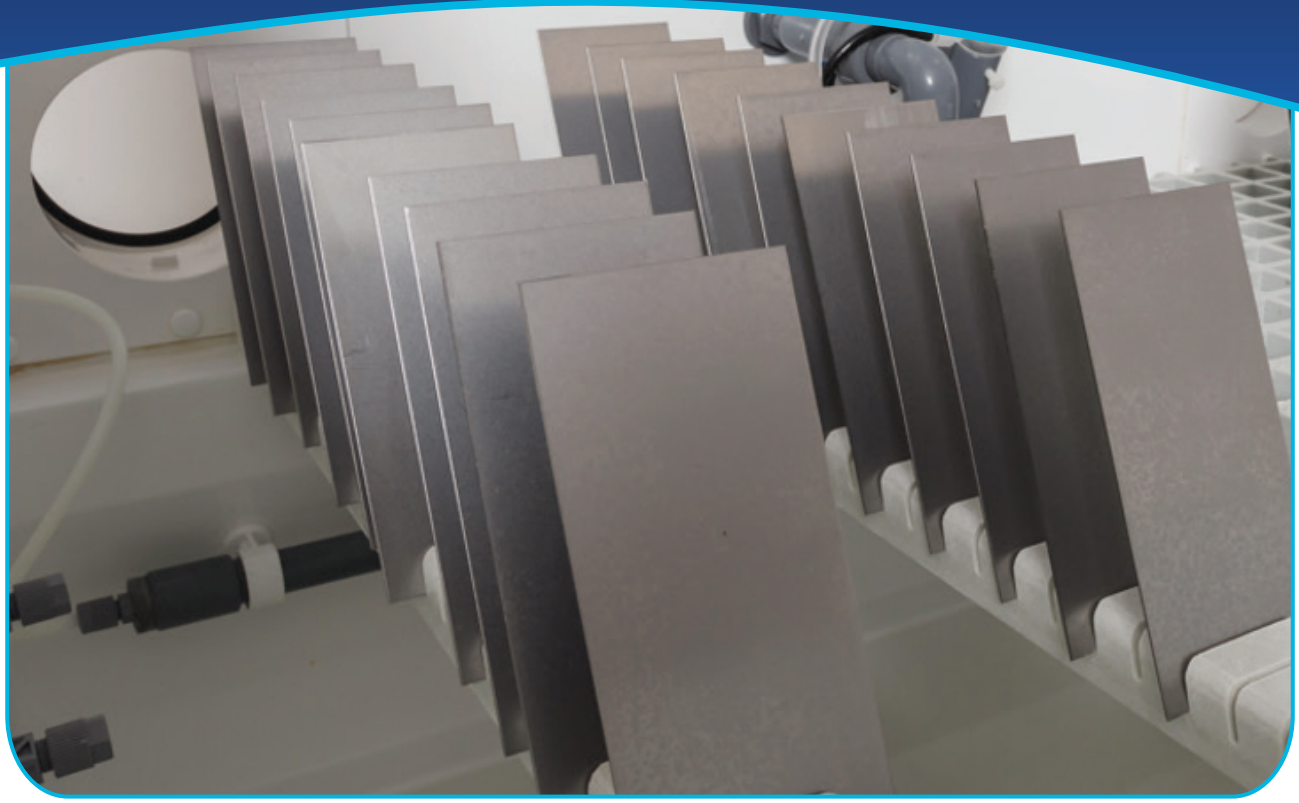
ACC144

CR1 SAE 1008 Grade Steel Corrosion Test Coupon

76mm x 127mm x 0.8mm

Meets standards: ASTM B117



CR1 Steel Test panels are used to check the reproducibility and repeatability of the test results for Salt Spray or Cyclic Corrosion Test Chamber, before being used to run ASTM B117.

It is necessary to verify the apparatus at regular intervals. During permanent operation, a reasonable time period between two checks of the corrosivity of the apparatus is generally considered to be 3 months.

Ascott CR1 Test panels are manufactured and tested in accordance with ISO 3574 supplied with a certificate of conformation and a UKAS Test Certificate.

- **Material Type:** Cold Rolled Steel CR1
- **Size:** 76mm x 127mm (+/- 0.2mm)
- **Thickness:** 0.8mm (+/- 0.2mm)
- **Pack Quantity:** 20
- **Product Code:** ACC144

Panels are wrapped in VCI Corrosion inhibiting paper in packs of 20 panels, in a vacuum sealed aluminium wrapping.

