



**roadstone**

## **Maintenance, cleaning and sealing of concrete paving units**

Concrete paving units should have regularly maintenance to maintain the surface properties and enhance the overall performance. Like any surfacing material, these can occasionally suffer from staining, due to general wear and tear dirt from other sources. Owing to the nature of construction, and the general use of kiln dried sand to created the interlock, there can also be some vegetation growing in the joints, or moss / lichens on the paving themselves in shaded / damp areas.

### **Health and safety**

As some of the off the shelf cleaners contain acids / chemicals, please ensure that you follow the manufactures instructions fully.

Always wear the recommended protective clothing.

Always work in a ventilated area.

### **NOTE:**

**Prior to undertaking any maintenance / cleaning, always test an area prior to use, in a small inconspicuous area first, to ensure there is no adverse effects on the paving.**

**While this document is offered as a guide only, Roadstone does not accept any liability for instances occurring from its use.**

### **Initial maintenance**

During the very early life of the pavement, the joints between the units should be regularly “topped up” with jointing sand to replace the sand consolidated by rainwater. Until the joints have become semi-impervious due to the sealing effect of detritus, the pavement should only be brushed by hand. Mechanical sweepers, and in particular sweepers with high suction forces should not used, since there is a risk of loss of jointing sand from between the units.

### **Cleaning of pavements**

General dirt should be removed by regular brushing. Where the dirt has reduced the intensity of the colour of the surface material it should be scrubbed with detergent and warm water either by hand or by using an industrial cleaner. All the detergent should be thoroughly washed from the surface on completion of the cleaning and the resulting run-off should be carefully channelled to either drainage points or containers from where it can be safely disposed.

If a power hose is used, care should be taken to avoid the removal of the jointing material (sand or mortar). The hose should be on a medium setting or lower, and should NOT be aimed directly at the paving surface, but at an angle of 30\* approximately. Some high-pressure jetting machines have been known to mark/damage the surface of certain types of paving material, so a small area should be tested before commencing on the larger area. Where units have been sealed, general dirt and grime should be removed by seasonal washing. Replace any washed out kiln dried sand (available in 25Kg bags from Roadstone) once the paving has dried.

### **Weeds**

**Avoid the re-occurrence of weeds by removing them once they appear. If a weed killer is required, test in a small area prior to use. Always follow the manufactures instructions.**



### **Moss, lichens and algae**

Moss, lichens and algae tend not to grow on concrete and natural stone unless the area is heavily shaded, is under trees or is not laid to an adequate fall.

Where undesirable growth of moss, lichens or algae has occurred the area should be treated with a proprietary chemical in accordance with the manufacturer's instructions. It should be noted that such products take some days to be effective and are most effective when applied during a spell of dry weather. Any thick growths should be scraped off and the chemical should be well brushed in. Some treatments leave a residue to discourage the re-growth of the moss and algae, but this is only of limited value if the conditions leave the paving damp and in shade.

### **Efflorescence on concrete products**

This is a naturally occurring phenomenon, for which Roadstone are not responsible. Efflorescence is not a manufacturing fault and in no way affects the structural integrity of concrete products.

Efflorescence or lime bloom is a transient phenomenon of OPC (Ordinary Portland Cement). Its effect is to lighten the colour of the concrete. Efflorescence, also known as lime bloom, can appear as a white deposit covering part or the entire surface. The result of lime deposits is the lightening of the surface colour, the heavier the deposit, and the lighter the surface colour. Except in very severe cases, the phenomenon disappears completely when the blocks are wet and reappears as the blocks dry out.

Efflorescence is a temporary, naturally occurring phenomenon that occurs to a varying extent on all cement based products. Mortar is particularly prone to efflorescence and this can contaminate other products. It is formed by soluble salts from the cement migrating to the surface where they react with the atmosphere to produce the white film (calcium carbonate). Individual crystals are very small and are not firmly fixed to the surface.

