

# — INDOOR — BASKETBALL EQUIPMENT GUIDANCE

# **BASKETBALL EQUIPMENT - INDOOR**

## **INTRODUCTION**

This document provides guidance and information in relation to indoor basketball equipment for basketball competitions across all aspects of the game, from school and community use to international competitions.

It is essential to have suitable basketball equipment at all levels of the game. Precision and standardisation of the used materials are vital in ensuring correct and impartial competitions.

Basketball backboards and rings are available to suit all needs, ranging from those appropriate for home use, where just a ring can be attached to an external wall, to wall-mounted goals in community facilities in schools, to roof mounted or FIBA backstop goals with 70kg pressure release rings for local and national league, professional and FIBA international play.

This document provides information about the range of basketball goals and backboards that are available for the different levels of the game across the following facility and competition categories:

- Community – School competitions, minimum standards for local leagues and informal recreational play.
- Club – National basketball league (NBL) level competitions, regional and local leagues, colleague, and university competitions.
- Premier – Professional level competition.
- International – international competition and National team and club level.

A breakdown of the Basketball Goal and Backboard specifications as per the technical guidance document has been provided below.

**BASKETBALL GOAL AND BACKBOARD SPECIFICATIONS (BASKETBALL ENGLAND TECHNICAL GUIDANCE):**

<b>BASKETBALL FACILITY TECHNICAL SPECIFICATIONS:</b>	<b>INTERNATIONAL</b>			<b>PREMIER</b>			<b>CLUB</b>			<b>COMMUNITY</b>		
	Gold <i>FIBA World</i>	Silver <i>FIBA Europe</i>	Bronze <i>FIBA Club</i>	Gold <i>BBL</i>	Silver <i>BBL</i>	Bronze <i>DBC's NBL1&amp;2</i>	Gold <i>NBL1&amp;2 WNBL1</i>	Silver <i>NBL3&amp;4 WNBL2</i>	Bronze <i>Local League</i>	Gold <i>Secondary Schools</i>	Silver <i>Secondary Schools</i>	Bronze <i>Primary Schools</i>
<b>SPORTS HALL (cont.)</b>												
<b>BASKETBALL GOALS:</b>												
FIBA Backstop Goals to main court (3.25m reach - require minimum 36.6m width hall)	●	●		●	●							
Roof/wall mounted goals with pressure release rings with 70kg flex break with adequate back support frame	●	●	●	●	●	●	●	●	●	●	●	
Height adjustable wall mounted goals (3.05m/2.60m)											●	●
Roof mounted, height adjustable, side baskets (3.05m/2.60m)	●	●	●	●	●	●	●					
Wall mounted, height adjustable, side baskets (3.05m/2.60m)								●	●	●		
<b>BACKBOARDS:</b>												
Transparent (1.8m/1.05m) white markings	●	●		●	●	●	●					
Transparent or white wood material (1.8m/1.05m) black markings if wood			●					●	●	●	●	●
Mini basketball, white wood (1.2m/0.9m)											●	●
Side & lower edge to be padded	●	●	●	●	●	●	●	●	●			



## **COMMUNITY**

This category relates to School Competitions plus minimum standard for local league and informal recreational play.

### **GUIDANCE**

The inclusion of adjustable hoops in community facilities allows the court to be used for competitive games as well as junior use, making the hall more attractive to clubs and users requiring equipment that cater for all levels of play. The addition of height-adjustable side baskets also creates more playing and training opportunities and are therefore recommended.

Where possible, full-size backboards (180 x 105cm) are preferred, however, backboards measuring 120 x 90cm are allowed at a mini basketball level. The material of the backboard can be either transparent with white markings or white wood material with black markings (50mm width).

For gold level community play, pressure release rings with 70kg flex break and adequate back support frames should be used. For silver and bronze, fixed rings can be used.

### **CONSIDERATIONS**

At the community level, a 180 x 105cm wooden backboard is recommended, however, a backboard measuring 120 x 90cm is also allowed for silver and bronze level community play. Fibreglass (with wood core) and wood backboards should have a thickness of 22mm. All markings, regardless of colour and material should be 50mm wide.

