUPS
Standard strength groups:
1570 (160), 1770 (180) N/mm2 (kg/mm2).
Double strength group (wires of the outer layer of the strand are from strength group 1370 N/mm2, while other wires are from strength group 1770 N/mm2).
We can produce cables with other diameters and other strength properties.

ELEVATOR ROPES

GOST 3077-80

It is recommended to use them as balancing ropes for elevators.



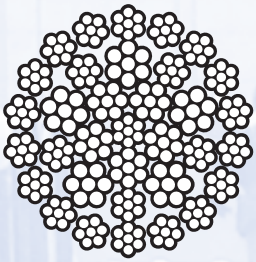
CONSTRUCTION
6x19(1+9+9) + fiber core

DIAMETER RANGE
4.6 – 46.0 mm

MULTISTRAND ROTATION-RESISTANT CRANE ROPES

STO 71915393 - TU 061 - 2008

It is recommended to use them on heavy-duty cranes with a complex rigging diagram and on other lifting devices.



ADVANTAGES

These ropes are characterized by superior strength properties and are suitable for multilayer winding onto the reel.

CONSTRUCTION

18x7(1+6)+5x7(1+6)/5x7(1+6)+5x7(1+6)+1x7(1+6)

DIAMETER RANGE

20.0 – 32.0 mm

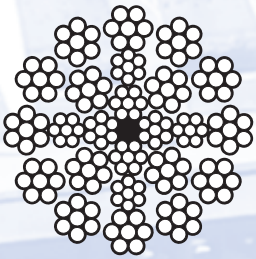
STRENGTH GROUPS

1770 (180), 1960 (200), 2160 (220) kg/mm2.
We can produce cables with other diameters and other strength properties.

MULTISTRAND ROTATION-RESISTANT ROPES

STO 71915393 - TU 064 - 2008

It is recommended to use them on heavy-duty cranes with a complex rigging diagram and on other lifting devices.



ADVANTAGES

These ropes are characterized by superior strength properties and are suitable for multilayer winding onto the reel.

CONSTRUCTION

12x7(1+6)+4x7(1+6)/4x7(1+6)+4x7(1+6)

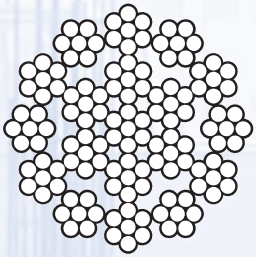
DIAMETER RANGE

14.0 – 20.0 mm

STRENGTH GROUPS

1770 (180), 1960 (200), 2160 (220) kg/mm^2.
We can produce cables with other diameters and other strength properties.

MULTISTRAND ROTATION-RESISTANT ROPES
DIN 3069 / DIN EN 12385-4



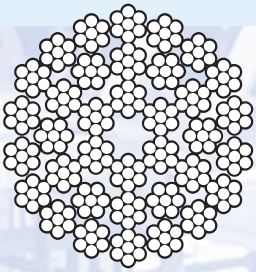
It is recommended to use them as load hoisting and balancing ropes.

ADVANTAGES
These ropes are characterized by superior strength properties and extra flexibility and are suitable for multilayer winding onto the reel.

CONSTRUCTION
12x7(1+6)+6x7(1+6)+ fiber core/
12x7(1+6)+6x7(1+6)+1x7(1+6)

DIAMETER RANGE
16.0 – 28.0 mm

MULTISTRAND ROTATION-RESISTANT ROPES
DIN 3071 / DIN EN 12385-4



It is recommended to use them as load hoisting and balancing ropes.

ADVANTAGES
These ropes are characterized by superior strength properties and extra flexibility and are suitable for multilayer winding onto the reel.

