



## **CITADEL #10 Polyurea Quartz**

*Technical Data Sheets*

**Base: Polyurea-350 (pigmented)**

**Broadcast Decorative Quartz**

**Intermediate: Polyurea-350 (clear)**

**Broadcast Decorative Quartz**

**Grout: RG-80X – Polyaspartic Coating**

**Top: RG-80X – Polyaspartic Coating**



# CITADEL® POLYUREA-350

## DESCRIPTION AND USES

Polyurea-350 is a two-component, 98% solids, VOC Compliant Polyurea that was developed as a primer/basecoat for a variety of coating systems. This coating provides exceptional adhesion to a large number of substrates and performs well in a wide range of temperatures and climate conditions. Extended working time makes it a great choice for both residential and commercial applications. Patent-Pending Adjustable Cure Rate Technology™ simplifies installations in all temperatures by maintaining consistent cure times and material pot life.

## PRODUCTS

SKU	DESCRIPTION
10142	Part A - 5 Gallon
10147	Part B Clear - 5 Gallon
10146	Part B Gray - 5 Gallon
10151B	Part B Summer Tan - 5 Gallon
10121B	Part B Winter Clear - 5 Gallon
10155	Part B Winter Gray - 5 Gallon
10157	Part B Winter Tan - 5 Gallon
10124	Part B Artic Clear - 5 Gallon
10136	Part B Artic Gray - 5 Gallon
10134	Part B Artic Tan - 5 Gallon
10104	Summer Clear 3 Gallon Kit
10110B	Summer Gray 3 Gallon Kit
10109B	Summer Tan 3 Gallon Kit
10105	Winter Clear 3 Gallon Kit
10163B	Winter Gray 3 Gallon Kit
10165B	Winter Tan 3 Gallon Kit
10106B	Artic Clear 3 Gallon Kit
10167B	Artic Gray 3 Gallon Kit
10169B	Artic Tan 3 Gallon Kit

## RECOMMENDED TOPCOATS

- SLE-100
- RG-70
- RG-80x
- UL-80
- Poly-1 HD
- Poly-2 Ultra
- Poly-3 WB

## PRODUCT APPLICATION

**READ ALL INSTRUCTIONS CAREFULLY BEFORE STARTING PROJECT**

### SURFACE PREPARATION

**NEW CONCRETE/PREVIOUSLY COATED 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 (SSPC-SP1). 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.

## PRODUCT APPLICATION (cont.)

### SURFACE PREPARATION (cont.)

The application area must be completely free of sealers, oils, dirt, paint, alkali, penetrating sealers, or any foreign materials that would prevent Polyurea-350 from penetrating the concrete surface. The recommended substrate should have a minimum concrete surface profile (CSP) of 2-3 in accordance to the ICRI Guideline No. 03732. Contact ICRI at [www.ICRI.org](http://www.ICRI.org) for more information on these surface profiles. Surface must be dry prior to application of Polyurea-350.

### MIXING

Both components should be pre conditioned to a minimum of 50°F (10°C) 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.

**NOTE:** The Part B component uses a moisture scavenger in its formulation to pull out any moisture which may have entered during the filling process. When this occurs, the scavenger settles out as a solid in the container. There is no need to try and mix this hard settled material into the liquid. Keep your paddle mixer above the packed out scavenger and pre-mix as normal. It is still required to pre-mix the material prior to use. Another option would be to transfer the material to a different mixing bucket, then mix as normal.

Pour the Part A and Part B components together in a clean, dry five gallon container and power mix at 500-700 rpm 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 1:2 by volume, Part A to Part B.

### TINTING (Clear)

Tinting is only to be done after Part A and Part B have been thoroughly mixed. If tinting, add 12% by volume of the selected 844 Colorant (1 quart of tint per 2 gallons of activated material). Power mix until a uniform color is achieved.

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

### EQUIPMENT RECOMMENDATIONS

**ROLLER:** Use a high quality  $\frac{3}{8}$  inch lint-free roller with a phenolic core.

**BRUSH:** Use a disposable natural fiber chip brush, 2-4 inch wide for cut in work.

**SQUEEGEE:** Contact Rust-Oleum for recommendation.



# CITADEL® POLYUREA-350

## PRODUCT APPLICATION (cont.)

### APPLICATION

Apply only when air, material and floor temperatures are between 0-90°F (-18 -32°C) and surface temperature is at least 5°F (3°C) above the dew point. The relative humidity of the air should not be greater than 85%. Do not apply in direct sunlight or when temperature is rising. Colder environmental conditions can slow the cure of Polyurea-350. Be sure the substrate is completely dry. 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.

**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 80-350 sq.ft./gal. spread rate. Back roll the material smooth using a  $\frac{3}{8}$ " lint free roller with a phenolic core to smooth out the finish.

If being used as a basecoat for a color aggregate or color flake finish, begin to broadcast the desired amount of aggregate or flake unto the coating as soon as the roller application is completed. Do not do any additional rolling after the broadcasting material.

**THINNING:** None required. **NOTE:** If necessary, can be thinned up to 20 percent with acetone or methyl ethyl ketone.

