

**FEDERATION INTERNATIONALE DE BASKETBALL
INTERNATIONAL BASKETBALL FEDERATION**

F I B A

Basketball Equipment



Appendix to the Official Basketball Rules





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Basketball Equipment

Appendix to the Official Basketball Rules

Throughout this appendix, any reference made to a timekeeper, scorer, 24-second operator, etc. in the male gender also applies to the female gender. It must be understood that this is done for the sake of practicality only.

Introduction

This appendix to the Official Basketball Rules describes all basketball equipment required at a game. Reference to high level competitions indicates that the equipment is imperative for this level and strongly recommended for medium level and other competitions. Reference to medium level competitions indicates that the equipment is imperative for this level and strongly recommended for all other competitions.

This appendix shall be used by basketball equipment manufacturers, local organisers, for FIBA approval of equipment, and to establish national and international standards.

The competitions are divided into three levels:

- High level competitions (level 1):
Main official competitions of FIBA as defined in article 1.1.1 of the Internal Regulations, Regulations governing the Competitions of FIBA, and Final Four/Final games of the EuroLeague Women (ELW) and Saporta Cup (ECS) in Europe. However, for the SuproLeague, the specific regulations must be adhered to.
- Medium level competitions (level 2):
All other official competitions of FIBA as defined in article 1.1.2 and 1.1.3 of the Internal Regulations, Regulations governing the Competitions of FIBA, the ELW and ECS games (except Final Four/Final games) in Europe, and high level competitions of the national federations.
- Other competitions (level 3):
All other competitions not included in the above.

The facilities and equipment required for the following main official competitions of FIBA are subject to FIBA approval (levels 1 and 2): Olympic Tournaments; World Championships for Men, Women, Young Men, Young Women, Junior Men and Junior Women; Continental Championships for Men, Women, Young Men and Young Women.

All measurement tolerances are according to DIN ISO Standard 286 (see References [1]) except where other values are explicitly stated.

All measurements are in millimetres.

Reference is made to the FIBA publications "Guide to Basketball Facilities for High-Level Competitions" and "Guide to Small Basketball Facilities".



1. Backstop unit

There will be two (2) backstop units, one placed at each end of the playing court (Diagram 1), and each consisting of the following parts:

- One (1) backboard.
- One (1) basket ring with a ring mounting plate.
- One (1) basket net.
- One (1) basket support structure.
- Padding.

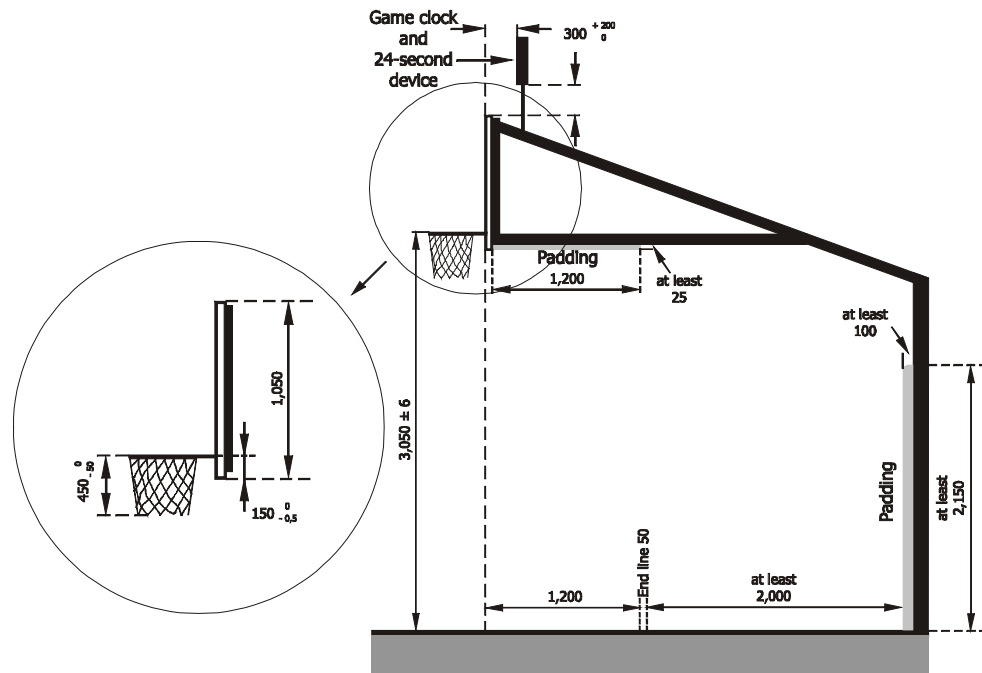


Diagram 1 Backstop unit

2. Backboard

- 2.1. The backboard shall be made of a suitable transparent material (preferably tempered safety glass) made in one piece and shall be non-reflective.
- 2.2. Glass backboards shall have a protective framework around the outside edge.
- 2.3. Glass backboards shall be manufactured such that pieces of glass do not break off.
- 2.4. For FIBA competitions levels 1 and 2, the backboards shall be made of tempered safety glass.
- 2.5. For other competitions the backboards may also be made of other transparent or non-transparent material(s), but they must meet the specifications indicated above.
- 2.6. Non-transparent backboards shall be painted white.
- 2.7. The backboards shall measure 1,800 mm (tolerance: + 30 mm) horizontally and 1,050 mm (+ 20 mm) vertically.

- 2.8. All lines on the backboards shall be drawn as follows:
- In white, if the backboards are transparent.
 - In black, if the backboards are non-transparent (white).
 - 50 mm in width.
- 2.9. The front surface of the backboards:
- 2.9.1. Shall be flat.
- 2.9.2. The borders shall be marked with a line (see Diagram 2).
- 2.9.3. A rectangle shall be drawn behind the ring as follows:
- Outside dimensions: 590 mm (+ 20 mm) horizontally and 450 mm (+ 8 mm) vertically.
 - The top edge of the base of the rectangle shall be level with the top of the ring and 150 mm (- 2 mm) above the bottom edge of the backboard.

