

TECHNICAL INFORMATION SHEET NUMBER 3

October 2014

SQUASH COURT FLOORING AND DIAGRAMS

INTRODUCTION

Any problem concerning the floor of a squash court can cause a great deal of emotion and comment amongst squash players, regardless of standard and experience. The required qualities of a floor are well known, but how to produce those qualities is not so widely understood. This paper sets out current England Squash advice and experience in a way that will be easily understood by anyone who has the responsibility of ordering a new floor.

1. MAPLE OR BEECH

When a new squash court floor is required which is to be left in a natural light colouring, tongued and grooved boards of maple or beech are the types of timber to consider. There are other types of flooring material available, but these are mainly 'composition', and at the moment, England Squash does not consider that such floors have the properties and playing qualities which squash clubs and players expect and demand. Both maple and beech are equally recommended and the selection is a matter of personal choice.

2. MAPLE

'First Grade Canadian Hardrock Maple' - be sure to specify the material's full title when placing an order. If offered 'Prime Grade Maple' - this grade should be avoided. First grade is colour matched to produce a uniformly light coloured floor. Prime Grade is of lower quality and will probably contain a quantity of darker boards. The use of such boards detracts from the overall appearance of the floor and does not provide an ideal background against which to sight a fast moving, small, dark ball. Maple is delivered unsealed in bundles containing boards with average dimensions of length 1100mm, width 57mm and thickness 20mm.

3. BEECH

'Danish Beech' strip flooring is easily recognisable and is in double widths and regular lengths. Beech should be ordered unsealed and is delivered in shrink-wrapped bundles containing boards of a length of 3700mm, width of 129mm and thickness of 22mm. A veneer of beech on a laminated base is also available.

4. GUIDE TO SQUASH COURT FLOOR REQUIREMENTS

a. DIMENSIONS - a squash court's internal dimensions are:

Length	-	9750mm +/- 10mm
Width	-	6400mm +/- 10mm
Diagonals	-	11663mm +/- 25mm

The total floor area is 62.4 square metres.

It is the responsibility of the flooring contractor to provide a certificate confirming that the flooring meets the requirements of European Standard EN14904.

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LEVELNESS - To comply with the WSF requirements for a Singles Court, a finished floor should be level within +/- 10mm in the length and width and on the diagonals. Joints between boards should be flush to within 0.25mm and any open joint shall not be more than 2mm wide.

If a glass back wall in place, the floor should be supported along the full width and up against the glass wall, to ensure there is no nick to cause the ball to deflect

- b. THE SLAB** - The flooring sub-contractor must be presented with a level concrete slab on which to work. It is the responsibility of the architect/site manager to ensure that this is done. The flooring contractor should check the slab level and draw any discrepancies to the attention of the architect/site manager before starting to lay the floor. Where a new or existing floor is to be laid on an uneven slab, a purpose made cradle system should be provided as a method of levelling the floor battens. Court floors laid using this levelling system with semi sprung battens at the stated centres for the type of flooring, will meet the requirements of European Standard EN14904.
- c. DELIVERY** - Maple is kiln dried, beech is press dried and moisture content of both will probably increase after the floor has been laid. In a new building, this is much more likely as the building itself may not be fully dried. It is advisable to deliver maple strips into the court area when the building is weather tight and the plaster work for the playing surfaces has been completed. The strips should be left unpacked for 2 weeks or more before laying so that the timber may adopt a moisture content similar to that of the building and reduce the risk of subsequent expansion. Beech flooring must be delivered to site immediately prior to laying and the site conditions must be the same as those prevailing when the court will be in use.
- d. DAMP PROOF MEMBRANE** - It is essential to specify a damp proof membrane either in or on the oversite slab to prevent the passage of moisture up through the slab to the timber floor. If the damp proof membrane is in the slab, it is advisable that a further damp proof membrane is laid on top of the slab. This may be either a single layer of one-ply butuminous felt or polythene film. In each case the material should be carried up the wall face to a height equal to the depth of the suspended floor battens, and special care should be taken to ensure that the damp proof membrane is not breached. Where an Elastic Cross Batten Substructure is used in conjunction with a levelling system or direct on to a screed or concrete slab, the flooring specialists require an increased thickness for the damp proof membrane if the moisture content is in excess of 4%.
- e. BATTENS** - A wooden strip floor is laid on semi-sprung battens. These are normally supplied in 1800mm lengths. Battens may either be overlapped by 150mm or preferably laid from the side wall of the court starting with a half length batten, 900mm long, the second row a full length batten, repeating the half then the full length batten for the length of the court. Batten are then butt ended and continued across the court, again using half and full length battens. With the

