



**MAINTENANCE
OF POROUS
MACADAM COURTS**

General Court Care Common To All Surfaces

Footwear

Good quality tennis shoes are recommended for all surfaces. Training shoes or any other type of footwear with bars, studs or sharp serrations on the soles should not be used.

Within these guidelines players should find it advantageous to have two or three pairs of shoes with different sole types. For instance a smooth sole that may give perfect grip on a dry surface may need to be replaced with a sole with more grip when the surface is damp or wet. Similarly some sole types may give too firm a foothold on some surfaces, which may overstretch knees and ankles etc. Trial and error will soon indicate the optimum sole for any given type and condition of surface.

It is useful to have a notice at the entrance of a court recommending, *inter alia*, the correct type of footwear. A player wearing incorrect shoes with aggressive soles can do a great deal of damage in a very short time.

It is also wise to avoid black soles on painted surfaces because these tend to leave unsightly black marks, which are difficult to remove.

It is advisable to have some sort of mat, scraper or shoe-cleaning device at the entrance to the court so that players can clean their shoes before going on to the court.

Furniture, Toys and Equipment on the Court

Most surfaces will be indented therefore damaged by heavy or sharp objects standing on the court.

Do not put umpires chairs, garden seats etc. directly on to the surface, but place boards or pads under the legs to help spread the load.

It is also essential to outlaw roller skates, skateboards, bicycles, wheel barrows or anything else children may bring on to the court and which could do damage to the surface. Family pets should be excluded for obvious reasons. Perhaps the simplest thing to do is to lock the gate! Machinery being used on the court surface e.g., compressors, water pumps etc. should stand still at all times on a piece of plywood or similar.

The Court Perimeter

A strip of ground at least two feet around the edge of the fence should be kept clear of vegetation at all times to form a barrier against plant and weed encroachment onto the playing surface. This may be done quite simply with an appropriate weed killer. It follows from this that climbing plant such as roses or clematis should not be planted to grow up the surrounding fence. Not only may their roots disturb the playing surface and their leaves pollute it, but they may cause severe damage to the fencing during high winds.

Shrubs, trees and hedges should be planted as far back from the court as possible, certainly allowing sufficient room between surround fence and plants for maintenance to be carried out between them.

Tree Roots

Trees, hedges and shrubs to be planted close to the court should be chosen carefully to avoid any with aggressive root systems e.g., poplars, sycamores and similar. These can cause major disturbance of the surface. If their use is essential, the insertion of a root barrier between the trees and court is strongly recommended, just as it is when the court has to be sited near mature specimens.

Overhanging Branches

Branches of trees that overhang the court invariably cause problems. Water dripping from the branches may cause slippery or discoloured patches, encourage the growth of algae or moss and sometimes even erode the surface. The secretions of aphids court the court surface with a sticky blackish surface substance, which may impair foothold and encourage algae etc., and, in severe cases, damage the surface paint. Last, but my no means least, the droppings of larger birds can cause damage especially to painted macadam surfaces during the summer months. For all these reasons overhanging branches should be pruned well back.

Substances to Keep Away From Tennis Courts

Cigarettes

Make your court a 'no-smoking' area. Cigarettes are unlikely to cause a fire hazard, but ends will leave unsightly burn marks on most surfaces.

Chewing Gum

Definitely to be banned! Chewing gum is invariably difficult to remove, although some advise the use of ice-cubes which hardens the gum and allows it to be broken away more easily.

Petrol, Oil and Solvents

Petrol, oil or solvent spillages will seriously damage most surfaces, especially those that are bitumen bound or are superimposed upon a bitumen bound sub-base. Great care should be taken to ensure that any machinery used within the court area e.g., a garden vacuum cleaner, is clean and in good repair and does not drip petrol or oil. It is strongly recommended that machines be removed from the court surface before filling with petrol, diesel or oil. In the event of a spillage immediate copious irrigation with tepid water and detergent may minimise the damage.

Salt and De-icing Agents

As a general rule salt or other de-icing agents should never be used to remove snow or ice from tennis courts; their effect is unpredictable and they may cause serious damage.

The Net and Net Posts

Do not over-tighten the tennis net. This will cause damage or even breakage of the steel cable and in severe cases may pull the net posts inwards, occasioning a very costly repair.

A common cause of the net being over-tightened is that the centre band is too short preventing the correct net height being achieved. The centre will be provided with a screw adjuster and this should be slackened to allow the net to be adjusted correctly, and then carefully re-tightened.

The correct height for the net is 0.914m (3'.0"). The traditional method of using two rackets to provide the correct measurement is no longer practical, because of the diversity of modern rackets. A gauge stick should be available at all times for this purpose.

The net should always be slackened after use to reduce to reduce strain on the equipment and to prevent low temperatures at night causing the cable to contract and be stressed still further.

It is also a wise precaution to wrap the net over its headband to prevent the net being abraded by the surface as it blows in the wind.

If during the winter the court is not to be used, both net and posts should be removed and stored, ensuring that they are first carefully dried.

