PFL Surface Preparation

PFL Surface Preparation is a traditional etching solution used to prepare concrete surfaces for sealing.

Description:

PFL Surface Preparation is a concentrated acidic solution which, when correctly diluted, removes surface laitance (efflorescence). PFL Surface Preparation is primarily employed to lightly 'etch' the floor in preparation for sealing, but can also be used to change the appearance and texture of concrete floors.

Precautions:

- PFL Surface Preparation is a **STRONG ACIDIC SOLUTION** and should be used with extreme care - please ensure all safety guidelines are read prior to use, and are strictly adhered to during application.
- PFL Neutralizer & Cleaner should be used in conjunction with PFL Surface Preparation to control and neutralize its corrosive activity.
- All susceptible surfaces i.e. walls and joinery, should be protected from splashing during application.
- The concrete surface must be well buffered with water prior to application of PFL Surface Preparation - failure to do so will result in 'acid burns' to the concrete surface.
- Ensure runoff during application is correctly neutralized to prevent corrosion of surrounding surfaces i.e. untreated concrete, asphalt etc.
- DO NOT dispose of PFL Surface Preparation down drains or waterways.

Application:

Equipment: Bucket (for dilution), broom, plastic watering can (for distribution), tray or polythene (to place bucket on), PFL Concrete Neutralizer & Cleaner (prepared diluted solution), wet and dry vacuum cleaner (for internal floors), safety equipment (see 'Safety and Handling').

Preparation: Floor should be cleaned and any contaminated areas treated prior to application of PFL Surface Preparation - refer to the 'PeterFell Finishing Guide' for full preparation instructions.

- Prepare working solution of PFL Concrete Neutralizer & Cleaner.
- Ensure all susceptible surfaces i.e. walls, joinery etc, are covered to prevent splashing.

Test Area: Prior to full application of PFL Surface it is recommended that a small test area away from the main visual area of the floor is prepared (following instructions) to ensure that the Surface Preparation is correctly diluted for your application.

Correctly diluted	The Surface Preparation 'bubbles' lightly on the surface, and following short exposure (<1 min), neutralization, and drying, the area appears free of surface laitance (dusty or 'chalky' substance on surface).
Too dilute	Little to no 'bubbling' evident following application of the Surface preparation, and following neutralization and drying, the area appears unchanged.
Too concentrated	Aggressive bubbling is observed on application of the Surface Preparation, and after a short period (<1 minute) concrete starts to corrode, exposing sand grains, then aggregate particles. Following neutralization and drying, concrete appears darker with 'grainy' or textured appearance.

If the concrete surface is still 'soft' (if concrete is not fully cured or incorrectly finished) the Surface Preparation will have a corrosive effect, similar to that of a 'too concentrated' solution.

Always start with the weakest applicable dilution as the concentration can always be increased.

- Conversely, if the solution is too concentrated and adversely alters the concrete surface, the effects are a lot more difficult to remedy, if at all!

If you are unsure about the appropriate dilution or application of PFL Surface Preparation contact Peter Fell Ltd before proceeding with the entire area.

Application continued over page...

Application (continued):

Dilution: Dilute PFL Surface Preparation with clean water as appropriate:
- ALWAYS add PFL Surface Preparation to water when diluting (not the other way around).

STRENGTH	DILUTION (Prep:water)	DESCRIPTION
Mild etch	1:30	Recommended for preparation of internal floors, or areas with minimal surface laitance. Will not significantly alter texture of the floor.
Medium etch	1:20	Recommended for preparation of external surfaces, or areas with significant surface laitance. Prolonged treatment exposes sand (and eventually aggregate), increasing surface texture and changing concrete appearance.
Heavy etch	1:10	Recommended ONLY when heavy exposure or 'Sandstone' effect is required. Will significantly alter appearance and texture of the concrete - proceed with caution!

Application

- Prepare and 'etch' small areas at a time (initially 2-4 m^2), and start away from main parts of the floor to get comfortable with procedure.

