



Designation: **F 1553 – 9601**

## **Standard Guide for Specifying Industrial and Commercial Chain Link Fence<sup>1</sup>**

This standard is issued under the fixed designation F 1553; 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 for industrial or commercial use 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 *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.*

### **2. Referenced Documents**

#### 2.1 *ASTM Standards:*

---

<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.

Current edition approved ~~Nov. June 10, 1996; 2001~~. Published ~~November 1997; August 2001~~. Originally published as F 1553-94. Last previous edition F 1553-94~~6~~.

- A 121 Specification for ~~Zinc-Coated (Galvanized) Metallic-Coated Carbon~~ Steel Barbed Wire<sup>2</sup>
  - A 392 Specification for Zinc-Coated Steel Chain-Link Fence Fabric<sup>2</sup>
  - A 491 Specification for Aluminum-Coated Steel Chain-Link Fence Fabric<sup>2</sup>
  - ~~A 585 Specification for Aluminum-Coated Steel Barbed Wire<sup>2</sup>~~
  - ~~A 824 Specification~~ 824 Specification for Metallic-Coated Steel Marcellled Tension Wire for Use with Chain Link Fence<sup>2</sup>
  - F 552 Terminology Relating to Chain Link Fencing<sup>2</sup>
  - F 567 Practice for Installation of Chain-Link Fence<sup>2</sup>
  - F 626 Specification for Fence Fittings<sup>2</sup>
  - F 668 Specification for Poly(Vinyl Chloride) (PVC)-Coated Steel Chain-Link Fence Fabric<sup>2</sup>
  - F 900 Specification for Industrial and Commercial Swing Gates<sup>2</sup>
  - F 934 Specification for Standard Colors for Polymer Coated Chain Link Fence Materials<sup>2</sup>
  - F 969 Practice for Construction of Chain-Link Tennis Court Fence<sup>2</sup>
  - F 1043 Specification for Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework<sup>2</sup>
  - F 1083 Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures<sup>2</sup>
  - F 1183 Specification for Aluminum Alloy Chain Link Fence Fabric<sup>2</sup>
  - F 1184 Specification for Industrial and Commercial Horizontal Slide Gates<sup>2</sup>
  - F 1345 Specification for Zinc-5 % Aluminum-Mischmetal Alloy-Coated Steel Chain Link Fence Fabric<sup>2</sup>
  - F 1379 Terminology Relating to Barbed Tape<sup>2</sup>
  - F 1664 Specification for Poly (Vinyl Chloride) (PVC)-Coated Steel Tension Wire Used With Chain-Link Fence<sup>2</sup>
  - F 1665 Specification for Poly (Vinyl Chloride) (PVC)-Coated Steel Barbed Wire Used With Chain Link Fence<sup>2</sup>
  - F 1712 Specification for Steel Chain Link Fencing Materials Used in Detention and Correctional Facilities<sup>2</sup>
  - F 1910 Specification for Long Barbed Tape Obstacles<sup>2</sup>
  - F 1911 Practice for Installation of Barbed Tape<sup>2</sup>
  - F 2000 Guide for Fences for Ballfields and Other Sports Facilities<sup>2</sup>
  - F 2049 Guide for Fences/Barriers for Public, Commercial, and Multi-Family Residential Use Outdoor Play Areas<sup>2</sup>
- 2.2 *CSI Standard*.<sup>3</sup>

Master Format

### 3. Terminology

3.1 *Definitions*—See Terminology F 552 for definitions of terms relating to chain link fencing. See Terminology F 1379 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 only existing ASTM standards for this reason, since these standards encompass most standard components of a typical chain link fence installation.

4.2 A large percentage of construction specifiers use MasterFormat, a publication of the Construction Specifications Institute (CSI) for writing their project specifications. MasterFormat is divided into 16 divisions, and chain link fence is listed as Section 02830 under Division 2—Site Work. The standard format for each 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 A 392*—If zinc-coated steel, select Class 1 or Class 2 coating.

6.2.1.2 *Aluminum-Coated Steel In Accordance With Specification A 491*.

6.2.1.3 *Zinc-5 % Aluminum-Mischmetal (Zn-5Al-MM) Alloy-Coated Steel In Accordance With Specification F 1345*—If Zn-5Al-MM alloy-coated steel, select Class 1 or Class 2 coating.

<sup>2</sup> *Annual Book of ASTM Standards*, Vol 01.06.

<sup>3</sup> Available from Construction Specifications Institute, 601 Madison St., Alexandria, VA 22314-1791.

6.2.1.4 *Aluminum Alloy In Accordance With Specification F 1183.*

6.2.1.5 *PVC-Coated Steel In Accordance With Specification F 668:*

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

(2) If PVC-coated steel, select the color from Specification F 934.

6.2.2 *Fence Posts, Rails, and Braces:*

6.2.2.1 Select the shapes and type of material (that is, steel or aluminum alloy) from Specifications F 1043 or F 1083 as applicable.

