



# POLIBRID® 705E

## TECHNICAL DATA SOLVENTLESS ELASTOMERIC COATING PROTECTIVE COATINGS AND LININGS

### GENERAL PROPERTIES

**POLIBRID 705E** is a tough, flexible and resilient elastomeric modified polyurea used as a protective coating or lining for concrete, steel and other surfaces. It is airless-spray applied at ambient temperatures at virtually any film thickness in one application, even on vertical or inverted surfaces.

**POLIBRID 705E's** solventless formulation and unlimited build capabilities permits application of different film thicknesses within the same application; from 20 to 250 mils, or higher, as required by differing service demands or surface conditions. The degree of protection is no longer limited to the maximum build of multiple coats of solvented coatings. Encapsulates rivets, bolts, edges, rough welds in one coat and produces the high film thicknesses needed to provide monolithic protection over naturally rough concrete.

**POLIBRID 705E** is a premium-quality, thermosetting elastomer that meets all known VOC regulations and is virtually odorless during and after application. It eliminates creation of pin-holes due to solvent evaporation, producing a dense monolithic membrane. It is sufficiently elastic to withstand normal shrinkage cracks in concrete without breaking. An ideal immersion lining, it is abrasion-resistant, chemical resistant, highly impermeable and can be placed in service within moments after application. Easy to repair if needed.

### RECOMMENDED USES

**POLIBRID 705E** provides the ultimate in corrosion protection for concrete or steel in potable water service. Protects against microbiologically induced corrosion (MIC), making it ideal for municipal wastewater applications. Geotextile fabrics may be embedded within the coating to produce reinforced, bonded geomembrane linings. Suitable for a wide range of industrial applications, including:

- Potable Water Treatment & Storage Tanks
- Wastewater Collection & Treatment Structures
- Secondary Containment Installations
- Hydroelectric Penstocks & Dam Gates
- Tank Linings & Bottoms
- Pipeline Coatings & Linings
- Marine Vessels & Offshore Structures



DRINKING WATER COMPONENTS CLASSIFIED BY UNDERWRITERS LABORATORIES INC.® IN ACCORDANCE WITH STANDARD ANSI/NSF 61-1996 — 7P59

Meets ANSI / AWWA C210-92 Pipe Inside / Outside

### LIMITATIONS

Not recommended for exposure to concentrated acids, aromatic hydrocarbons, ketones or chlorinated solvents.

|  |   |
|--|---|
| <b>GENERIC TYPE</b>                          | Solventless, Elastomeric Polyurea Aromatic, Chemical Cure   |
| <b>COLOR *</b>                               | Tan   |
| <b>SOLIDS CONTENT</b>                        | 100%  |
| <b>VOC CONTENT</b>                           | Zero  |
| <b>MAXIMUM BUILD</b>                         | Unlimited   |
| <b>FILM SHRINKAGE</b>                        | Zero (Wet to Dry)   |
| <b>TENSILE STRENGTH</b>                      | Avg. 3,280 psi (ASTM D-412)   |
| <b>ELONGATION</b>                            | 100% (ASTM D-412)   |
| <b>HARDNESS</b>                              | Shore "D" Avg. 60 @ 77°F (25°C) (ASTM D-2240)   |
| <b>FLEXIBILITY</b>                           | Passes multiple bends on 1/8" diameter mandrel @ 30 mils (ASTM D-1737)  |
| <b>ABRASION RESISTANCE</b>                   | 35 mgs. weight loss<br>Taber Abraser w/ CS-17 wheels; 1,000 revs; 1 kg. load (ASTM D-4060)  |
| <b>TEAR RESISTANCE</b>                       | Die C – Avg. 210 pli (ASTM D-624)   |
| <b>IMPACT RESISTANCE</b>                     | > 160 in.-lbs. / Direct and Reverse (ASTM D-2794)   |
| <b>WATER VAPOR TRANSMISSION RATES (WVTR)</b> | 40-45 mils - 0.10 gm./100 in <sup>2</sup> / 24 hrs.<br>75-80 mils - 0.04 gm./100 in <sup>2</sup> / 24 hrs.<br>at 100% RH, 73°F (23°C)<br>(ASTM F-1249-90) |
| <b>SERVICE TEMPERATURE RESISTANCE **</b>     | <u>Dry</u> : -20°F to 180°F (-29°C to 82°C)<br><u>Immersion</u> : Maximum 120°F (49°C)<br>(Ambient for Non-Insulated Tanks)                               |

\* Due to its aromatic composition, Polibrid 705 will tend to yellow or darken in color after exposure to UV light. For a color-fast, glossy finish, topcoat with an aliphatic polyurethane in a color of your choice.

\*\* Raw water in carbon steel vessels. Temperature resistance of the lining may be substantially affected by chemical composition of the immersion solution.

Manufactured By :

**POLIBRID COATINGS, INC.**

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## EQUIPMENT REQUIREMENTS &amp; APPLICATION CHARACTERISTICS

**Spray Equipment** .....Special designed, plural-component high-pressure airless spray machine. GRACO® "Hydra-Cat", 45:1 fluid-to-air ratio, King air motor with triplex bottom on a 2A:1B, fixed-volume ratio. Standard equipment typically includes heated hoses, drum heaters, suction feed from 50 gallon steel drums (feed pumps not required in most cases), recirculation system, GRACO® R-A-C III or IV spray tips from 0.021" to 0.035", stroke counter and automatic high-pressure shut-off system. Other set-ups may be necessary and many options are available. Applicator training is required and spray equipment must be approved by Polibrid Technical Service.

