



Designation: F1553 – 11 (Reapproved 2017)

## Standard Guide for Specifying Chain Link Fence<sup>1</sup>

This standard is issued under the fixed designation F1553; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This guide covers the recommended criteria for specifying the various elements of a chain link fence and lists the available choices of components from the current ASTM standards.

1.2 No recommendation is made or implied concerning the merits of any particular product. The choice of product components of the chain link fence should be made by the writers of the project specification, based on their own perception of the merits of the products for the particular application.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 *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 and health practices and determine the applicability of regulatory limitations prior to use.*

1.5 *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:*<sup>2</sup>

- [A121 Specification for Metallic-Coated Carbon Steel Barbed Wire](#)
- [A392 Specification for Zinc-Coated Steel Chain-Link Fence Fabric](#)
- [A491 Specification for Aluminum-Coated Steel Chain-Link Fence Fabric](#)

<sup>1</sup> This guide is under the jurisdiction of ASTM Committee F14 on Fences and is the direct responsibility of Subcommittee F14.40 on Chain Link Fence and Wire Accessories.

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

- [A824 Specification for Metallic-Coated Steel Marcellled Tension Wire for Use With Chain Link Fence](#)
- [F552 Terminology Relating to Chain Link Fencing](#)
- [F567 Practice for Installation of Chain-Link Fence](#)
- [F626 Specification for Fence Fittings](#)
- [F668 Specification for Polyvinyl Chloride \(PVC\), Polyolefin and Other Polymer-Coated Steel Chain Link Fence Fabric](#)
- [F900 Specification for Industrial and Commercial Steel Swing Gates](#)
- [F934 Specification for Colors for Polymer-Coated Chain Link Fence Materials](#)
- [F969 Practice for Construction of Chain-Link Tennis Court 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](#)
- [F1183 Specification for Aluminum Alloy Chain Link Fence Fabric](#)
- [F1184 Specification for Industrial and Commercial Horizontal Slide Gates](#)
- [F1345 Specification for Zinc-5 % Aluminum-Mischmetal Alloy-Coated Steel Chain-Link Fence Fabric](#)
- [F1379 Terminology Relating to Barbed Tape](#)
- [F1664 Specification for Poly\(Vinyl Chloride\) \(PVC\) and Other Conforming Organic Polymer-Coated Steel Tension Wire Used with Chain-Link Fence](#)
- [F1665 Specification for Poly\(Vinyl Chloride\) \(PVC\) and Other Conforming Organic Polymer-Coated Steel Barbed Wire Used With Chain-Link Fence](#)
- [F1712 Specification for Steel Chain-Link Fencing Materials Used for High Security Applications \(Withdrawn 2015\)<sup>3</sup>](#)
- [F1910 Specification for Long Barbed Tape Obstacles](#)
- [F1911 Practice for Installation of Barbed Tape](#)
- [F2000 Guide for Fences for Baseball and Softball Fields](#)
- [F2049 Safety Performance Specification for Fences/Barriers for Public, Commercial, and Multi-Family Residential Use Outdoor Play Areas](#)
- [F2200 Specification for Automated Vehicular Gate Construction](#)

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

**F2611** Guide for Design and Construction of Chain Link Security Fencing

2.2 *CSI Standard:*

**Master Format Chain Link Fence 32 31 13**<sup>4</sup>

2.3 *Chain Link Fence Manufacturers Institute:*

**WLG 2445 Chain Link Fence Wind Load Guide for the Selection of Line Post and Line Post Spacing**<sup>5</sup>

### 3. Terminology

3.1 *Definitions*—See Terminology **F552** for definitions of terms relating to chain link fencing. See Terminology **F1379** for definitions of terms relating to barbed tape.

### 4. Summary of Practice

4.1 Many standard specifications for chain link fence are presently in existence. These include, but are not limited to, specifications of the federal, state, and municipal governments and their various agencies, as well as trade groups and organizations. Most of these specifications either reference existing ASTM standards or are duplications of some of these standards. This guide references chain link fence ASTM standards for the purpose of developing a complete chain link fence specification.

