

Technical Specification References

Classification	Specification	Designation of Grade	Mechanical Properties			Chemical Composition %					Bend Test (N2)		Flattening Test H
			Tensile Strength Min.	Yield Strength Min.	Elongation Min.	C	Si	Mn	P	S	Bending Angle	Bending Radius	
			N/mm ²	N/mm ²	%	Max	Max	Max	Max	Max			
Welded Steel Tubes - Light, Medium & Heavy	BS EN 10255 : 2004	-	320 to 520	195	20 (N3)	0.20	-	1.20	0.045	0.045	180°	6D	3/5 D
Carbon Steel Pipes For Ordinary Piping	JIS G 3452	SGP	290min.	-	(N1) Test Piece No. 11 & 12 - 30min. (N1) Test Piece No. 5 - 25min.	-	-	-	0.040	0.040	90°	6D	2/3 D
ASTM Standard Welded Steel Pipes	ASTM A53	Grade A	330min.	205min.	As specified in A-53 specification	0.25	-	0.95	0.050	0.060	90°	12D	1/3 D
		Grade B	415min.	240min.		0.30	-	1.20	0.050	0.060			
ERW Steel Tubes for Cement Lined Pipes	BS 3601	ERW 320	320 - 460	195 min.	25 (N3)	0.16	-	0.30 - 0.70	0.040	0.040	-	-	As specified in BS 3601 Specification
		ERW 430	430 - 570	275 min.	22 (N3)	0.21	0.35	0.40 - 1.20	0.040	0.040			
Alpine Manufacturer Standard Welded Steel Pipes	APM S 002	(A) (AA)	270min.	170min.	20 (N3)	0.20	-	1.20	0.045	0.045	90°	6D	1/3 D

NOTES : (N1) - When the tensile test is carried out on No. 12 or No. 15 test piece for the pipe under 8mm in wall thickness the minimum value of elongation shall be obtained by subtracting 1.5% from the thickness values of elongation given in Table above for each 1mm decrease in wall thickness, and rounding off to an integer in accordance with JIS Z 8401

(N1) - The values of elongation given in Table above shall not applied to the pipe whose nominal size is 32mm or smaller

(N2) - Bend test in table above only applied to pipes of nominal size 2" (50mm) or smaller.

(N3) Gauge length $L_0 = 5.65 \sqrt{S_0}$ (%)

