



## **Standard Specifications for Racquetball Court Construction**

Racquetball Court Specifications  
Approved by the USA Racquetball Association  
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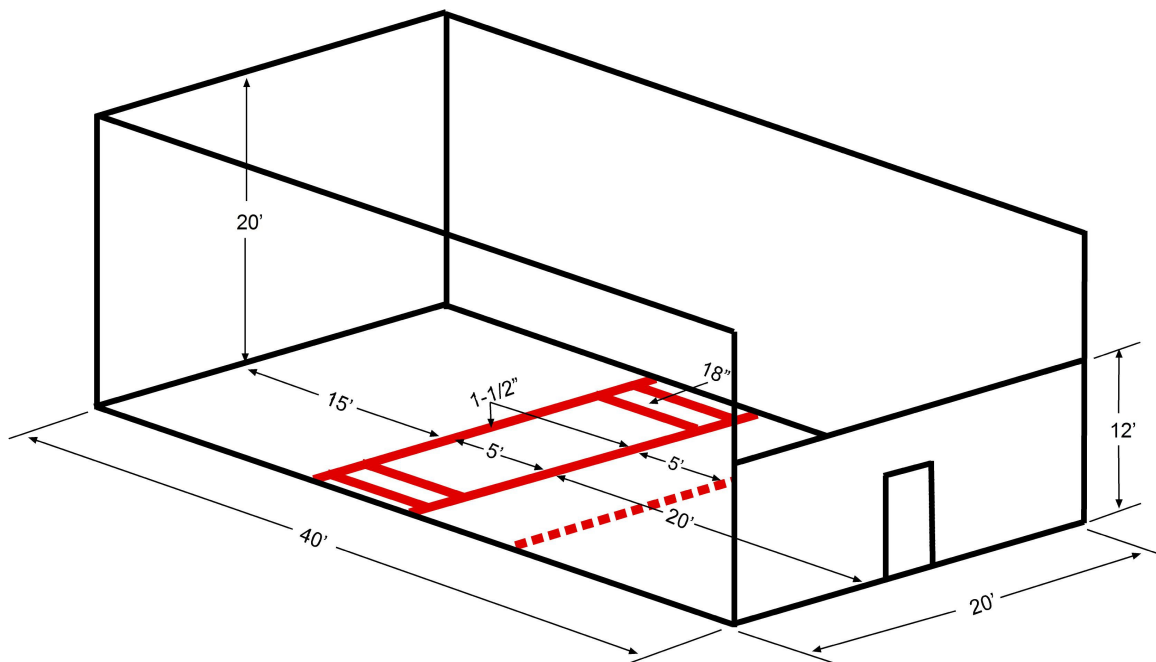
## I. Preamble

- 🔍 This Specification defines recommended standards for racquetball courts. It has been authored on behalf of the USA Racquetball Association as the main body of racquetball court constructors throughout the world.
- 🔍 The objectives of this document are:
  - to ensure comparability of recommended standards for courts from one country to another; and
  - to guide manufacturers, builders, and designers as to suitable standards for racquetball court construction.
- 🔍 It is not the intent of this document to refer to any method or material as correct for the building of a court. Rather, the Specification is a recommendation for performance and defining the basic characteristics of racquetball courts without reference to materials or methods of construction.
- 🔍 Courts built to this Specification will be suitable for all types of play including international matches and such events as decided from time to time by the respective amateur and professional governing bodies within their respective countries.
- 🔍 The USA Racquetball Association reserves the right to amend this Specification at any time, but the Association will inform the membership 90 days prior to any changes.
- 🔍 The Specification applies only to courts in which the construction of which commenced after 1983.
- 🔍 The Specification has been produce for the USA Racquetball Association. The assistance of numerous manufacturers and suppliers in commenting on drafts and supplying information is hereby acknowledged.

## II. Performance Specification

### A. General Configuration of the Court

The general configuration of the court shall be as shown below:



## **B. Match Officials – Tournament**

1. There shall be provided space for linesman and a referee who shall be able to see the whole of the court and shall be able to hear the play and the players and be heard by them.
2. The space for the linesman and referee shall be behind the plane of the back wall.
3. Where side wall glass is used for tournament play, it is recommended that a space for a linesman be provided at the service box of the side wall.

## **C. Spectators**

Spectator areas may be located behind the plane of any of the walls of the court.

