STEEL WIRE ROD

Wire rod for welding wire manufacture

Low carbon steel wire - rod according to TU 14-1-4760-89

Steel grades: Sv-08, Sv-08A with chemical composition as per GOST 2246-70.

Accuracy of rolling: V - conventional accuracy.

Diameters: 5.5, 6.0, 6.5, 8.0, 9,0 mm.

Tolerances for diameter and out-of-roundness are to comply with GOST 2590-88.

Ultimate strength not more than: 420 N/mm^2 (43 kgf/mm^2).

Relative reduction of cross-sectional area at fracture: not less than 60%.

Wire rod is delivered in coils. Mass of a coil should be not less than 160 кg.

Alloy and high-alloy steel wire rod according to TU 14-1-2203-77, GOST 2246-70

Diameter: 6.5 mm.

Tolerances: ±0.5 mm

Chemical composition according to GOST 2246-70

Steel Grade	Fraction of total mass, %										
	C	Si	Mn	Cr	Ni	Mo	Ti	S	P	Cu	N
								Not more than			
Sv-08G2SC	0.05-0.09	0.70-0.85	1.80-1.95	0.20 max	0.25 max	-	-	0.025	0.03	0.25	0.01
Sv-08GSMT	0.06-0.11	0.40-0.70	1.00-1.30	0.30 max	0.30 max	0.20-0.40	0.05-0.12	0.025	0.03	0.25	0.01
Sv-10GN	0.12 max	0.15-0.35	0.90-1.20	0.20 max	0.90-1.20	-	-	0.025	0.03	0.25	0.01
Sv-08HM.	0.06-0.10	0.12-0.30	0.35-0.60	0.90-1.20	0.30 max	0.50-0.70	-	0.025	0.03	0.25	0.012

Chemical composition according to TU 14-1-2203-77

Steel Grade	Fraction of total mass, %										
	C	Si	Mn	Cr	Ni	Mo	Ti	S	P	Cu	N
								Not more than			
Sv-08GSNT	0.10 max	0.60-0.90	1.40-1.80	0.30 max	0.80-1.20	-	0.05-0.12	0.030	0.03	-	0.02 optional
Sv-08GNM	0.09 max	0.20-0.40	0.60-1.00	0.30 max	0.60-0.85	0.90-1.10	0.05-0.12	0.015	0.02	0.20	0.015

Alloy steel wire rod according to TU 14-1-105-596-96

Steel grades: Sv-04N2GTA, Sv-04N2GSTA, Sv-04N31MTA, Sv-04N3GSMTA, Sv-10GNA, Sv-05GNTAA, Sv-08GSNTA are intended for manufacture of welding wire by redrawing procedure; erection of vessel hulls and steel structures by welding meeting the requirements of the Russia's Register of Shipping.

Product dimensions

Diameter, mm	Tolerance, mm
5.5	+0.3 -0.5
6.0	
6.5	
8.0	
9.0	

Ultimate strength: 690 N/mm2 (70 kgf / mm2).

Relative reduction of cross-sectional area at fracture: not less than 48%.

Chemical composition

Steel Grade	Fraction of total mass, %										
	C max	Si	Mn	Cr max	Ni	Mo	Ti	O_2 not more than	P not more than	S not more than	N_2 not more than
Sv-04N3GMTA	0.05	0.20 max	1.30-1.60	0.30	2.4-2.8	0.2-0.3	0.05-1.12	0.005	0.015	0.012	0.015
Sv-04N2GTA	0.05	0.20 max	1.30-1.60	0.30	2.0-2.4	-	0.05-0.12	0.005	0.015	0.012	0.015
Sv-10GNA	0.12	0.15-0.35	0.9-1.2	0.20	0.9-1.2	-	-	0.005	0.015	0.012	0.015
Sv-08GSNTA	0.10	0.60-0.90	1.4-1.8	0.30	0.8-1.2	-	0.05-1.12	0.005	0.015	0.012	0.015
Sv-04N3GSMTA	0.05	0.35-0.55	1.1-1.5	0.30	2.4-2.8	0.25-0.35	0.05-0.12	0.005	0.015	0.012	0.015

Wire - rod for ropes and structures

This wire–rod is manufactured according to GOST 5317-95.

Classification and symbols:

Classification as to qualitative characteristics:

VK – high-quality wire rod for ropes,

PK – higher quality wire rod for ropes,

KK – quality wire rod for ropes,

PD – wire rod for ropes and structures.

Classification as to cooling method: S – sorbitized cooling of wire rod after rolling heating.

Classification as to accuracy of manufacture: Class V according to GOST 2590-88.

Diameters: 6.5, 8.0, 9.0 mm. As agreed with a customer, wire rod of other dimensions may be manufactured according to GOST 2590-88.

