

# 1621 - STEEL SIGN POSTS

## SECTION 1621

### STEEL SIGN POSTS

#### 1621.1 DESCRIPTION

This specification governs steel posts intended for sign support and other various applications.

#### 1621.2 REQUIREMENTS

##### a. General.

(1) Channel or 'U' Type. Provide posts that have the symmetrical cross section profile of a channel with flared and extended flanges as displayed in AASHTO M 281 for the channel or 'U' type post cross section with a cross section that is uniform throughout the post length. The post length(s), weight per unit length, and specific fabrication requirements are as specified in the Contract Documents.

Perforate the web center of the post with 3/8 inch diameter holes on one-inch centers initiating at one inch from one end of the post relative to the first hole center. Perforate the post not less than 36% of the post length for posts up to 11 feet in length and not less than 50% of the length for posts of 11 feet or greater in length. Perforating the total length of the post is permitted. The method of perforation is at the discretion of the post manufacturer; however, the holes must be uniform in diameter, de-burred, and smooth sided. Perform all perforating and machining operations prior to application of the corrosion protection coating.

Provide posts with steel weight per unit length for posts of either 2.0 lb/ft or 3.0 lb/ft, as specified in the Contract Documents. The tolerance on this requirement is -3, +10%. It is preferable that the weight per unit length be determined on non-perforated, non-coated posts. If this is not possible or practical, the unit length mass may be near the lower end of the tolerance band. Compensate for any coating that is present during determination of the unit length weight.

(2) Perforated Square Steel Tube (PSST). Provide posts, post anchors, anchor sleeves, and anchor extensions that have a square cross section which is uniform throughout the post length.

Perforate the total length (all four sides) of sign posts, post anchors, and anchor sleeves with 7/16 inch diameter holes on one inch centers initiating one inch from one end of the post relative to the first hole center. Embossed rings or die-cut knockouts are an acceptable substitute for perforated holes. The method of perforation is at the discretion of the post manufacturer; however, the holes must be uniform in diameter, de-burred, and smooth sided. Perform all perforating, cutting, and machining operations prior to application of the corrosion protection coating.

Anchor extensions are used in sign post square coupler footings and are not perforated.

Provide posts, post anchors, anchor sleeves, and anchor extensions with dimensions shown on the Contract Documents.

##### b. Material Specifications.

(1) Channel or 'U' Type. The selection of the steel for production of the posts is at the discretion of the post manufacturer. However, the finished product must comply with **TABLE 1621-1** when center point loaded as a simple beam. The test post beam is to span 48 inches and have the channel web placed upward.

<b>TABLE 1621-1: LOAD DEFLECTION REQUIREMENTS – CHANNEL OR 'U' TYPE</b>			
<b>Post Weight per Unit Length (lbs/ft)</b>	<b>Applied Load (lbf)</b>	<b>Center Deflection Acceptable Range at Applied Load (inches)</b>	<b>Maximum Retained (plastic) Deflection after Test (inches)</b>
2.0	700	0.30 ↔ 0.60	0.01
3.0	1200	0.27 ↔ 0.60	0.01

After all fabricating operations have been performed, protect posts from corrosion by application of a zinc coating by the hot dip galvanizing (HDG) process in accordance with ASTM A 123, Thickness Grade 85 minimum.

(2) Perforated Square Steel Tube (PSST). Manufacture posts, post anchors, anchor sleeves, and anchor extensions from steel sheet or strip that conform to ASTM A 1011 SS Grade 50 and which is zinc coated in accordance with ASTM A 653, coating designation G90. The finished tubing, prior to perforating, shall have a

## 1621 - STEEL SIGN POSTS

minimum yield strength of 60 ksi.

### 1621.3 TEST METHODS

Conduct all tests required through **subsection 1621.2** and by the applicable ASTM specifications of **subsection 1621.2**. Coating thickness may be measured by any one of the methods specified in ASTM B 633 and by eddy current methods, ASTM B 244, provided that appropriate calibration procedures and standards have been applied. The magnetic induction and eddy current methods are nondestructive in nature and are preferred. Destructive techniques, i.e., coating removal, may be utilized as referee methods.

### 1621.4 PREQUALIFICATION

Not applicable.

### 1621.5 BASIS OF ACCEPTANCE

Submit for approval a Type A certification (certified mill test report), as specified in **DIVISION 2600**, that comply with **subsection 1621.2**. Submit the channel or 'U' type samples to the Engineer of Tests for evaluation and testing. Also submit for approval a Type B certification covering results of tests on tubing for PSST that comply with **subsection 1621.2**.

Inspection of posts, including applicable anchor pieces, by field personnel for compliance with dimensional requirements and for the quality of the corrosion protection coating.

The final disposition of all posts will be completed at the final destination as the result of inspection for the quality of workmanship and the delivery condition.