

## Explanatory Notes

### Galvanic Table/ Dissimilar Metals ELECTROCHEMICAL CORROSION POTENTIALS

The following table lists the corrosion potential (in volts) for various materials measured against a saturated calomel electrode in sea water at 25°C. The potential difference between any two materials should not exceed 0.50 volts for equipment installed inside, subject to salt free condensation, and 0.25 volts for equipment installed outside at any location. The material with the more negative potential will corrode.

**Example, combination of stainless steel (CRS316) and galvanized iron:**

From table, stainless steel (CRS316) = -0.35 V, galvanized iron = -1.05 V

Potential difference = -0.35 - (-1.05) = 0.7 V

Therefore the galvanized iron will exhibit accelerated corrosion

Material	Potential (volts)
<b>Magnesium &amp; its alloys</b>	-1.60
<b>Zinc &amp; its alloys</b>	
Zinc die casting alloy	-1.10
Zinc plating on steel	-1.10
Zinc plating on steel, chromate passivated	-1.10
Zinc coated (galvanized) iron	-1.05
<b>Tin-Zinc (80/20) alloy plating on steel</b>	-1.05
<b>Cadmium plating on steel</b>	-0.80
<b>Aluminium &amp; its alloys</b>	
Wrought aluminium-alloy-clad aluminium alloy	-0.90
Cast aluminium	-0.75
Wrought aluminium	-0.75
Aluminium-manganese alloy	-0.75
Aluminium-magnesium alloy	-0.75
Aluminium-silicon-magnesium alloy	-0.75
Duralium (unclad)	-0.60
<b>Irons &amp; steels</b>	
Non corrosion resisting	-0.70
Stainless steel (CRS304)	-0.45
High chromium stainless steel (CRS316)	-0.35
Austenitic	-0.20
<b>Lead &amp; its alloys</b>	
Lead	-0.55
Lead-silver solder (2.5% silver)	-0.50
<b>Tin &amp; its alloys (other than zinc plating)</b>	-0.50
<b>Tin-lead solders</b>	-0.50
<b>Tin plate</b>	-0.50
<b>Tin plating on steel</b>	-0.45
<b>Chromium</b>	
Chromium plating on steel	-0.50
Chromium and nickel plating on steel	-0.45
Chromium	-0.45
<b>Copper &amp; its alloys (bronze, brass etc.)</b>	-0.20
<b>Nickel &amp; its alloys</b>	
Nickel copper alloys	-0.25
Nickel plating on steel	-0.15
<b>Silver &amp; its alloys</b>	
Silver solder	-0.20
Silver	0.00
Silver plating on copper	0.00
Silver-gold alloy	+0.05
<b>Electrical contact metals</b>	
Rhodium plating on silver plated copper	+0.15
Gold	+0.15
Platinum	+0.15
<b>Carbon</b>	+0.10