

**Product Description**

405 is a two-component, water reducible, high gloss aliphatic polyurethane. This coating may be used for interior or exterior applications where a weather, chemical and abrasion resistant coating is desired. 405 is a low VOC, low odor, fast drying coating that can replace and outperform many solvent borne polyurethanes available in today's market. It can be applied directly to a variety of clean, sound surfaces such as aluminum, galvanized metal, stainless steel, ferrous metal, concrete, & wood. 405 has exceptional color and gloss retention and its tenacious adhesion allows it to be applied directly to most substrates without the use of a primer.

Typical Uses: Food & Beverage, Pharmaceutical, Water & Wastewater, Power Industries, OEM Facilities, Tank Exteriors, Pipelines, Parking Garage Floors, Commercial and Residential Buildings.

NOTE: This is a two-component product and must be mixed according to instructions for proper performance.

**Performance Features**

- Excellent Durability
- Excellent Adhesion
- Chemical Resistant
- Abrasion Resistant
- Flexible Film
- Direct to Metal
- Low Odor and VOC
- USDA Acceptable

**Compliance - Performance - Certification**

- ✓ Meets Green Seal GS-11 VOC Limits
- ✓ Meets LEED EQ Credit 4.2 VOC Limits
- ✓ Meets CARB VOC Limits
- ✓ Meets SCAQMD VOC Limits
- ✓ Meets National AIM VOC Limits
- ✓ Meets California Green Building Standards Code of Regulation Title 24, Part 11

**Product Specifications**

Resin Type:	Aliphatic Polyurethane
Color Range:	White, Ready mix & custom colors
Drying Time: (75° F. & 50% R.H.)	To touch: 4 hours To recoat 6-8 hours. (Max. recoat: 48 hours or sand)
Practical coverage:	Approx. 250-400 sq ft/gallon
Recommended Film Thickness:	Wet: 4-5 mils/coat (vertical) 6-8 mils/coat(horizontal) Dry: 2.4-3.0 mils/coat (vert.) 3.6-4.8 mils/coat (horiz.)
Weight per Gallon:	11 lbs. (mixed)
Solids by Volume:	Clear: 39% Colors: 58 – 65%
Shelf Life:	1 year (unmixed, unopened)
Sizes:	One gallon kits
V.O.C.	<50 Grams per liter
Clean Up:	Water or water & isopropanol

**Test Data**

Flame Retardant (ASTM 84)	15 – Class 1
Smoke Developed (ASTM 98)	5 – Class 1
Tensile Adhesion (ASTM D4541)	2473 – 2609 psi
Abrasion Resistance (ASTM D4060)	10 – 20 mg loss
Condensing Humidity – 1000 hrs (ASTM D2247)	Rusting: none, Blistering: none
Flexibility – Conical Bend (ASTM D522)	Elongation: 32%, Resistance to Cracking: <1/8" diameter
NSF International (incidental food contact)	Reg #132618, R2
Pencil Hardness (ASTM D3363)	Gouge: 4H, Scratch: H
Thermal Shock – 16 Cycles (ASTM D2246)	Passed
Salt Fog – 5000 Hours (ASTM B117)	Passed
Water Vapor Transmission (ASTM E96)	2.43 Perms
QUV – 5000 Hours (ASTM D4587)	<u>Color Change:</u> Pass SSPC Paint 36 Standard of < 2.0 delta E change. <u>Gloss Change:</u> Pass SSPC Paint 36 Standard of <30 gloss change

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## Chemical Resistance

Water	Passed
Water with Detergent	Passed
10% Hydrochloric Acid	Passed
36% Hydrochloric Acid	Failed (Extreme test – see note)
Toluene	Passed
Gasoline	Passed
MEK	Passed
10% Sulfuric Acid	Passed
Acetone	Passed
Isopropyl Alcohol	Passed
Xylol	Passed
50% Sodium Hydroxide	Passed
20% Sodium Chloride	Passed
37% Sulfuric Acid (battery acid)	Passed
Brake Fluid	Failed (Extreme test – see note)
Hydraulic Fluid	Passed
Skydrol JP-4	Passed
Bleach	Passed
Betadyne	Passed
Ketchup	Passed
Mustard	Passed
Orange Juice	Passed

Note: 405 was tested for Chemical Resistance using 20 strong chemicals/mixtures placed under a “watch glass” cover for 24 hours. This test is extreme and far more severe than typical customer field conditions. For this reason we are not concerned by the failures, as it would be unusual for chemicals to be in contact with the coating for 24 hours. In addition, 405 can be repaired if damaged by sanding and re-application.

## Surface Preparation

**WARNING!** If you scrape, sand or remove old paint from any surface, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Carefully clean up with a wet mop or HEPA vacuum. Before you start, find out how to protect yourself and your family by contacting the U.S. EPA/Lead Information Hotline at 1-800-424-LEAD (5323) or log on to [www.epa.gov/lead](http://www.epa.gov/lead).