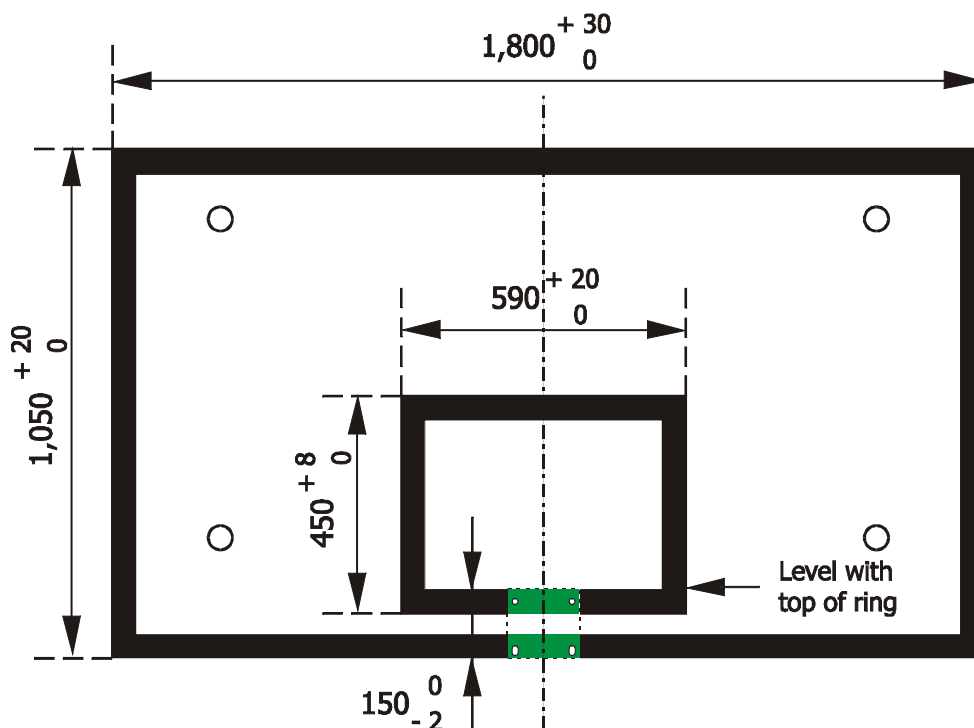


Diagram 2 Backboard markings

- 2.10. Test of the rigidity of backboard glass:
- When a square-shaped weight of 50 kg (250 mm wide and high, and 1,100 mm long) is applied along the centre of the backboard glass (without its frame), which is placed horizontally on two parallel wooden bars at a distance of 1,200 mm from each other as shown in Diagram 3, the maximum vertical deformation shall be 3 mm.

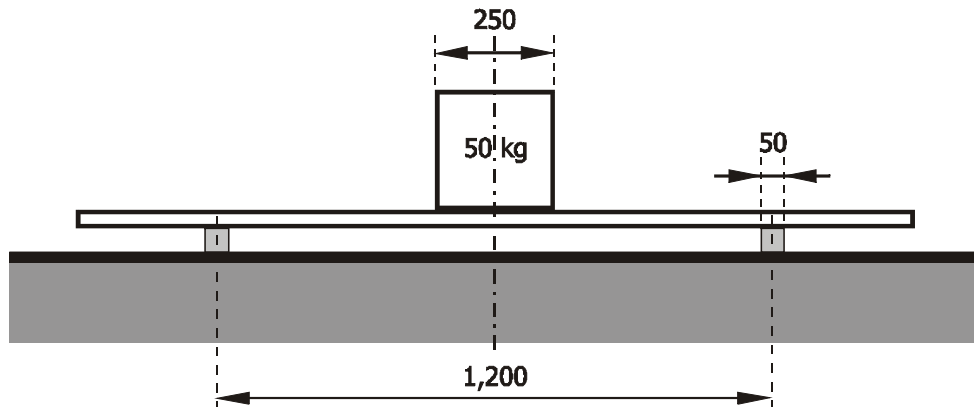


Diagram 3 Rigidity of the backboard glass

- 2.11. When a basketball is dropped onto the backboard, it shall reflect from it with a minimum rebounding height of 50%.
- 2.12. The backboards shall be firmly mounted at each end of the court at right angles to the floor, and parallel to the end lines (Diagram 1). The central vertical line on their front surface, extended down to the floor, shall touch the point on the floor which lies 1,200 mm from the centre point of the inner edge of each end line, on an imaginary line drawn at right angles to this end line. If the backboard is moved laterally, horizontally or vertically with a force F of 200 N (see Diagram 4), it should regain its static position within a maximum of 4 seconds.
- 2.13. The padding on the backboards shall cover the bottom edge of the backboard and the side edges to a minimum distance of 350 mm from the bottom (Diagram 4). For further specifications regarding the padding see section 6.

