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Standard Guide for Tennis Court Fencing and Other Perimeter Enclosures¹

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INTRODUCTION

Fencing, enclosures and barriers can be used to delineate an activity area, directing flow of users, control access and egress of persons, animals, or machinery. In tennis, it plays a significant role in keeping the balls in the playing area. The decision of what type of perimeter enclosure to introduce and to what extent the perimeter should be enclosed, will have a great impact on the playability, level of security, exposure to hazards and aesthetics of the facility.

Although the roots of tennis may date back to the 16th century, it is the 1870s when it became popular in Europe and America. In 150 years, there has been a great variety of perimeter enclosures of tennis courts; from solid walls, trellises with fabric, to netting and welded wire mesh, but the most common of tennis court enclosures has been chain link fencing (CLF). This Standard offers guidance that applies to all types of enclosures, including chain link fencing.

1. Scope

1.1 This guide provides design recommendations that promote quality construction and aim to reduced maintenance of tennis court enclosures. This guide informs those interested in the design, layout and maintenance of tennis court fencing on the many details and features of such enclosures. This standard describes various types of fence fabric and framework material that are available and refers to other useful resource material for designing better-quality tennis court enclosures.

1.2 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.

1.3 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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.*

¹ This guide is under the jurisdiction of ASTM Committee F08 on Sports Equipment, Playing Surfaces, and Facilities and is the direct responsibility of Subcommittee F08.66 on Sports Facilities.

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2. Referenced Documents

2.1 ASTM Standards:²

- A392 Specification for Zinc-Coated Steel Chain-Link Fence Fabric
- A491 Specification for Aluminum-Coated Steel Chain-Link Fence Fabric
- A824 Specification for Metallic-Coated Steel Marcellled Tension Wire for Use With Chain Link Fence
- F537 Specification for Design, Fabrication, and Installation of Fences Constructed of Wood and Related Materials
- 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 Standard Colors for Polymer-Coated Chain Link Fence Materials
- 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
- F1345 Specification for Zinc-5 % Aluminum-Mischmetal Alloy-Coated Steel Chain-Link Fence Fabric
- F1664 Specification for Poly(Vinyl Chloride) (PVC) and

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.

Other Conforming Organic Polymer-Coated Steel Tension Wire Used with Chain-Link Fence

F2453 Specification for Welded Wire Mesh Fence Fabric (Metallic-Coated or Polymer Coated) for Meshes of 6 in.² [3871 mm²] or Less, in Panels or Rolls, with Uniform Meshes

F2919 Specification for Welded Wire Mesh Fence Fabric (Metallic-Coated or Polymer Coated) with Variable Mesh Patterns or Meshes Greater than 6 in.² [3871 mm²] in Panels

2.2 *Chain Link Fence Manufacturers Institute:*

WLG 2445 Chain Link Fence Wind Load Guide for the Selection of Line Post and Line Post Spacing³

2.3 *United States Tennis Association (USTA) and American Sports Builders Association (ASBA):*

Tennis Courts: A Construction & Maintenance Manual (2021, updated every 3 to 4 years)⁴

3. Terminology

3.1 *Definitions*—See Terminology **F552** for definitions of chain link fence terms used in this Guide.

4. Summary of this Guide

4.1 This standard offers recommendations for perimeter enclosures of outdoor tennis courts; including, Layout (6.1), Heights (6.2), Strength (6.3), System Properties (6.4), Structural Frame Components (6.5), Sleeves (6.5.1.3), Bracing (6.5.1.4), Fabric (6.6), Gates (6.7), Additional Loads – Accessories (6.8), Installation (7), and Grounding (7.5), where other standards may not apply. Be sure to check State Construction Codes and Municipal Ordinances for specific regulations that may apply.

