



The Chemical Company

PRODUCT DATA

3 03 01 20 Maintenance of
Concrete Reinforcing

ZINCRICH REBAR PRIMER

One-component zinc-rich epoxy
primer for steel reinforcement

Description

Zincrich Rebar Primer is a one-component epoxy primer. It is designed to prime and protect reinforcing steel. Zincrich Rebar Primer combats corrosion through electro-chemical means by preventing anode transfer.

Yield

150 – 250 lineal ft per quart
(1/2" # 4 rebar)

Packaging

1 quart (0.9 L) cans

Color

Metallic gray

Shelf Life

1 year when properly stored

Storage

Store and transport in cool, clean, dry conditions between 40 and 85° F (4 and 29° C) in unopened containers.

Features

- Dries to touch in 15 – 45 minutes
- Epoxy chemistry
- No restrictive pot life
- One-component product

Benefits

- Time saving
- Compatible with all repair mortars
- Allows ample time for proper application
- Easy to use

Where to Use

APPLICATION

- As a primer for existing reinforcing steel

How to Apply

Surface Preparation

1. Fully expose any corroded steel in the repair area. Remove all loose scale and corrosion deposits, paying particular attention to the back of exposed steel bars.
2. Mechanically abrade all exposed steel to remove corrosion from pits and imperfections within its surface.
3. If a significant portion of cross-section has been lost, replace or supplement the reinforcing steel.

Application

1. Zincrich Rebar Primer must be stirred thoroughly before using.
2. Apply Zincrich Rebar Primer to a dry surface as soon as possible after completion of the preparation work—but always within 3 hours. Apply 1 full and unbroken coat with suitable brush, making sure the back of the exposed steel reinforcing bars are properly coated.
3. Apply 2 coats each at 4 mils WFT to ensure complete coverage of the surface. Allow the first coat to fully dry before applying the second.
4. Concrete-repair materials can be applied as soon as the Zincrich Rebar Primer is fully dry (generally 20 minutes to 1 hour). Do not leave the primed surfaces exposed to the elements for longer than 7 days before overcoating or applying repair materials.

Clean Up

Clean hands and skin immediately with soap and water or industrial hand cleaner, not solvents. Remove Zincrich Rebar Primer from tools, equipment, and mixers with xylene immediately after use.

For Best Performance

- Do not use a 100% solids epoxy bonding agent on steel that has been prepared with Zincrich Rebar Primer.
- Do not apply Zincrich Rebar Primer when the ambient or substrate temperature is below 40° F (4° C), when the temperature is above 95° F (35° C), or if the temperature is within 5° F (3° C) of the dewpoint.
- 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 version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.



Technical Data

Composition

Zincrich Rebar Primer is a one-component epoxy primer.

Typical Properties

PROPERTY	VALUE
Specific gravity	2.1 – 2.2
Recommended thickness per coat, mils, DFT	2
Drying times	68° F 95° F (20° C) (35° C)
Touch dry, min	45 15
Fully dry / recoatable, min	30 – 60 20 – 45

All application and performance values are typical for the material, but may vary test methods, conditions, and configurations.

Health and Safety

ZINCRICH REBAR PRIMER

Warning

Zincrich Rebar Primer contains Zinc, Xylene, Epoxy resin, Methyl ethyl ketone, Ethyl benzene, Zinc oxide, Inorganic lead.

Risks

Flammable liquid and vapor. May cause skin and eye irritation. Ingestion may cause irritation. Inhalation of vapors may cause irritation and intoxication with headaches, dizziness and nausea. Suspect cancer hazard. Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure. Reports associate repeated or prolonged occupational overexposure to solvents with permanent brain, nervous system, liver and kidney damage. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

KEEP AWAY FROM HEAT, FLAME AND SOURCES OF IGNITION. Vapors are heavier than air. Keep container closed. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors. DO NOT take internally. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

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. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. 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 other reproductive harm.

VOC Content

581 g/L or 4.84 lbs/gal less water and exempt solvents.

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

BASF Construction Chemicals, LLC – Building Systems

889 Valley Park Drive
Shakopee, MN, 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517
Technical Service 800-243-6739



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The Chemical Company

PRODUCT DATA

3 03 01 00 Maintenance of Concrete

10-61 RAPID MORTAR

Rapid-setting cement-based mortar
with extended working time

Description

10-61 Rapid Mortar is a one-component shrinkage-compensated cement-based mortar with an extended working time. It is designed for repairing horizontal concrete surfaces.

Yield

0.43 ft³ (0.012 m³) per 50 lb (22.7 kg) bag

When extended 50%:

0.57 ft³ (0.016 m³)

When extended 100%:

0.77 ft³ (0.022 m³)

Packaging

50 lb (22.7 kg) bags

Shelf life 1 year when properly stored

2,500 lb (1,134 kg) bulk bags

Shelf life 6 months when properly stored

Storage

Store and transport in unopened containers at 60 to 80° F (16 to 27° C) in clean, dry conditions.

Features

- Extended working time
- Excellent resistance to freeze/thaw
- Nongypsum based
- Shrinkage compensated
- Can be extended up to 100% by weight with 3/8" (10 mm) aggregate
- Proprietary cement blend

Benefits

- Can be used for deep or large repairs; allows repairs at elevated temperatures
- Outstanding durability
- Volume stability
- Minimizes cracking from drying shrinkage; reduces stress at the bondline
- Economical applications
- Bonds to carbonated and noncarbonated concrete substrates

Where to Use

APPLICATION

- Both small and large-scale repairs
- Structural concrete repairs
- Repairing industrial floors
- Bridges
- Parking decks
- Airport runways

LOCATION

- Horizontal surfaces
- Interior or exterior

SUBSTRATE

- Concrete

How to Apply

Surface Preparation

CONCRETE

1. Concrete must be structurally sound and fully cured (28 days).
2. Saw cut the perimeter of the area being patched into a square with a minimum depth of 1/2" (13 mm).
3. Remove all unsound concrete and roughen the surface to a minimum 1/4" (6 mm) profile amplitude.
4. Remove all laitance, oil, grease, curing compounds, and other contaminants that could prevent adequate bond.
5. The concrete substrate should be saturated surface-dry (SSD), without standing water, before application.



Technical Data

Composition

10-61 Rapid Mortar is a proprietary blend of cement, graded aggregate, shrinkage-compensating agents, and set-control additives.

Compliances

- ASTM C 928

Test Data

The following results were obtained with a water / powder ratio of 5.5 pints (2.6 L) of water to 50 lbs (22.7 kg) of 10-61 Rapid Mortar at 73° F (23° C).

PROPERTY	RESULTS	TEST METHODS
Fresh wet density , lb/ft ³ (kg/m ³)	130 (2,082)	ASTM C 138
Set time , min, at 72° F (22° C)		ASTM C 191
Initial	50	
Final	80	
Working time , min	25	
Length change , % (μstrain)		ASTM C 928
Drying shrinkage	-0.05 (-500)	
Wetting expansion	+0.03 (+300)	
Coefficient of thermal expansion in/in/° F (cm/cm/° C)	6.8 x 10 ⁻⁶ (12.6 x 10 ⁻⁶)	CRD C 39
Modulus of elasticity , psi (GPa)	4.6 x 10 ⁶ (32)	ASTM C 469
Rapid chloride permeability , coulombs	< 300	ASTM C 1202
Freeze-thaw resistance , % RDM, at 300 cycles	100	ASTM C 666
Scaling resistance , at 25 cycles	0 rating; no scaling	ASTM C 672
Slant shear bond strength , psi (MPa)		ASTM C 882, (modified ¹)
1 day	2,300 (16)	
28 days	2,600 (18)	
Splitting tensile strength , psi (MPa)		ASTM C 496
1 day	400 (3)	
28 days	450 (3)	
Flexural strength , psi (MPa)		ASTM C 348
1 day	700 (5)	
28 days	850 (6)	
Compressive strength , psi (MPa), 2" cubes		ASTM C 109
3 hrs	3,000 (21)	
1 day	4,000 (28)	
28 days	8,000 (55)	
Compressive strength , psi (MPa), 3 by 6" cylinders, at 28 days	7,400 (51)	ASTM C 39

¹No bonding agent used; mortar scrubbed into substrate.

All application and performance values are typical for the material, but may vary with test methods, conditions, and configurations.

REINFORCING STEEL

1. Remove all oxidation and scale from the exposed reinforcing steel in accordance with ICRI Technical Guideline No. 03730 "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion."
2. For additional protection from future corrosion, coat the prepared reinforcing steel with Zincrich Rebar Primer.

Mixing

1. Add 5-1/2 pints (2.6 L) of clean water to the mixing container for each bag of 10-61 Rapid Mortar. If required, add the correct amount of aggregate to the mixer. Add the powder to the water while continuously mixing with a slow-speed drill and paddle, mortar mixer, or other forced action mixer.
2. Mix for a minimum of 3 minutes until fully homogeneous.

