air–lux®

No compromise.

Maritime special solutions

The ideal solution for sliding windows near the sea

Themed flyer

Near the sea, glass and metal façades face particular challenges.

Near the sea, the salt content in the air and water increases the demands on buildings and façade components. air-lux has developed a system that performs reliably even under maritime conditions.

The basic situation

In the interests of classifying and evaluating the influence of different atmospheres on buildings and building façades, a classification system with four different atmospheres has been developed:
1 rural, 2 urban, 3 industrial, and 4 maritime
The maritime atmosphere is considered the most aggressive due to the salt in the air. Anything less than 5 km from the sea is exposed to the aggressive atmosphere and therefore defined as “maritime”.

Boston, USA
High-rise building, 50 m from the sea

“The maritime system solution developed by air-lux achieved significantly better test results than the standard version, both visually and technically.”

Markus Faller
Empa, Swiss Federal Laboratories for Materials Science and Technology

The challenges

Corrosion
To leave nothing to chance, a wide variety of air-lux system materials and versions were subjected to the DIN EN ISO 9227 Salt Spray Test.
air-lux also cooperated with the **Swiss Federal Laboratories for Materials Science and Technology (Empa)** to develop even stricter and tougher test conditions specifically for the air-lux system.

Wind load
In order to cope with the strong winds in maritime areas, the air-lux sliding window panels were subjected to hurricane tests in the US, during which air-lux set two world records:
– air-lux sliding window panels are the **largest sliding window panels** tested to date in the US
– air-lux makes the world's **most leak-proof sliding windows**

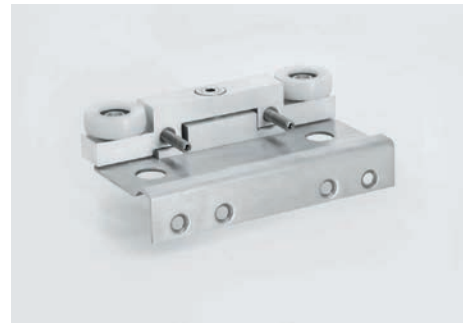
Other features that set the air-lux system apart: Guaranteed **leak-proof** for the entire service life, with a wear-free **air seal**.

Effects of aggressive ambient air in maritime regions:

Surface
– Powder coating decomposition and paint flaking
– Coating infiltration (filiform corrosion)

Fittings
– Corrosion and impaired functionality

Electronic components
– Corrosion of the conductive metal compounds
– False signals, malfunctions, and shortened service life



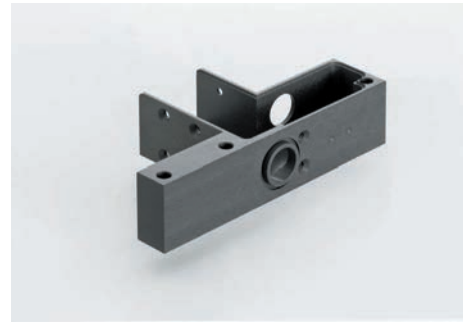
Upper guide carriage made of V4A and anodised aluminium

Our approach

A system that resists corrosion and high winds air-lux has succeeded in developing a maritime system that can withstand the marine climate and **minimise damage caused by salt water** thanks to **high-quality corrosion-resistant materials**, improved surface coatings, and technically optimised components.

In salt spray tests, the maritime system achieved significantly better technical and aesthetic results than the standard version.

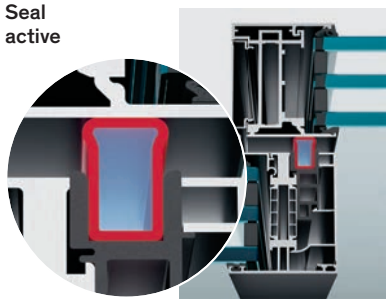
Carriage made of V4A and tempered rollers



Milled locking bolt housing

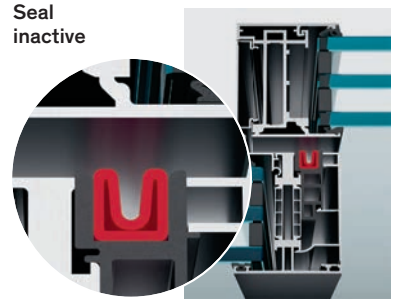
Sealing with air – the air-lux sealing concept

Seal active



Pressing the button allows air into the frame. It is then pumped into the seal, causing the seal to press against the slider profile and completely seal the gap between the slider and the fixed frame.

Seal inactive



To open the window, the button is pressed again. The air escapes and the seal returns to its original, rolled-up position.

Langebaan, South Africa
Private residence, 100 m from the sea

Swiss made

Care and maintenance

In spite of the high-quality materials used in construction, special care of the components is essential in exposed locations.
In addition to a maintenance contract for regular professional checks, we recommend the following measures:

- **Spray the windows with fresh water regularly to remove salt residue**
- **Clean the windows thoroughly and frequently with a sponge and suitable detergent**
- **Use special glass cleaner with nano-sealing to prevent salt, dirt, and limescale build-up on the window pane**

The “Maritime” special edition at a glance

Component	Standard solution	Maritime special solution
Surface	Stove enamelled Anodised	With pre-anodisation against filiform corrosion
Screws	Grade A2 stainless steel	Grade A4 stainless steel
Aluminium components (fittings)	Partially raw with cut edges	Anodised E0/EV1
Stainless steel components (fittings)	Grade 1.4301 stainless steel	Grade 1.4404 stainless steel
Locking bolts	Raw aluminium, open	Hard anodised, plastic coated
Carriage/bearing/ raceway	Stainless steel alloy X95Cr18	Maritime special alloy
Button	Stainless steel Grade 1.4301	Stainless steel Grade 1.4462
PCB	Not sealed	Double protective seal
Damper	Galvanised steel piston rod	Stainless steel piston rod, Grade 1.4404
Drive	Coated steel	Grade 1.4404 stainless steel
Substructure	Grade 1.4301 stainless steel	Grade 1.4404 stainless steel

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