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We connect and protect

IEC Aluminum Enclosure Range

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Introduction

nVent HOFFMAN supplies a wide range of IEC-rated enclosures for industrial environments – finished in aluminum, mild steel or stainless steel – and available in multiple configurations to meet a variety of application requirements.

To help customers determine if aluminum is suitable for their needs, let's examine the unique characteristics of this metal and contrast it with regular steel and stainless steel.

WHY CHOOSE ALUMINUM?

There are a number of reasons why nVent HOFFMAN customers choose aluminum for enclosures, including:

The light weight of the material contributes to its ease of handling, modification and integration into various applications.

Excellent resistance to corrosion enables enclosures to last longer.

High heat dissipation provides excellent temperature control.

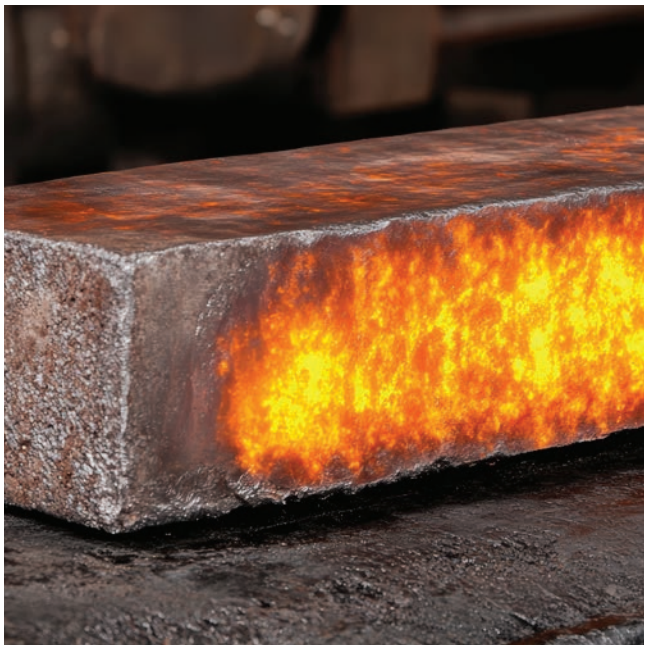
Such properties ideally position aluminum for outdoor applications such as renewable energy.

How does aluminum compare to steel?

Let's now examine how aluminum compares with regular steel and stainless steel, in the context of industrial enclosures.

IEC-RATED ENCLOSURES – available in multiple configurations to meet a variety of application requirements.

Introduction



1.1 CORROSION RESISTANCE

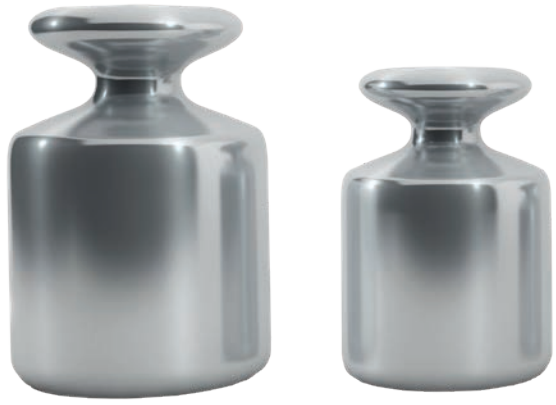
Corrosion is the gradual destruction of a material caused by chemical reaction with its environment. Under the EN 62208 standard, empty enclosures must be tested to prove their resistance to corrosion.

