CITADEL

CRE-820 S

100% SOLIDS CHEMICAL RESISTANT EPOXY

DESCRIPTION AND USES

Citadel® CRE-820 S 100% Solids Chemical Resistant Epoxy is a floor coating system applied at a thickness of 16 to 50 mils. It is designed for use in moderate to severe chemical environments and can tolerate constant rubber wheel traffic. This coating can be used as a 45-50 mil anti-skid textured surface, a 16-mil smooth finish, or a glaze coat over a heavy-duty topping.

For vertical surfaces, use CRE-820 V.

PRODUCT FEATURES AND BENEFITS

- High resistance to acids, alkalis and solvents. The Corrosion Resistance Chart in the Heavy-Duty Concrete Flooring Solutions Guide lists a variety of chemicals and expected performance with each.
- CRE-820 S will cure adequately for the next coating step in 6-8 hours at 70°F.
- This coating complies with USDA FSIS regulatory sanitation performance standards for food establishment facilities. This coating is impervious to moisture and easily cleaned and sanitized.

PRODUCTS

CRE-820 S is available in three standard colors. Custom colors are available upon request. Refer to the Citadel color chart. Product codes listed are 3-Gallon Kits. Mixing ratios are shown on the product labels.

SKU	DESCRIPTION
404306	Armor Gray
404307	Dunes Tan
404308	Light Gray
404309	Super Light Gray*
404310	Dark Gray*
404311	Navy Gray*
404312	Safety Red*
404313	Safety Yellow*
404314	Tile Red*
404315	Safety Blue*
404316	Safety Green*
404317	Silver Gray*
404318	Greige*
404319	Safety Orange*
404320	White*
404321	Black*
404322	Custom*

*Made-to-Order only. Contact Rust-Oleum Customer Service for details.

TYPICAL USES

CRE-820 S coating is used where one or more of the following properties are required:

- High wearability
- Corrosion resistance
- Anti-skid safety surfaces (when used in conjunction with a broadcasted aggregate)
- Ease of cleanability and maintenance
- Aesthetically pleasing surfaces

It may be used directly over concrete, or as a topcoat for other Citadel floor toppings.

TYPICAL APPLICATIONS

Walkways
Light warehousing & storage areas
Light manufacturing
Show rooms/clean rooms
Boiler plants/laboratories
Animal treatment areas

PRODUCT APPLICATION

SURFACE PREPARATION

NEW, UNCOATED CONCRETE: New concrete should be allowed to cure for a minimum of 30 days before application of any coating. If there is any doubt about the dryness of the concrete, conduct a test by simply placing a weighted rubber mat, plastic sheet or other non-porous material on the surface for 24 hours. Check the underside of the mat and concrete for signs of moisture. The substrate will be darker if damp. If moisture is found, allow additional drying time (10-14 days) and repeat test. If moisture persists, contact Rust-Oleum® Technical Services for additional product information.

Remove oil, dirt, grease and other chemical contaminants by cleaning with Rust-Oleum Professional Cleaners Concentrated Cleaner Degreaser, detergent, or other suitable cleaner. Rinse with water. Determine porosity by performing a water break test in multiple areas of the floor. If water soaks in, the surface is porous and can be coated. If water beads up on the concrete, the surface is not porous and additional treatment is warranted. Grind the concrete to achieve a surface profile. ICRI CSP Level 2 is recommended.

PREVIOUSLY COATED CONCRETE: Remove loose dirt, dust and paint by sweeping or vacuum cleaning. Remove grease, oil, floor compound or wax as indicated above, in the new, uncoated concrete section. Very glossy or hard coatings should be lightly sanded to ensure maximum adhesion. The CRE-820 S will not lift most previous coatings.

CITADEL

CRE-820 S

100% SOLIDS CHEMICAL RESISTANT EPOXY

PRODUCT APPLICATION (cont.)

SURFACE PREPARATION (cont.)

Concrete floor areas which require patching should be free of dirt, oil, grease and other chemical contaminants as indicated above, in the new, uncoated concrete section. Loose cement and previous paint should also be removed. The TurboKrete® Concrete Patching Compound or Fortification Formula can be used to repair damaged areas of the floor. Refer to the product Technical Data Sheet for more information.