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Elastic Cross Batten Substructure system, primary battens are laid at 560mm centres with the cross battens at centres according to the thickness of the boards to be used. Primary battens and cross battens are supplied cut to length and the manufacturers detail layout must be followed.

For maple floors the battens are laid at 300mm centre to centre. For beech floors the battens are laid at 411mm centre to centre..

- f. LAYING – The strips of maple or beech are laid along the length of the court, are tongued and grooved and secret nailed to the battens. It is normal to use ‘spacers’ (about every 5 timber strips across the floor for maple, and every two double widths of beech) to allow for natural expansion after the floor is laid. This may vary if exceptionally damp or dry conditions prevail on the site. See diagram for floor layouts.
- g. HEADING JOINTS
Maple – Heading joints for maple need not to be supported by battens; adjacent heading joints must not be allowed to occur, and should be separated by at least 150mm from the ends of the boards in the next rows. Short strips that are cross grained particularly at their ends, are vulnerable to end splitting and must be discarded by the flooring contractor.
Beech – The standard lengths for beech flooring allows header joints to be placed over battens. Heading joints on adjacent boards should not be allowed to occur.
- h. EDGE BOARDS – Should not be nailed, but should be screwed to the battens using brass screws and cups and countersunk to 1mm below the floor surface. This is to allow edge boards to be taken up easily in the event of excess expansion or contraction.
- i. THE NICK – Should be 6-9mm wide and the edge strips should stop that distance from the side wall. If the floor expands and thereby reduces the nick to 3mm or less, the edge strip should be lifted and reduced in width to maintain a 6mm gap between the edge strip and the wall face. Remember the nick is an aid to airflow and an escape route for moisture through evaporation and should not be filled with cork or any other material.
- j. SANDING AND SEALING - When a maple floor has been laid, it is usually necessary for the floor to be sanded in order to remove any slight variations on the surface. The floor is sanded by running the machine along the length of the court. The surface should be left with a slight ‘nap’ on the surface.

Beech flooring is supplied pre-sanded. When ordering, please specify that the boards should be delivered unsealed.

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ENGLAND SQUASH RECOMMEND THAT SQUASH COURT FLOORS ARE NOT SEALED.

- k. RED LINES - Should be 50mm wide and painted (either BS4800 colour code 04E53 Poppy Red or BS RAL3020) on clean and unsealed boards. Masking tape should be laid either side of the lines before painting. Red plastic tape can be damaged and tear especially where floors expand and contract, whilst sweat droplets can make them slippery; tape is not therefore recommended. If not red coloured, should contrast with the floor colour.
- l. FLOOR CARE – The floor should be the last item to be completed in the court. This will ensure that other trades such as plasterers, painters, electricians, glaziers and carpenters will have finished their work and so substantially reduce the risk of damage to the new floor.
- m. DAMP/HEAT/VENTILATION – Remember that a squash court should not be allowed to become damp for any length of time, as the moisture content in the air will eventually enter the boards and produce buckled or cupped strips. It is important to limit the variation in the air temperature of a court to 15°C - 20°C and ensure the provision of a regular air flow of not less than 4 air changes per hour.

