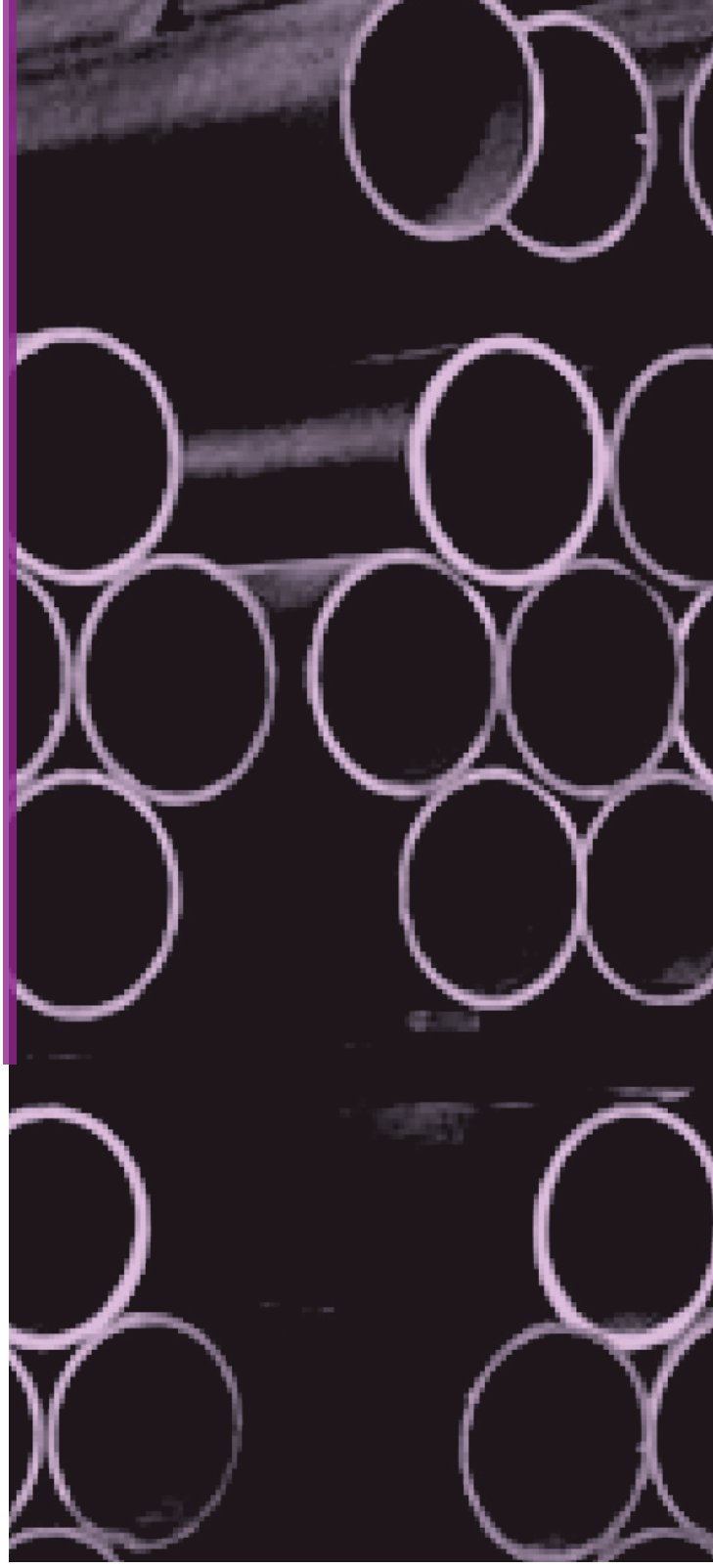
STEEL

PIPES



7f) Screwed And Socketed Steel Tubes And Tubulars And For Plain End Steel Tubes Suitable For Welding Or For Screwing To BS 21 Pipe Threads

British Standard (Extracts from BS 1387 : 1985)

General Information

This British Standard specifies requirements for screwed and socketed steel tubes and tubular and for plain end steel tubes suitable for welding or for screwing to BS 21 pipe threads.

