CITADEL®
FLOOR FINISHING SYSTEMS

Generic
SLE-100 Metallic
High Performance Floor Systems
SPEC-25-010225.15
Fluid Applied Flooring
096700
January 15th, 2025

SECTION 09 67 00
FLUID APPLIED RESINOUS FLOORING

Generic
SLE-100 Metallic
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PART 1 GENERAL

1.1 SECTION INCLUDES

A. High-performance coatings including the following:
   1. Cleaners and patch/repair specialty products.
   2. Citadel Floor Finishing Systems.

1.2 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete.

B. Section 07 90 00 - Joint Sealants.

1.3 REFERENCES

A. ASTM F 1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

B. ASTM F 2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

C. SSPC: The Society for Protective Coatings:
   1. SSPC-SP 1 - Solvent Cleaning.
   2. SSPC-SP 2 - Hand Tool Cleaning.
   3. SSPC-SP 3 - Power Tool Cleaning.
   4. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete.

D. ICRI: International Concrete Repair Institute
   1. CSP Concrete Surface Preparation Standards

E. Safety Data Sheets: Per manufacturer's SDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.

1.4 DEFINITIONS

A. LEED as used in this Section refers to Leadership in Energy and Environmental Design. Products listed meet LEED criteria for environmentally safe interior primers, paints and coatings.

B. VOC as used in this Section refers to Volatile Organic Compounds found in primers, paints, sealers and stains. The level of VOCs appears after each product listed in the Schedule in grams per liter (g/L).

C. Rust-Oleum Concrete Saver Systems are referred to as CS. Rust-Oleum Concrete Protection Systems are referred to as CPS. Rust-Oleum Seal-Krete High Performance Systems are referred to as SKHP. Rust-Oleum Citadel Floor Finishing Systems are referred to as CFFS.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Coordinate with Section 01 30 00 - Administrative Requirements.

C. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Submit descriptive data and specific recommendations for mixing, application, curing including any precautions of special handling instructions required to comply with the Occupational Safety and Health Act.
   2. Prepare instructions and recommendations.
   3. Submit storage and handling requirements and recommendations.

D. Selection Samples: For each finish product specified, submit maximum of three samples, 6 inches by 6 inches for each color and type of coating available from manufacturer's full range.

E. Verification Samples: For each finish product specified, submit maximum of three samples, 6 inches by 6 inches for each color and type of coating as specified.

F. Maintenance Literature: Submit two copies of manufacturer's maintenance recommendations.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Materials used in the floor surfacing shall be the products of a single manufacturer.

B. Installer Qualifications:
   1. Installer shall be acceptable to Architect and manufacturer.
   2. Installation shall be performed by an applicator with a minimum of 3 years’ experience in work of similar nature and scope. Installer shall be approved by the manufacturer of the floor surfacing materials. The Contractor shall furnish a written statement from the manufacturer that the installer is acceptable.
   3. Contractor shall have proven experience with specified system.

C. Certification:
   1. Manufacturer shall furnish statement attesting that materials meet specification requirements.
   2. Manufacturer shall furnish properly labeled material and Technical/Safety Data Sheets which comply with current state and federal requirements.

D. Pre-Construction Meeting:
   1. Pre-job meeting between Contractor, Architect, and installer shall be held to discuss concrete substrate, location of joints and/or saw cuts to minimize sub-floor cracking.

E. Mock-Up: Provide an installed mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Architect.

2. Mock-up size shall not be less than 50 square feet.
3. Acceptable mock-up to be standard of quality for installed work.
4. Unacceptable installed work to be removed and replaced or refinished until acceptable.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:
1. Product name and type (description).
2. Application and use instructions.
3. Surface preparation.
4. VOC content.
5. Environmental issues.
6. Batch date.
7. Color number.

B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.8 PROJECT CONDITIONS

A. Maintain the ambient room and floor temperature at 60°F (15°C) or above for a period extending from 72 hours before or per manufacturer's technical data sheet, during and after floor installation. Concrete to receive surfacing shall have cured for at least 28 days and be free of all curing compounds.

B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

C. When using polyureas or moisture cured urethane products, pay special attention to humidity levels. At higher humidity levels, these products will have a shorter working time.

1.9 WARRANTY

A. The technical data and suggestions of use are correct to the best of our knowledge and offered in good faith. The statements of this specification do not constitute a warranty, expressed, 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.

B. Special written project warranties may be issued on a request basis at the discretion of the Rust-Oleum Corporation Technical and Legal Departments and would not be contained within this specification document.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Rust-Oleum®, which is located at: 11 Hawthorn Pkwy.; Vernon

Hills, IL 60061; Toll Free Tel: 800-323-3584; Tel: 847-367-7700; Fax: 847-816-2330; Web: https://www.rustoleum.com.

B. Specification questions should be directed to Rust-Oleum Technical Service Department at technicalservice@rustoleum.com.

C. Distribution and product questions should be directed to Rust-Oleum Industrial Flooring Specialist David Haskell at david.haskell@rustoleum.com or Rust-Oleum Architectural Specialist Eric Mitchell at emitchell@rustoleum.com. **FLORIDA CONTACT:** Floor Coating Source, 239-424-8692, info@floorcoatingsource.com

D. Substitutions: Not permitted.

2.2 CLEANERS AND PATCH/REPAIR SPECIALTY PRODUCTS

A. Cleaners:
1. Rust-Oleum Professional Cleaner & Degreaser.
2. Rust-Oleum Professional Neutral Floor Cleaner.
3. Rust-Oleum Professional Low Foam Cleaner.

B. Patch/Repair Products:
1. Rust-Oleum CFFS Fast Patch.
2. Rust-Oleum CFFS Fortification Formula.
3. Rust-Oleum CFFS PolyFlex 93 Joint Filler.

C. Moisture Mitigating Vapor Barriers (Optional if required by testing):
1. Rust-Oleum CFFS Ultra Hydro Stop 100% Solids Epoxy.
   a. Use for up to 25 lbs. MVT.
   b. Applied at 100 square feet per gallon/16 mils DFT.
2. Rust-Oleum CFFS UHS H2O WB MVT Epoxy Primer.
   a. Use for up to 12 lbs. MVT
   b. Applied at 250 square feet per gallon/3 mils DFT per coat. Apply two coats.

