



ASTM A 53 TYPE E GRADE B PIPE

SCOPE

Covers black and hot-dipped galvanized electric-resistance welded Grade B pipe. Pipe is intended for mechanical and pressure applications and is acceptable for ordinary uses in steam, water, gas and air lines. ASTM A 53 is UL Listed and FM Approved, sizes 1" through 6" nominal, for use in Fire Sprinkler Pipe Applications. Pipe is suitable for welding, threading and grooving. Produced to the latest revision of ASTM A 53/ 53M, Federal Specification WW-P404 and ASME B36.10M.

MANUFACTURE

The weld seam shall be heat treated after welding to a minimum of 1400 °F or be otherwise processed in such a manner that no untempered martensite remains.

HOT-DIPPED GALVANIZED

The average weight of zinc coating shall be not 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 inspection test pressures for plain-end pipe are listed in Table X 2.2 of the A53/A 53M specification. Test pressures shall be maintained for a minimum of five seconds.

Nondestructive electric testing of the weld seam is required on each length of ERW pipe NPS 2 and larger.

CHEMICAL REQUIREMENTS

Composition, max. %

Carbon	Manganese	Phosphorus	Sulfur
.30	1.20	.05	.045

*Copper	*Nickel	*Chromium	*Molybdenum	*Vanadium
.40	.40	.40	.15	.08

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

TENSILE REQUIREMENTS

Tensile Strength, min.	60 000 psi
Yield Strength, min.	35 000 psi
Elongation in 2"	Refer to A 53 Table x 4.1

BENDING TEST (COLD)

Degree of Bend	For NPS 2 and under 90°
Diameter of Mandrel	12 x outside pipe diameter

FLATTENING TEST

As a test for ductility of the weld for pipe 2-1/2" NPS and larger, position the weld at 0° and alternately at 90° to the direction of force and flatten until the OD is 2/3 of the original outside diameter. No cracks shall occur along the inside or outside surface of the weld.

FREQUENCY OF TESTS

Tensile tests are required on one length of pipe from each lot of 500 lengths or fraction thereof for each size. Refer to A 53 specification for frequency of flattening tests.

END FINISH

Plain End: NPS 2 and larger, STD and XS weights: ends beveled to angle of 30°, +5°, -0° with a root face of 1/16" ± 1/32"

Threaded: To ANSI Standard B 1.20.1
Couplings: To ASTM Standard A 865

DIMENSIONS AND WEIGHTS

PERMISSIBLE VARIATIONS IN WALL THICKNESS

Minimum wall thickness at any point shall not be more than 12.5% under nominal wall thickness specified.

PERMISSIBLE VARIATIONS IN OUTSIDE DIAMETER

Pipe NPS 2 and larger shall not vary more than + 1% from the standard specified.

STANDARD (SCH. 40) BLACK PLAIN END			
Nominal Size	O.D. Inches	Nominal Wall	Weight/ Lb. Ft
2"	2.375	.154	3.66
2-1/2"	2.875	.203	5.80
3"	3.500	.216	7.58
4"	4.500	.237	10.88
5"	5.563	.258	14.63
6"	6.625	.280	18.99
8"	8.625	.322	28.58
EXTRA STRONG (SCH.80) BLACK PLAIN END			
Nominal Size	O.D. Inches	Nominal Wall	Weight/ Lb. Ft
2"	2.375	.218	5.03
2-1/2"	2.875	.276	7.67
3"	3.500	.300	10.26
4"	4.500	.337	15.00

PERMISSIBLE VARIATIONS IN WEIGHT PER FOOT

Pipe shall not vary more than ± 10% from the standard specified.

PRODUCT MARKING

Each length of pipe is continuously stenciled to show the manufacturer, the grade of pipe (ASTM A 53), the kind of pipe E for Electric Resistance Welded, B for Grade B, the size, XS for extra strong, and length. Stencil markings indicate UL Listing and FM Approval for sizes 1" through 6" nominal for use in Fire Sprinkler Pipe Applications. Bar coding is acceptable as a supplementary identification method.