Practice backboards mounted on side walls of sports halls can either be fixed projection or “fold away” to the side or upwards. However, it should be noted that at 600mm projection, the backboards do not interfere with most other activities. The recommended size for a side basket is a minimum of 120 x 90cm. The inclusion of side baskets along the length of the hall allows for more shooting and playing opportunities.

Where retractable seating units are provided, the practice backboards may need to be roof mounted to avoid conflict.

Free standing or portable practice backboards and rings come either with counterweights for stability or with a plastic base which can be filled with water or sand.

These are less stable, and “dunking” of the ball is not advisable. Extra stability can be achieved by fitting floor anchors.

All rings must measure 45cm in diameter and be set at a height of 3.05m or 2.60m for silver and bronze level play. Adequate back support frames should be used to minimize impact on the backboard.



**APPROXIMATE COSTS** – all excluding installation

Wooden backboards (180 x 105cm) start at around £250

Transparent acrylic backboards (180 x 105cm) start at around £1,000

Wooden backboards (120 x 90cm) start at around £105

Fixed rings start at around £50

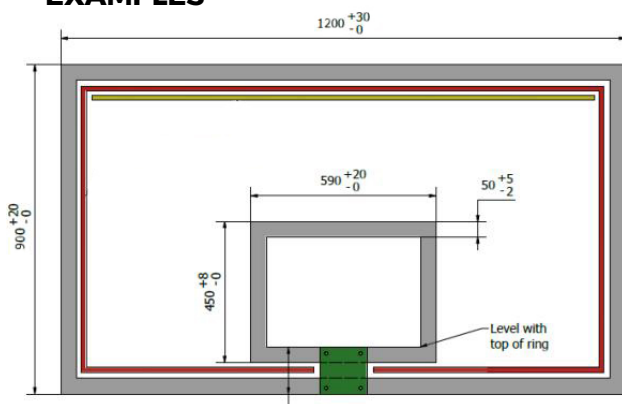
Flex rings start at around £155

Wall-mounted height-adjustable side baskets start at around £950

Wall-mounted height-adjustable main baskets start at around £2,000

Portable baskets that are suitable for practise use start at around £140

**EXAMPLES**



A diagram of a 120 x 90cm backboard with relevant markings



Height-adjustable, wall-mounted side basket with 120 x 90cm backboard, flex ring and frame



Height-adjustable main basket with 180 x 105cm transparent backboard, flex ring, frame and backboard padding

## **CLUB**

This category relates to all clubs in the Division 3 NBL and Division 1 and 2 WNBL, plus Regional & Local Leagues, College and University Competitions.

### **GUIDANCE**

For all levels of NBL, roof/wall mounted goals with pressure release rings with 70kg flex break and adequate back support frame are required, this is also recommended for local league level.

Backboards should be padded on the sides and lower edge.

Height-adjustable side baskets are encouraged to maximise training opportunities. For gold level, side baskets should be roof mounted, for silver and bronze level, wall-mounted baskets are accepted.

Portable, FIBA level two backstops with 2.25m projection can also be used.

### **CONSIDERATIONS**

For gold level play, the backboard should be of transparent material (acrylic or tempered glass) with white markings. For silver and bronze level, wood backboards with black markings are also accepted. All backboards should measure 180 x 105cm.

Acrylic backboards should have a thickness of 10mm whereas tempered glass should be 12mm. Both types require a strong metal frame with a ring-mounting plate enabling the ring to be mounted direct to the frame with no contact to the backboard, thereby minimising the potential for damage.

Fibreglass (with wood core) and wood backboards should have a thickness of 22mm.

There is no limit on the number of practice baskets that can be in sports halls but generally in a standard one court facility it is advisable to have them placed at one quarter and three quarter points of the hall so that small-sided scrimmage games can be played across the width of the court.