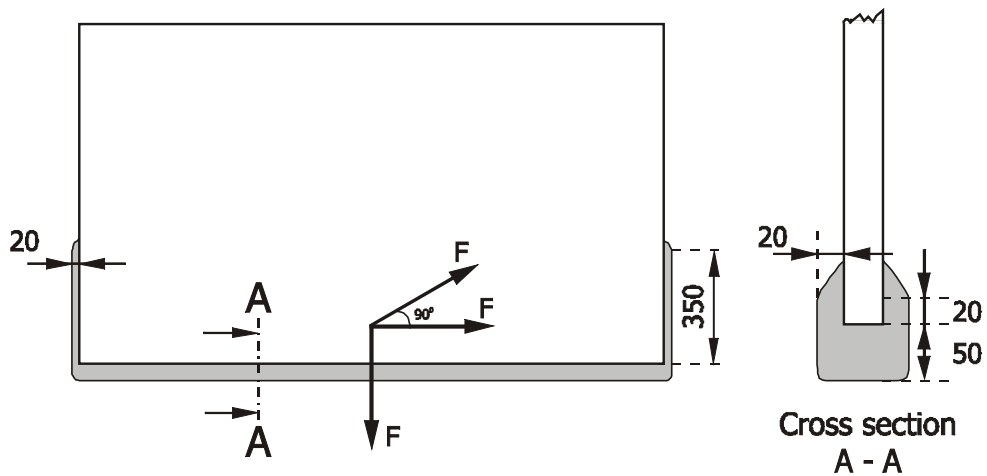
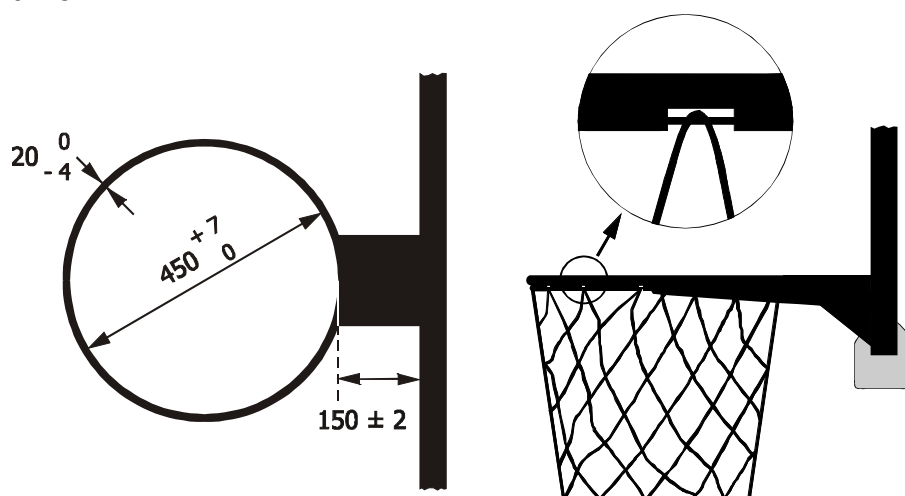


Diagram 4 Backboard padding

3. Basket ring

- 3.1. The ring shall be manufactured from solid steel.
- 3.2. The inside diameter of the ring shall be a minimum of 450 mm and a maximum of 457 mm.
- 3.3. The ring shall be painted orange within the following Natural Color System (NCS) spectrum as approved by FIBA (see References [2]):
0080-Y70R 0090-Y70R 1080-Y70R
- 3.4. The metal of the ring shall have a minimum diameter of 16 mm and a maximum diameter of 20 mm.
- 3.5. A force of 1,000 N shall be applied vertically to the top of the ring at the most distant point from the backboard. With the force no longer applied, or after the return of a pressure release ring to its original position, any permanent deformation of the ring shall be no greater than 2%.
- 3.6. The system on the under edge of the ring for attaching the nets shall be such that fingers are prevented from being trapped. For FIBA competitions level 1 and 2, hooks shall not be used to attach the net.
- 3.7. The net should be attached to each ring in 12 different places.
- 3.8. The fittings for the net attachment should not have any sharp edges or gaps which allow fingers to enter. The gaps must be no larger than 8 mm.



Attachment of the net (example)

Diagram 5 Basket ring

- 3.9. The ring shall be fixed to the framework supporting the backboard in such a way that any force applied to the ring cannot be transferred to the backboard itself. Therefore, there shall be no direct contact between the ring, the mounting hardware and the backboard (glass or other material). However, gaps shall be small enough to prevent fingers from entering.
- 3.10. The top edge of each ring shall be positioned horizontally 3,050 mm (± 6 mm) above the floor, equidistant from the two vertical edges of the backboard.



- 3.11. The point on the inside circumference of the ring nearest the backboard shall be 150 mm (± 2 mm) from the face of the backboard.
- 3.12. It is recommended that the ring mounting plate be fixed to the framework according to the measurements given in Diagram 6.

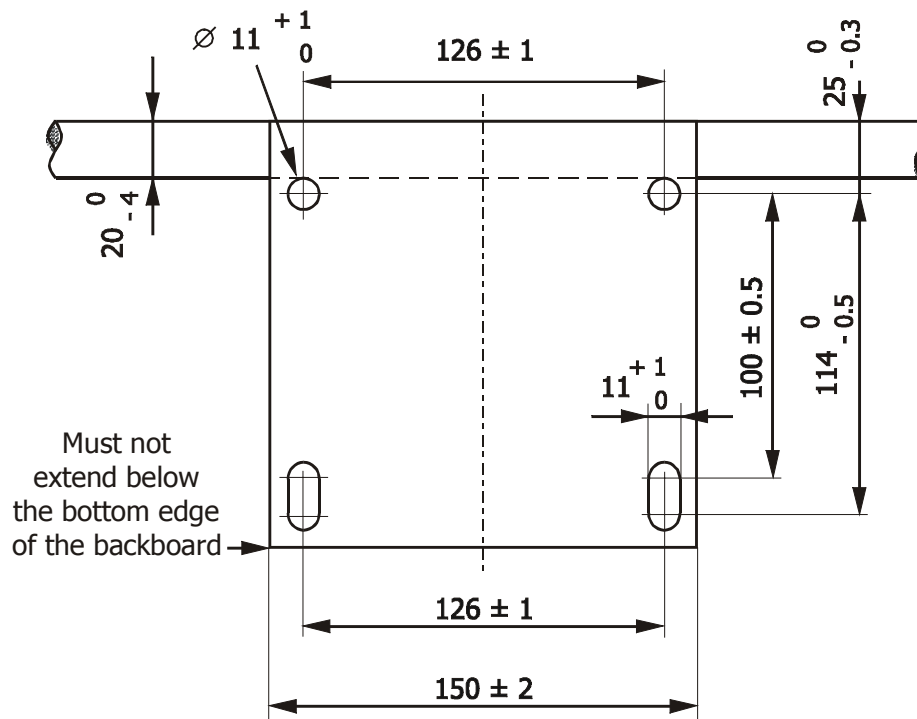


Diagram 6 Ring mounting plate

- 3.13. For existing baskets, it is recommended that the ring mounting plate be fixed to the framework according to the measurements given in Diagram 7.