AGGREGATE EXTENSION

1. For repair areas 2 – 4" (51 – 102 mm) in depth, the minimum recommended addition is 15 – 25 lbs (6.8 – 11.4 kg) of 3/8" (10 mm) washed, graded, rounded, SSD, low-absorption, high-density aggregate per 50 lb (22.7 kg) bag.
2. For areas greater than 4" (102 mm) in depth, the minimum recommended addition is 25 – 50 lbs (11.4 – 22.7 kg) of 3/8" (10 mm) washed, graded, rounded, SSD, low-absorption, high-density aggregate per 50 lb bag.
3. The maximum aggregate extension is 50 lbs (22.7 kg) of pea gravel per bag.
4. The performance of 10-61 Rapid Mortar depends on the type, condition, and amount of aggregate added. Rely on trials, testing, and previous experience to determine aggregate suitability.

Application

1. Apply the mixed material onto the prepared saturated surface-dry (SSD) substrate by gloved hand, trowel, or screed. Ensure proper consolidation of the mortar and compaction around reinforcing steel. Minimum application thickness is 1/2" (13 mm).
2. Finish the completed repair, as required, taking care not to overwork the surface.
3. A maximum of 30 minutes should be allowed to mix, place, and finish 10-61 Rapid Mortar at 70° F (21° C).

Clean Up

Clean tools and equipment with clean water immediately after use. Cured material must be removed mechanically.

Curing

Proper curing is extremely important. Cure 10-61 Rapid Mortar immediately after finishing. Use a water-based curing compound that complies with ASTM C 309.

For Best Performance

- Minimum ambient, surface, and material temperature is 50° F (10° C) and rising.
- Do not mix longer than 5 minutes.
- Minimum application thickness is 1/2" (13 mm).
- Consult coating manufacturer for overcoating requirements.
- 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 version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

10-61 RAPID MORTAR

WARNING!

10-61 Rapid Mortar contains silica, crystalline quartz; alumina cement; portland cement; anhydrite; fly ash; calcium sulfate; silica, amorphous; iron oxide; sulfur trioxide.

Risks

Product is alkaline on contact with water and may cause injury to skin or eyes. Ingestion or inhalation of dust may cause irritation. Contains small amount of free respirable quartz which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

Precautions

Avoid contact with skin, eyes and clothing. Prevent inhalation of dust. Wash thoroughly after handling. Keep container closed when not in use. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

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

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VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents.

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The Chemical Company

PRODUCT DATA

3^{03 01 00}

Maintenance of
Concrete

CONCRESE[®] STANDARD LVI

Low-viscosity epoxy adhesive

Description

Concresive[®] Standard LVI is a two-component moisture-insensitive 100% solids low-viscosity epoxy adhesive. It penetrates cracks and voids, bonding hardened concrete to hardened concrete. It can be mixed with aggregate to make high-strength, high-modulus epoxy concrete and mortars.

Yield

One gallon yields 231 in³ (0.001 m³)

Packaging

3 gallon (11 L) units

15.2 oz (300 by 150 ml) biaxial cartridges, 12 per box; 1 mixing nozzle per cartridge

Color

Amber

Shelf Life

2 years when properly stored

Storage

Store in sealed containers at temperatures between 50 and 90° F (10 and 32° C).

Features

- Rapid strength gain
- Creep resistant
- Low viscosity
- Moisture insensitive

Benefits

- Quickly returns repaired areas to service
- Maintains structural integrity under load
- Excellent penetration
- Bonds to damp or dry concrete

Where to Use

APPLICATION

- As a high-strength binder for grouts and mortars
- Repairing of concrete slab or walls
- Injection of cracks from 0.002 – 0.25" (0.05 – 6 mm)
- Repairing of beams, columns, and foundations
- Anchoring bolts, dowels, and reinforcing bars
- Consolidating rock pockets or honeycombs

LOCATION

- Horizontal and vertical surfaces
- Interior or exterior

How to Apply

The following information on surface preparation, mixing, and application represents a brief overview. Refer to the Concresive[®] Standard LVI product packaging for more detailed instructions before using this product.

Surface Preparation

CONCRETE

1. Substrate may be dry or damp, although dry surfaces product optimum results. New concrete must be fully cured (28 day minimum).
2. Remove grease, wax, oil contaminants, and curing compounds by scrubbing with an industrial-grade detergent or a degreasing compound. Follow with mechanical cleaning (refer to ASTM D 4258).
3. Remove weak, contaminated, or deteriorated concrete by shotblasting, bushhammering, gritblasting, scarifying, or other suitable mechanical means. Follow mechanical cleaning with vacuum cleaning (refer to ASTM D 4259).

STEEL

1. Remove dirt, grease, and oil with a suitable industrial-grade cleaning-and-degreasing compound (refer to SSPC-SP-1).
2. Remove rust and mill scale by gritblasting. Blast steel to white metal. Follow gritblasting with vacuuming or oil-free dry-air blast (refer to SSPC-SP-10 and NACE-2).



Technical Data

Composition

Concresive® Standard LVI is a two-component 100% solids epoxy.

Compliances

- ASTM C 881, Type I, II, IV, V, Grade 1, Class C

Typical Properties

COMPONENT	PART A (Resin)	PART B (Hardener)
Form	Liquid	Liquid
Color	Amber	Amber
Mixing ratio (by volume)	2	1
Mixed color	Amber	

PROPERTY	VALUE
Pot life , min, 150 g mass	40
Viscosity , cps (mixed)	300 ± 50
Thin-film cure , days	2
Initial cure , hrs (80% of ultimate strength)	24

Test Data

PROPERTY	RESULTS	TEST METHODS
Tensile strength , psi (MPa)	7,500 (52)	ASTM D 638
Elongation at break , %	1 (minimum)	ASTM D 638
Compressive yield strength , psi (MPa)	11,000 (76)	ASTM D 695
Compressive modulus , psi (GPa)	2.5 x 10 ⁵ (1.75)	ASTM D 695
Heat deflection temperature , ° F (° C)	124 (51)	ASTM D 648
Bond strength, slant shear , psi (MPa)		ASTM C 882
2 day	1,500 (10)	
7 day	2,000 (14)	

Test conditions: 77° F (25° C), cured 7 days. Test results are averages obtained under laboratory conditions. Expect reasonable variations.

Mixing

- The mix ratio is 2 (Parts A) to 1 (Part B). Mix only the amount of material usable before the pot life expires. Thoroughly stir each component before mixing.
- Measure (ratio) each component carefully and then add Part B (Hardener) to Part A (Resin).
- Mix Parts A and B using a low-speed drill (600 rpm) and mixing paddle (e.g., a Jiffy mixer). Carefully scrape the sides and bottom of the container while mixing. Keep the paddle below the surface of the material to avoid entrapping air. Proper mixing will take at least 3 – 5 minutes. Well-mixed material will be free of streaks or lumps.
- Concresive® Standard LVI can be poured into cracks or dispensed with most 2-to-1 plural component pumps.

Application

PRESSURE INJECTION OF CRACKS

- Concresive® Standard LVI is formulated for mixing and application with automatic pressure-injection equipment. Follow the recommendations and directions supplied by the equipment manufacturer.
- Seal the ports and cracks with an appropriate paste epoxy.
- When the paste is cured, inject Concresive® Standard LVI using standard pressure-injection equipment or by gravity feed.
- For injection with side-by-side dispenser, hold in an upright position and use continuous pressure to avoid an improper mixing ratio.

PATCHING MORTARS AND GROUTS

- Use washed, kiln-dried, and bagged graded silica sand. A carefully selected blend of sands with a low void content will require less epoxy for a given volume of mortar compared to ungraded sands. A good "skip" gradation for low void content is a blend by weight of 2 parts #12 or #16 mesh to 1 part #80 or #100 mesh. When graded sands are not available, a good general purpose sand is #30 mesh silica.
- The maximum placement depth is 1" (25 mm).

BOLT AND REBAR GROUTING

1. Holes may be cut either by rotary-percussion drilling, followed by air blow-out with oil-free compressed air, or diamond core boring, followed by water flush. The hole must be free of water before grouting. Where holes will be precast into the concrete, cast them undersized and drill them to fit.
2. The optimum hole size is 1/4" (6 mm) larger than the bar's; larger annular spaces are less desirable.
3. Pour a measured amount of epoxy into the hole. Insert the bar, displacing the epoxy, then secure the bar in the center of the hole. Remove excess epoxy from around the hole before it hardens. Pressure grouting is recommended for grouting holes deeper than 2 ft (0.6 m).

GRAVITY-FEED CRACK FILLING

1. For cracks from 1/16 – 1/4" (1.5 – 6 mm), V-notch the crack and fill with 60 – 80 mesh sand.
2. Pour the mixed epoxy into the crack until completely filled.
3. When cracks extend through the slab, be certain to cap seal the back side of the crack.

Clean Up

Mixed epoxy is much easier to clean up before it hardens. Use solvents like acetone or methyl ethyl ketone (MEK). Use commercial epoxy or paint-stripper solvents for hardened epoxy. Consult solvent manufacturer's recommendations.

For Best Performance

- Application temperature range is 50 to 105° F (10 to 41° C).
- Do not add solvents or water to epoxy components.
- Neat epoxy binder should not be applied greater than 1/4" (6 mm). Consult with manufacturer for recommendation.
- Bonding to a clean, damp surface is possible but less desirable than bonding to a dry surface. When applying this product to a damp surface, remove free water by oil-free airblast.
- Precondition all components to 70° F for 24 hours before using.
- 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 BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

CONCRESE® STANDARD LVI PART A

WARNING

Contains epoxy resin, 1,4-butanediol ether, o-cresyl glycidyl ether.

