

Introduction to Common Surface Treatments

常用表面處理介紹

Name 名稱	Thin layer thickness 薄層厚度(μm)	Applicable materials 適用材質	Usage examples 使用範例	Purpose, specialties 目的·特長	
Zinc plating 鍍鋅	3~20	Steel 鋼鐵	Thin sheets, wires 薄板、電線	1. Rust-proof, cost-effective 防銹、廉價 2. Poor appearance 外觀較差	
Chromate plating 鍍鉻酸鹽	1~2	Steel 鋼鐵	Sheet metal parts, bolts, nuts 鈹金部分、螺栓、螺帽	1. Rust-proof, cost-effective 防銹、廉價 2. Suitable for mass production 適用於量產品	
White zinc plating 鍍白鋅	1~2	Steel 鋼鐵		3. Poorer appearance, but can replace nickel plating. 外觀較差·但可代替鍍鎳	
Trivalent chromate 三價鉻酸鹽	1~2	Steel 鋼鐵	Bolts, nuts 螺栓、螺帽	1. Rust-proof, cost-effective 防銹、廉價 2. Does not contain hexavalent chromium. 不含六價鉻	
Nickel plating 鍍鎳	-	Steel 鋼鐵 Copper 銅 Brass 黃銅		1. Corrosion resistance improvement, decorative use 耐蝕性提升、裝飾用 2. Chrome plating has higher corrosion resistance in air. 在空氣中鍍鉻有較高的耐蝕性	
	Level 1 plating 1級電鍍			5~20	Better appearance than level 3 plating 比起3級電鍍有較好的外觀
	Level 3 plating 3級電鍍				-
	Pear field treatment 梨地處理			-	1. Fatigue resistance 耐疲勞性 2. Small scratches are not easily visible. 小刮痕不易顯現
Electroless nickel plating 鍍無電解鎳	Specifiable 可指定	Steel 鋼鐵 Stainless steel 不鏽鋼 Copper 銅 Al alloys 鋁合金 Glass 玻璃 Plastic 塑膠	Parts which cannot be nickel plated. 無法鍍鎳的零件	1. 10 times more expensive than nickel plating 比鍍鎳貴10倍 2. Easy film thickness control 容易作薄膜厚度控制 3. High corrosion resistance, wear resistance 高耐蝕性、耐磨性 4. Non-metallic conductors can be made. 可將非金屬導體化	
Chrome plating 鍍鉻	-	Steel 鋼鐵 Copper 銅 Brass 黃銅		1. Shiny appearance 外表有光澤 2. Good corrosion resistance 耐蝕性佳 3. Adhesion is likely to occur when sliding between chrome- plated products. 鍍鉻品之間的滑動時易產生附著	
	Hard chrome plating 鍍硬鉻			10~30	Cylinder liner 汽缸套

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Blackening treatment 染黑處理		-	Steel 鋼鐵	Bolts, nuts, measuring device 螺栓、螺帽、計測器	1. Paint bottom layer 烤漆底層 2. Shiny appearance 外表有光澤 3. Easier to rust than soft nitriding treatment 比較氮化處理易生銹
Low temperature black chrome plating 鍍低溫黑色鉻		1~2	Steel 鋼鐵 Copper 銅 Stainless steel 不銹鋼	Those who require precision and corrosion resistance better than black dyeing. 需要精密度者・要求耐蝕性優於染黑處理者	1. Long-term rust protection 長期防銹力 2. Good corrosion resistance 耐蝕性佳 3. Ultra thin film 超薄膜
Anodizing treatment 陽極處理	White 白色	3~5	Al alloys 鋁合金	-	1. Corrosion resistance, wear resistance 防蝕性、耐磨性 2. No conductivity 無導電性 3. Heat resistance 耐熱性
	Black 黑色	5~10			