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CE CB ISO14001 ISO9001 ISO45001 HCAC-LL-ACX02

Hisense VRF

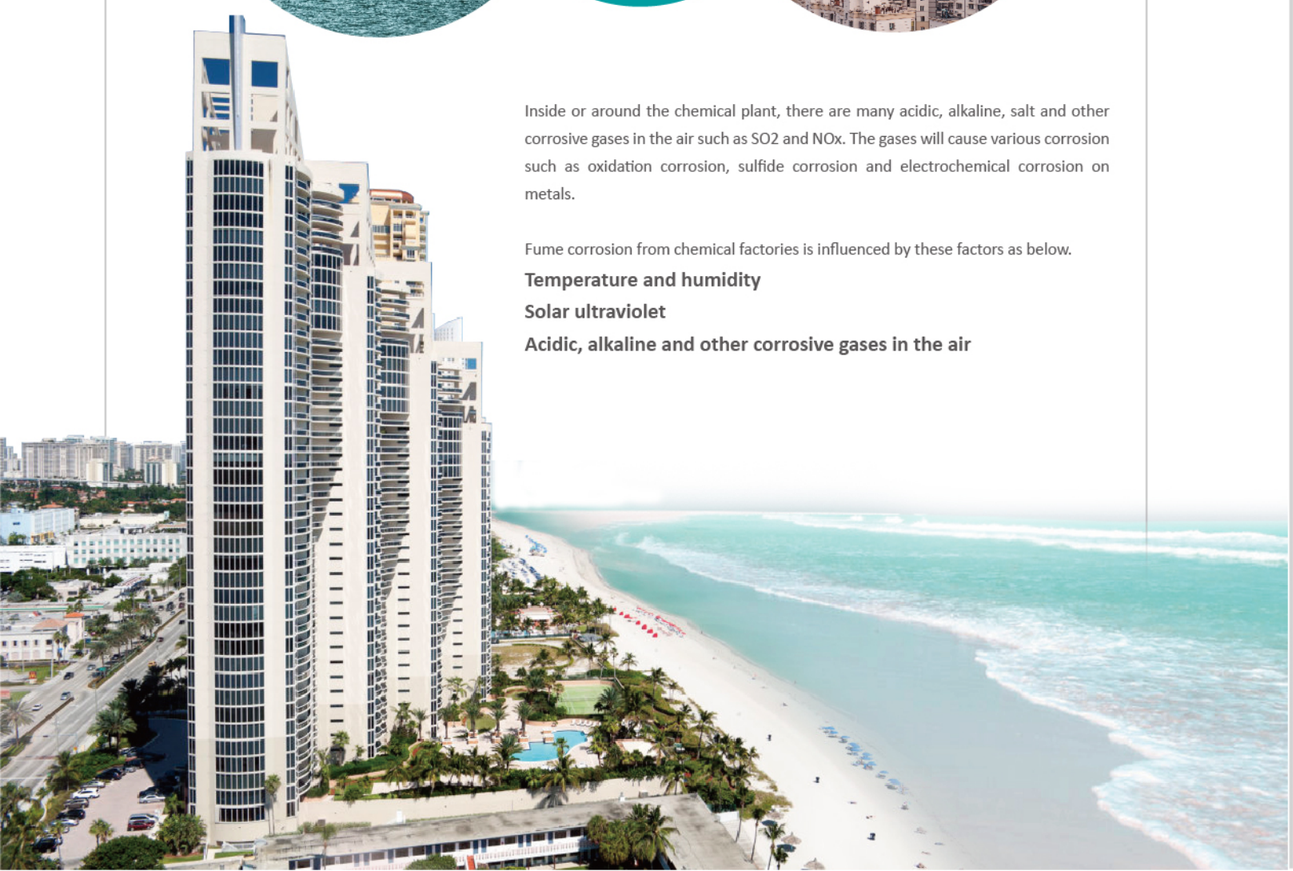
Ocean covers more than 70% of the earth's surface while it's rich in natural electrolytes. Common metals and alloys are very vulnerable to be corroded when exposed to the high salty, high humidity and intense ultraviolet ray environment near seasides.
The marine atmosphere is extremely complex, and the corrosion degree is deeply influenced by the temperature, humidity, radiation, the concentration of chloridion and salinity in the air. What's more, the higher temperature is, the corrosion is more severe. Thus the corrosion is most severe in the tropical areas, moderate in subtropics, and slight corrosion in the north and south poles.