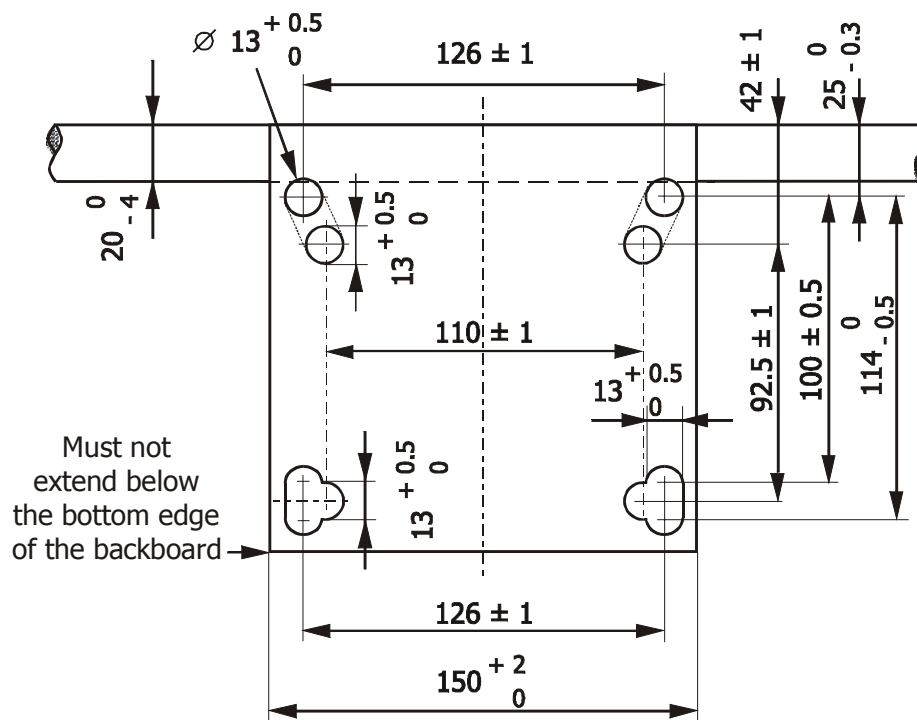


Diagram 7 Ring mounting plate for existing baskets



- 3.14. A pressure release ring may be used. It shall meet the following specifications:
- 3.14.1. It shall have rebound qualities closely resembling those of a fixed ring. The pressure release mechanism shall ensure these characteristics, but not cause any damage to either the ring or the backboard. The design of the ring and its construction shall be such that the players' safety is ensured.
- 3.14.2. For those rings with a 'positive-lock' device, the pressure release mechanism must not disengage until a static load of 82 kg minimum and 105 kg maximum has been applied to the top of the ring at the most distant point from the backboard.
- 3.14.3. The spring of the pressure release mechanism shall be preloaded with a force of 400 N.
- 3.14.4. When the pressure release mechanism is released, the ring shall rotate no more than 30 degrees and no less than 10 degrees below the original horizontal position.
- 3.14.5. After release and with the load no longer applied, the ring shall return automatically and within 0.5 seconds to its original position.

4. Basket net

- 4.1. The nets shall be of white cord suspended from the rings and constructed so that they check the ball momentarily as it passes through the basket. They shall be no less than 400 mm and no more than 450 mm in length.
- 4.2. The net shall have 12 loops to attach it to the ring.
- 4.3. The upper section of the net shall be semi-rigid to prevent:
- 4.3.1. The net from rebounding up through the ring, creating possible entanglement.
- 4.3.2. The ball from becoming trapped in the net or rebounding back out of the net.

5. Backboard support structure

- 5.1. For FIBA competitions level 1, only mobile or floor-fixed backboard support structures shall be used.
For FIBA competitions levels 2 and 3, ceiling or wall mounted backboard support structures may also be used. Ceiling mounted backboards shall not be used in sports halls with a ceiling height exceeding 12,000 mm.
- 5.2. The rigidity of the backboard support structure with ring shall be tested with a force of 2400 N applied vertically at the front edge of the ring. The horizontal permanent deflection of the framework after removal of the test force shall be no more than 10 mm from the zero position.
- 5.3. The elasticity of the complete backstop unit must be tested as follows:
A weight of 400 g attached to a steel rope of 8 mm in diameter and on the ring at the most distant point from the backboard will be dropped from a height of 500 mm above the level of the ring. The



length of duration of the movement of the ring will be measured. After one (1) second, the amplitude of the oscillation caused by the dropping of the weight must have decreased to 40% of the initial amplitude.

For all FIBA competitions level 1 the complete backstop units shall be tested by means of a FIBA approved, tamper-proof testing device.

- 5.4. The front of the backboard support structure, including the padding, shall be at a distance of at least 2,000 mm from the outer edge of the end line. It shall be of a bright colour in contrast with the background so that it is clearly visible to the players (Diagram 1).
- 5.5. The backboard support shall be secured to the floor so as to prevent any movement.
- 5.6. Once the backboard support structure has been adjusted so that the top edge of the ring is at a height of 3,050 mm from the playing floor, this height shall not be changed.

6. Padding

- 6.1. The backboard and backboard support structure must be padded. The minimum thickness of the padding shall be 50 mm unless otherwise stated.
- 6.2. The lower edge of both the front and the back surface of the backboards shall be padded to a minimum height of 20 mm from the bottom edge of the backboard. The minimum thickness of the padding shall be 20 mm (see Diagram 4).
- 6.3. The vertical edges on each side of the backboard shall be padded to a minimum height of 350 mm from the bottom edge of the backboard. The minimum thickness of the padding shall be 20 mm (see Diagram 4).
- 6.4. The vertical sides of the backboard support structure shall be padded to a minimum height of 2,150 mm from the floor upwards. The minimum thickness of the padding shall be 100 mm (see Diagram 1).
- 6.5. The bottom and side surfaces of the supporting arm of the backboard shall be padded from the back surface of the backboard over a length of 1,200 mm along the arm. The minimum thickness of the padding shall be 25 mm (see Diagram 1).
- 6.6. Free-standing advertising boards shall be padded around the top. The minimum thickness of the padding shall be 20 mm.
- 6.7. All padding shall be constructed in such a way as to prevent limbs from becoming trapped. It shall have a maximum indentation factor of 50%. This means that when a force is applied suddenly to the padding, the indentation in the padding does not exceed 50% of its original thickness.
- 6.8. All padding shall pass the test according to EN 913, Annex C (see References [3]).
- 6.9. For level 1 competitions, the colour of the padding shall be blue according to NCS 0090-B10G.

