Designation: F 2000 – 00a

Standard Guide for Fences for Ballfields and Other Sports Facilities[1]

This standard is issued under the fixed designation F 2000; 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 guide provides recommended minimum requirements for various types of fences used in softball and baseball ballfields and other sports facilities, and practices for installation.

1.2 *This guide 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.*

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

2. Referenced Documents

2.1 *ASTM Standards:*

A 392 Specification for Zinc-Coated Steel Chain-Link Fence Fabric[2]

A 491 Specification for Aluminum-Coated Steel Chain-Link Fence Fabric[2]

A 700 Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment[3]

F 552 Terminology Relating to Chain-Link Fencing[2]

F 567 Practice for Installation of Chain-Link Fence[2]

F 626 Specification for Fence Fittings[2]

F 668 Specification for Poly(Vinyl Chloride) (PVC)-Coated Steel Chain-Link Fence Fabric[2]

F 1043 Specification for Strength and Protective Coatings of Metal Industrial Chain-Link Fence Framework[2]

F 1083 Specification for Pipe, Steel, Hot Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures[2]

F 1183 Specification for Aluminum Alloy Chain-Link Fence Fabric[2]

F 1345 Specification for Zinc-5 % Aluminum-Mischmetal Alloy-Coated Steel Chain-Link Fence Fabric[2]

F 1664 Specification for Poly(Vinyl Chloride) (PVC)-Coated Steel Tension Wire Used with Chain-Link Fence[2]

2.2 *CPSC Document:*

CPSC Staff Recommendations

2.3 *ASA and Other Ball Sports Associations:*

Staff Recommendations

2.4 *BOCA Document:*

BOCA National Building Code/1993 – 12th Edition

2.5 *NFPA Documents:*[4]

Staff Recommendations

NFPA 70 National Electric Code (NEC)

2.6 *ANSI/IEEE Document:*[5]

ANSI/IEEE C2 National Electric Safety Code

3. Terminology

3.1 See Terminology F 552 for definitions of terms relating to chain-link fencing.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *fence*, *n*—a type of barrier that surrounds and deters balls, bats, and passage to or from the playing area.

3.2.2 *field*, *n*—the outdoor area that has been either designated, designed, constructed, or otherwise used for softball or baseball, or both.

3.2.3 *grade*, *n*—the finished elevation at any specified point of the ground or pavement outside or inside the playing area.

3.2.4 *outdoor*, *adj*—site located outside of a completely enclosed building or other structure.

4. Summary of Guide

4.1 This guide is based in part upon recommendations of the task groups concerned with baseball and softball of ASTM Committee F08.

4.2 This guide is directed to outfield fences, side or foul line fences, and player seating-box fencing.

5. Significance and Use

5.1 This guide sets forth minimum standard requirements for use in local codes and ordinances relating to ballfield containments.

5.2 This guide does not have the effect of law, nor is it intended to supersede local codes and ordinances of a more restrictive nature.

[1] This guide is under the jurisdiction of ASTM Committee F14 on Fences and is the direct responsibility of Subcommittee F14.10 on Specific Applications.

Current edition approved July 10, 2000. Published September 2000. Originally published as F 2000–00. Last previous edition F 2000–00.

[2] *Annual Book of ASTM Standards*, Vol 01.06.

[3] *Annual Book of ASTM Standards*, Vol 01.05.

[4] Available from National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269-9101.

[5] Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

5.3 Studies, as listed in Annex A1, have been referenced as the basis for certain recommendations in this guide and will assist those who intend to provide protection against injuries or fatalities associated with anticipated thrown or hit balls and bats as well as passage to or from a ballfield or other sports environment, thus restricting and deterring passage. This would include, but not be limited to, state and local governments, model code organizations, building code groups, and consumers. It is understood that the format will vary depending upon the specific use and local conditions.

5.4 Articles and studies have noted that fencing for baseball or softball sports, or both, should exist for baseball and softball sports outfields, player seating, and sidelines.

6. Dimensions and Materials

6.1 *Permanent Outfield Fence*:

6.1.1 *Height*—The top of the fence shall be a minimum of 96 in. (2.4 m) above grade measured on the side of the fence that faces away from the ballfield (see 3.2.3 for the definition of *grade* specific to this guide). The height is to be such that players in the outfield can safely attempt to catch a fly ball without impaction on the kidneys, back, or head. However, in circumstances where it is necessary to protect people or objects outside the fences, the height should be increased accordingly. Top rail padding systems may also be used. A mid rail is not needed, in accordance with Specification F 668.