Marine atmospheric corrosion is influenced by these factors as below.

Temperature and humidity

Solar ultraviolet

High salt contamination



Inside or around the chemical plant, there are many acidic, alkaline, salt and other corrosive gases in the air such as SO2 and NOx. The gases will cause various corrosion such as oxidation corrosion, sulfide corrosion and electrochemical corrosion on metals.

Fume corrosion from chemical factories is influenced by these factors as below.

Temperature and humidity

Solar ultraviolet

Acidic, alkaline and other corrosive gases in the air

Negative Effects of Corrosion

Disadvantages caused by severe corrosions:

Cooling and heating performance decreased largely

Low efficiency and high energy consumption

High maintenance cost

Outdoor unit lifespan reduced largely

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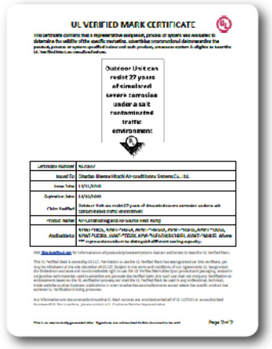
Hisense Anti-corrosion Series-Certificated

Outdoor Unit can resist 27 years of simulated severe corrosion under a salt contaminated traffic environment

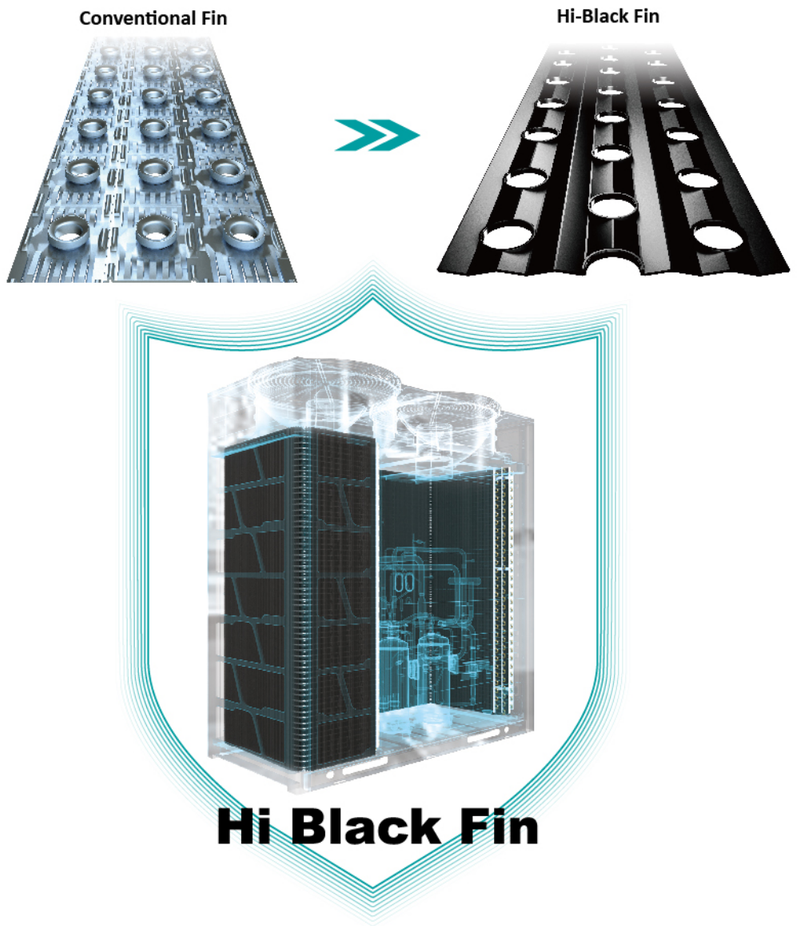
Test Standard:
ISO 21207:2015
Corrosion tests in artificial atmospheres — Accelerated corrosion tests involving alternate exposure to corrosion-promoting gases, neutral salt-spray and drying