H - Distance between the plates

D - Outside diameter of the pipe

APM S 002 - Manufacturer Standard

Welded Steel Pipes

BS EN 10255:2004

CLASS	Nominal		Outside Diameter		Wall	Calculated Weight						Number Of Threads	Socket		Test Pressure	
	Size		Maximum	Minimum	Thickness	Plain Ends			Threads and Coupling				per inch	Outer Diameter		
	mm	in	mm	mm	mm	kg/m	kg/ft	lb/ft	kg/m	kg/ft	lb/ft	mm		mm	Bar	Psi
LIGHT (L2)	15	1/2	21.4	21.0	2.0	0.947	0.289	0.636	0.956	0.291	0.642	14	27.8	38.1	50	725
	20	3/4	26.9	26.4	2.3	1.38	0.421	0.928	1.39	0.424	0.935	14	34.1	41.3	50	725
	25	1	33.8	33.2	2.6	1.98	0.604	1.33	2.00	0.61	1.34	11	42.1	47.6	50	725
	32	1 1/4	42.5	41.9	2.6	2.54	0.774	1.71	2.57	0.78	1.73	11	51.6	54.0	50	725
	40	1 1/2	48.4	47.8	2.9	3.23	0.985	2.17	3.27	1.00	2.20	11	57.9	57.2	50	725
	50	2	60.2	59.6	2.9	4.08	1.24	2.73	4.15	1.26	2.78	11	70.6	63.5	50	725
	65	2 1/2	76.0	75.2	3.2	5.71	1.74	3.83	5.83	1.78	3.92	11	87.3	69.9	50	725
	80	3	88.7	87.9	3.2	6.72	2.05	4.52	6.89	2.10	4.63	11	101.6	76.2	50	725
	100	4	113.9	113.0	3.6	9.75	2.97	6.55	10.00	3.05	6.72	11	128.6	88.9	50	725
LIGHT (L1)	15	1/2	21.7	21.0	2.3	1.080	0.329	0.726	1.090	0.332	0.732	14	27.8	38.1	50	725
	20	3/4	27.1	26.4	2.3	1.39	0.424	0.934	1.40	0.427	0.941	14	34.1	41.3	50	725
	25	1	34.0	33.2	2.9	2.20	0.671	1.48	2.22	0.68	1.49	11	42.1	47.6	50	725
	32	1 1/4	42.5	41.9	2.9	2.82	0.860	1.89	2.85	0.87	1.92	11	51.6	54.0	50	725
	40	1 1/2	48.6	47.8	2.9	3.24	0.988	2.18	3.28	1.00	2.20	11	57.9	57.2	50	725
	50	2	60.7	59.6	3.2	4.49	1.37	3.02	4.56	1.39	3.06	11	70.6	63.5	50	725
	65	2 1/2	76.3	75.2	3.2	5.73	1.75	3.85	5.85	1.78	3.93	11	87.3	69.9	50	725
	80	3	89.4	87.9	3.6	7.55	2.30	5.07	7.72	2.35	5.19	11	101.6	76.2	50	725
	100	4	114.9	113.0	4.0	10.80	3.29	7.26	11.10	3.38	7.46	11	128.6	88.9	50	725
MEDIUM (M)	15	1/2	21.8	21.1	2.6	1.21	0.369	0.814	1.22	0.372	0.82	14	27.8	38.1	50	725
	20	3/4	27.3	26.5	2.6	1.56	0.475	1.05	1.57	0.479	1.06	14	34.1	41.3	50	725
	25	1	34.2	33.3	3.2	2.41	0.735	1.62	2.43	0.741	1.63	11	42.1	47.6	50	725
	32	1 1/4	42.9	42.1	3.2	3.10	0.945	2.08	3.13	0.954	2.10	11	51.6	54.0	50	725
	40	1 1/2	48.8	47.9	3.2	3.56	1.09	2.40	3.60	1.10	2.42	11	57.9	57.2	50	725
	50	2	60.8	59.7	3.6	5.03	1.53	3.37	5.10	1.55	3.42	11	70.6	63.5	50	725
	65	2 1/2	76.6	75.3	3.6	6.42	1.96	4.32	6.54	1.99	4.39	11	87.3	69.9	50	725
	80	3	89.5	88.0	4.0	8.36	2.55	5.62	8.53	2.60	5.73	11	101.6	76.2	50	725
	100	4	115.0	113.1	4.5	12.2	3.72	8.2	12.5	3.81	8.40	11	128.6	88.9	50	725
	125	5	140.8	138.5	5.0	16.6	5.06	11.2	17.1	5.21	11.5	11	155.6	95.3	50	725
	150	6	166.5	163.9	5.0	19.8	6.04	13.3	20.4	6.22	13.7	11	184.2	95.3	50	725
HEAVY (H)	15	1/2	21.8	21.0	3.2	1.44	0.439	0.968	1.45	0.442	0.974	14	27.8	38.1	50	725
	20	3/4	27.3	26.5	3.2	1.87	0.57	1.257	1.88	0.573	1.263	14	34.1	41.3	50	725
	25	1	34.2	33.3	4.0	2.93	0.896	1.98	2.95	0.899	1.98	11	42.1	47.6	50	725
	32	1 1/4	42.9	42.0	4.0	3.79	1.16	2.56	3.82	1.16	2.57	11	51.6	54.0	50	725
	40	1 1/2	48.8	47.9	4.0	4.37	1.33	2.95	4.41	1.34	2.96	11	57.9	57.2	50	725
	50	2	60.8	59.7	4.5	6.19	1.89	4.17	6.26	1.91	4.21	11	70.6	63.5	50	725
	65	2 1/2	76.6	75.3	4.5	7.93	2.42	5.34	8.05	2.45	5.41	11	87.3	69.9	50	725
	80	3	89.5	88.0	5.0	10.3	3.14	6.92	10.5	3.20	7.06	11	101.6	76.2	50	725
	100	4	115.0	113.1	5.4	14.5	4.42	9.71	14.8	4.51	9.95	11	128.6	88.9	50	725
	125	5	140.8	138.5	5.4	17.9	5.46	12.0	18.4	5.61	12.4	11	155.6	95.3	50	725
	150	6	166.5	163.9	5.4	21.3	6.49	14.3	21.9	6.68	14.7	11	184.2	95.3	50	725

Note: This Specification replaces BS1387:1985

Tolerance: Wall thickness: Light (L1 & L2) - 8%
Medium (M) and heavy (H) - 10%
Length: Plus minus 50mm or Plus 150mm (Manufacturer Standard)
Mass: Plus 10% or minus 8% on individual tubes for types L1 and L2