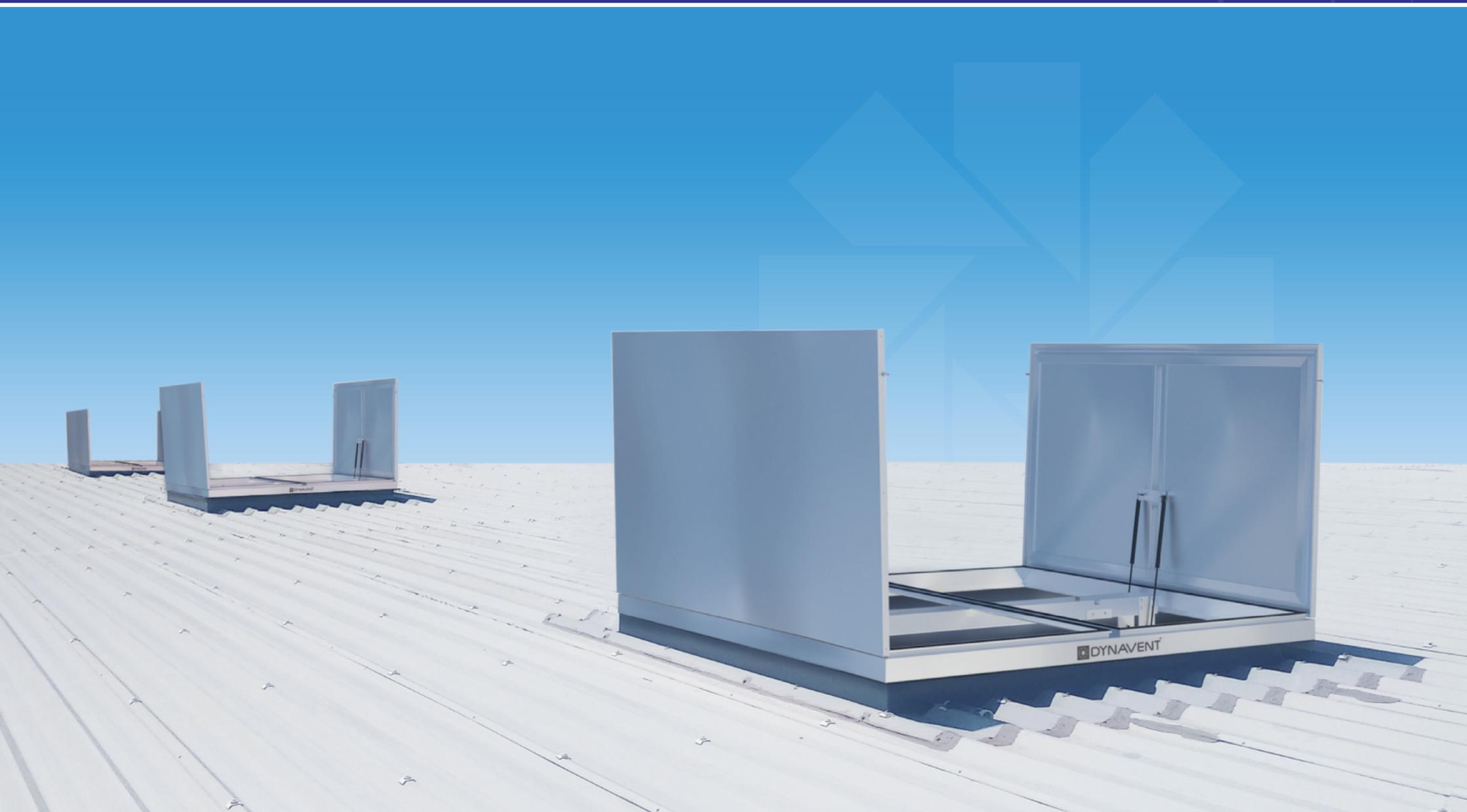


# The Importance of Water & Air-Tightness in Roof Ventilators & How to Achieve It



# Why Water & Air-Tightness in Roof Ventilators matter.

Poorly sealed ventilators and wrongly selected models are among the most common sources of roof leaks and thermal losses. Water ingress damages stored materials, finishes, insulation and electricals, uncontrolled air leakage drives condensation, mold risk, drafts, and energy losses. The thermal losses can have significant effect in buildings with sensitive material storage (eg- medical items) as they will result in temperature fluctuations and more energy consumption. Getting ventilators air and watertight is equal parts product performance and installation quality-and both can be assured by following the right test standards and site testing.



## What “good” looks like

### Water-tightness

-  The unit sheds wind-driven rain with no water reaching interior surfaces; any incidental moisture in frame cavities drains to exterior via designed channels.
-  Roof integration (curb/upstand + flashing + membrane) routes water around the opening without relying on sealant alone.