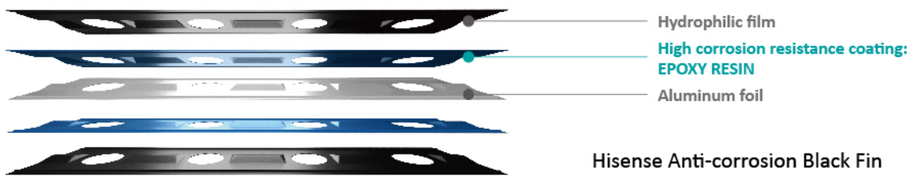


Hi-Black Fin

Hisense Hi-Black fin is applied for protection from various corrosive environments such as seasides with high salt contamination and industrial cities filled with fumes from factories. Hi-Black fin is coated with epoxy resin specially for corrosive resistance, while the conventional fin is only coated with acrylic resins. The thickness of epoxy resin is 1.5 times more than acrylic resin, and its anti-corrosion properties are 3 times better than acrylic resin. What's more, there is a hydrophilic film covered the epoxy resin, keeping water from accumulating on the fins, minimizing moisture buildup. These improvements can greatly prolong the unit's lifespan and lower the maintenance costs.

Hi-Black fin can achieve 1500h corrosion resistance under the following conditions: neutral salt spray test, 5%NaCl, 35℃.



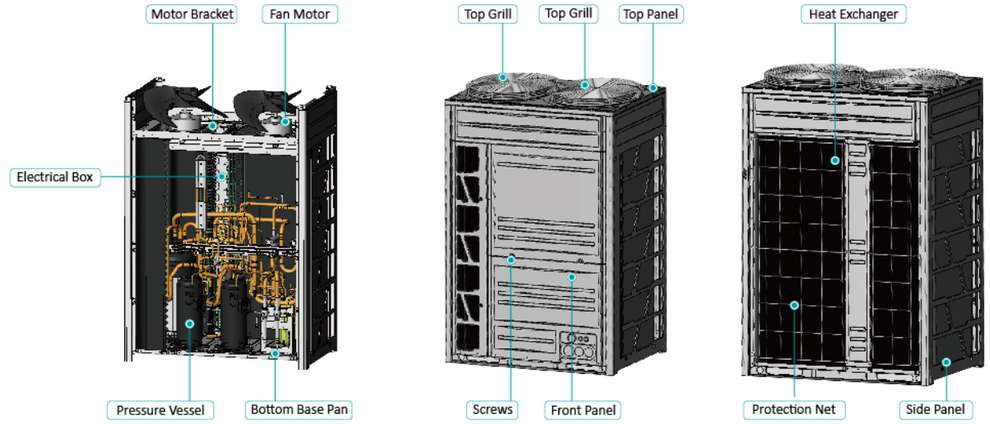


Hisense Anti-corrosion Black Fin

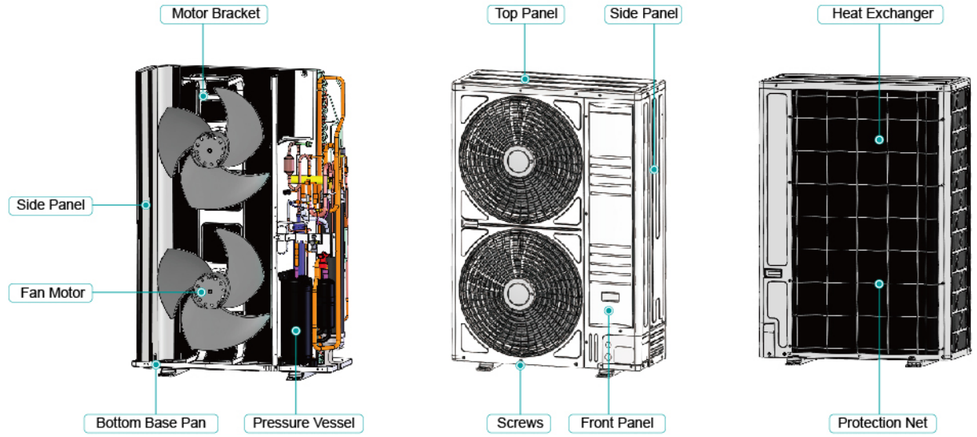
Specifications of Each Parts

The components marked on the below outdoor unit picture are very vulnerable to be corroded. Hisense has developed a corresponding anti-corrosion solution based on analyzing the corrosion theory of each part.
The corrosion resistance of outdoor unit will be greatly enhanced after the corrosive solutions to the components. And each anti-corrosion outdoor unit will have its own mark on the front side of the unit.

