

HOW TO USE THE WHEATLAND WIND LOAD FENCE POST CALCULATOR CHAIN LINK FENCE

2014

1. Familiarize yourself with the American Society of Civil Engineers, ASCE 7-10, wind load exposure categories, B, C and D listed in Table 1 below.
2. Identify the ice exposure level for your project:
 - a. heavy ice storms, b. moderate icing c. no icing
3. Refer to Table 2, Typical Line Post Dimensions, and select what you consider the proper size for the design. Keep in mind the maximum allowable post spacing for chain link fence is 10 feet (3.05 m).
4. Have available the chain link specifications for the project, mesh size, wire gauge and the height of the fence fabric. If you are not sure of the chain link specification one is available on the Wheatland website, Chain Link Fence and Gates, Section 32 31 13.
5. **Note:** Polymer coated chain link fabric wire has a larger coated outer diameter and thus greater wind resistance, see Table 4.
6. Fences containing privacy slats or windscreens are considered solid panels. Select “solid panel” in the mesh size drop down window. The ice exposure coefficient automatically defaults to no icing for solid panels.

Table 1. Wind Exposure Category

Exposure B: Urban and suburban areas, wooded areas or other terrain with numerous closely spaced obstructions having the size of single-family dwelling or larger.

Exposure C: Open terrain with scattered obstructions having heights generally less than 30 feet (9.15M). Includes flat open country, grasslands and all water surfaces in hurricane prone regions.

Exposure D: Flat, unobstructed areas exposed to wind flowing over open water for a distance of 1 mile (1.61 km) outside hurricane prone regions. Includes smooth mud flats, salt flats, and unbroken ice.

Table 2. Typical schedule 40 ASTM F 1083 line post sizes for various fence heights

Fabric Height		Line Post Outside Diameter	
4 ft	(1.2 m)	1.900 to 2.375 in.	(48.3 to 60.3 mm)
5 ft	(1.5m)	1.900 to 2.875 in.	(48.3 to 73.0 mm)
6 ft	(1.8 m)	1.900 to 2.875 in.	(48.3 to 73.0 mm)
7 ft	(2.1 m)	2.375 to 4.000 in.	(60.3 to 101.6 mm)
8 to 9 ft	(2.4 to 2.7 m)	2.375 to 4.000 in.	(60.3 to 101.6 mm)
10 ft	(3.05 m)	2.875 to 4.000 in.	(73.0 to 101.6 mm)
11 ft	(3.4 m)	2.875 to 4.000 in.	(73.0 to 101.6 mm)
12 to 14 ft	(3.7 to 5.4 m)	3.500 to 6.625 in.	(88.9 to 168.3 mm)
15 to 17 ft	(4.6 to 5.2 m)	4.000 to 8.625 in.	(101.6 to 219.1 mm)
18 to 20 ft	(5.5 to 6.1 m)	4.000 to 8.625 in.	(101.6 to 219.1 mm)

To assist in the line post selection see Table 2 listing typical post sizes based on a fence having 2” mesh 9-gauge chain link fabric, located in “Exposure B”, and in a region having no icing. The post sizes listed reflect the full range of wind loads from 90 to 170 MPH. Maximum post spacing is 10 ft. (3.05 m)

If the calculated post spacing is greater than the standard maximum 10 ft. select a smaller post diameter, if the spacing is less, select a larger diameter.

Table 3. Chain Link Fabric Configurations

Mesh Size Inches (mm)	6 gauge 0.192 in. (4.88mm)	9 gauge 0.148 in. (3.76 mm)	11 gauge 0.120 in. (3.05 mm)	11.5 gauge 0.113 in. (2.87 mm)	Notes
2 (50.8)	A	A	A	N/A	N-M = Not manufactured N/A = Not applicable for Commercial/industrial fence A = Available LA = Limited availability
1 3/4 (44.5)	A	A	A	N/A	
1 1/4 (31.8)	A	A	A	N/A	
1 (25.4)	N-M	A	A	N/A	
5/8 (15.8)	N-M	A	A	A	
1/2 (12.7)	N-M	A	A	A	
3/8 (9.5)	N-M	LA	A	A	

Table 4. Polymer coated chain link fabric O.D. gauge adjustment

Polymer-coated wire Gauge of core steel wire	Extruded Outer Gauge Class 1 and 2a	Thermally Fused O. D. Class 2b
# 6 [0.192"] (4.88 mm)	# 3 [0.244"] (6.20 mm)	# 5 [0.207"] (5.25 mm)
# 9 [0.148"] (3.76 mm)	# 6 [0.192"] (4.88 mm)	# 8 [0.162"] (4.11 mm)
# 11 [0.120"] (3.05 mm)	# 9 [0.148"] (3.76 mm)	# 10 [0.135"] (3.43 mm)
# 12 [0.105"] (2.67 mm)	# 8 [0.162"] (4.11 mm)	# 11 [0.120"] (3.05 mm)
# 14 [0.080"] (2.03 mm)	# 10 [0.135"] (3.43 mm)	# 12 [0.105"] (2.67 mm)

Polymer-coated chain link fabric specifications ASTM F 668, Federal Specification RR-F-191/1E and AASHTO M181 specify the steel core as the wire gauge not the coated outer diameter. The polymer coating applied to the steel core wire increases the outer diameter of the wire thus increasing the area of closure and in turn increasing the wind load resistance. It is necessary to adjust from the steel core wire gauge to the larger coated outer diameter gauge. Select the larger coated outer gauge listed in the calculator table.

The Wheatland Line Post Selection Guide is derived from the Chain Link Fence Manufacturers Institute's, "Chain Link Fence Wind Load Guide for the Selection of Line Post and Line Post Spacing" WLG 2445. The CLFMI document follows the American Society of Civil Engineers, ASCE 7-10, Minimum Design Loads for Buildings and Other Structures.

DISCLAIMER:

Wheatland Tube Company offers the guide as a general information service. However, because exposure, workmanship, soils, drainage, emplacement problems, maintenance, wind, flying debris, and other weather conditions may vary even at various locations in a single site, each application should be assessed by a qualified professional engineer. Accordingly, no representation or warranty is made, and none should be implied, respecting the suitability or adequacy of the information in the guide for any particular application, nor is this guide intended to establish industry "standards" respecting the selection of post and post spacing or for any purpose.