[Materials]
Corrosion Resistance of Metal Materials and Their Surface Treatment/Anti-rust Method

Ⅰ. Corrosion Resistance of Metal Materials and Their Surface Treatment

Test Method: Conduct the composite corrosion test according to GB/T 20854—2007 cyclic test method

Test Conditions:
① Salt Water Spray Test (5%NaCl.35℃) 2hr
② Dry (60℃) 4hr
③ Wet (95%RH. 35℃ ±2℃) 2hr
} 8hr is one cycle

1. Comparison of Different Metal Materials (No Surface Treatment)

Table 1

Material	S45C	SUJ2	SUS440C	SUS304	SUS316	✳G−STAR
Before Test						
48hr						
168hr						

*G-Star is martensitic stainless steel (pre-hardened die steel) made by Daido Steel Co., Ltd.

2. Comparison of Different Surface Treatments with the Same Material (SUJ2)

Table 2

Surface Treatment	Not Provided	Ferroferric Oxide Protective Film	Hard Chrome Plated
Before Test			
48hr			
168hr			

II . Anti-Rust Method

Metal corrosion is caused by various internal and external factors. Some common factors and corresponding countermeasures are listed below.

	Factors affecting the corrosion of metal	Countermeasures to slow down rusting
1	Chemical composition and structure of metal itself	Adopt materials with stronger anti-rust ability. For anti-rust ability comparison of materials, refer to Table 1 on P.1581.
2	Surface treatment method of metal	Adopt surface treatments with stronger anti-rust ability. For anti-rust ability comparison of surface treatments, refer to Table 2 on P.1581.
3	Metal surface finish	Select products with high processing accuracy
4	Media composition in contact with metal surface	Avoid contact with media that tend to cause rusting of the material rust, such as hand sweat. Regularly spray anti-rust oil. Refer to Table 3 on this page for the effect of spraying anti-rust oil.
5	The higher the ambient temperature and humidity, the more easily the metal corrodes.	Maintain a low humidity and temperature environment.

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Comparison of Corrosion of SUJ2 Material (Without Surface Treatment) under Different Maintenance Conditions (Reference)

Table 3

Placement Time	Whether anti-rust oil is sprayed	
	Provided	Not Provided
Before Test		
8hr		
24hr