Preparation of the panels before testing

Clean the panels before testing by degreasing only, so that the surfaces are free of dirt, oil or other foreign matter that could influence the test results. After cleaning, weigh each panel on an analytical balance to the nearest 1.0mg and record the mass.

Arrangement of the reference specimens

Position a minimum of two weighed CR1 steel reference specimen with the 127mm (5") length supported 15° to 30° from vertical. The panels should be placed in the proximity of the salt fog collection funnels, one should be close to each atomiser, and one furthest point away from each atomiser, taking care to ensure the collection funnels and test specimens are 100mm away from the walls of the chamber.

The support for the reference specimens shall be made of, or coated with, inert materials such as plastics (not supplied as standard, optional accessory ACC16). The lower edge of the reference specimens shall be in level with the top of the salt spray collector.

Testing and cleaning of the panels after exposure

Expose the panels to salt spray testing at 35°C for 48 to 168 hours.

Remove the panels from the test chamber and rinse immediately with running tap water to remove the salt, then rinse in reagent grade water (ASTM D1193 Type IV). Chemically clean each panel for 10min in ambient conditions of 20 to 25°C with the following solution;

- 1000ml of hydrochloric acid (sp.gr 1.19)
- 1000ml reagent grade water (ASTM D1193 Type IV)
- 10g of hexamethylene tetramine

After cleaning, rinse each panel with reagent grade water (ASTM D1193 Type IV) and dry.

Determining Mass Loss

Immediately after drying, determine the mass loss by reweighing the samples and subtracting the panel mass after exposure, from its original mass before exposure to salt spray testing.

Statistical Analysis

Determination of Corrosivity iaw ASTM B117;

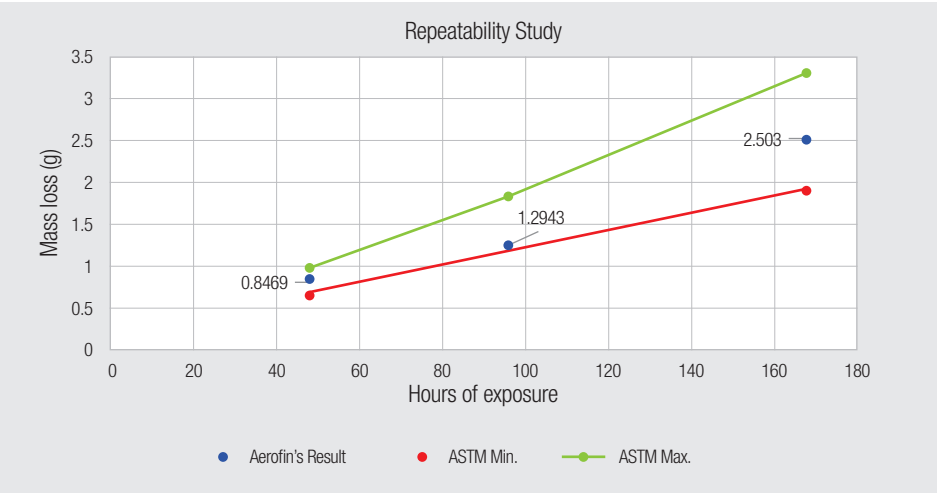
ASTM Repeatability Study (QP1)

Duration of exposure	Average Mass Loss (g)	Standard Deviation SR (g)	r (g)	Co-Efficient of variation - limits CV (%)
48 hours	0.8170	0.0588	0.1646	7.20
96 hours	1.5347	0.1048	0.2934	7.28
168 hours	2.5996	0.2498	0.6994	9.61
Comments: Results taken from ASTM B117 appendix X3, table X3.1.				

Comparison - Aerofin Laboratories and ASTM B117 Study

Duration of exposure	Average Mass Loss (g) (ALL)	Average Mass Loss (g) (ASTM)	MIN. Average mass loss - r (g)	MIN. Average mass loss + r (g)	Acceptance Criteria: Results must be within the min/max range
48 hours	0.8469	0.8170	0.6524	0.9186	Pass
96 hours	1.2593	1.5347	0.2413	1.8281	Pass
168 hours	2.5030	2.5996	1.9002	3.2990	Pass
Comments: The results obtained from the ASTM study is based on the average of two replicates in each test run. Aerofin's results are the average of four replicates of each run.					

Graphic Representation



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