

**SPECIFICATION FOR STANDARD SIZES FROM ASTM A53 GR-B  
SCHEDULE-80 FOR BLACK AND GALVANIZED PIPES**

Size		OD min		OD max		WALL THICKNESS		WEIGHT OF TUBE ( Plain end )		PRESSURE GR-B	PIECES PER BUNDLE
NPS	DN	INCH	MM	INCH	MM	INCH	MM	lb/Ft.	kg/M	PSI	
1/2	15	0,822	20,9	0,854	21,7	0,147	3,73	1,09	1,62	850	120
3/4	20	1,035	26,3	1,066	27,1	0,154	3,91	1,48	2,20	850	84
1	25	1,300	33,0	1,330	33,8	0,179	4,55	2,17	3,24	850	60
1 1/4	32	1,645	41,8	1,677	42,6	0,191	4,85	3,00	4,47	1900	42
1 1/2	40	1,885	47,9	1,920	48,7	0,200	5,08	3,63	5,41	1900	36
2	50	2,350	59,7	2,397	60,9	0,218	5,54	5,03	7,48	2500	26
2 1/2	65	2,846	72,3	2,900	73,7	0,276	7,01	7,67	11,41	2500	18
3	80	3,464	88,0	3,535	89,8	0,300	7,62	10,26	15,27	2500	18
3 1/2	90	3,960	100,6	4,040	102,6	0,318	8,08	12,52	18,63	2800	14
4	100	4,455	113,2	4,545	115,4	0,337	8,56	15,00	22,32	2800	12
5	125	5,507	139,9	5,620	142,7	0,375	9,52	20,80	30,94	2800	10
6	150	6,560	166,6	6,692	170,0	0,432	10,97	28,60	42,56	2740	5 or 7
8	200	8,539	216,9	8,712	221,3	0,500	12,70	43,43	64,64	2430	5 or 7

Table 1- Size, weight, pressure and bundle types of ASTM A53 pipes.

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### 1- Chemical Composition

Element	ASTM A53 GrB	ASTM A53 Gr A
Element	% max	% max
C	0,300	0,250
Mn	1,200	0,950
P	0,050	0,050
S	0,045	0,045
V	0,080	0,080
Cu	0,400	0,400
Ni	0,400	0,400
Cr	0,400	0,400
Mo	0,150	0,150

### 2- Mechanical Properties

Tensile Tests:		
	ASTM A53 GrB	ASTM A53 GrA
Yield Strength (Rt <sub>0.5</sub> ):	Min. 240 N/mm <sup>2</sup>	Min. 205 N/mm <sup>2</sup>
Tensile Strength:	Min. 415 N/mm <sup>2</sup>	Min 330 N/mm <sup>2</sup>
Elongation:	As per ASTM A53	

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**3- Flattening Test**

First, pipes are flattened to 2/3 of the original OD. No cracks or breaks on the weld seam shall be present. After, pipes are flattened to 1/3 of the OD. No cracks or breaks on inside, outside or end surfaces shall be present.

**4- Bend Test**

For pipe NPS 2 [DN 50] or smaller, a sufficient length of pipe shall be capable of being bent cold through 90° around a cylindrical mandrel, the diameter of which is twelve times the specified outside diameter of the pipe, without developing cracks at any portion and without opening the weld

**5- Dimensional Controls**

Wall Thickness	±%12,5 X WT
Outside Diameter	For D ≤ 40 mm OD shall not vary more than 0,4 mm.  For D ≥ 50, mm OD shall not vary more than ±%1 from the specified outside diameter.
Pipe Length	Length tolerances is -0 mm +50 mm
Pipe Straightness	Maximum 0,0015 x Pipe Length mm for 4" - 12" Maximum 0,0020 x Pipe Length mm for 1/2" to 3.5"
Pipe Ends	30° +5°, -0°, measured from a line drawn perpendicular to the axis of the pipe, and with a root face of 1/16 in. 6 1/32 in. [1.6 mm ± 0.8 mm] or square cut.

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**6- NDT Tests**

Hydrostatic Test	Test pressure acc. To A53 Clause 8 table X2.2 (min 5 seconds)
E/C or UT	Acc. To A53 Clause 9.

**7- Galvanization**

Pipes are demanded as galvanized, the process shall be applied acc. to A53 Clause 17.  
 Weight (Mass) per Unit Area of Coating—The weight (mass) per unit area of zinc coating shall be not less than 1.8 oz/ft<sup>2</sup> [0.55 kg/m<sup>2</sup>] as determined from the average results of the two specimens and not less than 1.6 oz/ft<sup>2</sup> [0.49 kg/m<sup>2</sup>] for each of these specimens. Each specimen shall have not less than 1.3 oz/ft<sup>2</sup> [0.40 kg/m<sup>2</sup>] of zinc coating on each surface, calculated by dividing the total weight (mass) of zinc on the given surface (outside or inside) by the area of the surface coated (outside or inside).

**8- Varnishing**

Pipes are temporary varnished externally over the full length.

**9- Threading**

If ordered with threaded ends, the pipe ends shall be provided with a thread in accordance with the gaging practice and tolerances of ANSI B1.20.1. up to 6" (DN150).

**10- Packaging & Marking**

Packaging & marking shall be applied acc. to A53 and customer request.  
 Marking shall be applied by continuous stenciling.  
 Packing shall be applied according to table 1 of this statement.

**11- MTC (Mill Test Certificate)**

Pipes are supplied comply with a MTC according to ASTM A53.

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