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Standard Specification for Industrial and Commercial Horizontal Slide Gates[1]

This standard is issued under the fixed designation F1184; 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.

ε[1] NOTE—General Requirements were moved editorially to Section 4 in March 2023.

1. Scope

1.1 This specification covers detailed requirements for rolling, cantilever and overhead slide gates, gate posts, and accessories for industrial and commercial applications.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are for information only.

1.3 *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:*[2]

A780 Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings

B221 Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

F567 Practice for Installation of Chain-Link Fence

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

F1083 Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures

F2200 Specification for Automated Vehicular Gate Construction

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *polymer*—as used in this specification, describes poly(vinyl chloride) (PVC) or polyester.

4. General Requirements

4.1 Gates shall be designed, constructed, and installed to not fall over more than 45 degrees from the vertical plane, when a gate is detached from the supporting hardware.

4.2 Positive stops shall be required to limit travel to the designed fully open and fully closed positions. These stops shall be installed at either the top of the gate, or at the bottom of the gate where such stops shall horizontally or vertically project no more than is required to perform their intended function.

4.3 All weight bearing exposed rollers 8 ft (2.44 m), or less, above grade shall be guarded or covered.

4.4 A gap, measured in the horizontal plane parallel to the roadway, between a fixed stationary object nearest the roadway (such as a gate support post) and the gate frame when the gate is in either the fully open position or the fully closed position, shall not exceed 2 ¼ in. (57 mm). See Fig. 1.

4.4.1 *Exception*—All other fixed stationary objects greater than 16 in. (406 mm) from the gate frame shall not be required to comply with this section.

4.5 All gates shall be designed with sufficient lateral stability to assure that the gate will enter a receiver guide.

4.5.1 *Single Panel*—Receiver guides shall be recessed behind the leading edge of the receiver post or fixed object.

4.5.1.1 *Exception*—Receiver guides mounted greater than 8 ft (2.44 m) above grade shall not be required to comply with this section.

4.5.2 *Dual Panels*—Receiver guides, if used, may be installed on either panel, and shall include a cross-sectional area of 9 in.^{2} (5806 mm^2) or greater as measured on the leading edge of each guide.

4.6 Gates shall be designed, constructed, and installed such that their movement shall not be initiated by gravity and shall not result in continuous, unimpeded movement in either linear direction of its travel.

5. Classification

5.1 Horizontal slide gates covered by this specification shall be of the types described in 5.1.1, 5.1.2, and 5.1.3.

[1] This specification is under the jurisdiction of ASTM Committee F14 on Fences and is the direct responsibility of Subcommittee F14.15 on Gates.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

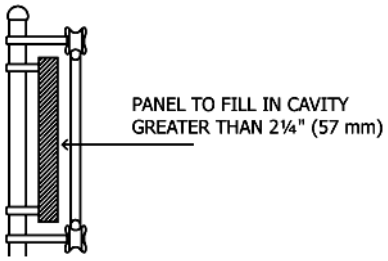

FIG. 1 Vehicular Horizontal Slide Gate – Section View

5.1.1 *Type I—Overhead Slide*—Any horizontal slide gate supported only from above.

5.1.2 *Type II—Cantilever Slide*—Any horizontal slide gate spanning an opening lacking a top or bottom support within that opening. Type II gates shall be supplied in one of two classes:

5.1.2.1 *Class 1*—Steel frame gates and aluminum frame gates using external rollers.

5.1.2.2 *Class 2*—Steel frame gates and aluminum frame gates using internal rollers.

5.1.3 *Type III—Rolling Gate*—Any horizontal slide gate that requires support on grade to traverse the gate opening. Type III gates shall be supplied in one of two classes:

5.1.3.1 *Class 1*—Steel frame gates and aluminum frame gates using an on-grade track to support and guide the entire gate.

5.1.3.2 *Class 2*—Steel frame gates and aluminum frame gates using a supporting pipe track at the trailing edge and an on-grade roller support at the leading edge of the gate.