Portable backstops need to be either anchored to the floor or have sufficient ballast to prevent the unit from falling over, however, if floor anchor points are not available, ceiling mounted baskets are recommended.

### **APPROXIMATE COSTS** - all excluding installation

Transparent acrylic backboards (180 x 105cm) start at around £1,000

Transparent tempered glass backboards (180 x 105cm) start at around £2,200

Fibreglass backboards (180 x 105cm) start at around £660

Wooden backboards (180 x 105cm) start at around £250

Flex rings start at around £155

FIBA-approved Pro Flex rings start at around £600

Backboard padding starts at around £200

Roof mounted basketball systems start at around £6,000

Wall-mounted height-adjustable side baskets start at around £950

Wall-mounted height-adjustable main baskets start at around £2,000

Club level/FIBA level 2 portable backstops start at around £8,000

### **EXAMPLES**



Ceiling-mounted basket with transparent 180 x 105cm backboard, flex ring, frame, backboard padding, LED strip and shot clock.



FIBA level two approved backstop with a transparent 180 x 105cm backboard, flex ring and backboard padding.



## INTERNATIONAL & PREMIER

International relates to international Competition at National and Club level.

Premier relates to Premier Clubs competing in the NBL 1, BBL and WBBL.

### GUIDANCE

For many top-level professional leagues and international competitions, portable backstops are required and come in a range of sizes. For international competitions, a two-meter run off beyond the baseline is also required.

FIBA guidance on equipment can be found [HERE](#) and below:

### BACKSTOP UNIT

There shall be two backstop units, one placed at each end of the court and each consisting of the following parts:

- One backboard
- One basket ring with a ring mounting plate
- One basket net
- One backboard support structure
- Padding

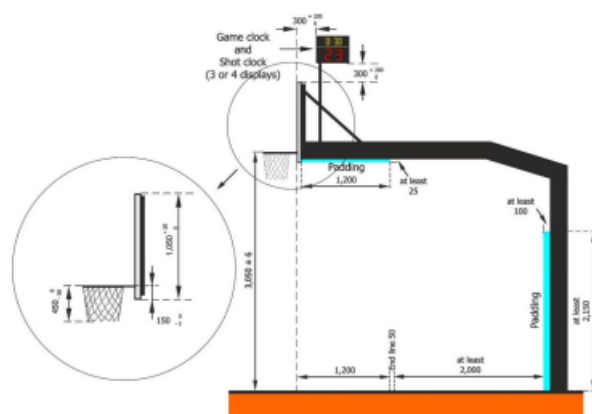


Diagram 1 Backstop unit level 1 (Shot clock option 1)

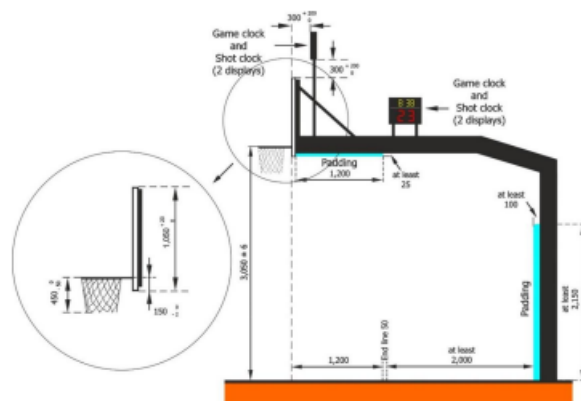


Diagram 2 Backstop unit level 1 (Shot clock option 2)

