Member of the International Olympic Committee

Racquetball Court Specifications

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INTRODUCTION

This specification defines recommended standards for racquetball courts. It has been authored and supplied by the International Racquetball Federation [IRF]. The objectives of this document are:

- To ensure comparability of recommended standards for courts from one country to another
- To guide manufacturers, builders and designers as to suitable standards for racquetball court construction
- To provide the basis upon which, an IRF official shall inspect and certify compliance with the specifications herein as a requirement for all international competitions.

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, defining 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 may be decided from time to time by the respective amateur and professional governing bodies, within their respective countries.

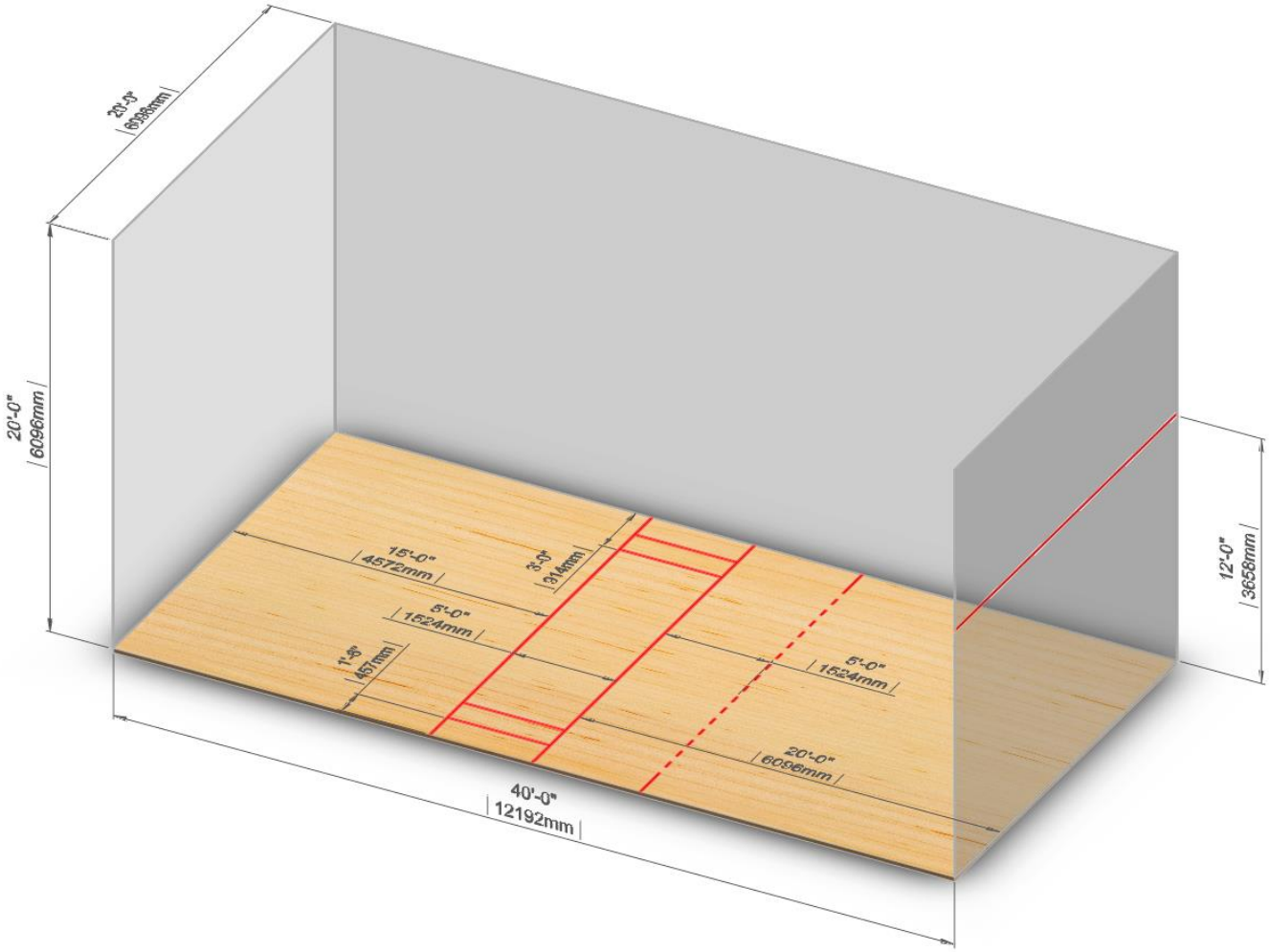
The IRF Technical Committee reserves the right to amend this Performance Specification at any time, but the Committee will inform the membership 90 days prior to any changes.

