

316 Stainless Steel Hardware

316 Stainless Steel Hardware Standard for all Enclosures

Allied Moulded understands that not all stainless steel hardware is created equally. To endure harsh environments, a robust nonmetallic enclosure must also utilize hardware that exhibits the same corrosion-resistant properties. Many enclosure manufacturers have standardized the use of 300 series stainless steel hardware in their products, with 304 stainless steel being the most common. Allied Moulded has made the use of 316 stainless steel standard for all of its enclosure products' external hardware.

What is Stainless Steel?

According to the Specialty Steel Industry of North America (SSINA)¹, the term stainless steel applies to a group of iron based alloys containing a minimum 10.5% chromium. Other elements are added to the alloys to make different grades of stainless steel. There are many different grades that have varying corrosion resistance and other properties based on the ratio of elements used in the alloy. There are more than 50 grades of stainless steel.

Corrosion Resistant Properties

The science behind the corrosion resistant properties of the various grades of stainless steel lies in the mixture and ratios of the different elements contained in the alloys. The chromium contained in the mixture alters the oxidation process that would make raw iron rust. Instead, the chromium forms a protective layer on the surface that resists oxidation. The added nickel (Grade 304 and 316) enhances this resistance. Alloys are made even stronger by the addition of molybdenum (Grade 316), which are used in applications where acetic, sulfuric and sulfurous acids may be present.

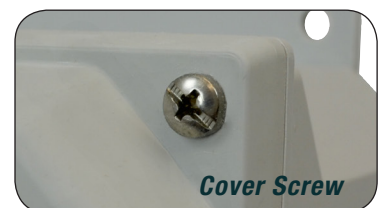
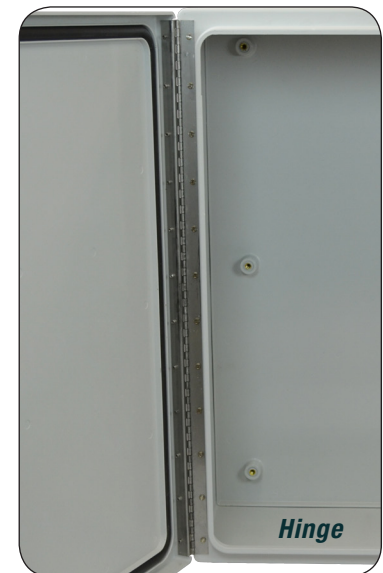
Grade 304

Grade 304 is considered the basic stainless steel alloy. It is made up of 18% chromium and 8% nickel. As previously mentioned, it is the most common of the 300 series alloys. It has good corrosion resistance properties in most applications.

Grade 316

Grade 316 also contains chromium (18%) and nickel (10%); however, it also contains at least 2% molybdenum. The addition of this element significantly increases its pitting and corrosion resistance properties, specifically with regard to chloride (salt) pollutants, which are found in coastal areas and de-icing applications, and potash which is found in agricultural fertilizer and chemical manufacturing. It also has wide application in water/waste water treatment plants, pulp and paper mills, and other environments with aggressive corrosive agents.

¹Design Guidelines for the Selection and Use of Stainless Steel, Specialty Steel Industry of North America (SSINA), www.ssina.com



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