

PITCH IN

Pitch In to reduce microplastic
loss from artificial sports pitches:

Guidelines for Owners and Maintenance Teams



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Thanks for reading our guide to reducing microplastic loss from your pitches. If you're interested in this guide, you probably own or manage a synthetic turf field. These simple recommendations will help to make sure any infill you use stays on the pitch, with ideas for adding physical barriers, making small changes to your standard maintenance routines and by working together with pitch users. We hope that these small changes will not only protect the local environment of the pitch, but may also save resources, while keeping the pitch in the best possible condition for players.

All pitches are different, so we've created an [online tool to help you generate your own Microplastic Reduction Plan for your pitch](#). Simply pick the elements of the guide that suit your circumstances and we will create a plan matching your own personalised set of goals.

Once you have created your action plan – we'll celebrate your commitment to keeping plastic on the pitch by including your club/school in our nationwide 'Pitch In Progress Map'.

Health and Safety on the Pitch

Health and Safety of pitch users will always be priority in design / build / retrofit of pitches. Any changes to the pitch should pose no additional risk to players and obligations for health and safety must not be compromised by any microplastic barriers. For example, all pitches in the UK have a legal obligation to include a run-off boundary at the pitch edge for health and safety reasons.

You may also have heard about potential health and safety concerns about the use of recycled SBR rubber as infill on pitches, due to the potential for heavy metals and other chemicals leaching from granules. A review of studies by Health Protection Scotland concluded that evidence does not currently support the hypothesis that artificial turf SBR poses a significant health risk¹. More information about ongoing studies and recommendations to further reduce risk of exposure can be found on the website of the [European Chemicals Agency \(ECHA\)](#). Recommendations include encouraging users to wash hands after using the pitch, and monitoring levels of PAHs present in SBR granules on your pitch².

¹ Health Protection Scotland, Nov 2017. [Evidence Assessment on the Potential Health Impacts of Tyre Crumb used in Artificial Ground Surfaces](#)
² <https://echa.europa.eu/-/recycled-rubber-infill-causes-a-very-low-level-of-concern>

Part 1. Adding physical barriers to stop infill loss

Below are some suggestions for simple options for retrofitting physical barriers to granule loss for existing pitches. *NB any physical barrier should be designed so that it does not pose a trip hazard to players (see Health and Safety box-out)*

- **Install a simple ground-up barrier around the perimeter of the pitch area**, to reduce loss of infill to the surrounding environment – a perimeter strapping, solid or fine mesh, (circa 6 inches/150mm in height) included at the base of the perimeter fence
 - *NB perimeter fencing should be of suitable standard to last, an appropriate height for ball retention and most critically safe, i.e. far enough back from the playing lines not to be a trip or head strike risk or hazard. – Suggested 5m from edge of play (3m run off plus a further 1 – 2m of hard stand for spectating purposes)*
- **Add filters to drains.** Consider installing [removable filters](#) or [advanced silt traps](#) in storm drains surrounding the pitch to ensure granules are not lost to drainage water.
- **Consider fitting a brush-off zone at the exit** to collect loose granules as users leave the pitch. *NB this is already a Sport Scotland Recommendation.* Options include:
 - Handheld brushes
 - Boot brushing stations
 - Stamp mats / ‘cattle grid’ style exit
 - Provide brushes **within** the pitch perimeter to allow users to remove loose granules before leaving the pitch.
 - Existing brushes **outside** the pitch should be surrounded by a physical barrier to stop granules escaping to the wider environment.

Part 2. General maintenance

The information provided below will help maintenance teams adapt their current care programme to minimise any loss of infill. Raising awareness with the team may lead to new ideas for how to prevent granule loss, which could be included in the personalised action plan for your pitch.

