

Replacing artificial surfaces for flat green bowls

General

Artificial-surfaced outdoor flat green bowls facilities have been in existence in the UK since the early 1970's. They offer bowls clubs or local authorities surfaces which can be played on virtually all year round, with minimal maintenance in comparison to natural turf greens. This briefing note aims to highlight the key issues which need to be considered for facilities with artificial surfaces that are in need of upgrading or total replacement.

Why resurfacing may be needed

Inevitably, an artificial bowls surface (or carpet) will require replacement at some stage due to becoming worn through, exhibiting extensive stitched or bonded-seam failure, becoming too fast resulting from compaction, or having poor drainage resulting from compaction and surface contamination. Apart from carpet defects, the base construction itself may be the cause of surface irregularities affecting a bowl's travel. Many of the earlier greens have reinforced concrete bases which, over time, may have undergone movement and cracking, or were not installed to the stringent regularity and level tolerances now specified for artificial-surfaced bowls facilities.

'Performance Standard' requirements

The construction and performance requirements for flat green bowls facilities are set out in the World Bowls (WB) ¹ publication *Performance Standards For Flat Green Bowls Surfaces - August 2008*. The standard is primarily intended to be of relevance to clubs and local authorities requiring guidance when purchasing an artificial sports surface. Its requirements are intended to meet top-level competition, club and recreational standards. Parameters include green/ditch/bank dimensions, divisions of the green (i.e. width of rink), green speed, surface draw, surface evenness, design levels, infiltration rate, surface cushioning and surface friction. Applicants should specify compliance with this standard as a minimum.

How to get started

It is strongly recommended to engage the services of an independent specialist to conduct a feasibility report for the facility, including dimensions, a detailed regularity survey (using a 3 m straight edge) and a grid of levels (at 2 m centres) which will indicate whether the base complies with current WB requirements. World Bowls have two accredited test houses, one of which is UK-based that can prepare feasibility and condition surveys. The feasibility report will also give recommendations and cost estimates for refurbishment.

Likely construction and scope of work

The majority of artificial bowls greens in the UK will have concrete or porous macadam bases. Refurbishment can be as simple as removal of the existing carpet with only minor corrections needed to the base before replacement with new carpet, or it could also involve 'overlaying' the existing base with porous macadam surfacing (Photograph 1) as a practical solution to improving levels and regularity. However, where an existing base exhibits pronounced movement or cracking, there may be no alternative other than for total



Macadam base after checking before carpet installation



Finished green showing the relationship of the club, path, ditch and green



General view of the finished green

¹ www.worldbowls Ltd.co.uk

reconstruction. In this instance, a ground investigation survey by a geotechnical engineering company is recommended, to ensure the correct construction depth and technique is specified.

Other greens will have 'dynamic' bases i.e. blinding stone or sand onto a base layer of stone, and may only require re-levelling prior to carpet replacement. While dynamic bases can meet WB standards for regularity, they can however be damaged during carpet installation. They can also deform from bowls being dropped onto the carpet after installation, or by user footfall.

Dynamic base facilities will require rolling to maintain regularity throughout their life, whereas porous macadam facilities will not.

In cases where an existing concrete base exhibits pronounced cracking/movement and there are no funds to replace it, overlaying with macadam may cause further problems due to 'reflective cracking'. In this situation, overlaying with blinding stone or sand to create a 'dynamic' base may be a better solution because these can be rolled in the future, if required, should further movement occur.

Overlaying an existing base will involve fitting new kerb edgings (typically wooden) and possibly raising the banks surrounding the green, for WB compliance. Carpets are usually retained on carpet gripper strips which are secured to the vertical face of the ditch. The walls of the banks are surfaced in carpet, and the bases of the ditches are surfaced with rubber to prevent damage to the bowls (Photographs 2 and 3).