### General:

All surfaces must be cured, firm, dry and cleaned free of dust, dirt, oil, grease, wax, chalky or loose paint, rust, loose mill scale, bond breakers and curing compounds, efflorescence, asphalt stains, mildew or any other contamination or condition that would adversely affect the performance of the coating. Sand glossy, glazed or dense surfaces. Fill holes and surfaces irregularities with a suitable patching compound to match the surface profile.

### Previously Painted Surfaces:

Properly clean the surface of all dust, dirt, grease and foreign matter. Apply a test patch of 405 to ensure adhesion to the previous coating and to ensure there will be no delamination of the existing coating to the substrate. **Note:** To insure optimum performance Kelly-Moore recommends removing existing coatings to the bare substrate before applying the 405 system.

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## **Steel:**

Remove all loose rust, dirt, grease or other contaminants per SSPC-SP1, SSPC-SP2 and/or SSPC-SP3.

## **Non-Ferrous Metal (Aluminum, Galvanized):**

Remove all oil, grease or soap film with a neutral biodegradable detergent or emulsion detergent.

**Concrete, Masonry, Concrete Blocks:** Allow concrete to cure for at least thirty (30) days before coating. Clean masonry substrates with a neutral biodegradable detergent or emulsion cleaner. Remove any laitance using a pressure washer.

## **Wood:**

Sand new wood to remove any surface contaminant and to remove loose wood fibers. Test patches are recommended.

**MIXING: This is a two (2) component system. Both components must be mixed together in order for the coating to dry and cure.**

Mixing Instructions: Stir each component thoroughly then mix the pre-measured Part A with the Part B. Mix thoroughly, ensuring Parts A & B are blended together. Then allow the combined Parts A & B time to "sweat in" for 2 minutes. You must reduce the mixed A & B components with Clean Tap Water, at a recommended level of 5% to 20%. Reducer water should be added while agitating the product. The volume of Part A will vary based on pigments and colors. In some cases total volume after combining Parts A & B, plus water may exceed a gallon. Use separate containers larger than one gallon for mixing. Once the clean tap water is mixed into the combined Parts A & B you may start to apply the coating. No further sweat in time is required.

**Pot Life:** 1.5 hours at 75° F & 50% R.H.

**PRODUCT MUST BE THINNED FOR PROPER CURING AND FILM BUILD:** For smooth vertical surfaces: thin 15% with clean tap water. For rough vertical surfaces: thin 10% to 15% with clean tap water. For horizontal surfaces: thin 20% to 25% with clean tap water. For spray applications: thin to proper consistency for application equipment and surface profile.

## **Application**

Temperature of the air, substrate and material is recommended to be between 50° F and 95° F, and at least 5° F above the dew point. Relative humidity should not be above 80%. Clean spray equipment thoroughly before using the 405. Use the appropriate solvent or cleaner that will adequately remove any residue from the previous coating that was used in the spray equipment. Then flush equipment. NOTE: If more than 48 hours have passed since application of the previous coat, sanding will be necessary before applying additional coats.

## **Equipment:**

Airless Spray: 2000-2400 psi. Tip: .015 - .017. Hose: 1/4 to 3/8 inch.

Air-Assist Sprayer: Unit: 500-650 psi. Tip: .015 - .017

Conventional: DeVilbiss pressure pot with GA 503 gun and FF needle assembly with 777 air cap.

Roller: For vertical surfaces use a 1/4" woven nap, Phenolic core. Horizontal Surfaces: use a 3/8" woven nap, Phenolic core.

## **Precautions**

Read each component's Material Safety Data Sheet before use. Mixed materials may have hazards of each component. Safety precautions must be strictly followed during storage, handling and use.

**USE ONLY WITH ADEQUATE VENTILATION • KEEP OUT OF REACH OF CHILDREN • FOR PROFESSIONAL USE ONLY**

## **Proper Disposal**

For proper disposal of excess material, please contact your local city or county waste management agency.

**Limited Warranty:** The statements made on this bulletin, product labels or by any of our agents concerning this material are given for information only. They are believed to be true and accurate and are intended to provide a guide to approved construction practices and materials. As workmanship, weather, construction equipment, quality of other materials and other variables affecting results are all beyond our control, Kelly-Moore Paint Company, Inc., does not make nor does it authorize any agent or representative to make any warranty of MERCHANTABILITY OR FITNESS for any purpose or any other warranty, guarantee or representation, expressed or implied, concerning this material except that it conforms to Kelly-Moore's quality control standards. Any liability whatsoever of Kelly-Moore Paint Company, Inc. to the buyer or user of this product is limited to the purchaser's cost of the product itself.

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