## 1. Backboard

- 1.1. For level one, the backboards shall be made of non-reflective laminated safety glass or tempered glass, with a thickness of between 11.8mm and 13.5mm, with a flat front surface and shall:
  - Have a protective framework of the backboard support structure around the outer edge.
  - Be manufactured such that, if broken, the pieces of glass do not split off or cause any risk of injury.
- 1.2. For level two, the backboards may be of the following:
  - Laminated/tempered glass (identical to level one)
  - Transparent acrylic or polycarbonate
  - Wood, fibreglass, steel or aluminium, painted white.
- 1.3. The backboards shall measure 1,800mm (+ a maximum of 30mm) horizontally, and 1,050mm (+ a maximum of 20mm) vertically, including the frame.
- 1.4. All lines on the backboards shall be:
  - In white, if the backboards are transparent.
  - In black, if the backboards are painted white (level two only).
  - 50mm in width.
- 1.5. The borders of the backboards shall be marked with a boundary line and an additional rectangle behind the ring as follows:
  - Outside dimensions: 590 mm (+ a maximum of 20 mm) horizontally and 450 mm (+ a maximum of 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.
- 1.6. For level one, each backboard shall be equipped with a light strip around its perimeter, mounted on the inside borders of the backboards and which lights up in red only when the game clock signal sounds for the end of a quarter or overtime. The light strip shall be a minimum of 10 mm in width and cover a minimum of 90% along the edge of the backboard glass area.
- 1.7. For level one, each backboard shall be equipped with a light strip along its perimeter at the top, mounted on the inside borders of the backboards, which lights up in yellow only when the shot clock signal sounds. The light strip shall be a minimum of 10 mm in width and be mounted directly below the red lighting for the game clock.
- 1.8. The backboards shall be firmly mounted on the backboard support structures at each end of the court at right angles to the floor, parallel to the endlines (Diagram 1 or 2).

The central vertical line on their front surfaces, 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 endline, on an imaginary line drawn at right angles to this endline.

- 1.9. For level one, when a basketball is dropped onto the backboard, from 1.8m, it shall rebound from it with a minimum rebounding height of 50%.

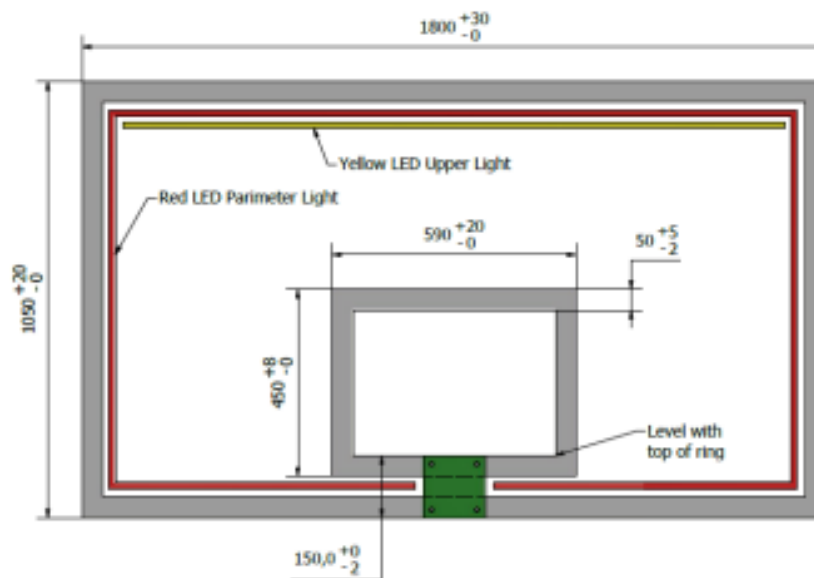


Diagram 3 Backboard markings

## 2. Basket Ring

- 2.1. The rings shall be made of solid steel and shall:

- Have an inside diameter of a minimum of 450mm and a maximum of 459mm.
- Be painted orange within the following Natural Colour System (NCS) or RAL CLASSIC spectrums:
  - NCS:
    - S0580-Y70R (CMYK: 0, 63, 79, 4)
    - S0585-Y70R (CMYK: 0, 70, 92, 5)
    - S1080-Y70R (CMYK: 0, 65, 85, 13)
  - RAL:
    - RAL 2004 (CMYK: 0, 65, 87, 0)
    - RAL 2008 (CMYK: 0, 70, 90, 0)
    - RAL 2010 (CMYK: 0, 78, 100, 0)
- Have its metal a minimum of 16 mm and a maximum of 20 mm in diameter.



