

# ASTM A53/ASME SA-53 Type E, Grade B

## Submittal Data Sheet

### Approvals and Specifications

This product meets the following standards:

- Hydrostatically tested
- Nondestructive electric test
- Flattening tested for NPS ½" and greater
- Bend tested for pipe NPS 2" or smaller
- UL, ULC Listed
- FM = Approval Class 1630
- NSF 61 & 372 for 2" and less
- NSF 372 for more than 2½"
- Made in Canada

### Product Marking

Each length of pipe ½" NPS and larger is continuously stenciled to show:

- The manufacturer name
- Made in Canada
- Grade
- Type of pipe
- Size
- Length
- Heat number
- Lot number (if galvanized)
- Date

### Dimensions and Weights

NPS	OD (in.)	Wall (in.)	Weight (lb./ft)	S40 Wall (in.)	S40 Weight (lb./ft)	S80 Wall (in)	S80 Weight (lb/ft)
½	0.840	-	-	0.109	0.85	0.147	1.09
¾	1.050	-	-	0.113	1.13	0.154	1.48
1	1.315	-	-	0.133	1.68	0.179	2.17
1¼	1.660	-	-	0.14	2.27	0.191	3.00
1½	1.900	-	-	0.145	2.72	0.200	3.63
2	2.375	-	-	0.154	3.66	0.218	5.03
2 ½	2.875	-	-	0.203	5.80	0.276	7.67
3	3.500	-	-	0.216	7.58	0.300	10.26
3 ½	4.000	-	-	0.226	9.12	0.318	12.52
4	4.500	0.188	8.67	0.237	10.80	0.337	15.00
5	5.563	0.188	10.80	0.258	14.63	-	-
6	6.625	0.188	12.94	0.280	18.99	-	-

### Scope

Covers bare, black and hot-dipped galvanized Electric Resistance Welded, Grade B pipe. These pipes are intended for mechanical and pressure applications and are acceptable for use in steam, water, gas and air lines. These pipes are suitable for: welding, forming, threading, flanging, grooving and bending. Produced to the latest revisions of ASTM A53/A 53M, ASME SA53 / SA53M and ASME B36.10M. Pipe is UL/ULC Listed for sizes 1/2" to 6" S40, FM Approved 1/2" to 6" S40, for use in Fire Sprinkler Pipe applications. These pipes are also certified NSF/ANSI 372 Drinking Water System Components - Lead Content for sizes 1/2" to 6" S40, S80 and NSF/ ANSI 61 Drinking Water System Components - Health Effects for sizes 1/2" to 2" S40, S80 (excluding zinc coated pipe).



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### Manufacture

The weld seam of electric-resistance welded pipe in Grade B shall be heat treated after welding or otherwise processed in such a manner that no untempered martensite remains.

### Hot-Dipped Galvanized

The average weight of zinc coating is determined by the ASTM A90 testing method and shall not be less than 1.8 oz per sq. ft. of surface (inside and outside). When galvanized pipe is bent or otherwise fabricated to a degree which causes zinc coating to stretch or compress beyond the limit of elasticity, some flaking of the coating may occur.

### Hydrostatic and Nondestructive Electric Testing

Hydrostatic test pressures for plain-end pipe are indicated below (psi). Test pressures shall be maintained for a minimum of 5 seconds. Non-destructive electric testing of the weld seam is done for each length of ERW pipe NPS 1/2" and larger.

NPS	0.188	S40	S80
1/2	-	1200	1200
3/4	-	1200	1200
1	-	1200	1200
1 1/4	-	1300	1900
1 1/2	-	1300	1900
2	-	2500	2500
2 1/2	-	2500	2500
3	-	2500	2500
3 1/2	-	2370	2800
4	1750	2210	2800
5	1420	1950	-
6	1190	1780	-

### Flattening Test

NPS 1/2" and greater: As a test for quality of the weld, position of the weld at 90° from the direction of force and flatten until there is 2/3 of the original outside diameter. No cracks shall occur along the inside or outside surface of the weld.

### Bend Test

NPS 2" and 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.

### End Finish

Plain end: NPS 2" and larger: ends are beveled, to an angle of 30°, - 0°, + 5° with a root face of 1/16 ± 1/32 Threaded: To ANSI Standard B1.20.1

Couplings: To ASTM Standard A865

### Chemical Requirements

Composition, max % Carbon: 0.30, Manganese: 1.20, Phosphorus: 0.05, Sulfur: 0.045, \*Copper: 0.40,

\*Nickel: 0.40, \*Chromium: 0.40, \*Molybdenum: 0.15, \*Vanadium 0.08

\*The combination of these five elements shall not exceed 1.00%

### Tensile Requirements

Tensile Strength: 60000 Psi (415 Mpa) minimum

Yield Strength: 35000 Psi (240 Mpa) minimum

Elongation: Refer to ASTM A53 table X4.1

### Permissible Variations in Wall Thickness, In Outside Diameter, In Weight per Foot

- Minimum wall thickness at any point shall not be more than 12.5% under nominal wall thickness specified.
- Pipe Diameter NPS 1 1/2 and under: ± 1/64 in new line.
- Pipe Diameter NPS 2" and over: ±1%.
- Pipe weight per foot shall not vary more than ±10% from the standard specified.