2.3 CITADEL FLOOR FINISHING SYSTEMS (CFFS)

A. **SLE-100 Metallic Floor System**
1. Surface Prep: Clean and abrade ICRI CSP Level 2 or 3 to provide proper profile for adhesion.
2. Prime Coat: **R-O CFFS EP-55 Water-Based Epoxy Primer Black** applied at approximately 250-350 square feet per gallon/2-3 mils DFT per manufacturer's TDS.
3. Base Coat: **R-O CFFS SLE-100 100% Solids Decorative Epoxy** pigmented with 4 oz per gallon metallic powder applied at approximately 80-100 square feet per gallon/16-20 mils DFT. per manufacturer's TDS.
4. Wear Coat:
   Preferred: R-O CFFS Poly-1HD Polyurethane Coating Clear w/ UDP additive applied at approximately 400 square feet per gallon/3-4 mils DFT. per manufacturer's TDS.
   Optional: R-O CFFS Poly-3WB Polyurethane Coating Clear applied at approximately 400 square feet per gallon/2-3 mils DFT per manufacturer's TDS.
5. Owner to approve color.

PART 3 EXECUTION

3.1 EXAMINATION

A. The Contractor shall review the product manufacturer's special instructions for surface

preparation, application, temperature, re-coat times, and product limitations.

B. The Contractor shall review product health and safety precautions listed by the manufacturer.

C. The Contractor shall be responsible for enforcing on site health and safety requirements associated with the Work.

D. Ensure that surfaces to receive coating are dry immediately prior to application.

E. Ensure that moisture-retaining substrates to receive coating have moisture content within tolerances allowed by coating manufacturer.

F. Examine areas to receive coatings for:
   1. Concrete surfaces shall be in sound condition and properly prepared prior to flooring system installation.
   2. Defects in existing work that affect proper execution of coating work.
   3. Deviations beyond allowable tolerances for the concrete slab work.

G. Correct conditions that could impair performance or appearance of coatings in accordance with specified surface preparation procedures before proceeding with coating application.

H. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 SURFACE PREPARATION

A. All cleaning and surface preparations specified herein are minimums. Prepare substrate to receive coating in accordance with manufacturer's recommendations.

B. All surfaces to be coated shall be free of cracks, pits, fins, projections, or other imperfections that would interfere with the formation of a uniform, unbroken coating film. Honor expansion joints or dynamic, moving joints/cracks.

C. Substrate shall be free of dirt, waxes, curing agents, and other foreign materials prior to mechanical surface preparation. Clean area with **Rust-Oleum Professional Concentrated Cleaner & Degreaser or Rust-Oleum Professional Low Foam Cleaner** and power wash to remove all contaminants.

D. New concrete shall have cured for a minimum 30 days prior to coating application. If a cure and seal agent was added to the concrete or applied after initial cure, the concrete must be abrasive blast cleaned or mechanically abraded to remove the sealer and expose fresh concrete.

E. Acceptable Substrates:
   1. Level tolerance: Concrete sub-floor shall be level with a maximum variation from level of 1/4 inch (6 mm) in 10 feet (3048 mm). Any irregularity of the surface requiring patching and/or leveling shall be done using material approved by the manufacturer.
   2. Concrete floor shall have a steel trowel finish.
   3. Concrete shall be cured a minimum of 28 days. No curing agents shall be used in areas to receive coating.
   4. Concrete slab shall have an efficient moisture barrier of minimum 10 mils (.2540 mm) placed directly under the concrete slab. Do not use vapor barrier manufactured with recycled content. Testing shall be done to verify that the moisture vapor emission rate of the slab does not exceed that as recommended by the manufacturer at time of installation of the epoxy coating flooring. Moisture vapor emission and moisture content testing shall conform with the requirements of ASTM F 1869 (Calcium Chloride Test) and ASTM F 2170 (Relative Humidity Probe Test). If test results show

excessive levels of moisture content or vapor emission rate above that recommended by the manufacturer, apply manufacturer's recommended moisture vapor emission control material.

5. Saw cutting of control joints shall be done between 12 and 24 hours after placement of the structural concrete.

F. Concrete, SSPC-SP13 or NACE 6: This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.

G. Concrete surfaces shall be mechanically abraded, or abrasive blast cleaned to remove all laitance to provide a uniform surface profile with a profile depth recommended by the fluid applied resinous system selected per ICRI CSP Standards. **The ICRI CSP Level required for this project this CSP-2 to 3**. Contact Manufacturer's technical service department for specific surface preparation questions.

H. The coating contractor is to examine the substrate to determine if it is in satisfactory condition to receive the specified floor system. Obtain coating contractor's written report listing conditions detrimental to performance of work in this specification. Do not proceed with the application of specified floor coating until unsatisfactory conditions have been corrected.

3.3 MIXING AND THINNING

A. Mixing:
1. The base component and activator must be combined with power mixing. Hand mixing is not adequate.
2. Scrape out the container of the activator to transfer as much material as possible.
3. Use a suitable mixing blade which will not entrain air. Mix at 500-750 RPM for 1-3 minutes.
4. Application must begin as soon as the material has been completely mixed.

B. Thinning: Thinning is not required. Do not thin.

3.4 APPLICATION

A. Weather Conditions:
1. Apply when air and surface temperatures are between 60-80°F (15-27°C) and surface temperature is at least 5°F (3°C) above the dew point.
2. The relative humidity should not be greater than 85 percent.

B. Coating Application:
1. Do not attempt to work out of the container. Immediately after mixing material, pour out the activated material in a long thin stripe across the top of the work section of floor. Use only the material that flows naturally out of the container.
2. Do not scrape out the container of activated material or turn buckets upside down on floor to drain. Doing so may result with transfer of un-activated material to the floor which will result with soft spots in the coating.
3. Install in accordance with manufacturer's instructions.
4. Locate all flexible joints required.
5. Provide accessories necessary for complete installation.

C. Protection of Surfaces:
   1. The Coating Contractor shall be responsible for protecting all adjacent surfaces from spills, drips, or any other form of coating damage.
   2. The coating contractor and its subcontractors shall be responsible for removing spots or repairing damaged surfaces to the satisfaction of the Architect.

3.5 CLEAN-UP

A. Clean-up shall be done to remove all spills, drips, overspray, or other unwanted coating from all surfaces not intended to be coated.

B. All used rags, brushes, roller covers, and other application related materials shall be removed from the work site and disposed in a proper manner and in accordance with local waste regulations.

C. All equipment, staging, ladders, and other contractor materials brought onto the jobsite by the contractor shall be remove at the conclusion of the job in a timely manner.

3.6 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

C. Standard maintenance includes a proper cleaning schedule with Rust-Oleum Professional Cleaners or similar approved cleaning product on a routine basis. Please refer to are & Maintenance Guide for direction.

