

# UNIVERSAL PIPE



## SPECIFICATION FOR STANDARD SIZES

### ASTM A53 GR-B SCHEDULE- 40 FOR BLACK AND HOT DIPPED GALVANIZED STEEL PIPES

SIZE		OD (Minimum)		OD (Maximum)		WALL THICKNESS		Weight of Tube.(Plain End)		PRESSUR E GR-B	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	1300	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	1300	2.740	4.04	36
2"	50	2.350	59.70	2.400	60.90	0.154	3.91	3.660	5.44	2500	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	2500	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	2370	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	2210	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	1950	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	1780	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	1570	--	--	4
10"	250	10.669	271.0 0	10.82 6	275.0 0	0.365	9.27	40.52	60.29	1430	--	--	4
12"	300	12.637	321.0 0	12.85 4	326.5 0	0.406	10.31	53.57	79.70	1340	--	--	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  $\pm 0.4$  mm. For NPS 2" & above shall not vary more than  $\pm 1\%$  from the standard specified
- c) On 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  $\pm$  0.8 mm.

**3. INTERNAL DEBEADING**

: 2" and above - Internal beads to be removed completely.

**4 Heat Tretments**

: Weld Seam of the ERW Pipe in Grade B shall be heat treated after welding to a minimum tempreture of 540° C, so that no untempred martensite remains

**5. Chemical Composition (% Max)**

C - 0.30%, Mn - 1.20%, 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.)

**6) Mechanical (Minimum)**

Yield Strength-240 N/mm2, Tensile Strength-415 N/mm2, Elongation-19-30%

**7) 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.

**8.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-  
2 :For ductility of steel until 1/3 of outside dia of specimen tube.

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

**9) LEAK TIGHTNESS TEST**

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

**10 ) BLACK VARNISH**

:Tubes are uniformly varnished externally over their full length.

**11. ZINC COATING**

: Average 550 Gm/mm<sup>2</sup> but one side should not be less than 490 Gm/mm<sup>2</sup>.

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

**12. 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.

**13.MARKING**

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

**14 PACKING**

:Hexagonal  
Type

**15 MILL TEST CERTIFICATE**

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