The specification applies only to courts constructed on or after January 1, 1988.

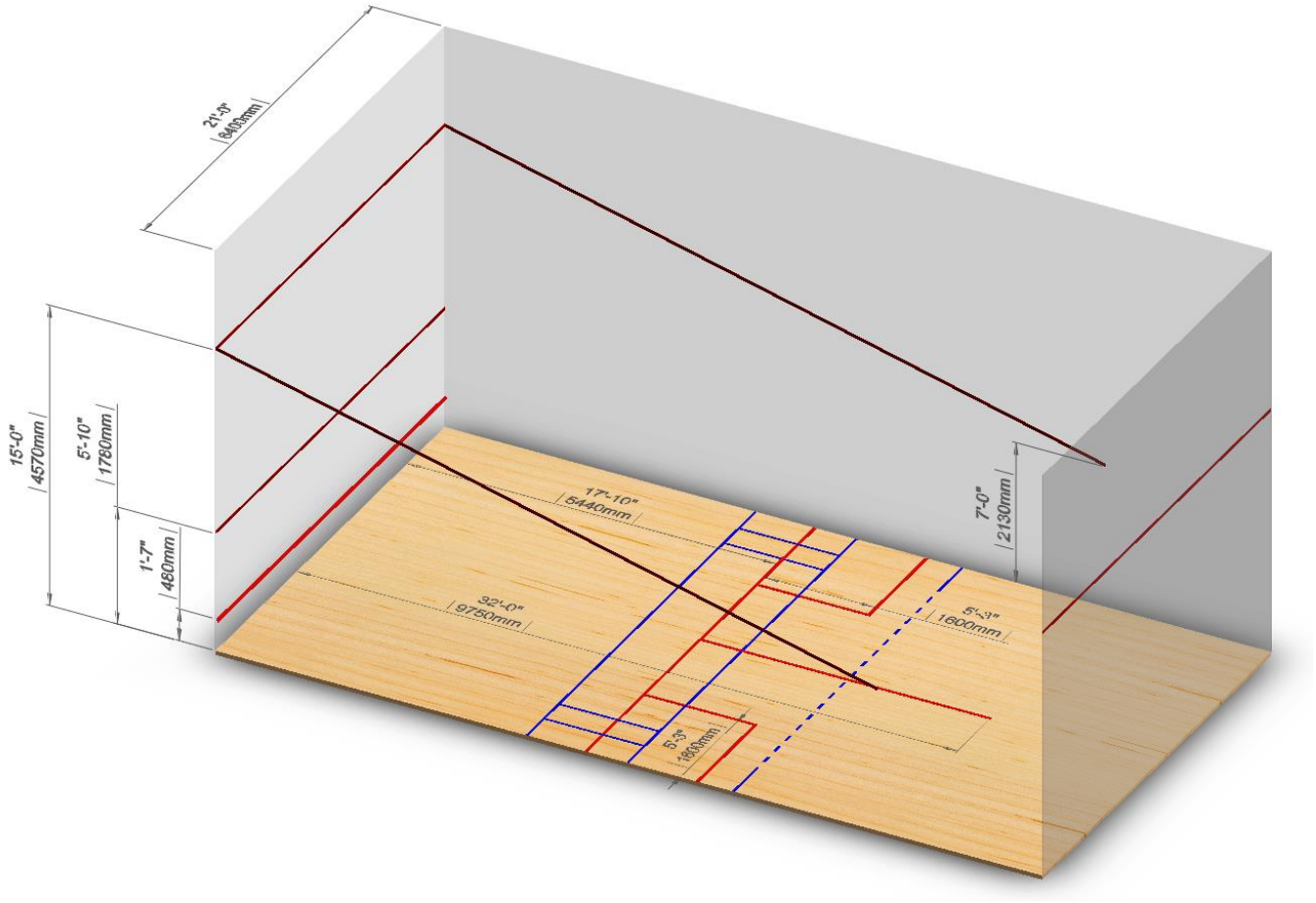
The specification has been produced by the IRF. The assistance of numerous manufacturers and suppliers in commenting on drafts and supplying information is hereby acknowledged.