Top Flow Unit



Front Flow Unit



Components	Material	Anti-corrosion Treatment Solution	Corrosion Resistance Test※1
Heat Exchanger	Anti-corrosion Black Fin	1st Step: Coated with Modified Epoxy Resin 2nd Step: Coated with Hydrophilic Film	1500 Hours Test Result: Pass
Front Panel, Top Panel, Side Panel, Bottom Base Pan, Structural Columns etc. (Sheet Metal Parts that can be seen on the outside surface)	Anti-corrosion Treated Galvanized Steel	1st Step: Zirconium-based Treatment 2nd Step: Spray Coating of Epoxy Zinc Rich Primer 3rd Step: Spray Coating of Pure Polyester Paint Total Coating Thickness: 100μm~180μm	1500 Hours Test Result: Pass
Electrical Box, Motor Bracket and Fixing Plate, Connecting Plate etc. (Separator, Support Plate, Bracket Connection Plate and other Internal Sheet Metal Parts)	Anti-corrosion Treated Galvanized Steel	1st Step: Zirconium-based Treatment 2nd Step: Spray Coating of Pure Polyester Paint Total Coating Thickness: 50μm~120μm	1500 Hours Test Result: Pass
Heat Exchanger Protection Net, Top Grill	Anti-corrosion Low-carbon Steel	1st Step: Zirconium-based Treatment 2nd Step: Dipped in Plastic Polyethylene Resin. Total Coating Thickness: 400μm~600μm	2000 Hours Test Result: Pass
Pressure Vessel	Anti-corrosion Treated Carbon Steel	1st Step: Zirconium-based Treatment 2nd Step: Spray Coating of Pure Polyester Paint or Electrophoresis Total Coating Thickness: 50μm~120μm Electrophoresis Coating Thickness: 20μm~40μm	1500 Hours Test Result: Pass
Motor	Anti-corrosion Treated Motor	Spray Coating of Transparent Acrylic Resin Coating Thickness: 10μm ~30μm	1500 Hours (case only) Test Result: Pass
Screws	Anti-corrosion Stainless Steel	Spray Coating of DACROMET®※2 Coating	1500 Hours Test Result: Pass

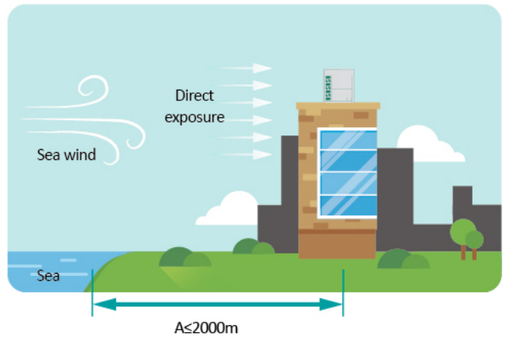
※1 Test Condition and Evaluation Standard : ISO 21207 / ASTM B117 / GB 1771 / GB 6461 / GB 1766
- Temperature: 35±2°C
- NaCl Concentration: 5%
- Average Spraying Volume: 50g/L±1g/L

※2 DACROMET® is a registered trademark of NOF METAL COATINGS GROUP, belonging to the Japanese Chemical Group.

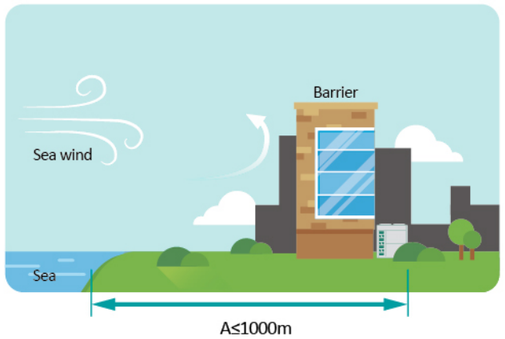
3. The above data is tested under specific test conditions, and the actual corrosion resistance degree will vary according to the actual installation environment.
4. This scheme is only for corrosion protection under high salt contamination conditions. For chemical corrosion occasions, such as sulfur and other elements pollution, please contact with your local engineers.

