CITADEL #11 PLE Flake

Technical Data Sheets

Base: PLE 100 - Epoxy

Broadcast Decorative Flake

Top: RG-80X – Polyaspartic Coating

CITADEL® PLE-100
100% SOLIDS GENERAL PURPOSE EPOXY

DESCRIPTION AND USES

Citadel® PLE-100 General Purpose Epoxy is an epoxy-based coating system that provides outstanding customer value. Its great value, slower dry time, and low odor formulation makes PLE-100 General Purpose Epoxy ideal for larger indoor application areas.

PRODUCT FEATURES AND BENEFITS

- Versatile - Direct to Concrete
- Low odor 100% solids
- Tenacious adhesion
- Chemical resistant
- Compliant nationwide with near zero VOC

PRODUCTS

SKU	DESCRIPTION
388944	Light Gray 3-Gallon Kit
382563	Light Gray 15-Gallon Kit
388945	Armor Gray 3-Gallon Kit
382564	Armor Gray 15-Gallon Kit
388946	Dunes Tan 3-Gallon Kit
382566	Dunes Tan 15-Gallon Kit*
388947	Clear 3-Gallon Kit
382562	Clear 15-Gallon Kit*
388948	Custom 3-Gallon Kit
382565	Custom 15-Gallon Kit*

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

PRODUCT APPLICATION

READ ALL INSTRUCTIONS CAREFULLY BEFORE STARTING PROJECT

SURFACE PREPARATION

NEW CONCRETE: Laitance must be removed by diamond for a minimum of 28 days. The concrete must be structurally sound, dry, and free of grease, oils, dust, curing compounds and other coatings or contaminants. Surface laitance must be removed. Rising moisture vapor emission rate must not exceed 3 lb. per 1000 sq. ft. over a 24 hour period as measured by calcium chloride test method ASTM F-1869. The preferred method of surface preparation is to mechanically abrade the floor by diamond grinding to achieve a final 80–120 grit finish, reference profile CSP-2 according to ICRI. If patching is required, use Fortification Formula concrete repair.

PREVIOUSLY COATED: Previously coated surfaces must be sound and in good condition. Smooth, hard, or glossy finishes should be scarified by sanding or sweep blasting to create a surface profile. PLE-100 General Purpose Epoxy is compatible with most coatings, but a test patch is suggested.

NOTE: Concrete must be visibly dry at time of application.

PRODUCT APPLICATION (cont.)

MIXING EQUIPMENT

Low speed drill and spiral mixing wand. Must pre-mix prior to use.

Important: Hand mixing will produce inconsistent results and is not an approved method.

Note: Three gallon kits are packaged in Citadel's new and exclusive All-In-One packaging. Both A and B components are shipped together inside an outer 5 gallon pail that can be used for combining both components at the application site. For best results use narrow spiral paint mixer (SKU:388011) to premix individual components within the 3 gallon kits.

MIXING

Note: Before starting, ensure that the material, concrete surface, and the ambient air are all at 50-90°F. Mixing ratio is 2 parts by volume of Part A to 1 part by volume of part B.

Pre-mix both A and B sides prior to combining.

Add part “A” to the mixing container.

Add part “B” to the mixing container and mix for 3 minutes.

APPLICATION EQUIPMENT

24” notched squeegee
18" short nap lint free roller

APPLICATION

Mix only what you can squeegee and back roll within 30-45 minutes (approximately 1 gallon of mixed material per crew of two applicators wearing spiked shoes). Do not aerate the mix.

Before starting, ensure that the material, concrete surface, and the ambient air are all at 50-90°F. Do not apply in direct sunlight or when temperature is rising. Wearing spiked shoes, immediately pour mixed PLE-100 General Purpose Epoxy on the floor in ribbons. Spread using a squeegee and then back roll using a short nap lint-free roller. If priming is required, PLE-100 General Purpose Epoxy can be thinned up to 10% by volume with xylene and squeegeed tight to help fill small voids. Refer to recoat window below for best practice when abrading and/or applying subsequent coats.

CLEAN UP

Clean Tools and application equipment immediately after use with active solvent like xylene (in SCAQMD use acetone only). Clean spills or drips while still wet with solvent. Dried product will require mechanical abrasion for removal.

Form: ARJ-2400
Rev.: 070323

CITADEL® PLE-100
100% SOLIDS GENERAL PURPOSE EPOXY

PRODUCT APPLICATION (cont.)

