



netball
NEW SOUTH WALES

Netball Court Surface Finishes

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A frequent recurring question from
Netball NSW Associations has been

**“Should we leave our newly resurfaced
or newly built courts as an
asphalt finish?
Or should we apply an acrylic coating?
(eg, plexipave)”**

The first point for all Associations to note is the choice and decision are yours. There is no directive in either the Netball Australia or State Facilities Policy or technical manuals to compel you to choose one or the other.

The second key point is that all surfaces will need to be replaced at some stage and each surface will have a different finish and different length of serviceable life.

Each week across NSW netball is played on several thousand netball courts that are either asphalt or asphalt with an acrylic coating and many would have had to be resurfaced or needing resurfacing at some time. The need to resurface is primarily caused by the lifecycle of asphalt.

The following information has been compiled by Netball NSW as a general guide towards understanding the dynamics of the asphalt court surface and also the application of an acrylic coating.

Asphalt

Hot Mix Asphalt (HMA) is the most commonly installed base for netball.

HMA is a combination of approximately 95% stone, sand, or gravel bound together by asphalt cement, a product of crude oil.

The asphalt is manufactured in a HMA manufacturing facility. Asphalt is heated to allow it to be combined with the stone, gravel and sand. The asphalt must be kept at a high temperature until it is laid and compacted. As it cools it sets. It is delivered to the installation location in trucks. It is installed using an asphalt paving machine. The asphalt paving machine has a vat at the front where the asphalt is deposited from the delivery truck. It travels through the machine via an internal conveyor. It is then deposited on the ground and spread by a levelling bar.

The asphalt paving machine varies in width between 2.7m to 6 metres. The asphalt is laid in a run down the court at the width of the paver from one side of the court to the other. This means there are seams in the asphalt pavement. Care must be taken to ensure the seams are correctly compacted and are level with the surrounding pavement. This will avoid seams becoming a point of weakness with linear cracking occurring along the seams as the HMA pavement ages.



Asphalt is not a structural product. It has compressive strength but it does not have significant tensile strength. It relies on a solidly, well compacted, well drained sub base to maintain its surface profile. Having compressive strength but low tensile strength means it will not depress or rise unless there is movement in the sub-base. Therefore, it is very important to have a well-engineered sub pavement.

HMA pavements are quite flexible and malleable immediately after installation but they will harden and stiffen as they age. The Asphalt surface slowly disintegrates through oxidisation, the effect of sunlight (Ultraviolet Radiation), warming and cooling cycles, traffic, water erosion, abrasive wear, subgrade seasonal movement and other environmental effects. The asphalt aging process generates lower adhesion between the asphalt binder and aggregates. This will result in stripping and ravelling of the asphalt which ultimately makes the surface coarse and the asphalt crack.

What started out as a smooth flexible pavement appropriate for netball becomes a hard coarse pavement with more dust and gravel appearing on the surface. This occurs progressively from date of installation and slowly accelerates throughout the whole lifecycle.

The project specifier (usually the Local Council) needs to be informed about the use of the asphalt area when specifying the asphalt mix. Pedestrian and Sports pavements have a different void content requirement compared to trafficked pavements (carparks or roads). The thickness of the asphalt will also vary depending on the area use and the distance from the manufacturing plant.

Acrylic Coatings

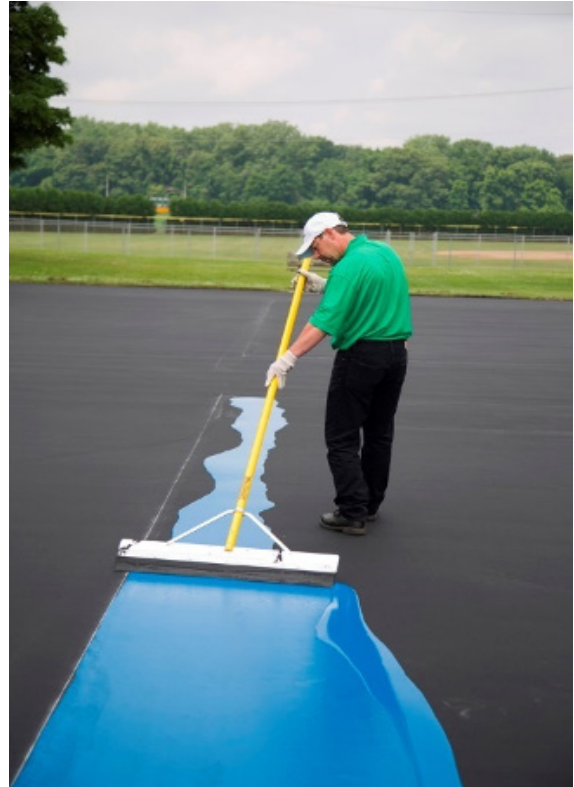
The lifespan of asphalt pavement depends on a number of factors which have been mentioned previously. A critical element in managing netball hardcourts is to try and optimise the playable life of the asphalt pavement as long as possible as they are costly to replace. Consideration of applying an acrylic coating then becomes part of that decision making process.

There are numerous acrylic coatings in the market place, the original acrylic surface was developed in the 1950s.

The 100% acrylic system is a combination of texture coats and finish coats, that provides a weather resistant surface for indoor and outdoor use.

Acrylic coatings have several roles and benefits. Its primary role is to reduce the impact of environmental and user effects. It can extend the life of the asphalt considerably.

As the acrylic coating is a liquid it penetrates the surface of the asphalt and fills the voids and further binds the surface of the asphalt, thus providing UV protection, reduced water penetration, less abrasive wear and stripping of the asphalt.



The acrylic coating provides appropriate surface texture for fast modern netball. It reduces abrasions, it is less fatiguing with sound traction for players.

It dries reasonably quick after rain. It has an anti-glare (matt) finish and will lower court temperatures by 5-7 degrees.

The courts have a smart and bright finish with high visibility and make the facility attractive and inviting to participants.

Acrylics are chosen for coating asphalt as they are a thin yet flexible coating that does not have the strength to crack or distort the asphalt surface. Acrylic coatings bond to the surface of asphalt or concrete and can extend the life of the asphalt netball courts through several asphalt resurfacing cycles. It can be easily renewed without costly relaying or reconstruction work.



There are significant environmental advantages in the installation of acrylic surfaces. Acrylic coating or recoating of asphalt typically requires 1 tonne of acrylic product per resurface. No construction equipment and minimal freight impacts. The coating life cycle depends on the number or coats in the original installation, usage and maintenance. On average Plexipave 3 coat system is resurfaced every 8-10 years

Asphalt re-sheeting typically requires the removal of 25mm of existing asphalt. Then the installation of a new 25mm deep layer of asphalt. On a per court basis that equates to 36t removed and 36t replaced. The asphalt life cycle depends on a great many factors and typically is profiled and re-sheeted every 15 years.

The environmental impact of asphalt re-sheeting, including the carbon footprint, is significant with major construction equipment, profiler, paver, rollers, loaders, trucks, quarried products and crude oil products.



Summary

HMA pavements are commonly used for outdoor netball throughout NSW. When new, the asphalt supplies an appropriate and well-draining surface for netball. However, the asphalt will weather and deteriorate over time ultimately requiring replacement.

The installation of acrylic surfaces protects the asphalt and significantly extends the life of the asphalt. The major difference in the play characteristics is that the texture is gained in the natural tackiness of asphalt and the gravel within the asphalt. With an acrylic surface, the texture is gained by the sand in acrylic. The sand provides a high grip surface but it does not have as high of a grip as new unsurfaced asphalt.

The decision for netball facility managers is therefore a multifaceted decision.