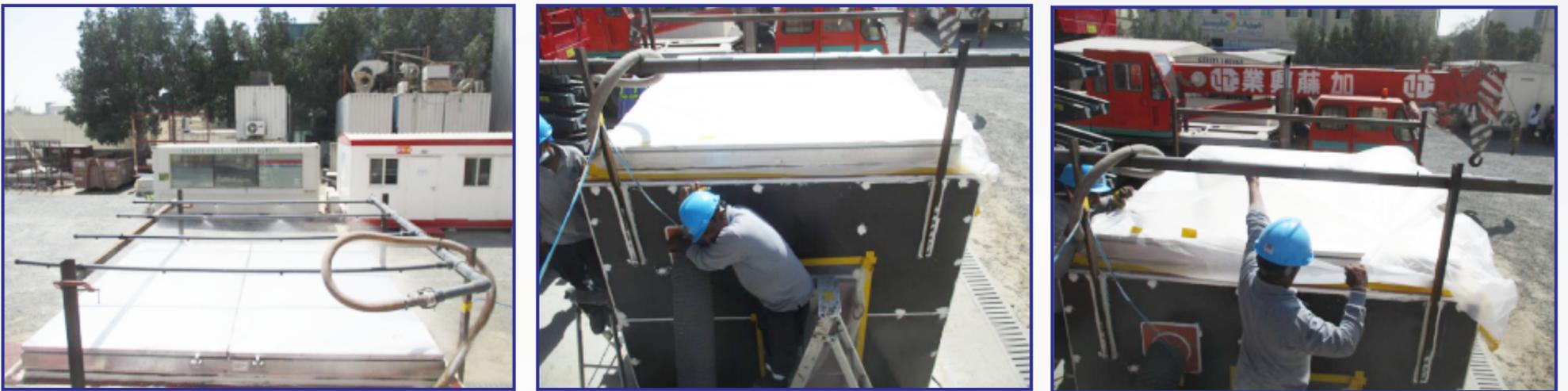
### Air-tightness

-  The assembly limits exfiltration/infiltration even under forced or natural drafts upto design pressure limits.

# What to specify (the parameters that matter)

## 1) Air leakage (laboratory method)

Test to EN 1026; classify to EN 12207 (Classes 1 - 4, with Class 4 being highest). The ventilator is tested at different pressure levels and is given rating as per the maximum class level it sustains. Class 4 is the best rating available and a ventilator certified to this rating ensures that even at a design pressure of upto 600pa, the ventilator allows lesser than  $3 \text{ m}^3/(\text{h m}^2)$  air leakage rate. Selecting a ventilator rated for class 4 ensure that unit has the lowest air leakage rate and lowest thermal losses.



## 2) Water penetration (laboratory test method)

Test to EN 1027; classify to EN 12208 (higher class = better water resistance). In this test method the ventilator is mounted on a fully sealed test rig and negative pressure is applied beneath the ventilator. Fine mist of water is then sprayed onto the ventilator and the pressure is increased in increments of 50 Pa every 5 mins. The rating is decided based on the pressure level at which water starts to penetrate and highest rating of 9A is achieved if ventilator can withstand upto 600 Pa pressure without allowing water penetration.

Specifying 9A ensures the highest level of water tightness.



## Installation details that make-or-break performance

### Roof curb / upstand

-  In case of standard sandwich panel- The vent and roofing interfacing to be carried out using GRP upstand which is fabricated matching the roofing profile. This Soaker panel should have a water deflector located upstream of the slope. The vent direction should be as per manufacturers recommendation.
-  In case of Standing seam profile- Standing seam profile needs metal roof curb continuously welded to the roofing sheet. The curb flange has to be coordinated with manufacturer to ensure proper fit.
-  In case of Concrete upstand - The ventilator to be provided with flat flange ensuring proper thermal and water seal against concrete.

## Fastening & structural

-  Use fasteners and accessories as per manufacturers recommendations.

## Sealants & gaskets

-  Use Sealants suitable for the roofing material with correct ambient temperature and ensure they are given sufficient setting time during installation.

## Thermal/condensation control

-  Ensure the vent has proper drain arrangement and EPDM gaskets to ensure run off of any condensate formed. Thermal separation between metal base and vent base to be used in case of façade installations.

## Commissioning tests

-  Conduct water test at site in presence of manufacturer and ensure the system is fully watertight.

## Specifier's quick checklist

**Cite the right product standard** - eg: EN 1026 & EN 1027 certified and demand third-party test reports.

## Set minimum classes/limits:

1. Air: EN 12207 Class 4 at design  $\Delta P$ .
2. Water: EN 12208 class 9A to suit exposure at test pressure  $\geq$  project design.

