



POLIBRID® 705

TECHNICAL DATA SOLVENTLESS ELASTOMERIC POLYURETHANE PROTECTIVE COATINGS AND LININGS

GENERAL PROPERTIES

POLIBRID 705 is a tough, flexible and resilient elastomer 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 705'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 705 is a premium-quality, thermosetting elastomer that meets all known VOC regulations and is virtually odorless during and after application. It eliminates creation of pinholes 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 705 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 / AAWA C210-92 Pipe Inside / Outside

LIMITATIONS

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

GENERIC TYPE	Solventless, Elastomeric Polyurethane Aromatic, Chemical Cure (ASTM D16 Type V)
COLOR *	Tan
SOLIDS CONTENT	100 %
VOC CONTENT	Zero
MAXIMUM BUILD	Unlimited
FILM SHRINKAGE	Zero (Wet to Dry)
TENSILE STRENGTH	2,878 psi (ASTM D-412)
ELONGATION	52% (ASTM D-412)
HARDNESS	Shore "D" 61-65 @ 77°F (25°C) (ASTM D-2240)
FLEXIBILITY	Passes multiple bends on 1/8" diameter mandrel @ 30 mils (ASTM D-1737)
ABRASION RESISTANCE	36.7 mgs. weight loss Taber Abraser w/ CS-17 wheels 1,000 revs; 1 kg. load (ASTM D-4060)
TEAR RESISTANCE	352 lbf/in (ASTM D-624)
COMPRESSIVE STRENGTH	> 4,500 psi (ASTM D-695) Full recovery when load is removed
IMPACT RESISTANCE	> 160 in lbs / Direct and Reverse (ASTM D-2794)
WATER VAPOR TRANSMISSION RATES (WVTR)	40-45 mils - 0.080 gm/100 in ² / 24 hrs. 75-80 mils - 0.016 gm/100 in ² / 24 hrs. at 100% RH, 73°F (23°C) (ASTM F-1249-90) WVTR too low for measurement per ASTM E-96 Methods "A" & "BW"
CATHODIC DISBONDING	Passes ASTM G-8 Passed DIN 30671
FRICION COEFFICIENT VS. ICE	0.14 / Breakaway 0.06 / Static 0.06 / Kinetic
SERVICE TEMPERATURE RESISTANCE **	<u>Dry</u> : -20°F to 180°F (-29°C to 82°C) <u>Immersion</u> : Maximum 120°F (49°C) (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:

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EQUIPMENT REQUIREMENTS & 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 ft²/gal @ 1 mil DFT
1 m²/lt @ 1mm (40m²/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 for 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

HEALTH & SAFETY: AVOID SKIN CONTACT! 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 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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