



SECURITY CONTRACTOR SERVICES

*Large Enough To Serve
Small Enough To Care*

Schedule 40 Pipe, Galvanized

ASTM F1043 Group I-A, Federal specification RR-F-191 Type,
Grade A, AASHTO Grade 1

1. PRODUCT NAME

Schedule 40 pipe, Galvanized

2. DISTRIBUTOR

Corporate Headquarters: **5339 Jackson St, North Highlands, CA 95660**

Phone:(916)338- 4800

SCS centers are located throughout the West Coast of the United States

3. PRODUCT DESCRIPTION

Basic Use: Schedule 40 pipe for use as end, corner or line post, 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 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
- ASTM A 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, 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/ft (550 g/m), determined from the average results of two specimens taken for test and not less than 1.6 oz/ft (490 g/m) for either of these specimens. The weight of the 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/ft (610 g/m) is also available. Each specimen shall have no less than 1.3 oz/ft (400 g/m) 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 and outside). The weight of zinc coating is determined in accordance with ASTM A90/A90M.

Size and Tolerances: Sizes and Schedule 40 pipe is typically used for the fence installations, are listed in Table 1. The weight tolerance of the pipe is +/-10% of the nominal weight listed in Table 1. The tolerance for pipe diameter is 1/64 inch (0.4mm) 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% of that specified. Pipe mill joint lengths may range from 18 ft to 24 ft, or posts are available cut-to-length. Post lengths must be noted on purchase orders, plans or specifications. The tolerance for cut posts is +/- 1 inch (25.4 mm). Strength calculations are provided in Table 2. The calculations are based on 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 cost may vary depending on specific requirements. Costs may be obtained through all SCS Service Centers.

7. MAINTENANCE

Periodic inspection is recommended but no routine maintenance is required.

8. TECHNICAL SERVICES

Technical services are available through the SCS Corporate Office:

Phone: (916)338-4200

Fax: (916)338- 1140

Quote: (800)843-7893

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Table 1 - Schedule 40 Pipe - Dimensions and Nomial 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	3.38	1.68	2.5
1-1/4	32	1.66	42.2	0.14	3.56	2.27	3.4
1-1/2	40	1.9	48.3	0.145	3.68	2.72	4
2	50	2.375	60.3	0.154	3.91	3.65	5.4
2-1/2	65	2.875	73	0.203	5.16	5.79	8.6
3	80	3.5	88.9	0.216	5.49	7.58	11.3
3-1/2	90	4	101.6	0.226	5.74	9.12	13.6
4	100	4.5	114.3	0.237	6.02	10.8	16.1
6	150	6.625	168.3	0.28	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 Modules Inch	Maximum Bending Moment	Calculated Load (lbs)		
						10 ft Free Supported	Cantilaver Load	
							4 ft	6ft
1	1.315	0.133	1.049	0.133	3,985	133	83	55
1-1/4	1.66	0.14	1.38	0.235	7,038	235	147	98
1-1/2	1.9	0.145	1.61	0.326	9,786	Sizes above 1.66" o.d. are not normally used for top rail.	204	136
2	2.375	0.154	2.067	0.561	16,819		350	234
2-1/2	2.875	0.203	2.469	1.064	31,921		665	443
3	3.5	0.216	3.068	1.724	51,723		1,078	718
3-1/2	4	0.226	3.548	2.394	71,816		1,496	997
4	4.5	0.237	4.026	3.215	96,435		2,009	1,339
6	6.625	0.28	6.065	8.496	254,873		5,310	3,540
8	8.625	0.322	7.981	16.089	504,274		10,506	7,004

Post Selection Guide - based on fabric height

Fabric Height	O.D.		Wall Thickness		Weight	
	in	mm	in	mm	lb/ft	kg/m
Terminal Posts: End, Corner and Pull						
Fabric 6ft (1,830 mm) and under	2.375	60.3	0.154	3.91	3.65	5.4
Fabric over 6ft (1,830 mm) to 12ft (3,660 mm)	2.875	73	0.203	5.16	5.79	8.6
Line Posts						
Fabric 6ft (1,830 mm) and under	1.9	48.3	0.14	3.68	2.72	4
Fabric over 6ft (1,830 mm) to 8ft (2,440 mm)	2.375	60.3	0.154	3.91	3.65	5.4
Fabric over 8ft (2,440 mm) to 12ft (3,660 mm)	2.875	73	0.203	5.16	5.79	8.6
Rails (Top, bottom, intermediate and brace)						
All Heights	1.66	42.2	0.14	3.56	2.27	3.4