5. CONCLUSION

England Squash is always available to assist with and advise on all aspects of squash court maintenance and repair. If you require advice, please telephone us rather than act in the dark. It is likely that, with over 8000 courts in England, your problem has already been encountered and information is available

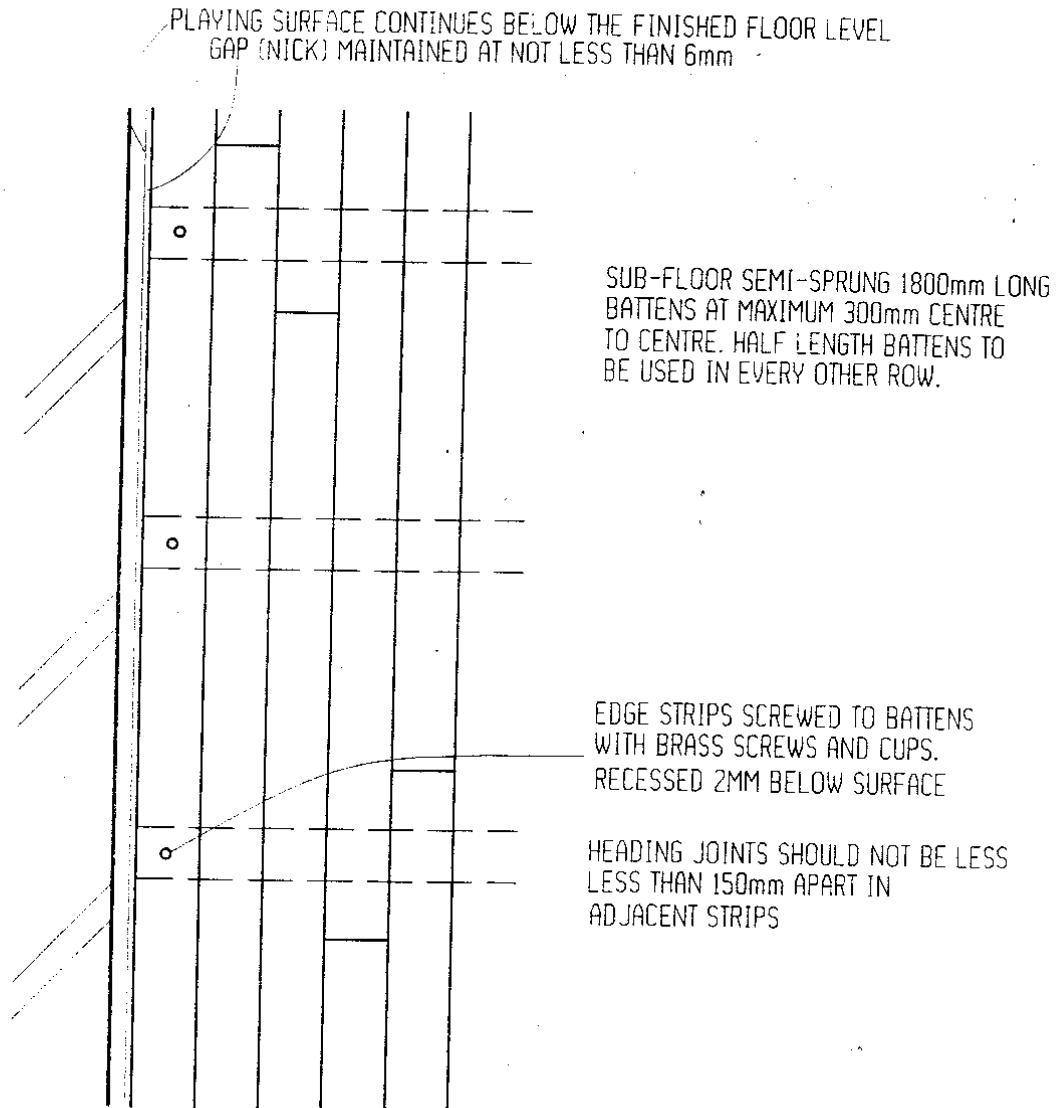
Please note that the information for the maintenance and provision of squash courts contained in the England Squash Technical Information Sheets apply to courts built in the United Kingdom only.