4.2 A large percentage of construction specifiers use MasterFormat, developed and published by the Construction Specifications Institute (CSI) for writing project specifications. Chain link fence carries the MasterFormat designation 32 31 13. The standard format for each MasterFormat section is in three parts: Part 1—General; Part 2—Products; and Part 3—Execution. This guide is written in a manner that will lend itself to following that format.

### 5. Part 1—General

5.1 List the work included, related work, erector qualification, referenced documents, criteria for shop drawings, and product data submittals, when required.

### 6. Part 2—Products

6.1 *Acceptable Manufacturers*—When desired, list the acceptable manufacturers of any components of the chain link fence.

6.2 *Materials:*

6.2.1 *Chain Link Fabric*—Select the material and type of coating from one of the following:

6.2.1.1 *Zinc-Coated Steel In Accordance With Specification A392*—Select Class 1 or Class 2 coating.

6.2.1.2 *Aluminum-Coated Steel In Accordance With Specification A491*

6.2.1.3 *Zinc-5 % Aluminum-Mischmetal (Zn-5Al-MM) Alloy-Coated Steel In Accordance With Specification F1345*—If Zn-5Al-MM alloy-coated steel, select Class 1 or Class 2 coating.

6.2.1.4 *Aluminum Alloy In Accordance With Specification F1183.*

6.2.1.5 *Polymer-Coated Steel In Accordance With Specification F668*

(1) If polymer-coated steel, select Class 1, Class 2a, or Class 2b coating.

(2) If polymer-coated steel, select the color from Specification **F934**.

6.2.2 *Fence Posts, Rails, and Braces:*

6.2.2.1 Select the framework from Specifications **F1043**, if Group IA is chosen, see **F1083**.

6.2.2.2 Select the protective coating from Specification **F1043**.

6.2.2.3 If optional supplemental color coated polymer coated steel, select polymer coating in accordance with Specification **F1043**.

6.2.3 *Barbed Wire*—If barbed wire is desired, select the design number and type of coating from one of the following:

6.2.3.1 If metallic-coated steel in accordance with Specification **A121**, select Design Number 12-4-3-14R or 12-4-5-14R and coating Type A (aluminum coated steel), Z (Class 3 zinc-coated steel) or ZA (Class 60 zinc-5 % aluminum-mischmetal alloy coated steel).

6.2.3.2 If PVC or other polymer-coated steel, select Coating Class 1, Class 2a or Class 2b in accordance with Specification **F1664**, and select color in accordance with Specification **F934**.

6.2.4 *Barbed Tape Obstacles*—Select in accordance with the product descriptions in Specification **F1910**.

6.2.5 *Tension Wire*—Select the type of coating from one of the following:

6.2.5.1 If metallic coated steel in accordance with Specification **A824**, select coating Type I (aluminum coated steel), Type II (zinc-coated steel) or Type III (zinc-5 %-aluminum-mischmetal alloy coated steel).

(1) For Type II, select coating Class 1, Class 2, or Class 3;

(2) For Type III, select coating Class 1 or Class 2.

6.2.5.2 If PVC or other polymer coated steel, select core wire diameter, type of metallic coating, and Coating Class 1, Class 2a or Class 2b in accordance with Specification **F1665** and select color in accordance with Specification **F934**.

6.2.6 *Fittings*—Specify fittings are to be in accordance with Specification **F626**, and list any choices, additions, or exceptions to that specification. In general, the type of material and any protective coating selected for the fittings should match that selected for the fence posts, rails and braces (see 6.2.2).

6.2.7 *Swing Gates*—Specify swing gates are to be in accordance with Specification **F900**. Select single or double gates. If automated, add requirement to comply with **F2200**.

6.2.8 *Slide Gates*—Specify slide gates are to be in accordance with Specification **F1184**, and select Type I, overhead slide, or Type II, cantilever slide. Select single or double gates. If automated, add requirement to comply with **F2200**.

6.2.8.1 If Type II, cantilever slide, select Class 1 or Class 2.

6.3 *Components and Sizes:*

6.3.1 *Chain Link Fabric*—Select the size of mesh, size of wire, height of fabric, type of top selvage, and type of bottom selvage from Specifications **A392**, **A491**, **F668**, **F1183**, or **F1345**.

<sup>4</sup> Available from Construction Specifications Institute, 601 Madison St., Alexandria, VA 22314-1791.