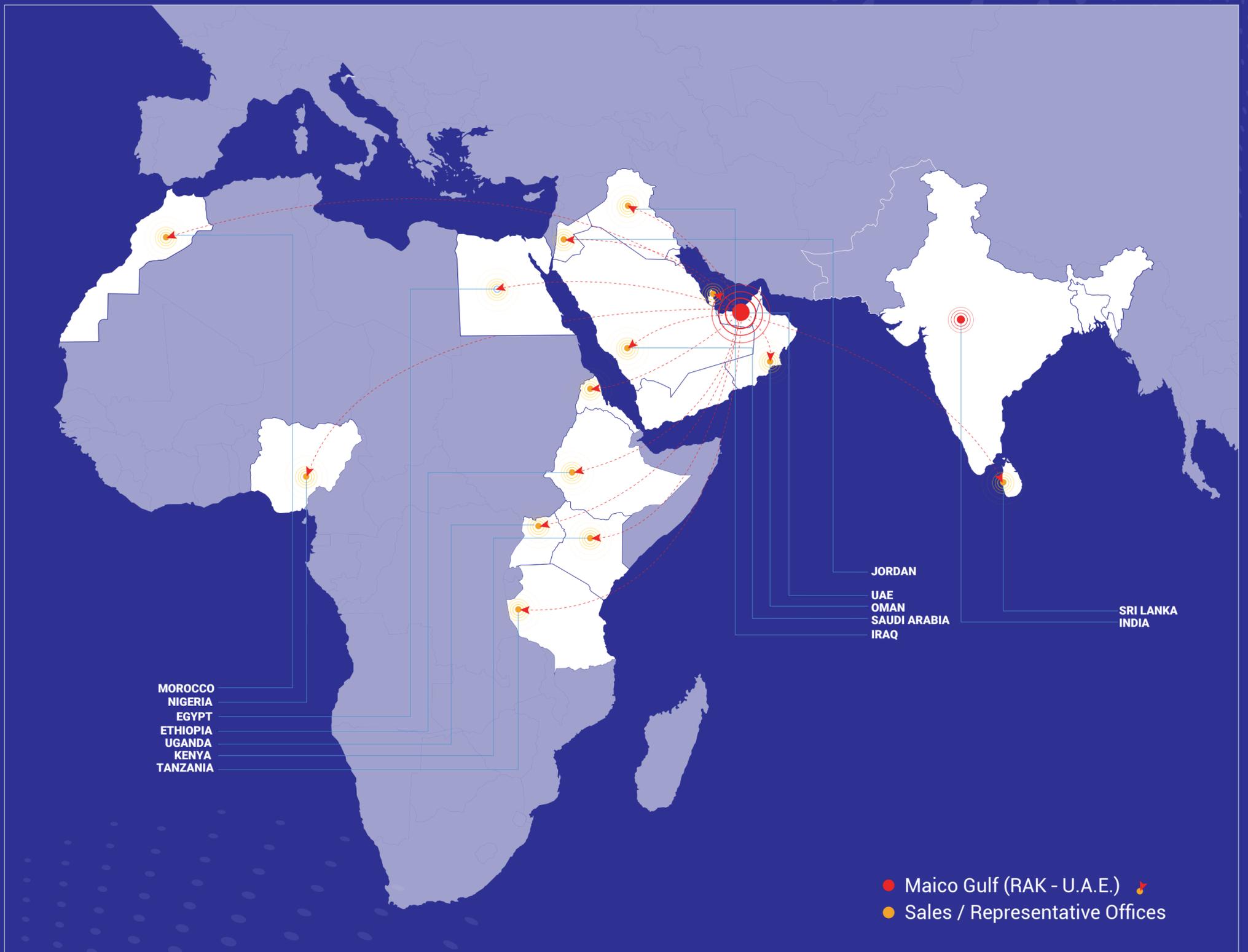
## **Detail the interface and get it approved from manufacturer:**

curb type, flashing sequence, interior air/vapor seal, and insulation.

**Require field testing:** Once the units are installed, the entire interfacing of system has to be site tested as per manufacturers recommendations.

**Document maintenance:** keep water drains clear; inspect seals and re-seal as per manufacturer guidance.

# Worldwide Sales Network



**Maico Gulf L.L.C**  
P.O.Box 9014, Al Ghail Industrial Park, Ras Al Khaimah, U.A.E  
Tel. +971 7 258 9000  
[enquiry@maicogulf.com](mailto:enquiry@maicogulf.com)  
[www.maicogulf.com](http://www.maicogulf.com)



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