END OF SECTION

CITADEL®
ULTRA-HYDRO STOP H2O PRIMER

DESCRIPTION AND USES

Ultra-Hydro Stop H2O Primer is a three component, water-based, 50% solids, epoxy primer used to remedy concrete floors with high moisture levels before the application of finish coatings. Capable of holding back up to 12 lbs. of MVT (Moisture Vapor Transmission) with a two coat application, this primer has excellent adhesion to moisture laden concrete slabs. Ultra-Hydro Stop H2O Primer can be applied to concrete as early as 48 hours after placement, reducing job-site downtime and delays in production.

PRODUCT

SKU	DESCRIPTION (Clear)
10302	1.5 Gallon Kit

NOTE: Combined components and the required additional water will yield 1 ½ gallons.

RECOMMENDED TOPCOAT

Any epoxy, polyurethane, or polyurea floor coating.

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. Squeegee away excess rinse water. The Ultra-Hydro Stop H2O Primer can be applied to damp concrete, but not a wet surface. Place your hand flat on the surface. If any water is transferred to your hand, the surface is considered to be wet.

NEW, UNCOATED CONCRETE: In addition to the aforementioned cleaning, the concrete must also be free of any sealers or silicate treatments that may have been applied after finishing of the concrete. Removal of sealers or silicate treatments will require cleaning with mechanical abrasion.

Etch concrete with 108 Cleaning & Etching Solution. Rinse thoroughly and immediately. Very dense concrete may require abrasive blasting or diamond grinding to create surface profile.

OLD OR PREVIOUSLY COATED CONCRETE: In addition to the aforementioned cleaning the concrete must be in good, sound condition. All previous coating must be removed by mechanical abrasion.

MIXING

Hand mixing is not adequate. The components must be combined using a power mixer. Mix at 500-750 rpm. Do not over mix or use higher speeds. This can introduce air into the coating causing small bubbles in the finish.

Combine the entire contents of Part B into the two gallon container of Part A and mix for 2-3 minutes.

PRODUCT APPLICATION (cont.)

MIXING (cont.)

Continue power mixing and slowly add 64 fl. Oz. of clean fresh water and continue to mix until a uniform mixture is achieved. Material is ready to use. No induction time is required.

NOTE: There is a fill line marked on the two gallon container which indicates the level of the total activated material once the 64 fl. Oz. of water has been added.

DO NOT try to mix a partial kit. The components are premeasured and rationed for the additional water.

EQUIPMENT RECOMMENDATIONS

SQUEEGEE: Use a high quality ⅛ inch V notched rubber squeegee.
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 60-80°F (15.5-27°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 Ultra-Hydro Stop H2O Primer. 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. One activated gallon of Ultra-Hydro Stop H2O Primer will cover 250 square feet. The full 1½ gallon kit will cover 375 square feet. This spread rate must be honored to ensure the primer properly performs.

Once mixed, pour the primer 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 ⅛ inch V notched squeegee to spread the material out and achieve the 250 sq. ft./ gal spread rate. Roll out the material smooth using a ⅜" lint free roller with a phenolic core.

Ultra-Hydro Stop H2O Primer should be allowed to flow down into saw cuts, but not allowed to fill the saw cut. Do not allow the material to pool.

One coat of Ultra-Hydro Stop H2O Primer will block up to 6 lbs. of MVT. Two coats will block up to 12 lbs.

THINNING: Not required

CLEAN-UP: Acetone

CITADEL®
ULTRA-HYDRO STOP H2O PRIMER

PHYSICAL PROPERTIES

		ULTRA-HYDRO STOP H2O PRIMER
Resin Type		Mannich Base Adduct Converted Epoxy
Weight*	**Per Gallon**	8.9 lbs.
	Per Liter	1.1 kg/l
Solids by Volume*		50%
Volatile Organic Compounds*		0 g/l
Induction Time		None required
Working Time		1 hour @ 77°F (25°C)
Pot Life		None. Pour out all material at the end of the induction time
Recommended Wet Film Thickness (WFT) Per Coat		6 mils
Recommended Dry Film Thickness (DFT) Per Coat		3 mils
Practical Coverage		250 sq. ft./gal. Coverage rate can vary depending on the texture and porosity of the concrete
Recoat/Topcoat		5-24 hours. Scuff sanding is required if greater than 24 hours
Shelf Life		5 years
Safety Information		For additional information see SDS

Calculated values are shown and may vary slightly from the actual manufactured material.
*Activated material
†Immediately following mixing, pour the entire material onto the floor in a long, thin stripe. Do not try to work out of a pan or container, as the build-up of heat could shorten the pot life and create a hazardous condition.

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CITADEL®
ULTRA-HYDRO STOP PRIMER

DESCRIPTION AND USES

Ultra-Hydro Stop Primer is a versatile moisture vapor barrier ideal for use on damp and green concrete floors. It is the perfect solution on moisture laden concrete surfaces for the installation of most resinous coatings and protects moisture sensitive flooring. Ultra-Hydro Stop Primer is two component, 100% solids epoxy primer that is easy to install, self-leveling and fast setting. It provides excellent adhesion and is capable of holding back up to 25 lbs. of moisture vapor transmission, (MVT). Available in Clear, Dunes Tan and Light Grey. The pre-tinted colors can be used as broadcast coats to save time and money.

PRODUCT FEATURES AND BENEFITS

- Compliant with all state and federal VOC regulations
- Typical one coat application
- Excellent adhesion to moisture laden slabs
- Resistant to high PH
- Meets ASTM F3010 standard requirements

PRODUCTS

SKU	DESCRIPTION
10301B	Clear 5 Gallon Kit
359081	Dunes Tan 5 Gallon Kit
359082	Light Gray 5 Gallon Kit

RECOMMENDED TOPCOATS

Contact Rust-Oleum Technical Service Department for approved systems and more detailed information.

PRODUCT APPLICATION

READ ALL INSTRUCTIONS CAREFULLY BEFORE STARTING PROJECT

SURFACE PREPARATION

New concrete must be allowed to cure for a minimum of 14 days before application of the Ultra-Hydro Stop Primer. All concrete surfaces must be free of all dirt, grease, oil, fats, and other contamination. Remove surface contamination by cleaning with Krud Kutter® PRO Cleaner/Degreaser, detergent, or other suitable cleaner.

After the concrete surface has been cleaned and visibly dry at the time of application, the concrete must be further prepared. The concrete surface texture must be comparable to ICRI CSP Level 3 for moderate environments or Level 5 for severe environments. Contact Rust-Oleum Technical Service Department for more detailed information.