7. Basketballs

7.1. The ball shall be spherical, with black seams, and of a single shade of orange within the following NCS spectrum as approved by FIBA:

0080-Y70R	1090-Y70R	0090-Y80R
0090-Y70R	2080-Y70R	1090-Y80R
1080-Y70R	2090-Y70R	

7.2. The ball shall have eight (8) traditionally shaped panels as shown in Diagram 8.

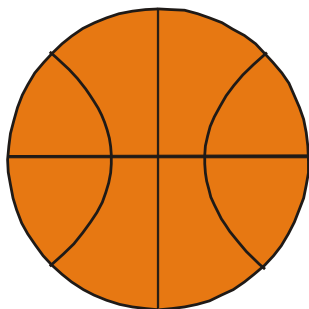


Diagram 8 Basketball panels

7.3. For FIBA competitions levels 1 and 2, the outer surface of the ball shall be made of genuine leather or artificial/composite/synthetic leather.

For level 3 competitions, the outer surface of the ball may be made of rubber material.

7.4. The ball shall be inflated to an air pressure so that when it is dropped onto the playing surface from a height of approximately 1,800 mm, measured from the bottom of the ball, it will rebound to a height of between 1,200 mm and 1,400 mm, measured to the top of the ball.

7.5. The width of the seams of the ball shall not exceed 6.35 mm.

7.6. The circumference of the ball shall be no less than 749 mm and no more than 780 mm (size 7).

7.7. The ball shall weigh no less than 567 g and no more than 650 g.

7.8. The surface of the ball shall not contain toxic materials or any materials which may cause an allergic reaction. The ball must not contain heavy metals (EN 71) and AZO colours.

7.9. In addition to checking the specifications listed above, the following tests shall be carried out:

- Fatigue strength.
- Heat-storage test.
- Valve leak test.
- Practise test.

7.10. For FIBA competitions levels 1 and 2, the ball must have successfully passed the current "Test Programme for Basketballs" for category 1 ("BLACK") (see References [10]).



8. Game clock

- 8.1. The game clock (see Diagrams 9 and 10) shall be placed so that it is clearly visible to everyone involved in the game including the spectators.
- 8.2. The main game clock shall be a digital countdown clock, with an automatic signal sounding at the end of each period or extra period. The signal shall sound as soon as the display shows zeros (0:00).
- 8.3. The game clocks shall be synchronised and display the playing time remaining throughout the game.
- 8.4. At least during the last 60 seconds of each period or extra period, the playing time remaining shall be indicated to the one-tenth ($\frac{1}{10}$) of a second.
- 8.5. If the main game clock is placed above the centre of the playing court, there shall be a synchronised duplicate game clock at each end of the playing court high enough so that it can be seen by everyone involved in the game including the spectators. Each duplicate game clock shall indicate both the score and the playing time remaining.
- 8.6. A whistle-controlled time system used by the officials to stop the game clock may be used provided that this system is used in all games of a given competition.

9. Scoreboard

- 9.1. The scoreboard must be clearly visible to everyone involved in the game including the spectators. For FIBA competitions levels 1 and 2, there shall be two (2) large scoreboards, one at each end of the court and, if so desired, a scoreboard (cube) placed above the centre of the playing court.
A scoreboard (cube) placed above the centre of the playing court does not exclude the necessity for the two scoreboards as described above.
- 9.2. A control panel for the game clock shall be provided for the timekeeper and a separate control panel for the scoreboard shall be provided for the assistant scorer.
- 9.3. The display of the scoreboard shall be in bright contrasting colours. The background of the display shall be antiglare.
- 9.4. The display numbers of the game clock and game score shall have a minimum height of 300 mm and a minimum width of 150 mm.
- 9.5. The display numbers of the team fouls and periods shall have a minimum height of 250 mm and a minimum width of 125 mm.
- 9.6. The scoreboard must not have any sharp edges or burrs.
- 9.7. The scoreboard must be able to withstand severe impact from any ball.
- 9.8. The scoreboard must be mounted securely.
- 9.9. The scoreboard shall contain a digital countdown game clock.
- 9.10. The scoreboard shall indicate:
 - 9.10.1. The game clock as specified above (section 8).
 - 9.10.2. The points scored by each team and, preferably, the points scored by each individual player.

- 9.10.3. The number of each individual player and, preferably, their corresponding surnames.
- 9.10.4. The number of fouls committed by each player on the team from 1 to 5. The fifth foul shall be indicated in red or orange. The number may be shown with 5 indicators or a number display with a minimum height of 135 mm. In addition, the 5th foul may be indicated with a slow flashing display (~ 1 Hz) for five (5) seconds.
- 9.10.5. The number of team fouls from 1 to 5, stopping at 5.
- 9.10.6. The number of the period from 1 to 4, and E for an extra period. The numbers may be shown with 5 indicators or a number display with a minimum height of 135 mm.
- 9.10.7. The number of charged time-outs per period from 0 to 2.
- 9.10.8. A clock for timing the time-out may be included. The game clock must not be used for this purpose.
- 9.10.9. The electromagnetic compatibility of the scoreboards shall be in accordance with the statutory requirements of the respective country.
- 9.10.10. The scoreboards shall pass the test of protection against damage by balls according to DIN 18 032-3 (see References [8]).

