

BEARING TUBES

Chemical composition

100Cr6										
C	Si	Mn	Cr	P	S	Mo	Cu	Al	Ti	Ni
0.93-	0.15-	0.25-	1.35	Not more than						
1.05	0.35	0.45	1.60	0.025	0.015	0.10	0.30	0.050	0.003	0.15

Tolerances - C +/-0.03%, Si +/-0.03%, Mn +/-0.04%, P,S +0.005%, Cr +/-0.05%, Mo +/-0.03%, Al +0.010%, Cu +0.03%, O - max 0.0015%.

Macro-inclusions

The content of macro-inclusions shall not exceed a length of 2.5 mm per dm² as measured by the blue fracture test. The maximum length for a single inclusion shall not exceed 3 mm.

Micro-inclusions

Heat check according to ISO 4967:1998 (E), Method A.

The micro-inclusion rating can be made on the sample of bar with a reduction ratio of minimum 1:10 or maximum 1:60 for continuously cast material.

The micro-inclusion rating shall not exceed the limits specified below.

Inclusion type	Thin	Heavy
A	2.0	1.5
B	1.5	0.5
C	0.0	0.0
D	1.0	0.5
DS		1.5



Microstructure

In accordance to SEP 1520

Pearlite amount

PA ≤ 3.0.

Carbide size

2.1 to 2.3.

Carbide network

4.3 or 5.3 maximum respectively

Carbide segregation

6.2 and 7.3 maximum respectively

Hardness

Hot-rolled tubes:

170 - 210 HBS, according to ISO 6506-1:1999

Cold rolled tubes:

220 - 320 HBS, according to ISO 6506-1:1999

Decarburization:

Hot rolled tubes // Pilled internal surface

Internal surface – max. 0,5 mm. External surface – 0 mm.

Hot rolled tubes // Not Pilled

Internal surface – max. 0,5 mm. External surface – 0,5 mm.

Cold rolled tubes // Internal surface – max. 0,25 mm External surface – max. 0,25 mm.

Hot rolled tubes size range:

Outside diameter	Wall thickness, mm									
	8,0-9,0	9,1-10,0	10,1-11,0	11,1-13,0	13,1-15,0	15,1-17,0	17,1-19,0	19,1-21,0	21,1-23,0	23,1-25,0
82,1-90,0										
90,1-100,0										
100,1-110,0										
110,1-120,0										
120,1-130,0										
130,1-140,0										
140,1-150,0										
150,1-160,0										
160,1-170,0										
170,1-180,0										

Cold rolled tubes size range:

Outside diameter	Wall thickness, mm					
	3,6-5,0	5,1-7,0	7,1-9,0	9,1-11,0	11,1-13,0	13,1-15,0
34,1-40						
40,1-50						
50,1-60						
60,1-70						
70,1-80						
80,1-83						

Dimensional tolerances

Diameter

Hot rolled tubes: $-0/+0,50+0,005 \times \text{Dimension}$

Cold rolled tubes: $-0 /+ 0,40$

Wall Thickness

Hot rolled tubes:

Dimension / Wall thickness	Tolerance (mm)
OD/WT 11	-0/+15%
OD/WT= 11-12,5	-0/+20%
OD/WT 12,5	-0/+25%

Cold rolled tubes = $-0/+12\%$

Straightness

Any deviation from a straight line must not exceed $0.001 \times$ the measured length.

The measured length must be minimum 1000 mm.

Out-of-roundness

Maximum 80% of the OD tolerance range.

Protection

Pipes are supplied:

- black and bare
- oiled internally and externally

Upon request pipes ends are protected with plastic caps.

Marking

Pipes are supplied with marking according to standard and customer request.

Marking is paint and/or hard stenciled on the ends of pipes. The same data, as well as additional information per customer's request, is indicated on the bundle's tags.

Certification

Pipes are supplied with 3.1. inspection certificate, in conformity with EN 10204.

