

Zinc Electroplating

Technical Data Sheet



Widely used by industry, electro deposited zinc gives sacrificial protection to the underlying iron or steel substrates; in other words, zinc corrodes in preference to the substrate. This has the additional benefit that steel exposed in cut or abraded areas will not easily rust.

Bright zinc gives reasonable protection at low thicknesses, typically 8 μ , so is ideal for small components including machine screws with fine threads.

The corrosion resistance of zinc can be enhanced by a post plating step, a conversion coating, commonly referred to as a "passivate". This applies a thin deposit on the zinc surface. The performance of these types of solutions used has been improved significantly during recent years because of requirements imposed by The End of Life of Vehicles Directive and The Registration, Evaluation and Authorisation of Chemicals Regulations severely restricting the use of hexavalent chromium.

The trivalent chromium conversion coatings developed fall into two categories – a clear (light blue) coating and iridescent (light yellow, or heavyweight) coating. The performance of coatings can be improved by using a seal (often including a lubricant) which will extend the corrosion performance.

The performance of zinc coatings (and others) is often assessed by neutral salt spray testing. The typical performances from the common zinc-based finishes are as below.

The Anochrome Group is approved to carry out the MacDermid "Zinklad" processes.

Neutral Salt Spray Resistance – (ISO 9227; ASTM B117) 8 μ Zinc thickness on test panels:

Conversion coating	Zinc Corrosion	Rust
Trivalent Clear	24 hours	96 hours
Trivalent Iridescent (heavy)	96 hours	240 hours
Trivalent iridescent +seal	96 hours	384 hours

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