

CONCRETE FLOORS – ACID ETCHING

WHAT IS ACID ETCHING?

Acid etching involves allowing the reaction of a dilute hydrochloric acid solution with the concrete surface, then rinsing off with water. The acid chemically reacts with surface laitance¹, dissolving it and allowing it and other water-soluble contaminants to be washed away.

CAUTION! Acid etching removes loosely bound laitance and slightly etches the surface. It does not remove contaminants such as water insoluble solids, oily deposits or curing compounds. It may not remove all laitance. All acid must be completely removed, but residual acid is difficult to detect. Even when executed correctly, acid etching is adequate for light duty floor coatings only, but given the difficulty in achieving a satisfactory result, DULUX DOES NOT ENDORSE ACID ETCHING.

FLOOR PREPARATION PROCEDURE USING ACID ETCH

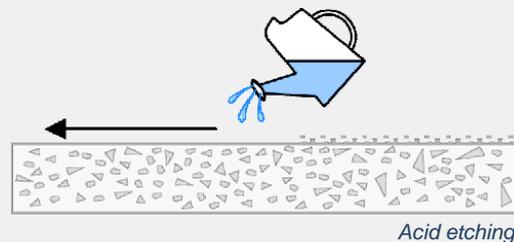
1. Remove all dust and dirt by brooming and vacuum.
2. Remove all grease or oils by washing with a free-rinsing, alkaline detergent, such as **Gamlen CA No. 1**, according to the manufacturer's written instructions and all safety warnings. Rinse off all residues with fresh potable water. Repeat if water on the surface beads.
3. Add 1 part of 33% hydrochloric acid to 2 parts water to make a 10% solution. Always add acid to water and wear eye protection, acid proof gloves and all other appropriate protective equipment.
4. Apply liberally to cover the floor using a large watering can. Just enough is NOT enough. Apply at 3m²/L.
5. Allow to stand for 15 minutes, occasionally working into the concrete with a stiff-bristled yard broom. Bubbling at the water/concrete interface should be evident.
6. Neutralize with a mild alkaline detergent. Wash with liberal quantities of clean water. High-pressure wash to 3,000 PSI will ensure a more rapid and thorough result.
7. Remove dust and debris prior to painting. Ensure surface is dry - moisture content must be less than 10%.

Profile achieved with acid etching: CSP 1.

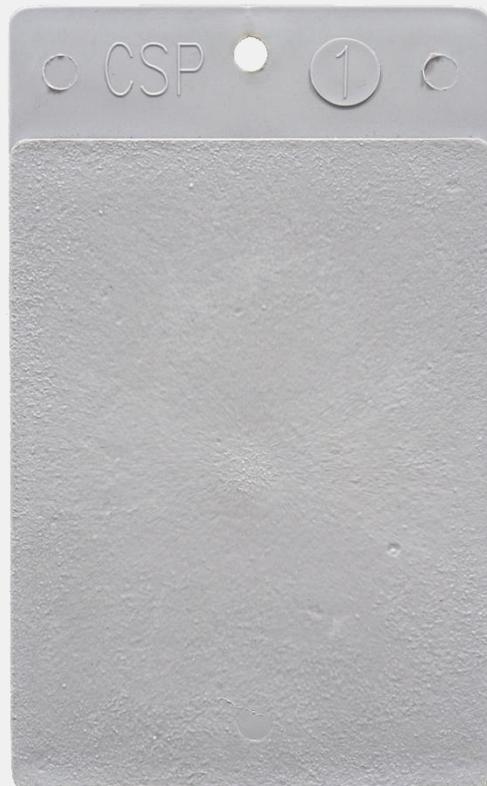
NOTES:

- Check with local water authority/EPA if approval is required if wastewater is to enter catchments or sewers.
- Acid Etching should only be used where the floor receives light to moderate foot traffic. A more profiled surface is otherwise required.
- Ensure that no residual acid remains on the concrete, as it may adversely affect the concrete, the bond strength of the coating and corrode any underlying reinforcing steel.

¹ Laitance is the weak, milky layer of cement dust, lime and sand fines that rise to the surface with over-wet concrete, poor curing or over-trowelling. If a coating is applied over laitance, impact from trolleys, forklifts, etc. will cause the laitance layer to delaminate, along with the coating..



All traces of acid must be completely washed away



Concrete Standard Profile CSP 1

For more information, please contact the Dulux Protective Coatings Technical Consultant in your state.