SECTION ONE: PERFORMANCE SPECIFICATION

1.1 General Configuration of the Court. The general configuration of the court shall be as shown below (see detail for floor markings):



1.2 General Configuration of a Convertible Court. The general configuration of a convertible court shall be as shown below (see detail for floor markings):



1.3 Match Officials - Tournament. There shall be provided space for a two linepersons 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. The space for the two linepersons and referee shall be behind the plane of the back wall. Where side wall glass is used for tournament play, it is recommended that a space for a two linepersons be provided at the service box of the side wall.

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

1.5 Camera Facilities. Play may be televised, filmed, photographed or recorded in any from above the court or through any of the walls, provided no camera or other equipment may project into any part of the court or below the minimum free height above the court specified under section 2.2 -- Clear Height; and that players inside the courts are not aware of any camera, camera lighting or other equipment, or any personal operating the cameras or other equipment, behind either the front or the side walls during play.

1.6 **Camera Panels.** Camera panels may be incorporated in any part of the court playing walls provided that any such panel shall be flush with the adjacent wall surfaces on the court side, match as closely as possible the color of the adjacent surfaces on the court side, have similar rebound characteristics to the surrounding court playing surface, be fixed in such a way as to withstand indefinitely the impact of the ball, racquets and players in normal play and be constructed of material (for example tempered glass) which will not as likely cause serious injury to players or spectators if it breaks.

1.7 **Convertible Courts.** Courts with moveable glass back walls must be constructed in such a way so as not to create a hinder when retracted into the racquetball position. Therefore, any moveable glass back wall that incorporates the use of tracks in either the court side walls or floor do not meet the provisions of this specification.

SECTION TWO: COURT DIMENSIONS AND TOLLERANCES

2.1 Plan Dimensions. The plan dimensions of the court, measured 36” (914mm) above finished floor level, shall be: Length: 40’ (12.192m) ± 4.8” (122mm) or 1.00%, Width: 20’ (6.096m) ± 3” (76mm) or 1.25% & Height: 20’ (6.096m) ± 3” (76mm) or 1.25%. The plan dimensions of a convertible court, measured 36” (914mm) above finished floor level, shall be: Length: 40’ (12.192m) ± 4.8” (122mm) or 1.00%, Width: 21’ (6.4008m) ± 3.15” (80mm) or 1.25% & Height: 20’ (6.096m) ± 3” (76mm) or 1.25%.

2.2 **Clear Height.** The clear height above finished floor level (i.e. the height to the underside of the lowest obstruction) over the whole of the court shall be not less than 20’ (6.096m) ± 3” (76mm). The minimum rear wall shall be 12’-0” (3.66m) above the finish court floor. The maximum is 20’-3” (6.17m). The rear wall shall be constructed so as all materials are the same to 12’0” (3.66m) except as follows:

2.2.1. Where vision windows are to be placed in rear walls, windows shall be flush with court surface and be constructed of a safety material. Minimum window height above floor is recommended to be 30” (762mm). Door finish may be slightly different than the surrounding wall surface, but must be flush and playable.

2.2.2. (Optional) The court ceiling shall extend a minimum of 32' (9.76m) from the finished hit wall when the court side walls do not extend to the ceiling for the last 8’ (2.44m) of the court. (See 8.3, Cut-Outs)

2.3 **Verticality of Court Walls.** The court walls shall be plumb vertically to within ½” (13mm) in 20’ (6.096m) at any place on the court.

2.4 **Straightness of Court Walls.** The walls of the court shall be straight to within plus or minus ¾” (19mm) in the length of the side wall and ½” (13mm) in the length of the front wall.

2.5 Plane of Court Walls. The walls of the court shall be plane, and have no indentations, holes or open joints more than $^{3}/_{32}$" (2mm) in any dimension in the plane of the wall and no variation from the true surface of more than ⅛" (3mm) in 12" (305mm).

2.6 The Floor. The playing floor shall be level to within ¼" (6mm) in any 10' (3.048m) radius. Any joint in the floor finish shall be plane to within $^{1}/_{16}$" (2mm). Any open joint shall be not more than $^{3}/_{32}$" (2mm) wide, except that an expansion gap not more than ⅝" (16mm) wide is recommended at the junction of the floor with any wall.

