

Schedule 40 Pipe, Galvanized

ASTM F1043/F1083 Group I-A, Federal Specification RR-F-191 Type 1, Grade A,
AASHTO M-181 Grade 1

1. PRODUCT NAME

Schedule 40 pipe, Galvanized

2. DISTRIBUTOR

Southwestern Wire, Inc.
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3. PRODUCT DESCRIPTION

Basic Use:

Schedule 40 pipe for use as end, corner or line posts, and rails, for commercial, industrial and institutional installations of chain link fencing. Schedule 40 pipe is the historically used material for this purpose. The requirements for this material are contained in various government specifications for use in prison, road, dock, airport, housing, forestry, and military installations.

Schedule 40 pipe is typically used in installations which incorporate zinc-coated or aluminum-coated steel chain link fence fabric, although it may be specified for use with other types of fabric, i.e. PVC coated.

Composition and Materials:

Schedule 40 pipe is produced from steel manufactured by the electric furnace, open hearth, or basic oxygen process. The steel is of soft weldable quality.

Welded pipe NPS 4 and under in size may be butt-welded. Welded pipe over NPS 4 is typically electric welded.

Standards:

ASTM F1043 Strength and
Protective Coatings on Metal
Industrial Chain Link Fence
Framework, Group I-A
ASTM F1083 Pipe, Hot-Dipped
Zinc-Coated (Galvanized)
Welded, for Fence Structures
ASTM F567 Installation of
Chain Link Fence
ASTMA 90/A90M Test Method
for Weight of Coating on Zinc-
Coated (Galvanized) Iron or

Steel Articles
Federal specification RR-F-191K/3D
Fencing, Wire and Post Metal
(Chain Link Fence Posts, Top
Rails, and Braces), Class 1,
Grade A
AASHTO M-181 Chain Link
Fence, Grade 1 (American
Association of State Highway
Transportation Officials)

4. TECHNICAL DATA

General:

The manufacturer or distributor, if requested, will supply samples and certification that all materials furnished fully comply with the appropriate specifications.

Galvanized Steel Framework:

The information contained herein for hot-dipped galvanized welded steel pipe covers the requirements for pipe sizes NPS 1 to NPS 8. (Note: The dimensionless designator NPS is used instead of traditional terms such as nominal diameter, size, and nominal size.)

Tensile Requirements:

The tensile strength of schedule 40 pipe is 48,000 psi (330 MPa), min.

The yield strength of schedule 40 pipe is 30,000 psi (205 MPa), min.

Coating Requirements:

The minimum zinc coating weight of schedule 40 pipe is 1.8 oz/ft² (550 g/m²), determined from the average results of two specimens taken for test, and not less than 1.6 oz/ft², (490 g/m²), for either of these specimens. The weight of zinc coating is calculated by dividing the total weight of zinc, inside plus outside, by the total area, inside plus outside, of the area coated.

Schedule 40 pipe with a minimum average zinc coating weight of 2.0 oz/ft² (610 g/m²) is also available.

Each specimen shall have not less than 1.3 oz/ft² (400g/m²) of zinc coating on each surface, calculated by dividing the weight of zinc on a given surface (inside or outside) by the area of the surface coated (inside or outside). The weight of zinc coating is determined in accordance with ASTM A90/A90M.

Size and Tolerances:

Sizes of Schedule 40 pipe typically used for fence installations are listed in **Table 1**.

The weight tolerance of the pipe is +10% of the nominal weights listed in **Table 1**.

The tolerance for pipe diameter is 1/64 inch (0.4 mm) over for pipe NPS 1 1/2 and under and 1/32 inch (0.8 mm) under that specified. For pipe size NPS2 and over, the outside diameter shall be + 1 %.

Strength calculations are provided in **Table 2**. The calculations are based on the specified diameters, wall thickness, and minimum specified yield strength.

5. INSTALLATION

Install fence posts in accordance with ASTM Practice 567.