The winding mechanism should be greased occasionally to ensure smooth and quiet operation and the posts checked for rust. It can also be helpful to lightly grease the post sockets and that part of the posts that fits into the post sockets. This can greatly facilitate the removal of the posts, especially if they are left in position for long periods.

Weeds

Before constructing the court, general weed killer is applied to the site, following the manufacturers recommended coverage rates. This is usually effective but sometimes some weed growth will occur, either involving highly resistant species or wind blown seed. It should not be automatically assumed that the weed killing process has, therefore, been carried out inefficiently. It is simply that, in spite of all the wonders of modern science, there is no safe herbicide in existence, which can be guaranteed to kill all weeds on tennis court sites prior to construction and to ensure that no subsequent growth will take place. Such weed growth that does occur usually represents a temporary inconvenience and only very rarely constitutes a significant threat to the court.

The extent to which weeds may constitute a nuisance will also depend very much on the type of surface and the location of the court. Weeds are virtually unheard of on porous concrete surfaces and are rare on impervious acrylic surfaces. Windblown seedlings can sometimes establish themselves in sand-filled, artificial grass surfaces, but usually wither away quite quickly. It is on bitumen-based surfaces, such as 'grey-green' or porous macadam, where troublesome weeds are most likely to be encountered.

Whilst it would be wrong to give the impression that weeds constitute a major problem, they will appear in a small number of cases, more especially in the year following construction. The secret is to deal with them promptly and not to allow them to become established.

Courts sited in fields, paddocks or other weedy areas or adjacent to suckering trees etc., may be at increased risk beyond the immediate post-construction period. This is because of tree roots giving rise to suckers, and certain weeds such as creeping thistle can spread rapidly underground and may re-infest the tennis court site thereby. In these circumstances, it is advisable to maintain a weed free area around the perimeter of the court by applying a good, general weed killer regularly to a strip of a minimum width of 2 feet immediately outside the court surround fencing. This will check underground growth before it reaches the court.

Treating Weeds

All grass, weeds, seedlings and shallow-rooted plants:

Apply a paraquat based weed killer such as 'Weedol', thoroughly wetting the foliage of the weeds. The weeds will be quickly scorched, shrivel and die. Weedol works most quickly in bright sunny weather.

Note: Any surplus of a paraquat solution should be disposed of safely in accordance with the manufacturers recommendations.

All deep-rooted weeds, e.g. thistles, convolvulus, bindweed, mare's-tail, tree suckers etc:

Apply a systematic weed killer such as 'Tumbleweed'. Spray all the growing parts of the weed thoroughly with the solution. These weed killers work by being carried down to the roots of the plant and, therefore, are slower acting than paraquat-based herbicides. The weeds should be left in situ until the weed killer has taken effect. Systematic weed killers will only work really effectively on young, fast growing weeds and will be less effective late in the summer when the weeds have hardened-off and the growth has slowed down.

Note: Again any surplus should be discarded as the recommendations of the manufacturer. Weed killers are poisonous and do need to be used and discarded with care.

General Hints:

Treat weeds as soon as they appear – do not let them become established.

When the weeds are dead they may be carefully removed. Great care should be taken not to disturb the surface of the court. A sharp, narrow-bladed knife may be useful for cutting off thick weed stems below the surface. If the weed has lifted the court surface, it should be carefully trodden down with the flat of the foot once the weed has died.

If very deep-rooted weeds, e.g. mare's-tail, persist in spite of the spot treatment described previously, contact us and ask for help, or contact a specialist weed-killing company.

Maintenance of Porous Macadam Courts

Most porous macadam tennis courts consist of a permeable foundation of broken, graded stone on which is laid the macadam wearing course or playing surface. This is then coated with a coloured, acrylic surface coating. The play lines are painted onto this coloured surface, but self-adhesive tapes may also be used. Sometimes a bitumen-bound base-course is interposed between the foundation and wearing courses.

The resulting tennis surface is fully permeable, hard wearing, “all-weather” and requires relatively little maintenance, but however modest this maintenance requirement, it is nevertheless of vital importance if the surface is to remain good to look at, good to play on and long-lasting. Indeed the installer's guarantee is likely to be conditional upon his recommended maintenance requirements being carried out with reasonable efficiency.

What maintenance and why?

The maintenance procedures are designed to ensure the following:

- That the playing surface is scrupulously clean
- That the free drainage of surface water is maintained throughout the life of the court
- That the court looks attractive and well cared for at all times, and achieves a reasonable life span

These objectives are achieved by:

- Sweeping or vacuuming leaves and other debris from the surface
- Occasionally washing the surface
- Applying prophylactic treatments of mosskiller

Keeping the Surface Clean

Leaves, tree flowers, pine needles, fluff from tennis balls and other detritus should not be allowed to remain on the surface for any length of time. If this happens they rapidly rot down and settle into the interstices of the surface impairing drainage and providing a growing medium for algae and moss.

