

CRU-400 CRU COATING

Technical Data Sheet

DESCRIPTION:

This two-component chemical resistant aliphatic urethane has exceptional resistance to most chemicals. It cures through chemical reaction and therefore is not dependent on atmospheric moisture.

USES:

Use on concrete in areas that are subjected to strong chemical spillages. Especially useful for floors in such areas as aircraft hangers, service bays, etc., where light reflectance and chemical resistance to spills are required. Can be used alone as clear. Eighteen additional colors available by mixing the clear with UR-4 Color Add.

ADVANTAGES:

- UV light resistance
- High degree of chemical resistance
- High light reflectance
- Excellent hiding properties
- High abrasion resistance
- Excellent anti-soiling properties
- Wide range of colors using UR-4 Color Adds

PACKAGING:

The CRU-400 COATING is packaged in full containers. Part "H" Hardener is packaged in a full five-gallon pail or full one-gallon containers. Part "R" Resin is packaged in a full five-gallon pail.

CRU-400 COLOR BASE KITS are packaged in pre-proportional kits for error-free job site mixing and application. Each kit consists of one 5 gallon pail filled with 1.5 gallons of Part "R" Resin and one 1.0-gallon container of Part "H" Hardener. Each one kit requires 1-qt of UR-4 Color Additive, which is sold separately.

MIX RATIO:

Clear: 2 R: 1 H
Color Add: 1.5 gal R: 1-gal H: 1-qt UR-4

COVERAGE:

Depending upon smoothness of existing surface, coverage is approximately 350-sq. ft. per gallon per coat,

Clear
at 350-400 sq. ft. Wet: 4.0 - 5.0 mils/coat
ft. per gallon: Dry: 2.5 – 3.0 mils/coat

GENERAL DATA:

Colors:	Clear, and other colors available with the use of UR-4 Color Add
Percent Solids By Weight:	Clear-63.0%;
VOC:	368 g/l (Clear); 341 g/l (with UR-4 Color Add)
Flash Point, T.C.C.:	81°F
Gloss @ 60°:	90
Recommended DFT at 350-400 sq. ft. per gallon:	<u>Clear:</u> 2.5 – 3.0 mils
Suggested Number of Coats:	Two coats over primed surface.
Application Method:	Lamb's wool applicator or high quality 3/8" nap solvent resistant roller.
Clean-up Solvent:	UR-10 CRU Thinner
Dry Time @ 75°F:	Tack free in 7 hours Light Traffic in 24-30 hours Heavy Traffic in 5 days
Recoat Time @ 75°F:	From 12 to 18 hours. After 18 hours, screen before recoating.
Shelf-Life:	1 year in unopened container

TYPICAL PHYSICAL PROPERTIES:

Test	Values	Description
Abrasion Resistance	Taber Abraser CS-17 wheel, 1000: cycles, 1000 gm load.	18 mg loss
Adhesion	To concrete: Existing CRU coatings with proper preparation	Excellent
Flexibility	Bent on 1/8" conical	No cracking mandrel or crazing
UV Light Resistance	Q-U-V Accelerated Weather Tester	Excellent
Slip Resistance	ASTM D-2047	Passes

ASSOCIATED PRODUCTS:

Preparation:	PC-40 DYNOMITE PC-41 SOLV-KWIK PC-42 ACID CONDITIONER
Priming:	PR-14 WB KWIK PRIME PR-7 FLEX PRIME
Thinner & Catalyst:	UR-10 CRU THINNER UR-11 CRU CATALYST

LIMITATIONS:

This product is not designed for immersion or any use where moisture can reach the underside of the coating. Do not apply to 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.

In order for this product to cure per specifications, adequate air ventilation must be provided during and after the application process.

Do not apply at a mil thickness greater than recommended. Too thick of an application may result in solvent entrapment and improper curing.

Do not apply in damp or wet weather or in air temperatures below 55°F or above 85°. Do not apply when 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.

Vapors from this product can be objectionable to people unaccustomed to the odor; do not apply in or around buildings occupied by nonconstruction personnel without consulting building management.

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 application should be applied and evaluated for compatibility and adhesion.

This product is not intended to be sprayed.

