

# Concrete Care Method Bulletin

Constant Shield:

**LD-1000**

**HD-3000**

Preparation, application and maintenance procedures for use with the Multi-Clean® line of waterbase concrete coatings.

**Multi-Clean Technical Support**

Call Multi-Clean Technical Support with questions or comments between 1-651-481-1900 and ask for Technical Support.

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**Multi-Clean at (651) 481-1900** to arrange training.

DO NOT USE THIS MULTI-CLEAN SYSTEM OR ITS COMPONENT PRODUCTS WITHOUT APPROPRIATE TRAINING.  
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## Conventional Floor Finishes on Concrete

Multi-Clean manufactures a full line of high performance floor finishes. These finishes are most commonly used on vinyl flooring. However, there are times when a conventional floor finish may be desired on concrete. A floor finish is easy to maintain and a high gloss can be developed with burnishing. If removal is desired, the floor finish is easily stripped from the floor using a conventional floor finish stripper.

The procedures on this page are for those that want to apply Multi-Clean floor finishes on concrete floors. These methods also apply to acid stained floors.

### Preparation

1. Floors to be coated must be clean. Scrub floors with a degreaser (Formula 340, Red Lightning, Blue Blazes). DO NOT use Formula 340 on floors that have already been finished.
2. Rinse floor with plain water. For acid stained floors follow stain manufacturer's recommendations for stain drying times and rinsing procedures. Allow floor to dry 1 hour or until it appears visually dry.

### Application of LD-1000 primer

1. To achieve a strong bond to a regular concrete surface or an acid stained surface apply 1-2 coats of LD-1000.
2. LD-1000 can be applied with a rayon mop or lambswool applicator. Apply thin coats. Coverage is 1200-1800 sq ft/gallon. Allow to dry 45-60 minutes per coat.

### Application of Floor Finish

1. Select the best Multi-Clean floor finish for the application:  
Multi-Clean's Premier is a durable hard finish and the best choice for floors that will not be buffed or burnished. Multi-Clean's Decade 100 is a tough finish that can be regularly buffed or high-speed burnished with electric, battery, or propane equipment.
2. Apply 2-3 coats of the finish with a rayon mop. Allow 30-45 minutes dry time per coat. DO NOT apply more than 4 coats (primer and finish) in a single day.

### What is Acid Stained Concrete?

Concrete flooring is using an acid based reactive stain that creates a unique design effect. The stain contains metallic salts that react with certain components in concrete and impart various shades of color (usually earth tones). After acid staining, the floors are sealed.

# Waterborne Performance Coatings and Seals for Concrete Floors

## CONSTANT SHIELD LD-1000

LD-1000 requires the least amount of preparation prior to application. The product is excellent for heavy foot traffic and light to moderate industrial traffic. When LD-1000 is used in areas subject to heavy wheel traffic, high traffic lanes can be recoated quickly and easily to maintain desired appearance levels.

### Features

- Superior adhesion to concrete
- No acid etching
- Excellent standing water resistance
- Fast drying
- Good adhesion to acid stained concrete

### Recommended Procedures

**Minimum floor temperature: 50°F**

1. Cleaning/Degreasing: FORMULA 340
2. Clear water rinse.
3. Apply using wood block applicator with lambswool pad. Coverage: 900-1200 sq. ft./gallon (first coat may be slightly less).
4. Apply 3 coats minimum, 60 minute dry time between coats. Apply no more than 4 coats in a single day.
5. Recoat high wear areas as needed by following Steps 1 and 2. Apply 1-2 coats.
6. The floor may be re-opened to light foot traffic after 4 hours, normal foot traffic and light wheel traffic after 16 hours, and normal wheel traffic after 48 hours.

**CAUTION:** Do not use LD-1000 in garages.



## CONSTANT SHIELD HD-3000

HD-3000 is a two-part epoxy product that provides maximum durability and chemical resistance. It is ideal for industrial areas subject to heavy wheel traffic and/or chemical exposure.

### Features

- Highest performance
- High gloss
- Higher build per coat
- Part A and B pre-measured
- Improved chemical resistance



### Recommended Procedures

**Minimum floor temperature: 60°F**

1. Cleaning/Degreasing: FORMULA 340
2. Acid etch: Use Muriatic acid, available at most hardware stores..
3. Dilute one part etcher to 6 parts water. See page 3 under 'Etching' for more details.
4. Clear water rinse (twice)
5. Mixing Procedure: a) Add contents of Part B to Part A. b) Mix with a high speed drill and mixer blade attachment. Do not hand mix. c) Mix 2-5 minutes. A noticeable thickening will occur. d) Allow product to stand about 15 minutes, then mix again briefly. e) Product has a maximum pot life of 2 hours at 70°F. **Do not use product beyond usable life of 2 hours.** Temperatures above 70°F will shorten pot life. Review Pot Life/Temp Tables on page 3. It is best to store product in air conditioned environment before using.
5. Apply using a heavy-duty roller with 3/8-1/2 inch nap cover. Coverage 350-600 sq. ft./gal.(First coat may be slightly less).
6. Apply 2 coats. Allow 12-16 hours dry time between coats.
7. If recoating is necessary, follow screening procedure as outlined in over-coating existing seals.
8. The floor may be opened to normal foot traffic and light wheel traffic after 24 hours and normal wheel traffic after 48 hours.