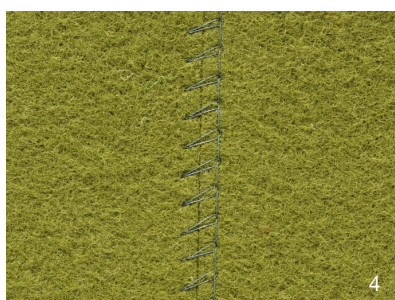
The range of surfaces available

Artificial bowls surfaces available include needle punch (Photograph 4 and 9), woven fabric (Photograph 8), sand-filled and sand-dressed carpets. Needle punch carpets, approximately 10 mm-thick, are the most commonly used on outdoor UK greens. These are generally installed above a felt or prefabricated foam shockpad², although some carpets have an integral shockpad backing. The shockpad controls the speed and draw of the green, and provides a degree of player comfort. While green speeds can vary from 10 seconds ('slow') to 18 seconds ('very fast'), many clubs prefer 'medium' green speeds in the range 12-14 seconds and specialist bowls surfacing installers will quote a speed for their product. The strips of carpet are generally installed at right angles to the direction of play so that the bowls travel directly across the seams (Photograph 4). If regular competition play is proposed in both directions, sometimes they are installed diagonally to equalise the affects of the seams on the bowls.

Certificate of compliance

Before the new carpet is installed, it is of paramount importance that the base is independently checked for WB compliance with regard to dimensions, regularity, deviation from design level, and porosity. If this is not carried out and problems are subsequently reported, then the new carpet will have to be removed at a later stage to conduct base repairs and alterations before relaying. This will result in unnecessary facility closure, possible damage to the carpet and potential liability issues with the contractor/installer.

Upon completion, the facility should be checked by the UK accredited WB test house to ensure compliance with their standards (Photographs 5 and 6). If successful, a *Certificate of Compliance will be* issued, which is normally displayed in the pavilion.



Stitched seam of a needle punch carpet



Testing of green speed by the WB test house



Testing of surface regularity by the WB test house

² Shockpad is also referred to as underlay by bowls carpet manufacturers and installers.

Example budget allowances

Resurfacing a typical 36 x 36 m green (six-rink facility), including removal of the old carpet and assuming no major base works are necessary, is likely to cost in the region of £35,000. A 50 mm-thick porous macadam overlay and new kerb edgings could cost an additional £25,000, although a 25 mm-thick layer may only be necessary which could reduce the additional cost to £17,000. These guideline figures do not include professional fees or VAT.

Making a decision

For product selection, the WB web site has a list of 'WB endorsed' surface products with details of respective suppliers and installers. These products have been tested by WB accredited test houses on completed installations and found to comply with their standards. Two UK-based companies are included on the list offering products manufactured in the UK. These companies also offer associated civils works should base rectification be necessary. It should, however, be possible to install any of these products, even if manufactured abroad, by contacting the supplier and requesting details of their UK agent.

There are also products available which do not have WB endorsement and are offered by other specialist UK installers. Whether an applicant is considering 'Endorsed' or 'Non-endorsed' products, for reference it is strongly recommended that completed UK installations are visited to 'play test' the product and assess workmanship, before making a final decision.

Sport England also has Framework Contractors for artificial sports surfaces who may be considered as part of a potentially larger project.

Maintenance essential

Maintenance is important and the installers recommendations must be strictly adhered to. Carpets do relax and require stretching shortly after installation, which the contractor carries out. Maintenance contracts with the installers can also be taken out.

By following the above guidelines, a bowls club or local authority can look forward to at least 10 years of use from a top-quality modern facility before replacement of the artificial carpet is necessary.

For further information, see Sport England's 'Artificial Surfaces for Outdoor Sport' Design Guidance Note at:

http://www.sportengland.org/facilities_planning/design_and_cost_guidance.aspx



Shockpad installed awaiting installation of carpet (and rubber sheet to be laid into ditches)



Woven fabric carpet above shockpad



Needle punch carpet above shockpad