

## CCT-1

This is an accelerated laboratory corrosion test method that can be used to determine the corrosion resistance of automotive assemblies and components. It is cyclic in nature, i.e.; test specimens are exposed to changing climates over time.

Test specimens are placed in an enclosed chamber and exposed to a changing climate that comprises of the following 3 part repeating cycle. 4.0 hours exposure to a continuous indirect spray of neutral (pH 6.5 to 7.2) salt water solution, which falls-out on to the specimens at a rate of 1.0 to 2.0ml/80cm<sup>2</sup>/hour, in a chamber temperature of +35C . This is followed by 2.0 hours of air drying in a climate of 20 to 30%RH at +60C. This is followed by 2.0 hours exposure to a condensing water climate (wetting) of 95 to 100%RH at +50C. The number of cycle repeats and therefore the test duration is variable.

The maximum transition times between each part of the test cycle are also specified as follows:

From salt spraying to air drying within 30 minutes.

From air drying to wetting within 15 minutes.

From wetting to salt spraying within 30 minutes.

## ASTM G44

### Standard Practice for Exposure of Metals and Alloys by Alternate Immersion in Neutral 3.5 % Sodium Chloride Solution.

This standard covers procedures for making alternate immersion stress corrosion tests in 3.5% sodium chloride, used primarily for tests of aluminium alloys and ferrous alloys but maybe used for other metals exhibiting susceptibility to chloride ions.

The test utilises a 1 hour cycle that includes a 10 minute period in an aqueous solution of 3.5% sodium chloride followed by a 50 minute period out of the solution during which the specimens are allowed to dry. This 1 hour cycle is continued 24 h/day for the total number of days recommended for the particular alloy being tested, typically from 20 to 90 days or longer depending upon the resistance of the alloy to corrosion by saltwater

## JIS H 8502

### Methods of corrosion resistance test for metallic coatings

Can be used to test the relative resistance to corrosion of electro-plated coatings, when exposed to different corrosive atmospheres, as follows:

#### JIS H 8502 – Method 1: Neutral salt spray test

Test specimens are placed in an enclosed chamber and exposed to a continuous indirect spray of neutral (pH 6.5 to 7.2) salt water solution, which falls-out on to the specimens at a rate of 1.0 to 2.0ml/80cm<sup>2</sup>/hour, in a chamber temperature of +35C. This climate is maintained under constant steady state conditions. The test duration is variable. This test is also referred to as an NSS test

#### JIS H 8502 – Method 2: Acetic acid salt spray test

Test specimens are placed in an enclosed chamber and exposed to a continuous indirect spray of salt water solution, acidified (pH 3.1to 3.3) by the addition of acetic acid, which falls-out on to the specimens at a rate of 1.0 to 2.0ml/80cm<sup>2</sup>/hour, in a chamber temperature of +35C. This climate is maintained under constant steady state conditions. The test duration is variable.

This test is also referred to as an ASS test

#### JIS H 8502 – Method 3: Copper accelerated acetic acid salt spray test

Test specimens are placed in an enclosed chamber and exposed to a continuous indirect spray of salt water solution, with copper chloride added and acidified (pH 3.0 to 3.2) by the addition of acetic acid, which falls-out on to the specimens at a rate of 1.0 to 2.0ml/80cm<sup>2</sup>/hour, in a chamber temperature of +50C. This climate is maintained under constant steady state conditions. The test duration is variable.

This test is also referred to as a CASS test

#### JIS H 8502 – Method 4: Corrodkote test

Test specimens are coated with Corrodkote mud, which is applied to the surface of the samples and allowed to dry.

Then the samples are placed in a controlled climate of +38C and 80 to 90%RH (non condensing) and allowed to stand for 16 hours (1 cycle). For further cycles the samples are cleaned and fresh Corrodkote is applied.

## JIS H 8502 – Clause 8.1 Cyclic Neutral Salt Spray Test Method

## **JASO M 609**

### Corrosion test method for Automotive Materials

This standard specifies a test method to determine the corrosion resistance of steel sheets for automotive use. It is cyclic in nature, i.e.; test specimens are exposed to changing climates over time.

Test specimens are placed in an enclosed chamber and exposed to a changing climate that comprises of the following 3 part repeating cycle. 2.0 hours exposure to salt spray at +35C according JIS Z 2371. This is followed by 4.0 hours of air drying in a climate of 20 to 30%RH at +60C. This is followed by 2.0 hours exposure to a condensing water climate (wetting) of 95 to 100%RH at +50C. The number of cycle repeats and therefore the test duration is variable.

The maximum transition times between each part of the test cycle are also specified as follows:

From salt spraying to air drying within 30 minutes.

From air drying to wetting within 15 minutes.

From wetting to salt spraying within 30 minutes.

Please see elsewhere in this document for details of JIS Z 2371.

Chamber volumes of less than 400 Litres are not permitted by this test standard.

This test is also referred to as a Cyclic Corrosion Test, often abbreviated to CCT.