6.2.2.2 If steel, select the protective coating from Specification F 1043.

6.2.2.3 ~~PVC-If optional supplemental color coated polymer coated steel, select polymer coating in accordance with Specification F 1665.~~

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

~~(b) (b) If PVC-coated steel, select color from Specification F 934.~~

~~F 1043.~~

6.2.2.4 *Zinc-5 % Aluminum-Mischmetal (Zn-5Al-MM) Alloy-Coated Steel In Accordance With Specification A 824, Type III—If Zn-5Al-MM alloy-coated steel, select Class 1 or Class 2 coating.*

6.2.2.5 ~~PVC-coated steel in accordance with Specification F 1664.~~

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

~~(b) (b) If PVC-coated steel, select color from Specification F 934.~~

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

6.2.3.1 ~~ZIf metallic= coated steel (chain link fence grade) in accordance with Specification A 121, select Design Number and coating Type A (aluminum coated steel), Z (zinc-coated steel) or ZA (zinc-5 % aluminum-mischmetal alloy coated steel).~~

~~(1) For Type Z or Type ZA, select the Class of coating from Specification A 121, Table 2 or 3.~~

6.2.3.2 ~~Alf PVC or other polyuminum=er coated steel, select Coating Class 1, Class 2a or Class 2b in accordance with Specification A 585, Type II (high security). F 1664, and select color in accordance with Specification F 934.~~

6.2.4 *Barbed Tape Obstacles—select in accordance with the product descriptions in Specification F 1910.*

6.2.5 *Tension Wire—If tension wire is desired, select the type of coating from one of the following:*

6.2.4.1 ~~Aluminum-coated~~

6.2.5.1 ~~If metallic coated steel in accordance with Specification A 824, select coating Type I.~~

6.2.4.2 ~~Zinc-Coated Steel In Accordance With Specification A 824, 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 F 1665 and select color in accordance with Specification F 934.

6.2.6 *Fittings—Indicate that the fittings are to be in accordance with Specification F 626, 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.).*

6.2.67 *Swing Gates—Indicate that the swing gates are to be in accordance with Specification F 900. Select single or double gates.*

6.2.78 *Slide Gates—Indicate that the slide gates are to be in accordance with Specification F 1184, and select Type I, overhead slide, or Type II, cantilever slide. Select single or double gates.*

6.2.78.1 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 A 392, A 491, F 668, F 1183, or F 1345.*

NOTE 1—If the fence is for a tennis court, note special provisions for the size of mesh, size of wire, height of fabric, and type of top and bottom selvage listed in Practice F 969.

6.3.2 *Line Posts—Select the size from Specification F 1043 and F 1083.*

6.3.3 *Corner and Terminal Posts—Select the size from Specifications F 1043 or F 1083.*

NOTE 2—If slats, screening or other materials are to be installed in or on the chain link fabric, 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. If the fence is for a tennis court, see 5.3, the section entitled “Caution Regarding Windscreens” in Practice F 969.

6.3.4 *Swing Gate Posts—Indicate that the sizes of swing gate posts are to be in accordance with Specification F 900, Table 2.*

6.3.5 *Slide Gate Posts—Indicate that the sizes of slide gate posts are to be in accordance with Specification F 1184.*

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 F 1043. If tension wire, see 6.2.45.

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 F 1043.

NOTE 4—Tension wire is not used as an intermediate horizontal member. An intermediate rail should always be specified on 12 ft high fence. Fences greater than 14 ft 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 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 F 1043. If tension wire, see 6.2.45.

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 Brace rails or brace rail and truss rod assemblies may be specified for fences greater than 5 ft in height (see Section 6 of Practice F 567). Select brace rail material from Specification F 1043. Select truss rod material from Specification F 626.

NOTE 6—Brace rails are required on any fences constructed without a top rail.

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 sizes of all gates (opening width).

6.3.9 If the fence is for a detention or correctional facility, see Specification F 1712 for special provisions on materials, some of which may supersede various provisions specified herein.

## 7. Part 3—Execution

### 7.1 *Installation:*

7.1.1 Indicate that the fence is to be installed per Practice F 567, and list any choices, additions, or exemptions to that practice.

7.1.2 If the fence is for a tennis court, indicate that special provisions for the installation listed in Practice F 969 are to be followed.

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

7.1.4 If the fence is for a detention or correctional facility, indicate that special provisions contained in Practice F 1712 are to be followed.

7.1.5 If the fence is to include barbed tape obstacle, indicate that the requirements of Practice F 1911 are to be followed.

7.1.6 If the fence is for a ballfield or other sports facility, indicate that special provisions contained in Guide F 2000 are to be followed.

7.1.7 If the fence is for a public, commercial or multi-family residential use outdoor play area, indicate that any special provisions for the installation listed in Guide F 2049 are to be followed.

## 8. Keywords

8.1 chain link; fence; specifications

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

*This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).*