PRODUCT APPLICATION (cont.)

SURFACE PREPARATION (cont.)

CONCRETE REPAIR

All spalls and cracks must be chased out and repaired to ICRI standards using Citadel® Concrete Repair Compound. For floors with very high moisture levels, cracks should be repaired with a mix of Ultra-Hydro Stop Primer and Cab-O-Sil® fumed silica to create a paste and applied by trowel or putty knife.

MIXING

Both components and environment should be preconditioned to a minimum of 60ºF (15ºC) prior to use. 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 Base component in the short filled 5- gallon pail then add in the two gallons of Activator while maintaining mixing. It is very important to transfer as much activator as possible. Mix the two components together for 1-3 minutes being careful to not pull air into the mixture. Do not mix more material than what can be applied within 25 minutes of mixing.

If mixing less than the premeasured amounts, mix each component separately before accurately measuring out material. Use a 3:2 (base to activator) by volume mixing ratio and mix thoroughly.

TINTING (Clear)

Pre-mix Universal Tint Packs prior to adding into floor coatings. Add Universal Tint Packs at 8 oz. per gallon of mixed floor coating material and combine thoroughly via power mix to achieve uniform colorant dispersal.

NOTE: Some colors, including safety colors, may require additional coats if desired coverage is not achieved in the first application.

NOT FOR USE IN WATER BASED COATINGS

EQUIPMENT RECOMMENDATIONS

SQUEEGEE: Use a high quality notched rubber squeegee.

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.

Form: ARJ-2098
Rev.: 011425

CITADEL®
ULTRA-HYDRO STOP PRIMER

PRODUCT APPLICATION (cont.)

APPLICATION

Apply only when air, material and floor temperatures are between 60-80°F (15-27°C) and surface temperature is at least 5°F (3°C) above the dew point. Do not apply in direct Sunlight or when temperature is rising. Immediately after mixing, pour the material onto the floor in a long, 8- to 12-inch-wide stripe.

Ultra-Hydro Stop Primer is to be applied at a minimum thickness of 16 mils. Ultra-Hydro Stop Primer when applied at a minimum of 16 mils thickness, without tinting or broadcasting into it, will reduce vapor emission rate up to 25 lbs./1,000 sq. ft./24 hour and maximum RH of 99%. To ensure proper coverage, periodically check mil thickness using a wet film thickness gauge. Ultra-Hydro Stop Primer that is tinted or broadcast into (i.e., chips, quartz, silica, etc.) will not have the same moisture blocking properties. Contact Rust-Oleum Technical Service Department for more information.

NOTE: Do not try to work out of a pan or container, as the build-up of heat could shorten the pot life and create a hazardous condition. 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 80-100 sq. ft./gal. spread rate. Back roll the material smooth using a ⅜" lint free roller with a phenolic core to smooth out the finish. If needed, a spiked roller can be used to release any entrapped air in the coating.

Ultra-Hydro Stop Primer should be allowed to flow down into saw cuts, but not allowed to fill the saw cut. Allow to cure for a minimum of 24 hours before the placement of backer rod and a suitable polyurethane sealant. All expansion joints must be honored.

COVERAGE

One activated gallon of Ultra-Hydro Stop Primer will cover 80-100 square feet. The full 5-gallon kit will cover 400-500 square feet. This spread rate must be honored to ensure the primer properly performs.

THINNING: Not required

CLEAN-UP: Acetone

PERFORMANCE CHARACTERISTICS

COMPRESSIVE STRENGTH

METHOD: ASTM D695
TYPICAL VALUE: 15,225 psi

TENSILE STRENGTH

METHOD: ASTM D638
TYPICAL VALUE: 10,000 psi

FILM HARDNESS, SHORE D

METHOD: ASTM D2240
TYPICAL VALUE: 85

FLEXURAL STRENGTH

METHOD: ASTM D790 @ 2 hours
TYPICAL VALUE: 16,100 psi

PERMEANCE

METHOD: ASTM E96
TYPICAL VALUE: 0.09 perms (grains/h/sq. ft./in. Hg)

CITADEL®
ULTRA-HYDRO STOP PRIMER

PHYSICAL PROPERTIES

		ULTRA-HYDRO STOP PRIMER
Resin Type		Amidoamine Converted Epoxy
Weight*	**Per Gallon**	9.1 lbs.
	Per Liter	1.1 kg/l
Solids by Volume		100%
Volatile Organic Compounds		0 g/l
Mixing Ratio		3:2 (Base to Activator by volume)
Induction Time		None required
Working Time		25 minutes @ 77°F (25°C)
Recommended Dry Film Thickness (DFT) Per Coat		16 mils
Practical Coverage		100 sq. ft./gal. Coverage rate can vary depending on the texture and porosity of the concrete
Recoat/Topcoat		12-14 hours. Scuff sanding is required if greater than 24 hours
Shelf Life		5 years
CAUTION		Protect from freezing
Safety Information		For additional information see SDS

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

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CITADEL® EP 55

DESCRIPTION AND USES

Citadel® EP 55 is a two component, water-based epoxy primer designed to improve the adhesion of floor coatings over difficult to coat, or marginally prepared substrates. Substrates include, hard-troweled concrete, aluminum and various types of tiles. EP 55 primer can be top coated with most types of floor coating technologies including acrylic, epoxies and polyurethanes.

PRODUCT FEATURES AND BENEFITS

- Alternative to traditional mechanical and chemical surface preparation
- Excellent as a primer/basecoat for warehouse line striping, zone marking, solid color and decorative floor coatings including metallic systems
- Can be top coated after 5 hours and before 7 days without sanding
- Compatible with most floor coating technologies
- VOC compliant nationwide

PRODUCTS

SKU	DESCRIPTION (120 fl. oz. Kit)
354982	Flat Black
355235	Flat White

NOTE: Kits contain Base and Activator.

PRODUCT APPLICATION

READ ALL INSTRUCTIONS CAREFULLY BEFORE STARTING PROJECT

SURFACE PREPARATION

New concrete should be allowed to cure for 30 days before application of any coating. Remove oil, dirt, grease and other chemical contaminants by cleaning with Krud Kutter® Pro Concentrated Cleaner Degreaser, detergent or other suitable cleaner and rinse with fresh water. Existing coatings should be well bonded and sound.