6. AVAILABILITY AND COST

Availability: Schedule 40 pipe is available for shipment throughout the United States and worldwide.

Cost: Material costs may vary depending on specific requirements. . Costs may be obtained by calling Southwestern Wire, Inc. or one of their stocking dealers.

7. MAINTENANCE

Periodic inspection is recommended but no routine maintenance is required.

8. TECHNICAL SERVICES

Technical services are available at Southwestern Wire, Inc. by calling 1-800-348-9473.



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Table 1 - Schedule 40 Pipe - Dimensions and Nominal Weights (plain ends)

Designator		Outside Diameter		Wall Thickness		Weight	
NPS	Metric	inch	mm	inch	mm	lb/ft	kg/m
1	25	1.315	33.4	0.133	3.37	1.68	2.5
1 1/4	32	1.660	42.2	0.140	3.56	2.27	3.4
1 1/2	40	1.900	48.3	0.145	3.68	2.72	4.0
2	50	2.375	60.3	0.154	3.91	3.65	5.4
2 1/2	65	2.875	73.0	0.203	5.16	5.79	8.6
3	80	3.500	88.9	0.216	5.49	7.58	11.3
3 1/2	90	4.000	101.6	0.226	5.74	9.12	13.6
4	100	4.500	114.3	0.237	6.02	10.80	16.1
6	150	6.625	168.3	0.280	7.11	18.99	28.3
8	200	8.625	219.1	0.322	8.18	28.58	42.5

Table 2 - Schedule 40 Pipe - Strength Characteristics - inch-pound units

Based on minimum yield strength of 30,000 psi

NPS	Outside Diameter o.d. inches	Wall Thickness inch	Inside Diameter i.d. inches	Section Modulus Inch 2	Maximum Bending Moment lb-inch	Calculated Load (lbs)		
						10 ft * Free Supported	Cantilever Load **	
							4 ft.	6 ft.
1	1.315	0.133	1.049	0.133	3,985	133	83	55
1 1/4	1.660	0.140	1.380	0.235	7,038	235	147	98
1 1/2	1.900	0.145	1.610	0.326	9,786	Sizes	204	136
2	2.375	0.154	2.067	0.561	16,819	above	350	234
2 1/2	2.875	0.203	2.469	1.064	31,921	1.600" o.d.	665	443
3	3.500	0.216	3.068	1.724	51,723	are not	1,078	718
3 1/2	4.000	0.226	3.548	2.394	71,816	normally	1,496	997
4	4.500	0.237	4.026	3.215	96,435	used for	2,009	1,339
6	6.625	0.280	6.065	8.496	254,873	top rail.	5,310	3,540
8	8.625	0.322	7.981	16.089	504,274		10,506	7,004

* 10 ft Free Supported Calculated Load is representative of top rail for a typical chain link fence installation.

** 4 ft and 6 ft Cantilever Loads represent maximum calculated load applied at the top of the post with the bottom fixed.

Table 3 - Post Selection Guide - based on fabric height

Fabric Height	O.D.		Wall Thickness		Weight	
Terminal Posts: End, Corner and Pull	in.	mm	in.	mm	lb/ft	kg/m
Fabric 6 ft. (1,830 mm) and under	2.375	60.3	0.154	3.91	3.65	5.4
Fabric over 6 ft (1,820 mm) to 12 ft (3,660 mm)	2.875	73.0	0.203	5.16	5.79	8.6
Line Posts						
Fabric 6 ft. (1,830 mm and under)	1.900	48.3	0.140	3.68	2.72	4.0
Fabric over 6 ft (1,820 mm) to 8 ft (2,440 mm)	2.375	60.3	0.154	3.91	3.65	5.4
Fabric over 8 ft (2,440 mm to 12 ft (3,660 mm)	2.875	73.0	0.203	5.16	5.79	8.6
Rails (Top, bottom, intermediate and brace						
All heights	1.660	42.2	0.14	3.56	2.27	3.4