CONSTRUCTION
18x7(1+6)+12x7(1+6)+6x7(1+6) + fiber core / 18x7(1+6)+12x7(1+6)+6x7(1+6)+1x7(1+6)

DIAMETER RANGE
18.0 – 40.0 mm

COMPARISON OF CABLES

TENTATIVE WEIGHT

Rope diameter, mm	Tentative weight of 1,000 m of lubricated rope, kg					
	STO 71915393 - TU 061 -2008	STO 71915393 - TU 064 -2008	DIN 3069 / DIN EN 12385-4	DIN 3071 / DIN EN 12385-4	DIN 3069 / DIN EN 12385-4	DIN 3071 / DIN EN 12385-4
			With fiber core		With metal core	
14.0	-	847	750	765	788	788
16.0	-	1 099	980	999	1 030	1 030
18.0	-	1 398	1 240	1 260	1 300	1 300
20.0	1 825	1 734	1 530	1 560	1 610	1 610
22.0	2 183	-	1 850	1 890	1 950	1 950
24.0	2 579	-	2 200	2 250	2 310	2 310
26.0	3 085	-	2 590	2 640	2 720	2 720
28.0	3 507	-	3 000	3 060	3 150	3 150

BREAKING LOAD

Rope diameter, mm	Breaking load for the entire rope, kN (tf), for strength group 1770 N/mm2 (180 kg/mm2)					
	STO 71915393 - TU 061-2008	STO 71915393 - TU 064 -2008	With fiber core		With metal core	
			DIN 3069 / DIN EN 12385-4	DIN 3071 / DIN EN 12385-4	DIN 3069 / DIN EN 12385-4	DIN 3071 / DIN EN 12385-4
14.0	-	133.0 (13.6)	111.0 (11.2)	108.0 (11.0)	114.0 (11.6)	110.0 (11.2)
16.0	-	173.0 (17.6)	144.0 (14.7)	141.0 (14.4)	149.0 (15.1)	144.0 (14.7)
18.0	-	219.0 (22.4)	183.0 (18.6)	179.0 (18.2)	188.0 (19.1)	183.0 (18.6)
20.0	291.9 (29.8)	272.0 (27.8)	226.0 (22.9)	221.0(22.5)	232.0 (23.6)	225.0 (22.9)
22.0	350.1 (35.7)	-	273.0 (27.8)	267.0 (27.2)	281.0 (28.6)	273.0 (27.7)
24.0	414.3 (42.2)	-	325.0 (33.0)	318.0 (32.4)	335.0 (34.0)	325.0 (33.0)
26.0	495.9 (50.6)	-	381.0 (38.8)	374.0 (38.0)	393.0 (39.9)	381.0 (38.7)
28.0	564.8 (57.6)	-	442.0 (45.0)	433.0 (44.1)	455.0 (46.3)	442.0 (44.9)

INDUSTRY SOLUTIONS

CABLE-STAYED STRUCTURES

Severstal-metiz produces over 80 types of structures, including locked-coil and twisted ropes, used in construction of bridges, stadiums and air-supported structures as guy ropes (guylines) which retain their physical and mechanical properties under load for a long time.

For instance, Severstal-metiz designed and manufactured a locked-coil galvanized guy rope for a bridge built in Cherepovets across the Sheksna River. For construction of a bridge in Volgograd over the Volga River a multistrand low-rotation rope (28 mm in diameter) was manufactured. This rope was needed for a Bauer drilling rig. In addition, almost all cable roads in the Russian Federation (Elbrus region, Sochi, Pyatigorsk, etc.) are equipped with locked-coil ropes made by Severstal-metiz.

In its interactions with consumers Severstal-metiz tries to meet their individual requirements: the Group's employees can implement all construction phases – from design to manufacturing ropes, equipping them with caps and participating in their hanging. This work is carried out by specialists of the Volgograd plant of Severstal-metiz and Redaelli, an Italian company which is the European leader in production of specialty wire ropes. After Redaelli had become a part of Severstal-metiz Group of Companies, the Group not only expanded its product portfolio thanks to specialty complex-structure wire ropes manufactured by the Italian unit, but also strengthened its servicing and engineering businesses.