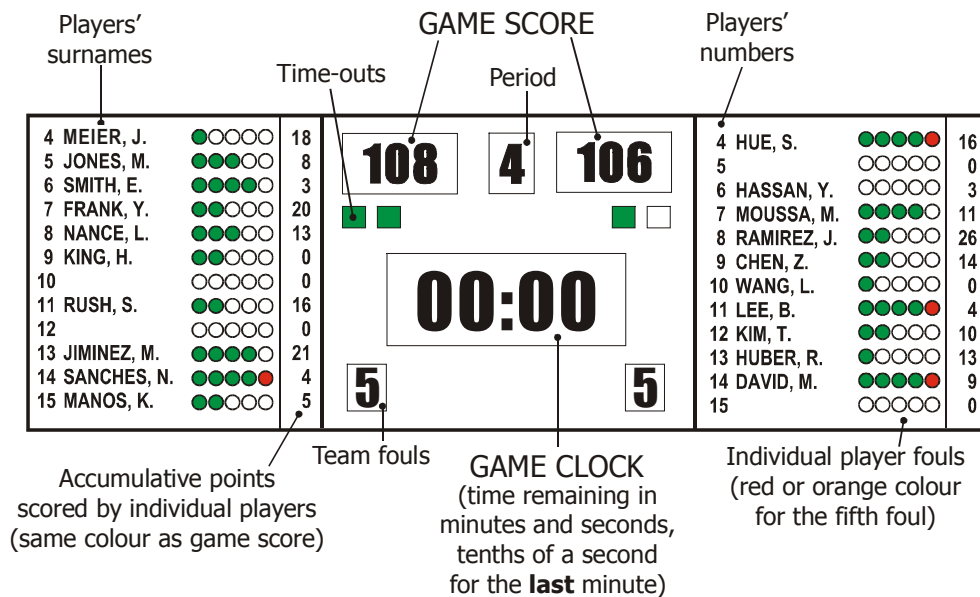


Diagram 9 Scoreboard for FIBA competitions levels 1 and 2 (example)

10. 24-second device

- 10.1. The 24-second device shall have a separate control unit to operate it and display units with the following specifications:
 - 10.1.1. Digital countdown, indicating the time in seconds.
 - 10.1.2. The ability to be started from 24 seconds.
 - 10.1.3. The ability to be stopped with the display indicating the seconds remaining.
 - 10.1.4. The ability to be restarted from the time it was stopped.
 - 10.1.5. The ability to have no display on the device.



- 10.1.6. Be clearly visible to everyone involved in the game including the spectators.
- 10.1.7. The numbers of the display units shall have a minimum height of 250 mm and a minimum width of 125 mm.
- 10.1.8. The device shall have a very loud automatic signal sounding to indicate the end of the 24-second period. The signal shall sound as soon as the display shows zero (0).
- 10.1.9. The electromagnetic compatibility of the 24-second device shall be in accordance with the statutory requirements of the respective country.
- 10.1.10. The display units shall pass the test of protection against damage by balls according to DIN 18 032-3 (see References [8]).
- 10.2. For FIBA competitions levels 1 and 2, the display unit of the 24-second device (Diagram 10), together with an additional game clock and a bright red electric light, shall be located both above and behind each backboard at a distance of between 300 mm and 500 mm (Diagram 1). The colours of the numbers of the 24-second device and the game clock shall be different. The device may be mounted onto the backboard structure or hung from the ceiling. It is recommended to have 3 display surfaces per unit to make it visible from all sides.
The additional game clock shall meet all the specifications outlined in 8.1 - 8.4 above.
- 10.3. For all other competitions (level 3):
If there are four (4) display units, they shall be placed in all four (4) corners of the playing court, 2,000 mm behind each end line.
If there are only two (2) display units, they shall be placed in diagonal corners of the playing court, 2,000 mm behind each end line. In addition, the display on the left-hand side when sitting at the scorer's table shall be 2,000 mm in from the sideline extended.
- 10.4. The 24-second devices shall be connected to the main game clock so that:
 - 10.4.1. When the main clock stops, the devices shall also stop.
 - 10.4.2. When the main clock starts, it shall be possible to start the device manually.
 - 10.4.3. When the 24-second device stops and sounds, the main clock shall also stop.
- 10.5. The electric light on the display unit above the backboard shall:
 - 10.5.1. Be bright red.
 - 10.5.2. Be synchronised with the game clocks to light up when the signal sounds for the end of playing time for each period or extra period.
 - 10.5.3. Be synchronised with the 24-second device to light up when the signal sounds for the end of a 24-second period.
- 10.6. The 24-second display units shall pass the test of protection against damage by balls according to DIN 18 032-3 (see References [8]).

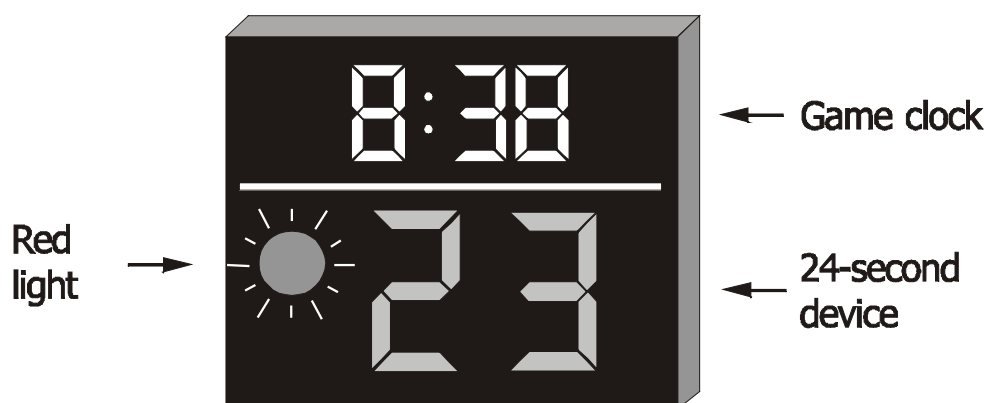


Diagram 10 Game clock, 24-second device and red light for FIBA competitions levels 1 and 2 (example)

11. Signals

There shall be provision for at least two (2) separate sound signals with distinctly different and very **loud** sounds:

- 11.1. One (1) for the timekeeper and the scorer. It shall sound automatically to indicate the end of playing time for a period, extra period and/or the game. The scorer and timekeeper shall be able to sound the signal manually when appropriate to attract the attention of the officials.
- 11.2. One (1) for the 24-second operator which shall sound automatically to indicate the end of the 24-second period.
- 11.3. Both signals shall be sufficiently powerful to be easily heard above the most adverse or noisy conditions. The sound volume shall be adjustable to a maximum sound pressure level of 120 dBA, measured at a distance of 1 m from the source of the sound. A connection to the loud speaker system of the sports hall is strongly recommended.

12. Player foul markers

The player foul markers provided shall be white with numbers of a minimum size of 200 mm in length and 100 mm in width and shall be numbered from 1 to 5 (1 to 4 in black, and the number 5 in red).