### Non-Skid Finish with HD-3000

HD-3000 is an ideal product to produce non-skid finishes using quartz silica GRIT ADDITIVE. A non-skid finish should be considered in areas that may be frequently slippery due to water or other spillage on the surface.

**A cautionary note:** Quartz silica GRIT ADDITIVE does not possess the hardness required to withstand continuous heavy forklift traffic. Therefore, these types of grit additives should not be used in areas of heavy forklift or other vehicle traffic.



*To make an anti-skid floor with HD-3000:*

The grit can be hand broadcast into the first coat while it is still wet. Broadcast rate is 1 lb. Per 500 sq. ft. After allowing the first coat to dry, add 1-2 top coats of HD-3000 with no GRIT ADDITIVE. Use steel spiked shoes to walk through the wet coating. For best results, throw grit up into the air and allow to settle in the wet coating.

### CONCRETE FLOOR PREPARATION

#### Cleaning and Degreasing

Concrete floors must be free of dust residues, imbedded soil, grease and oils before applying a seal. In order to effectively clean and degrease concrete floors, an automatic scrubber (or low speed floor machine) equipped with appropriate brushes and a strong degreaser are required. FORMULA 340 at 16 oz./gallon is an effective and economical degreaser particularly suited for automatic scrubbers.

When using an automatic scrubber on heavily soiled floors, a double scrub procedure should be implemented. Repeat the degreasing steps until the floor is thoroughly cleaned.

*\*Pre-soak Grease/Oil Stains:* Prepare a solution of 1 part Formula 340 to 8 parts warm to hot water. Apply to stain, allow to soak 15 minutes. Spread oil-dri or other absorbent to draw out stain. Sweep up.

**Note: If the floor is not thoroughly cleaned, etched, and completely rinsed, the coating may not adhere properly to the surface.**

### Etching Concrete Floors

Concrete by nature is an alkaline material that is capable of undergoing a neutralizing reaction with acidic products. The etching process is a means of removing surface impurities and roughing the concrete surface in order to achieve a strong mechanical bond between the seal and concrete. This process is important for achieving a strong bond.

To etch a concrete floor, mix 1 part muriatic acid with 6 parts water. Apply the etcher to the floor as evenly as possible using a large plastic garden sprinkling can. An immediate white foaming/fizzing reaction should be apparent and will continue for up to 5 minutes. Coverage rate should be approximately 150 sq. ft./diluted gallon.

After 5-10 minutes, scrub the floor and pick up the neutralized solution with an automatic scrubber (may need small amount of Defoamer in recovery tank). Alternatively, scrub with a floor machine and pick up solution with a wet/dry vacuum. **Note:** Although etching products are acidic, it will not function when concrete is already sealed nor act as a stripper on existing seals.

After etching, the floor should have a uniform appearance and texture (similar to medium grit sandpaper). Blotchy, smooth or discolored areas should be re-etched to insure uniformity.



A plastic garden sprinkling can works well for application of the etcher.

#### Water Rinse

Rinsing of the concrete surface is the last step required prior to application of a seal. A thorough rinse with clear water in the solution tank of an automatic scrubber insures that residues from degreasers and/or etching compounds are completely removed. It is recommended this process be repeated once. After the rinsing process is complete, application of coating can commence after a 30-60 minutes dry time. **Note:** The rinsing process should be done with clear water only. Do not use neutralizing agents and/or neutral cleaner in rinse water.

#### Repairing Damaged Concrete

Before applying any coating product, it is recommended that large cracks and or potholes be repaired with commercial concrete patching compounds and allowed to set according to manufacturer instructions before applying.

## CONSTANT SHIELD APPLICATION

### Standard Method

To produce an excellent, uniform, well leveled appearance, the following is a recommended application technique for the Constant Shield LD-1000.

1. Pour the prepared product into a suitable tub or paint tray.
2. Dip the applicator into the tray; for LD-1000 use a wood block applicator with lambswool type pad; HD-3000 use an 18" wide roller with 3/8-1/2" nap cover.
3. Begin applying the product along the wall and in the corner furthest from the planned exit. Work an approximate 4 ft. x 4 ft. square area.
4. First, apply the product by spreading back and forth (north-south direction in diagram) over the 4 ft. x 4 ft. area. **Note:** HD-3000 *Pigmented* products may not hide the concrete with the first coat, therefore the underlying concrete may remain visible. HD-3000 requires 2 coats minimum.
5. Without re-wetting the applicator, level the product by going back and forth (east-west direction see figure 1) over the applied seal.
6. Move to the next adjacent 4 ft. x 4 ft. area and repeat steps 2-5. Always overlap the previous area by 1-2 inches to prevent lap marks or seams in the finish.