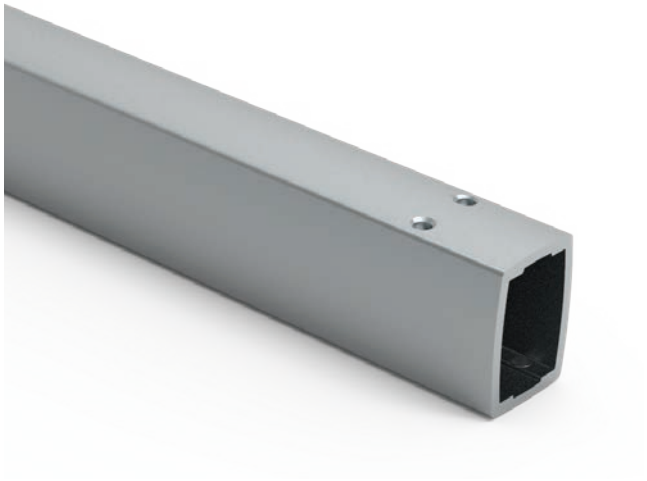
- **Aluminum** offers strong corrosion resistance due to a natural oxide layer that protects it from further oxidation, making it suitable for outdoor and marine applications. However, it can corrode in highly acidic or basic environments.
- **Steel** is prone to rust and corrosion when exposed to moisture and oxygen.
  It requires protective coatings or treatments such as galvanization or painting to enhance its resistance.
- **Stainless steel** offers superior corrosion resistance due to its chromium content, which forms a passive layer that prevents rust and corrosion.
  This makes it appropriate for harsh environments, including chemical processing, marine, and medical applications.

1.2 THERMAL CONDUCTIVITY

Thermal conductivity is a measure of a material's ability to conduct heat. It is a key parameter in determining how effectively an enclosure can dissipate heat generated by internal components.

- **Aluminum** has high thermal conductivity (typically around 205 W/m·K), making it excellent for the dissipation of heat across the surface and away from critical components.
- **Regular steel** provides lower thermal conductivity (approximately 50 W/m·K). This results in less heat dissipation than aluminum, potentially leading to higher internal temperatures.
- **Stainless steel,** depending on its specific alloy, has thermal conductivity ranging from 15 to 25 W/m·K.
  This is even lower than regular steel, making it the least efficient in terms of thermal dissipation.





1.3 WEIGHT

- **Aluminum** is the lightest of the three, with density approximately one-third of steel. This makes it ideal for applications where weight reduction is critical – for example, in the aerospace, automotive and transportation sectors. In addition, its light weight contributes to fuel efficiency and ease of handling.
- **Regular steel** is heavier than aluminum but provides excellent strength and durability. Its weight can be a disadvantage in certain applications, but it remains a preferred choice for structural and load-bearing applications due to its robustness and cost-effectiveness.
- **Stainless steel** is heavier than aluminum but offers a good balance of strength, durability and corrosion resistance. Its weight is similar to regular steel, making it suitable for outdoor construction, pharmaceutical and food and beverage applications. This, combined with corrosion resistance and aesthetic appeal, make stainless steel a versatile material.

THE BOTTOM LINE

EACH OF THE MATERIALS WE'VE EXAMINED – ALUMINUM, REGULAR STEEL AND STAINLESS STEEL – HAS UNIQUE PROPERTIES THAT MAKE IT SUITABLE FOR DIFFERENT APPLICATIONS.

Aluminum is lightweight and has excellent thermal conductivity, lending it to applications where heat dissipation and weight reduction is a priority. It offers good corrosion resistance due to its natural oxide layer, making it ideal for outdoor applications and marine environments.

Regular steel is cost-effective and strong but requires protective treatment for corrosion resistance. Its properties position it for construction, automotive and manufacturing applications.

Stainless steel offers superior corrosion resistance and durability, making it optimal for harsh environments. However, it's also the most expensive option due to its alloying elements.

ALUMINUM –
lightweight and has excellent thermal conductivity, lending it to applications where heat dissipation and weight reduction is a priority.

Exploring the nVent HOFFMAN Aluminum Enclosure Range

Aluminum has long been a popular choice for nVent HOFFMAN enclosures. The company produces a wide range of models and regularly updates them to support evolving customer and application requirements.