- 2.2. The net shall be attached to each ring in 12 places. The fittings for the attachment shall:
- Not have any sharp edges or gaps,
  - Have gaps smaller than 8 mm, to prevent fingers from entering,
  - Not be designed as hooks for level one.

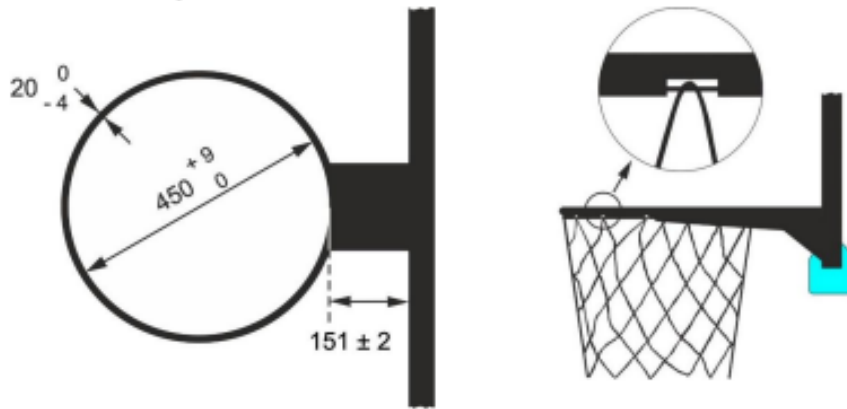


Diagram 4 Basket ring dimensions Diagram 5 Attachment of the net (example)

- 2.3. The rings shall be fixed to the backboard support structures 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 mounting plate and the backboard (Diagram 6).
- 2.4. The top edge of each ring shall be positioned horizontally, 3,050 mm (+ a maximum of 6 mm) above the floor, equidistant from the 2 vertical edges of the backboard.
- 2.5. The point on the inside circumference of the ring nearest the backboard shall be 151 mm (+ a maximum of 2 mm) from the face of the backboard.

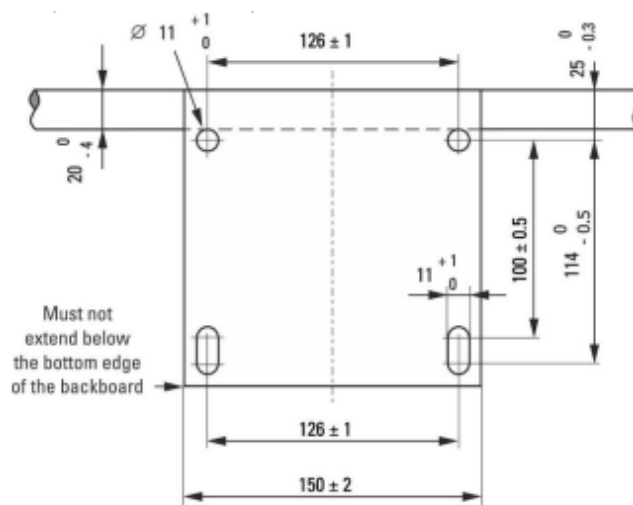


Diagram 6 Ring mounting plate (example dimensions)

- 2.6. For existing basket support structures, it is recommended that the ring mounting plate be fixed to the framework according to the measurements given in Diagram 7.

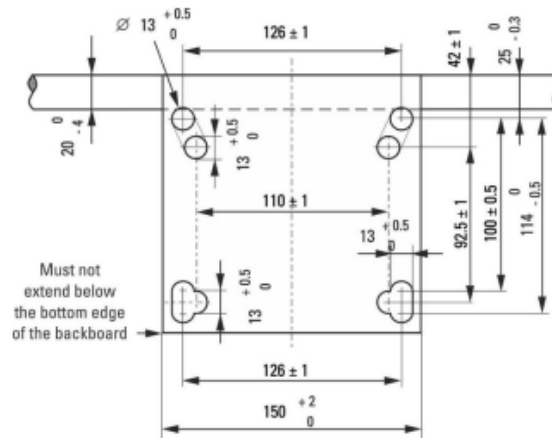


Diagram 7 Ring mounting plate for existing baskets (example dimensions)

