



POLY-1 HD

DESCRIPTION AND USES

Poly-1 HD is a high solids, single component, aliphatic moisture cure urethane that provides a high gloss, smooth finish with excellent protection from UV rays, abrasion, and many of today's harshest chemicals. Poly-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 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

SKU	DESCRIPTION
10607	Clear 2-Gallon Kit

PACKAGING

3.5-gallon bucket containing two – 1-gallon half-round containers and two stabilizer shots.

COMPANION PRODUCT

SKU	DESCRIPTION
15302	Ultra Durability Plus Additive

RECOMMENDED PRIMERS

- EP-55
- Ultra-Hydro Stop
- Ultra-Hydro Stop H2O
- RG-70
- SLE-100
- PLE-100
- PLE-100 FC
- Poly-350

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 Rust-Oleum® Professional Cleaner Degreaser, detergent, or other suitable cleaner. Rinse thoroughly with clean, fresh water and allowed to dry. **NOTE:** The substrate must be completely dry prior to application of Poly-1 HD. Urethane coatings are sensitive to moisture and can affect proper curing of the coating.

PRODUCT APPLICATION (cont.)

SURFACE PREPARATION (cont.)

NEW, UNCOATED CONCRETE: New concrete must be allowed to cure for a minimum of 30 days before application. 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. Poly-1 HD is intended as a topcoat/wear coat and should be applied over one of the listed primers/base coats.

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. Wipe with Methyl Ethyl Ketone (MEK) or Acetone.

MIXING

Both components and environment should be preconditioned to a minimum of 50°F (10°C) prior to use. Be sure the air and surface temperatures are at least 5°F (3°C) above the dew point. Poly-1 HD is moisture sensitive, so be sure the outside of the containers are dry and free of condensation.

Shake the container of Stabilizer for one full minute before combining with the Poly-1 HD. The components can be mixed in a separate container or mixed in the 1-gallon half-round container. After combining the components, 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. **NOTE: Stabilizer must be added prior to application.** Once mixed, the material has a 6-month shelf life.

Optional: Use Ultra Durability Plus Additive to increase scuff and scratch resistance and lower sheen to a satin finish. Mix, at minimum, 1 bag per 2 gallons of Poly-1 HD, after addition of stabilizer.

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. For white and safety yellow, add 12 oz. per gallon.

UNIVERSAL TINT PACKS NOT FOR USE IN WATER BASED COATINGS

EQUIPMENT RECOMMENDATIONS

ROLLER: Use a high quality woven 3/8"- or 1/4" lint-free roller with a phenolic core, depending on system and finish.

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



POLY-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", woven, lint free roller with a phenolic core to roll out the coating, depending on system and finish. 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.

CLEANUP

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/H2O	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

URETHANE	TECHNICAL DATA	CDL-14
 CITADEL	POLY-1 HD	

PHYSICAL PROPERTIES

		POLY-1 HD
Resin Type		Aliphatic Moisture Cure Urethane
Weight*	Per Gallon	9.59 lbs.
	Per Liter	1.1 kg
Solids By Volume		80%
Volatile Organic Compounds*		<50 g/l*
Recommended Dry Film Thickness (DFT) Per Coat		2.5-3.5 mils
Wet Film to Achieve DFT (unthinned material)		3.2-4.2 mils
Practical Coverage Rate		300-400 sq. ft./gal. Coverage rate can vary depending on the texture and porosity of the concrete
Dry Times at 72°F (22°C) 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 Stabilizer has been added and properly sealed
Flash Point		>200°F (93°C)
Safety Information		For additional information, see SDS

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

† Dry times will be increase if temperatures are less than 65° F (18°C) 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 your Citadel Representative or Tech Service for recommended installation practices.

*** If 12 hour recoat time has elapsed, the coating must be appropriately abraded prior to recoating.

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