

Use and Correct Aftercare of Loose Impact Absorbing Surfaces

General

- It is most important for loose impact absorbing surfaces (LIAS) to be correctly installed in accordance with the manufacturer's recommendations.
- EN 1176 Appendix A.1, sets out examples of general specifications for LIAS products.
- To comply with the Standard, all LIAS must be installed and maintained at a 200mm - 400mm finished, settled depth, depending on critical fall height of the equipment together with results of laboratory tests.
- One of the most common causes of unsatisfactory LIAS performance, is inadequate simple maintenance.
- It is a legal requirement for all play facilities and surfaces, to be kept free from hazards and for prompt action to be taken to remove hazards as they occur. Play areas therefore need to be inspected and maintained on a regular basis.
- The Department of Environment, Health and Safety Executive and British Standards Institute, recommend that a hierarchical maintenance inspection, both of play equipment and surfaces should be carried out as follows:
 - A daily or weekly visual inspection.
 - A monthly or quarterly recorded inspection.
 - An annual independent expert inspection.

Bark

- Not all bark is the same. Bark from different tree species have quite different characteristics, in terms of texture, performance and durability.
- The two most common types of bark used in the UK are:

Granular bark - predominantly pine species (Pinus).

Elastic or supple bark - predominantly spruce species (Picea).

Granular Bark

- Granular pine bark provides the most effective of all LIAS play surfaces.
- Once laid, the performance of granular particles contributes to the surface's ability to be practically self-levelling when being played on.
In areas of particularly high play activity, weekly levelling with a rake, is recommended.
- In practice, the bottom 100mm of a 2300mm layer of granular bark, tends to naturally adhere together, to form a firm, yet yielding, free drainage base.
The top 50-100mm surface layer naturally remains loose and does not matt tightly.
The upper surface "gives" easily under initial impact, whilst the base layer tends to cushion the residual impact of any fall.
- As the upper surface tends to wear, bark pieces of the lower layer will naturally become dislodged, to renew and maintain the surface layer.
- The surface will gradually wear down, depending on use.
As LIAS have high impact absorbency, resulting from the natural ability of the surface to "move", it is important to have readily available, additional bark to top up to the original level, to ensure that the desired critical fall height rating is maintained.

Elastic or Supple Barks

- LIAS surfaces consisting of all, or mainly elastic-typically spruce bark, initially provide reasonably good impact attenuation.
Generally their critical fall heights are lower than granular barks at all installation depths .
- Their texture causes them to initially matt together, but their natural flat shape, rather than granular particles, causes them to consolidate very tightly.
They retain some of their impact absorbency, but their drainage ability rapidly diminishes.
Topping up is best carried out prior to "forking" or "turning", so that the whole surface, old and new, forms a homogeneous mass of equal texture and consistency throughout.
The new rejuvenated bark has most structure and when mixed with the older material, will initially enhance the drainage characteristics.
Topping-up as required and totally replace every third or fourth year.
The essential need to "turn" the entire surface, greatly increases the maintenance costs.

Continued

Use and Correct Aftercare of Loose Impact Absorbing Surfaces (Continued)

Wood Products

- There is a profusion of products available of varying species and particle sizes, ranging from carefully graded conifer chips, conifer peelings, to chopped up old pallets. Some products being offered are totally unsuitable for use in play areas.
- The chosen product must be well graded to eliminate most dust and fine material, large chunks and long thin slithers.
- Properly graded wood chips perform in a similar manner to granular bark. The lower 100mm of a 200mm surface will loosely bond together, allowing good drainage. The upper 50-100mm will remain loose and to some extent, be partially self-levelling. Heavy wear areas will need additional material to be raked in from the surrounding areas, into any depressions, usually on a monthly basis, depending on use. Wood type products are less durable than bark. Their structure will rapidly degrade, necessitating total replacement. Mixing old and new wood surfaces is not usually recommended.

Sand

- Many different types of sand are available. However, unless the sand has been properly screened and washed, it is likely to stain children's clothes.
- A suitable product should be rounded and have a particle size of between 0.2-2.0mm.
- Sands are naturally self levelling, with the exception of small foot print depressions, which will remain.
- Sand is attractive to animals, particularly cats, so in built-up urban areas, it must be inspected daily and cleaned with disinfectant, if necessary.
- For a typical surface, budget for total replacement, or screening of all fines, every six to eight years.
- Increased wear on timber equipment, painted surfaces, moving joints and bearings will occur.

Pea Gravel

- Pea gravel is so called because it resembles the size of large garden peas.
- Supplied in various particle size ranges, although BS EN 1176 quotes a particle size of 2-8mm diameter.
- Pea gravel is hard wearing, but has unproven critical fall height characteristics.
- It is self-levelling and totally free draining.
- Other than the need for litter removal, it has a low maintenance requirement.
- It is extremely tiring to walk on, practically impossible to run on, and under five year old children negotiate it with extreme difficulty.
- Bottles can be smashed or thrown hard against it. It can be swallowed, get stuck up noses or in ears. It can cause safety problems on hard surfaced pathways and damage maintenance machinery.



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