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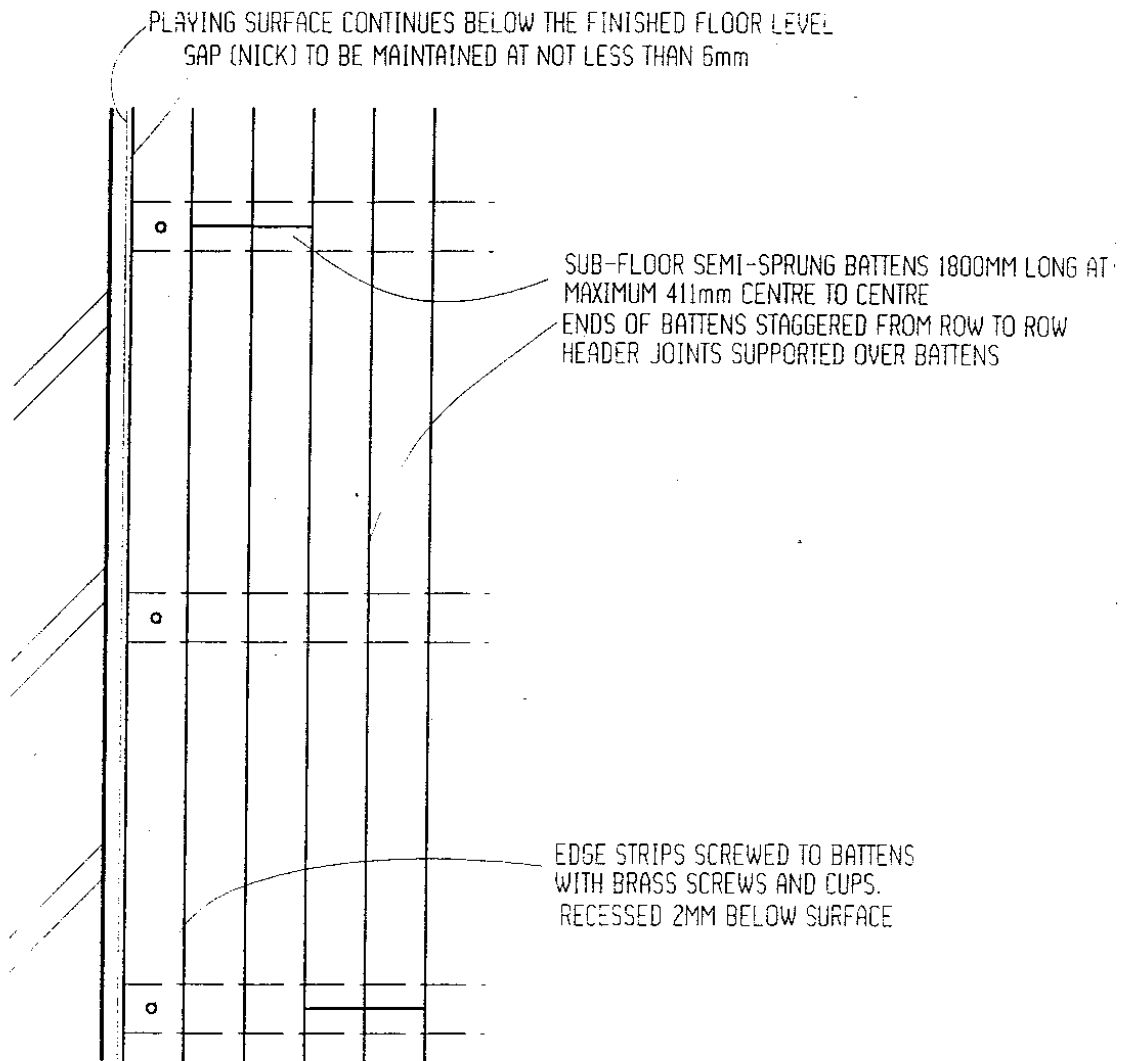
SQUASH COURT FLOORING LAYOUT FOR MAPLE FLOORS.