The phenomenon is temporary, and will with time disappear as a result of normal weathering and trafficking. Efflorescence should be removed using an acid washing agent, e.g. dilute hydrochloric acid. The area should first be thoroughly soaked with clean water and a commercial acid washing material (available from most builders' merchants) should be immediately applied in accordance with the manufacturer's instructions.

As the efflorescence dissolves, there will be some frothing (effervescence) and once this has finished the whole surface should be rinsed thoroughly with clean water, taking care to dispose of the run-off safely. In some cases, more than one treatment may be required.

### **Cement staining**

Every effort must be made to ensure that cement staining does not occur, as the cement will "bond" to the face of the paviour. Where cement staining has occurred, the pavement should be thoroughly wetted with water and a hydrochloric acid solution of up to 10% concentration poured over the surface. Some time should be allowed for the reaction to occur. When the effervescence has finished, the surface should be washed with clean water. The treatment should be repeated if necessary.



### **Sealing**

Where the surface has been treated with a specialist pre-polymer urethane sealer/sand stabiliser it should be cured in accordance with the manufacturer's recommendations before allowing trafficking

NOTE : This type of treatment can prevent sand erosion by vacuum sweepers. Sealants and joint stabilisers can have an effect on the colour of the paving and its slip/skid resistance and can require on-going maintenance during the life of the pavement. The use of certain sealers can prevent most stains occurring on the surface and aids cleaning.

### **Beverage stains**

Beverage stains should be removed by scrubbing the area with hot soapy water. If the stain is persistent, household bleach should be applied and the area should be rinsed with clean water, taking care to dispose of the run-off safely.

### **Chewing gum**

Newly discarded gum should be scraped off using a scraper. Hardened gum should be frozen and chiselled from the surface of the pavement, using a hot water/steam cleaner or special jet blasting equipment.

### **Maintaining slip/skid resistance of surfacing material**

To maintain the slip/skid resistance of surfacing material, the surface build up of dirt and grime should be removed by regular sweeping and washing.

### **Rust stains**

The source of rust staining should be identified and a means of eliminating the source should be put in place.

To remove the rust stains water should be applied to make the surface wet and then the affected area should be treated with a 5–10 % hydrochloric acid solution or other similar solution. Since acid attacks concrete and can leave a slightly roughened surface, care should be taken when using the cleaner and all manufacturer's instructions should be strictly followed. After cleaning, the area should be washed off with clean water shortly and care should be taken to dispose of the run-off safely.

### **Oil stains**

Oil penetrates readily into concrete pavers, therefore any spillages should be removed promptly with an absorbent material, e.g. paper towels, cloth or granules to prevent staining. For large areas of spillage, sand or sawdust should be immediately applied to absorb the oil. It should be noted that this does not directly remove the spill material but keeps it on the surface and aids in its subsequent removal.

DO NOT wipe the oil - this drives it into the concrete and spreads the spill over a larger area.

If the stain persists, then an emulsifying degreaser should be brushed onto the affected area, and left for a period of time, in accordance with the manufacturer's instructions. The emulsified oil should be washed away with plenty of water.

Alternatively, the surface may be scrubbed with a strong detergent, which should then washed away with hot water. However, care should be taken since this method can result in the leaching out of some pigment from concrete products.

**Graffiti and paint stains**

Fresh wet paint should be soaked up with an absorbent material such as paper towels, cloth or granules without wiping the paint to prevent spreading the stain. The area should be treated with a suitable solvent, such as white spirit. The area should then be washed with a degreasing agent, taking care in the disposal of the run-off material.

**Smoke, fire and tobacco stains**

Smoke, fire and tobacco stains should be removed by scrubbing with soap and water. Where the stains persist, a mixture of scouring powder and household bleach should be applied

**Scuff marks from vehicle tyres**

Scuff marks from vehicle tyres should be removed by steam cleaning, or by scrubbing the area with hot water and a strong detergent solution.