Chemical Composition

The Chemical Composition of the steel shall comply with Table 1.

Table 1. Chemical Composition

Chemical Composition % max.			
C	Mn	P	S
0.20	1.20	0.045	0.045

Mechanical Strength (Tensile Test)

The Mechanical properties at room temperatures shall be as given in Table 2.

Table 2. Mechanical Properties

Mechanical Properties At Room Temperature		
Minimum Tensile Strength N/mm^2	Minimum Yield Strength, N/mm^2	Minimum Elongation On Gauge Length $Lo = 5.65\sqrt{So}$ A
320 to 460	195	20

Bending Test

The bend test applies to tubes up to and including DN 50. When tested in accordance with the following bend test the finished tubes shall withstand the test without showing any signs of fracture or failure.

The test shall be carried out using a tube bending machine and the tube shall be bend round a grooved former of the radius given in (a) or (b) as appropriate. Tubes shall be bent with the weld at 90˚ to the plane of bending. The tubes shall not be filled for this test.

a) Tubes which have not been hot-dip zinc coated shall be bend cold, without cracking, through 180˚ round a former having a radius at the bottom of the groove equal to six times the outside diameter of the tube as given in table 1, 2 and 3.

b) 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 eight times the outside diameter of the tube.

Cold Flattening Test

The flattening test applies to tubes greater than DN 50.

The weld shall be placed at 90˚ to the direction of flattening.

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 the original outside diameter of the tube and no crack or flaws in the metal elsewhere than in the weld shall occur until the distance the between the platens is less than 60% of the original outside diameter.

Leak Tightness Test

Each tube shall be tested for leak tightness at the manufacturer's works.

The test shall be either a hydraulic test at a pressure of 50 bar, the pressure being maintained sufficiently long for proof and inspection.

Or alternatively, an eddy current test.

Tolerances On Dimensions and Mass

The tolerances on dimensions shall respectively conform to Table 3.

Table 3. Tolerance on dimensions

Dimension Of Steel Tubes		Tolerance
Outside Diameter	Light	Refer to Table A
	Medium	Refer to Table B
	Heavy	Refer to Table C
Thickness	Light tubes	- 8%
	Medium tubes	- 10%
	Heavy tubes	- 10%
Length	+ 6, - 0 mm	
Straightness	Shall not exceed 0.20 %	
Out-of-roundness (*o*)	-	
Concavity / convexity	-	
Radius of Corners	-	
Squareness of side	-	
Twist	-	
Inner Flash	-	
End tolerance of diameter	-	
End Facing	-	
Mass (*m*) per unit length	The mean consignment mass for quantities of 150mm and over of one size shall not deviate by more than ± 4% form the mass of consignment calculated from the mass given in Table A, B and C. Single tube shall deviate by more than +10%, -8% from the mass given in the Table A, B and C.	

Pipes BS 1387

7f(i) Welded Steel Pipe & Galvanised Iron Pipe

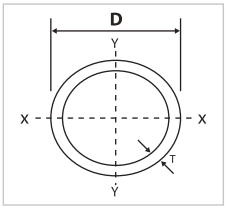


Table A - Welded Steel Pipe - Class Light (A)

BS 1387 : 1985 / Manufacturer's Standard

Nominal Size		Outside Diameter		Wall Thickness	Calculated Weight				No. of Threads/in	Socket		Test Pressure	
		Max	Min		Plain Ends		Threads and Coupling			Outer Diameter	Min Length		
		D		t									
mm	in	mm	mm	mm	Kg/m	Kg/ft	Kg/m	Kg/ft		mm	mm	Bar	psi
15	1/2	21.4	21.0	2.0	0.947	0.289	0.956	0.291	14	27.8	38.1	50	700
20	3/4	26.9	26.4	2.3	1.38	0.421	1.39	0.424	14	34.1	41.3	50	700
25	1	33.8	33.2	2.6	1.98	0.604	2.00	0.610	11	42.1	47.6	50	700
32	1 1/4	42.5	41.9	2.6	2.54	0.774	2.57	0.783	11	51.6	54.0	50	700
40	1 1/2	48.4	47.8	2.9	3.23	0.985	3.27	0.997	11	57.9	57.2	50	700
50	2	60.2	59.6	2.9	4.08	1.24	4.15	1.26	11	70.6	63.5	50	700
65	2 1/2	76.0	75.2	3.2	5.71	1.74	5.83	1.78	11	87.3	69.9	50	700
80	3	88.7	87.9	3.2	6.72	2.05	6.89	2.10	11	101.6	76.2	50	700
100	4	113.9	113.0	3.6	9.75	2.97	10.00	3.05	11	128.6	88.9	50	700