Risks

May cause skin, eye and respiratory irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Ingestion may cause irritation.

Precautions

Use only with adequate ventilation. Avoid contact with skin, eyes and clothing. Keep container closed when not in use. Wash thoroughly after handling. DO NOT take internally. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

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

For additional information on personal protective equipment, first aid, and emergency procedures, refer to the product Material Safety Data Sheet (MSDS) on the job site or contact the company at the address or phone numbers given below.

Proposition 65

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

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents when components are mixed and applied per Manufacturer's instructions.

CONCRESE® STANDARD LVI PART B

DANGER – CORROSIVE

Contains: 2,2,4-Trimethyl-1,6-hexanediamine; 2,4,4-Trimethyl-1,6-hexanediamine; 2,4,6-Tris((dimethylamine)methyl)phenol; Diethylenetriamine; o-Sec-butylphenol; Phenol; 1,2-Cyclohexanediamine.

Risks

Contact with skin or eyes may cause burns. Ingestion may cause irritation and burns of mouth, throat and stomach. Inhalation of vapors may cause irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Repeated or prolonged contact with skin may cause sensitization. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

DO NOT get in eyes, on skin or clothing. Wash thoroughly after handling. Keep container closed. DO NOT take internally. Use only with adequate ventilation. DO NOT breathe vapors. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

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

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Proposition 65

This product does not knowingly contain materials listed by the State of California as known to cause cancer, birth defects or other reproductive harm.

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents when components are mixed and applied per Manufacturer's instructions.

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

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Technical Service 800-243-6739



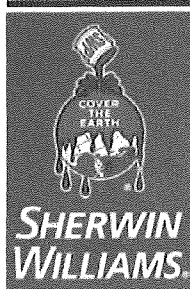
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Protective & Marine Coatings

SOLVENTS

Revised 5/09

PRODUCT INFORMATION

12.00

OVERVIEW

- Film integrity, appearance, and application are significantly affected by the nature of the solvent. A solvent plays a very important role in film formation and durability even though it is not a permanent component.
- There are only two basic performance properties that must be considered in selecting the proper solvent for any end use: solvency and evaporation rate. Solvency is important because, by definition, a solvent must dissolve something.
- The solvent dissolves the resin and reduce the viscosity. Evaporation is subsequently necessary, not only as a part of the drying process, but to control the coating viscosity at various stages of drying. As the solvent evaporates, film viscosity increases.
- A solvent must evaporate relatively quickly during initial drying to prevent sagging, but it must evaporate slowly enough to give sufficient leveling and adhesion.

ALIPHATICS/AROMATICS

ALIPHATIC SOLVENTS

These solvents are used to reduce medium and long oil alkyd enamels such as Industrial Enamel HS and Direct-to-Metal Enamel. They are not strong enough to be true solvents in any resin quality other than alkyds. Aliphatic solvents are non-photochemically reactive, HAPS complying, and non-polar.

- **Mineral Spirits R1K4** - Weak, slow evaporating. Used predominately in alkyds.
- **VM&P Naphtha R1K3** - Weak, fast drying solvent, very good for solvent cleaning galvanized metal.

AROMATIC SOLVENTS

Aromatic solvents are economical solvents that are widely used in alkyds, polyesters, and epoxies; either alone or in combination with other solvent types. All aromatics are photochemically reactive.

- **Toluol (Toluene) R2K1** - fast evaporating, strongest aromatic, not HAPS complying.
- **Xylol (Xylene) R2K4** - medium evaporating, most common aromatic, not HAPS complying. Used to adjust viscosity when electrostatic spraying.
- **Hi-Flash Naphtha (100 Flash Naphtha, Solvesso 100) R2K5** - Slow evaporating aromatic. Used as retarder to improve flow or as part of a solvent blend. Not HAPS complying.

BLENDED SOLVENTS

- **Reducer #54 R7K54** - designed for use with epoxies where a photochemically reactive solvent blend is permitted. It has excellent solvent power and permits application at higher films with and less reduction than when using other blended reducers. It is relatively fast evaporating and used primarily with spray applications.

BLENDED SOLVENTS

(continued)

- **Reducer #58, R7K58** - also designed for use with epoxies. It has excellent solvent power. It is slower evaporating than R7K54. Used for brush, roll, and squeegee applications.
- **Reducer 255-C-005** - designed for use with select epoxies. Relatively fast evaporating; used primarily for spray applications.
- **Reducer 100, R7K100** - a slow evaporating solvent for use with epoxies. Over use may cause sagging.
- **Reducer 145, R7K145** - designed for use with select epoxies. Acceptable for brush, roll, or spray application.
- **Reducer 155, R7K155** - a medium-slow evaporating, strong cutting solvent for use in epoxies.

KETONES

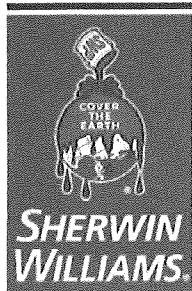
Ketone solvents offer very strong solvency to reduce viscosity rapidly and to increase conductivity. Ketones are widely used in polyurethanes, polyesters, and epoxies and also as part of a solvent blend in many other coating qualities.

- **Reducer R7K195** - 100% MIBK - a very strong, fast drying solvent for use during spray applications in select epoxies.
- **Methyl Ethyl Ketone (MEK) R6K10** - a very fast evaporating polar solvent widely used in zinc rich coatings, and as part of reducer blends. It is also used to increase conductivity of coatings for electrostatic applications. It is not HAPS complying.
- **Acetone R6K9** - an extremely fast evaporating solvent. It is too fast evaporating for most products. Its very low flash point makes it extremely flammable. Acetone has been exempted in Federal EPA regulations as a VOC contributor and it is HAPS complying.

POLYURETHANE SOLVENTS

Polyurethane solvents are specially formulated for use with polyurethane coatings. They are moisture free and optimized for use on the wide range of substrates and systems to which polyurethane coatings are applied.

- **Reducer R7K69** - a general purpose photochemically reactive reducer for use in polyurethanes.
- **Reducer R7K216** - a general purpose retarder/reducer for improved flow when spraying large areas or when ambient temperatures are over 86°F (30°C).
- **Reducer R7K15** - a strong solvent designed primarily for use with moisture cured urethanes. Relatively fast drying. Ideal for spray applications.
- **Reducer 132, R7K132** - a medium-slow evaporating, strong cutting solvent for use in polyurethanes



Protective & Marine Coatings

SOLVENTS

PRODUCT INFORMATION - SOLVENT SELECTION

12.00

Sherwin-Williams offers reducers and solvents which will assure the correct tailor-made properties are obtained for each coating or application requirement. The following chart provides a list of solvents and blended solvents and some specific properties. For the proper selection of a reducer or thinner, see the respective Product Data Page which then can be tied in with the chart below.

Product Name	Evaporation Rate-Minutes 1*	Solvent Strength 2*	Flash Point 3*	Flow 4*	Set Up Time 5*	HAPS 6*	Non-Photo- chemically Reactive	Characteristic Summary
ALIPHATIC/AROMATIC								
R1K4 - Mineral Spirits	50	1	105	6	6	OK	YES	Weak, slow evaporating, used predominately in alkyds.
R2K4 - Xylene	11	6	80	4	3	NO	NO	Medium fast evaporating for use in epoxies and alkyds.
R2K1 - Toluene	4	6	40	2	1	NO	NO	Fast evaporating.
R1K3 - VM&P Naphtha	4	2	50	2	2	OK	YES	Weak, fast evaporating, very good for solvent cleaning when using alkyd topcoats.
R2K5 - Hi-Flash Naphtha	40	5	105	6	6	NO	NO	Slow evaporating, overuse may cause sagging.
BLENDED SOLVENTS								
R7K54 - Reducer #54	15	6	55	5	5	NO	NO	Medium-fast evaporating for epoxy spray application.
R7K58 - Reducer #58	20	6	80	8	7	NO	NO	Slow evaporating for epoxies and urethanes, use with brush and roll application.
R7K100 - Reducer #100	40	5	105	6	6	NO	NO	Slow evaporating, overuse may cause sagging.
255-C-005 - Reducer	10	6	40	4	6	NO	NO	Medium to fast evaporating, for use with epoxies.
R7K145 - Reducer #145	18	6	80	6	6	NO	NO	Medium-slow evaporating for use with epoxies; brush, roll, or spray application
R7K155 - Reducer #155	20	7	75	8	7	NO	YES	Medium-slow evaporating, strong cutting solvent for use in epoxies.
KETONES								
R6K10 - MEK	2	10	18	2	2	NO	YES	Very fast evaporating for spray application with zinc rich coatings. Used in small amounts.
R6K9 - Acetone	1	10	1	1	1	OK	YES	Very fast evaporating
R7K195 - Reducer #195	14	8	60	5	4	NO	YES	Medium fast evaporating, for use with spray applications of epoxies.
POLYURETHANE SOLVENTS								
R7K69 - Reducer #69	8	6	35	4	4	NO	NO	Medium-fast evaporating for use with polyurethanes.
R7K216 - Reducer #216	21	9	102	8	8	OK	YES	Slow evaporating for brush and roll application of polyurethanes.
R7K132 - Reducer #132	18	8	108	9	6	NO	NO	Medium-slow evaporating, strong cutting solvent for use in polyurethanes
R7K15 - Reducer #15	12	8	<100	5	7	NO	NO	Medium-fast evaporating for use with moisture cure urethanes.