MIXING

Hand mixing is not adequate. You must combine the base and activator by power mixing using either a 3" Jiffler Mixer or Hanson Plunge Mixer. Mix at 500-750 rpm for 1-3 minutes. Do not over mix or use higher speeds. This can introduce air into the coating causing small bubbles in the finish.

Start mixing the CRE-820 S part A and immediately add the part B activator. It is very important to transfer as much part B activator as possible, scrape the sides and bottom of the container thoroughly. Mix the two components together for 1-3 minutes, being careful to not pull air into the mixture.

EQUIPMENT RECOMMENDATIONS

SQUEEGEE: Use a high-quality rubber squeegee.
ROLLER: Use a high-quality short nap (⅜") lint-free roller with a phenolic core.

APPLICATION

Apply only when air and floor temperatures are between 60-80°F. Because of the short pot life, it is recommended the application of the coating be limited to small sections. One activated gallon of CRE-820 S will cover 100 square feet at 16 mils. This can be achieved with a single coat application, however, on bare concrete there is a risk of outgassing from small pinholes, voids and raising temperatures in the concrete during the curing of the coating which will form blisters in the finish.

To greatly reduce the risk of blisters we recommend that bare concrete be first primed with Citadel Ultra Hydro Stop or PLE-100 General Purpose Epoxy. Refer to the Technical Data Sheet for the primer for more information and application instructions.

NOTE: Outgassing only occurs when there is a rise in temperature causing entrapped air in pinholes to expand. The risk of blisters can also be reduced by avoiding application of the coating during times of the day when temperatures may increase.

PRODUCT APPLICATION (cont.)

APPLICATION (cont.)

After the primer has cured, mark off the floor into 100 square foot sections. Coating this area with one gallon of activated CRE-820 S finish will yield a film thickness of 16 mils. On previously coated floors where outgassing is not a problem, the CRE-820 S can be applied directly to the floor in a single coat application of 16 mils. Mark out the floor into 100 square foot sections for coverage with one gallon of activated material.

Immediately pour the mixture out onto the marked off area of the floor in a long thin strip. Do not try to work out of the container or put the material in a roller pan as heat will build up and shorten pot life and work time and could be hazardous. The material on the floor will be workable for about 20 minutes.

NOTE: Do not scrape the sides or bottom of the container. Use only the material that flows naturally out of the container. Also, do not turn the container upside down and leave on the floor to drain. Doing so may result with unactivated material from the sidewall of the container being applied. This will cause soft spots in the coating.

After pouring the material onto the floor, use a rubber squeegee to spread the material out over the entire section. Roll the material smooth using a ⅜" nap, lint free roller with a phenolic core. Make all final passes parallel and in the same direction. Do not roll excessively and do not re-roll the material after the final passes are made. Doing so may result in color variations.

NOTE: Change the roller cover every 45-60 minutes and always mount it on the roller frame in the same direction. After completing the section repeat the process on the adjacent section, overlapping the prior application approximately 12-18 inches to blend the coating together. Natural breaks in the floor, such as control joints or expansion joints, should be used as stopping points if the entire floor cannot be completed in one day. The coated floor will be ready for foot traffic 10-12 hours after application of the final coat. The coating will be ready for full use in 48-72 hours at 70-80°F and 50% relative humidity. Do not detergent wash the floor for 5 days after application.

NON-SLIP SURFACES

To obtain a non-slip surface, a two-coat application is required. The same basic procedure is followed as for application of the regular high gloss finish. Apply the first coat of CRE-820 S at 16 mils, 1 activated gallon per 100 square foot section, by rubber squeegee and roller. Within 20 minutes after rolling of the first coat, broadcast 20-40 mesh silica sand to rejection, totally saturating the coated surface. If the floor is being coated in multiple sections, then leave a 12–18-inch area un-sanded along the edge of the section to allow for blending of the coating in the next section.

CITADEL

CRE-820 S

100% SOLIDS CHEMICAL RESISTANT EPOXY

PRODUCT APPLICATION (cont.)