The projects implemented by Redaelli include the construction of the Storebaelt suspension bridge in Denmark (the largest suspension bridge in Europe), the cable system for the London Eye Ferris wheel in the UK and cable-stayed roofs at stadiums in Athens, Greece, and in Zagreb, Croatia.

CERTIFICATION

Lloyd's Register of Shipping.

Det Norske Veritas, an independent classification and certification society.

American Bureau of Shipping.

Registro Italiano Navale, an Italian classification society, and others.

PORTFOLIO

Sverdlovsk Railroad
Nizhnyaya Serginskaya – Mikhailovsky Zavod, Russia
Mesh structures

Moscow-City Business Center
Moscow, Russia
VR-1 wire and cold-deformed reinforcing bars

Cable-stayed footbridge
Saragossa, Spain
Cable-stayed structures (locked-coil wire ropes, caps)

Bayterek Monument
Astana, Kazakhstan
Electrodes

Luzhniki Stadium
Moscow, Russia
Fasteners, electrodes

Bridge for the Light Rail project
Jerusalem, Israel
Cable-stayed structures
(locked-coil wire ropes, caps)

Liquefied natural gas terminal
Isle of Grain, UK
Stabilized strands

Gitschberg Jochtal Ski Resort
South Tyrol, Italy
Special-purpose wire ropes

Oktyabrsky Bridge
Cherepovets, Russia
Locked-coil wire ropes, electrodes

COOPERATION

Severstal-metiz Group of Companies invites service metal centers, distributors, construction companies, design and R&D institutions to cooperate in the areas of metal product supplies and joint promotion of advanced building materials.

AREAS OF COOPERATION WITH SERVICE METAL CENTRES AND DISTRIBUTORS

- credit activities;
- individual schedules and scope of supplies, and mutual commitment to their implementation;
- a system of rolling schedules and applications for stock replenishment: monitoring of client's stockpiles and on-time delivery;
- consulting on products and NVP characteristics;
- feedback on claims and applications for NVP development;
- conduct of joint coordination meetings;
- consignment stocks;
- shipment to partner's branches;
- product manufacturing in client's retail-trade packing;
- training and motivation system for partner's sales personnel;
- conduct of joint promotion campaigns, exhibitions and product presentations for partner's clients;
- technical support for clients.

COOPERATION WITH CONSTRUCTION COMPANIES ON SUPPLIES TO PROJECTS UNDER CONSTRUCTION

- individual schedules and scope of supplies;
- transparent pricing, and setting fixed prices for a certain period of time;
- guaranteed deadlines for manufacturing and supply of standard products;
- distributor's (a partner of Severstal-metiz) involvement into supply chain;
- credit activities;
- feedback on claims and applications for NVP development;
- conduct of coordination meetings with the client on supplies and technology compliance;
- technical support;
- development of technical documentation and client's staff training on the product use;
- joint research and development activities;
- consignment stock on the buyer's territory or insurable stock at Severstal-metiz.

COOPERATION WITH DESIGN AND R&D INSTITUTIONS

- financing of R&D focused on implementing technology that involves Severstal-metiz products;
- development of new products (fabrication of product specimens, free shipment of pilot batches for studies, consulting on relevant technology issues);
- conduct of workshops, conferences and round table discussions on the matters related to new construction technology implementation.

DEALER NETWORK

52, Kirillovskoe shosse, Cherepovets,
Vologda region, Russia
tel. +7(8202) 57-28-06, 29-74-58, 29-61-79
e-mail: smlsales@mail.ru

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CONTACTS

52, Kirillovskoe shosse, Cherepovets, Vologda region, Russia

tel. +7 (8202) 57-28-06,
tel. +7 (8202) 29-74-58,
tel. +7 (8202) 29-61-79

e-mail: smlsales@mail.ru