

## Removing Stains from Concrete

This Information Bulletin sets out procedures for removing common stains from concrete surfaces.

### Warning – When Using Chemicals

- Diluted hydrochloric acid, chlorine bleach or chemically-based cleaning agents can be hazardous if used incorrectly.
- Read the supplier's instructions before use
- Observe safety advice and recommended dilution rate.
- Always add acid to water, not water to acid.
- Wear suitable protective clothing at all times and work only in well-ventilated areas.
- Acids can etch the concrete surface. Use only diluted acids and wash off immediately after use.

### Introduction

With spillages that may result in staining, it is always better to 'mop up' the contaminant and clean concrete surfaces as soon as possible to avoid surface penetration of the concrete. Prevent the spill from spreading by soaking up with an absorbent material such as paper towels or cloths. Avoid wiping, as this tends to drive the contaminant, e.g. oil, into the concrete and makes removal more difficult. Concrete can be protected against staining by applying a suitable sealer.

Before attempting to remove a stain from concrete, a small trial area in an inconspicuous location should be treated first to check the effect of the cleaning method. Cleaning may change the colour of the concrete and/or affect the surface texture. Also, before commencing removal of the stain,

make provision for the removal of any wash water and contaminants generated by the cleaning method.

### Chewing Gum

Solidify the gum with ice cubes and scrape off as much as possible. Then apply a poultice (use cat litter or similar inert absorbent material) saturated with methylated spirits. Apply the poultice to the gum. Leave until dry. This should turn the residue gum brittle, making removal possible with a stiff bristle or wire brush. Finish by washing affected area with hot soapy water, then rinse with clean water.

An alternative method is to scrape off as much chewing gum as possible and then remove the rest with a solvent such as amyl acetate.



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### Clay Soil and Common Beverage Stains

Scrub stain vigorously with warm soapy water. Rinse with clean water. Stubborn stains may require scrubbing with chlorine bleach. Wet surface first, then apply bleach, scrub and rinse.

## Coffee Stains

Scrub stain vigorously with warm soapy water. Rinse with clean water. If this is not effective, try a poultice (use cat litter or similar inert absorbent material) saturated with a solution of 1 part glycerol to 4 parts water. Allow to react with the stain for at least 24 hours before removing and hosing affected area. The area may need to be scoured with abrasive cleaning powder to remove the remains of the poultice.



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## Efflorescence (Salt Deposits)

Remove excess salt deposit with a stiff bristle broom. If the result is not satisfactory, scrub with clean water then lightly rinse surface. To remove any remaining deposits, the concrete may be further treated by acid cleaning as follows.

Extreme care is required when handling acids and safety precautions as outlined on the first page of this Information Bulletin should be adhered to. Only diluted acid should be used to clean concrete surfaces. The recommended proportions are 1 part hydrochloric acid to 20 parts water.

The surfaces to be treated should be saturated with water before applying the dilute acid solution.

When applying the acid solution, ensure the surface to be treated is moist but without any free water being present. The applied solution should be allowed to react on the concrete surface for 10-15 minutes. The surface should then be thoroughly rinsed and scrubbed with lots of clean water. Repeat at least twice or until all traces of the acid solution have been removed.

## Fungal Growth

Wet concrete surface. Apply chlorine bleach and scrub vigorously. Rinse thoroughly. A deposit of dead fungal residue will usually be noticeable within a few days. Brush with a stiff bristle broom and repeat cleaning process as necessary. Alternatively, use a high-pressure water cleaner to remove fungal growth, and then broom chlorine bleach over the surface. Rinse thoroughly.

## Oil and Grease Stains

These can be difficult to remove completely because of their rapid penetration of the concrete surface. If an oil spill occurs, stop it spreading by encircling with sand or dirt, sawdust or cat litter. Soak up as much surface oil or grease as possible with an absorbent cloth or powder. Cover residue stain with a poultice made of 1 part lime to 2 parts mineral turpentine. Spread a 5-mm layer of the paste over the stained area ensuring a margin of 50 to 100 mm around edges. Cover with plastic sheeting and leave for 24 hours. Remove cover and scrape off the powder. It may be necessary to repeat this process again within a day or so to remove any deeply ingrained oil or grease that sometimes continues to rise to the surface. Scrub with warm water and laundry detergent then rinse with clean water at the end of the treatment.



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## Paint (Dry)

Scrape off as much excess paint as possible. Cover residue paint with a commercial paint remover for 20-30 minutes. Observe paint remover manufacturer's safety and handling instructions.

Wear protective clothing and use only in well-ventilated areas. Scrub stain gently to loosen paint film then wash surface thoroughly with clean water. Stubborn-to-remove surface paint film may require additional scrubbing with abrasive cleaning powder. Ingrained paint may be further treated with acid cleaning as described under 'Efflorescence.'

## Paint (Wet)

Soak up excess paint with absorbent cloth or paper towels. Do not wipe or rub as this will only spread the paint spill and drive it further into the concrete. Immediately scrub the affected area with abrasive cleaning powder and water until there is no further improvement. Wait at least three days then use the dry-paint removal technique described above. Paint removers or solvents used to remove wet paint film deposits in less than three days may result in spreading the stain and increase the risk of deeper surface penetration.



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## Rubber Marks

Use proprietary rubber-removal compounds available from hardware stores. Seek advice from the supplier regarding the manufacturer's recommended preparation and application and

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<sup>1</sup> Also known as sodium tricitrate, available from chemical suppliers and some grain stores.

what effect, if any, the rubber removal compound might have on the concrete surface.

## Rust Deposits

Remove excess rust with a stiff brush then cover stain with a poultice (use cat litter or similar inert absorbent material) impregnated with a solution of 1 part sodium citrate<sup>1</sup> to 6 parts warm water. Remove when dry. Scrape off residue then scrub with warm soapy water. Rinse with clean water.



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## Smoke Stains

Remove any surface deposit by scouring with powdered pumice or grit scrubbing powder. Then bleach the stain using either the cleaning and bleaching powder or household bleach solution. (These are essentially calcium hypochlorite [a lime] and sodium hypochlorite solution respectively).

## Timber Stains

Scrub vigorously with chlorine bleach then rinse the surface. Cover stain with a cloth soaked in bleach, repeating this process until a satisfactory result is achieved. Scrub regularly between bleach treatments. Rinse thoroughly.

## Bibliography

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