

EC-11 EPOXY AGGREGATE BINDER

Technical Data Sheet

DESCRIPTION:

A two component, 100% solids, epoxy binder material designed to be mixed with graded aggregate at various ratios.

USES:

Designed for overlaying, resurfacing and repairing worn and eroded concrete floors in a variety of industries from light to heavy duty. Can be mixed and applied on the job site at a 1/8 to 1/4 inch or greater. Formulated to repair and protect concrete floor areas that have been subjected to the harsh effects of abrasive traffic and strong chemical attack.

ADVANTAGES:

- Fast curing system...little downtime
- 2-3 times stronger than concrete
- Solvent free...safe to use
- Resists a broad range of chemicals
- Resistant to steel-wheeled traffic
- USDA Approved

PACKAGING:

Available in 25-gal and 275-gal units.

Each 25-gal unit consists of one 5-gal pail of Part "H" Hardener, and four 5-gal pails of Part "R" Resin. The 275-gal unit consists of one 55-gal drum of Part "H" and four 55-gal drums of Part "R".

Note: The graded aggregate is purchased separately. Valspar's testing and data generated herein, is based on using a "special graded aggregate" from Fairmount Abrasives, located in Wedron, IL (1-800-258-3878). Additional suggested aggregates include "Tri-Blend" from US Silica Corp., located in Mauricetown, NJ (1-800-257-7034). Also, "Blend B-23" from RMC Lonestar, located in Pleasanton, CA (1-800-227-5186).

Although EC-11 should work with most aggregate blends, you should test your own aggregate system at various ratios to ensure desired properties and coverage.

GENERAL PRODUCT DATA:

Color: Clear and other colors available with use of Epoxy Color Add
 Pot Life: 20 minutes @ 75°F
 Application: Steel finishing trowel or power trowel
 Shelf Life: 2 years in unopened containers
 Cure Rate: 5-6 hrs.- Foot traffic 18-24 hrs.- Light traffic 72 hrs.- Heavy traffic and/or chemical spillages

TYPICAL PHYSICAL PROPERTIES:

| Type Test | Test Method | Typical Value |
|-----------------------|--------------------------|----------------------------------|
| Compressive Strength: | ASTM C-597 | 9,200 psi |
| Tensile Strength: | ASTM C-307 | 1,520 psi |
| Flexural Strength: | ASTM C-580 | 3,280 psi |
| Impact Resistance: | ASTM D-2794 | 160 in-lbs. |
| Hardness: (Shore D) | ASTM D-2240 | 87-90 |
| Bond Strength: | ACI 503R-5, 503R-25, A.1 | 400+ psi (100% concrete failure) |
| Flammability: | ASTM D-635 | Film is Self Extinguishing |

Above typical values based on 7 days cure @ 75 °F

COVERAGE:

The coverage rate will vary greatly based on the specific aggregate used and the ratio between the aggregate and EC-11 EPOXY AGGREGATE BINDER.

As a mortar system, the product is generally mixed at a 6.5 to 7.5 to 1 ratio (by weight). Based on this assumption, the coverage rate will be as follows:

| Size Unit | SQ. Ft | Thickness | Ratio (agg/liq) |
|--------------|--------|-----------|-----------------|
| 25-gal unit | 700 | 1/4" | 7.0/1 |
| 275-gal unit | 7,700 | 1/4" | 7.0/1 |

LIMITATIONS:

This product is not designed for exterior use, immersion, or any use where moisture can reach the underside of the coating. Do not apply to concrete floors less than 60 days old. Do not apply to floors previously treated with curing and parting compounds or other coatings unless they have been completely removed by chemical or mechanical means. Do not use on vinyl, asphalt, rubber, glazed tile, paving brick, quarry tile, Mexican tile, or similar materials.

Technical Data Sheets are updated periodically. To ensure the most current version is being used, visit Technical Resources on www.valsparflooring.com.

Proper material application is the responsibility of the user. Site visits made by Valspar personnel are for making technical recommendations only and not for supervising or providing quality control.

Do not apply if the floor or air temperature is below 60°F or over 90°F or if the relative humidity is above 85%. Do not apply over honeycombed or structurally unsound surfaces.

Before applying for protection against specific chemical environments, consult Chemical Resistance Guide or Valspar Technical Service.