SECTION THREE: COURT MARKINGS

3.1 Application.

3.1.1 All court markings are recommended to be 1½" (38mm) wide and colored bright red. On convertible courts utilizing a moveable glass back wall, the recommended color is either black or bright blue.

3.1.2 All court markings shall be straight to within plus or minus $^{1}/_{16}$" (2mm) in 10' (3.048m).

3.1.3 The maximum variation from the correct position of any court marking at any point shall not exceed ¼" (6mm).

3.2 Required Markings. There shall be lines as follows:

3.2.1 Short Line - The short line is midway between and is parallel with the front and back walls. The back edge of the line is 20' (6.096m) from the back wall.

3.2.2 Service Line - The service line is parallel with the short line and the front edge of the service line is 5' (1.524m) from the back edge of the short line.

3.2.3 Service Zone - The service zone is the space between the outer edges of the short and service lines.

3.2.4 Service Boxes - A service box is located at each end of the service zone by lines 18" (457mm) from and parallel with each side wall connecting the short line and service line.

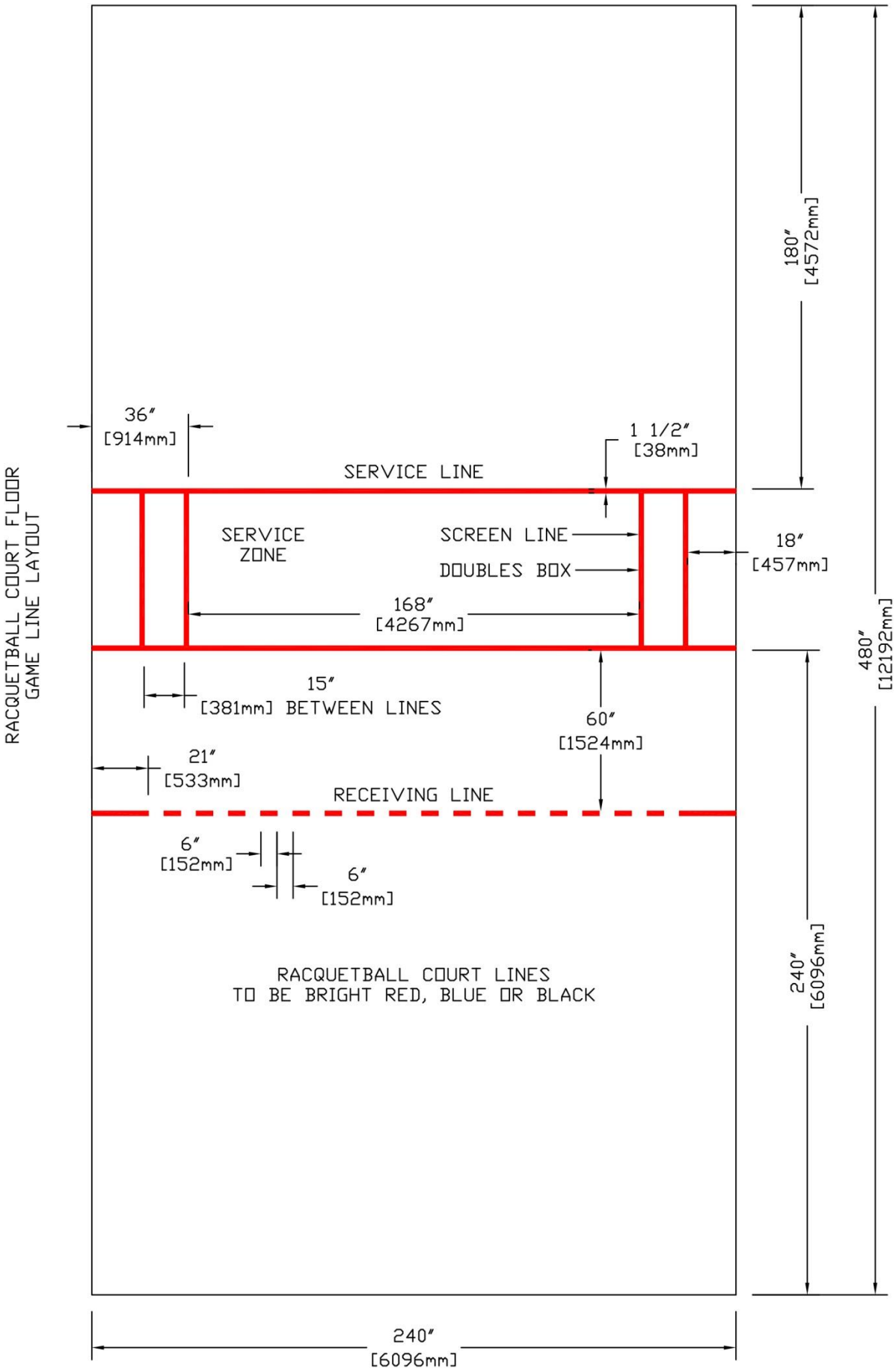
3.2.5 Receiving Lines - Back edge of the receiving line is 5' (1.524m) from the back edge of the short line. The segment from the wall is 21" (533mm) long. There are 16 additional segments, each 6" (152mm) long, with 6" (152mm) spaces between them, which complete the line. See diagram.

