

COATING FOR RESILIENT WEDGE GATE VALVES



1. GENERAL CLASSIFICATION

- 1.1 Coating shall be a fusion bonded (thermosetting) epoxy protective coating and shall function as a physical, chemical and electrical barrier between the base metal to which it is applied and the surrounds.
- 1.2 Coating shall comply with AWWA C550 and shall be certified to NSF 61. The coating shall be non-toxic and shall not impart taste or odor to water.
- 1.3 Coating shall have a gloss finish and shall be suitable for field over-coating and touch-up without sanding or special surface preparation, or application of heat in excess of room temperature.
 - a. Corrosion resisting pigments. The coating includes a corrosion inhibiting ingredient to provide protective action as small nicks or scratches penetrate the base metal.
 - b. Standard coating is 10 mils nominal thickness.
 - c. Color: Sienna Red.
 - d. Gloss (70-80%) finish requires no surface DE glossing for field touch-up overcoating.
- 1.4 The coating shall have a successful record of performance on gate valves for a minimum of five (5) years.

2. TESTING

- 2.1 The coating adhesion to the substrate shall exceed cohesion of the coating film as demonstrated by the following test:
 - a. Prepare test panel and apply coating per manufacturer's recommendation.
 - b. After sample has properly cured per manufacturer's recommendation, scribe an "X" using a sharp knife or scalpel through the coating to the metal substrate.
 - c. With the point of the knife at the juncture of two scribes, attempt to lift off the coating. Coating should not lift off substrate or between coats readily, but should break up leaving coating material on the substrate of this damaged area.
 - d. No disbondment of the film shall be noted as tested above after immersion in tap water for 1500 hours at 100° F.
- 2.2 A Tabor Abrader Test per ASTM D 4060 resulting in a maximum .041 grams coating loss per 1000 cycles when using a CF-17 wheel (1000-gram weight).
- 2.3 Impact – ASTM G14 results in no cracking of the coating at 20-inch pounds minimum drop, using a 6.61 pound tup with a 5/8" diameter nose.
- 2.4 Adhesion – ASTM D3359. Test method B. No loss of adhesion using pressure sensitive tape applied over lattice cuts and then removed.
- 2.5 Hardness – Pencil hardness 4H to 6H.
- 2.6 Humidity – ASTM D2247. No failure in 1000 hours at 100° F.
- 2.7 Dielectric Strength – ASTM D149. 1000 volts/mil at 10 mils thickness.
- 2.8 Weather Resistance – ASTM G11. Moderate chalking. No damage after 5000 hours.
- 2.9 Salt Spray – ASTM B117. No detectable rust penetration under coating at scribed marks after 1000 hours.
- 2.10 Epoxy coating shall be Mueller Pro-Gard™ Epoxy or approved equivalent.

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3. CHEMICAL RESISTANCE

3.1 Mueller Pro-Gard™ Epoxy coating is recommended for immersion environments with the following chemicals (ambient temperatures):

- a. Aliphatic Hydrocarbons
- b. Calcium Chloride (10%)
- c. Calcium Hydroxide (10%)
- d. Calcium Sulfate (saturated solution)
- e. Calcium Carbonate (saturated solution)
- f. Distilled Water
- g. Diesel Fuel
- h. Fresh Water
- i. Fuel Oil
- j. Gasoline (unleaded)
- k. Hexane
- l. Kerosene
- m. Motor Oil
- n. Magnesium Sulfate (saturated solution)
- o. Potassium Acetate (10% solution)
- p. Soap Solutions
- q. Salt Water
- r. Sodium Chloride (5%)
- s. Sodium Nitrate (10%)
- t. Sodium Hydroxide (5%)
- u. Sodium Hydroxide (saturated solution)
- v. Trisodium Phosphate (5%)

3.2 Mueller Pro-Gard™ Epoxy coating is also recommended for splash and spillage environments with the following chemicals:

- a. Aromatic Hydrocarbons
- b. Butanol
- c. Ethanol
- d. Hydrochloric Acid (5%)
- e. Isopropyl Alcohol
- f. Methanol
- g. Sulfuric Acid (5%)
- h. Toluene
- i. Xylene



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