Sealed surfaces may discolor under tires due to tire plasticizer migration.

If the product is to be applied in or near areas containing foodstuffs, they should be removed before the application and until the coating has fully cured and all vapors have dissipated.

Do not thin this product. Addition of thinners will slow down the cure and reduce the ultimate properties of this product. Critical recoat times will also be affected.

As with all high performance coatings, the cured product may become slippery when wet or if exposed to oily conditions. For a procedure for incorporating aggregate to obtain a non-slip finish, contact Valspar Technical Service.

If there is any question as to whether or not the product will adhere to an existing coating, a test patch should be applied and evaluated for compatibility and adhesion.

This product can not be sprayed.

This product has a limited pot life.

PRELIMINARY FLOOR INSPECTIONS:

In general, the area to be surfaced must be clean, sound, dry and above 60°F to assure a successful installation. Concrete must be at least 60 days old.

If there is uncertainty as to whether or not a curing compound or any coating is present on the floor, the following two tests may be performed in order to find out:

1. Pour a cup of water on three or four areas of the floor. If the water puddles out, then there probably is no curing compound or any coating on the floor, and the preparation process may begin. However, if the water beads up like on a waxed car, this may indicate the presence of a curing compound or any coating that must be removed by chemical or mechanical means.
2. Place a drop of PC-42 ACID CONDITIONER on the floor. If the acid bubbles, a curing compound or any coating is not present.

Always be alert to any possible airborne or surface contaminants that may contribute to problems such as fisheyes, crawling, cratering, etc.

The concrete floor should be examined for the presence of moisture. This can be accomplished by the following means:

1. Calcium Chloride Test
2. Delmhorst Moisture Meter
3. Polyethylene Sheet Method

Calcium Chloride Test: This test method works by a change in weight of moisture absorbing anhydrous calcium chloride and indicates the amount of moisture transmitting out of a large concrete surface area. Pounds is the equivalent weight of the water that is emitted from a 1,000 square foot concrete slab surface area in a 24 hour period of time (standard test duration is 60 hours). Concrete must not show moisture content greater than three pounds per 1,000 square feet in 24 hour time frame. Follow instructions as outlined by the supplier of the test kits. Make sure the concrete surface to be tested is completely clean of any residue and any debris. All seals, including curing compounds must be removed prior to performing tests. Sources: Roofing Equipment Inc., Denver, CO 303-371-7667; Sealflex Industries Inc., Costa Mesa, CA 714-708-0850; Vinyl Plastics Inc., Sheboygan, WI 920-458-4664; and Floor Seal Technology, San Jose, CA 408-436-8181

SURFACE PREPARATION:

All oil, grease, wax, laitance, curing compounds, water soluble concrete hardeners and other surface contaminants must first be removed. PC-43 WASH OFF REMOVER or PC-46 DRY EZE should be used for removal of sealers, finishes and paints. Inspect the concrete and remove loose or soft concrete by scarifying, sand blasting or high pressure water blasting.

STANDARD TESTS:

Refer to the standard test methods below for further information.

| | |
|----------------|---|
| ASTM D 4258-83 | Standard Practice for Surface Cleaning Concrete for Coating |
| ASTM D 4259-83 | Standard Practice for Abrading Concrete |
| ASTM D 4260-83 | Standard Practice for Acid Etching Concrete |
| ASTM D 4262-83 | Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces |

CHEMICAL PREPARATION:

PC-40 DYNOMITE should be used as directed to remove all traces of grease, oil, and dirt followed by a thorough rinsing to remove all cleaning residues. Remove excess water with a good wet vacuum. To remove laitance and to give a slight texture to area to be surfaced, acid-etch using PC-42 ACID CONDITIONER. Using a 1:1 dilution ratio with water, apply evenly as possible to the surface and vigorously scrub into the surface with a stiff bristle brush or automatic scrubber. Thoroughly rinse with copious quantities of water and use wet vacuum to remove any residues. Repeat this process until concrete surface is the texture of a medium grit sandpaper.

MECHANICAL PREPARATION:

Mechanically abrade the concrete by grinding, scarification or "shot-blasting" the surface to the texture of a medium grade sandpaper. Next, sweep and vacuum any remaining dirt and dust with a wet/dry vacuum. Removing residual dust will help insure a tenacious bond from the primer.

