

Reclamation Coatings Testing for Water Infrastructure

Table 1: Corrosion test protocol summary, number of 3"x6"x1/8" panels (scribed(s)/unscribed(u)) used for each test.

Immersion Exposure		Cyclic Exposure			
Dilute Harrison (HAR) ¹	Deionized Water (DI) ²	Salt Fog (FOG) ³	UV + Condensation (QUV) ⁴	Prohesion (PRO) ⁵	Immersion + Salt Fog + QUV (BOR) ⁶
2s/1u	2s/1u	1s/1u	1s/1u	2s/1u	2s/1u

¹ ASTM D870: Harrison's Solution is 0.5 g/L NaCl, 3.5 g/L (NH₄)₂SO₄, testing performed at room temperature

² ASTM D870: DI water, testing performed at room temperature

³ ASTM G85 Annex A5: 1 hr fog at ambient using DHS solution, 1 hr dry-off at 35 C.

⁴ ASTM D 4587: Test condition "B" 4 h UV/60 C followed by 4 h Condensation/50 C

⁵ ASTM D5894: 1 week alternating exposure schedule in the following repeating order: QUV, FOG

⁶ 1 week alternating exposure schedule in the following repeating order: QUV, FOG, HAR, FOG

Table 2: Mechanical test protocol and substrates utilized.

Disbondment ASTM G8	Erosion Resistance USBR-5071-2015	Abrasion Resistance ASTM D 4060 ¹	Impact Resistance ASTM D2794	Pull-off Adhesion ASTM D4541	Pull-off Adhesion (wet) ASTM D4541	Knife adhesion test (wet) ASTM D6677 ²
3-inch diam. pipe	2 – 11" diam. discs	2 – 4" diam. discs	3"x6"x1/8" coupon(s)	3"x6"x1/8" coupon	3"x6"x1/8" coupon	DI and HAR

¹ASTM D4060 weight loss measured after 1000 cycles, CS-17 wheels resurfaced after 500 cycles, 1 Kg load

²Test performed on HAR and DI panels, post immersion.