3.2.6 Back Wall Out-of-Bounds – A back wall out-of-bounds line is located with the bottom edge 144" (3.658m) above the finished floor.

3.2.7 Screen Lines - The outside edge of the line (nearest to the center of the court) is three feet from the side wall. See diagram.

3.2.8 Line edges - "Back edge" is defined as the edge on the line closest to the back wall; "Front edge" is defined as the edge on the line closest to the front wall.

3.3 Playing Lines for Racquetball Court (diagram)

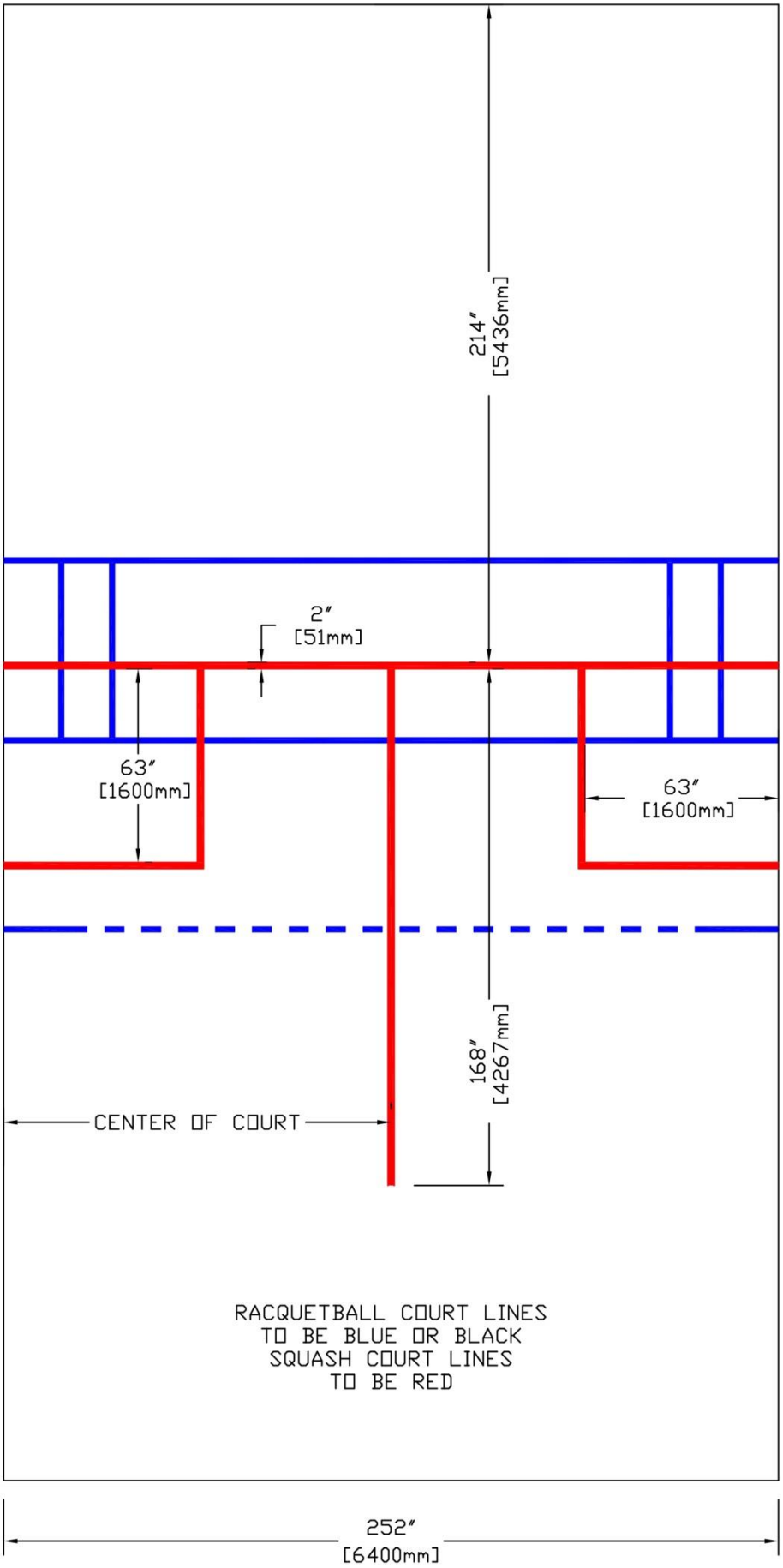

RACQUETBALL COURT FLOOR
GAME LINE LAYOUT
36″
[914mm]
1 1/2″
[38mm]
SERVICE LINE
SERVICE
ZONE
SCREEN LINE
DOUBLES BOX
18″
[457mm]
168″
[4267mm]
180″
[4572mm]
480″
[12192mm]
15″
[381mm] BETWEEN LINES
60″
[1524mm]
21″
[533mm]
RECEIVING LINE
6″
[152mm]
6″
[152mm]
RACQUETBALL COURT LINES
TO BE BRIGHT RED, BLUE OR BLACK
240″
[6096mm]
240″
[6096mm]

3.4 Special Application and Markings for Convertible Court

3.4.1 The International Racquetball Federation sanctions tournament play on convertible courts when constructed 21′ (6.4008m) wide.
3.4.2 For Racquetball specific courts all lines are solid 1½″ (38mm) wide and red in color.
3.4.3 For Convertible courts all racquetball lines are 1½″ (38mm) wide black or bright blue in color.
3.4.4 For convertible courts all squash lines are 2″ (50.8mm) wide red in color.
3.4.5 Short line - Back edge is exactly midway in court.
3.4.6 Service line - Front edge is 5′ (1.524m) from the back edge of the short line.
3.4.7 Service box - The inside edge of the lines are 18" from the side walls.
3.4.8 Receiving Lines - Back edge of the receiving line is 5′ (1.524m) from the back edge of the short line. The segment from the wall is 21" (533mm) long. There are 16 additional segments, each 6" (152mm) long, with 6" (152mm) spaces between them, which complete the line. See diagram.
3.4.9 Back Wall Out-of-Bounds – A back wall out-of-bounds line is located with the bottom edge 144″ (3.658m) above the finished floor.