- 2.7. Pressure release rings with the following specifications are required for level one and also for level two products requesting FIBA approval:
- The pressure release mechanism shall 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.
  - For level one, the pressure release rings shall have a 'positive-lock' mechanism which must not disengage until a static load of a minimum of 82 kg and a maximum of 105 kg has been applied vertically to the top of the ring at the most distant point from the backboard. The pressure release ring mechanism shall be adjustable within the given static load range.
  - When the pressure release mechanism is released, the front or the side of the ring shall rotate no more than 30 degrees and no less than 10 degrees below the original horizontal position.
  - After release and with the load no longer applied the ring shall return automatically and instantly to its original position. No fissures and no permanent deformation of the ring shall be observed.
  - The rebound/elasticity of the ring and support system shall be within 35 % - 50 % energy absorption range of the total impact energy. Two opposing rings shall fall within 5% units of one another.

### 3. Basket Net

- 3.1. The nets shall be made of white cord and shall be:
- Suspended from the rings.
  - Manufactured so that they check the ball momentarily as it passes through the basket.
  - No less than 400 mm and no more than 450 mm in length.
  - Manufactured with 12 loops to attach it to the ring.

- 3.2. The upper section of the net shall be semi-rigid to prevent:
- The net from rebounding up through or over the ring, creating possible entanglement.
  - The ball from becoming trapped in the net or rebounding back out of the net.

#### 4. Backboard support structure

4.1. For level one, only mobile or floor-fixed backboard support structures shall be used. For level two, in addition to mobile or floor-fixed, ceiling-mounted or wall-mounted backboard support structures may also be used.

4.2. Ceiling-mounted backboards shall not be used in venues where suspension height exceeds 10,000 mm in order to avoid excessive vibration in the support structure. It is recommended that safety straps are always installed with the ceiling mounted unit.

4.3. The backboard support structure shall be:

- For level one, at a distance of at least 2,000 mm, measured from the outer edge of the endline to the front of the backstop padding (Diagram 1 or 2).
- For level two, at a distance of at least 1,000 mm, measured from the outer edge of the endline to the front of the backstop padding. For wall or ceiling mounted units this measurement shall be taken from the outer edge of the endline to the wall or nearest obstacle.
- Of a colour, that sufficiently contrasts with the background, so that it is clearly visible to the players.
- Secured to the floor so as to prevent any movement. If floor anchoring is not possible, sufficient ballast weight on the basket support base must be used to prevent any movement.
- Adjusted such as that once the top edge of the ring is at a height of 3,050 mm from the floor, this height cannot be changed.
- The rigidity of the backboard support structure with ring shall fulfil the requirements of EN 1270.
- The vibration of the backboard support unit in which the displacement exceeds 5 mm, shall last less than 4 seconds after a dunk shot.

#### 5. Padding

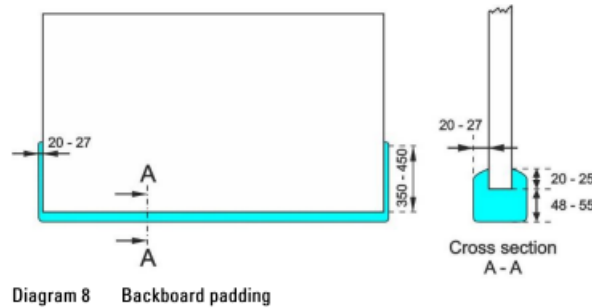
5.1. The backboard and backboard support structure must be padded.

5.2. The padding shall be of a single solid colour and shall be the same colour on both backboards and support structures.

5.3. The backboard padding shall be 20 to 27 mm thick from the front, back and side surface of the backboards. The padding shall be 48 to 55 mm thick from the bottom edge of the backboards.



