

High-Strength and Corrosion-Resistant Stainless Steel MIRDC

Incorporate ally design and manufacturing to increase the solubility of nitrogen and reduce nickel, reinforce corrosion resistance, reduce manufacturing cost and replace import materials to help businesses transform and develop diversified applications.

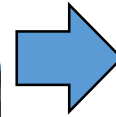
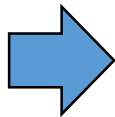
Introduction

- Due to the humid of the island climate, the corrosion-resistance of conventional drilling screws is limited, the regular maintenance and replacement are needed. Bimetallic drilling screws which are made of stainless steel rods and carbon steel, helps resolve the insufficient strength of self-tapping drilling screws, however it increases the cost and the work procedures. So far, Japan has the technological advantages (Nippon Steel), followed by China, which uses low-cost products to compete with Taiwan's fastener industry.
- Corrosion-resistant and high-strength stainless steel is produced by using the rapid cooling (metal mold) method. The content of N can reach 0.09wt%, while increasing the content of Ti-N and V-N precipitates. The corrosion resistance test has proven it without corrosion after more than 1,200 hr. Made into an integrated drilling screw, the core hardness can reach Hv 605 and the external hardness can reach Hv 642. (Japanese benchmark YUS550: corrosion resistance for 500 hr and screw hardness at Hv 550).

Honors / Patent

- 2019 Taiwan Innotech Expo Taipei Innovation Award Gold Medal
- High-nitrogen low-nickel Austenitic stainless steels alloy and its manufacturing method (I665314), 6 patents of Taiwan, the US, Indonesia and Mainland China.

Industrial Applications/ Case Studies



Self-drilling screws applications
no welding, low cost



Low-priced products ->
High-priced products
Business transformation



Stainless steel wire rod



Integrated drilling screws



Integrated drilling screws for green energy facilities in agriculture



High-precision automotive fasteners

High-performance stainless steel

Industrialization of mass production process