6.1.2 *Ground Clearance*—The maximum vertical clearance between grade and the bottom of the fence shall be no more than a 1 in. (25.4 mm) reveal or space, measured on the side of the fence that faces the ballfield, to avoid entrapment of feet.

6.1.3 *Panels*—Solid barriers and safety padding that does not have openings, such as plastic, plywood, or canvas, shall not contain indentations or protrusions, except for normal construction tolerances and joints. Such indentations shall not be deeper than 0.375 in. (9.5 mm) and should be flush facing the ballfield.

6.1.4 *Horizontal and Vertical Members*—Where the fence is composed of horizontal and vertical members, the structural members shall be located on the side opposite of the play environment to prevent encountering the member. The spacing between the vertical or horizontal members shall not exceed 1¾ in. (4.44 cm). If of a lattice design, the members shall be diagonal.

6.1.5 *Diagonal Members*:

6.1.5.1 Where the fence is composed of diagonal or other angular positioned members, such as in a lattice fence, any opening created by the diagonal members shall be a maximum of 1¾ in. (4.44 cm) measured in its largest direction, to prevent toe holds. Such members should be on the side away from the ballfield.

6.1.5.2 Diagonal bracing members extending from one corner to the opposite corner, creating a ladder effect on all styles of fences and gates, are not permitted where spacing of vertical or horizontal members in any area between posts exceeds 1¾in. (4.44 cm), in order to prevent climbing into the ballfield.

6.1.6 *Fabric or Mesh*—Mesh opening for chain-link and other fence fabrics shall be a minimum of 2-in. (5-mm) mesh, 9 gage. All chain-link fabric shall have a knuckle and knuckle selvage and shall be selected from chain-link fabric in accordance with Specifications A 392, A 491, F 668, or F 1345. Other materials shall have blunt edges.

6.2 *Portable Outfield Fence*:

6.2.1 Portable outfield, and often sideline, fencing is generally used when it is necessary to reconfigure the playing field boundary for games in which the classification will change or when the field is to have multiple uses. The potential for injury caused by an outfielder colliding with a fence that does not meet resiliency, break away, or fall-down requirements is significant. The added criteria that must be considered is the stability of the cross or horizontal pieces, supports, the panel fabric opening, the vertical pieces and their give away, and the height. Portable fence systems made of specially formulated polymers in approximate 10-ft (3.05-m) lengths with break-apart connections and stable support should allow panels to release and fall down in sections when impacted. The collapsibility feature should prevent cartwheeling over the fence and allow the outfielder to be lowered to the ground in a fall. The downed panel should quickly and easily return to its original position and be snapped into place.

6.3 *Wood Outfield Fence*:

6.3.1 *Height*—The top of the fence shall conform to height for other fence types.

6.3.2 *Ground Clearance*— The clearances shall conform to prior appropriate sections to eliminate foot entrapment.

6.3.3 *Panels*—The panels should conform to prior appropriate sections with the flush side inside the playing area and shall be covered with a wall padding.

6.4 *Foul Line Fencing*:

6.4.1 *Height*—The top of the fence shall be a minimum of 96 in. to 8 ft (2.44 m) above grade measured at the side of the fence from the ballfield where any sideline obstructions exist or where objects such as other activity areas, parking lots, and so forth have to be protected.

6.4.2 *Ground Clearance*— The clearance shall conform to prior appropriate sections to eliminate foot entrapment.

6.4.3 *Panels*—The panels should conform to prior appropriate sections.

6.4.4 *Horizontal and Vertical Members*—The horizontal and vertical members shall conform to prior appropriate sections.

6.4.5 *Diagonal Members*—The diagonal members shall conform to prior appropriate sections.

6.4.6 *Fabric or Mesh*— The fabric or mesh shall conform to prior appropriate sections.

6.5 *Spectator Protective Fencing*:

6.5.1 *Height*—The top of the fence shall be a minimum of 8 ft, 0 in. (2.44 m) above grade or of a greater dimension that ensures protection of spectators from a fouled line drive or related trajectory.

6.5.2 *Ground Clearance*—The clearance shall conform to prior appropriate sections to eliminate foot entrapment.

6.5.3 *Panels*—The panels shall conform to prior appropriate sections.

6.5.4 *Horizontal and Vertical Members*—The horizontal and vertical members shall conform to prior appropriate sections.