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Standard Guide for Chain-Link Pickleball Court Fences[1]

This standard is issued under the fixed designation F3558; 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 The purpose of this guide is to inform the builder, designer, facility manager, or owner, or a combination thereof, of a pickleball court or facility about the many details and features of pickleball court fence. It focuses on what to consider when designing a pickleball fence, offers some recommendations, and points the user to where they could find additional useful information regarding the design, construction, and maintenance of pickleball courts.

1.2 *Units*—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.*

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

2.2 *CLFMI Document:*[3]

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

2.3 *USAP and ASBA Document:*[4]

Pickleball Courts: A Construction & Maintenance Manual 2020

2.4 *U.S. Access Board Document:*[5]

Chapter 4 Guide to the ADA Accessibility Standards

2.5 *PTI Document:*[6]

DC10.3-20 Design, Construction and Maintenance of Post-Tensioned Concrete Courts

3. Terminology

3.1 *Definitions*—See Terminology F552 for definitions of terms used in this guide.

4. Summary of Guide

4.1 This guide is intended to guide those responsible for, or concerned with, the design and installation of chain-link

[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 and Other Fence Systems and Components.

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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.

[3] Available from Chain Link Fence Manufacturers Institute (CLFMI), 10015 Old Columbia Road, Suite B-215, Columbia, MD 21046, http://www.chainlinkinfo.org.

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

[5] Available from U.S. Access Board, www.access-board.gov.

[6] Available from Post-Tensioning Institute (PTI), https://www.post-tensioning.org.

fencing for both private and public pickleball courts, where other standards may not apply.

5. Significance and Use

5.1 *The Intended Use of This Guide* is to identify the specific functions and qualities desired of a pickleball fence and offer recommendations on how to achieve them with a chain link fence for different types of pickleball courts.

5.2 *The Primary Function of a Pickleball Court Fence* is to keep pickleball balls in and uninvited traffic out. It also serves as a barrier to prevent players from colliding with fixed objects and spectators. It also prevents players from running onto irregular or slippery surfaces or into dangerous adjacent areas. Fences need to respond to secondary functional requirements, including: spectator viewing, screening the court from wind and visual distractions outside the court, and being as open and welcoming as security conditions permit. In cases where security or dangerous adjacent conditions are an issue, a uniformly high type of enclosure can still be called for, but in most cases, pickleball fences are a variety of heights and may accommodate lights, shade shelters, gates for players and maintenance, and can have completely open (no fence) portions of the perimeter that lead to decks, grandstands, or landscaping

6. Pickleball Fence Recommendations

6.1 *Layout*—The most favorable environment for pickleball is one with the least amount of fencing required to meet the functional needs and address the site-related challenges.

6.1.1 There are numerous layouts of pickleball fence. The playing area of a pickleball court can be a variety of sizes and can be hard or soft, but hard courts are more common. Pickleball courts may be stand-alone, adjacent, or in batteries of multiple courts. The site conditions may impact the fencing requirements. Some courts can be completely enclosed while others can be more open. Not all court fences can be simple rectangles. A facility may have a unique set of requirements that also impact the fence layout.

6.1.2 *Court Size:*

6.1.2.1 A pickleball court measures 20 ft (6100 mm) by 44 ft (13 410 mm) with overall playing areas that range from the USAP recommended minimum of 30 ft (9145 mm) by 60 ft (18 290 mm) to as much as 50 ft (15 240 mm) by 80 ft (24 380 mm) for stadium courts. The most common size is 34 ft (10 360 mm) x 64 ft (19 510 mm). That is a perimeter of 180 linear ft (54 860 mm) for the smallest court to 260 lin. ft (79 250 mm) for the largest, and 196 lin. ft (59 740 mm) for the most common court.

6.1.3 *Fence Configurations*—The pickleball court fencing is made up of baseline and sideline fences. Each has its functions and particular characteristics.

6.1.3.1 *Baseline Fence* is at the back of the pickleball court, parallel with the court baselines. The typical height of the high fencing is 8 ft (2440 mm), but could be as high as 12 ft (3660 mm) for rooftop and other extraordinary site conditions.

6.1.3.2 *Sideline Fence* is parallel to the court sideline. This fence varies the most in height. Along this fence line, 16 ft (4880 mm) on either side of the pickleball net can remain open or have a fence anywhere between 42 in. high and a height matching the backdrop. The recommendation for the first 16 ft (4880 mm) from the corners is that the height match the baseline fence.