Internal Application:
- When using PFL Surface Preparation on interior floors, extreme care must be taken to prevent collateral degradation of other surfaces.
  - All walls, skirting, and metal joinery should be covered, while other peripheral surfaces should be pre-treated with PFL Neutralizer & Cleaner.
- Prepare diluted solution of PFL Surface Preparation in bucket as described above
  - Always add PFL Surface Preparation to water (not other way around).
  - If using a watering can, carefully transfer solution to watering can.
- When using diluted solution, place bucket/watering can on a tray or sheet of polythene to prevent any spillage onto the concrete surface while working.
  - Care must also be taken when taking broom/brush from bucket.
- Wet down area with clean water, making sure water is ALWAYS visible on the surface where PFL Surface Preparation is applied.
  - If surface is not properly wet, the PFL Surface Preparation will react directly with the concrete surface resulting in 'acid burns', which significantly alter both the concrete colour and texture.
- Disperse solution with watering can or using broom in circular motion, lightly working solution over surface
  - Ensure solution is applied evenly over surface.
  - Care must be taken NOT to exceed area which has been pre-wetted.
- Once initial reaction has stopped, treat area with PFL Neutralizer & Cleaner, leave on surface for a few minutes (solution turns 'milky' in patches), then vacuum up with wet and dry vacuum.
- Repeat process over whole area to be treated, remembering to keep surface wet as you move from area to area.

External Application:
- Prepare surface as described above
- Ensure surface is kept wet during application
  - Care must be taken in regard to evaporation of surface water
- If working on a slope, start at the bottom and work back up the slope.
  - Ensure active solution does not run over already treated or non-buffered concrete as will over 'etch' these areas.
- Solution can be removed with excess water, or following neutralization with PFL Neutralizer & Cleaner (described above).
  - Ensure runoff does not go down waterways, or onto areas susceptible to pH changes i.e. gardens.

Coverage: Coverage is dependent on dilution rate and application.

Cleanup: All equipment used should be neutralized and cleaned with appropriately diluted solution of PFL Neutralizer & Cleaner. Ensure PFL Surface Preparation is NOT disposed of down drains or waterways.

Safety and Handling:

Hazard: PFL Surface Preparation is a STRONGLY ACIDIC solution producing vapour irritable to eyes and respiratory tract. It is extremely corrosive, capable of causing burns to skin. EXTREME CARE must be taken. For full safety information refer to MSD sheet available from Peter Fell Ltd.

UN Number: 1789 **DG Number:** 8 **Hazchem code:** 2(R)

Active Ingredient: Hydrogen Chloride (CAS 7647-01-0)

Safety: Wear suitable protective clothing, impervious footwear, eye protection, protective gloves, and respirator.

Pack Sizes: 1, 2, 5, 10, and 20 L.

Storage: Store in cool, dry, well ventilated place in original container. Store out of reach of children. Store away from direct sunlight, oxidizing agents (e.g. nitrates, peroxides, hypochlorites), acids, anionic detergents (e.g. soap), heat sources and foodstuffs. Ensure container is sealed when not in use, and checked regularly for leaks or spills. Do not allow vapours to collect in enclosed spaces. PFL Surface Preparation can be stored for up to 12 months.

First Aid:

Swallowed: DO NOT induce vomiting. Give water or milk to drink. Obtain medical attention immediately. If patient becomes unconscious treat for 'Inhalation' below.

Eyes: Immediately flood with copious quantities of water, holding eye open if necessary, for at least 15 minutes. Seek urgent medical attention.

Skin: Remove contaminated clothing and shoes and wash skin thoroughly with excess water. If irritation occurs or persists, seek medical attention. Launder clothing and clean shoes before re-use.

Inhalation: Remove patient from exposure, keep warm and at rest. If there is respiratory distress, give oxygen. If respiration is failing, apply artificial respiration. Seek immediate medical attention.

Physical and Chemical Properties:

Appearance..... colourless to yellow liquid
Odour.....pungent irritating fumes
Solubility.....miscible with water in all proportions
Reactivity..... highly corrosive to most metals with evolution of hydrogen gas.
.....reacts violently with alkali
.....reacts with sodium hypochlorite to evolve chlorine
Specific Gravity.....1.15 kg/L