A wide soft broom can be used to sweep the surface, a rubber-tined rake is usually better, albeit rather slow and arduous. Best of all is a mechanical garden vacuum cleaner, which will greatly speed up the operation and do it more efficiently. Mechanical leaf sweepers can also be good. The equipment should be well maintained and carefully operated to avoid contamination of or physical damage to the surface.

At least once a year the court surface will benefit from a vigorous wash. This not only has the effect of keeping the surface interstices clean and free draining but is also essential to maintain a good foothold. Courts near busy roads are particularly susceptible to becoming coated with “traffic film”, whilst those near trees may become coated with “honey-dew” from aphids. The resulting black film from either cause can make courts very slippery after rain.

If the water pressure is reasonably high, washing can be carried out with a domestic hosepipe assisted by a mild cold water detergent. Even more effective are cold water pressure washers, available from most equipment hire outlets. However, these must be used with care, the greatest attention being paid to establishing that the process does not dislodge the coloured surface coating or stone chippings. Again, mild and non-foaming detergent increases the efficiency of the operation.

Steam cleaners should not be used. If the court surface has become very badly sealed and does not respond satisfactorily to this treatment, consult the installer or a firm that specialises in cleaning tennis courts.

The Post-Construction Period

The installer will have indicated when play can commence on the new surface, and his instructions should be meticulously followed. Thereafter, for the first few months the surface will still be slightly “tender” as bitumen and surface coating achieve their final hardness.

Whilst the surface can be kept in full normal use, as with a new motor car, a little extra care and vigilance will pay dividends: in particular, unsuitable footwear and other bad habits like “racket abuse” should be outlawed, especially in warm weather.

On a very new court water will sometimes stand on the surface after heavy rain. This is a very temporary phenomenon resulting from surface tension, and should not cause concern unless it persists.

Play in Hot Weather

Most modern macadam surfaces contain special additives to raise the temperature at which the courts will soften in hot weather. The surface coating is also beneficial in this respect. Nevertheless the courts may still soften in hot weather especially in the first season after construction. Thereafter the tendency to soften should rapidly diminish.

If the surface softens stop play immediately because serious damage can result from continuing to play. The first sign of the problem is usually when black marks begin to appear as a result of the paint being rubbed or scuffed off. It is sometimes possible to cool a hot surface by hosing it down with cold water to allow evening play to take place.

Softening is a phenomenon usually confined to the first season, but, even thereafter for a year or two, the surface should be checked if very hot weather is experienced.

Bird Damage

An unusual nuisance that may sometimes be experienced is damage caused by bird droppings. This is usually only a significant problem:

- During the first year or two of life
- In the summer
- Where branches overhang the court

Pigeons are the usual culprits. The droppings adhere to the surface, dry out in warm weather and shrink. In the process the paint coating and even stone chippings may be pulled off.

The remedy is to cut back overhanging branches. If the droppings are already insitu they should be hosed away. Damaged spots should be carefully firmed with the foot and touched up with surface paint.

Snow and Ice

Snow and ice should not prove harmful and can be allowed to melt through in due course. Powdery snow can be swept away using a wide soft broom or wooden scraper. Metal shovels or scrapers should not be used because they may damage the surface, as will mechanical snow removing equipment e.g. mini tractors etc.

Do not use salt, urea or other chemical de-icing agents. Their effect is unpredictable and they can cause severe damage.

Maintenance Schedule

Daily – at the end of the day's play:

- Make sure the net is slackened and rolled up in the middle
- Make sure the gate is shut.

Weekly

- Clear leaves and rubbish from the court

Monthly

- Deal with any moss or algae

Annually

- Wash the court
- Apply mosskiller
- Call in the installer if any aspect is causing significant concern

Note: these are minimum recommendations.

Common sense and careful observation should prevail. If any serious doubt exists about the effectiveness of the maintenance regime or the condition of the court(s), call in the installer immediately. It is better to be safe than sorry.

ENVIRONMENTAL REQUIREMENTS

For obvious health and safety reasons and also playability of the courts, it is essential that there is no water build up on the court surfaces. The drainage system works by allowing the water to find a path down through the hard surfaces and into the ground below.

The tarmacadam is a porous substance, which means it allows water to soak through the pores into the sub-base. Before the installation of the new surface the existing surface has been spiked with holes at regular intervals that have in turn been filled with pea-shingle to form drainage holes beneath the surface.

When the theory of the tennis court drainage is understood it becomes clear how important it actually is to keep the courts clean. Besides preventing the surface from being slippery, it ensures that the drainage is working to its full capability.

The pores in the macadam surface become blocked by general dirt, which will cause the water to start 'puddling' on the surface, or simply saturate the surface making it very slippery. Not only does this create a health and safety risk, but it would also mean that the courts would simply not be playable until the water is drained.

Over time the tennis courts will need some maintenance work for example, high pressure washing. During this procedure harmful substances such as **Armillatox** would be used in order to kill moss. Although once applied the chemical is considered safe it is still important to ensure that the removal of any excess chemicals from site is performed to a safe standard. For this purpose a reputable and qualified organisation should be selected to avoid any hazardous situations.