6.1.3.3 *Backstop* is the term used for the portion of fence that is considered the minimum fence configuration. It is the high fencing made up of the entire baseline fence and the sideline fence along each side normally measuring 16 ft (4880 mm) from the corner on 30 ft by 60 ft and 34 ft by 64 ft courts.

6.1.3.4 *Divider Fence* is a shared fence between adjacent courts. If included, the recommended minimum distance from the court sideline to the fence is 5 ft (1550 mm), while 7 ft (2130 mm) is preferred. The divider fence may be 42 in. (1070 mm) or greater in height.

6.1.3.5 *Low Fence Option*—It is not unusual to see new pickleball courts built with 42 in., 4 ft, or 5 ft fencing around the entire perimeter. This option prioritizes the spectator experience and allows unobstructed viewing from all sides. This is not recommended for competition courts, but can be an option for recreation courts.

6.1.4 *Court Combinations*—The most common residential court is a stand-alone court. The popular court arrangement for clubs is two adjoining courts and the typical grouping of school and park courts is multi-court batteries.

6.1.4.1 *Stand-Alone Courts* include 30 ft (9145 mm) x 60 ft (18 290 mm) recommended minimum, converted courts, 34 ft (10 360 mm) x 64 ft (19 510 mm) preferred size courts, 44 ft (13 410 mm) x 74 ft (25 560 mm) wheelchair courts and 50 ft (15 420 mm) x 80 ft (24 380 mm) stadium courts. Their fences are designed for spectator viewing or an open appearance, or both.

6.1.4.2 *Two Adjoining Courts* that share a divider fence are popular in clubs. They may have interrupted sideline fences to make room for shade shelters. Although combinations of two courts is the most popular, three or more adjacent courts can be grouped together.

6.1.4.3 *Multi-Court Batteries* are the most economical model and therefore popular in facilities that have tight budgets for both construction and maintenance. Multi-court batteries are the most common arrangement of conversions.

6.1.5 *Location* of the courts on a site may play a major role in determining the nature of the fencing.

6.1.5.1 *Open Sites*—Where site conditions are supportive, fences might be limited to the backstops only. This is especially common on elite and stadium courts.

6.1.5.2 *Tight Quarters*—Most facilities are designed efficiently and therefore require fences along the sidelines. In cases where the sideline is near a roadway, parking area, pond, or other use that may be difficult to navigate, higher fences are preferred.

6.1.5.3 *Elevated Courts*—The most dramatic locations of pickleball courts are rooftops. They can be one or more stories in the air and retrieving pickleball balls could be a chore. The perimeter fence enclosure can be extended another 4 ft to 8 ft with suspended netting to catch stray miss hit balls.

6.1.6 *Types of Court Surfaces*—Hard, clay, fastdry, and tiles.

6.1.6.1 *Hard Courts,* including concrete slabs, asphalt pavement, and even wood floors are commonly used for pickleball. The hard surfaces may have acrylic surfacing systems, cushioned acrylic systems, or poured urethane surfaces. These are the most popular for all levels of pickleball play. New courts have a wide range of heights, from 42 in. (1070 mm) to 8 ft (2440 mm). Many courts have 42 in. or 4 ft (1220 mm) high fences around the entire perimeter, but 8 ft (2440 mm) high backstops are recommended.

6.1.6.2 *Soft Courts,* including clay and fastdry surfaces, have grown in popularity and generally can include slightly lower backstop fences, but the recommendations for the backstops is the same as for the hard courts.

6.1.7 *Security* plays a major role in the height of pickleball fences. If security is a primary issue, the fence should be 7 ft (2130 mm) or higher. In these cases, addressing the security concerns in one continuous fence line around the perimeter of the facility, rather than at each pickleball court battery separately, may be preferred.

6.1.8 *Other Considerations*—Divider fences, extended netting, around inflated fabric structures.

6.1.8.1 *Divider Fences*—When full-size courts are placed adjacent to each other, they can share a common fence between them. This fence is similar to an outside sideline fence, except that light poles can be located on the same line and therefore, interrupt the fence line in two locations on each sideline. It is common to have 42 in. (1070 mm) to 4 ft (1220 mm) high fences as dividers.