Installation Requirements

1. Don't install the outdoor unit at the place where the sea wind can blow directly. It's better to have barriers to block out the wind.

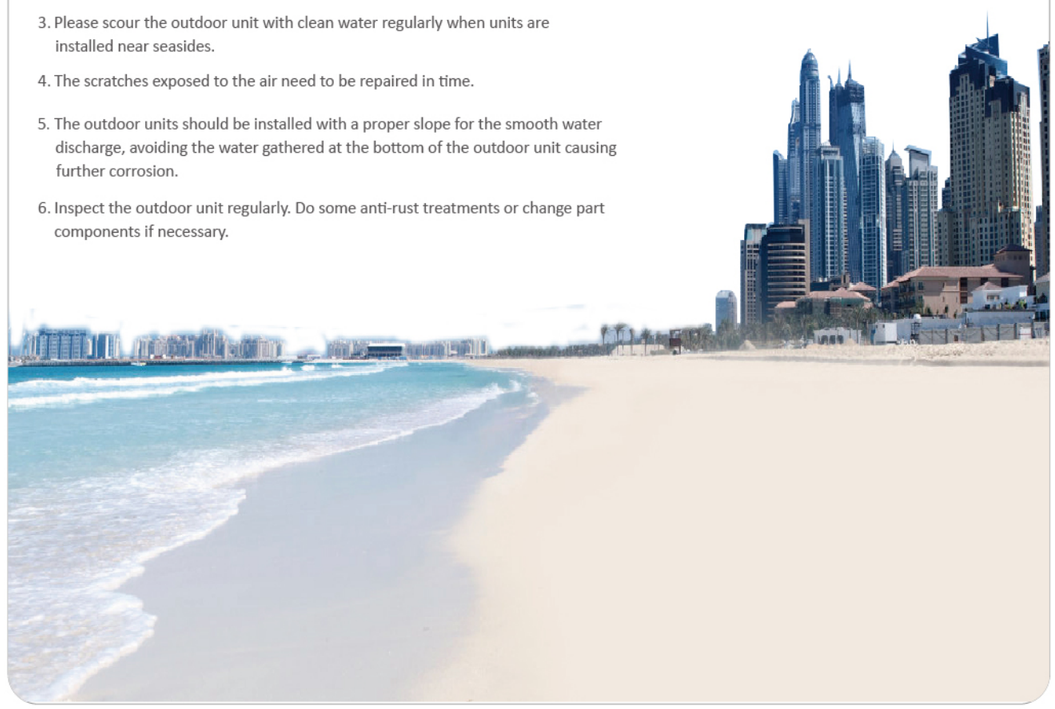


Where the sea wind is blowing to the ODU directly and the distance A≤2000m, anti-corrosion outdoor unit should be adopted.



Where the sea wind is blocked out by a wall or a building and the distance A≤1000m, anti-corrosion outdoor unit should be adopted.

2. Install the outdoor unit in the shade as much as possible, avoiding the direct ultraviolet radiation exposure.
3. Please scour the outdoor unit with clean water regularly when units are installed near seasides.
4. The scratches exposed to the air need to be repaired in time.
5. The outdoor units should be installed with a proper slope for the smooth water discharge, avoiding the water gathered at the bottom of the outdoor unit causing further corrosion.
6. Inspect the outdoor unit regularly. Do some anti-rust treatments or change part components if necessary.



Hisense VRF
Anti-corrosion Solution

Reference Projects

Elite Tower
Cancun, Mexico

Hilton Villas
Nadi, Fiji

Ghana Parliament Office
Accra, Ghana

Vinschool Halong
Quang Ninh, Vietnam

Palm Village
Dar-es-Salaam, Tanzania

S Abdulla Home Showroom
Karachi, Pakistan

JAT Office
Colombo, Sri Lanka

Marriott Courtyard
Pattaya, Thailand