

# Stephens Pipe & Steel

# SPS-40

# Steel Pipe



*From the Heartland of the USA,*  
***We Fence the World***



**Stephens Pipe & Steel was established in 1974 and has grown to be the largest Domestically owned Fence Manufacturer and Distributor in the United States. With 14 (and counting) strategic locations in the central and northeast US, the ownership of our company is always in pursuit of the latest technology and manufacturing practices in the industry.**

**After 40+ years in business, our continued growth and success is attributed to a strong management team, dedicated employees, and loyal customers. This foundation has propelled Stephens Pipe & Steel to the top of the industry.**

## **SPS-40 Technical Specifications**

### **Scope**

This specification covers SPS-40 galvanized steel pipe as manufactured by Stephens Pipe & Steel and covers steel sheet, zinc-coated (galvanized) by the hot-dip process in coils and cut lengths.

### **Materials and Weight of Coatings**

#### **1. Steel**

Steel Strip used in the manufacturer of Stephens SPS-40 shall conform to ASTM A-653 and will meet or exceed the performance criteria as stated in this standard specification. The steel shall be cold rolled and meet a minimum yield strength of 50,000 psi.

#### **2. Zinc**

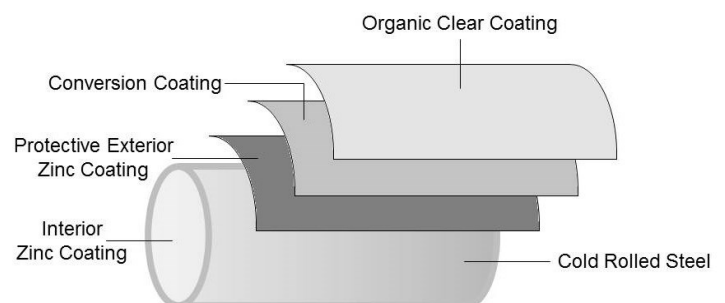
The zinc used in coating SPS-40 shall conform to ASTM B6 for High Grade and Special High Grade Zinc. Coating weight of the zinc shall have a designation of G-210, and both exterior and interior surfaces are coated for a total zinc coating weight of 2.10 oz/ft<sup>2</sup>. The test method for calculating zinc weight is described in ASTM A90.

#### **3. Conversion Coating**

While on-line, the external surface of the pipe shall be applied with a conversion coating once it has passed through an alkaline bath. That coating shall be 30 microgram/in<sup>2</sup> ± 10 micrograms/in<sup>2</sup> and shall be determined by a strip and weigh method using an atomic absorption spectrophotometer or X-ray fluorescence spectrograph.

#### **4. Organic Clear Coating**

An organic clear coat shall be applied to the exterior of the pipe. The thickness of clear coat shall be .5 mils ± .2 mils and will be determined by measurement with a magnetic or eddy current coating thickness tester.



# Strength Characteristics

## 1. Load Strength

The strength of SPS-40 shall conform to the requirements of ASTM F-1043. A 4-foot or 6-foot cantilevered beam test shall be used to determine the strength of line, end, corner and pull post. The strength of top rail shall be determined by a 10-foot free support beam test.

## 2. Bending Moment

Conformance with this specification can be demonstrated by measuring the yield strength of a randomly selected piece of pipe and calculating the section modulus. The yield strength shall be determined according to the methods described in ASTM E-8. For materials under this specification, the 0.2 offset method shall be used to determine yield strength.

### Physical Dimensions and Strength Calculations:

Fence Industry	Decimal O.D. Equivalent		Pipe Wall Thickness		Weight		Section Modulus	x	Min. Yield Strength	=	Max Bending Moment	Calculated Load (lbs)		
	O.D.	inches	(mm)	inches	(mm)	lb./ft						(kg/m)	inches <sup>3</sup>	psi
													4'	6'
1-5/8"	1.660	42.16	.111	2.82	1.84	2.74	.1961	x	50,000	=	9805	327	204	136
2"	1.900	48.26	.120	3.05	2.28	3.39	.2810	x	50,000	=	14050	468	293	195
2-1/2"	2.375	60.33	.130	3.30	3.12	4.64	.4881	x	50,000	=	24405	814	508	339
3"	2.875	73.03	.160	4.06	4.64	6.90	.8778	x	50,000	=	43890	1463	914	610
3-1/2"	3.500	88.90	.160	4.06	5.71	8.50	1.3408	x	50,000	=	67040	2235	1397	931
4"	4.000	101.60	.160	4.06	6.56	9.76	1.7819	x	50,000	=	89095	2970	1856	1237