- *
1. Measure of time in minutes required for 90% to evaporate. ASTM -D3539.
2. Ratings express the approximate ability to dissolve resin and reduce viscosity. Rated 1 to 10 (10 best).
3. Temperature (°F) at which sufficient vapors are given off to ignite by open flame (Closed Cup Method).
4. Rated from 1 to 10 (10 best). Good flow permits paint film to level out into a smooth film of uniform thickness without orange peel, brush marks, etc.
5. Rates from 1 to 10 (10 slow) relative rating of time necessary to obtain surface or dry-free drying of film.
6. Status relative to proposed Federal EPA HAPS Rule. "No" means listed and regulated as hazardous air pollutant.



The Chemical Company

PRODUCT DATA

7 07 18 00 Traffic Coatings

TRAFICGUARD® EP35

Rapid-setting, epoxy-based concrete overlay system

Description

Trafficguard® EP35 is a rapid-curing, skid-resistant, epoxy-based concrete overlay system. When mixed with aggregate it can be used as a repair mortar.

Yield

Parking Decks: 40 - 60 ft²/gallon (1.0 - 1.5 m²/L), depending on porosity and profile of substrate

Bridge Decks: 20 - 40 ft²/gallon (0.5 - 1.0 m²/L), depending on porosity and profile of substrate

80 ft²/gallon (1.96 m²/L) as a primer for epoxy binder

Binder yield varies depending on mix ratio (aggregate to epoxy) and aggregate size and gradation. A 3 to 1 ratio will yield approximately 650 in³.

Packaging

10 gallon (38 L) kits

110 gallon (412 L) kits

Color

Blonde

Shelf Life

2 years when properly stored

Storage

Store in unopened containers at 60 to 80° F (16 to 27° C) in clean, dry conditions.

Features

- Rapid strength development
- Waterproof
- Low modulus
- 90% lighter than typical concrete overlays
- Excellent adhesion to the substrate
- Skid-resistant
- 1 to 1 mix ratio by volume
- Produces a durable surface
- No primer required
- 100% solids

Benefits

- Minimizes traffic disruption
- Prevents chloride ion contamination, freeze-thaw damage, and salt scaling
- Accommodates thermal movement in the substrate
- Limits dead load in suspended structures
- Prevents delamination extending surface life
- Increased safety for vehicles and pedestrians
- Simplifies application
- Increased service life
- Faster installation
- VOC-compliant system meets all federal regulations

Where to Use

APPLICATION

- Parking decks and ramps
- Bridge decks
- Steel decks
- Warehouse floors
- Elevated airport runways
- As a lightweight alternative to concrete overlays
- When rapid overlay installation and quick turnaround times are required
- As a skid-resistant coating
- Balconies

LOCATION

- Horizontal surfaces
- Interior and exterior

SUBSTRATE

- Concrete
- Steel

How to Apply

Surface Preparation

STEEL

Shotblast steel substrates and clean to meet the requirements of SSPC-SP10, with a minimum 4 mil (0.2 mm) profile. If flash rust appears, the surface must be reblasted.

CONCRETE

1. The concrete surface should be clean, dry, and free of oil, contaminants, laitance, and debris, and fully cured for 28 days.
2. Patch or repair deck delaminations and spalls and cracks with the appropriate MBT® repair product and allow to cure.
3. Mechanically prepare the surface to expose coarse aggregate and remove all loose materials. Meet the requirements of ICRI Guideline No. 03732 Standard CSP 6. To ensure proper surface preparation, perform "direct tension" testing (in accordance with ACI 503 Appendix A) every 4,500 ft² (414 m²).



Technical Data

Composition

TrafficGuard® EP35 is a two component epoxy-based binder.

Test Data

PROPERTY	RESULTS	TEST METHODS
Mix ratio , by volume	1 to 1	
Viscosity , poise, at 75° F (24° C); #3 spindle at 20 rpm	20 – 25	ASTM D 2393
Gel time , min, at 72° F (22° C); (Modified to test 70 g sample)	15 – 20	ASTM C 881
Compressive strength , psi (MPa) 24 hrs 7 days	4,000 – 4,500 6,500 – 7,000	ASTM D 695
Compressive strength , psi (MPa) Mixed with aggregate 3 hrs 24 hrs	3,000 – 3,500 5,000 – 5,500	ASTM C 579
Modulus of Elasticity in Compression , psi (MPa)	1.21 x 10 ⁵ (834)	ASTM C 695
Tensile strength , psi (MPa), at 7 days	6,525	ASTM D 638
Tensile elongation , %, at 7 days	>30	ASTM D 638
Adhesion Pull Test 24 hrs	>536 psi (break in concrete)	ASTM D 7234 (ACI 503 Appendix A)
Hardness Shore D @ 7 days	62	ASTM D 2240
Abrasion - Taber 1000 cycles - CS 17 wheel	70 mg (neat) 77 mg (with aggregate)	ASTM D 4060
Thermal compatibility , 5 cycles Modified: 8 hours @ 60°C plus 16 Hours @ -21°C	Pass	ASTM C 884
Water absorption , % 24 hrs	0.02	ASTM D 570
Rapid Chloride Permeability Chloride ion penetration @ 28 days	0 negligible	ASTM C1202 (AASHTO T277)

All application and performance values are typical for the material, but may vary with test methods, conditions, and configurations.

Mixing

1. Thoroughly mix each separate component for 2 – 3 minutes.
2. Mix Part A (resin) and Part B (hardener) in the proper ratio (1 to 1 by volume), using a slow-speed drill (500 rpm) and paddle for 2 – 3 minutes.
3. Because of the quick cure rate of this product, do not mix more material usable within the pot life of 15 – 25 minutes at 75° F (24° C). Elevated temperatures decrease pot life, and reduced temperatures increase pot life.

BROADCAST-AGGREGATE METHOD

PARKING DECKS

1. Spread the mixed TrafficGuard® EP35 onto the substrate with a notched squeegee at a rate of 60 ft²/gallon (1.0 m²/L). Place the epoxy to permit a continuous operation by applying the second mix immediately behind the first mix.
2. Begin the aggregate broadcast immediately, but stop to maintain a wet edge. Broadcast Dynagrip Aggregate # 9 to complete saturation (approximately 1.1 lb/ft² (5.4 kg/m²). If wet spots develop, immediately broadcast additional aggregate until a dry surface is re-established.

3. Apply the second coat in the same manner described above at a rate of 40-60 ft²/gal. The maximum recoat window is 24 hours.

BRIDGE DECKS

1. If the application takes place early in the evening, the deck may be opened to traffic early the next morning.
2. Spread the mixed TrafficGuard® EP35 onto the substrate with a notched squeegee at a rate of 40 ft²/gallon (1.0 m²/L) or 2.5 gallons/100 ft². Place the epoxy to permit a continuous operation by applying the second mix immediately behind the first mix.

3. Begin the aggregate broadcast immediately, but stop to maintain a wet edge. Broadcast Dynagrip Aggregate #8 or #9 to complete saturation (approximately 1.1 lb/ft² (5.4 kg/m²). If wet spots develop, immediately broadcast additional aggregate until a dry surface is re-established.

4. Apply the second coat in the same matter but at a rate of 20 ft²/gallon (2 m²/L) or 80 mils. The maximum recoat window is 24 hours.

EPOXY BINDER

1. Mix the 2 components of Trafficguard® EP35 using the recommended procedures under the Mixing section.
2. Slowly add up to 5 parts by volume of oven-dried sand to 1 part of mixed epoxy.
3. For larger applications, a paddle-type (mortar) mixer may be used. However, the A and B components must first be mixed together using a slow-speed drill as outlined previously.
4. For epoxy concrete applications, consult your local BASF representative.
5. Prime the area to receive the epoxy mortar using neat resin (parts A and B mixed but with no aggregate). Some applications, e.g., paving dams, will require forming to prevent the material from slumping into the joint.
6. Place the epoxy mortar into the repair area and level with a trowel or float. Excess working of the surface will bring resin to the top, which will create a slick finish when cured. To prevent this, broadcast aggregate to refusal onto leveled surface.
7. Allow time for sufficient curing before removing forms, if applicable.

HOT-WEATHER APPLICATION

1. In hot weather, precondition materials to 65 to 70° F before mixing and applying.
2. Continuous mixes of 30 gallons can be mixed every 3 minutes but must be dumped within 6 minutes, be spread within 10 minutes of placement, and broadcast within 20 minutes.

COOL-WEATHER APPLICATION

1. Application can proceed in temperatures as low as 50° F (10° C). Condition all components to 80 to 100° F (27 to 38° C) before mixing and applying.
2. At 50° F (10° C), a hand-operated surface roller may become necessary to ensure the aggregate penetrates the cool resin.