Previously coated floors need to be in good condition with proper adhesion to the concrete substrate. Check the adhesion of the previous coating by cutting a small X in the coating using a sharp razor knife. Firmly apply a piece of 2" duct tape over the center of the X cut; then pull off with a fast snap. The coating is suitable to topcoat if no significant previous coating is removed beyond the X cut. If the coating fails this test, additional surface preparation is required.

PRODUCT APPLICATION (cont.)

MIXING

Combine the base and activator components. Power mix the material using a 3" Jiffler Mixer or Hanson Plunge Mixer. Mix at 500-750 rpm for 2-3 minutes, making sure a uniform color is achieved. Do not delay the application. The useable pot life is 45 minutes. Do not mix more material than you plan to use within the listed pot life.

NOTE: It is not unusual for a soft settle of the base component to occur. Adequately power mix the base component separately to fully reincorporate the material prior to combining with the activator.

APPLICATION

Apply only when air and surface temperatures are between 50-85ºF (10-29ºC) with the surface is at least 5ºF above the dew point and the relative humidity is below 85% during and after application. Use a good quality, lint free ⅜" nap roller with a phenolic core. A brush may be used for cutting in along walls. Avoid excessive film thickness.

DRY AND RECOAT TIMES

The coated floor will be ready for foot traffic in 4-6 hours. Allow 5 hours prior to application of the desired finish coat. The finish coat must be applied within 7 days.

COVERAGE

Approximately 250-350 square feet per activated gallon.

CLEAN-UP

Tools and equipment should be washed in warm soapy water before the product starts to cure. Accidental splashes of components prior to mixing can only be removed with MEK.

Form: ARJ-1887
Rev.: 012720

EPOXY	TECHNICAL DATA	CDL-03

CITADEL® EP 55

PHYSICAL PROPERTIES

		EP 55
Resin Type		2-Component Water-based Epoxy
Pigment Type		Titanium Dioxide, Carbon Black
Solvents		Water
Weight*	**Per Gallon**	11.9 lbs.
	Per Liter	1.43 kg
Solids*	**By Weight**	67%
	By Volume	53%
Volatile Organic Compounds*		0 g/l
Mixing Ratio		4:1 base to activator by volume
Induction Period		None required
Pot Life		45 minutes
Recommended Dry Film Thickness (DFT) Per Coat		2.0-3.0 mils (50-75µ)
Wet Film to Achieve DFT (unthinned material)		4.0-6.0 mils (100-150µ)
Practical Coverage at Recommended DFT (assumes 15% material loss)		Approximately 250-350 sq.ft./gal. (6.2-8.6 m^2/l)
Dry Times at 70ºF (21°C) and 50% Relative Humidity	**Foot Traffic**	4-6 hours depending on the porosity of the substrate
	Apply Finish Coat	After 5 hours and before 7 days
	Full Cure	7 days
Shelf Life		2 years (unopened containers)
Safety Information		For additional information, see SDS

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

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RUST-OLEUM
Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, Illinois 60061
Phone: 866·765·4310
www.citadelfloors.com

Form: ARJ-1887
Rev.: 012720

CITADEL® SLE 100™

100% SOLIDS DECORATIVE EPOXY

DESCRIPTION AND USES

SLE 100™ is a two component, 100% solids, cyclo-aliphatic hybrid coating system that has exceptional adhesion properties to concrete substrates. Due to its unique chemistry, this coating exhibits great flexibility, working times and self-leveling properties while offering great chemical resistance as well. Low odor makes it a great choice for interior applications.

PRODUCT FEATURES AND BENEFITS

- Emits virtually no odors and can be applied indoors
- VOC Free
- 60 minute pot life
- Convenient 2 parts A :1 part B mixing ratio
- Serves as both a primer and basecoat in 1 coat
- 100% solids formulation
- Exhibits great self-leveling properties with a built in shine

PRODUCTS

SKU	DESCIPTION
10255A	Dunes Tan 3-Gallon Kit
382429	Dunes Tan 15-Gallon Kit*
10257A	Light Gray 3-Gallon Kit
382430	Light Gray 15-Gallon Kit*
388943	Armor Gray 3-Gallon Kit
389161	Armor Gray 15-Gallon Kit*
10232BB	Clear 3-Gallon Kit
382434	Clear 15-Gallon Kit*
367480	Custom 3-Gallon Kit*
382435	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

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

NEW CONCRETE: Laitance must be removed by diamond grinding or shot blasting. On concrete that has been cured with curing compounds or has had a hard, steel troweled finish, shot blasting, sandblasting or other methods of mechanical preparation will be required. New concrete should be cured for a minimum period of 28 days at 70°F prior to application.

EXISTING CONCRETE: Concrete must be clean and sound. Old coatings and toppings must be removed. Concrete must be clean and free of previous coatings, oil, wax, paint, and other contaminants.

PRODUCT APPLICATION (cont.)

SURFACE PREPARATION (cont.)

EXISTING CONCRETE (cont.): The surface of the concrete must be clean and properly profiled to enable the coating to achieve maximum bond. Water soluble contaminants can be hosed off with water. Some water insoluble materials are difficult to remove and may require sandblasting, scabbling, or other methods of removal. For either new or existing concrete, when preparation is complete, the surface texture should be similar to 60-80 grit sandpaper or ICRI CSP Level 2 or 3. Concrete must be visibly dry at time of application.

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: 3-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 60-90°F. Mixing ratio is 2 parts A to 1 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 60-90 seconds.

TINTING (Clear)

Pre-mix Universal Tint Packs prior to adding into floor coatings. Add Universal Tint Packs at 8 oz. per gallon of mixed floor coating material and combine thoroughly via power mix to achieve uniform colorant dispersal.

NOTE: Some colors, including safety colors, may require additional coats if desired coverage is not achieved in the first application.

NOT FOR USE IN WATER BASED COATINGS

THINNING

None required.

NOTE: If necessary, can be thinned with xylene.

CITADEL® SLE 100™

100% SOLIDS DECORATIVE EPOXY

PRODUCT APPLICATION (cont.)

EQUIPMENT RECOMMENDATIONS

SQUEEGEE: Use a high quality notched rubber squeegee.

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 60-90°F (15-32°C) and the surface temperature is at least 5°F (3°C) above the dew point and RH less than 85%.

SLE 100 can be applied by roller working from a roller pan or it can be poured directly onto the floor in a ribbon and spread out with a rubber squeegee to spread the material out and achieve the 80-100 sq. ft./gal. spread rate. Back roll the material smooth using a ⅜" lint free roller with a phenolic core to smooth out the finish.

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.