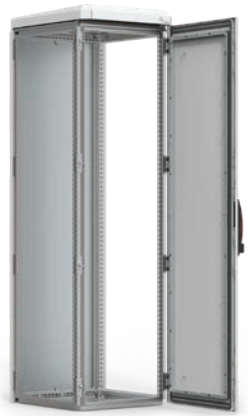
EVERY NVENT HOFFMAN ENCLOSURE IS DESIGNED FOR EASY INSTALLATION AND FOR CUSTOMIZATION WITH STANDARD ACCESSORIES.

The technical and how-to documentation provided with every purchase enables customers to get up-and-running quickly and glean maximum value from their enclosure.

Here are some of the nVent HOFFMAN aluminum models available today:

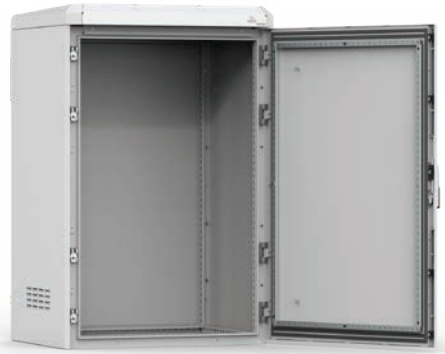
ECOM COMBINABLE SINGLE DOOR ALUMINUM FLOOR STANDING OUTDOOR ENCLOSURES

This enclosure range is designed for outdoor use and is available off the shelf in multiple dimensions. Because it is combinable, it is highly configurable. With IP 66 protection, anti-vandalism features and effective thermal management capabilities, components in the enclosure are well protected.

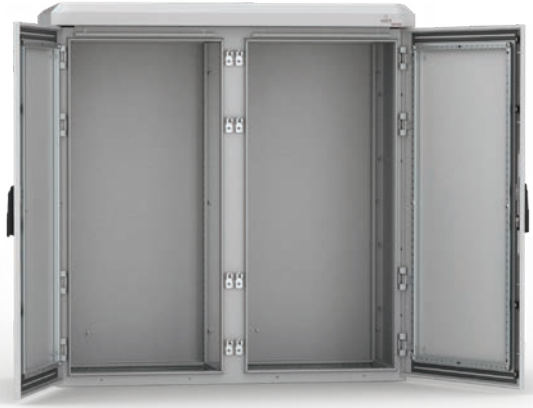


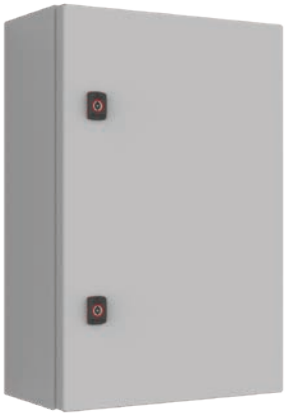
EKOM COMPACT ALUMINUM FLOOR STANDING OUTDOOR ENCLOSURES

This model range with IP 66 protection is ideal for outdoor use and is available off the shelf in different sizes. Components are protected through the high protection degree, and by anti-vandalism features and high thermal management efficiency. These factors eliminate the risk of component failure that could lead to downtime.



