

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)		PRESSURE GR-B	Weight of tube (SS)		Pieces Per bundle
INCH	Specified OD (mm)	INCH	MM	INCH	MM	INCH	MM	lb./Ft.	kg./Mtr.	PSI	lb./Ft.	kg./Mtr.	
1/2"	21.3	0.822	20.90	0.854	21.70	0.109	2.77	0.850	1.27	700	0.860	1.27	120
3/4"	26.7	1.035	26.30	1.070	27.10	0.113	2.87	1.130	1.69	700	1.140	1.69	84
1"	33.4	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"	42.2	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"	48.3	1.885	47.90	1.920	48.70	0.145	3.68	2.720	4.05	1300	2.740	4.04	36
2"	60.3	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"	73.0	2.850	72.30	2.900	73.70	0.203	5.16	5.800	8.63	2500	5.850	8.67	18
3"	88.9	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"	101.6	3.960	100.60	4.040	102.60	0.226	5.74	9.120	13.57	2370	9.270	13.71	12
4"	114.3	4.450	113.20	4.540	115.40	0.237	6.02	10.800	16.07	2210	10.920	16.23	10
5"	141.3	5.507	139.90	5.620	142.70	0.258	6.55	14.630	21.77	1950	14.900	22.07	7
6"	168.3	6.560	166.60	6.690	169.98	0.280	7.11	18.990	28.26	1780	19.340	28.58	7
8"	219.1	8.562	217.50	8.70	221.00	0.322	8.18	28.58	42.55	1570	--	--	4
10"	273.0	10.669	271.00	10.826	275.00	0.365	9.27	40.52	60.29	1430	--	--	4
12"	323.8	12.637	321.00	12.854	326.50	0.406	10.31	53.57	79.70	1340	--	--	2

- 1) **TOLERANCES**
 - 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 11/2" & 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) 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 - Beveled with ends beveled to an angle of 30, $\pm 5^\circ$ 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 **HEAT TREATMENTS** : Weld Seam of the ERW Pipe in Grade B shall be heat treated after welding to a minimum temperature of 540° C, so that no untempered 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 ordered 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. **FLATTENING 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/m² but one side should not be less than 490 Gm/m².**
:Free from bare Spot, Black spot, rough, overcoating, Peel off or any other 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 standard & 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