6. Materials and Manufacture

6.1 *Materials*—The base materials of the gate frame shall be round or rectangular tubular members, welded at all corners. However, bolted or riveted, or both, field assemblies of modular panels are permitted.

6.1.1 The interior vertical or horizontal bracing, when needed, shall be the same metal tubular material and finish as the gate frame, but need not be the same size.

6.2 *Manufacture*—Gate frames shall be fabricated, and coated where necessary, as described in 6.2.1 through 6.2.6. For gates intended to be automated, manufacture shall conform to the applicable provisions of Specification F2200.

6.2.1 *Zinc-Coated Steel Frames* shall be in accordance with Specifications F1043 or F1083, or a combination thereof, and shall match that selected for any adjoining fence framework. Welded joints shall be coated in accordance with Practice A780, employing a zinc-rich paint conforming to 4.2.2 of Practice A780 and following only the procedures outlined in A2.1.3 and A2.1.4 of Practice A780.

6.2.2 *Aluminum Alloy Gate Frames* shall be in accordance with Specifications B221, 6005-T61, 6061-T6, or 6063-T6, and shall meet the performance criteria described in this specification.

6.2.3 *Polymer-Coated Steel or Polymer-Coated Aluminum Frames* shall be in accordance with Specification F1043 and shall match that selected for any adjoining fence framework. Welded joints on steel gate frames shall be coated in accordance with Practice A780, employing a zinc-rich paint conforming to 4.2.2 of Practice A780 and following only the procedures outlined in A2.1.3 and A2.1.4 of Practice A780. The painted areas shall then be top-coated to match the frame color.

6.2.4 *Chain Link Gate Fabric*—The fabric shall be as specified for the adjoining fence.

6.2.5 *Barbed Wire Top*—When specified, the barbed wire top shall have extensions to the gate frame to accommodate three strands of barbed wire uniformly spaced and positioned so that the top strand is approximately 1 ft (0.305 m) above the top horizontal member of the gate frame, except that the minimum height for barbed wire installed at the top of gates intended to be automated shall be in accordance with Specification F2200. Barbed wire shall be attached by suitable means to prevent wire from moving out of position and shall be supported by the gate frame extensions at maximum intervals of 10 ft (3.05 m).

6.2.6 *Barbed Tape*—The minimum height for barbed tape installed at the top of gates intended to be automated shall be in accordance with Specification F2200.

7. Dimensions

7.1 Width of gate opening shall be measured from one inside face to the other inside face of the gate posts.

7.2 Height of gate shall be measured from the finished grade line to the top edge of the gate frame, to match the height of the adjoining fence as measured from the finished grade line to the top edge of the top rail or fabric.

8. Gate Accessories

8.1 All gate hardware shall be of sufficient strength and durability to support the gate and repeated open-close cycles.

8.2 In addition, latches shall have a provision for locking devices.

9. Additional Specifications for Type I Gates

9.1 The specifications given in 9.1.1 through 9.1.7 shall apply only to Type I (overhead slide) gates with opening widths up to 40 ft (12.2 m).

9.1.1 *Materials and Manufacture*—In addition to the welded construction specified in 6.1, the gate frame may be alternatively assembled with corner fittings. Gates assembled with corner fittings shall have adjustable truss rods of 5⁄16 in. (7.9 mm) minimum diameter on panels 5 ft (1.52 m) wide or wider. Truss rods shall be of the same base metal and finish as the gate frame.

9.1.2 *Shape and Size*—Shape and size of the gate frame shall conform to procurement drawings or shall be of the shape and size as specified. The gate frame width shall be the width of the gate opening plus the diameter of one gate post.

9.1.3 *Dimension and Weight*—Gate frame members shall have dimensions and weights as described in Table 1.

9.1.4 *Gate Posts*—Gates having an opening width of up to 10 ft (3.05 m) and an overhead clearance of up to 14 ft (4.27 m) shall be supported by steel posts with a nominal outside diameter of 2.875 in. (73.02 mm) and a minimum weight of 4.64 lb/linear ft (6.91 kg/m). Gates having an opening width