

**Sonneborn®****Concrete  
Repair  
Systems****SONOCONCRETE®****LAPIDOLITH®****Concrete hardener and dustproofer****Where to Use  
Lapidolith®**

- Concrete floors
- Warehouses
- Aircraft hangers
- Commercial garages
- Chemical installations
- Hospitals
- Breweries
- Schools
- Dairies
- Bakeries
- Canneries
- Laundries
- Textile mills
- Industrial plants
- Computer rooms under false floors

**Features**

- Strengthens and hardens floors that are porous, readily absorptive, and only moderately hard...
- 100% reactive with the free lime in concrete...
- Tightly binds together the cement, sand, and aggregate particles...
- Nonfilm forming floor treatment...
- Compatible with most resilient tile adhesives...

**Benefits**

- Ideal for aged concrete surfaces
- Produces a breathable, dense, abrasion-resistant surface
- Improves resistance to most acids, alkalis, organic and inorganic chemicals, oils, greases
- Reduces cleaning and maintenance costs
- Suitable for substrates to be covered by carpeting

## How to Apply Lapidolith®

### Surface Preparation

- 1 New concrete must be thoroughly dry and cured a minimum of 10 days; best results are obtained with a full 28-day cure.
- 2 Surfaces must be clean, dry, and free of all loose dirt, oil, wax, sealers, curing and parting compounds, and other foreign matter or carbonation.
- 3 Use Sonofloor Citrus Degreaser (see Form No. 1017985) for oil stains and general cleaning. Rinse floor thoroughly and allow to dry.

### Application

- 1 The number of applications and dilution ratios for Lapidolith® are dependent on the porosity and density of the concrete. Refer to coverage chart. Two applications of Lapidolith® are generally required on concrete and nonresin-based terrazzo floors. Wood-floated, broom-finished, or porous floors may require a third application applied full strength.

2 Lapidolith® can be applied by roller, spray, brush, or squeegee. Bubbling indicates activation of the Lapidolith® into the concrete. Distribute evenly and mop up excess solution or puddles.

#### 3 Concrete

After the first application, allow the floor to dry until no longer visibly wet. If crystals develop during the second application, the applicator should flush the surface liberally with clean water, preferably hot. At the same time, the floor must be rapidly brushed with a stiff bristle broom. Excess water can then be mopped up and the surface allowed to dry.

#### 4 Concrete, polished sheen

To achieve the appearance of a polished sheen from traffic, use 3 applications of Lapidolith®. The first is diluted 4 to 1 (water to Lapidolith®), the second 3 to 1, and the third 2 to 1 (see coverage section).

As the last application is drying, wait for the uniform appearance of white crystals. Flood the floor with water and buff with a commercial floor buffer using a 3M® or similar type of abrasive pad. Continue buffing until the floor acquires a patina or polish and the whiteness is gone.

The above recommendation is for dense, steel troweled floors. Older or more porous concrete may require less dilution or a lower coverage rate or more than 3 applications. **Caution:** unusually wet or oily environments will be more slippery with this surface treatment.

#### 5 Terrazzo (nonresin based)

The first application is not allowed to dry. While the surface is still damp, it should be flushed thoroughly with clean hot water and then allowed to dry until no longer visibly wet. For the second application, follow the same procedure but mop up excess wash

water and allow the surface to dry.

6 White crystals developing after the first or second application signifies too strong a mix or the surface reaching maximum hardness. If this occurs, the applications should be stopped and the surface flushed with clean hot water, broomed with a stiff bristle broom, then allowed to dry. If any applications remain, the dilution ratio may be increased to avoid further problems.

### Maintenance

Routine sweeping and washing of floors with mild conventional cleaners and detergents is recommended. Remove all abrasive grit and wipe up corrosive spills as soon as possible.

### Clean Up

Clean all tools and equipment with water immediately after use. Dispose of unused material according to local regulations.