## **D. Camera Facilities**

1. Play may be televised, filmed, photographed or recorded in any way from above the court or through any of the walls, provided:
  - a. that no camera or other equipment project into any part of the court or below the minimum free height above the court specified under Section III.B below; and
  - b. that players inside the court are not aware of the camera, camera lighting or other equipment, or any persons operating the cameras or other equipment behind either the front or side walls during play.
2. Camera panels may be incorporated in any part of the court playing walls provided that any such panel shall:
  - a. be flush with the adjacent wall surfaces on the court side;
  - b. match as closely as possible to the color of the adjacent surfaces on the court side;
  - c. have similar rebound characteristics to the surrounding court playing surface;
  - d. be fixed in such a way as to withstand indefinitely the impact of the ball, racquets and players in normal play; and
  - e. be constructed of a material (e.g., tempered glass) which will not as likely cause serious injury to players or spectators if it breaks.

# **III. Court Dimensions and Tolerances**

## **A. Plan Dimensions**

The plan dimensions of the court, measured 3 feet above the finished floor level shall be:

Length: 40 feet  $\pm$  4 inches or 1.00%

Width: 20 feet  $\pm$  3 inches or 1.25%

Height: 20 feet  $\pm$  3 inches or 1.25%

## **B. Clear Height**

1. The clear height above the finished floor level (e.g., the height to the underside of the lowest obstruction) over the whole of the court shall be not less than 20 feet  $\pm$  3 inches.
2. The minimum rear wall shall be 12 feet  $\pm$  1 inch above the finish court floor. The maximum height is 20 feet  $\pm$  3 inches.
3. The rear wall shall be constructed so as all materials are the same up to 12 feet except as follows:
  - a. where vision windows are to be placed in rear walls, windows shall be flush with court surface and be constructed of a safety material;
  - b. minimum window height above floor is recommended to be 2 feet 6 inches; and
  - c. door finish may be different only if flush and playable.

### **C. Verticality of Court Walls**

The court walls shall be plumb vertically to within 1 inch in 20 feet at any place on the court.

### **D. Straightness of Court Walls**

The walls of the court shall be straight to within  $\pm 1\text{-}1/2$  inches in the length of the side wall and 1 inch in the length of the front wall.

### **E. Plane of Court Walls**

The walls of the court shall be plane and

- a. have no indentions, holes or open joints more than  $3/32$  inch in any dimension in the plane of the wall; and
- b. have no variation from the true surface of more than  $1/8$  inch in 12 inches.

### **F. The Floor**

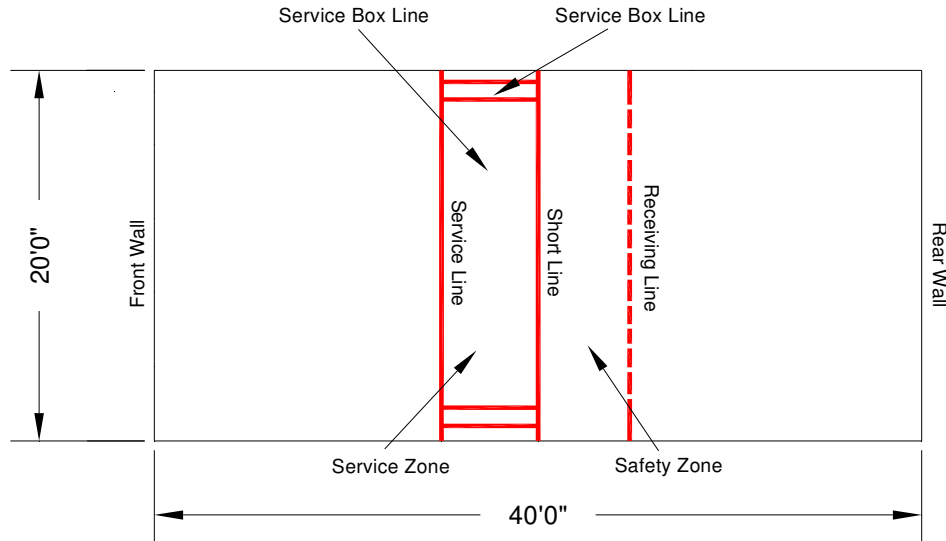
1. The playing floor shall be within  $1/8$  inch in any 10 foot radius.
2. Any joint in the floor finish shall be plane to within  $1/16$  inch. Any open joint shall not be more than  $3/32$  inch wide except that an expansion gap not more than  $1/2$  inch wide is recommended at the junction of the floor and the side walls and not more than  $3/16$  inch wide is recommended at the junction of the floor and the front and rear walls.