PERFORMANCE CHARACTERISTICS

COMPRESSIVE STRENGTH
METHOD: ASTM C695
TYPICAL VALUE: 7950 psi

TENSILE STRENGTH
METHOD: ASTM D412
TYPICAL VALUE: 4500-5200 psi

BOND STRENGTH TO CONCRETE
METHOD: ASTM D4541
TYPICAL VALUE: Exceeds tensile strength of concrete (concrete fails first)

TABER ABRASION
METHOD: ASTM 4060, CS 17, 1,000 gram load
TYPICAL VALUE: Loss/1000 cycles = 55 mg

FLAMMABILITY
METHOD: ASTM D635
TYPICAL VALUE: 1.2 cm./min.

COEFFICIENT OF FRICTION
METHOD: ASTM D2047
TYPICAL VALUE: 0.77 unglazed

FILM HARDNESS, SHORE D
METHOD: ASTM D2240
TYPICAL VALUE: 85

IMPACT RESISTANCE
METHOD: ASTM D2794
TYPICAL VALUE: Direct/Reverse, 85/65 inch pounds

KONIG PENDULUM HARDNESS
METHOD: ASTM D4366
TYPICAL VALUE: 125

This product complies with USDA FSIS regulatory sanitation performance standards for food establishment facilities. This coating is impervious to moisture and easily cleaned and sanitized. Meets USDA requirements for incidental food contact.

CITADEL® SLE 100™

100% SOLIDS DECORATIVE EPOXY

CHEMICAL RESISTANCE

CHEMICAL	RESULT
Acetic Acid 100%	R
Acetone	R
Ammonium Hydroxide 50%	RC
Benzene	RC
Brine saturated H_2O	R
Chlorinated H_2O	R
Clorox (10%) H_2O	R
Diesel fuel	R
Gasoline	R
Gasoline/5% MTBE	R
Gasoline/5% Methanol	R
Hydrochloric Acid 20%	RC
Hydrofluoric Acid 10%	RC
Hydraulic fluid (oil)	RC
Isopropyl Alcohol	R
Jet fuel (JP-4)	R
Lactic Acid	RC
MEK	RC
Methanol	R
Methylene Chloride	C
Mineral Spirits	R
Motor Oil	R
MTBE	C
Muriatic Acid 10%	R
NaCl/ H_2O 10%	R
Nitric Acid 20%	RC
Phosphoric Acid 10%	RC
Phosphoric Acid 50%	C
Potassium Hydroxide 10%	R
Potassium Hydroxide 20%	R, Dis
Propylene Carbonate	R
Skydrol	R
Sodium Hydroxide 25%	R
Sodium Hydroxide 50%	R
Sodium Hypochlorite 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 14 days at 82° C	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

CITADEL® SLE 100™

100% SOLIDS DECORATIVE EPOXY

PHYSICAL PROPERTIES

		SLE 100
Resin Type		Amine Cured Epoxy
Weight[1]	**Per Gallon**	8.5-10.8 lbs./gal.
	Per Liter	1.0-1.3 kg
Solids by Volume[1]		100%
Volatile Organic Compounds[1]		<50 g/l (0.42 lbs./gal.)
Mixing Ratio		2:1 (Part A to Part B, by volume)
Induction Time		None required
Pot Life†		60 minutes @ 70°F (21°C)
Recommended Dry Film Thickness (DFT) Per Coat		16-20 mils
Practical Coverage at Recommended DFT		Approximately 80-100 sq. ft./gal.
Dry Times @ 70-80ºF (21-27°C) and 50% Relative Humidity	**Recoat**	12-48 hours
	Light Traffic	12-16 hours
	Vehicle Traffic	36-48 hours
	Full Cure[2]	7 days
Shelf Life		5 years
Flash Point		>200°F
Safety Information		See SDS

[1]Activated material
[2]Coating achieves its full physical and chemical resistant properties.
Calculated values are shown and may vary from the actual manufactured material.
† Pot life is affected by air temperature and the amount of material activated.

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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: 3-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.

TINTING (Clear)

Pre-mix Universal Tint Packs prior to adding into floor coatings. Add Universal Tint Packs at 8 oz. per gallon of mixed floor coating material and combine thoroughly via power mix to achieve uniform colorant dispersal.

Note: Some colors, including safety colors, may require additional coats if desired coverage is not achieved in the first application.

NOT FOR USE IN WATER BASED COATINGS

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.

CITADEL® PLE-100
100% SOLIDS GENERAL PURPOSE EPOXY

PRODUCT APPLICATION (cont.)

APPLICATION (cont.)

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.

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

CITADEL® PLE-100
100% SOLIDS GENERAL PURPOSE EPOXY

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 Hypochlorite 15% (Bleach)	Y
Sodium Hypochlorite 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		8-16 mils
Recommended Wet Film Thickness (WFT) Per Coat		8-16 mils
Practical Coverage (assume 15% material loss)		100-200 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.

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CITADEL®
POLYUREA-3 WB

DESCRIPTION AND USES

Citadel® Polyurea-3 WB is a High Solids premium water-based two-part high performance urethane coating which utilizes aliphatic urethane polymer technology. It provides excellent film hardness, chemical, abrasion and UV resistance. Polyurea-3 WB can be applied directly to many surfaces without the need of a primer, i.e., concrete, wood, aluminum and galvanized metal. The coating is widely used to provide a high gloss or matte finish to concrete floors, food & beverage and pharmaceutical facilities.

Recommended for interior and exterior environments including; cafeterias, clean rooms, healthcare facilities, manufacturing plants and warehouses. This product also has anti-graffiti barrier coat properties.

PRODUCT FEATURES

- User friendly–Easy to mix two component system with a 60 minute pot life
- Excellent chemical, abrasion and UV resistance
- UV stable and non-yellowing: colors are available in a gloss finish, clear is available in gloss and matte finishes
- VOC compliant nationwide

PRODUCTS

DESCRIPTION (3 Gallon Kit)	SKU
Polyurea-3 WB Matte Clear	10609A
Polyurea-3 WB Gloss Clear	10611A
Polyurea-3 WB Gloss Light Gray	356271
Polyurea-3 WB Gloss Dunes Tan	356272
Polyurea-3 WB Custom Clear	356273

PRODUCT APPLICATION

READ ALL INSTRUCTIONS CAREFULLY BEFORE STARTING PROJECT

CONCRETE REPAIR

All spalls and cracks must be chased out and repaired to ICRI standards using an appropriate patching material.

SURFACE PREPARATION

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. 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.

PRODUCT APPLICATION (cont.)

