

LAPIDOLITH®

Concrete hardener and dustproofers

PRODUCT DATA

3 03360

**Concrete
Finishes**

Description

Lapidolith® is a magnesium-fluorosilicate concrete hardener and dustproofers that bonds chemically with the concrete to strengthen and harden floors that are porous, readily absorptive, and only moderately hard.

Yield

See Chart on page 3.

Packaging

5 gallon (18.93 L) pails

55 gallon (208 L) drums

Concentrate also available. Call Customer Service for more information.

Color

Clear liquid

Shelf Life

1 year when properly stored

Storage

Store in original, unopened containers in cool, dry area. Protect from freezing in the container; do not store below 35° F (2° C).

Features

- Concrete hardener
- 100% reactive with the free lime in concrete
- Tightly binds together the cement, sand, and aggregate particles
- Nonfilm forming
- Compatible with most resilient tile adhesives

Benefits

- Strengthens floors that are porous, readily absorptive, and only moderately hard; 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 for floors
- Suitable for substrates to be covered by carpeting

Where to Use

APPLICATION

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

LOCATION

- Interior and exterior

SUBSTRATE

- Concrete

How to Apply

Surface Preparation

1. New concrete must be thoroughly dry and cured a minimum of 10 days; for best results cure for a full 28 days.
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. Apply Lapidolith® by roller, spray, brush, or squeegee. Bubbling indicates activation of the Lapidolith® into the concrete. Distribute evenly and mop up excess solution or puddles.

Sonneborn®

Technical Data

Composition

Lapidolith® is a magnesium fluorosilicate hardener.

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

Test Data

PROPERTY	RESULTS	TEST METHODS
Abrasion resistance , depth of wear, in (mm)		ASTM C 779*
30 minutes		
Untreated concrete	0.0264 (0.7)	
Lapidolith® treated*	0.0025 (0.06)	
Abrasion resistance , depth of wear, in (mm)		ASTM C 779*
60 minutes		
Untreated concrete	0.0428 (1.1)	
Lapidolith® treated*	0.0106 (0.27)	

*Concrete was cured for 28 days.

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

Chemical Resistance

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ACI Standard 302.1R-89 magnesium fluorosilicate hardeners can be used to increase concrete resistance to chemicals including, but not limited to the following:

Aluminum sulfate		
Ammonium chloride	Mercuric chloride	Sulfite liquor
Barium hydroxide	Mercurous chloride	Tallow and tallow oil
Beef fat	Mine water, waste	Tannic acid
Calcium hydroxide	Mineral oil	Tanning liquor, 10%
Calcium nitrate	Molasses	Tobacco
Carbon dioxide	Mustard oil	Walnut oil
Carbonic acid	Nickel sulfate	Zinc chloride
Castor oil	Oleic acid, 100%	Zinc sulfate
Coal-tar oils	Olive oil	Zinc nitrate
Cottonseed oil	Paraffin	Zinc sulfate
Creosote	Phenol, 25%	
Cresol	Phosphoric acid, 85%	
Distillers slop	Pickling brine, 10%	
Ethylene glycol	Poppy seed oil	
Ferric chloride	Potassium aluminum sulfate, 10%	
Ferric sulfate	Potassium carbonate	
Ferrous chloride	Potassium chloride	
Ferrous sulfate	Potassium dichromate	
Fish oil	Potassium persulfate	
Fruit juices	Potassium sulfate	
Glucose	Rapeseed oil	
Glycerine	Sea water	
Hydrogen sulfide	Silage	
Iodine	Sodium bromide	
Lactic acid, 25%	Sodium carbonate	
Lead refining solutions, 10%	Sodium chloride	
Lignite oils	Sodium dichromate	
Machine oils	Sodium nitrite	
Magnesium chloride	Sodium sulfate, 10%	
Magnesium sulfate	Sodium sulfite, 10%	
Manganese sulfate	Sodium thiosulfate	
Manure	Soybean oil	
Mash, fermenting	Sugar	

Yield

TYPE OF SURFACE	FT ² /GAL (M ² /L) (MIXED MATERIAL)	APPLICATIONS	DILUTION RATIO (BY VOLUME) WATER TO LAPIDOLITH®	RATIO
Light to moderately troweled floors	100 (2.45)	2	1 to 1 first 1 to 2 second	1.17
Heavy-duty or densely troweled floors	100 – 300 (2.45 – 7.35)	2	3 to 1 first 1 to 2 second	0.92
Rough-finished floors	100 (2.45)	2	1 to 1 first 1 to 2 second	1.17
Terrazzo (nonresin based)	300 (7.35)	2	3 to 1 each	0.50
Concrete, polished sheen	200 – 300 (4.9 – 7.35)	3	4 to 1 first 3 to 1 second 2 to 1 third	0.78

To estimate the quantity of Lapidolith® needed for an application, divide the area of the floor by the coverage rate (ft²/gal or m²/L) of mixed material. Multiply this number by the ratio (in last column). Example: 8,000 ft² 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.

CONCRETE

1. After the first application, allow the floor to dry until no longer visibly wet.
2. If crystals develop during the second application, flush the surface liberally with clean water, preferably hot. At the same time, rapidly brush the floor with a stiff-bristled broom. Then mop up excess water and allow the surface to dry.

CONCRETE, POLISHED SHEEN

1. 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 is diluted 3 to 1, and the third is diluted 2 to 1 (see Yield section).
2. 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.
3. 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.

TERRAZZO (NONRESIN BASED)

1. Do not allow the first application to dry. While the surface is still damp, flush it thoroughly with clean hot water and then allow it 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.
2. White crystals developing after the first or second application signifies too strong a mix or the surface reaching maximum hardness. If this occurs, stop the application and flush the surface with clean, hot water; broom with a stiff-bristle broom, and allow to dry. If any applications remain, increase the dilution ratio to avoid further problems.

Clean Up

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

Maintenance

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

For Best Performance

- In event of freeze/thaw, warm and restir to uniformity. If separation is persistent, discard Lapidolith®—DO NOT APPLY.
- 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.
- Do not apply to uncured concrete; concrete must be properly wet cured.
- 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 Degussa Technical Service.
- For resilient tile applications, conduct an adhesion test.

- 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.
- Do 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 versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by Degussa personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

LAPIDOLITH®

Danger—Corrosive

Lapidolith® contains magnesium fluorosilicate and 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 lbs/gal or 0 g/L per gallon of coating.

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

Degussa Building Systems

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www.degussabuildingsystems.com

Customer Service 800-433-9517

Technical Service 800-243-6739

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