

COMPARISON OF METAL SPRAYING WITH ELECTRO-PLATING

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Electroplating is a process which transfers metal ions from a liquid solution to a metallic surface under the influence of an electric current. The most common method is deposition from aqueous solutions, many of which are toxic. During electroplating, water decomposes and hydrogen is deposited at the surface being plated. This will cause embrittlement of high strength steels unless they are heat treated immediately after plating. This is only partially effective in reversing the damage.

Electro deposition is usually limited to the deposition of relatively thin, dense layers of pure metals or simple alloys. A limited range of composites may be plated. Electrically conductive substrates are essential but complex geometries are readily plated.

Metal Spraying Offers the Following Advantages Over Electro-Plating

- Adhesion is usually better
- Non-metallic substrates can be treated
- Engineering alloys can be applied as coatings
- Ceramic coatings can be applied
- Thicker deposits can be applied
- There is no risk of hydrogen embrittlement
- Deposition rates are higher
- There is no component size limitation
- Coatings can be applied on site
- There is no effluent disposal problem
- Jigs and fixtures do not corrode
- Complex chemical control techniques are not required