



Tech Tip # 112

Remote Condenser Seacoast Construction

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Introduction

For installations within 30 miles of the ocean, many owners want their split remote condensers protected for the corrosive impacts of ocean blown salt spray. This bulletin will provide an analysis of the construction recommendations for such an installation.

Desert Aire Remote Condenser Seacoast Construction

Desert Aire provides a premium standard construction of the remote condenser that is highly corrosion resistant. Standard construction provides significant longevity in the harshest conditions. Among the standard features that are provided are:

- Fan blades are formed from cast structural aluminum for RC5 series condensers or polymer blades over an aluminum frame for RC8 series
- Base material is manufactured with heavyweight G90 galvanized steel
- All exterior panels are fully coated with powder paint after fabrication to provide continuous barrier to the elements

In addition to this premium standard construction, additional protection in seacoast applications is provided through the specification of ElectroFin® E-Coat of the heat transfer surface. ElectroFin® E-Coat is a leading technology of corrosion-resistant coil coatings that covers fins, tubes, headers and coil frame.

The seacoast construction that Desert Aire offers is the best in the industry.

Compare this to standard A/C units which are G40 galvanized metal that is pre-painted and coils with fin surface only coatings or wet spray applications.

Salt Spray Testing Data

Standard corrosion testing methods such as ASTM B117, B368, and G85 provide prescriptive methods for corrosion apparatus and test procedures. The standards typically do not include detailed sample preparation or acceptance criteria at any stage of testing. Extreme care must be taken when comparing testing results. Many manufacturers may quote "coating rated for 5000 hours salt spray" without stating the substrate, preparation, or measure of acceptable corrosion before failure. This can be misleading. Some manufacturers or coating suppliers will score a sample coupon to the base metal before starting the testing in order to quantify the peeling and adhesion, but this may not always be the case. It is possible that a pass/fail criteria would be indicated when 5% of the sample has red rust. It is also possible that the failure point is specified at 50% red rust or more.

As a practical example, one manufacturer has a polymer sprayed paint with exposed edges and claims a 5,000 hour salt spray test result while another uses a very controlled powder coat process over primed galvanized with no exposed edges and advertises half this amount. The difference is likely not how the test procedure was carried out, but rather the preparation of samples and the analysis of the final results.

Customers with specific questions about resistance to corrosion can contact Desert Aire to speak about setting up additional testing. Comparisons can be carried out for a proper evaluation when more specific criteria are known. Knowing that a specific coating provides expected service life is the most important first-step in understanding the results of accelerated aging tests such as the salt spray chamber tests.

Custom Coatings

Due to the nature of the premium construction and available coil coating for seacoast applications, additional protection is not often required. Additional specialized coating of specific components is possible, but is typically reserved for extreme process applications beyond coastal applications. Examples are mining, wastewater treatment, and other process applications where high concentrations of specific chemicals are known to exist beyond ambient conditions. In these cases, Desert Aire factory can assist in evaluating coatings and other protection for the application.