LIMITATIONS

Do not apply if water or ice is present. Lower temperatures will slow cure time. Do not store PLE-100 General Purpose Epoxy at temperatures below 50°F or above 95°F. Do not apply to slabs on grade unless a heavy uninterrupted vapor barrier has been installed under the slab. Do not apply PLE-100 General Purpose Epoxy if the floor is subject to moisture vapor drive or hydrostatic pressure. PLE-100 General Purpose Epoxy will yellow upon prolonged exposure to sunlight or high intensity artificial lights.

PERFORMANCE CHARACTERISTICS

COMPRESSIVE STRENGTH

METHOD: ASTM C695
RESULT: 7,500 psi @ 24 hours and 9,800 psi @ 7 days

TENSILE STRENGTH

METHOD: ASTM D412
RESULT: 4500-5200 psi

BOND STRENGTH TO CONCRETE

METHOD: ASTM D4541
RESULT: >600 psi

TABER ABRASION

METHOD: ASTM 4060, CS 17
RESULT: Loss/1000 cycles = 36 mg.

FLAMMABILITY

METHOD: ASTM D635
RESULT: Self-extinguishing

WATER ABSORPTION (24 HOURS)

METHOD: ASTM D570
RESULT: <0.5%

KONIG HARDNESS

METHOD: ASTM D4366
RESULT: 120

TENSILE ELONGATION %

METHOD: ASTM D638
RESULT: 20-30%

MONOLITHIC SURFACING

METHOD: ASTM C722
RESULT: Pass

IMPACT RESISTANCE

METHOD: ASTM D2794
RESULT: Pass

CHEMICAL RESISTANCE

CHEMICAL	RESULT
Acetic Acid 100%	Y
Acetone	N
Ammonium 30%	Y
Ammonium Hydroxide 30%	Y
Animal Urine	S
Antifreeze	Y
Benzyl Alcohol	S
Brake Fluid	Y
Calcium Hypochlorite (Chlorine)	Y
Chromic Acid 10%	Y
Citric Acid 10%	Y
Clorox	Y
Ethyl Acetate	N
Gasoline	Y
Glycol Ether	N
Hydraulic Fluids	N
Hydrochloric Acid 35%	Y
Hydrofluoric Acid 40%	N
Hydrogen Peroxide 30%	S
Iodine 2%	Y
MEK	N
Methanol	N
Methyl Cellosolve	N
Methylene Chloride	N
Mineral Spirits	S
Motor Oil	Y
Mustard	N
Nitric Acid 20%	S
Nitric Acid 40%	N
Orange Juice	Y
Phosphoric Acid 10%	Y
Phosphoric Acid 30%	S
Phosphoric Acid 50%	S
PM Solvent	Y
Silver Nitrate 20%	Y
Skydrol	S
Sodium Hydroxide 50% (Caustic Soda)	Y
Sodium Hypchlorite 15% (Bleach)	Y
Sodium Hypchlorite 50% (Bleach)	N
Sulfuric Acid 10% (Battery Acid)	Y
Sulfuric Acid 50% (Battery Acid)	Y
Toluene	N
Trichloroethylene (1, 1,1)	S
Trichloroethylene	N
Windshield Wiper Fluid	Y
Xylene	S

Chemical Resistance: Chart Key

Y= Resistant
S= Splash & Spill
N=Not recommended

CITADEL® PLE-100
100% SOLIDS GENERAL PURPOSE EPOXY

PHYSICAL PROPERTIES

		PLE-100 100% SOLIDS GENERAL PURPOSE EPOXY
Resin Type		Epoxy Amine
Pigment Type		Varies depending on color
Weight	**Per Gallon**	8.5-10.8 lbs.
	Per Liter	1.0-1.3 kg
Solids	**By Weight**	100%
	By Volume	100%
Volatile Organic Compounds*		<10 g/l
Recommended Dry Film Thickness (DFT) Per Coat		8-12 mils
Recommended Wet Film Thickness (WFT) Per Coat		8-12 mils
Practical Coverage (assume 15% material loss)		115-170 sq. ft./gal. Coverage rates will vary based on application method.
Mixing Ratio		2A : 1B
Pot Life		30-35 minutes
Re-Coat Window (Min./Max)		12 hours/24 hours
Dry Times at 77°F (25ºC) and 50% Relative Humidity	**Touch**	4-6 hours
	Vehicle Traffic	48-72 hours
	Full Cure**	7 days
Shelf Life		5 years
Flash Point		>200°F (93°C)
Safety Information		**PROTECT FROM FREEZING** For additional information, see SDS

*EPA Method 24 Floor Category
**Coating achieves its full physical and chemical resistant properties.
Calculated values are shown and may vary from the actual manufactured material.

