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TECHNICAL BULLETIN MECHANICAL PLATED FASTENERS

What is mechanical zinc plating?

A unique process involving the depositing of zinc by the mechanical action of a rotating barrel of chemicals, water, zinc powder and glass beads. The process cold-welds a uniform coating of metal powder free from oxides.

Advantages

Uniformity: Mechanical plated fasteners have uniform thickness throughout the surface areas including the head, thread peaks and points when compared to electrodeposited coatings. This offers superior corrosion resistance in all exposed surfaces.

Coating Thickness: Unlike electrodeposited coating where coating thickness is limited to 1.5 to 2 tenths, mechanical can be applied to thicknesses exceeding 6 tenths. Since coating thickness is directly related to corrosion resistance, mechanical affords the user increased longevity of the parts in the field.

Embrittlement Free: Failure of fasteners due to hydrogen embrittlement is eliminated due to the process of mechanical plating. Unlike electroplate which utilizes electric current thereby inducing hydrogen diffusion in the part, mechanical plating does not induce diffusion. This leads to less likelihood of parts breaking in the field from stress after installation.

Galvanic Protection: Since the base metal is less chemically active than the mechanical zinc the coating sacrifices itself to the corrosion process, thus inhibiting the formation of rust.

Meets or Exceeds These Requirements:

Federal spec FF-N-105B, Military spec MIL-C-81562

American Society for Testing Materials ASTM-B-695-82 & ASTM-A-307-76A