

## GOST 10707-80 ELECTRIC WELDED COLD-FINISHED STEEL TUBES

Tube size range is given in Table 1.

Limit tolerances for wall thickness vary from 0.075 to 0.12 mm depending on tube diameter.

Tubes to this standard shall be delivered in random (1.5 to 9 m), specified (3 to 9 m) and multiple length within specified with 5 mm allowance per cut. On the buyer's request tube shall have the length over 9 m.

Tubes of specified and multiple length up to 6 m shall have length tolerance +10 mm; for tube length over 6 m length tolerance shall be +15 mm.

Wall thickness variation and ovality of tubes shall be within the permissible tolerances for wall thickness and diameter. On the buyer's request total ovality and wall thickness tolerance shall be not greater than 0.8 of the total wall thickness and diameter tolerance.

Tube curvature per any meter length shall not exceed 1.5 mm for heat treated tubes and 2 mm for tubes without heat treatment. On the buyer's request the above tolerances for tube curvature shall not exceed 1.0 mm and 1.5 mm respectively.

Table 1 Size range and limit tolerances for diameter

Outside diameter, mm	Wall thickness, mm	Limit tolerance for OD, mm, for different levels of accuracy		
		Normal	Improved	High
5; 6; 7	0.5; 0.6; 0.7; 0.8; 0.9; 1.0	±0.15	±0.10	-
8; 9;	0.5-1.0; 1.2			
10	0.5-1.2; 1.4; 1.5			
11; 12	0.5; 1.5; 1.6; 1.8; 2.0; 2.2;	±0.20	±0.12	±0.10
	2.5			
13	0.6-2.5			
14; 15; 16	0.7-2.5			
17; 18; 19;	1.0-2.5			
20				
21	1.0-2.5	±0.25	±0.15	±0.12
22; 23; 24;	1.0-2.5; 2.8; 3.0			
25; 26; 27;				
28; 29; 30				

32; 33; 34;	1.0-3.0	±0.30	±0.20	±0.15
35; 36				
38; 40	1.0-3.0; 3.2; 3.5			
41.3; 42;	1.0-3.5	±0.35	±0.25	±0.20
42; 45; 46;				
48; 49; 50				
51; 53; 54;	1.4-3.5	±0.75%	±0.6%	±0.25
55; 56; 57				
59; 60	1.5-3.5			
63; 65; 68;	1.5-3.5	±0.75%	±0.6%	±0.30
70				
73; 75; 76	1.5-3.5	±0.75%	±0.6%	±0.35
77; 80	2.5-3.5			
83	2.5-3.5	±0.75%	±0.6%	±0.40
87; 89	2.5-3.5; 4.0			
90	3.5-4.0			
100	3.5-4.0	±0.75%	±0.6%	±0.49
101; 102	4.0			
110	4.0; 4.5; 5.0			

Other requirements.

Tubes shall be produced in different grades depending on quality level:

- grade A: with specified mechanical properties of killed, semikilled and rimming steel grades St2, St3, St4 (table 2);
- grade B: with specified chemical composition of killed, semikilled and rimming steel grades BSt2, BSt4, 08, 10, 15, 20, 08Ju;
- grade V: with specified chemical composition and mechanical properties of killed, semikilled and rimming steel grades BSt2, BSt3, BSt4, 08, 10, 20 and 08Ju;
- grade D: with specified hydraulic test pressure.

Tube shall be delivered heat treated or without heat treatment. On the buyer's request heat treatment shall be carried out in a protective atmosphere.

Mechanical properties of tubes grades A and C delivered in heat treated condition, shall conform to those given in Table 2. Mechanical properties of tubes without heat treatment are subject to agreement; in any case they shall be not lower than: tensile strength 314 MPa; elongation 5 percent.

Марка стали	Временное сопротивле- ние разры- ву, МПа	Предел текучести, МПа	Относитель- ное удлине- ние, %
Все	314	216	5

Table 2 Mechanical properties of tubes

Steel grade	Tensile strength, MPa	Yield strength, MPa	Elongation, percent
08кп, 08Ю	294	175	27
08, 08пс, 10кп	314	196	25
10пс, 15кп, Ст2сп, Ст2кп, Ст2пс	333	206	24
10	353	206	24
15, 15пс, 20кп, Ст3сп, Ст3пс, Ст3кп, ВСт3сп, ВСт3пс, ВСт3кп	372	225	22
20, 20пс, Ст4сп, Ст4пс, Ст4кп, ВСт4сп, ВСт4кп, ВСт4пс	412	245	21

Note: Yield limit is determined on the buyer's request.

According to the height of internal weld bead, tubes to this standard shall be delivered in three grades:

I - with internal bead height below 0.3 mm; on agreement, weld bead can be left intact and its height shall be lower than 0.6 tube wall thickness;

II - with internal bead height under 0.15 mm;

III - with internal weld bead removed leaving tube wall thickness within specified tolerances.

Tube ends shall be cut square and deburred. Tube end bevelling due to burr removal is permissible. Random length tubes shall be delivered without burr removal on agreement.

Tubes to this standard shall withstand hydraulic test pressure or undergo 100% non-destructive test of the weld area. Tubes with D/t ratio equal or lower than 35 shall be tested by the pressure of 6 MPa; tubes with D/t ratio over 35 shall be tested at 4MPa.

On agreement tubes in heat treated condition shall undergo hydraulic pressure test to GOST 3845-75 under pressures not over 20 MPa; on special agreement pressures over 20 MPa may be used.

Heat treated tubes grades A, B and C shall be flattened with distance H between flattening plates calculated according to formulas given elsewhere.

On agreement, hydraulic and non-destructive test may not be carried out.