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## For Best Performance

- Do not apply Lapidolith® to floors that have been previously sealed or treated with curing and parting compounds unless these products have been chemically or mechanically removed.
- Lapidolith® can be used for exteriors. If the surface has been steel troweled, however, traffic can polish the surface and make it slippery.
- Although Lapidolith® is chemically resistant, its application in specific chemical environments should be checked with ChemRex® Technical Services.
- For resilient tile applications, conduct an adhesion test.
- Do not apply to uncured concrete; concrete must be properly wet cured.
- In event of freeze-thaw, warm and restir to uniformity. If separation is persistent, discard Lapidolith® — do not apply.
- Never use Lapidolith® with plastic concrete or mortar or resin-based terrazzo mixes.
- Lapidolith® will not salvage honeycombed or structurally unsound surfaces.
- Do not allow Lapidolith® to dry on terrazzo (resin based) floors except as indicated in application instructions.
- When mixing or handling Lapidolith® in other than the original sealed container, use a plastic bucket.
- Small amounts of sediment or a cloudy appearance in the container will not affect product performance.
- Workers should not allow Lapidolith® to come in contact with any glass, fabric, metal, or painted surfaces. Immediately wipe contaminated surfaces with a clean water-saturated cloth, then wipe dry with a second clean cloth.
- For subsequent coatings applications, perform proper surface preparation and consult the coating manufacturer for more instructions.
- When a curing compound must be applied to freshly placed concrete, use a nonfilm-forming curing compound such as Sonneborn's Kure-N-Harden™ (see Form No. 1017931). For some applications Sonosil® (Form No. 1017941) may also be used. Kure-N-Harden™ not only cures, but surface hardens concrete to some degree; consequently, somewhat less than the recommended 2 applications of Lapidolith® will sufficiently harden the concrete.
- Make certain the most current version of this data guide is being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by ChemRex® personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

## Technical Data

### Compliances

- Recommended for use on all classes of concrete floors as noted in Table 1.1, ACI Standard 302.1R-89
- USDA compliant for use in meat and poultry areas

### Abrasion Resistance Depth of Wear

#### ASTM C-779\*

|                      | 30 Minutes, in. (mm) | 60 Minutes, in. (mm) |
|----------------------|----------------------|----------------------|
| Untreated concrete   | .0264 (0.7)          | .0428 (1.1)          |
| Lapidolith® treated* | .0025 (0.06)         | .0106 (0.27)         |

\*Concrete was cured for 28 days

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

### Chemical Resistance

ACI Standard 302.1R-89 magnesium fluorosilicate hardeners can be used to increase concrete resistance to attack from the following chemicals:

Aluminum sulfate  
Ammonium chloride  
Barium hydroxide  
Beef fat  
Calcium hydroxide  
Calcium nitrate  
Carbon dioxide  
Carbonic acid  
Castor oil  
Coal tar oils  
Cottonseed oil  
Creosote  
Cresol  
Distillers slop  
Ethylene glycol  
Ferric chloride

Ferric sulfate  
Ferrous chloride  
Ferrous sulfate  
Fish oil  
Fruit juices  
Glucose  
Glycerine  
Hydrogen sulfide  
Iodine  
Lactic acid, 25%  
Lead refining solutions, 10%  
Lignite oils  
Machine oils  
Magnesium chloride  
Magnesium sulfate  
Manganese sulfate  
Manure  
Mash, fermenting  
Mercuric chloride  
Mercurous chloride  
Mine water, waste  
Mineral oil  
Molasses

Mustard oil  
Nickel sulfate  
Oleic acid, 100%  
Olive oil  
Paraffin  
Phenol, 25%  
Phosphoric acid, 85%  
Pickling brine, 10%  
Poppy seed oil  
Potassium aluminum sulfate, 10%  
Potassium carbonate  
Potassium chloride  
Potassium dichromate  
Potassium persulfate  
Potassium sulfate  
Rapeseed oil  
Sea water  
Silage  
Sodium bromide  
Sodium carbonate  
Sodium chloride  
Sodium dichromate

Sodium nitrite  
Sodium sulfate, 10%  
Sodium sulfite, 10%  
Sodium thiosulfate  
Soybean oil  
Sugar  
Sulfite liquor  
Tallow and tallow Oil  
Tannic acid  
Tanning liquor, 10%  
Tobacco  
Walnut oil  
Zinc chloride  
Zinc sulfate

## Order Information

### Packaging

Lapidolith®

- 5 gallon (18.93 L) pails
- 55 gallon (208 L) drums
- Concentrate also available. Call Customer Service for more information.

