

Technical Data Sheet

DESCRIPTION:

A two component, 100% solids, epoxy resurfacer for thin coat application. Can be used alone as a Clear or "Oxford Gray". Additional colors available by mixing the clear with UR-4 Color Add.

USES:

Designed for economical base coat application from 5 to 10 mils on concrete floors subjected to abrasion and/or chemical spills. Provides an economical binder for slurry type applications.

ADVANTAGES:

- 100% solids system - low odor
- Economical resurfacer
- Improved Clarity, Water Clear
- Easy application with roller
- Good chemical and abrasion resistance
- Wide range of colors with UR-4 Color Add

PACKAGING:

The EC-7 EPOXY SHOP FLOOR RESURFACER is packaged in pre-proportioned 6 gallon units (2-batch), 15 gallon pail units and in 165 gallon bulk units for error-free jobsite mixing and application.

Each 6 gallon unit consists of 2 batches of product, comprised of 2 one gallon containers Part "A" Hardener in a corrugated carton and 2 pails of Part "B" Resin. The correct amount of Part "A" Hardener is packed in the gallon container while the Part "B" Resin is packed in a five gallon pail, which is oversized to allow for mixing.

A 15 gallon bulk units consisting of 2 full five gallon pails of Part "B" Resin and 1 full five gallon pail of Part "A" Hardener. When using the bulk unit, the product is mixed at the ratio of 2 parts Part "B" Resin to 1 part Part "A" Hardener by volume.

A 165 gallon bulk unit consists of two full 55 gallon drums of Part "B" resin and one full 55 gallon drum of Part "A" hardener. The two are combined in a separate, clean mixing vessel at the ratio of two parts resin to one part hardener by volume.

CAUTION: INSURE THAT THE PART-B RESIN IN THE BULK UNITS ARE PROPERLY BLENDED BEFORE USING.

COVERAGE:

Approximately 160-320 sq. ft. per gallon or 960-1,920 sq. ft. per 2-batch 6 gallon unit over primed, relatively smooth, dense concrete surfaces. Actual coverage will vary depending on the texture and porosity of the

GENERAL DATA:

Colors: Clear, Oxford Gray and other colors available with use of UR-4 Color Add
 VOC: 5 g/l (Clear)
 Coverage: 960-1,920 sq. ft. per 6 gal unit @ 10-5 mils
 Recommended Film Thickness: 10-5 mils/coat at 160-320 sq. ft. per gallon:
 Mixing Method: Low speed with "jiffy" mixer
 Application: Flat squeegee, 3/8" nap roller and porcupine roller.
 Method: NOT RECOMMENDED
 Thinner: NOT RECOMMENDED
Maintain resin and hardener below 80 degrees F and under no circumstances mix these products above this temperature.
 Pot Life @ 75°F: 20 minutes
 Cure Rate @ 75°F: 10 hrs. - Foot traffic
 24 hrs. - Light traffic
 72 hrs. - Heavy traffic and/or chemical spillage

Recoat Time @ 75°F: From 10 to 14 hours.
 After 14 hours, screen before recoating.

Shelf-Life: 2 years in unopened container

TYPICAL PHYSICAL PROPERTIES:

<u>Test</u>	<u>Description</u>	<u>Values</u>
Hardness: (Shore D)	ASTM D-2240	80-84
Bond Strength:	ACI 503R-5, 503R-25, A.1	400+ psi (100% concrete failure)
Impact Resistance:	ASTM D-2794	160 in-lbs.
Abrasion Resistance: Taber Abraser(CS-17 wheel, 1000 cycles, 1000 gm load)	ASTM D- 1044	65-70 mg loss
Flammability:	ASTM D-635	Film is Self Extinguishing Passes
Slip Resistance	Equivalent to ASTM D-2047	

concrete and whether or not PR-14 WB KWIK PRIME is used.

ASSOCIATED PRODUCTS:

Preparation: PC 40 DYNOMITE
PC 41 SOLV KWIK
PC 42 ACID CONDITIONER

Priming: PR 14 WB KWIK PRIME 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.

