



Performance Through
Technology and Service

Date Issued	
Replaces	

DATA SPECIFICATION

PS-C001

ACID ETCHING OF CONCRETE WITH HYDROCHLORIC ACID

Introduction In general, concrete must be clean, dry and sound before a coating is applied to it. 'Clean' means that there is no foreign matter such as dust, dirt, grease or oil on the concrete. 'Dry' means no free water is present. 'Sound' means there is no laitance or weak surface skin on top of the concrete and that the concrete has no defects to harm the performance of the coating. Acid etching the surface removes the top layer of loosely adhering particles and provides a profile to key into the coating.

Procedure This method below uses Hydrochloric Acid, (Cotec Concrete Etch Solution) which works quickly. Other acids such as phosphoric, sulphuric or citric acid can be used.

1. The acid strength ready to use is approximately 10%, such as Cotec Concrete Etch Solution.
2. If concentrated acid (approximately 33%) has been purchased this must be diluted, using:

2 Parts Water : 1 Part Acid.

CAUTION: Add the acid to water slowly with stirring. Do NOT mix the other way as it may boil and burn eyes and skin.

- 3 Spread evenly on the concrete by either using a broom, squeegee, a low pressure spray or watering can.
- 4 Coverage Rate will vary: Allow from 1 sq M/L (dense smooth concrete) to 4 sq M/L (open, light wood float finish) of ready to use Etch Solution.

NOTE: Where the acid stays longer on the concrete the colour will darken to a deeper colour.

If a clear coating is to be applied on top of the concrete special care must be taken to produce even etching of the surface.

4. When the acid has stopped 'fizzing' the reaction has stopped – maximum 15 – 30 minutes.
5. Waterblast to remove any fine dust etc. then allow to dry. Check to see that all dust has been removed.
6. AVOID contact with METALS, especially copper, brass and zinc as the acid will corrode these and can cause discoloration.

Health and Safety Read the Material Safety Data Sheet (MSDS). Wear gloves and goggles and work in a well ventilated area. If using concentrated acid be 'VERY CAREFUL', wear a plastic apron etc.

Refer the following Specifications for related information

- PS - C004** The Moisture Content of Concrete
- PS – C006** Making Concrete Clean and Dry
- PS – C007** Making Concrete Oil/Grease Free

ISSUE NO: 03
ISSUE DATE: 21-03-05