Handling Infill

- **Take care when topping up infill.** When new infill is delivered or applied to the pitch, choose the best location to place the infill so that it is not dispersed into the environment by wind, rain or maintenance activities. If there is a danger of infill escaping to the surrounding soil or grass verges, temporarily cover/shelter the verge. Do not overfill the pitch. Ideally the grass pile should protrude 15-20mm above the infill layer so that the grass fibres keep the infill in place and less microplastics escape into the environment.
- **Store your infill safely.** Improve storage of new and used rubber granules, to make sure these are less likely to be lost by accidental spillage. For example, use a solid box storage system rather than plastic bags. Ensure the vessels used for storage are sealed and weather proof. This also prevents the material from being contaminated by leaves and other organic matter.



Figure 1 A ground-up barrier at the base of the fence perimeter can stop granules like these escaping the pitch.

Equipment

- **Get the right tools.** Make sure that your maintenance equipment contains the necessary tools for recovering infill and preventing infill loss, for example adding a brush, rake, Hoover, and filters

Leaves

- **Take care with leaf-blowers**
- Consider using rakes instead of blowers if there is no perimeter barrier in place to keep the microplastics on the pitch.
- If using a leaf-blower, blow the leaves from the outside to the centre of the pitch where they can be raked up.

Sweeping/Brushing

- **Redistribute infill on the pitch regularly.** Regular grooming and drag-matting/brushing of the pitch is essential to keep infill evenly distributed and prevent excess loss of infill from the margins of the field. Infill tends to migrate to the margins of the fields from where it more easily escapes into the environment.
- **Sweep up escaped granules.** Make sure loose granules at pitch edges are regularly swept up and, if reusable, returned to pitch surface.
- Use Power Sweeping machines that can collect and sort the rubber granulate for re-use. This cuts down on cost by reducing the amount of new granulate added to the fields each year. Machines can be shared across clubs further cutting down on costs.
- **Clean equipment carefully.** Thoroughly brush or hose down sweeping/deep-clean/decompaction machines before leaving the pitch as infill will cling to the tyres and frame of the machine and be transported away from the pitch.
- **Cover drains during maintenance work.** If infill is dispersed into perimeter gutters and drains during maintenance activities, consider temporarily covering these before starting with sweeping/brushing

Waste disposal

- **Debris from on or near the pitch will contain microplastic.** The following materials will contain microplastics. Where the material can't be cleaned and granules returned to the pitch, it must be disposed of as rubbish (i.e. they should not be composted or returned to the environment):
 - Leaf debris
 - Mixed debris from sweeping
 - Sludge from gullies and drains around the field

Snow

- **Avoid removing snow from the pitch.** Snow removal from pitches can remove a huge amount of pitch infill. When it snows, consider leaving the snow on the pitch until it melts. If this is not an option, move the snow to one side of the pitch, so any granules that melt out remain on the pitch.
- **Never move snow from the pitch onto grass or soil outside the pitch.** If the snow must be removed from the pitch, be sure to place it on a hard surface or tarp (not the grass!) so that the rubber granules can be collected once the snow melts and re-used.

Part 3. Help pitch users to keep the infill in

- **Provide information to users** using posters on the edge of the pitch to raise awareness and help players reduce microplastic loss, including
 - Why it's important to keep granules on the pitch
 - Instructions on how to use any brushes / cattle grid systems available
 - Instructions to dispose of any granules found in the bin and not outdoors or down the drain.
- **Provide brushes to help players remove granules before leaving the pitch.** Provide brushes for players to use within the protected pitch perimeter. Where possible install 'boot brushing' stations.
- **Put filters in shower drains.** Place granular traps in changing room drains - this will prevent microplastic being lost with shower water
- **Collect granules from kit.** In the changing room, include a collection bin for loose granules found in shoes and kit.

Pitch In

We have created a Community Toolkit to help clubs show they care about microplastic and spread the word about reducing it. Sign up via our website to download the free poster and activities and become part of our **Pitch In community; keeping plastic on the pitch.**



Figure 3 An example of a portable boot brushing station (image from sportsequip.co.uk)