

VALFLEX®
FLEXIBLE EPOXY MEMBRANE

Technical Data Sheet

DESCRIPTION:

Valflex is a two component, 99% solids and flexible epoxy for use as a flexible membrane. Can be used alone as a Clear or with Epoxy Color Add.

USES:

Valflex membrane is ideal for areas where solvent fumes are unacceptable such as, cold storage rooms and mechanical equipment rooms. Valflex may be used as a waterproofing membrane.

ADVANTAGES:

- 99% solids system - low odor
- Economical
- Ease of application
- Hybrid chemistry assures long term durability
- No VOC's
- Non Flammable
- Bridges hairline cracks, flexible properties
- Resistance to thermal shock
- Wide range of colors with Epoxy Color Additive
- Allows installation of full thickness in one application
- USDA Approved

PACKAGING:

Valflex is packaged in full 5-gallon pails. Mix ratio is 1R:1H by volume.

COVERAGE:

Approximate coverage is 80-sq. ft. per mixed gallon @ 20 mils DFT. Waterproofing requires 40 mils total.

ASSOCIATED PRODUCTS:

Preparation: PC-40 DYNAMITE
 PC-41 SOLV-KWIK
 PC-42 ACID CONDITIONER

GENERAL DATA:

Colors: Clear and various colors using Epoxy Color Add
 VOC: 17 g/l
 Percent Solids: 99% by volume
 Recommended Film Thickness at 80 sq. ft. per gallon: 20 mils DFT
 Application Method: Notched trowel or notched rubber squeegee and spiked roller
 Thinner: NOT RECOMMENDED
 Recoat Time @ 75°F: Up to 48 hours
 After 48 hours, screen before recoating.
 Shelf-Life: 18 months in unopened container

TYPICAL PHYSICAL PROPERTIES:

<u>Test</u>	<u>Description</u>	<u>Values</u>
Hardness: (Shore D)	ASTM D-2240	40
Adhesion, Bond Strength:	ASTM D-4541	520 lbs/in ² - Concrete Failure
Impact Resistance: (Gardener Impact Tester)	ASTM D-2794	>160 in - lb (900 cm/Kg)
Flammability:	ASTM D-635	Self Extinguishing
Tensile Strength:	ASTM D-412	1050 psi (7.2 MPa)
Tensile Elongation:	ASTM D-412	125%
Modulus of Elasticity:	ASTM D-412	246,000 psi (1697 MPa)
Tear Strength:	ASTM D-1938	90 lbs (41 Kg)
Thermal Cycling: 24 Hrs. -21°C to 25°C	ASTM C-884	No Cracking

Above typical values based on cure @ 75°F

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.

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

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.

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.

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 not intended to be sprayed.

This product has a limited pot life. Product should not be applied by dipping roller into kit container, but by pouring a bead of mixed material in the form of a ribbon on the surface to be coated.

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, which 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, which 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 are 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 medium grit sandpaper.

MECHANICAL PREPARATION:

Mechanically abrade the concrete by grinding, scarification or "shot-blasting" the surface to the texture of 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 primer and/or subsequent topcoats. It is 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:

No primer is necessary.

NOTE: Waterproofing requires (2) coats of Valflex at 40 total mils. This method does not require a primer. If a single coat application of Valflex is applied at 40 mils, a primer is necessary.

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PR-7, PR-14

PR-7 Flex Prime should be applied at 275-300 sq. ft. per gallon, over damp or dry concrete. Rough concrete surfaces will result in reduced coverage.

PR-14 KIWK PRIME should be applied at 400-500 sq. ft. per gallon over damp or dry concrete. For rough areas or floors that have been "shot blasted", coverage will be reduced to 300-400 sq. ft. per gallon. Allow to dry thoroughly (varies with temperature and humidity) until tack free and clear in appearance before coating.

MIXING:

It is important to remember that this coating has a limited pot life. Therefore it is wise to check and make sure everything is in order before starting the mixing sequence.

Color Additives: If color is desired, the appropriate Epoxy Color Add is added to the "Clear" Part R resin at the specified rate. Refer to Epoxy Data Sheet for specific ratios. Mix at low speed for a minimum of two minutes.

1. The Part R Resin must be thoroughly mixed prior to the addition of Part H Hardener.
2. Mix ratio is 1 Part Resin to 1 Part Hardener by volume. Pour into an empty clean pail correct amount of Resin and Hardener, 1 R:1 H.
3. Mix with a very low speed jiffy mixer, until completely blended. This will take about 3 to 5 minutes. Be careful not to introduce any air bubbles while mixing.
4. Due to the difference in viscosity between the Part "R" Resin and Part "H" Hardener, care must be taken to ensure that both components are thoroughly mixed in order to avoid weak or partially cured spots in the coating.
5. Since this product does not need any induction time, it should be used immediately after mixing.

APPLICATION:

1. This product should be applied by first pouring a bead of material in the form of a ribbon on the surface to be coated. The material should not be left in the container long because it will set faster thus reducing pot life.
2. Using a flat, serrated squeegee or trowel spread the bead of material at a rate of approximately 80 sq. ft. per gallon. Apply as evenly as possible. The material should flow out and does not require back rolling in most cases.
3. Valspar requires a total of 40 mils of Valflex when waterproofing is necessary.

POT LIFE:

The pot life on this product is approximately 40 minutes at 75°F and 50% R.H. High temperature and high humidity will accelerate curing and reduce pot life. Since this is not a solvent based system the pot life is relatively short. Do not mix more of this material than can be used within this period of time.

CURE TIMES:

The floor area should be maintained at a temperature range of 60°F or less than 90°F during application and curing. At 75°F, the coated area should be ready for foot traffic in 12-16 hours and light traffic in 24 hours. For heavy-wheeled traffic and/or chemical spillages, allow a minimum of 72 hours cure.

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 48 hours (under normal curing conditions).

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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