

# TEST METHOD AS PER STANDARDS

## SAE J2334

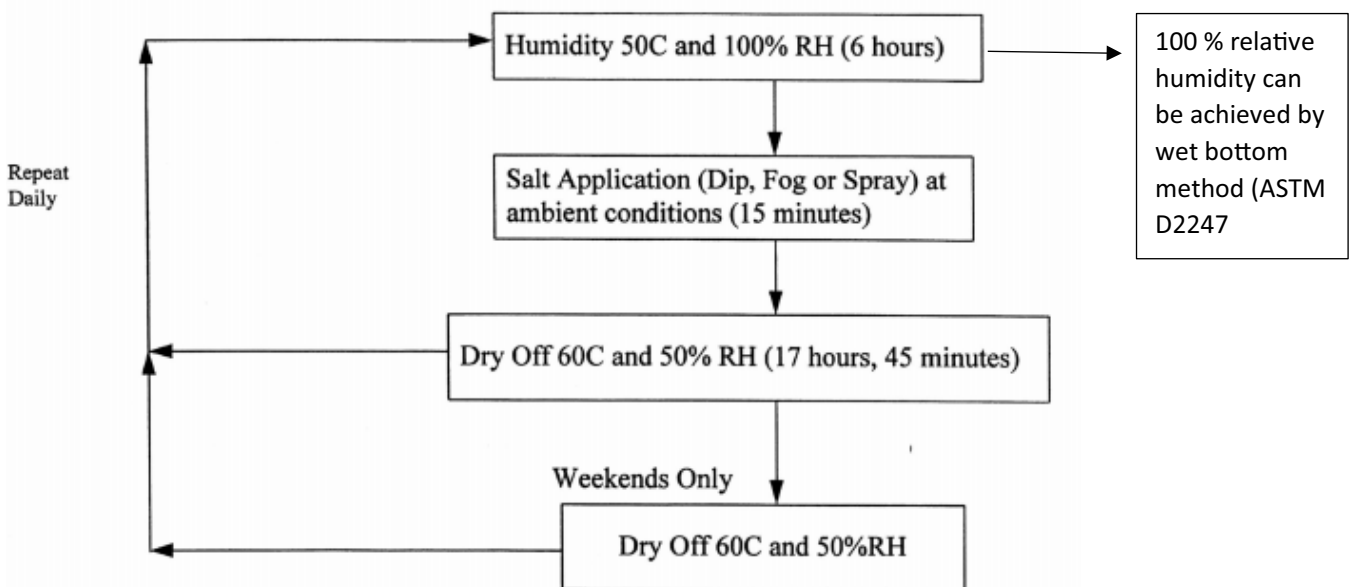
This test procedure should be used when determining corrosion performance for a particular coating system, substrate, process, or design. Since it is a field correlated test, it can be used as a validation tool as well as a development tool.

Salt solution - 0.5% NaCl, 0.1% CaCl<sub>2</sub> & 0.075% NaHCO<sub>3</sub> in deionised water

Summary of test conditions-

Cosmetic corrosion - Corrosion that occurs as a result of the breakdown or damage to a coating system. Typically, this type of corrosion does not impact function but does compromise appearance.