CITADEL® RG-80X

DESCRIPTION AND USES

Citadel® RG-80x is a two component, high gloss, UV stable polyaspartic polyurea floor coating for use in industrial and commercial facilities and is designed to be used as a clear finish over broadcast floors. Suitable for both interior and exterior applications. RG-80x can be tinted to finish color.

PRODUCTS

SKU	DESCRIPTION
10422B	Part A - 5 Gallons
10411B	Part B Fast 0-50°F - 5 Gallons
10424B	Part B Slow 50-90°F - 5 Gallons
10412B	Part B Super Slow 90+°F - 5 Gallons
10404B	4 Gallon Kit Fast 0-50°F
10406B	4 Gallon Kit Slow 50-90°F
10407B	4 Gallon Kit Super Slow 90+°F

RECOMMENDED PRIMERS

- Polyurea-350
- SLE-100
- Polycuramine
- Ultra-Hydro Stop*
- Ultra-Hydro Stop H2O*
- EP-55

*If there is a moisture issue with the floor, then it must be primed with one of the Hydro Stop Primers.

PRODUCT APPLICATION

READ ALL INSTRUCTIONS CAREFULLY BEFORE STARTING PROJECT

SURFACE PREPARATION

The concrete surface must be free of all dirt, grease, oil, fats, and other contamination. Remove surface contamination by cleaning with Krud Kutter® Cleaner Degreaser, detergent, or other suitable cleaner. Rinse thoroughly with clean, fresh water and allowed to dry.

NEW CONCRETE: New concrete should be allowed to cure for a minimum of 28 days. The concrete must be structurally sound, dry, and free of grease, oils, dust, curing compounds and other coatings or contaminants. Surface laitance must be removed. Concrete must be tested for relative humidity and or rising moisture vapor emission. Rates must not exceed 3 lb. per 1,000 sq. ft. over a 24 hour period as measured by calcium chloride test method ASTM F-1869 or RH in slab must not exceed 75% as tested per ASTM F2170. The preferred method of surface preparation is to mechanically abrade the floor by diamond grinding to achieve a final 80–120 grit finish, reference profile CSP-2 according to ICRI.

PRODUCT APPLICATION (cont.)

SURFACE PREPARATION (cont.)

PREVIOUSLY COATED CONCRETE: Previously coated concrete must be in good sound condition with the existing coating tightly adhering to the concrete. In addition to the aforementioned cleaning the existing coating must be sanded to dull the finish and produce a slight surface profile. Remove all sanding dust by vacuum.

MIXING

Both components should be pre conditioned to a minimum of 50º F (10ºC) prior to use. Thoroughly mix each component separately before combining.

If only using part of a container, be sure to use a separate mixer blade for each component to avoid cross contamination.

Pour the Part A and Part B components together in a clean, dry five gallon container and power mix for a minimum of two minutes. Do not entrain air into the mixing. Do not mix more material than can be applied in 20-25 minutes.

If using less than a full container, combine the components using a mixing ratio of 1:1 by volume, Part A (Base) to Part B (Activator).

TINTING

If tinting, add 12% by volume of the selected color Polyurea Universal Tint (1 quart of tint per 2 gallons of activated material). Power mix until a uniform color is achieved.

EQUIPMENT RECOMMENDATIONS

ROLLER: Use a high quality ⅜ inch lint-free roller with a phenolic core.
BRUSH: Use a disposable natural fiber chip brush, 2-4 inch wide for cut in work.

APPLICATION

Apply only when air, material and floor temperatures are between 30-90°F (-1-32°C) and the surface temperature is at least 5°F (3°C) above the dew point and RH less than 75%. Do not apply in direct sunlight or when temperature is rising. Colder environmental conditions can slow the cure of RG80. Variability in these conditions during application may lead to surface defects. For application outside of this temperature range, please contact Rust-Oleum Technical Service.

Immediately after mixing, pour the material onto the floor in a long, 8 to 12 inch wide stripe.

