

## **Salt Spray Testing – A Background in The Process of Evaluating Corrosion Resistance**

Salt spray or salt fog testing is the process of evaluating the relative corrosion resistance of coatings and seals intended to prevent rust on metal surfaces. This is critical for metal components that may be exposed to harsh marine environments or areas where de-icing involves salt. Any salt spray tests should be conducted in accordance with ASTM B117 and ISO 9227. Adherence to these guidelines ensures that testing parameters are met.

Surfaces that can be tested using this process include metallic coatings, anodic oxide coatings, metals and their alloys. Note that hot-dip galvanized surfaces cannot be evaluated using salt spray unless it is a painted surface with an underlying hot-dip galvanized coating.

Procedures will vary based on the durability of the coating. Testing requirements for spray pressure, solution concentration, pH, duration, and cycles are determined by the customer and are not specified in the ASTM B117 guidelines. For example, durations can range from hours to more than a month. It is important that you work with an experienced test engineer to ensure your procedures meet your required specifications.

### **NSS or CASS**

If you are familiar with salt spray testing, chances are that you've heard the terms NSS and/or CASS. Neutral Salt Spray, or NSS, refers to traditional salt spray testing in which the pH of the solution is 6.5-7.2. Copper-accelerated acetic acid salt spray, or CASS, refers to a more corrosive test in which chemicals are added to the salt water solution resulting in a pH of 3.1-3.3. CASS testing is used for decorative electroplated coatings, anodized aluminum, and nickel/chromium coatings on steel, zinc, or aluminum. Best practices dictate that separate chambers are used for NSS and CASS, due to the corrosive nature of CASS solutions. For this reason, our testing lab has a dedicated chamber for each. If you aren't sure which is right for your application, our test engineers can help you to make that determination.

The team at our ISO 17025 accredited testing lab has over 80 years of combined experience in product testing. When you work with our team you can be confident that we have the knowledge and expertise to ensure your process is in compliance.