PRELIMINARY FLOOR INSPECTIONS:

In general, the area to be surfaced must be clean, sound, dry and above 55°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
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 DYNAMITE 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 by 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, seep 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 top coats. It's also possible that the texture of the "shot-blast" pattern may show through the last coat. In most cases, multiple coats of urethane will be required in order to cover the profile created by a improperly "shot-blasted" floor. 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.

OPTION:

After the primer has cured, a coat of epoxy could be applied to build mil thickness prior to the urethane topcoat.

PRIMING: PR-14, PR-7

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", coverage may 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.

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.

MIXING:

If clear coating is desired follow steps 1-4 below, use step 2a instead of 2b. If pigmented coating is desired follow steps 1-4 below, use step 2b instead of 2a.

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 Additive is added to the "Clear" Part "R" Resin at the specified rate. Refer to the UR-4 Data Sheet for specific ratios. Mix at the appropriate rate at low speed for a minimum of two minutes.

1. The Part "R" Base Resin must be mixed for a minimum of 2 minutes prior to the addition of the Part "H".
2. Use exact ratios:
 - a.) For **clear**, carefully measure one gallon of Part "H" Hardener into 2 gallons of Part "R" Resin.
 - b.) For **color base**, one quart of UR-4 Color Add into 1-1/2 gallons of Part "R" Resin. Mix thoroughly with a Jiffy mixer being careful not to beat in air. Then add 1 gallon of Part "H" Hardener and mix.
3. Mix with a variable speed Jiffy mixer, until completely blended. This will take about 2 to 3 minutes. Be careful not to introduce any air bubbles while mixing.
4. Due to the difference in viscosity between the Part "H" Hardener and Part "R" 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.

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APPLICATION:

Avoid application if the floor temperature is below 55°F or above 85°F. Atmospheric, floor and product liquid temperatures should always be considered before applying this product.

1. Apply as evenly as possible. To lessen bubbling of the coating, avoid excessive agitation of the liquids with the roller or applicator.
2. Use a lamb's wool applicator or 3/8" solvent resistant cover and apply material at recommended coverage.

POT LIFE:

Useful working time is approximately 30-45 minutes at normal application temperatures and conditions of 75°F and 50% R.H.

DRYING TIME:

1. Under normal cure conditions, this product will be tack free in approximately 7 hours. If a second top coat is desired, allow a minimum of 12 hours but no more than 18 hours between subsequent coats. If more than 18 hours have elapsed screen the floor prior to recoating.
2. Allow approximately 24 hours cure after last coat for light foot traffic. When heavy traffic is involved, it is best to wait a minimum of 5 days. For maximum abrasion and chemical resistance, a cure time of 7 days is recommended.

	<u>Clear</u>	<u>+ UR-4 Color Add</u>
Tack Free	7 hrs.	9 hrs.
Recoat	12-18 hrs.	12-18 hrs.
Light Traffic	20-48 hrs.	20-48 hrs.

All dry times will vary depending on atmospheric conditions at the time of application.

CLEAN-UP:

Equipment should be cleaned immediately after use with soap and water or UR-10 CRU THINNER.

CRITICAL RECOAT TIME:

It is important to apply subsequent coats of this and other products within 12 to 18 hours (under normal curing conditions). If this coating is allowed to cure longer than the 18 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:

<u>PROBLEM OBSERVED</u>	<u>POSSIBLE CAUSES</u>
Orange peel; Wrinkling	Product applied too heavily; Product applied over an incompatible existing coating; Recoating too soon.
Slow Cure	Low floor and ambient temperature; Improper mixing of components; Inadequate ventilation during application and cure; Product applied too thick.
Poor Gloss; Dull Finish	Solvent entrapment due to inadequate ventilation during application and cure. Improper ratios
Roller Marks in Finish; Bubbles in Finish; Product Curing Fast	High floor and ambient temperatures; Humidity during application; Extra catalyst added to product; Product applied too thin.
Fisheyes; Crawling	Improper substrate cleaning; Surface contamination of oil, grease, silicone, or mold release agents, etc.
Peeling between Coats	Past the critical recoat time; Contamination between coats; Recoating too late.

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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