13. Team foul markers and indicators

- 13.1. The two (2) team foul markers provided shall be red, and be a minimum of 200 mm in width, 350 mm in height, and be constructed in such a way that when positioned on the scorer's table they are clearly visible to everyone involved in the game including the spectators.
- 13.2. The two (2) indicators provided shall indicate the number of team fouls up to five (5).
- 13.3. Electrical or electronic devices may be used, but they shall meet the specifications outlined in 9.10.5 and Diagram 9.



14. Playing floor

- 14.1. The playing floor surface shall be made of:
- Permanent wooden flooring (levels 1 and 2).
 - Mobile wooden flooring (levels 1 and 2).
 - Permanent synthetic flooring (level 3).
 - Mobile synthetic flooring (level 3).
- 14.2. The playing floor shall:
- 14.2.1. Be in accordance with DIN 18 032-2 (see References [7]).
- 14.2.2. Have the following dimensions:
- A minimum length of 32,000 mm.
 - A minimum width of 19,000 mm.
- 14.2.3. Have an antiglare surface.
- 14.3. The manufacturer, together with the flooring installation company, shall be obliged to:
- 14.3.1. Have a quality assurance programme according to ISO 9002 (see References [9]).
- 14.3.2. Produce documentation for each customer comprising the following at least: results of the prototype test, a description of the installation procedure, results of the inspection and approval of the existing installation carried out by approved inspection officials.

15. Playing court

For all FIBA competitions levels 1 and 2:

- 15.1. All spectators must be seated at a distance of at least 5,000 mm from the outside edge of the boundary lines of the playing court.
- 15.2. The playing court shall be marked by a 50 mm wide boundary line as defined in Art. 2 of the Official Basketball Rules.
- 15.3. The playing court shall be marked by a further boundary line (Diagram 11) drawn in a sharply contrasting colour and at least 2,000 mm in width. The colour of the further boundary line should be the same as that of the centre circle and the restricted areas.

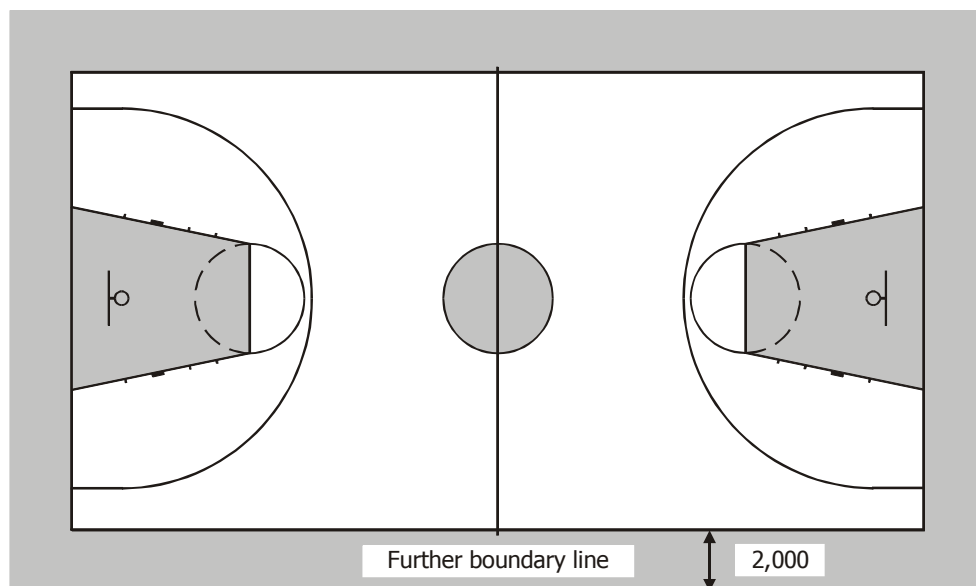


Diagram 11 Playing court for FIBA competitions levels 1 and 2



16. Lighting

- 16.1. For all FIBA competitions levels 1 and 2, the lighting over the playing court shall be no less than 1,500 lux. This level shall be measured 1,500 mm above the playing court. The lighting shall meet the television requirements for colour temperatures (DIN EN 12193, see References [6]).
- 16.2. All lighting installations shall:
- 16.2.1. Have antiglare light.
- 16.2.2. Be free of shadows.
- 16.2.3. Be in compliance with the national safety requirements for electrical equipment in the respective country.
- 16.3. For all FIBA competitions level 1, there shall be a strobe light system for the photographers. Individual flash photography is not permitted.
- 16.3.1. The strobe light system shall have a wiring harness for the installation of four lines, one in each corner of the playing court. Each line shall power a set of four strobe lights. Each set shall have synchro-cabling and be accessible to the photographers via a switch exchange located in the vicinity of the basket support structure.
- 16.3.2. Each set shall be located at a distance of at least 5,000 mm from the boundary lines and at a recommended height of 15,000 mm (if possible).
- 16.3.3. There shall be four sockets for the strobe lights located 2,000 mm from the flashes. Each socket shall be separate and protected against interference between each lamp (thermal recognition differential magnet).
- 16.3.4. The harness shall be installed safely and not within reach of the spectators. The flashes shall be installed safely to prevent them from falling.

17. Advertising boards

- 17.1. Free-standing advertising boards may be located around the playing court with the following provisions. They shall be located (Diagram 12):
- At a minimum distance of 2,000 mm from the end lines and sidelines.
 - Along the end lines. There must, however, be a gap of a minimum of 900 mm on both sides of the mobile backstop units so that the floor wiper(s) and portable TV camera(s) can pass through, if necessary.
- 17.2. Advertising boards are permitted in front of the scorer's table provided that they are placed directly in front and flush with the table.
- 17.3. Free-standing advertising boards shall be padded around the top.
- 17.4. Advertising boards shall not exceed a height of 1,000 mm from the playing floor.



- 17.5. For all FIBA competitions level 1, only motorised rotating advertising boards are permitted.
- 17.6. Advertising boards shall:
- 17.6.1. Have no burrs and all edges shall be rounded off.
- 17.6.2. Be in compliance with the national safety requirements for electrical equipment in the respective country.
- 17.6.3. Have mechanical protection for all engine driven parts.
- 17.6.4. Be non-flammable.