SURFACE PREPARATION (cont.)

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. Polyurea-3 WB is compatible with most coatings, but a test patch is suggested. Concrete must be visibly dry at time of application.

WOOD: Sand new wood to remove any surface contaminant and to lower grain. Previously finished wood should be sanded to provide good adhesion. Test patches are recommended.

ANTI-GRAFFITI SYSTEM: Follow appropriate surface preparation noted above. Apply two coats of Polyurea-3 WB Clear using a short nap premium 1/4–3/8" lint free roller. Graffiti “spray paint” can be removed with a rag saturated with xylene.

ALUMINUM: Remove all oil, grease or soap film with an alkaline cleaner such as TSP (tri-sodium phosphate).

MIXING EQUIPMENT

Low speed drill and spiral mixing wand.

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

MIXING

Note: Before starting, ensure that the material, concrete surface, and the ambient air are all at 50-95°F. Mixing ratio is 3 part A to 1 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 60-90 seconds.

Mix only the amount of material that can be applied during the pot life (approximately 1 hour, depending on air/surface temperatures). Do not aerate the mix. Apply immediately.

***Option**: To help aid in flow and leveling of the product, 6-8 oz. of clean water may be added to each gallon.

APPLICATION

Apply only when air, material and floor temperatures are between 30-90°F (-1-32°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-3 WB. 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, contact Rust-Oleum Technical Service.

CITADEL®
POLYUREA-3 WB

PRODUCT APPLICATION (cont.)

APPLICATION (cont.)

Use a ⅜ inch, short nap roller for horizontal surfaces and for vertical surfaces. Apply light coats no more than 24 hours between coats.

THINNING

None required

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.

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 that have been treated with curing compounds (unless completely removed) or substrates that are less than 30 days old. Do not use on vinyl, asphalt, glazed tile, paving brick, quarry tile, Mexican tile or similar materials. Do not apply if surface temperature is below 50°F.

PERFORMANCE CHARACTERISTICS

TENSILE STRENGTH

METHOD: ASTM D638
RESULT: 2715-2912 psi

ABRASION RESISTANCE

METHOD: ASTM D4060, CS 17 Wheel
RESULT: 4mg loss

WATER VAPOR TRANSMISSION

METHOD: ASTM E96
RESULT: 1.39 perms

MONOLITHIC SURFACING

METHOD: ASTM C722
RESULT: PASS

KONIG HARDNESS

METHOD: ASTM D4366
RESULT: 111

IMPACT RESISTANCE (CS-17)

METHOD: ASTM D2794
RESULT: Pass, >160 inch/lb.

CHEMICAL RESISTANCE

CHEMICAL	RESULT
Acetone	Y
Animal Urine (fox)	Y
Antifreeze (Prestone®)	Y
Bleach (Clorox®)	Y
Brake Fluid	N
Calcium Chloride	Y
Cooking Oil (Peanut, Olive Canola)	Y
De-Icing Salts	Y
Detergents	Y
Gasoline	Y
Hydraulic Fluids (Tellus 46)	Y
Hydrochloric Acid 10%	Y
Hydrofluoric Acid 37%	Y
Isopropyl Alcohol	Y
MEK	Y
Motor Oil	Y
Mustard (Raye's®)	Y*
Natural Grain Spirits 190 Proof	Y
Phosphoric Acid 10%	Y
Skydrol 5	Y
Sodium Hydroxide 50% (Caustic Soda)	Y
Sulfuric Acid 10%	Y
Sulfuric Acid 37% (Battery Acid)	Y
Toluene	Y
Trisodium Phosphate	Y
Water	Y
Windshield Wiper Fluid	Y
Xylene	Y

Chemical Resistance: Chart Key

Y = Resistant
N = Not Recommended
*Will stain unless immediately removed

CITADEL®
POLYUREA-3 WB

PHYSICAL PROPERTIES

		POLYUREA-3 WB
Resin Type		Water based urethane
Weight*	**Per Gallon**	9.0-10.18 lbs
	Per Liter	1.08-1.22 kg
Solids*	**By Weight**	57-67%
	By Volume	54-59%
Volatile Organic Compounds*		<100 g/l
Recommended Wet Film Thickness (WFT) Per Coat		3-5 mils
Recommended Dry Film Thickness (DFT) Per Coat		2-3 mils
Practical Coverage Rate		300-500 sq.ft./gal. Coverage rate can vary depending on the texture and porosity of the concrete
Mixing Ratio		3 (base) : 1 (activator)
Induction Period		None
Pot Life @ 70-80°F (21-27°C) & 50% Relative Humidity		60 minutes
Dry Times at 70-80°F (21-27ºC) and 50% Relative Humidity	**Tack Free**	6 hours
	Vehicle Traffic	5 days
	Re-Coat	Minimum 6 hours and Max 24 hours
Shelf Life		2 years
Flash Point		>200°F (93°C)
CAUTION!		Protect from freezing
Safety Information		See SDS

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

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CITADEL®
POLYUREA-1 HD

DESCRIPTION AND USES

Polyurea-1 HD is a high solids, single component Aliphatic Polyurea that provides a high gloss, smooth finish with excellent protection from UV rays, abrasion, and many of today's harshest chemicals. Polyurea-1 HD provides reliable performance in a wide range of temperatures and climate conditions. For a beautiful satin finish, just add our Ultra Durability Plus additive. Ideal for interior, exterior horizontal and vertical use.

PRODUCT

SKU	DESCRIPTION
10607	Clear 2-Gallon Kit

PACKAGING

5-gallon bucket containing two – 1-gallon pouches and two stabilizer shots.

COMPANION PRODUCT

SKU	DESCRIPTION
15302	Ultra Durability Plus Additive

RECOMMENDED PRIMERS

- EP-55
- Hard Surface Primer
- Ultra-Hydro Stop
- Ultra-Hydro Stop H2O
- SLE-100
- Polyurea-350

PRODUCT FEATURES AND BENEFITS

- Fast return to service time, can accept vehicle traffic in 24 hours
- UV Stable, excellent chemical and abrasion resistance
- Easy roller application
- One gallon covers 400-500 square feet
- Unlimited Pot Life

PRODUCT APPLICATION

READ ALL INSTRUCTIONS CAREFULLY BEFORE STARTING PROJECT

CONCRETE REPAIR

All spalls and cracks must be chased out and repaired to ICRI standards using an appropriate patching material.

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® PRO Cleaner Degreaser, detergent, or other suitable cleaner. Rinse thoroughly with clean, fresh water and allowed to dry.

