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TEST CERTIFICATE — EAR-CONTROLLED DATA

Date: 3/10/2022
P.O. No.: Dave03042022
W/O No.: THE221-03-07-04060-2

ORDER # 215309
LINE # 2
P/N CO1311590306000
DESCRIPTION 316L
HEAT # BC526

4-Hour Immersion Corrosion Test

Corrosion Coupons: 316L, Heat BC526, ID # B4208 through B4210 and 4198 through 4200
Corrosion Solutions: Customer provided mineral deposit mixed with SDS + RTD aqueous descaler solution at a ratio of 50 grams mineral deposit to 500 mL solution.
Testing Method: ASTM G1-03 (2017) / Customer Requirement
Qty Tested: 6 (2 in vapor, 2 immersion, 2 with 50% immersion)
Testing Conditions: 2 sets of corrosion coupons were hung in a 1L Erlenmeyer flask. Mineral deposit was poured into the Erlenmeyer flask that was then filled with 0.75L SDS + RTD aqueous descaler solution and attached to an Allihn condenser connected with flowing tap water.

The coupons were suspended with nylon monofilament arranged such that one coupon was hanging in vapor, one was immersed in the solution, and another was suspended with 50% surface immersed in the solution and 50% exposed in the vapor, for 4 hours. A strong effervescent reaction between test solution and mineral deposit caused a small amount of liquid loss from foam out through the Allihn condenser vent. When test was complete, approximately 40% of the two semi-submerged samples remained submerged.

Coupons were cleaned in alcohol before testing, and rinsed in water and dried after testing. Coupon dimensions before testing were measured with areas calculated. Coupons were weighed before and after the immersion corrosion test.

Observation: After the immersion corrosion test for 4 hours, no significant discoloration was observed. No localized corrosion (pitting etc.) observed.

Sample ID #	Width, mm	Length, mm	Thickness, mm	Hole Diameter, mm	*Area, mm ²	Area, cm ²	Weight before, g	Weight after, g	Weight Loss, g	*Corrosion Rate (mils per year, mpy)
B4208	19.22	50.84	2.90	9.72	2300.79	23.01	20.8692	20.8690	0.0002	0.1574
B4209	19.19	50.89	2.92	9.70	2303.61	23.04	20.8260	20.8255	0.0005	0.3930
B4210	19.14	50.79	2.90	9.71	2290.20	22.90	20.8053	20.8045	0.0008	0.6324
B4200	19.18	50.78	2.90	9.71	2294.05	22.94	20.6966	20.6964	0.0002	0.1578
B4199	19.18	50.83	2.90	9.71	2296.26	22.96	20.6197	20.6193	0.0004	0.3154
B4198	19.19	50.77	2.89	9.72	2292.76	22.93	20.4636	20.4629	0.0007	0.5527

Note: B4208 and B4200 were hanging in vapor
B4209 and B4199 started test with 50% surface submerged in solution and 50% exposed in vapor.
B4210 and B4198 immersed in the solution

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Respectfully submitted

Francine Dwyer
Quality Administrator

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ALL TESTING PERFORMED IN A MERCURY-FREE ENVIRONMENT