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SQUASH COURT FLOORING LAYOUT FOR BEECH FLOORS



NOTE: FLOORING SUPPLIED IN DOUBLE WIDTH STRIPS SO THAT
HEADING JOINTS OCCUR ON ADJACENT STRIPS.

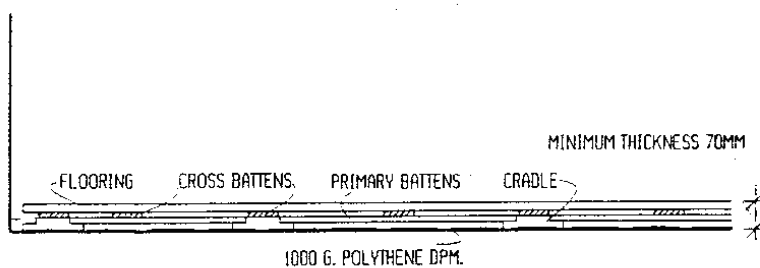
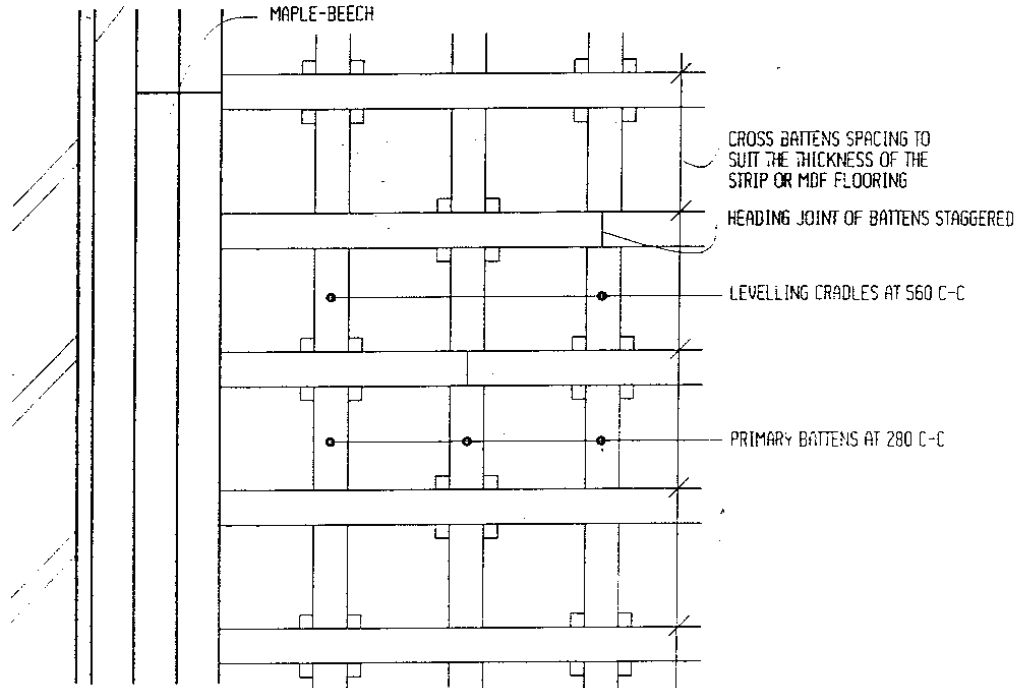
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TYPICAL CROSS BATTEN SYSTEM

FOR MAPLE AND BEECH

PLAYING SURFACE CONTINUES BELOW THE FINISHED FLOOR LEVEL
GAP (NICK) TO BE MAINTAINED AT NOT LESS THAN 6mm



PART SECTION THROUGH THE LENGTH OF COURT FLOOR