### **G. Court Markings**

1. All court markings are recommended to be  $1\text{-}1/2$  inches wide and colored bright red, white or black.
2. All court markings shall be straight to within  $\pm 1/16$  inch in 10 feet.
3. The maximum variation from the correct position of any court marking at any point shall not exceed  $1/4$  inch.
4. Court dimensions
  - a. The dimensions shall be 20 feet wide, 40 feet long, and 20 feet high with a back wall at least 12 feet high.
  - b. All surfaces shall be in-play with the exception of any gallery opening or surfaces designated as court hindlers.
5. Lines and zones – racquetball courts shall be divided and marked with lines  $1\text{-}1/2$  inch wide as follows:
  - a. Short Line: The back edge of the short line is midway between and is parallel with the front and back walls.
  - b. Service Line: The front edge of the short line is midway between and is parallel with the front and back walls.
  - c. Service Zone: The service zone is the 5 foot area between the outer edges of the short line and the service line.
  - d. Service Boxes: The service boxes are located at each end of the service zone and are designated by lines parallel with the side walls. The edge of the line nearest to the center of the court shall be 18 inches from the nearest side wall.
  - e. Drive Service Line: The drive serve lines, which form the drive serve zone, are parallel with the side wall and are within the service zone. The edge of the line nearest to the center of the court shall be 3 feet from the nearest side wall.
  - f. Receiving Line: The receiving line is a broken line parallel to the short line. The back edge of the receiving line is 5 feet from the back edge of the short line. The receiving line begins with a line 21 inches

long that extends from each side wall; the two lines are connected by an alternate series of 6 inch spaces and 6 inch lines (17 – 6 inch spaces and 16 – 6 inch lines).

- g. Safety Zone: The safety zone is the 5 foot area bounded by the back of the edges of the short line and the receiving line. The zone is observed only during the serve.



## IV. Court Walls

### A. Construction of Court Walls

Each wall of the court shall be of the same construction over the whole of the playing area except as allowed under Section II.C above.

### B. Strength of Court Walls

The walls of the court and all components in them shall be capable of withstanding all the stresses which may be placed upon them in normal play as a result of the impact of balls, racquets and players, and shall not suffer any permanent or temporary damage as a result of these impacts.

### C. Deflection of Court Walls

1. The walls of the court shall not deflect under the impact of the ball in normal play to such an extent or in such a manner that the rebound of the ball is affected.
2. The walls may deflect under the impact of players if it is necessary for their structural integrity that they should do so. The amount of any such deflection shall not exceed the appropriate limits specified below following an impact equivalent to that of a human body with a mass of 200 lbs. and a coefficient of absorption of 47% traveling at the moment of impact at a speed of 10 feet per second and striking the wall at right angles to it over an area of not more than 5.4 square feet at a height to the center of the impact area of 4.8 feet ( $\pm 2$  inches) in the middle third of any panel on the wall or, in the case of a wall of homogenous construction over the whole of its area, in the middle third of the wall:
  - a. in the case of glass walls: 1-1/4 inch at the center of the impact area; and
  - b. in the case of all other walls: 1/4 inch at the center of the impact area.
3. Any wall which deflects as allowed by the above paragraph shall return to its original static position within one second of the initial impact and shall suffer no temporary or permanent damage as a result of the deflection.

#### **D. Wall Finishes**

All playing walls of the court shall have a hard smooth surface.

#### **E. Color of Court Walls**

All playing surfaces of the court are recommended to be of the same color and reflectance unless glass is used. If the back wall is a solid wall, it shall be of the same color and reflectance as the front and side walls.

#### **F. Reflectance of Walls**

The average reflectance of the front and side walls shall not be less than 80% at any point when in a clean condition.

#### **G. Ball Rebound from the Court Walls**

The ball shall rebound truly on striking all parts of the playing walls. The ball shall be consistent over the whole area of each wall.

#### **H. Joints in Playing Surfaces**

Any open joint in the finish of a wall for panel construction shall:

- a. not deflect the rebound of the ball in any way;
- b. not be larger than 1/16 inch in the plane of the wall surface; and
- c. be constructed in such a manner as to ensure that adjacent areas of the finish cannot move relative to one another at right angles to the plane of the wall following the impact of the ball, a racquet, or a player, except in the case of doors in glass walls as allowed by described under Section V.D.2 below of this Specification.

#### **I. Flank Wall Panels (Optional)**

The plane of the side walls of the court can be extended behind a glass back wall for a distance of not less than 12 inches and to a height of not less than 8 feet above finished floor level inside the court by means of fixed or moveable panels of the same color and texture as the side walls of the court.

#### **J. Wall to Wall and Wall to Ceiling Junctions**

There shall be no protrusions of any kind into the court at the junction of one wall with another other than a caulking bead having the same color as the court walls and ceiling for aesthetic appearance.

