

MS 863:1983/BS 1387:1985 Light, Medium and Heavy

Our Black and Galvanised pipes are produced to MS 863:1983/BS 1387:1985/MANUFACTURER STANDARD on our precision electric-resistance-weld tube mills, using prime quality steel.

General Information on MS 863:1983/BS 1387:1985 Welded Steel Tube							
Descriptions:	MIG-Maruichi BS 1387 : 1985 welded steel tube is produced in 3 thickness classes* - Light, Medium and Heavy - and available in black finish or hot dipped galvanised finish in 6 meter uniform mill lengths.						
Applications:	For ordinary conveyance of steam, gas, air, water, etc.						
End Finish and Protection:	Plain-end square-cut (PE) or threaded and fixed with coupling (T/C). (PE) tubes are shipped without any protection on both ends. T/C tubes are supplied screwed with taper threads to BS21 and fitted with one parallel-threaded malleable iron socket, as required under this specification.						
Identification Marking:	<p>Tubes are marked by colour bands about 50 mm wide, painted about 300 mm from each end, as follows:</p> <table border="1"> <tr> <td>Light tubes -</td> <td>Brown</td> </tr> <tr> <td>Medium tubes -</td> <td>Blue</td> </tr> <tr> <td>Heavy tubes -</td> <td>Red</td> </tr> </table>	Light tubes -	Brown	Medium tubes -	Blue	Heavy tubes -	Red
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Chemical Composition:	<p>The chemical composition of the steel, by ladle analysis, shall comply with the table below:</p> <table border="1"> <thead> <tr> <th>C max.</th> <th>Mn Max.</th> <th>P Max.</th> <th>S Max.</th> </tr> </thead> <tbody> <tr> <td>0.20%</td> <td>1.20%</td> <td>0.045%</td> <td>0.045%</td> </tr> </tbody> </table>	C max.	Mn Max.	P Max.	S Max.	0.20%	1.20%	0.045%	0.045%
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Mechanical Properties:	<p>The mechanical properties at room temperature shall be as given in the table below:</p> <table border="1"> <tr> <td>Tensile strength (N/mm²):</td> <td>320 to 460</td> </tr> <tr> <td>Yield strength (N/mm²):</td> <td>195 min.</td> </tr> <tr> <td>Elongation on gauge length $L_0 = 5.65\sqrt{S_0}$(%):</td> <td>20 min.</td> </tr> </table>	Tensile strength (N/mm ²):	320 to 460	Yield strength (N/mm ²):	195 min.	Elongation on gauge length $L_0 = 5.65\sqrt{S_0}$ (%):	20 min.		
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Tolerances on Dimensions and Mass	<p>Outside Diameter:</p> <table border="1"> <tr> <td>Wall thickness:</td> <td>Light tubes</td> <td>- 8%</td> </tr> <tr> <td></td> <td>Medium and Heavy Tubes</td> <td>- 10%</td> </tr> </table> <p>Mass: the mean consignment mass for quantities of 150m and over of one size shall not deviate by more than $\pm 4\%$ from the mass of consignment calculated from the mass given in Table as appropriate. No single tube shall deviate by more than +10%, -8% from the mass given in Table as appropriate.</p>	Wall thickness:	Light tubes	- 8%		Medium and Heavy Tubes	- 10%		
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Hot-Dip Zinc Coating Test: (if required)	After the 4 successive one-minute immersions in the copper-sulphate solution, the test sample shall not show any adherent red deposits of metallic copper.								
Bend Test:	Black tubes up to and including DN 50 shall be bent cold without any sign of fracture or failure, through 180° round a former having a radius at the bottom of the groove equal to 6 times the outside diameter of the tube as given in the Table. Hot-dip zinc coated tubes shall be bent cold without cracking of the steel, through 90° round a former having a radius at the bottom of the groove equal to 8 times the outside diameter of the tube.								
Flattening Test:	The flattening test applies to tubes greater than DN 50. A ring not less than 40mm in length taken from one end of each selected tube shall be flattened cold between parallel flat platens without showing either crack or flaw until the distance between the platens, measured under load, is not greater than 75% of original outside diameter of the tube, and no cracks or flaws in the metal elsewhere than in the weld shall occur until the distance between the platens is less than 60% of original								

	diameter. The weld shall be placed at 90° to the direction of flattening.										
Leak Tightness Test:	The test shall be either a hydraulic test at a pressure of 50 bar (50 x 10 N/M), or alternatively, an eddy current test.										
Bore Test for Hot-Dip Coated Tubes:	Hot-dip zinc coated tubes up to and including DN 25 shall have a rod 230mm in length, of the appropriate diameter specified below, passed through them and shall have a free bore.										
	<table border="1"> <thead> <tr> <th colspan="2">Rod Diameter</th> </tr> <tr> <th>Nominal Size (DN)</th> <th>Diameter of Rod (mm)</th> </tr> </thead> <tbody> <tr> <td>15</td> <td>9.5</td> </tr> <tr> <td>20</td> <td>14.3</td> </tr> <tr> <td>25</td> <td>20.6</td> </tr> </tbody> </table>	Rod Diameter		Nominal Size (DN)	Diameter of Rod (mm)	15	9.5	20	14.3	25	20.6
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Special tube sizes not stipulated in the BS specifications may be made available upon request.											