Drying Time

PRODUCT AND SUBSTRATE

TEMPERATURE, ° F (° C)	OPEN TO TRAFFIC, MIN*
60 (16)	210
65 (18)	195
70 (21)	180
80 (27)	150
90 (32)	120
100 (38)	90

*Times are typical for the material but may vary with ambient conditions

Aggregate

Dynagrip Aggregate is recommended with Trafficguard® EP35 polymer concrete overlay. Dynagrip Aggregate is a hard-wearing, angular, dark-gray aggregate.

- Dynagrip Aggregate #8 is a coarser aggregate suitable for bridge decks and other surfaces.
- Dynagrip Aggregate #9 is a less coarse aggregate.

Alternatively, an angular shaped silica or basalt aggregate may be used. The aggregate shall be an angular-shaped silica with Mohs scale hardness of 7 or greater or basalt with a hardness of 6 or greater. The alternate aggregate must be clean, dry (less than 0.2% moisture), and conform to the following gradation.

PERCENT, BY WEIGHT, PASSING IN INDICATED U.S. STANDARD-SIEVE SERIES

COARSE AGGREGATE				
Sieve #	4	8	16	30
% Passing	100	30 – 75	0 – 5	0 – 1

Clean Up

Clean tools and equipment with xylene immediately after using. Wash hands and skin with soap or industrial hand cleaner, not with solvent. Cured material must be removed mechanically.

For Best Performance

- Precondition all components to 70° F (21° C) for 24 hours before using.
- Minimum ambient, surface, aggregate and epoxy temperature should be 50° F (10° C) and rising at the time of application.
- Do not apply when rain is expected within 12 hours.
- Finished product is a vapor barrier and should not be applied to on-grade slabs subject to exterior service conditions or other structures where moisture-vapor transmission is a concern.
- Do not use neat (without aggregate).
- 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 version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

TRAFICGUARD EP35 PART A

Warning

Traficguard EP35 Part A contains Epoxy resin (25068-38-6); Oxirane, mono [(C12-14-alkyloxy)methyl] derivs. (68609-97-2)

Risks

SENSITIZER. IRRITANT. May cause allergic skin reaction. May cause skin, eye and respiratory irritation. Ingestion may cause irritation.

Precautions

Use only with adequate ventilation. Avoid contact with skin, eyes and clothing. Keep container closed when not in use. Wash thoroughly after handling. DO NOT take internally. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. 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 material listed by the state of California as known to cause cancer, birth defects, or other reproductive harm.

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents when components are mixed and applied per BASF instructions.

TRAFICGUARD EP35 PART B

Danger—Corrosive

Traficguard EP35 Part B contains 4-nonylphenol, branched (84852-15-3); Polyetherdiamine (9046-10-0); 2,4,6-tris-(dimethylaminomethyl)-phenol (90-72-2); 1,3-Cyclohexanedimethanamine (2579-20-6)

Risks

CORROSIVE. Causes burns. Corrosive to eyes. Harmful if inhaled or swallowed.

Precautions

DO NOT get in eyes, on skin or clothing. Wash thoroughly after handling. Keep container closed. DO NOT take internally. Use only with adequate ventilation. DO NOT breathe vapors. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

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

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VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents when components are mixed and applied per BASF instructions.

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

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The Chemical Company

PRODUCT DATA

7 07 18 00 Traffic Coatings

CONIPUR® II DECK COATING SYSTEM

High-solids polyurethane waterproofing, traffic bearing membrane systems for vehicular and pedestrian areas

Description

Conipur® II Deck Coating System is a fluid-applied polyurethane waterproofing system. Conipur® II uses a fast-setting two-component reactive curing mechanism. It has a very low odor and is VOC compliant.

Conipur® II Deck Coating System is composed of:

CONIPUR® 78 PRIMER, a two-component polyurethane-based adhesive primer.

CONIPUR® 265-Z BASE COAT, a two-component fast-curing polyurethane base coat with outstanding mechanical properties including excellent elongation.

CONIPUR® 275 TOP COAT, a two-component fast-curing aromatic polyurethane topcoat with outstanding mechanical properties, including high tensile strength, and excellent tear and abrasion resistance.

Conipur® 295 UV is a high performance, two-component, aliphatic, polyaspartic modified, high solids, urethane waterproofing membrane designed as an intermediate/topcoat for the Conipur II or Conipur Plus deck coating systems.

Yield

See chart on page 3.

Features

- VOC compliant
- Two-component
- Low odor/high solids
- Seamless waterproof membrane
- Excellent chloride resistance
- Excellent chemical resistance
- Skid resistant

Benefits

- Environmentally responsible
- Provides fast setting time, even in cooler climates; reduces facility downtime
- May be used over or near inhabited structures; Non-flammable, solvent free
- Protects concrete from freeze/thaw damage; protects occupied areas below from water damage; has no seams that may result in leaks
- Protects from chloride intrusion; extends the life of reinforcing steel
- Protects against common parking deck chemicals including gasoline, diesel fuel, oil, alcohol, ethylene glycol, de-icing salt, bleach and cleaning agents
- Increases safety, offers excellent durability and superior abrasion resistance

Packaging

Conipur® 78 Primer: 3.4 gallon (12.9 L) kits

Conipur® 265-Z Base Coat: 4.66 gallon (17.6 L) kits

Conipur® 275 Top Coat: 4.78 gallon (18.1 L) kits

Conipur® 295 UV Top Coat: 5 gallon (18.93 L) unit

Colors



*Colors are approximate; conduct final color matching with actual material

Shelf Life

1 year when properly stored

Storage

Store in unopened containers in cool, clean, dry area.

Where to Use

APPLICATION

- Parking garages
- Mechanical rooms
- Stadiums
- Balconies
- Plaza decks

LOCATION

- Interior or exterior
- Above grade

SUBSTRATE

- Elevated concrete slabs
- Exterior grade plywood

Sonneborn®

Technical Data

Composition

Conipur® II Deck Coating System is a two-component polyurethane membrane.

Typical Properties

PROPERTY	VALUE
Solids content, %	
Conipur® 78 Primer	99
Conipur® 265-Z Base Coat	99
Conipur® 275 Top Coat	99
Conipur® 295 UV	90
Viscosity, cps	
Conipur® 78 Primer	630
Conipur® 265-Z Base Coat	3,400
Conipur® 275 Top Coat	1,600
Conipur® 295 UV	2,500 – 4,000
Working Time, min*	
Conipur® 78 Primer	30 ± 10
Conipur® 265-Z Base Coat	20 ± 5
Conipur® 275 Top Coat	20 ± 5
Conipur® 295 UV	30 ± 10
Initial cure, hrs	
Conipur® 78 Primer	2 – 3
Conipur® 265-Z Base Coat	3 – 4
Conipur® 275 Top Coat	3 – 4
Conipur® 295 UV	4 – 8

*Tested at 73° F (23° C) and 50% relative humidity. Warm temperatures will shorten pot life; plan work accordingly.

Test Data

PROPERTY	RESULTS	SPECIFICATIONS	TEST METHODS
Crack bridging, Conipur® 265-Z Base Coat	Passes	No cracking	ASTM C 957
Adhesion peel, pli, Primer and Base Coat			ASTM C 957
Plywood	25	3	
Concrete	14	5	
Adhesion (Pull-off) psi Primer 78 / 265Z Basecoat -	400 p.s.i.	—	ASTM D 4541
Tensile strength, psi (MPa), Base Coat	2,500 (17.2)	Control	ASTM D 412
Elongation, %, Base Coat	900	Control	ASTM D 412
Tensile strength, psi (MPa), 275 Top Coat	3,000 (20.7)	Control	ASTM D 412
Tensile strength, psi (MPa), 295 UV Top Coat	2,980 (20.6)	Control	ASTM D 412
Elongation, %, 275 Top Coat	30	Control	ASTM D 412
Elongation, %, 295 UV Top Coat	250	Control	ASTM D 412
Hardness, Shore D 275 Topcoat	70	—	ASTM D 2240
Hardness, Shore D 295 UV Topcoat	92	—	ASTM D 2240
Taber abrasion resistance, mgms; CS-17 Wheel, 1,000 g load, 1,000 cycles, Primer/Base Coat/275 Top Coat	100	—	ASTM D 4060
Taber abrasion resistance, mgms; CS-17 Wheel, 1,000 g load, 1,000 cycles, Primer/Base Coat/Intermediate 275/295 UV Top Coat	47	—	ASTM D 4060

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

SEALANT-WATERPROOFING & RESTORATION INSTITUTE

Issued to: **BASF Corp.**
Product: Conipur® 265-Z Base Coat and 275 Top Coat

ASTM D 412: Tensile Strength of Top Coat
Conipur® 275 Top Coat
Tensile Strength: 3,160 psi;
Elongation: 40% Pass ✓

ASTM D 4541: Adhesion of Base Coat
Conipur® 265-Z Base Coat
Pull-off Adhesion: 468 psi Pass ✓

ASTM D 4060: Abrasion Resistance of Top Coat
Conipur® 275 Top Coat
Abrasion Resistance: 68 mgms loss
— mgms loss/1,000 cycles Pass ✓

Validation Date: 1/2/13 – 1/1/18

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DECK COATING VALIDATION
www.swrionline.org

SEALANT-WATERPROOFING & RESTORATION INSTITUTE

Issued to: **BASF Corp.**
Product: Conipur® 265-Z Base Coat & 295 UV Top Coat

ASTM D 412: Tensile Strength of Top Coat
Conipur® 295 UV Top Coat
Tensile Strength: 3,080 psi
Elongation: 360% Pass ✓

