Designation: F3151 – 17

Standard Specification for Driven Steel Post Drive Anchor System[1]

This standard is issued under the fixed designation F3151; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This standard provides an alternative to the use of concrete footings for the purpose of installing steel post framework to support chain link, expanded metal, welded wire mesh, wood, ornamental, rigid PVC, and composite fence.

1.2 This standard is not intended to include all methods available to support fence post framework.

1.3 This standard does not intend to preclude any practice that has proven equal to or given better performance under varying conditions such as location, weather, or intended use.

1.4 The values stated in inch-pound units are to be regarded as standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*

F567 Practice for Installation of Chain-Link Fence

F1043 Specification for Strength and Protective Coatings on Steel Industrial Fence Framework

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *anchor*—means of stabilizing vertical fence framework members with underground support equal to or greater than a concrete footing.

3.1.2 *drive anchor*—steel members driven into the ground to support fence framework post.

3.1.3 *drive anchor clamp bracket*—pressed steel fitting that secures the drive anchors to the post.

4. Materials

4.1 Drive anchor clamp bracket to be pressed steel, minimum of 11 ga. × 1 in. wide, minimum 1.2 oz/ft^2 hot dipped zinc coating. Bracket secured using ⅜ in. diameter bolts.

4.2 Drive anchors.

4.2.1 Industrial/commercial applications require all driven steel anchors, including round or square sections, to have equal or greater strength characteristics as the historical 1 ½ in. × 1 ½ in. × ⅛ in. steel angle irons. Whichever shape chosen must have a yield strength of 35,000 psi, a maximum bending moment of 6,462 lb/in., a minimum 1.2 oz/ft^2 zinc coating, and a gripping surface area of 3 in.^{2}

4.2.2 Residential applications for fences up to 60 inches in height require 1 in. × 1 in. × ⅛ in. steel angle having a minimum zinc coating 1.2 oz/ft^2, a yield strength of 35,000 psi, or alternate steel shapes of equal strength, coating, and surface gripping area.

5. Installation

5.1 The installer shall investigate the various conditions of the site, such as terrain contours, soil characteristics (texture, density, moisture content), frost line, amount of rainfall, velocity of wind, and related factors to ascertain if drive anchors are applicable.

5.2 Infringement of anchors on property owned by others. In this situation the anchors may be inserted parallel to the fence line, rather than perpendicular. In performance tests, there is little difference in the orientation of the blades.

5.3 The procedure to install bolted drive anchors includes the following steps:

5.3.1 Under normal conditions, drive the post plumb to a minimum depth of 24 in. plus an additional 6 in. for each 1 ft increase in the fence height over 4 ft. Climate, soil conditions, or local regulations may require greater depth.

5.3.2 With a pointed shovel, cut a small trench around the post to a depth of about 6 in.

5.3.3 Install anchor clamp bracket and slightly tighten bolts to hold bracket in place.

5.3.4 Drive anchors, at about a 45 degree angle to the post, to depth below grade.

[1] This test method is under the jurisdiction of ASTM Committee F14 on Fences and is the direct responsibility of Subcommittee F14.15 on Other Fence Systems and Components.

Current edition approved Oct. 1, 2017. Published October 2017. DOI: 10.1520/F3151–17.