

UNIVERSAL PIPE

SPECIFICATION FOR STANDARD SIZES



EXTRACTS FROM ASTM A53 GR-A SCHEDULE- 40 FOR BLACK AND GALVANIZED STEEL PIPES

SIZE		OD (Minimum)		OD (Maximum)		WALL THICKNESS		Weight of Tube.(Plain End)		PRESSURE GR-A	Weight of tube (SS)		Pieces Per bundle
INCH	NB(mm)	INCH	MM	INCH	MM	INCH	MM	lb./Ft.	kg./Mtr	PSI	lb./Ft.	kg./Mtr	
1/2"	15	0.822	20.90	0.854	21.70	0.109	2.77	0.850	1.27	700	0.860	1.27	120
3/4"	20	1.035	26.30	1.070	27.10	0.113	2.87	1.130	1.69	700	1.140	1.69	84
1"	25	1.300	33.00	1.330	33.80	0.133	3.38	1.680	2.50	700	1.690	2.50	60
1 1/4"	32	1.645	41.80	1.680	42.60	0.140	3.56	2.270	3.39	1200	2.280	3.40	42
1 1/2"	40	1.885	47.90	1.920	48.70	0.145	3.68	2.720	4.05	1200	2.740	4.04	36
2"	50	2.350	59.70	2.400	60.90	0.154	3.91	3.660	5.44	2300	3.680	5.46	26
2 1/2"	65	2.850	72.30	2.900	73.70	0.203	5.16	5.800	8.63	2500	5.850	8.67	18
3"	80	3.460	88.00	3.530	89.80	0.216	5.49	7.580	11.29	2220	7.680	11.35	14
3 1/2"	90	3.960	100.6 0	4.040	102.6 0	0.226	5.74	9.120	13.57	2030	9.270	13.71	12
4"	100	4.450	113.2 0	4.540	115.4 0	0.237	6.02	10.80 0	16.07	1900	10.92 0	16.23	10
5"	125	5.507	139.9 0	5.620	142.7 0	0.258	6.55	14.63 0	21.77	1670	14.90 0	22.07	7
6"	150	6.560	166.6 0	6.690	169.9 8	0.280	7.11	18.99 0	28.26	1520	19.34 0	28.58	7
8"	200	8.562	217.5 0	8.70	221.0 0	0.322	8.18	28.58	42.55	1340	--	--	4
10"	250	10.669	271.0 0	10.82 6	275.0 0	0.365	9.27	40.52	60.29	1220	--	--	4
12"	300	12.637	321.0 0	12.85 4	326.5 0	0.406	10.31	53.57	79.70	1150	--	--	2

- 1) **TOLLERENCE**
- a) On Thickness:- The minimum wall thickness at any point shall be not more than 12.5% under the specified wall thickness.
 - b) On Diameter For NPS 1 1/2" & under any point shall not vary more than ± 0.4 mm. For NPS 2" & above shall not vary more than $\pm 1\%$ from the standard specified
 - c) Weight The weight of the pipe shall not more than $\pm 10\%$ of the specified weight.
2. **ENDS**
- a) 1 1/2" and below size - End finish shall be at the option of manufacturer which is nominally square cut with the axis of tube and free from excessive burrs.
 - b) 2' and over size - Bevelled with ends beveled to an angle of 30, + 5 / -0 degree measured from a line perpendicular to the axis of the pipe with a root face of 1.6 mm ± 0.8 mm.
3. **INTERNAL DEBEADING** : 2" and above - Internal beads to be removed completely.
4. **Chemical Composition (% Max)** C - 0.25%, Mn - 0.95%, S - 0.045%, P - 0.050%, Cu - 0.40%, Ni - 0.40%, Cr - 0.40%, Mo - 0.15% & V - 0.08% (Cu+Ni+Cr+Mo+V=1.0% max.)
- 5) **Mechanical (Minimum)** Yield Strength-205 N/mm², Tensile Strength-330 N/mm², Elongation-24-36%
- 6) **BEND TEST** :Applicable to tubes upto and including nominal size of 50 mm
- a) :When orderd for close coiling bend up to 180 degrees around a cylindrical mandrel,The diameter of which is 8 times the OD of pipe.
 - b) :Bend up to 90 degree around a cylindrical mandrel, the diameter is 12 times the OD of pipe.
:No Crack at any portion and no open in the weld.
7. **FLATTENIG TEST** : Applicable to tubes greater than nominal sizes of 50 mm & weld located 0/90 degree from line of direction of force.
- Stage-1 :For weld ductility until 2/3 of outside dia of specimen tube.
- Stage- :For ductility of steel until 1/3 of outside dia of specimen tube.

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Stage-
3 :Full flattening for testing of laminated and unsound material.

8) LEAK TIGHTNESS TEST

- a) :On line NDT(Eddy Current)
- b) :Hydro testing at pressure as per above Table and holding time Min. 5 second.

9) BLACK VARNISH

:Tubes are uniformly varnished externally over their full length.

10. ZINC COATING

: Average 550 Gm/mm² but one side should not be less than 490 Gm/mm².

:Free from bare Spot,Black spot,rough,overcoating, Peel off or anyother surface defect.

11. THREADING

: For 1/2" & 3/4" - 14 TPI, 1" to 2" - 11.5 TPI and 2 1/2" to 6" - 8TPI.

Check with standard ASTM ring and plug gauges.

12.MARKING

: We can do on line stenciling as per this stanadrd & as per customer needs at one meter interval

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3 PACKING

:Hexagonal
Type

1

4 MILL TEST CERTIFICATE

:We can issue a MTC, certifying that the tubes supplied comply with this ASTM A 53 Standard