6.1.8.2 *Netting* is frequently introduced to extend the fence height without adding substantial lateral loads or cost. Fence posts may need to be extended to support that netting. Netting is also used for divider nets between courts; this will typically require additional posts in the fence line for the nets, or substantially increasing the size of the posts in the fence line that are also supporting the netting.

6.1.8.3 *Other Sources*—For more detailed information regarding the layout of pickleball courts, refer to *Pickleball Courts: A Construction & Maintenance Manual*, a joint publication of the USA Pickleball (USAP) and ASBA.

6.2 *Heights* of pickleball court fences may vary based on the layout (see above). Heights commonly use:

Up to 12 ft (3660 mm)	Where areas outside the court are inaccessible. See 6.1.8.2 above.
8 ft (3050 mm)	Court backstops and where property lines, roadway and other adjacent functions suggest a high fence. See 6.1.8.2 above.
7 ft (2440 mm)	Minimum recommended backstops where the above conditions do not apply.
42 in. (1070 mm)[7]	Sidelines.

6.3 *Strength*—A pickleball court fence should be strong enough to stop a player without being damaged and designed to resist lateral wind loads that are established by the local codes. Refer to *Chain Link Fence Wind Load Guide for Selection of Line Posts and Line Post Spacing* published by the CLFMI for details regarding the overall strength as well as the strength of the components. If windscreens, canopies, or other accessories will be installed into the framework, the fence supports should be engineered for wind loads by a professional.

6.4 *System Properties:*

6.4.1 *Continuity*—The fence system should be smooth, continuous, and free of sharp edges and protrusions on the playing side and where spectators are present. It should limit all gaps between fence elements, to a dimension less than that of a pickleball ball and avoid "finger-catcher" gaps at railings and where users are likely to handle the fence.

6.4.2 *Durability*—Steel fence system should be galvanized or aluminized, but additional coatings, such as polyvinyl chloride (PVC), polyolefin and other polymer-coated are recommended for harsh environments to increase durability. This applies to the posts, rails, bars, tie wires, clips, and fasteners.

6.5 *Fabric:*

6.5.1 *Gauge*—11-guage steel wire can be used for residential courts and 9-gauge steel wire is more durable and less likely to deform and therefore is recommended for most pickleball fence fabric.

NOTE 1—These sizes refer to the steel wire only. If the wire is also coated in a PVC or other secondary coating, the finished coated wire could be as much as 6 gauge in size.

6.5.2 *Mesh*—The standard chain link mesh size is 2 in. (50 mm). Using larger mesh can result in pickleball balls getting stuck in the fabric or going through it.

6.5.3 *Primary Coating*—The steel fabric is available with one of three primary coatings. The most common and affordable coating is a galvanized zinc coating (see Specification A392 for Class 1 or Class 2 coatings). Another is the alloy-coating, zinc-5 % aluminum-mischmetal coating. This also comes with magnesium substituting for mischmetal. This coating is 95 % zinc, but due to the combination, the coating lasts more than twice that of the common zinc-coating (see Specification F1345 for Class 1 or Class 2 coating). The third coating is an aluminum coating (see Specification A491). Rust is most likely to appear at cuts and scratches in the aluminum coating than in a zinc finish.

6.5.4 *Secondary Coatings*—In addition to the galvanizing or aluminizing, there are surface coatings that are available to further prevent the steel from rusting and that offer the option of additional colors of fence fabric (see Specification F934). These coatings include polyvinyl chloride (PVC), polyolefin and other polyester-coatings. These can be extruded, extruded and adhered, or fused and adhered over the primary coating. See Specification F668 for Class 1 or Class 2a and Class 2b coating specifications. The Class 2a and Class 2b secondary coatings are particularly desirable where the environment is particularly corrosive - places with high levels of pollution, and near salt water bodies, or where the additional color options are desirable for aesthetic reasons.

6.5.5 *Fabric Ends*—The chain link fence fabric should have knuckle selvages at the top and bottom to hide the wire ends. This can reduce the chance of injury and prevent debris being trapped along the bottom of the fence.

[7] It is recommended that the low fences be guardrail height. If spectator seating is provided along the fence, it is recommended that the fence be omitted or that the seating is raised such that sight lines over the 42 in. high fence are improved.