### Cosmetic Corrosion Lab Test Cycles SAE J2334 - 5 Day/Week - Manual Operation

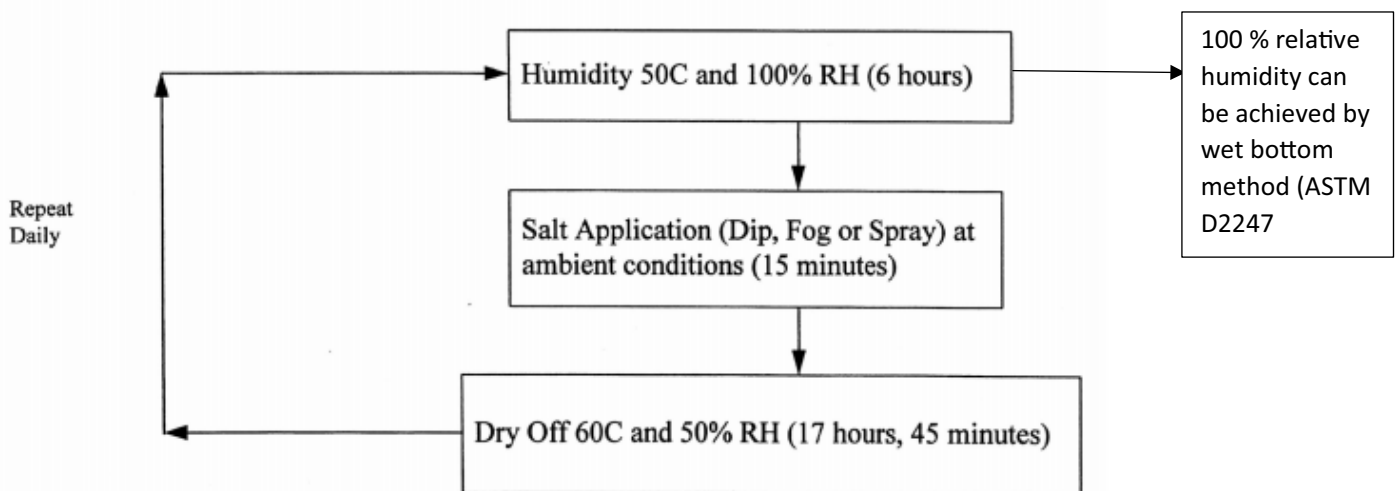


Note- Ramp time between the salt application stage (2) and dry stage (3) are part of the dry stage time. Similarly, ramp time between the dry stage (3) and humid stage (1) are part of the humid stage. Ramp times should be documented for each test setup.



# TEST METHOD AS PER STANDARDS

## Cosmetic Corrosion Lab Test Cycles SAE J2334 - 7 Day/Week - Automatic Operation



Test Duration- conducted for a minimum of 60 cycles when evaluating coated products. Longer durations may be required to observe performance differences in the heavier weight metallic precoats.

### Coupon monitoring

The testing process will be monitored with bare steel corrosion coupons which is called coupon monitoring. coupons generally consist of 25.4 mm by 50.8 mm pieces of bare sheet metal which serve to monitor the corrosivity of the test environment during the test. The sheet metal coupon will always include low carbon cold rolled steel sheet.

The coupon rack shall be placed in the general vicinity of the samples being tested, such that the coupons receive the same environmental exposure.

Coupons shall be removed and analyzed after a predetermined number of cycles throughout the test to monitor corrosion. To analyze coupons, remove 1 coupon from each end of the rack and prepare for weighing and mass loss determination. Insure enough coupons are exposed in the test so monitoring frequency can be accomplished.



## TEST METHOD AS PER STANDARDS

Once clean, wipe the coupons with methanol and weigh to determine the coupon mass loss using

$$\text{Mass Loss} = (\text{Initial Mass}) - (\text{End-of-Exposure Mass})$$

Note-Corrosion losses may also be expressed in term of average corrosion rates from the mass loss, coupon area, test duration, and metal density by use of the calculation described in ASTM G 1

### INSTRUMENTATION

Test cabinet(s) with the ability to obtain and maintain the following environmental conditions

1. 50 °C  $\pm$  2 °C and 100% Relative Humidity The 100% relative humidity &
2. 60 °C  $\pm$  2 °C and 50% Relative Humidity  $\pm$  5%. Additional equipment will be required to maintain the 50% relative humidity condition.

Air circulation must be sufficient to prevent temperature stratification and allow drying of test parts during the dry-off portion of the test cycle. Air circulation can be obtained through the use of a fan or forced air.

A periodic or continuous direct impingement spray of the salt solution over the 15 minute interval that ensures the test specimens are kept wet for the entire 15 minute interval.

Fog collection rate is 2 to 4 mL/h

it is recommended that panels be oriented 15 degrees from the vertical such that no one panel shadows another and that the scribe line be made in a diagonal across the panel face.