Whenever "shot-blasting" is utilized, be careful to leave concrete with a uniform texture. Over "blasting" will result in reduced coverage rates of the EC-7 EPOXY SHOP FLOOR RESURFACER and/or subsequent top coats. It is also possible that the texture of the "shot-blast" pattern may show through the last coat. This is known as "tracking".

NOTE: Although, chemical preparation may be required on some surfaces, mechanical preparation is highly recommended and in most cases more efficient. It is not uncommon that a combination of the two is required.

PRIMING:

The surface to be patched or resurfaced must be first primed with a coat of PR-7 FLEX PRIME at an approximate rate of 275-300 sq. ft. / gallon. The mixed mortar must be applied to the "wet" primed surface ASAP. If the PR-7 is allowed to dry, it must be recoated before applying the EC-11 EPOXY AGGREGATE BINDER system. Rough concrete may result in reduced coverage.

MIXING:

Color Additives: If color is desired, the appropriate Epoxy Color Add is added to the Part "B" Resin at the specified rate. *Refer to the Epoxy Color Add Data Sheet for specific ratios.*

Before proceeding with the mixing and application, verify that the surface and/or material temperature is above 60°F and that the surface is properly prepared. Since this is a 4:1 ratio

1. First, the two liquid components of the EC-11 are thoroughly blended together at a 4 to 1 ratio by volume with a "jiffy mixer" for approximately 2 minutes (4 parts Resin, 1 part Hardener). Remember: at a 4:1 ratio, it is very critical to accurately measure the liquids to insure the product achieves the tested properties.
2. The blended liquids are then thoroughly mixed with the "special" graded aggregate using an appropriate mixer for this type of system. For a 50# bag of the blend from Fairmont Abrasives, 100 fl. oz. of the blended liquids was used.

This mixing should take about 2-3 minutes, based on the size batch involved. Remember that this is a fast curing system and must be mixed with the aggregate immediately and this mortar must be applied as soon as possible to the primed surface.

The Resin and Hardener must be premixed prior to use.

APPLICATION:

1. This epoxy mortar mixture is immediately used to fill in any holes, cracks and crevices using a margin trowel.
2. Then the material is spread with a gauge rake, trowel or screed box, to the desired thickness.
3. Finally the material is compressed using a steel finishing trowel, finish moving the trowel from left to right. The finished surface should be relatively smooth, free of trowel marks and without open areas.

POT LIFE:

Approximately 20 minutes @ 75°F. This pot life is based on not leaving the mixed material in the mixing pail any longer than absolutely necessary.

CURE TIME:

At a cure temperature of 75°F, allow 5-6 hours for foot traffic, 18-24 hours for light loads. For chemical spillages and heavier loads allow a minimum 72 hours.

CLEAN UP:

Equipment should be cleaned immediately after use with soap and water or UR-9 MCU THINNER.

CRITICAL RECOAT TIME:

It is important to apply subsequent coats of this and other products within 12 to 24 hours (under normal curing conditions). If this coating is allowed to cure longer than the 24 hours before subsequent recoats, screening will be necessary. The floor surface should be screened to the effect that a uniform dullness is achieved. There should be no gloss present on the floor before applying the next coat.

TROUBLE SHOOTING:

| PROBLEM OBSERVED | POSSIBLE CAUSES |
|------------------------|---|
| Fisheyes | Oil Contamination; Improper substrate cleaning; Mold Release Agents; Improper Mixing. |
| Peeling From Substrate | Insufficient preparation process; Oil impregnation; Moisture in concrete. |
| Peeling Between Coats | Past critical recoat time; Contamination between coats. |
| Coating Soft, Dulling | Improper mixing; Use of thinner in product; Extreme weather conditions. |
| Slow Cure | Low floor and ambient temperatures; Use of thinner in product; Improper mixing; Product applied too thin. |
| Fast Cure | High floor and ambient temperatures. |
| Bubbling | High temperatures; No primer used; Working product past pot life; Improper mixing overworked the product. |

REFER TO MATERIAL SAFETY DATA SHEET FOR FURTHER SAFETY AND HANDLING INFORMATION.

See individual labels for more caution statements. KEEP OUT OF THE REACH OF CHILDREN.

DISPOSAL:

Dispose in accordance with federal, state, and local regulations. Use licensed hazardous waste company.

Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned.

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