CITADEL® RG-80X

PRODUCT APPLICATION (cont.)

APPLICATION (cont.)

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.

Use a rubber squeegee to spread the material out and achieve the 100-400 sq.ft./gal. spread rate. Back roll the material smooth using a 3/8" lint free roller with a phenolic core to smooth out the finish.

NOTE: Coverage rate can vary depending on the texture and porosity of the concrete.

THINNING: Not normally required. Thin with acetone if needed.

CLEAN-UP: Acetone.

PERFORMANCE CHARACTERISTICS

TENSILE STRENGTH

METHOD: ASTM D412
TYPICAL VALUE: 6,000 psi

COMPRESSIVE STRENGTH

METHOD: ASTM C695
TYPICAL VALUE: 9,400 psi

ELONGATION

METHOD: ASTM D412
TYPICAL VALUE: 100

FILM HARDNESS, SHORE D

METHOD: ASTM D2240
TYPICAL VALUE: 78

GLOSS

METHOD: ASTM D523 @60°
TYPICAL VALUE: 90+

TABER ABRASION

METHOD: ASTM 4060, CS 17, 1,000 gram load
TYPICAL VALUE: Loss/1000 cycles = 28 mg

CHEMICAL RESISTANCE

CHEMICAL	RESULT
Acetic Acid 100%	C
Acetone	C
Ammonium Hydroxide 50%	RC
Benzene	C
Brine saturated H_2O	R
Chlorinated H_2O	R
Clorox H_2O	R
Diesel fuel	RC
Gasoline	RC
Gasoline/5% MTBE	RC
Gasoline/5% Methanol	RC
Hydrochloric Acid 20%	R
Hydrofluoric Acid 10%	NR
Hydraulic fluid (oil)	RC
Isopropyl Alcohol	R
Lactic Acid	RC
MEK	RC
Methanol	R
Methylene Chloride	C
Mineral Spirits	RC
Motor Oil	R
MTBE	C
Muriatic Acid 10%	R
NaCl/ H_2O 10%	R
Nitric Acid 20%	NR
Phosphoric Acid 10%	R
Phosphoric Acid 50%	NR
Potassium Hydroxide 10%	R
Potassium Hydroxide 20%	R, Dis
Propylene Carbonate	RC
Skydrol	C
Sodium Hydroxide 25%	R
Sodium Hydroxide 50%	R, Dis
Sodium Hypchlorite 10%	R
Sodium Bicarbonate	R
Stearic Acid	R
Sugar/ H_2O	R
Sulfuric Acid 10%	R
Sulfuric Acid >50%	RC
Toluene	R
1, 1,1-Trichlorethane	C
Trisodium Phosphate	R
Vinegar/ H_2O 5%	R
H_2O	R
H_2O 14 days at 82° C	RC
Xylene	RC

Chemical Resistance: Chart Key

R=recommended/little or no visible damage
RC=recommended conditional/some effect, swelling or discoloration
C=Conditional/Cracking-wash within one hour of spillage to avoid affects
NR=Not recommended
Dis=discolorative

POLYUREA	TECHNICAL DATA	CDL-10

CITADEL® RG-80X

PHYSICAL PROPERTIES

		RG-80X
Resin Type		Polyaspartic Polyurea
Weight	**Per Gallon**	9.0 lbs.
	Per Liter	1.1 kg/l
Solids by Volume		80%
Volatile Organic Compounds		<50 g/l**
Mixing Ratio		1:1 (Part A to Part B)
Induction Time		None required
Pot Life		20-25 minutes
Practical Coverage		100-400 sq.ft./gal. Coverage rate can vary depending on the texture and porosity of the concrete
Dry Times @ 72ºF and 50% Relative Humidity†	**Tack Free**	1-2 hours
	Dry Hard	2-4 hours and 24 hours for vehicle traffic NOTE: RG80 Super Slow may require additional cure times of 36-48 hours for vehicle traffic.
	Recoat	2-12 hours*
Shelf Life		12 months
Safety Information		See SDS

Calculated values are shown and may vary slightly from the actual manufactured material.
† Physical properties are based on these environmental conditions. Changes in these conditions may cause times to vary. Extreme cold temperatures may slow cure times.
* If 12 hour recoat time has elapsed, the coating must be properly abraded and cleaned prior to recoating.
** Calculated Applied VOC

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