ASTM D 4541: Adhesion of Base Coat
Conipur® 265-Z Base Coat
Pull-off Adhesion: 468 psi Pass ✓

ASTM D 4060: Abrasion Resistance of Top Coat
Conipur® 295 UV Top Coat
Abrasion Resistance: 21 mgms loss
— mgms loss/1,000 cycles Pass ✓

Validation Date: 2/22/13 – 2/21/18

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DECK COATING VALIDATION
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Yield

	WET MIL THICKNESS	APPROXIMATE COVERAGE
Conipur® 78 Primer	4 mils (0.1 mm)	250-300 ft²/gal (6.4 - 7.37 m²/L)
Conipur® 265-Z Base Coat	25 mils (0.5 mm)	60 ft²/gal (1.5 m²/L)
Conipur® 275 Top Coat	20 mils (0.5 mm)	80 ft²/gal (2.0 m²/L)
Conipur® 275 Top Coat	15 mils (0.4 mm)	100 ft²/gal (2.5 m²/L)
Conipur® 295 UV Top Coat	25 mils (0.5 mm)	60 ft²/gal (1.5 m²/L)
Conipur® 295 UV Top Coat	15 mils (0.4 mm)	100 ft²/gal (2.5 m²/L)

Coverage may vary with the application technique used. Actual coverage rate and mil thickness depend on substrate porosity and surface profile.

How to Apply Surface Preparation

CONCRETE

1. Concrete must be fully cured (28 days), structurally sound, clean and dry (ASTM D 4263). All concrete surfaces (new and old) must be shotblasted to remove previous coatings, laitance and all miscellaneous surface contamination and to provide profile for proper adhesion. Abrasive shotblasting must occur after concrete repair has taken place. Acid-etching is not permitted. Proper profile should be a minimum of ICRI CSP-3 (approximately 80 – 100 grit sandpaper.)

2. Repair voids and delaminated areas with BASF Construction Chemicals branded cementitious and epoxy patching materials. For application when fast-turn repairs are required, Conipur® 265-Z Base Coat can be used to repair patches up to 1" (25 mm) in depth. Please refer to Technical Service for proper application techniques.

3. All units must be applied within the specified pot life.

SURFACE PRESTRIPING AND DETAILING

1. Prestripe with Conipur® 78 Primer 1" (25 mm) beyond all surfaces that require detail work, using a short-nap roller. Just before application of Conipur® 78 Primer, remove all dust, dirt, and contaminants. Allow Conipur® 78 Primer to dry tack free. On the same day, coat primed surfaces with 25 – 30 wet mils (0.6 – 0.8 mm) of Conipur® 265-Z Base Coat. Feather the edges.

2. For nonmoving joints and cracks less than 1/16" (1.6 mm) wide, apply 25 – 30" (0.6 – 0.8 mm) wet mils prestripping of Conipur® 265-Z Base Coat over cured Conipur® 78 Primer. Apply the Base Coat to fill and overlap the joint or crack 3" (76 mm) on each side. Feather the edges.

3. Dynamic cracks and joints over 1/16" (1.6 mm) wide must be routed to a minimum of 1/4 by 1/4" (6 by 6 mm) and cleaned. Install bondbreaker tape to prevent adhesion to bottom of joint. Prime joint faces only with Sonneborn® Primer 733 and fill with Sonneborn® SL 1" or SL 2". Fill joints deeper than 1/4" (6 mm) with appropriate backer rod and SL 2" or NP 1"/NP 2" sealants. For cracks, sealant should be flush with the adjacent surface. For expansion joints, sealant should be slightly concave.

4. Sealed joints 1" (25 mm) or less can be coated over with the Conipur® system. Expansion joints exceeding 1" (25 mm) wide, including the primary wide expansion-joint system, are not to be coated so they can perform independently of the deck coating system.

5. Form a sealant cant into the corner at the junction of all horizontal and vertical surfaces (wall sections, curbs, columns) by priming with Primer 733 and applying a 1/2 – 1" (13 – 25 mm) wide bead of Sonneborn® NP 1" or NP 2". Tool to form a 45° cant. Apply masking tape to the vertical surfaces 4 – 5" (102 – 127 mm) above the sealant cant to provide a clean termination of the vertical detail coat. After the sealant has cured, prime the deck on either side of the sealant with Conipur® 78 Primer. Apply 25 wet mils (0.6 mm) of Conipur® 265-Z Base Coat over the cured cant up to the masking tape and 4" (102 mm) onto deck surface. Feather onto the deck surface so it will not show through the finished coating system.

6. Where the coating system will be terminated and no wall, joint, or other appropriate break exists, cut a 1/4 by 1/4" (6 by 6 mm) keyway into the concrete. Fill and coat keyway when application of Conipur® 265-Z Base Coat progresses.

METAL SURFACES

Remove dust, debris, and any other contaminants from vent, drain pipe, and post penetrations; reglets; and other metal surfaces. Clean surfaces to bright metal and prime immediately with Sonneborn® Primer 733. Provide appropriate cant with Sonneborn® NP 1" or NP 2" sealants to eliminate 90° angles.

PLYWOOD

1. All plywood must be smooth-faced, APA-stamped, and exterior grade. Construction must conform to code, but plywood must not be less than 15/32" (12 mm) thick. Plywood spacing and deck construction must follow APA guidelines.

2. Surfaces must be free of contaminants. Priming is not necessary on clean, dry plywood.

3. All seams must be caulked with NP 1" or NP 2" sealants (see Form Nos. 1017906 and 1017911). Prestripe 4 – 6" (102 – 152 mm) wide with 25 wet mils (0.6 mm) of Base Coat. Reinforce all seams between plywood sheets and between flashing and the plywood deck by embedding Sonoshield® Reinforcing Fabric into the prestripping. Provide appropriate cant with NP 1" or NP 2" to eliminate 90° angles.

PRIMING

1. Before mixing, precondition both components to a temperature of approximately 70° F (21° C).
2. Add entire contents of Conipur® 78 Part B to Part A. Mix both components with a slow-speed drill for a minimum of 3 minutes. Scrape down sides and bottom of mixing vessel, then mix again for 2 minutes. During this second mixing stage, 1 pint (0.5 L) of Sonneborn® Reducer 990 may be added to increase penetration into concrete and aid in application. Keep the mixing paddle submerged during mixing. Avoid whipping air into the mixture.
3. Allow the mixed primer to rest 3 minutes, then apply with paint roller or squeegee. Apply at a rate of 250-300 sq.ft./gal (6.4-7.37 sq. m/L) or approximately 4 wet mils (0.1 mm).
4. Apply primer only to those areas that will be coated within 12 hours with Conipur® 265-Z Base Coat.
5. Minimum curing temperature is 40° F (4° C). Protect primed areas from rain and moisture.
6. Base coat may be applied over primer in about 2 hours depending on temperature and humidity. However, it is important that the primer is tack free prior to application of base coat. Do not over apply primer.
7. Working time is approximately 30 minutes at 70° F (21° C). Higher temperatures will shorten working time.

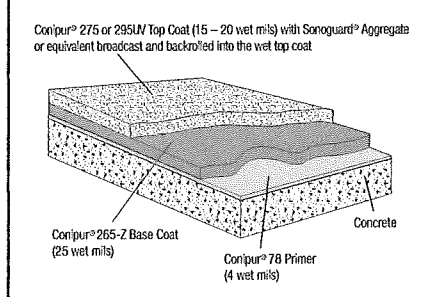
APPLICATION OF BASE COAT

1. Precondition both A and B components to a temperature of approximately 70° F (21° C).
2. Add entire contents of Conipur® 265-Z Base Coat Part A to Part B. Mix components with a slow-speed drill for a minimum of 3 minutes. Scrape down sides and bottom of mixing vessel, then mix again for 2 minutes. Keep the mixing paddle submerged during mixing. Avoid whipping air into the mixture.
3. Apply at a rate of 25 wet mils (0.5 mm) 60 sq.ft./gal. (1.47 sq. m/L) using a proper notched squeegee. Backroll with a spiked roller to remove any air bubbles.
4. Apply Base Coat only to those areas that can be recoated within 24 hours with Conipur® Top Coat. Allow base coat to cure 3 – 4 hours before applying Conipur® Top Coat.
5. Working time is approximately 20 minutes at 70° F (21° C). Higher temperatures will shorten working time.

MIXING OF 275 TOPCOAT

1. Precondition both A and B components to a temperature of approximately 70° F (21° C).
2. Add entire contents of Conipur® 275 Topcoat Part A into Part B. Mix components with a slow-speed drill for a minimum of 3 minutes. Scrape down sides and bottom of mixing vessel, then mix again for 2 minutes. Keep the mixing paddle submerged during to avoid whipping air into the mixture
3. For mixing instructions for Conipur 295 UV, please consult 295UV Data sheet

LIGHT TO MEDIUM DUTY TRAFFIC AND PARKING STALLS



Application of Systems

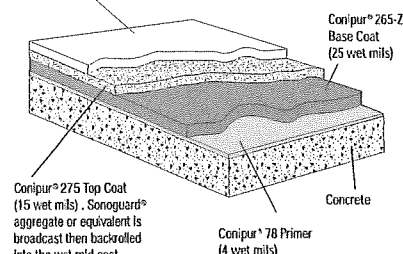
Conipur® II can be applied using several methods, depending upon the degree of traffic to which the system is exposed. In areas of extreme traffic (turning lanes, pay booths, entrances and exits), apply the Extra Heavy-Duty Traffic System. The following summary briefly describes each method. All coverage rates are approximate.