5. Significance and Use

5.1 *The Primary Function of a Tennis Court Perimeter Enclosure* is to keep tennis balls in and uninvited traffic out. It also serves as a barrier to prevent players from colliding with fixed objects and spectators. It prevents players from running onto irregular or slippery surfaces or into dangerous adjacent areas. Enclosures need to respond to secondary functional requirements, including; spectator viewing, screening the court from wind and visual distractions outside the court, and be as open and welcoming as security considerations permit. Tennis courts were once surrounded by a 10 ft (3050 mm) to 12 ft (3660 mm) high fence. In cases where security or dangerous adjacent conditions are an issue, this type of enclosure is still popular, but in most cases, tennis fences are a variety of heights and can accommodate lights, shade shelters, gates for players and maintenance, and can have completely open portions of the perimeter that lead to decks, grandstands or landscaping.

5.2 *The Intended Use of This Guide* is to identify the specific functions and qualities desired of a tennis enclosure and offer recommendations on how to achieve them with a

chain link fence, or other enclosure, for different type of tennis courts. Although this standard is focused on chain link fencing that makes up the majority of tennis enclosures, many of the recommendations are applicable to other traditional and new fencing options for tennis court enclosures that are available on the market. This Standard is intended primarily to guide those responsible for, or concerned with, the layout and design of perimeter enclosures for both private and public tennis courts, and where other standards may not apply.

6. Tennis – Perimeter Enclosure Considerations

6.1 *Layout*—According to the United States Tennis Association (USTA), the preferred environment for tennis is one with the least amount of fencing required to meet the functional needs and address the site-related challenges. There are many variables in the layout of tennis enclosures. The playing area of a tennis court can be different sizes. It can be hard or soft. Tennis courts can be stand-alone, adjacent or in batteries of multiple courts. Some courts can be completely enclosed while others may be open along the sidelines. The site conditions may impact the fencing requirements. Every facility has a unique set of requirements, and that could impact the enclosure layout. Not all court enclosures may be simple rectangles. Many courts feature diagonally cut corners. These have the advantages of reducing the footprint and amount of enclosure, strengthening the enclosure against wind loads, eliminating hard-to-maintain corners, and aesthetically, breaking up the long fence line on a battery of courts. The USTA suggests that diagonal fence not intrude into the area inside a radius of 16 ft 3 in. (4955 mm) from the corner of the tennis court.

6.1.1 *Court Sizes:*

6.1.1.1 *78 ft Court* is the traditional, full-sized court that measures 36 ft (10 970 mm) by 78 ft (23 770 mm) with overall playing areas that ranges from the ITF recommended minimum of 56 ft (17 070 mm) by 114 ft (34 750 mm) to as much as 80 ft (24 380 mm) by 140 ft (42 670 mm) for stadium courts. The most common size is 60 ft (18 290 mm) by 120 ft (36 580 mm). That has a perimeter of 340 linear ft (103 630 mm) for the smallest court to 440 linear ft (134 110 mm) for the largest, and 360 linear ft (10 970 mm) for the most common court.

6.1.1.2 *60 ft Court* was first introduced to 10-and-under play, but now is used more widely. It is referred to as the 60 ft court and measures 27 ft (8230 mm) by 60 ft (18 290 mm), with a playing area of 47 ft (14 330 mm) by 88 ft (26 820 mm). The perimeter of the court is 270 linear ft (82 300 mm).

6.1.1.3 *36 ft Court* was initially introduced for 8-and-Under play. It is referred as the 36 ft court that measures 18 ft (5490 mm) by 36 ft (10 970 mm) with an overall playing area of 34 ft (10 360 mm) by 56 ft (17 070 mm). The perimeter of the court is 180 linear ft (82 300 mm).

6.1.2 *Fence Configurations*—The tennis court enclosure is commonly made up of baseline and sideline fences. Each has its functions and particular characteristics, and each differs on the 78 ft, 60 ft and 36 ft courts.

6.1.2.1 *Baseline Fence* is at the back of the tennis court, parallel with the court baselines. For 78 ft courts, the baseline fence is commonly between 8 ft (2440 mm) and 10 ft (3050

³ Available from Chain Link Fence Manufacturers Institute, 10015 Old Columbia Road, Suite B-215, Columbia, MD 21046, <http://www.chainlinkinfo.org>.

⁴ Available from American Sports Builders Association, 2331 Rock Spring Rd., Forest Hill, MD 21050, www.sportsbuilders.org.