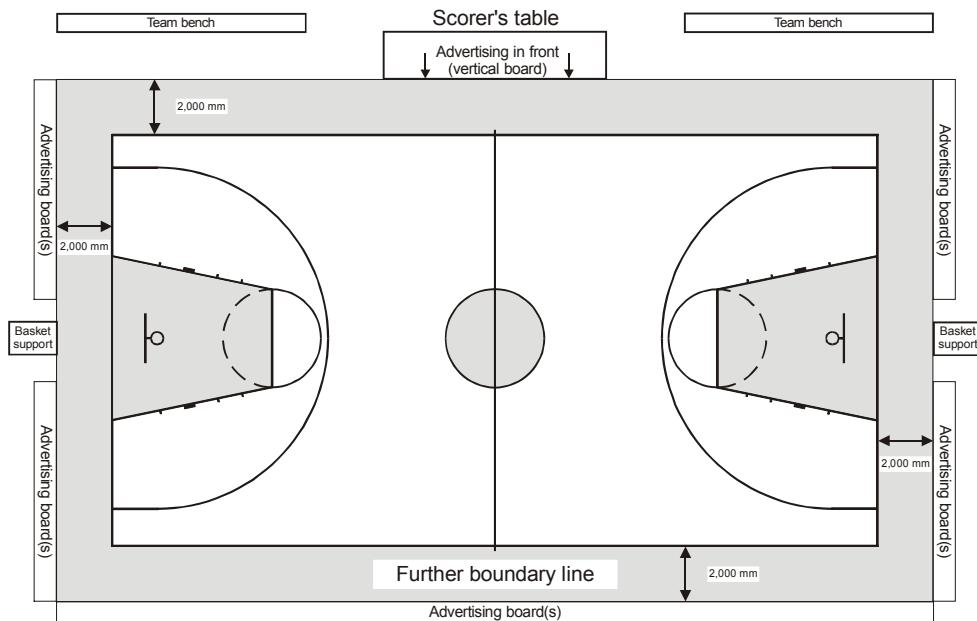


Diagram 12 Advertising in the playing court area

18. Support service areas

The specifications in this section are recommendations only.

- 18.1. The support service areas comprise all areas where essential operations for the competition are carried out.
- 18.2. Such areas shall be fully accessible to persons with a disability.
- 18.3. The height of the ceilings shall be in accordance with legal provisions of the respective country. It shall not be less than 2,700 mm.
- 18.4. The required areas are:
- a) Athletes' changing rooms.
 - b) Changing rooms for referees and table officials.
 - c) Areas for commissioners and/or FIBA representatives.
 - d) Doping control station.
 - e) First aid station for athletes.
 - f) Staff changing room.
 - g) Storage room and cloakroom.
 - h) Administrative offices.
 - i) Media area.
 - j) VIP area.

19. Spectator areas

The specifications in this section are recommendations only.

- 19.1. Spectator areas shall allow the free movement of the public, including persons with a disability, and shall enable spectators to have a comfortable view of the event.
- 19.2. There may be provisions for variable seating capacity, however, the visibility from all seats shall always be unobstructed.
- 19.3. The line of visibility of the spectators shall be as shown in Diagram 13, unless there is a different local standard.

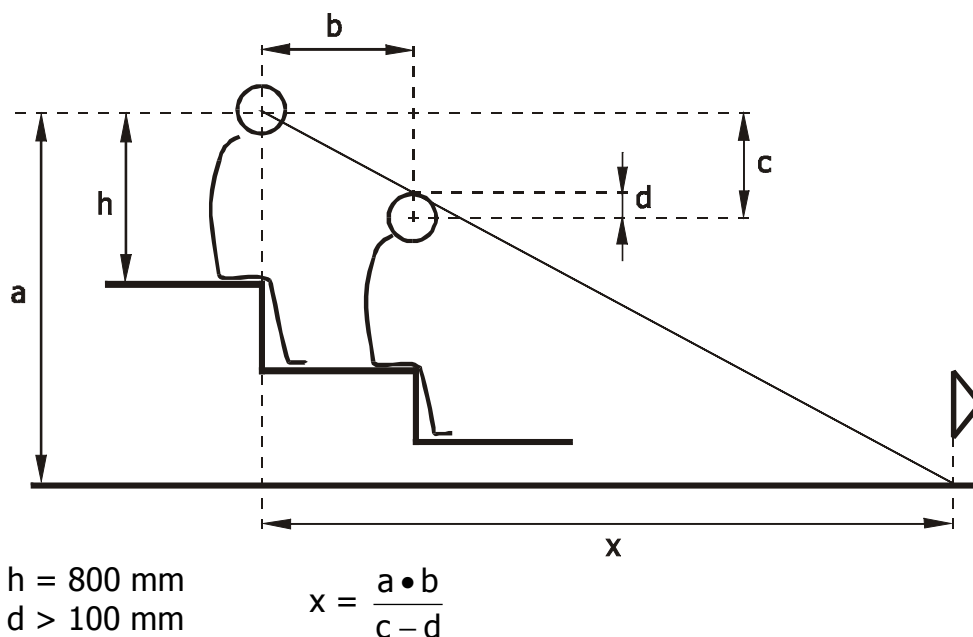


Diagram 13 Spectators' line of visibility

- 19.4. Seating capacity definition:
The total capacity of the sports hall is the sum of both seated and standing positions.
The number of seated positions is the total number of seats or the total length of the terraces or benches in metres divided by 480 mm.
The number of standing positions is the assigned floor space with 35 spectators on 10 m².
Local standards may allow for deviations.



20. References

- [1] DIN ISO 286, 1990: ISO system of limits and fits; bases of tolerances, deviations and fits
- [2] National Color System of Standardiseringkommissionen i Sverige (SIS), Doc. No. SS019102
- [3] EN 913, Annex C, 1996: Determination of shock absorption of padding
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- [7] DIN 18032-2, 1991: Sports hall surfaces, requirements, testing, maintenance
- [8] DIN 18032-3, 1997: Sport halls: halls for gymnastic and games: testing of safety against ball throwing
- [9] ISO 9002, 1994: Quality assurance management
- [10] Test Programme for Basketballs 01/1999 – 12/2002
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