LIGHT TO MEDIUM DUTY TRAFFIC AND PARKING STALLS

1. Apply 4 wet mils (0.1 mm) of Conipur® 78 Primer at 250 – 300 ft²/gallon (6.4 - 7.3 m²/L).
2. Apply 25 wet mils (0.5 mm) of Conipur® 265-Z Base Coat with proper notched squeegee at the rate of approximately 60 ft²/gallon (1.5 m²/L). Allow base coat to cure 3 – 4 hours.
3. Apply 15–20 wet mils (0.4–0.5 mm) of Conipur® 275/295 UV Top Coat at the rate of approximately 60–100 ft²/gallon (1.5–2.5 m²/L).
4. Immediately broadcast Sonoguard® Aggregate or equivalent at the rate of 10 – 15 lbs/100 ft² (0.5 – 0.75 kg/m²) into wet Conipur® 275/295 UV Top Coat and backroll to encapsulate.
5. Allow minimum curing time of 24 hours before allowing vehicular traffic onto the coating. Allow a minimum of 3 – 4 hours for pedestrian traffic.

HEAVY DUTY TRAFFIC SYSTEM

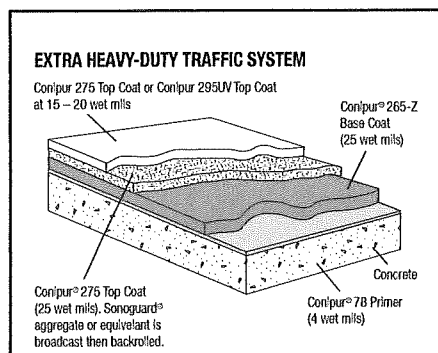
Conipur 275 Top Coat or Conipur 295UV
Top Coat at 15 – 20 wet mils



HEAVY DUTY TRAFFIC SYSTEM

1. Apply 4 wet mils (0.1 mm) of Conipur® 78 Primer at 250 - 300 ft²/gallon (6.4 – 7.3 m²/L).
 2. Apply 25 wet mils (0.5 mm) of Conipur® 265-Z Base Coat with proper notched squeegee at the rate of approximately 60 ft²/gallon (1.5 m²/L). Allow base coat to cure 3 – 4 hours.
 3. Apply 15 wet mils (0.38 mm) of Conipur 275/295UV intermediate topcoat using a properly notched squeegee at the rate of approximately 100 sq ft/gal. (2.5 m²/L). Immediately back roll to evenly level Conipur Topcoat. The next step, #4, can utilize either method described in 4A or 4B.
- 4A. AGGREGATE TO REFUSAL METHOD**
Immediately broadcast Sonoguard Aggregate or equivalent 16-30 mesh, rounded silica sand into the wet coating at the rate of 20 -25 lbs per 100 sq ft (1.0 – 1.25 kg /m²). Immediately after the aggregate broadcast and while the coating is still wet, blow any excess aggregate via a portable blower forward into the wet coating. Do not over apply aggregate; it is acceptable to have localized wet spots in the aggregate surface after completion of this method. This process requires coordination between all of the members in the work crew. The blower operator, wearing clean spiked shoes should blow the excess aggregate forward towards the freshly applied and back rolled topcoat. In this method, the coating should not accept additional sand, minimal excess aggregate is on the surface, less aggregate is used and the textured appearance should be fairly uniform
- 4B. BROADCAST AND BACKROLL METHOD**
Immediately broadcast Sonoguard Aggregate or equivalent 16-30 mesh, rounded silica sand into the wet coating and backroll to encapsulate the aggregate. Evenly broadcast aggregate at the rate of 10 - 15 lbs per 100 sq ft (0.5 – 0.75 kg/m²).
5. Remove all excess or loose aggregate by sweeping or vacuuming

6. Ensure there is no moisture on the surface of the aggregate/membrane before application of topcoat. Apply 15-20 wet mils (0.38 – 0.64 mm) of Conipur 275/295UV at the rate of 60 – 100 sq ft/gal (1.5 – 2.5 m²/L) using a flat squeegee. Immediately back roll to evenly level Conipur Topcoat.
7. Immediately broadcast Sonoguard® Aggregate or equivalent at the rate of 3-5 lbs/100 ft² (0.15-0.25 kg/m²). Lightly backroll into top coat.
8. Allow minimum curing time of 24-48 hours curing time before allowing vehicular traffic onto the coating. Existing environmental conditions effect the allowable time period.



EXTRA HEAVY DUTY TRAFFIC SYSTEM

1. Apply 4 wet mils (0.1 mm) of Conipur® 78 Primer at 250 - 300 ft²/gallon (6.4 – 7.3 m²/L).
2. Apply 20 wet mils (0.6 mm) of Conipur® 265-Z Base Coat with a proper notched squeegee at the rate of approximately 60 ft²/gallon (1.5 m²/L). Immediately backroll to level Conipur®. Allow base coat to cure 3 – 4 hours.
3. Apply 20 - 25 wet mils (0.51 - 0.64 mm) of Conipur 275/295UV intermediate topcoat using a properly notched squeegee at the rate of approximately 60 - 80 sq ft/gal. (1.5 – 2.0 m²/L). Immediately backroll to evenly level Conipur topcoat. The next step, #4, can utilize either method described in 4A or 4B.

4A. AGGREGATE TO REFUSAL METHOD

Immediately broadcast Sonoguard Aggregate or equivalent 16-30 mesh, rounded silica sand into the wet coating at the rate of 25 – 35 lbs per 100 sq ft (1.25 – 1.75 kg /m²). Immediately after the aggregate broadcast and while the coating is still wet, blow any excess aggregate via a portable blower forward into the wet coating. Do not over apply aggregate; it is acceptable to have localized wet spots in the aggregate surface after completion of this method. This process requires coordination between all of the members in the work crew. The blower operator, wearing clean spiked shoes should blow the excess aggregate forward towards the freshly applied and back rolled topcoat. In this method, the coating should not accept additional sand, minimal excess aggregate is on the surface, less aggregate is used and the textured appearance should be fairly uniform

4B. BROADCAST AND BACKROLL METHOD

Immediately broadcast Sonoguard Aggregate or equivalent 16-30 mesh rounded silica sand into the wet coating and backroll to encapsulate the aggregate. Evenly broadcast aggregate at the rate of 13 - 20 lbs per 100 sq ft (0.83 – 1.0 kg/m²).

5. Remove all excess or loose aggregate by sweeping or vacuuming
6. Ensure there is no moisture on the surface of the aggregate/membrane before application of topcoat. Apply 15-20 wet mils (0.38 – 0.64 mm) of Conipur 275/295UV at the rate of 60 – 100 sq ft/gal (1.5 - 2.5 m²/L) using a flat squeegee. Immediately backroll to evenly level Conipur Topcoat.
7. Immediately broadcast Sonoguard® Aggregate or equivalent at the rate of 3-5 lbs/100 ft² (0.15-0.25 kg/m²). Lightly backroll into top coat.
8. Allow minimum curing time of 24-48 hours curing time before allowing vehicular traffic onto the coating. Existing environmental conditions effect the allowable time period.

IMPORTANT NOTE: All coverage rates are approximate and may vary due to the application technique used. Coverage rates are affected by substrate texture, choice and distribution of aggregate, environmental conditions and application methods and are not under the control of BASF. Ensure that an adequate amount of aggregate is utilized to achieve required slip resistance.

Exterior applications must utilize Conipur® 295 UV Top Coat at the specified coverage rate of 15-25 wet mils.

Mockup

1. Provide mockup of at least 100 ft² (9.3 m²) to include surface profile, sealant joint, crack, flashing, and juncture details and allow for evaluation of slip resistance and appearance of Conipur® II.
2. Install mockup with specified coating types and with other components noted.
3. Locate where directed by architect.
4. Mockup may remain as part of work if acceptable to architect.

Clean Up

Clean all tools and equipment immediately after use with Reducer 990 or xylene. Cured material must be removed mechanically.

For Best Performance

- Conipur® 275, 295 UV, 265-Z, and Primer 78 have very short working times. Once the material has been mixed, the coating must be poured onto the surface and applied immediately.
- Conipur® 275 Top Coat will discolor if exposed to UV light.
- Minimum application temperature is 40° F (4° C) and rising.
- If areas of inadequate slip resistance exist, an additional Conipur® Top Coat backrolled with aggregate is required.
- Do not apply to concrete that is outgassing.
- Warm temperatures will shorten working time; plan work accordingly.
- Concrete should have a minimum compressive strength of 3,000 psi (21 MPa) and be cured for a minimum of 28 days.
- Do not apply Conipur® II to concrete slabs on grade, un-vented metal pan decks, or split slab applications with a water proofing membrane between slabs. Contact BASF technical services.
- Be sure to allow for movement in the deck by the proper design and use of expansion and control joints.
- Select the proper type and amount of aggregate to achieve desired slip resistance.