<sup>5</sup> Available from Chain Link Fence Manufacturers Institute, 10015 Old Columbia Road, Suite B-215, Columbia, MD 21046, <http://www.chainlinkinfo.org>.

NOTE 1—If the fence is for a tennis court use Practice **F969**.

6.3.2 *Line Posts*—Select the size from Specification **F1043**, if Group IA is chosen, see Specification **F1083**.

6.3.3 *Corner and Terminal Posts*—Select the size from Specifications **F1043**, if Group IA is chosen, see Specification **F1083**.

NOTE 2—If slats, screening or other materials are to be installed in or on the chain link fabric, or the use of small security mesh or if the fence is 10 ft (3.05 m) high or greater, consideration should be given to selection of larger size line, corner and terminal posts, increasing the size of the post footings, decreasing the spacing of the line posts, decreasing the spacing of the tie wires or other fasteners securing the fabric to the framework, or various combinations of these measures, to withstand the additional wind, and snow or ice load placed on the fence. Consult the Chain Link Fence Manufacturers Institute Guide WLG 2445.

6.3.4 *Swing Gate Posts*—Specify the size of swing gate posts to be in accordance with Specification **F900**, Table 2.

6.3.5 *Slide Gate Posts*—Specify the size of slide gate posts to be in accordance with Specification **F1184**.

6.3.6 *Horizontal Framework Members*—Materials may be either pipe or roll-formed sections (referred to as *rails*), or tension wire. Select material and type of coating as follows:

6.3.6.1 Determine if the top horizontal member of the fence will be a rail or tension wire. If rail, select from Specification **F1043**. If tension wire, see **6.2.5**.

NOTE 3—All fences should have either a top rail or top tension wire.

6.3.6.2 Determine if the fence is to have a mid-height (intermediate) rail. Select from Specification **F1043**.

NOTE 4—Tension wire is not used as an intermediate horizontal member. An intermediate rail should always be specified on 12 ft (3.7 m) high fence in accordance with Practice **F567**. Fences greater than 14 ft (4.3 m) in height may require two or more intermediate rails, spaced at equal intervals between finished grade and the top of the fence. Intermediate rails may be specified on fences less than 12 ft (3.7 m) in height when conditions warrant.

6.3.6.3 Determine if the fence is to have a bottom horizontal member. If rail, select from Specification **F1043**. If tension wire, see **6.2.5**.

NOTE 5—A bottom rail or bottom tension wire is optional but

recommended for better security. A bottom horizontal member should be specified on any fence constructed with slats or screening.

6.3.6.4 Specify brace rails and truss rod assemblies for fences greater than 5 ft (1.5 m) in height (see Practice **F567**). Select brace rail material from Specification **F1043**. Select truss rod material from Specification **F626**.

6.3.7 *Barbed Wire*—Indicate the number of strands (three, five, or six) and the configuration of barbed wire. If three strands, indicate whether the barbed wire is to be slanted inward or outward from the fence line or in a vertical plane above the fence.

6.3.8 *Gates*—Indicate the size (opening width) of all gates.

6.3.9 If the fence is for a high security, detention or correctional facility, see Specification **F1712** or **F2611** for special provisions on materials and installation, some of which may supersede various provisions specified herein.

## 7. Part 3—Execution

### 7.1 Installation:

7.1.1 Specify the fence is to be installed per Practice **F567**, and list any choices, additions, or exemptions to that practice.

7.1.2 If the fence is for a tennis court, use Practice **F969**.

7.1.3 Specify that any manufacturer's instructions for the installation of gate systems are to be followed.

7.1.4 If the fence is for higher security, a detention or correctional facility, specify that special provisions contained in Practice **F1712** or Practice **F2611** are to be followed.

7.1.5 If the fence is to include barbed tape obstacle, specify that the requirements of Practice **F1911** are to be followed.

7.1.6 If the fence is for a ballfield or other sports facility, specify that special provisions contained in Guide **F2000** are to be followed.

7.1.7 If the fence is for a public, commercial or multi-family residential use outdoor play area, specify that any special provisions for the installation listed in Guide **F2049** are to be followed.

## 8. Keywords

8.1 chain link; fence; specifications

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