3.4.10 Screen line - The outside edge of the line is three feet from the side wall. Back edge is the edge on the line closest to the back wall. Front edge is the edge on the line closest to the front wall.
3.4.11 Playing Lines for Convertible Court (diagram)

3.5 Playing Lines for a Convertible Court (diagram)

CONVERTIBLE COURT FLOOR
GAME LINE LAYOUT



SECTION FOUR: COURT WALLS

4.1 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 1.5 -- Camera Panels.

4.2 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.

4.3 Deflection of Court Walls. 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.

4.4 Player Impact. 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 limit specified below following an impact equivalent to that of a human body with a mass of 200# (90.7kg) and a coefficient of absorption of 47%, traveling at the moment of impact at a speed of 10 ft/sec (3.05m/sec) and striking the wall at right angles to it over an area of not more than 5.4 ft^2 (.5m^2) at a height to the center of the impact area of 4.8′ (1.46m) 2 inches) in the middle third of any panel on the wall or, in case of a wall of homogenous construction over the whole of its area, in the middle third of the wall:

4.4.1 In the case of glass walls: 1¼” (32mm) at the center of the impact area.
4.4.2 In the case of all other walls: ¼” (6mm) at the center of the impact area.

4.5 Return. Any wall which deflects as allowed by section 4.4 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.

4.6 Testing Requirements Specific to Glass Walls. All glass walls, including moveable walls, must comply with the requirements of the 2009 International Building Code (IBC), Section 2408 titled “Glazing in Athletic Facilities” and Consumer Product Safety Commission CPSC 16 CFR. Part 1201. Submission of testing report issued by an independent, licensed testing laboratory demonstrating compliance is required for certification of the court by the IRF.