# Corrosion Resistance

## 1. Salt Spray

For the Exterior Surface of the Pipe, the clear organic coating shall demonstrate the ability to resist 1000 hours of exposure to salt spray with a maximum of 5% red rust. Test shall be conducted in accordance with ASTM B117. The Interior Zinc Coated Surface shall withstand no less than 650 hours of exposure to salt spray with a maximum of 5% red rust when tested in accordance with ASTM B-117.

## 2. Humidity

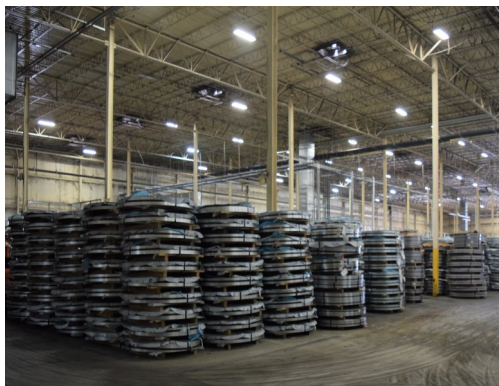
The clear organic coating shall have the ability to withstand exposure for 500 hours at 100% relative humidity without blistering and peeling when conducted in accordance with ASTM D-4585.

## 3. Weatherometer

The clear organic coating of SPS-40 shall have a demonstrated ability to withstand exposure for 500 hours without failure at a black panel temperature of 145 degrees F when tested in accordance with ASTM G-26, Xenon Type BH apparatus or ASTM G-23 HH apparatus.



Cut lengths are available at customer's request to fit every project.



Our extensive coil inventory is stored inside until final processing to ensure you receive the best possible product.



Standard full lengths are readily available. Extended lengths available upon request.

## Specifying Agencies

A partial list of agencies that have approved SPS-40:

- AASHTO American Association of State Highway and Transportation Officials M181-10
- Federal Specifications RR-F-191/3D
- ASTM F1043-14 Standard Specification for Strength and Protective Coatings
- US Department of Justice - Federal Bureau of Prisons
- US Army Corps of Engineers USGS 32 31 13
- Department of the Navy
- Federal Aviation Administration AC/5370-10E Item 162
- State Department of Transportation


## Certification

Stephens Pipe & Steel proudly manufactures SPS-40 in the “**Heartland of the USA**”. Our materials can be certified to meet applicable Federal, State and Local Specifications, with “**Made in the USA**” stamped on each length of pipe.



## Availability

SPS-40 is readily available at our corporate headquarters in KY and also at all branch locations. Stephens Pipe & Steel carries an extensive inventory of standard full length pipe, extended lengths (on request) and shorter cut lengths (to minimize waste). We own an impressive fleet of trucks and manage all of our logistic priorities in-house with a dedicated and experienced staff. With this in mind, SPS-40 and other product lines can be delivered to fit the most demanding customer schedules. With our massive inventory and dedicated trucking fleet, SPS-40 could be on your yard tomorrow. Call one of our many branch locations and talk to a sales representative today.

**Corporate Headquarters (KY): 1-800-451-2612**  [facebook.com/StephensPipe](https://facebook.com/StephensPipe)

Greensboro, NC: 1-800-582-1533  
Mt. Sterling, OH: 1-800-742-3467  
Bladensburg, MD: 1-866-792-5295  
Dallas, TX: 1-877-348-2404

Hayden, AL: 1-800-521-3810  
Melbourne, FL: 1-800-290-7473  
Manchester, CT: 1-877-777-8721  
Huntington, WV: 1-888-736-7321  
Montoursville, PA: 1-888-275-1638

Wyoming, MI: 1-800-850-3433  
Port Allen, LA: 1-866-219-4336  
Winder, GA: 1-877-868-5518  
Nashville, TN: 1-877-953-0001

Visit our website at [www.spsfence.com](http://www.spsfence.com) to learn more about Stephens Pipe & Steel and to see contact information for all of the branch locations.