Tolerances

Accuracy Class	Diameter Tolerance, mm	Out-of-roundness
V	+ 0.3 -0.5	0.3

Chemical composition

Steel grade	Fraction of total mass, not more than, %											
	C	Mn	Si		P		S		Cr	Ni	Cu	
			Class		Class		Class				Class	
			VK	PK, KK	VK	PK, KK	VK	PK, KK			VK	PK, KK
35	032-0.40	0.40-0.70	0.37	0.45	0.025	0.030	0.025	0.030	0.10	0.10	0.10	0.15
40	0.37-0.45											
45	0.42-0.50											
50	0.47-0.55											
55	0.52-0.60											
60	0.57-0.65											
65	0.62-0.70											
70	0.67-0.75											
75	0.72-0.80											
80	0.77-0.85											
85	0.82-0.90											

Mechanical properties

Steel grade	Wire rod class: Sorbitized		
	Ultimate strength, σ_B, N/mm^2	Relative reduction, ψ,%	Relative elongation δ_{10}, %
	Not more than	Not less than	
35	740	50	15
40	780	46	15
45	880	42	14
50	930	40	13
55	980	35	12
60	1030	35	11
65	1080	32	10
70	1130	30	9
75	1180	28	9
80	1230	24	8
85	1270	20	7

Wire rod for telegraph wire

This wire-rod is manufactured according to TU 14-1-5284-94. It is intended for drawing wire used in laying overhead communication lines and stranded wire electric power lines.

This wire rod is manufactured either from commercial quality steel T or from copper steel TM, depending on application.

As to accuracy of rolling, the wire-rods are manufactured to conventional accuracy V.

Diameters: 5.5, 6.0, 6.5 mm.

Tolerances for diameter and out-of-roundness are to be in accordance with GOST 2590-88.

Ultimate strength of as-delivered wire rod is 310 to 440 N/mm2.

Wire rod is made in the form of a coil consisting of one continuous length. Coil mass is to be not less than 160 кg.

Chemical composition

Steel grade	Fraction of total mass, %					
	C	Mn	Si	P	S	Cu
	Not more than					
T	0.11	0.50	0.05	0.045	0.05	<0.2
TM	0.11	0.50	0.05	0.045	0.05	0.2-0.4

Wire-rod for wire drawing

According to TU 14-1-5283-94

This wire-rod is manufactured from commercial quality carbon steel.

Steel grades are as follows: St0, St1, St2, St3 of any degree of deoxidation according to GOST 380-94.

Diameters: 5.5, 6.0, 6.5, 8.0, 9.0, 10.0, 11.0 mm.

Tolerances for diameter and out-of-roundness are to be in accordance with GOST 2590-88.

Relative reduction

Steel grade	Ultimate strength, N/mm^2 (kgf/mm^2), not less than		Relative reduction %, not less than	
	Single-stage cooling/ air cooling in coils	Double-stage cooling	Single-stage cooling/ air cooling in coils	Double-stage cooling
St0 with C fraction of total mass up to 0.12%, inclusive	420	470	68	66
St0 with C fraction of total mass higher than 0.12%, inclusive	-	-	60	58
St1ps, St1sp	-	-	68	66
St2kp, St2ps, St2sp	-	-	60	60
St3ps, St3sp	-	-	60	60

This wire rod is manufactured in the form of coils consisting of a single continuous length. Coils consisting of two continuous lengths are permitted in the amount of not more than 10% of consignment mass. Mass of one coil should be not less than 160 kg. Up to 10% of coils in a consignment are permitted to contain less than 160 kg, but not less than 50 kg. It is permitted to pack coils as a bundle of coils not exceeding 5 mt by mass, unless otherwise agreed upon with a customer.

According to ASTM 510M-96

Range of products

Wire rod diameter, mm	Tolerances, mm	Out-of-roundness, mm
5.5-12.0	±0.4	0.6

Chemical composition

Steel grade (acc.to SAE))	Fraction of total mass, %			
	C	Mn	P max	S max
1006	0.08 max	0.25-0.40	0.040	0.050
1008	0.10 max	0.30-0.50	0.040	0.050
1010	0.08-0.13	0.30-0.60	0.040	0.050

Wire rod can also be manufactured from steel grades SAE 1012, SAE 1022, SAE 1006. Production of other carbon steel grades according to ASTM 510M-96 (13 mm in diameter) can be brought to a commercial level, when agreed upon with a customer. Microalloying with boron is admitted.

Packing,marking and handling is implemented in conformity with ASTM 700 requirements.

Wire rod for cold drawing

This wire-rod is manufactured according to DIN 1740. This standard covers manufacture of wire rod from commercial quality steel and low alloy steel.

Production of steel grade D63-2 is brought to a commercial level. Same is applied to other steel grades when agreed upon with a customer.

Wire rod for packing and other purposes

This wire-rod is manufactured according to TU 14-5282-94 from commercial quality carbon steel grades St0, St1, St2, St3 of any degree of deoxidation with chemical composition according to GOST 380-94.

Diameters: 5.5, 6.0, 6.5, 8.0, 9.0, 10.0, 11.0, 12.0, 13.0 mm.

Tolerances for diameter and out-of-roundness should be in accordance with GOST 2590-88.

Ultimate strength is to be not less than 310 N/mm2.

Wire rod is made in coils. Mass of one coil should be not less than 160 kg.