

TEST METHOD AS PER STANDARDS

ASTM D2247

This method specifies the basic principles and operating conditions for testing water resistance of coatings by exposing coated specimens in an atmosphere maintained at 100 % relative humidity so that condensation forms on the test specimens.

Continuous Water exposure can cause the degradation of coatings, so knowledge of how a coating resists water/humidity is helpful in predicting its service life

SUMMARY OF THE TEST CONDITIONS

Coated test specimens are placed in an enclosed cabinet comprising a heated, saturated mixture of air and water vapor. The temperature of the cabinet is generally maintained at 38°C with 100 % relative humidity (RH), a little temperature difference between the specimen and the surrounding vapor causes the formation of condensation on the specimens.

TEST SOLUTION

Water reagent conforming to below specs-

Electrical conductivity - 5.0 , max, $\mu\text{S}/\text{cm}$ at 25 degree C

PH level – 5.0 – 8.0

Sodium, max – 50 $\mu\text{g}/\text{L}$

Chlorides, max – 50 $\mu\text{g}/\text{L}$



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INSTRUMENTATION

The equipment shall be designed so that heated water vapor is generated at the bottom of the cabinet. This saturates the air instantly up above the water tank with water vapor. The saturated composition of water vapor and air temperature get up and then cool beneath the dew point, causing precipitation on the specimens.

100 % Rh can be maintained using a water tank with electric immersion heater to supply heat and humidity, to the test cabinet, the area of the heated water tank should be limited to no more than 25 % of the floor area of the cabinet.

The water temperature will be approximately 5 to 10°C higher than the vapor temperature.

A high quality device for independent control of temperature and relative humidity shall be accessible.

Droplets of condensation/precipitation should be seen evenly on the specimen at all times if the cabinet is functioning properly.

The test specimens shall be arranged in the chamber at an angle of 15 degree from the vertical.

Angle of lid/canopy is in between 90 to 125°

EVALUATION OF TEST RESULTS

Conclude the test after a pre-determined period of time or after effects from exposure to water are observed.

Wipe the test specimens and let them dry, analyze specimens for changes in color, blistering, etc