**Mix Ratio by Volume** .....2A:1B (Two to One)

**Pot Life** .....5 to 8 minutes

**Dry to Touch @ 72°F** ..... 20 mils - 50 min. / 125 mils - 15 min.

**Recommended Thickness** .....Steel: 25 to 125 mils DFT  
Concrete: 80 to 125 mils DFT

**Minimum Cure Temperature** ..... 25°F (-4°C)

**Ambient Temperature**..... 40°F to 120°F (4°C to 49°C)

**Materials Temperature** ..... 80°F to 90°F (27°C to 32°C)

**Substrate Temperature** ..... Min. 40°F (5°C) / Max. 140°F (60°C)  
Minimum 5°F (3°C) above Dew Point

**Ambient Moisture** ..... Maximum 95% RH

**Return to Service** ..... ± 2 hours @ 72°F (22°C) for light foot-traffic. May be immersed in compatible solutions immediately after application.

**Theoretic Coverage** .....1,604 ft<sup>2</sup>/gal. @ 1 mil DFT  
1 m<sup>2</sup>/lt. @ 1 mm. (40 m<sup>2</sup>/lt. @ 25μ)  
(Coverage may vary widely depending on job conditions)

**Flash Point** ..... Resin (Part A): 500°F (260°C) (COC)  
Catalyst (Part B): 230°F (110°C) (COC)

**Specific Weight** ..... Resin (Part A): 8.5 lbs./gal. (1.02 kg./lt.)  
Catalyst (Part B): 10 lbs./gal. (1.2 kg./lt.)  
Mixed: 9 lbs./gal. (1.08 kg./lt.)

**Flush Solvents** ..... Mineral Spirits

**Cleaning Solvents** ..... MEK, Lacquer Thinners

**Packaging** .....50 gallon steel drums

**Sales Unit** ..... 150 gallon kit

**Shelf Life** .....Resin (Part A) 2 Years / Catalyst (Part B) 12  
Months stored dry in original, unopened containers @ 65°F or  
higher or 6 months @ 65°F or lower)

**Mixing**.....Thoroughly mix Resin (Part A) with air-driven  
agitator for 30 minutes just prior to use. Catalyst (Part B) requires  
no agitation before using unless tinted.

**Storage**.....KEEP DRY! Do not place drums directly over  
concrete or earth; store on top of wood slats or pallets. Blanket  
partial drums with nitrogen gas to prevent moisture  
contamination. Avoid freezing. Do not open until ready to use.  
Rotate Resin (Part A) drums regularly if stored for long term.

## SURFACE PREPARATION

**CONCRETE:** For new concrete allow 28 day cure. Decontaminate per ASTM D-4258, then abrasive blast clean per ASTM D-4259 to produce surface profile resembling coarse sandpaper. Eliminate leaks and infiltrations and remove standing water. Resurface areas with excessive cavities (bugholes) or exposed aggregate using a high-strength, rapid-cure, zero-shrinkage resurfacing product. Wherever possible, fiberglass screen or geotextile fabric may be embedded within coating to "bridge", rather than resurface cavities, thereby eliminating resurfacing compounds. Apply nominal 5 mils (125μ) Polibrid 670-S epoxy primer, before topcoating with Polibrid 705. Concrete may be damp to the touch, however, surfaces must be free of condensation and visible moisture. Vacuum to dust-free condition before priming.

**CARBON STEEL:** For direct-to-metal application, decontaminate surface per SSPC SP-1 "Solvent Cleaning" if needed, then abrasive blast clean per SSPC SP-10 "Near-White Condition" to produce nominal 3½ mil (88μ) surface profile. Remove flash rust per SSPC SP-7 "Brush-Off Blast Cleaning". Substrate must be dry and dust-free before coating. Application to wet surfaces is not recommended.

## PRECAUTIONS

AVOID SKIN CONTACT !

**HEALTH & SAFETY:** Wear chemical goggles as minimum eye protection, use impermeable gloves and cover all exposed skin. Do not allow contaminated clothing to contact skin. Use properly fitted organic vapor respirators and adequate ventilation. Wash hands before eating, smoking or using washroom. Follow precautions in CFR Title 29 (OSHA) and all pertinent Local, State & Federal health, safety and environmental regulations. Read, understand and fully comply with recommendations made in Material Safety Data Sheets (MSDS) supplied for individual coating components!

**CONFINED SPACES:** Provide forced air ventilation. Workers must use carbon monoxide filtered breathing air-line respirators. If flammable vapors are present, use only non-sparking tools and equipment. COMPLY WITH PERTINENT LOCAL AND OSHA REGULATIONS RELATIVE TO WORK IN CONFINED SPACES.

**FIRST AID:** SKIN CONTACT: Wash thoroughly with plenty of soap and water. EYE CONTACT: Immediately flush with fresh clean water for at least fifteen (15) minutes and get specialized medical attention promptly. INHALATION: Remove to fresh air and provide oxygen. INGESTION: Immediately call a physician or poison control center. DO NOT INDUCE VOMITING !

**THESE MATERIALS ARE FOR INDUSTRIAL USE BY FACTORY-TRAINED QUALIFIED TECHNICIANS ONLY!**

CONSULT YOUR POLIBRID TECHNICAL SERVICE REPRESENTATIVE BEFORE SPECIFYING !

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