- 5.4. The backboard padding shall cover the bottom surface of each backboard and the side surface to a distance of 350 to 450 mm from the bottom. The front and back surface must be covered to a minimum distance of 20 to 25 mm from the bottom of each backboard.



- 5.5. The padding of the backboard support structure shall cover:
- The vertical edges on each side, to a minimum height of 2,150 mm from the floor and with a minimum thickness of 100 mm (Diagram 1 or 2).
  - The bottom and side surfaces of the supporting arm of the backboard, from the back surface of the backboard over a minimum length of 1,200 mm along the arm, with a minimum thickness of 25 mm (Diagram 1 or 2).
- 5.6. To protect players during impact all padding shall:
- Be constructed so as to prevent limbs from being trapped.
  - 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.
  - Have a peak deceleration value of 500 m/s or less.

## **APPROXIMATE COSTS**

For detailed information about facility costs, please have a look at Sport England's facility cost guidance below:

**[SPORT ENGLAND FACILITY COSTS](#)**

**[SPORT ENGLAND LIFE CYCLE COSTS - AFFORDABLE INDOOR SPORTS FACILITIES](#)**

## **CONSIDERATIONS**

Floor anchor points are highly recommended for portable baskets. If these are not available, sufficient ballast is needed.

Flooring type needs to be considered to ensure it can withstand the load of portable backstops in one location and withstand movement of the unit across the floor when traveling to storage and back.

Space required to install/remove - most baskets are wheeled into position in the 'down' position with the unit at its longest. Space is required behind the backstop location to

accommodate the install/removal if being used in a flexible setting where multiple sports are played.

Spare backboard/ring or in some cases an entire unit is required as part of international competition rules.

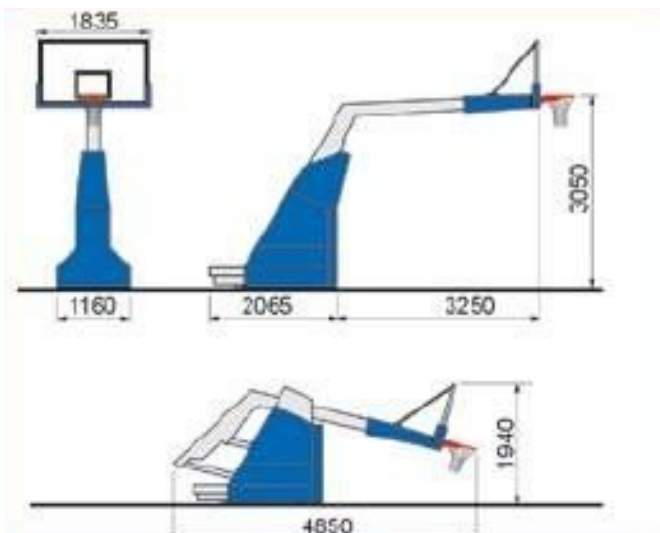
Wiring - It is important to consider wiring and cable run for scoring equipment. The cable run must be stowed away when not in use as it can be a trip hazard otherwise. It is also important to consider how the equipment connects and detaches and where it will be stored when not in use.

Storage - large backstops can take up around 5m x 2m of floor space per unit. Please see figure below.

## EXAMPLES



Sure Shot Mac Shot FIBA level one backstop unit in 'down' position, with a transparent 180 x 105cm backboard, flex ring and backboard padding.



Dimensions in 'up' and 'down' position

We always recommended to liaise with the relevant league when purchasing new equipment.

## APPROXIMATE COSTS

Portable, FIBA level one baskets start at £9,600

## APPROVED EQUIPMENT PARTNER

Sure Shot are the official basketball equipment supplier to Basketball England and can provide a complete range of backboards, rings, portable baskets, in-grounds, wall-mounts and spare parts.

Visit: [shop.basketballengland.co.uk](http://shop.basketballengland.co.uk)

Tel: 01642 224444

E-mail: [rsg@rsgsport.com](mailto:rsg@rsgsport.com) for more information on indoor equipment