PRODUCT APPLICATION (cont.)

SURFACE PREPARATION (cont.)

NOTE: The substrate must be completely dry prior to application of Polyurea-1 HD. Urethane coatings are sensitive to moisture and can affect proper curing of the coating.

NEW, UNCOATED CONCRETE: New concrete must be allowed to cure for a minimum of 30 days before application. In addition to the aforementioned cleaning, the concrete must be further prepared by mechanical grinding or acid etch to remove all laitance and produce a suitable surface profile.

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. Do not wipe the floor with denatured alcohol or other solvent. If wiping is necessary, use only urethane grade Methyl Ethyl Ketone (MEK).

MIXING

Both components and environment should be preconditioned to a minimum of 50º F (10º C) prior to use. Be sure the air and surface temperatures are at least 5º above the dew point. Polyurea-1 HD is moisture sensitive, so be sure the outside of the containers are dry and free of condensation.

Shake the container of Stabilized for one full minute before combining with the Polyurea-1 HD. The components can be mixed in a separate container or mixed in the gallon pouch. After combining the components, power mix at 500-700 rpm for 2-3 minutes. Use an appropriate size mixer and use care to not entrain air into the coating while mixing. Once mixed, the material has a 6-month shelf life.

TINTING (Clear)

Pre-mix Universal Tint Packs prior to adding into floor coatings. Add Universal Tint Packs at 8 oz. per gallon of mixed floor coating material and combine thoroughly via power mix to achieve uniform colorant dispersal.

NOTE: Some colors, including safety colors, may require additional coats if desired coverage is not achieved in the first application.

NOT FOR USE IN WATER BASED COATINGS

EQUIPMENT RECOMMENDATIONS

ROLLER: Use a high quality 3/8- or 1/4-inch lint-free roller with a phenolic core.

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

Form: ARJ-2099
Rev.: 040524

CITADEL®
POLYUREA-1 HD

PRODUCT APPLICATION (cont.)

APPLICATION

Apply only when air, material and floor temperatures are between 50-90°F (10-32°C) and the surface temperature is at least 5°F (3°C) above the dew point. The relative humidity should not be greater than 85%. Do not apply in direct sunlight or when temperature is rising. Be sure the substrate is completely dry.

Pour out only the amount of material to be used into a roller pan. Unused material can be saved in the mixing container for up to 6 months provided it is properly sealed. Do not return unused material from the roller pan to the mixing container.

Use a 3/8- or 1/4-inch, lint free roller with a phenolic core to roll out the coating. Begin with rolling out a W or M pattern, then cross roll to fill in and smooth out the coating.

NOTE: Do not exceed recommended coverage rate, as film defects are possible.

THINNING

Not recommended

CLEAN-UP

Methyl Ethyl Ketone (MEK)

PERFORMANCE CHARACTERISTICS

TENSILE STRENGTH

METHOD: ASTM D412
RESULT: 5,500

ABRASION RESISTANCE

METHOD: ASTM D4060, CS 17 Wheel, 1,000 g load, 1,000 cycles
RESULT: 43

COMPRESSIVE STRENGTH

METHOD: ASTM D695
RESULT: 12,000

HARDNESS, SHORE D

METHOD: ASTM D2240
RESULT: 84

ELONGATION

METHOD: ASTM D412
RESULT: 75

GLOSS

METHOD: ASTM D23 @ 60°
RESULT: 91+

COEFFICIENT OF FRICTION

METHOD: ASTM D1894
RESULT: 0.69 Wet, 0.80 Dry

CHEMICAL RESISTANCE

CHEMICAL	RESULT (77°F/25°C)
Acetic Acid 100%	RC
Acetone	R
Ammonium Hydroxide 50%	RC
Benzene	RC
Brake Fluid	RC
Brine saturated H2O	R
Chlorinated H2O	R
Clorox (10%) H2O	R
Diesel fuel	RC
Gasoline	R
Gasoline/5% MTBE	R
Gasoline/5% Methanol	R
Hydrochloric Acid 20%	R
Hydrofluoric Acid 10%	RC
Hydraulic fluid (oil)	RC
Isopropyl Alcohol	R
Jet Fuel (JP-4)	R
Lactic Acid	RC
MEK	NR
Methanol	R
Methylene Chloride	C
Mineral Spirits	R
Motor Oil	R
MTBE	C
Muriatic Acid 10%	R
NaCl/H2O 10%	R
Nitric Acid 20%	R
Phosphoric Acid 10%	RC
Phosphoric Acid 50%	NR
Potassium Hydroxide 10%	R
Potassium Hydroxide 20%	R, Dis
Propylene Carbonate	RC
Skydrol	RC
Sodium Hydroxide 25%	R
Sodium Hydroxide 50%	R, Dis
Sodium Hypochlorite 10%	RC
Sodium Bicarbonate	R
Stearic Acid	R
Sugar/H20	R
Sulfuric Acid 10%	R
Sulfuric Acid >50%	R
Toluene	R
1, 1,1-Trichlorethane	C
Trisodium Phosphate	R
Vinegar/H2O 5%	R
H2O 14 days @ 82°	R
Xylene	NR

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

Form: ARJ-2099
Rev.: 040524

CITADEL®
POLYUREA-1 HD

PHYSICAL PROPERTIES

		POLYUREA-1 HD
Resin Type		Aliphatic Urethane
Weight*	**Per Gallon**	9.59 lbs.
	Per Liter	1.1 kg
Solids By Volume		90%
Volatile Organic Compounds*		<50 g/l*
Recommended Dry Film Thickness (DFT) Per Coat		3-4 mils
Wet Film to Achieve DFT (unthinned material)		3.5-4.5 mils
Practical Coverage Rate		400 sq. ft./gal. Coverage rate can vary depending on the texture and porosity of the concrete
Dry Times at 72°F (22ºC) and 50% Relative Humidity†	**Recoat****	4-12 hours***
	Light Traffic	4-6 hours
	Full Traffic	24 hours
Shelf Life		18 months unopened 6 months once the Stabilizer/Tint has been added
Flash Point		>200°F (93°C)
Safety Information		See SDS

Calculated values are shown and may vary slightly from the actual manufactured material.
† Dry times will be increase if temperatures are less than 65º F (18ºC) and /or Relative Humidity is less than 50%.
* Calculated applied VOC
** As temperature, humidity, and dew points rise, re-coat windows are drastically shortened. Please contact Tech Service for recommended installation practices.
*** If 12 hour recoat time has elapsed, the coating must be sanded prior to recoating.

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