

GOST 5005-82 ELECTRIC WELDED STEEL TUBES FOR CARDAN SHAFTS

Tubes to this standard are used in automobile industry and agricultural machine building.

Tubes are manufactured by welding and subsequent drawing. Inside diameter of tubes is 45 to 104 mm, wall thickness 1.6 to 5.0mm. Size range and limit size tolerances are given in table below.

Table 1. Tube size range and limit tolerances for cardan shaft tubes.

Диаметр внутрен- ний, мм	Толщина стенки, мм	Предельные отклонения, мм	
		диаметра внутреннего	толщины стенки
Inside diameter, mm	Wall thickness, mm	Limit tolerance, mm	
		inside diameter	wall thickness
45	2.5	±0.10	±0.12
46	2.5	±0.10	±0.12
55	2.0	±0.11	±0.10 *
55	2.5	±0.11	±0.12
55	3.5	±0.11	±0.15
63	3.5	±0.11	±0.15
71	1.6; 1.8; 2.0	±0.11	±0.10 *
71	2.1; 2.2; 2.5	±0.11	±0.12
71	3.0	±0.11	±0.14
82	2,5	±0.12	±0.12
82	3.0	±0.14	±0.14
82	3.5	±0.20	±0.15
82	4.0	±0.25	±0.14
94	3.5	±0.25	±0.15
94	4.0	±0.25	±0.17
104	4.0	±0.25	±0.17
104	4.5; 5.0	±0.25	±0.20
* - предельные отклонения толщины стенки труб повышенной точно- сти ±0.06 мм.		* - For tubes of improved accuracy wall thickness tolerance shall be 0.06 mm.	

Tubes shall be delivered in random (475 to 8500 mm), specified (475 to 2000 mm) and multiple length with 2 mm tolerance per cut and total length allowance + 10 mm. On agreement 15 % of tube lot by weight shall be delivered as random length.

Tube ovality shall be within the tolerance for the diameter.

Wall thickness variations shall not exceed 50 % of the respective tolerance for wall thickness under 2 mm and 0.12 mm for wall thickness over 2 mm. Tube curvature per meter length shall not exceed 0.25 mm for normal accuracy tubes with the length shorter than 2 m and wall thickness under 2.5 mm or 0.15 mm for tubes of improved accuracy. For tubes with the length over 2 m and wall thickness under 2.5 mm and for tubes of any length and wall thickness over 2.5 mm curvature per meter length shall be not over 0.4 mm (0.25 mm for tubes of improved accuracy).

Tube curvature is measured by placing a ruler on tube surface; the sag shall not be over the values given above.

Technical requirements.

Tubes shall be manufactured of cold rolled strip (steel grades 15 and 20 to GOST 1050-88). Other steel grades are applicable on agreement.

Tube ends shall be cut square and have no burrs and indentations. Weld flash on tube inside surface shall have the height under 0.17 mm for tubes with inside diameters under 71 mm; for larger diameters flash height shall be under 0.25 mm. Weld flash removal may result in 0.1 mm tube wall thinning.

Mechanical properties of tubes of steel grades 15 and 20 are given below.

Механические свойства (mechanical properties)	Марка стали (steel grade)	
	15	20
Предел прочности (tensile strength), МПа	470	510
Предел текучести (yield limit), МПа	373	392
Относительное удлинение (elongation), %	8	8

Tubes shall withstand hydraulic test pressures calculated from the formulas.