- The best method to ensure the proper wet film thickness is the use of a grid system. Divide the surface to be coated into grids and calculate the square footage of each. Refer to the coverage chart to determine the quantity of coating needed for each grid to arrive at the required mil thicknesses. For example, 1 pail of Conipur® II Base Coat will cover an area approximately 300 ft² (27.9 m²), or a grid 30 by 10 ft (9 by 3 m) at 25 wet mils (0.6 mm).
- Contact Technical Service when substrates are over 90° F (32° C) or under 40° F (4° C) or when applying to decks containing between-slab membranes.
- Avoid application of Conipur® II traffic deck coatings when inclement weather is present or imminent.
- Do not apply Conipur® II to damp, wet, or contaminated surfaces.
- Conipur® II is not suitable for use where chained or metal-studded tires will be used.
- 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 BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health, Safety and Environmental

Read, understand and follow Material Safety Data Sheets and product labels for all components of this flooring system prior to use. The MSDS can be obtained by searching for them on www.BuildingSystems.BASF.com, e-mailing your request to basfbcsct@basf.com or calling 800/433-9517. Use only as directed.

BASF Corporation Building Systems

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Shakopee, MN, 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517

Technical Service 800-243-6739

18.8



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The Chemical Company

PRODUCT DATA

3 03 35 00 Concrete Finishing

LAPIDOLITH®

Concrete hardener and dustproofers

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 absorbent, 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 absorbent, 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 hangars
- 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 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 fluosilicate 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

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

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 BASF 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™. 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 BASF 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, less water and exempt solvents.

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

BASF Construction Chemicals, LLC — Building Systems

389 Valley Park Drive
Shakopee, MN, 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517
Technical Service 800-243-6739



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The Chemical Company

PRODUCT DATA

7 07 19 16 **Water
Repellents**

HYDROZO® 100

High-performance, clear,
100% silane penetrating sealer

Description

Hydrozo® 100 is a clear, breathable, high-performance, 100% silane, VOC compliant, water repellent sealer. It is used on horizontal and vertical concrete and does not harm adjacent metal, glass, wood or painted surfaces - which do not require cleaning after application. It penetrates deeply, sealing out water, chloride ions, and acids, preventing damage from freeze/thaw cycles.

Yield

250 – 400 ft²/gallon (6 – 10 m²/L)

Coverage may vary greatly with porosity of the substrate; extreme porous substrate may require two coats. Perform test panels to ensure desired results and coverage rates.

Packaging

5 gallon (18.9 L) pails

55 gallon (208 L) drums

Color

Clear

Shelf Life

2 years when properly stored.

Storage

Store in unopened containers in a clean, dry area between 35 and 110° F (2 and 43° C).

Features

- No masking of windows necessary
- No residue
- Highest degree of performance
- Breathable
- 100% silane
- Superior water repellence
- Abrasion resistant

Benefits

- Requires no cleaning after application
- Will not harm glass windows, metal frames, or painted surfaces
- Extends service life of structures
- Allows interior moisture to escape without damaging sealer
- Protects against damage from moisture intrusion and chloride ion penetration
- Penetrates deeply and chemically reacts within the pores of concrete to provide long-lasting protection
- Provides long-lasting protection to horizontal substrates subject to traffic, such as bridge decks and highway surfaces

Where to Use

APPLICATION

- Traffic-bearing concrete substrates
- Bridge decks and substructures
- Concrete highway surfaces
- Ramps and barrier rails
- Parking garages
- Buildings
- Stadiums
- Cooling towers
- Many other reinforced concrete structures

LOCATION

- Horizontal and vertical
- Exterior or interior
- Above grade

SUBSTRATE

- New and existing concrete
- Brick
- Stucco

How to Apply

Surface Preparation

1. Verify substrate has properly cured. Concrete should obtain 80% of design strength, typically achieved within 14 – 28 days.
2. Clean all surfaces of all sand, surface dust and dirt, oil, grease, chemical films and coatings, and other contaminants prior to application. Use waterblast, sandblast, or shotblast as necessary to achieve the desired surface condition. Repoint any loose, disintegrated, or cracked mortar and allow a minimum of 72 hours drying time before application.
3. Air, material and surface temperatures should be 40° F (4° C) or higher during application. Hydrozo 100 may be applied to frost free surfaces as low as 20° F (-7° C). Do not apply sealer when temperatures are expected to fall below 20° F (-7° C) within 12 hours or when rain is expected within 4 hours following application. Hydrozo® 100 may be applied to slightly damp surfaces.
4. Crack control, caulking, patching, and expansion joint sealants can be installed before or after application of the sealer. Allow adequate curing time following sealant-manufacturer's recommendations. Allowing material to pond on silicone sealant will cause silicone to swell.



Technical Data

Composition


Hydrozo® 100 is 100% silane by weight.

Compliances

- Alberta DOT, Type 1c
- SWR Institute validated

Typical Properties

PROPERTY	VALUE
Penetration , in (mm), average depth, depending upon substrate	0.35 (9)
Surface appearance after application	Unchanged



**SEALANT • WATERPROOFING
& RESTORATION INSTITUTE**

Issued to: BASF Corporation
Product: HYDROZO 100

ASTM D 6532: Water Exclusion – Brick 99%,
Concrete 90%
Water Absorption – Brick .05%, Concrete .96%

ASTM D 6490: Water Vapor Transmission –
WVT (grains/h ft²) 2.0, Permeance 4.8
Validation Date: 4/03/12 – 4/02/17

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**CLEAR PENETRATING VERTICAL WATER
REPELLENT VALIDATION PROGRAM**
www.swronline.org

Test Data

PROPERTY	RESULTS	TEST METHODS
Flash point, ° F (° C)	165 (62.7)	SETA
Water repellency after heavy abrasion, %	83.5 – exceeds criteria	Alberta DOT penetrating sealer, Type 1c (0.35 w/c ratio)
Water weight gain, % reduction 250 ft²/gal (6.1 m²/L) 400 ft²/gal (9.8 m²/L)	90 85	NCHRP 244 Series II-cube test
Absorbed chloride, % reduction 250 ft²/gal (6.1 m²/L) 400 ft²/gal (9.8 m²/L)	96 87	NCHRP 244 Series II-cube test
Absorbed chloride, % reduction	98 – exceeds criteria	NCHRP 244 Series IV - Southern climate
Skid Resistance, BPN Broomed Concrete Untreated Treated	 90 90	 ASTM E 303
Water penetration of masonry, % Reduction Facing Brick Dampness Leakage	 100 100	 ASTM E 514
Water Exclusion, % Brick Concrete	 99 90	 ASTM D 6532
Water Absorption, % Brick Concrete	 0.05 0.96	 ASTM D 6532
Water Vapor Transmission WVT (grains/h/ft²) Permeance (Perms)	 2.0 4.8	 ASTM D 6490
Elevated Temperature Volatility, % Weight Loss @85° F / 50% RH 30 min. 60 min. @122° F / 50% RH 30 min. 60 min.	 <1 <1 2 6	 BASF Method

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

Application

1. Test small area of surface (generally a 5 by 5 ft [1.5 by 1.5 m] section) before starting general application of any clear penetrating sealer to ensure desired results and coverage rates. Allow 5 – 7 days for the product to fully react before evaluating. Refer to Appendix HY-3: Test Area Application.
2. Stir material thoroughly before and during application.
3. For horizontal surfaces, apply with a flooding action. Sealer may be applied with low-pressure spray or roller, followed by brooming for even distribution.
4. For vertical surfaces, apply by low-pressure, non-atomizing sprayer. Apply from the bottom up for uniform distribution of the sealer.

Apply to saturation, with a controlled rundown of 8" (20 cm). In certain cases, a mist coat before general application will help break the surface tension and assure maximum penetration of saturation coat.

Drying Time

Typical drying time for Hydrozo® 100 is 4 hours at 70° F (21° C) and 50% relative humidity. Cooler temperatures or higher relative humidity can extend the drying time.

Clean Up

Clean equipment with mineral spirits or xylene.

For Best Performance

- Do not apply during inclement weather or when inclement weather is anticipated within 12 hours.
- To prevent damage to nearby shrubbery and landscaping, cover or protect with drop cloth.
- Protect asphalt-based products such as roofing materials or plastic products from overspray.
- Caution should be taken with specialty coated glass. Small areas should be tested prior to application to ensure the product does not discolor the coating. Plastic windows will turn opaque when sprayed with this products.
- Hydrozo® 100 will not inhibit water penetration through unsound or cracked surfaces or surfaces with defective flashing, caulking, or structural waterproofing.
- Variations in the texture and porosity of the substrate will affect the coverage and performance of the product.
- Paint line striping after the application of Hydrozo® 100.
- 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 BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

HYDROZO® 100

Warning

Hydrozo® 100 contains octyltriethoxysilane and ethanol.

Risks

Combustible liquid and vapor. May cause skin, eye or respiratory irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Ingestion may cause irritation. Reports associate repeated or prolonged occupational overexposure to solvents with permanent brain, nervous system, liver and kidney damage. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

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

First Aid

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2.92 lbs/gal or 350 g/L, less water and exempt solvents.

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