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 Federal 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 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 is 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 product in the form of a ribbon on the surface to be coated.

NOTE: Addition of UR-4 Color Add to this product may result in color streaking and non-uniform appearance.

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

Delmhorst Moisture Meter - This meter uses electrical resistivity to determine the moisture content of concrete at or below the surface. The most accurate way to get a reading with the probes is to make two holes in the concrete (with a hardened concrete nail). The depth of the 2 probe holes can be approximately 1/16 to 1/8 inch in depth. The probes are then placed in the two holes and a reading is taken. A few readings should be taken

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at various locations of the floor. In adhesion failures, check concrete under newly peeled films. A reading of 17 or higher on a scale of 100 is considered too wet to seal or a moisture problem is present in the slab, causing a coating system to fail. It is highly recommended that all concrete slabs be checked for moisture, no matter what the age of the floor.

Polyethylene Sheet Method - An effective method to test for excessive moisture within the concrete (capillary moisture) is the Plastic Sheet Method. This method is done by taping (2 inch duct tape) a 4 mil thick clear plastic sheet 2 foot x 2 foot to the slab surface. The sheet can remain on the surface for 16-24 hours. After this time duration the plastic sheet should be removed and the underside checked for moisture. If visible moisture collects under the plastic film - the concrete has too much moisture within it for successful coating application. The slab must be allowed more time to cure. Note: Prior to taping plastic sheet to floor, thoroughly clean and/or strip any soil or coatings on the surface. This test will not work over chemically hardened concrete. Hardener must be eliminated for this test to be effective.

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:

If acid cannot be used, mechanically abrade or "shot-blast" the surface to the texture of a medium grade sandpaper, then vacuum up any dust.

Whenever "shot-blasting" is utilized, be careful to leave concrete with a uniform texture. Over "blasting" will result in reduced coverage rates of the PR-14 WB KWIK PRIME and/or subsequent top coats. It is also possible that the texture of the "shot-blast" pattern may show through the last coat.

PRIMING:

PR-14 WB KWIK PRIME should be applied at 400-500 sq. ft. per gallon over a damp or dry floor. For rougher areas or floors that have been "shot-blasted", coverages 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 UR-4 Color Add is added to the "Clear" Part B resin at the specified rate. Refer to the UR-4 Data Sheet for specific ratios. Mix at low speed for a minimum of two minutes.

1. The Part B Resin must be thoroughly mixed prior to the addition of Part A Hardener.
2. Carefully empty the contents of the Part A Hardener entirely into the can of Part B Resin. The Part B container is oversized to allow for easy mixing.
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 A Hardener and Part B Resin, 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:

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 the pot life.

1. Using a serrated squeegee, spread the poured material at a rate of approximately 160-320 sq. ft. per gallon. Apply as evenly as possible, working from left to right, and then back.
2. Backroll using a high quality 18", 3/8" nap roller.
3. Roll with a porcupine roller after 10 minutes to remove excess bubbles.

Note: This product is designed to be used as is and therefore thinning or reducing with solvents is not recommended. Also do not mix less than full batch quantities.

POT LIFE:

The pot life on this product is approximately 20 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 kits of 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 10 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 10 to 14 hours (under normal curing conditions). If this coating is allowed to cure longer than the 14 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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WARRANTY STATEMENT

Information about Federal products is given to the best of our knowledge, based on tests and experience. However, as products are often applied or used under conditions beyond our control, Federal cannot guarantee anything but the quality of the products. Federal warrants its products meet specifications set by Federal, but we reserve the right to change given specifications without notice. FEDERAL DISCLAIMS ALL OTHER WARRANTIES RELATING TO THE PRODUCTS AND THEIR APPLICATION, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Receipt of Federal products constitutes acceptance of the terms of this limited warranty and the terms and conditions set out in our invoice, contrary provisions of buyer's purchase documents notwithstanding. In the event Federal finds that the product delivered is off specification, Federal will, at its sole discretion, either replace the product or refund the purchase price thereof, and Federal's choice of one of these remedies is buyer's sole remedy. Federal will under no circumstances be liable for special, incidental or consequential damages.