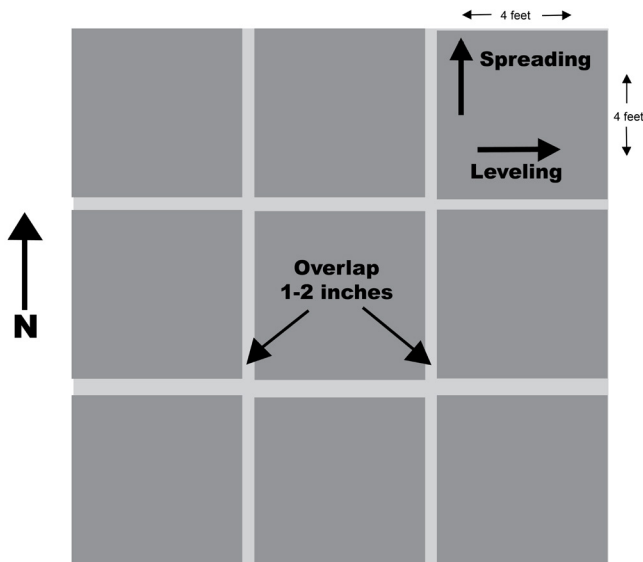


Figure 1

### Optional Methods

LD-1000: Airless Sprayer  
T-Bar Applicator  
Tank Applicator

**Note:** Concrete surfaces are variable in nature ranging from very smooth troweled to highly textured with a wide range of porosities.

When using Constant Shield products over extremely porous and/or textured concrete, additional coats may be necessary to achieve the desired level of gloss and/or opacity.

### DETERMINING PRODUCT REQUIREMENTS

In order to determine how much Constant Shield product will be needed, use the formula below to assist in proper planning. The total amount of product required should be considered a minimum, some extra product should be available to compensate for shortages.

#### Coverage

LD-1000 1000 sq. ft./gal. (3 coats minimum)

HD-3000 400 sq. ft./gal. (2 coats)

$$\text{Total sq. ft.} \div \text{Coverage} \times \text{No. of Coats} = \text{Total Gals. Needed}$$

### MAINTENANCE OF CONCRETE FLOORS

Now that the concrete floor has been sealed, it requires much less time and effort to maintain an acceptable standard of appearance and cleanliness. Soils are more efficiently removed from the floor with low dilution levels of cleaner/degreaser and an automatic scrubber because the soils do not become embedded in the concrete. An automatic scrubber can be used with less aggressive brushes/pads and at high speeds while still maintaining efficient soil removal.

It is **important** to install a regular maintenance program to prolong the life and maintain the attractiveness of the concrete floor. Routine removal of soils (especially gritty materials) will prolong the shine and extend the life of the floor. Automatic scrubbers are highly recommended for effective and productive cleaning of floors.

For routine cleaning, use FORMULA 340 at 4 oz./gallon in the solution tank of an automatic scrubber. The automatic scrubber should be equipped with red scrub pads or scrub type brushes.

## Overcoating Existing Seals

Very frequently, a previously sealed concrete floor will be encountered where the seal is well bonded to the concrete but the floor has worn.

Although stripping of the seal except for Constant Shield products, is the preferred method, it may be possible to overcoat the old seal provided the seal is well bonded to the concrete. **Caution:** Any signs of chipping or flaking indicates an inadequate bond that should not be overcoated.

A simple method of checking the bond of a seal is to use a razor blade to scribe a cross-hatch (tic-tac-toe) pattern into the seal. The scribes should go through the seal to the concrete surface. Apply a piece of duct tape to the cross-hatch pattern and rapidly pull off. If any of the seal is removed, adhesion may not be adequate.

Due to the wide variety and chemical make-up of concrete seals on the market, it is impossible to provide absolute assurance that the Constant Shield products will work over existing seals even if preparation procedures are followed.

If coating over an unknown seal, it is strongly recommended that a test patch of the Constant Shield product be applied following the procedure below. **Note:** the test patch should be applied in an area subject to normal traffic for several weeks to insure a good bond is obtained.

1. Clean/degrease the floor (see Concrete Floor Preparation). Allow to dry.
2. Thoroughly roughen the old seal by using a floor machine and a 60 or 80 grit screen.
3. Sweep or vacuum up dust residues.
4. If bare concrete is exposed in heavy wear areas, these areas may need to be etched depending on the Constant Shield product selected.
5. Apply product.

## Mechanical Removal of Coatings

Removal of seals by non-chemical methods involves a grinding, blasting or scarifying process with specialized equipment. This process is usually done by professional contractors.

# The PROVEN Multi-Clean Method for Concrete Floor Care

## CONSTANT SHIELD® LD-1000

Water-based polymer coating designed to seal and protect concrete floors. This coating provides an easy to maintain, tough, glossy finish that protects and beautifies concrete floors. No etching required.

## CONSTANT SHIELD® HD-3000

Waterborne two-part epoxy concrete sealer designed for the toughest applications. Suitable for use in heavy traffic areas or areas prone to chemical spillage.

## FORMULA 340

Powerful, low-foam synthetic cleaner/degreaser, contains no solvents. Excellent for use in automatic scrubbers for concrete floor maintenance.

## Ultra Stripper

Use for stripping conventional floor finishes. Also can be used to strip some types of curing membranes.

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