

GOST 23270-78 MOTHER TUBES FOR MACHINING PURPOSES

Steel mother tubes to this standard shall be used for making articles by machining.

Mother tube size range (mm) is given in Table 1.

Mother tubes to this standard shall have the length given below:

- random 1.5 to 12.5 m;
- specified 4.0 to 12.5 m;
- limited;
- multiple within random with 5 mm allowance per cut.

Tube curvature per meter length shall not exceed the values given below:

- 1.5 mm for wall thickness below 20 mm;
- 2.0 mm for wall thickness 20 to 30 mm;
- 4.0 mm for wall thickness over 30 mm.

Tolerances other than specified here are subject to agreement.

Technical requirements.

Mother tubes to this standard shall be produced of steel grades 10; 20; 35; 45; 30HGSA; 30HMA, 12HN2; 38H2MYuA with chemical composition specified in GOST 1050-88 and GOST 4543-71. Mother tube of steel grade 38H2MYuA shall be made of peeled billets.

Mechanical properties of tube metal are given in Table 2.

Mechanical properties of steel grade 38H2MYuA are given in Table 3.

Steel making method for grade 38H2MYuA is specified in the order.

In electroslag-remelted steel sulphur content shall be under 0.015 %; specified silicon content variation shall be within +0.1 %.

Table 1

Outside diameter	Wall thickness	Limit tolerance for different accuracy levels			
		outside diameter		wall thickness	
		normal	improved	normal	improved
42	3.0; 3.5; 4.0; 4.5;	±0.5 мм	±0.5 %	для S ≤ 15.0 мм	
	5.0; 5.5; 6.0				
45	3.0-6.0; 6.5; 7.0				
50	3.0-7.0; 7.5; 8.0			+12.5 %	+12.5 %
54	3.0-8.0;	±1.0 %	±0.8 %	-15.0 %	
57	3-8; 8,5; 9,0; 9,5;				
	10,0;11.0; 12.0; 13.0				
60; 63.5	3.0-13.0; 14.0			для S = 15.0 ÷ 30.0 мм	
68; 70	3.5-14.0; 15.0; 16.0				
73; 76; 83	3.5-16.0; 17.0; 18.0;				
	19.0			+12.5 %	+10.0 %
89; 95; 102	3.5-19.0; 20.0; 22.0;				-12.5 %
	24.0				
108; 114;					
121	4.0-24.0; 25.0; 26.0;			для S ≤ 30.0 мм	
	28.0				
127	4.0-28.0;				
133	4.0-28.0; 30.0			+10.0 %	±10.0 %
140; 146;				-12.0 %	
152; 159	4.5-30.0; 32.0; 34.0;				
	35.0; 36				
168; 180;	5.5-36.0; 38.0; 40.0;				
	42.0; 45.0				
194	6,0-45.0				
203	6.0-45.0				
219	6.0-45.0				
245	7,0-45,0				
273;					
299; 325	8,0-45,0				

Note.

For asymmetric size deviations the actual size is taken as a mean for positive and negative tolerance.

Table 2

Steel grade	Tensile strength, MPa	Yield limit, MPa	Elongation, %	Brinell hardness number for t>10 mm, not over	
	not lower			Indentation diameter, mm	HB
10	353	216	24	5.1	137
20	417	245	21	4.8	156
35	510	294	17	4.4	187
45	588	323	14	4.2	207
30X1CA	686	-	11	-	-
30XMA	588	392	13	-	-
12XH2	639	392	14	-	-

Table 3

Steel grade	Reduc. in area, %	Tensile strength, MPa	Impact strength for w. t>12, kg/cm ²	Elongation, %	Brinell hardness number	
					indentation diameter, mm	HB
		not over				
38X2MOA	50	980	216	14	3.4-3.7	-

Tube metal grain size shall be not over 5 according to GOST 5639-65.

Mother tube surface may have removed or repaired defects if they leave the wall thickness within specified limits.

Alloy steel tubes shall be heat treated. Tubes of steel grades 10 and 20 shall withstand expansion, bending, flattening and flanging tests.

Macrostructural examination is carried out only for wall thickness over 12 mm.

Tube ends shall be cut square and deburred. Bevelling at an angle not less than 70 deg. to tube axis is permissible.

A tube lot shall be made of tubes of the same size, steel grade and heat treatment conditions, and on the customer's request of metal from one heat.

A tube lot shall contain not over 400 lengths of tubes with OD under 76 mm and 200 lengths for other diameters.