

GOST 800-78 BEARING TUBES

This standard specifies the size range and requirements to cold-finished bearing tubes.

Cold-finished bearing tubes shall be supplied in diameters 20 to 90 mm. Tubes with outside diameters 20 to 32 mm are supplied on agreement.

Cold-finished tubes shall have the length of 2.5 to 4.5 meters; Delivery of tubes with the length not shorter than 1 meter (not over 10 % of the lot by mass) is permissible.

Limit tolerances of the outside diameter shall not exceed +0.4 mm for cold-finished tubes of 20 to 60 mm (incl.) or +0.5 mm for cold-finished tubes of 60 to 90 mm (incl.).

Limit tolerances of the wall thickness shall not exceed + 12 %.

Tube curvature shall not exceed 1 mm per any meter length.

This standard also specifies tube surface waviness (cold-finished tubes only); it shall not exceed 0.3 mm for wave length not over 300 mm.

Technical requirements.

Steel grades. Bearing tubes shall be made of steel grades ShH15, ShH15SG made by conventional and slag remelting methods and having the chemical composition to GOST 801-78.

Mechanical properties.

Bearing tubes undergo numerous machining operations; therefore, the only requirement to their properties is tube metal hardness.

Bearing tubes shall be supplied in annealed condition (BHN 255 to 207, indentation diameters 3.8 to 4.2 mm) or, on agreement, tempered at low temperatures for BHN under 285; tubes without heat treatment can be also delivered.

Bearing tubes do not undergo mechanical test.

Other requirements include surface quality inspection, macro- and microstructural examination, non metallic inclusions control and check of decarburized layer depth.

Tubes surface defects shall be divided to unacceptable (laps, tears, cracks) and permissible leaving OD and w.t. values within specified limits.

Tubes section macrostructure on etching shall not have shrinkage porosity, cracks, burns and blisters detectable with an unaided eye.

Tubes section microstructure shall be fine -grained pearlite with uniformly distributed carbides. Carbide segregation exceeding 1.5 units to GOST 801-78 is not permissible.

Tubes steel grades ShH15-SH and ShH15SG-SH shall have no microporosity. Other plain steel grades shall have microporosity not exceeding 2 units to GOST 801-78.

Contents of non-metallic inclusions to GOST 801-78 shall be lower than the values given below:

	Сталь марок (Steel grades)	
	ШХ15, ШХ15СТ	ШХ15-Ш, ШХ15СТ-Ш
Оксиды (Oxides)	2.5	1.5
Сульфиды (Sulphides)	2.5	1.5
Глобули (Globules)	2.5	1.5

According to globules content tubes shall be divided into two grades:

- tube metal of grade 1 may have any inclusion exceeding the specified level by 0.5 units;
- tube metal of grade 2 may have higher contents of oxides and sulphides, not globules.

The depth of decarburized level not exceed 0.3 mm both on the inside and outside surfaces of cold-finished tubes.

Other tests include chemical composition of steel, BHN, macro- and microstructural examination, carbide segregation, microporosity, non-metallic inclusions, decarburized layer depth.