#### **K. Wall to Floor Junctions**

There shall be no protrusion of any kind into the court at the junction of any wall of the court with the floor. An expansion joint may be provided at the junction of any wall of the court with the floor but is recommended to not exceed the gaps described under Section III.F.2.

### **V. The Door**

#### **A. Position of the Door**

The door to the court is recommended to be located in the center of the back wall and shall open into the court. It shall be installed in accordance with Section V.B.2 and Section V.C below of this Specification.

#### **B. Inside Surface of the Door**

1. The inside surface of the door shall be plane and shall be flush with the adjacent wall surfaces when the door is closed. It shall be fitted with a flush handle and a restraining device which shall stop the door from hitting the court walls when opened.
2. The door shall match the color, texture, and ball rebound characteristics of the adjacent wall surfaces as closely as possible and shall be fitted with a latch or other mechanism which will prevent the door from opening following the impact of a player with it on the court side.

### **C. Size of Door**

The door shall not be more than 3 feet 6 inches wide and 7 feet high.

### **D. Finger Traps with Glass Doors**

1. Glass doors must be of sufficient strength to remain intact following testing as described in CPSC-16 CRF Part 1201.
2. The door, when struck as described above, shall not deflect more than:
  - a. the thickness of the glass plus 1/16 inch at an impact velocity of 10 feet per second; and
  - b. the thickness of the glass plus 1/2 inch at an impact velocity of 15 feet per second.

## **VI. Surfaces Behind Glass Walls**

All surfaces behind a glass wall which will be seen by a player looking downwards at an angle of 55° below the horizontal from an eye height of 60 inches and from a position of 12 inches inside the court shall not be darker in color or tone than the floor of the court.

## **VII. The Floor of The Court**

### **A. The Floor Finish**

The floor finish is recommended to be hard, smooth, and have a degree of resiliency and provide a firm footing and normal play.

### **B. Resilience**

1. The bounce of the ball shall be of even height and pace over the entire area of the floor.
2. When viewed from vertically above the line of the flight of the ball, the linear path of the ball shall not be affected when it bounces on the floor.

### **C. Color and Reflectance**

1. The floor is recommended to be light and relatively consistent in color as not to hide appearance of the ball during low shots.
2. Bleaching the hardwood white before applying the finish is allowed if the courts are to be used for television coverage.

## **VIII. Lighting**

### **A. Lighting Installation**

1. The courts shall be lit by artificial lighting. It is recommended a minimum of 100 foot candle consistent over the entire court area measured 3 feet above the court floor  $\pm$  10% be used.
2. Where multiple wall glass exhibition courts are built 150 foot candle is recommended.
3. The walls of the court shall be lit in such a way as to appear evenly and uniformly illuminated.
4. The lighting shall be shadow-free and free from any stroboscopic effects. The fixtures shall be installed flush and be a playable surface having similar ceiling rebound qualities.

### **B. Glass Walls**

In courts with clear glass walls, the level of illumination is recommended to be the same on both sides of the wall.

### **C. Television Lighting**

Television lighting may be installed temporarily or permanently but in either case it shall comply with Section VIII.A above except that the level of illumination provided for television is recommended to be at least 150 foot candles at 3 feet above finished floor level.



## **IX. Miscellaneous**

### **A. Condensation**

The court walls and floor shall be constructed, insulated, heated, and/or ventilated in such a way as to ensure that they remain free of condensation when the court and any adjacent spectator area is in use. Humidity is recommended to be controlled between 40% and 60%.

### **B. Location of HVAC Grilles and Other Equipment**

1. HVAC grilles can be located
  - a. in the ceiling at least 24 feet back from the front wall;
  - b. in the upper rear corners (8 feet x 8 feet maximum size) of the side walls; or
  - c. in the area above 12 feet at the rear wall.
2. Acoustical material: Acoustical material can be installed in the back 16 feet maximum of the ceiling, if desired. This material must withstand ball strikes and stay in place. The remaining front part of the ceiling is recommended to be the same surface material as the wall surface.
3. Storage boxes (aka goody boxes): Storage boxes are to be positioned next to doors in the rear walls. Alternate location shall be on the side wall approximately 10 feet from the back wall. Height should be 4 feet from the finished floor to the bottom of the storage box. The box shall be a playable surface and flush to the court walls.
4. Wallyball kits: Install the top plate approximately 102 inches a.f.f. (to center of the plate). Install the bottom plate approximately 54 inches a.f.f. (to center of the plate). The distance between the 2 plates should be approximately 46 inches. The top of the net (in the center of the court) can vary from 8 feet to 8 feet 2 inches. Wall plates should not be installed at any wall seams and shall remain flush with the wall surfaces.