**CLEAN-UP:** Methyl ethyl ketone

## PERFORMANCE CHARACTERISTICS

### TENSILE STRENGTH

METHOD: ASTM D412

TYPICAL VALUE: 3600

### ELONGATION

METHOD: ASTM D412

TYPICAL VALUE: 198

### TEAR STRENGTH (PLI)

METHOD: ASTM 2240

TYPICAL VALUE: 350

### FLEXIBILITY (1/8" MANDREL)

METHOD: ASTM D1737

RESULT: Pass

### IMPACT RESISTANCE

METHOD: ASTM D2794

TYPICAL VALUE: Direct/Reverse, 250/285 inch pounds.

### ADHESION

METHOD: ASTM D4541

TYPICAL VALUE: >500 psi

## CHEMICAL RESISTANCE

CHEMICAL	RESULT (77°F/25°C)
Acetic Acid 100%	C
Acetone	C
Ammonium Hydroxide 50%	RC
Benzene	C
Brine saturated H <sub>2</sub> O	RC
Chlorinated H <sub>2</sub> O	R
Clorox(10%) H <sub>2</sub> O	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	NR
Methanol	R
Methylene Chloride	C
Mineral Spirits	RC
Motor Oil	R
MTBE	C
Muriatic Acid 10%	R
NaCl/H <sub>2</sub> O 10%	RC
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 Hypochlorite 10%	R
Sodium Bicarbonate	RC
Stearic Acid	R
Sugar/H <sub>2</sub> O	R
Sulfuric Acid 10%	R
Sulfuric Acid >50%	NR
Toluene	RC
1, 1,1-Trichlorethane	C
Trisodium Phosphate	RC
Vinegar/H <sub>2</sub> O 5%	R
H <sub>2</sub> O	R
H <sub>2</sub> O 14 days at 180°F	R
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

	<b>TECHNICAL DATA</b>	<b>CDL-11</b>
	<b>CITADEL® POLYUREA-350</b>	

## PHYSICAL PROPERTIES

		<b>POLYUREA-350</b>
<b>Resin Type</b>		Polyurea
<b>Weight</b>	<b>Per Gallon</b>	9.9 lbs.
	<b>Per Liter</b>	1.2 kg
<b>Solids by Volume</b>		98%
<b>Volatile Organic Compounds</b>		<50 g/l**
<b>Mixing Ratio</b>		1:2 (Part A to Part B)
<b>Induction Time</b>		None required
<b>Pot Life</b>		20-25 minutes
<b>Recommended Dry Film Thickness (DFT)</b>		5-20 mils
<b>Practical Coverage Rate at Recommended DFT</b>		80-350 sq.ft./gal. Coverage rate can vary depending on the texture and porosity of the concrete
<b>Dry Times @ 70-80°F (21-27°C) and 50% Relative Humidity<sup>†</sup></b>	<b>Recoat</b>	2-12 hours*
	<b>Light Traffic</b>	2-4 hours
	<b>Full Traffic</b>	24 hours
<b>Shelf Life</b>		12 months
<b>Safety Information</b>		See SDS

Calculated values are shown and may vary slightly from the actual manufactured material.

<sup>†</sup> Extreme cold temperatures may slow cure times.

\* If 12 hour recoat time has elapsed, the coating must be sanded prior to topcoating.

\*\* Calculated Applied VOC

The technical data and suggestions for use contained herein are correct to the best of our knowledge, and offered in good faith. The statements of this literature do not constitute a warranty, express, or implied, as to the performance of these products. As conditions and use of our materials are beyond our control, we can guarantee these products only to conform to our standards of quality, and our liability, if any, will be limited to replacement of defective materials. All technical information is subject to change without notice.



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Form: ARJ-2096  
Rev.: 022521

**POLYUREA****TECHNICAL DATA****CDL-10****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 50° F (10°C) 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  $\frac{3}{8}$  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 <sub>2</sub> O	R
Chlorinated H <sub>2</sub> O	R
Clorox H <sub>2</sub> O	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 <sub>2</sub> O 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 Hypochlorite 10%	R
Sodium Bicarbonate	R
Stearic Acid	R
Sugar/ H <sub>2</sub> O	R
Sulfuric Acid 10%	R
Sulfuric Acid >50%	RC
Toluene	R
1, 1,1-Trichlorethane	C
Trisodium Phosphate	R
Vinegar/ H <sub>2</sub> O 5%	R
H <sub>2</sub> O	R
H <sub>2</sub> O 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**

		<b>RG-80X</b>
<b>Resin Type</b>		Polyaspartic Polyurea
<b>Weight</b>	<b>Per Gallon</b>	9.0 lbs.
	<b>Per Liter</b>	1.1 kg/l
<b>Solids by Volume</b>		80%
<b>Volatile Organic Compounds</b>		<50 g/l**
<b>Mixing Ratio</b>		1:1 (Part A to Part B)
<b>Induction Time</b>		None required
<b>Pot Life</b>		20-25 minutes
<b>Practical Coverage</b>		100-400 sq.ft./gal. Coverage rate can vary depending on the texture and porosity of the concrete
<b>Dry Times @ 72°F and 50% Relative Humidity†</b>	<b>Tack Free</b>	1-2 hours
	<b>Dry Hard</b>	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.
	<b>Recoat</b>	2-12 hours*
<b>Shelf Life</b>		12 months
<b>Safety Information</b>		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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