Table B - Welded Steel Pipe - Class Light (B)

BS 1387 : 1985 / Manufacturer's Standard

Nominal Size		Outside Diameter		Wall Thickness	Calculated Weight				No. of Threads/in	Socket		Test Pressure	
		Max	Min		Plain Ends		Threads and Coupling			Outer Diameter	Min Length		
		D		t									
mm	in	mm	mm	mm	Kg/m	Kg/ft	Kg/m	Kg/ft		mm	mm	Bar	psi
15	1/2	21.7	21.1	2.6	1.21	0.369	1.22	0.372	14	27.8	38.1	50	700
20	3/4	27.2	26.6	2.6	1.56	0.475	1.57	0.479	14	34.1	41.3	50	700
25	1	34.2	33.4	3.2	2.41	0.735	2.43	0.741	11	42.1	47.6	50	700
32	1 1/4	42.9	42.1	3.2	3.10	0.945	3.13	0.954	11	51.6	54.0	50	700
40	1 1/2	48.8	48.0	3.2	3.57	1.09	3.61	1.10	11	57.9	57.2	50	700
50	2	60.8	59.8	3.6	5.03	1.53	5.10	1.55	11	70.6	63.5	50	700
65	2 1/2	76.6	75.4	3.6	6.43	1.96	6.55	2.00	11	87.3	69.9	50	700
80	3	89.5	88.1	4.0	8.37	2.55	8.54	2.60	11	101.6	76.2	50	700
100	4	114.9	113.3	4.5	12.2	3.72	12.5	3.81	11	128.6	88.9	50	700
125	5	140.6	138.7	5.0	16.6	5.06	17.1	5.21	11	155.6	95.3	50	700
150	6	166.1	164.1	5.0	19.7	6.00	20.3	6.19	11	184.2	95.3	50	700

Table C - Welded Steel Pipe - Class Light (C)

BS 1387 : 1985 / Manufacturer's Standard

Nominal Size		Outside Diameter		Wall Thickness	Calculated Weight				No. of Threads/in	Socket		Test Pressure	
		Max	Min		Plain Ends		Threads and Coupling			Outer Diameter	Min Length		
		D		t									
mm	in	mm	mm	mm	Kg/m	Kg/ft	Kg/m	Kg/ft		mm	mm	Bar	psi
15	1/2	21.7	21.1	3.2	1.44	0.439	1.45	0.442	14	27.8	38.1	50	700
20	3/4	27.2	26.6	3.2	1.87	0.570	1.88	0.573	14	34.1	41.3	50	700
25	1	34.2	33.4	4.0	2.94	0.896	2.96	0.902	11	42.1	47.6	50	700
32	1 1/4	42.9	42.1	4.0	3.80	1.16	3.83	0.954	11	51.6	54.0	50	700
40	1 1/2	48.8	48.0	4.0	4.38	1.34	4.42	1.17	11	57.9	57.2	50	700
50	2	60.8	59.8	4.5	6.19	1.89	6.26	1.91	11	70.6	63.5	50	700
65	21/2	76.6	75.4	4.5	7.93	2.42	8.05	2.45	11	87.3	69.9	50	700
80	3	89.5	88.1	5.0	10.3	3.14	10.5	3.20	11	101.6	76.2	50	700
100	4	114.9	113.3	5.4	14.5	4.42	14.8	4.51	11	128.6	88.9	50	700
125	5	140.6	138.7	5.4	17.9	5.46	18.4	5.61	11	155.6	95.3	50	700
150	6	166.1	164.1	5.4	21.3	6.49	21.9	6.68	11	184.2	95.3	50	700