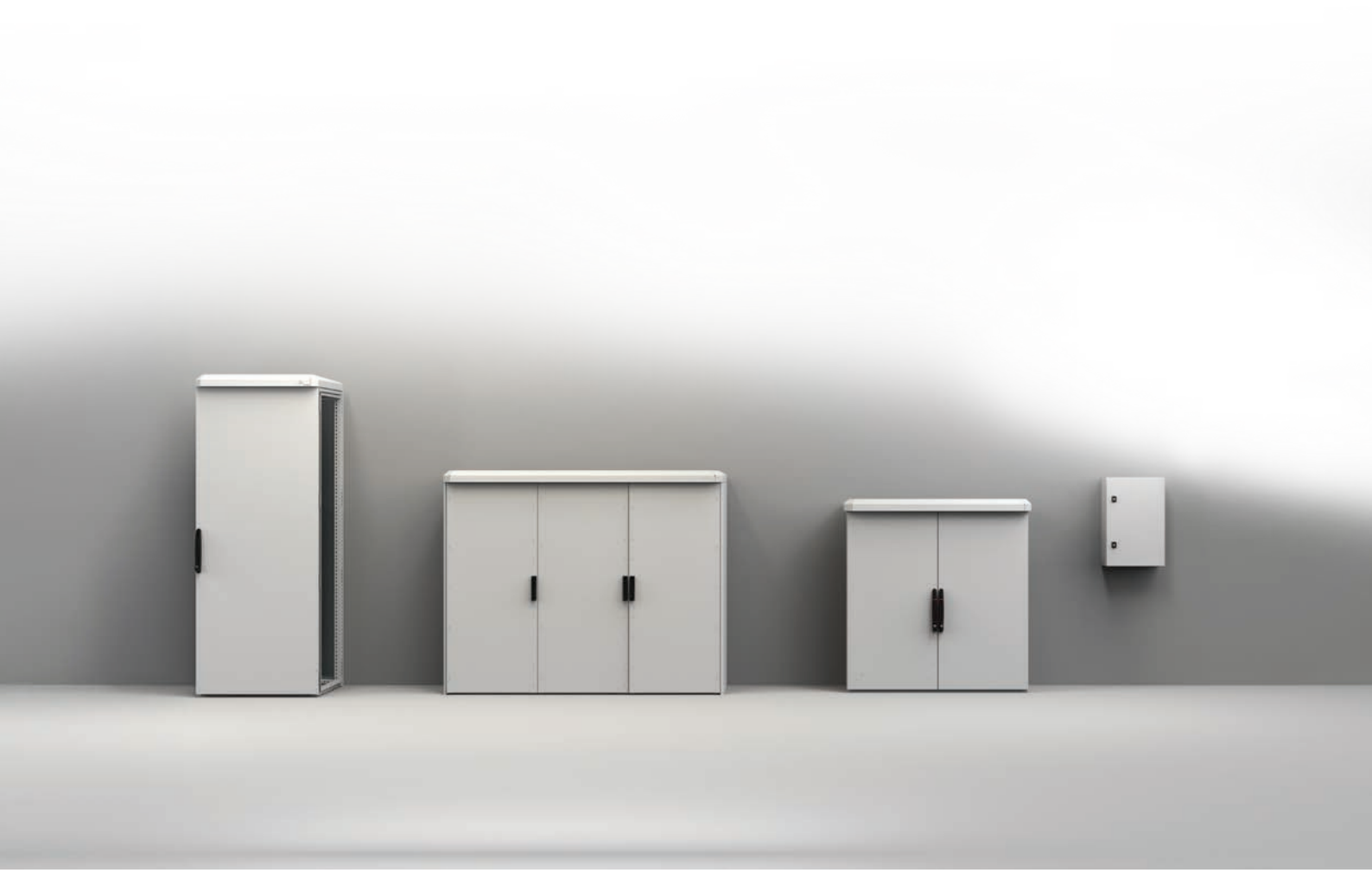
EKOM is also available as an aluminum single wall compact floor standing model range: **EKOM-SW COMPACT SINGLE WALL VERSION ALUMINUM SINGLE AND MULTIPLE DOORS.**





WAS WALL MOUNTED ALUMINUM SINGLE DOOR ENCLOSURE

Designed for harsh, industrial and outdoor environments, this model range is available off the shelf in multiple sizes. The IP66-rated design prevents water and dust from entering the enclosure, eliminating the risk of component failure that could lead to downtime. WAS is ideal for zones exposed to corrosion or that feature adverse ambient conditions.



LEARN MORE

on nVent HOFFMAN aluminum enclosures and their suitability for your industrial application

nVent.com

Our powerful portfolio of brands:

CADDY ERICO HOFFMAN ILSCO SCHROFF TRACHTE

HOFFMAN-SB-N136650-IECAluminumRangeEU-EN-2507