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Tel: (615) 391-4785 | Fax: (615) 885-9655**DATE:** March 14, 1994**TEST METHOD: ASTM D-1308:**

Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Finishes. (Chemical Soak Test with Nine Test Solutions)

**COATING SYSTEM:**

PROTECTO 401™ CERAMIC EPOXY Lining: Plant applied Protecto 401™ lined ductile iron pipe (DIP) cut into 3 inch x 4 inch coupons.

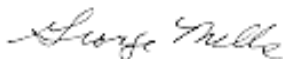
**TEST DURATION and CONDITIONS:**

1080 hours (45 days), Room temperature, panels submerged 50% to provide liquid and vapor phase testing.

Coupons, cut from plant applied Protecto 401™ Ceramic Epoxy lined pipe, were subjected to specific 1080 hour (45 day), 70°C partial submersion in a series of strong chemicals. The test solutions and results are tabulated below.

CHEMICAL SYSTEM	RESULTS
3% Sulfuric Acid	Pass: Coating unaffected; Corrosion to opposite side of metal coupon.
10% Sulfuric Acid	Pass: Coating unaffected; Corrosion to opposite side of metal coupon.
5% Sodium Hydroxide	Pass: Coating unaffected.
20% Sodium Hydroxide	Pass: Coating unaffected.
25% Sodium Hydroxide	Pass: Coating unaffected.
10% Hydrochloric Acid	Pass: Coating unaffected; Heavy corrosion loss to opposite side of coupon.
Gasoline	Pass: Coating unaffected; Some discoloration of gasoline.
Toluene	Pass: Coating unaffected; Some discoloration of toluene.
DI Water	Pass: Coating unaffected.
Hot Water (45 day @ 76°C)	Pass: Coating unaffected.

CERTIFIED:

Dr. George Mills  
**Date:** 12 July 1994