NON-SLIP SURFACES (cont.)

Use 50 lbs. of round particle, #20-40 mesh silica sand per 100 square foot section. Silica is sold separately. After 6-8 hours, sweep off the excess silica thoroughly. Apply a second coat of CRE-820 S within 10-24 hours at the same spread rate of 16 mils, or 1 gallon per 100 square feet. This second coat anchors the silica and improves appearance while maintaining the non-slip surface. The floor will be ready for foot traffic in about 10-12 hours after the application of the second coat and is ready for full use in 48-72 hours. Do not detergent wash for 5 days after application.

THINNING

Not required.

COVERAGE

Smooth finish: 16 mils (400µ)
One coat @ 100 sq. ft. /gal. (2.5 m^2/l)

Anti-skid finish: Applied in two coats.* (three steps involved), 45-50 mils (1,125-1,250µ)
1st coat is 100 sq. ft. /gal. (2.5 m^2/l) (16 mils (400µ) no less)
Aggregate broadcast while wet
2nd coat* is 100 sq. ft. /gal. (2.5 m^2/l)**
*The 2nd coat anchors the aggregate.
** This will vary, based on coarseness of aggregate used.

For special textures or decorative effects, consult application instructions.

SET TIME

Cured adequately for next coating step in 6-8 hours at 70°F (21°C).

CLEAN UP

Xylene or Acetone can be used to remove material from equipment if it is cleaned before the material has started to set up; otherwise, stronger solvents will be necessary.

SAFETY INFORMATION

CRE-820 S contains amine curing agents. Avoid skin contact. In case of eye contact or ingestion, contact a physician immediately. In case of skin sensitivity to these materials, use protective clothing and gloves.

SAFETY DATA SHEETS

Safety Data Sheets are available upon request. It is strongly recommended that they be read by all persons handling CRE-820 S.

If there are any questions on the use of this product, please consult our technical service department.

PERFORMANCE CHARACTERISTICS

COMPRESSIVE STRENGTH

METHOD: ASTM C579
TYPICAL VALUE: 8,300 psi

FLEXURAL STRENGTH

METHOD: ASTM C580
TYPICAL VALUE: 9,600 psi

TENSILE STRENGTH

METHOD: ASTM C307
TYPICAL VALUE: 3,500 psi

TABER ABRASION

METHOD: ASTM 4060, CS 17
TYPICAL VALUE: Loss/1000 cycles = 30 mg.

FILM HARDNESS, SHORE D

METHOD: ASTM D2240
TYPICAL VALUE: 85

CITADEL

CRE-820 S

100% SOLIDS CHEMICAL RESISTANT EPOXY

PHYSICAL PROPERTIES

		CRE-820 S 100% SOLIDS CHEMICAL RESISTANT EPOXY
Resin Type		Polyamine Converted Epoxy
Pigment Type		Varies depending on color
Weight*	**Per Gallon**	9.35-10.0 lbs.
	Per Liter	1.12-1.20 kg
Solids*	**By Weight**	100%
	By Volume	100%
Volatile Organic Compounds*		<100 g/l (0.83 lbs./gal.)
Recommended Dry Film Thickness (DFT) Per Coat		16 mils (400µ) one coat Non-slip finish: Applied in two coats (three steps involved) 16 mils (second coat)
Wet Film to Achieve DFT		16 mils
Practical Coverage Per Kit		100 sq. ft./gal. at 16 mils one coat 100 sq. ft./gal. at 16 mils second coat
Mixing Ratio		2 : 1 base to activator by volume
Induction Period		None
Pot Life @ 70-80°F (21-27°C) & 50% Relative Humidity		30 minutes. Higher temperatures and larger quantities of activated material will significantly reduce pot life
Dry Times at 70-80°F (21-27ºC) and 50% Relative Humidity	**Foot Traffic**	10 hours
	Full Use	48-72 hours
	Full Cure**	5 days
Shelf Life		5 years
Flash Point		>200°F (93°C)
Safety Information		For additional information, see SDS

Calculated values are shown and may vary slightly from the actual manufactured material.
*Activated material
** Coating achieves its full physical and chemical resistant properties.