

GOST 12132-66 WELDED AND SEAMLESS TUBES FOR MACHINE BUILDING

Tubes to this standard shall be electric welded, seamless or electric welded and cold drawn. Method of manufacture shall be indicated in the order. For size range of tubes see Tables 1-3.

Table 1 Size range of seamless tubes, mm

Диаметр наружный, мм Outside diameter, mm	Толщина стенки, мм Wall thickness, mm
6; 7	0.8; 1.0; 1.2; 1.5; 1.8
8; 9	0.8; 1.5; 1.8; 2.0
10	0.8; 1.5; 1.8; 2.0; 2.2; 2.5
11; 12; 13	0.8; 2.8; 3.0
14; 15; 16; 17; 18; 19; 20	0.8; 2.8; 3.5; 4.0
21; 22	0.8; 2.8; 3.5; 4.0
24; 25; 26; 27; 28	0.8; 2.8-4.0; 4.5; 5.0; 5.5; 6.0
29; 30	0.8; 1.0; 2.8-6.0
32; 33; 34; 35	0.8; 1.0; 3.0; 3.5; 4.0; 4.5; 5.0; 5.5; 6.0
36	0.8; 1.0; 3.5-6.0
38; 39; 40	0.8; 1.0; 3.5-6.0; 6.5; 7.0; 7.5
41; 42; 45	1.0; 4.0-7.5
48; 50; 51; 53; 54; 57	1.0; 1.2; 4.5-7.5
63.5; 70; 75	1.0; 1.2; 4.5-7.5
89; 102	1.5; 1.8; 5.5-7.5

Table 2 Size range of welded, welded and cold drawn or seamless tubes, mm

Диаметр наружный, мм Outside diameter, mm	Толщина стенки, мм Wall thickness, mm
8; 9; 10	1.0; 1.2
11; 12; 13; 14; 15; 16; 17; 18;	1.0; 1.2; 1.5; 1.8; 2.0; 2.2; 2.5
19; 20; 21; 22; 24; 25; 26; 27; 28	1.0; 1.2; 1.5; 1.8; 2.0; 2.2; 2.5
29; 30	1.2; 1.5; 1.8; 2.0; 2.2; 2.5
32; 33; 34; 35	1.2-2.5; 2.8
36; 38; 39; 40; 41; 42; 45	1.2-2.5; 2.8; 3.0
48; 50; 51; 53; 54	1.2-2.5; 2.8; 3.0
57; 63.5; 70; 75	1.5-3.0

Table 3 Size range of welded and seamless tubes, mm

Диаметр наружный, мм Outside diameter, mm	Толщина стенки, мм Wall thickness, mm
39; 40; 41; 42; 45	1; 2
48; 50; 51; 53; 54	3; 5
57; 63.5; 70; 75	3.5; 4.0
89; 102	2; 2.2; 2.5; 2.8; 3.0; 3.5; 4.0; 4.5; 5.0

Limit dimensional tolerances for particular sizes are given in Table 4.

Table 4. Limit dimensional tolerances for particular sizes are given

Tube size, mm	Limit tolerances for different levels of accuracy, mm		
	normal	improved	high
Диаметр наружный Dн Outside diameter			
<10	± 0,20	± 0,15	± 0,10
10-30	± 0,30	± 0,20	± 0,10
30-50	± 0,40	± 0,25	± 0,15
>50	± 0,8	± 0,6*	± 0,5*
Толщина стенки S Wall thickness			
<1	± 0,12	± 0,10	± 0,08
1-5	± 10,0*	± 8,0*	± 7,5*
>5	± 8,0*	± 7,0*	± 6,0*

* - Предельные отклонения в %. * - Limit tolerances are given in %.

Notes

1. Tubes of high accuracy level shall be welded and drawn.
2. Tubes 32x1 shall have the OD tolerance ± 0.10 mm.

The length shall be random within 1.5 to 9 meters or specified within 4 to 9 meters; on request multiple lengths are deliverable with 5 mm allowance per cut.

Each tube lot of random length shall have 5% of tubes not shorter than 0.5 m by mass.

Total allowance for tube length is +20 mm for diameters below 30 mm and +25 mm for diameters over 30 mm.

On special agreement other tolerances not exceeding their total specified values are possible.

For ordering, OD and w.t. values are specified.

High accuracy tubes are supplied to one parameter only.

Different combinations of OD and w.t. tolerances are possible.

Wall thickness variation and out-of-roundness shall leave the tubes within the tolerances for OD and wall thickness. On the buyer's request these tolerances shall not exceed 0.8 mm of total tolerance for OD and w.t.

Tube curvature shall not be over 1.5 mm per meter length; tubes with 1 mm curvature per meter length are supplied on request.

Method of tube manufacture is indicated in the order.

Tubes of steel grades 35, 45, 15H, 30HGSA and 30HMA shall be seamless.

Depending on the use tubes shall be made of steel to GOST 3500-88, GOST 1050-88, GOST 4543-71.

Mechanical properties of heat treated tubes are given in Table 5.

Table 5 Mechanical properties of tubes

Steel grade	Tensile strength, MPa	Elongation, %	Steel grade	Tensile strength, MPa	Elongation, %
	not lower			not lower	
08	314	25	45	589	14
10, Ct2	334	24	15X	412	19
Ct3	373	22	30XГСА	491	18
20	412	21	30XMA	589	13
35	510	17			

Note.

Tubes of rimming steel grades can be supplied on agreement.

Welded tubes may have weld bead on the inside surface.

Weld bead on the inside surface of tubes is permissible: for tubes of normal accuracy with diameters over 30 mm weald bead height shall be under 0.5 mm and for tubes of high accuracy it shall be under 0.2 mm. Tubes with OD under 76 mm may have local wall thinning after bead removal added to the negative tolerance on w.t.

Tube ends shall be cut square and deburred. Electric welded tubes shall be hydraulically tested at pressures of 600 MPa. For tubes tested by non-destructive methods, hydraulic test is not specified.

Heat treated tubes and electric welded tubes without heat treatment shall withstand a flattening test.

Expansion, bending and flanging tests are accomplished according to the customer's request.

Depending on the delivery condition, heat treated tubes shall withstand bending, flanging and expansion tests. The amount of flanging is subject to agreement.