Shelf life is typically 1 year when stored in unopened containers under normal conditions. Protect from freezing in the container; do not store below 35°F (2°C).

### Color

- Clear liquid

### Coverage

| Type of surface                       | Sq. ft. per gallon (m <sup>2</sup> /L) (mixed material) | Applications | Dilution ratio (by Volume) Water: Lapidolith® | Ratio |
|---------------------------------------|---|--------------|---|-------|
| Light to moderately troweled floors   | 100 (2.45)  | 2            | 1: 1 first<br>1: 2 second                     | 1.17  |
| Heavy-duty or densely troweled floors | 100 - 300 (2.45 - 7.35)                                 | 2            | 3: 1 first<br>1: 2 second                     | 0.92  |
| Rough-finished floors                 | 100 (2.45)  | 2            | 1: 1 first<br>1: 2 second                     | 1.17  |
| Terrazzo (non-resin based)            | 300 (7.35)  | 2            | 3: 1 each                                     | 0.50  |
| Concrete, polished sheen              | 200 - 300 (4.9 - 7.35)                                  | 3            | 4: 1 first<br>3: 1 second<br>2: 1 third       | 0.78  |

To estimate the quantity of Lapidolith® needed for an application, divide the area of the floor by the coverage rate (sq. ft./gal. or m<sup>2</sup>/L) of mixed material. Multiply this number by the ratio (in last

column). Example: 8,000 ft<sup>2</sup> floor, moderately troweled: 8,000 ÷ 100 = 80 gallons mixed material x 1.17 = 93.6 gallons of Lapidolith® needed.

Recommendations for the number of applications and the dilution ratios are based upon average conditions. Coverage varies with application method, porosity and texture of concrete.

## Danger—Corrosive

Lapidolith® contains magnesium fluorosilicate, sulfuric acid

### Risks

Contact with skin or eyes may cause burns. May be absorbed through skin. Repeated or prolonged exposure increases the risk of absorption. Inhalation of vapors may cause irritation. May cause irritation and burns of mouth, throat and stomach. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

### Precautions

KEEP OUT OF THE REACH OF CHILDREN. Prevent contact with skin, eyes and clothing. Wash thoroughly after handling. DO NOT take internally. Prevent inhalation of vapors or mists. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or if used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable federal, state and local regulations. Empty container may contain hazardous residues. All label warnings must be observed until container is commercially cleaned or reconditioned.

### First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. SEEK IMMEDIATE MEDICAL ATTENTION. In case of skin contact, wash affected areas with soap and water. Remove and wash contaminated clothing. If irritation persists, SEEK MEDICAL ATTENTION. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

### Proposition 65

This product contains materials listed by the state of California as known to cause cancer, birth defects, or reproductive harm.

### VOC Content

0 g/L or 0 lbs. of VOC per gallon of coating.

**For medical emergencies only, call ChemTrec (1/800/924-424-9300).**

### Limited Warranty Notice

Every reasonable effort is made to apply ChemRex® exacting standards both in the manufacture of our products and in the information which we issue concerning these products and their use. We warrant our products to be of good quality and will replace or, at our election, refund the purchase price of any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. Therefore, except for such replacement or refund, CHEMREX® MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS, and CHEMREX® shall have no other liability with respect thereto. Any claim regarding product defect must be received in writing within one (1) year from the date of shipment. No claim will be considered without such written notice or after the specified time interval. User shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith. Any authorized change in the printed recommendations concerning the use of our products must bear the signature of the ChemRex® Technical Manager.



**Sonneborn®**

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