Separate and independent tests are required for both fixed (structural) glass walls and moveable glass walls.

4.7 Wall Finishes. All playing walls of the court shall have a hard smooth finish.

4.8 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.

4.9 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.

4.10 Ball Rebound from the Court Walls. The ball shall rebound true on striking all parts of the playing walls. The ball rebound shall be consistent over the whole area of each wall.

4.11 Joints in Playing Surfaces. Any open joint in the finish of a wall for panel construction shall:

4.11.1 Not deflect the rebound of the ball in any way
4.11.2 Not be larger than $^{3}/_{32}$" (2mm) in the plane of the wall surface
4.11.3 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 paragraph 5.6 of this specification.

4.12 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" (305mm) and to a height of not less than 8' (2.44m) 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.

4.13 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.

4.14 Wall to Floor Junctions. There shall be no protrusions 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 not to exceed ⅝" (16mm) of any dimension or any point.

SECTION FIVE: THE DOOR

5.1 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 sections 5.3 and 5.4.

5.2 **Inside Surface of the Door.** 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.

5.3 **Characteristics.** 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. a. An aluminum frame around the white door on the court side is permissible.

5.4 **Size of Door.** The door shall be not more than 42" (1067mm) and 84" (2134mm).

5.5 **Deflection.** Glass doors shall remain intact following a test impact at the prescribed height in the center of the door. The relative deflection between the edge of the door and the adjacent wall shall not exceed the thickness of the wall plus 1/2" (12.7mm) for a drop height of 48" (1219mm).

SECTION SIX: THE FLOOR OF THE COURT

6.1 **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.

6.1.1 The floor is to be sanded and finished with polyurethane. Playing on bare wood or sanded wood is optional and preferred for convertible courts.

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

6.3 **Color and Reflectance.** The floor is recommended to be light and relatively consistent in color so as not to hide the appearance of the ball. Bleaching the hardwood white before applying the finish is allowed if the courts are to be used for television broadcast conditions.

SECTION SEVEN: LIGHTING

7.1 **Lighting Installation.** The courts shall be lit by artificial lighting. It is recommended a minimum of 100 foot candles consistent over the entire court area measured 36" (914mm) above the court floor + 10% be used. In courts where side wall glass is utilized, 150 foot candles is recommended. The walls of the court shall be lit in such a way as to appear evenly and uniformly illuminated. The lighting shall be shadow-free and free from any stroboscopic effects. The fixtures should be installed flush and be a playable surface having

similar ceiling rebound qualities.

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

7.3 **Television Lighting.** Television lighting maybe installed temporarily or permanently but in either case it shall comply with all specifications in Section Seven: Lighting (inclusive) above, except that the level of illumination provided for television is recommended to be at least 150 foot candles at 36" (914mm) above finished floor level.

SECTION EIGHT: ENVIRONMENT

8.1 **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. Relative humidity is recommended to be controlled between 40% and 60 %.

8.2 **Location of Grilles and Other Equipment.** It is recommended that the location for heating or ventilation ducts shall be in the ceiling at least 24 feet back from the front wall.

8.3 **Cut-Outs.** Cut-outs in the upper rear corner of side walls are acceptable 8' x 8' (2.4m x 2.4m) maximum size.

8.4 **Acoustical Material.** Acoustical material may be substituted on the ceiling, in lieu of the provided playing surface, on the back 8' (2.4m) of the court 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.

8.5 **Viewing Windows and Glass Walls.** Where vision windows are to be placed in rear walls, windows shall be flush with court surface and be constructed of a safety material. Minimum window height above floor is recommended to be 30" (762mm). Door finish may be slightly different than the surrounding wall surface, but must be flush and playable.

8.6 **Storage Boxes.** Storage boxes are to be positioned next to doors in the rear walls. Alternate location, shall be on the side wall approximately 20' (6.096m) from the back wall. Height should be 4' (1.2m) from the finished floor to the bottom of the storage box. The box should be a playable surface and flush to the court walls.

8.7 **Surfaces Behind Glass Walls.** All surfaces behind a glass wall which will be seen by a player looking downwards at an angle of 55 degrees below the horizontal from an eye height of 60" (1524mm) and from a position 12" (305mm) inches inside the court shall not be darker in color or tone than the floor of the court.