

Arlington, Texas: 817.640.2151

Brownsville, Texas: 956.838.0758

FINISH GUIDE

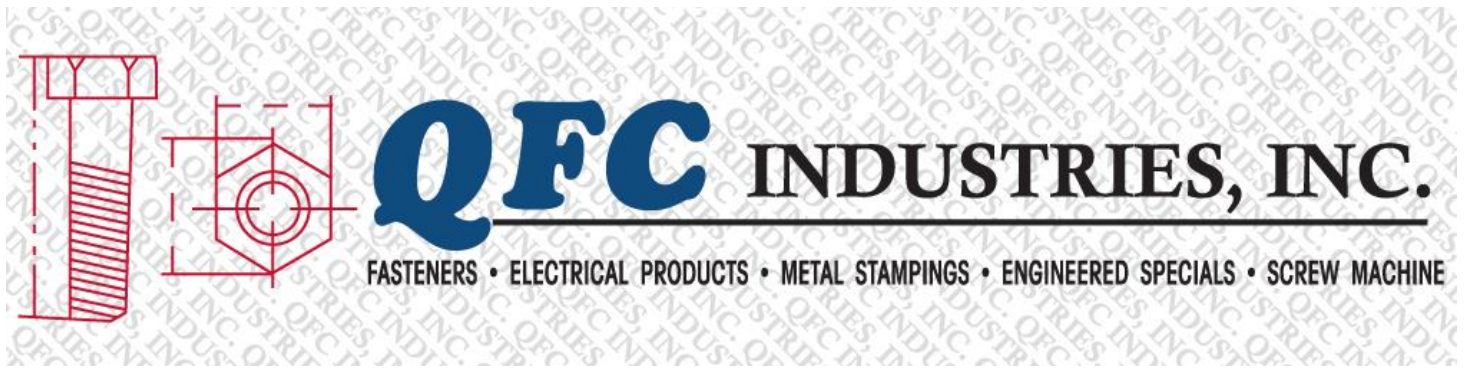
Zinc Plating: A common sacrificial coating used in finishing steel parts to provide protection from red rust. Applied electrolytically to a typical thickness of 200 – 300 micro inches (.0002" - .0003"). The zinc plating protects the underlying steel by formation of a "galvanic cell", which results in the zinc corroding preferentially to the steel. Red rust will not start forming until all zinc has been converted to white rust (zinc oxide). Normally zinc plating is used for indoor applications, but can also be used as a base for painting. By itself a 200 – 300 micro inch zinc plating will probably get no more than 12 hours of Salt Spray protection per ASTM-B117. With a clear chromate topcoat this is increased to 24-36 hours, while a yellow chromate top coating can achieve protection up to approximately 96 hours. Even though it is mostly used as a functional coating, zinc plating does have some decorative appeal. Other properties of zinc plating include: moderate appearance, excellent abrasion resistance and excellent paint adhesion.

Trivalent Zinc Chromate Plating: Zinc trivalent chromate plating provides a bright silver/blue like finish, with the added benefit of ROHS Compliance. This chromate conversion coating is a type of coating used to passivate aluminum, zinc, cadmium, copper, silver, magnesium, and tin alloys. It is primarily used as a corrosion inhibitor, primer, decorative finish and it can retain electrical conductivity. Trivalent chromate is an iridescent conversion that can exhibit different hues. This is considered normal when applying iridescent conversions.

Yellow Zinc Plating: As above, with yellow dichromate passivate, greatly improving corrosion resistance. Salt Spray protection (ASTM-B117) is approximately 96 hours.

Black Zinc Plating: As above with black silver nitrate passivate, giving a matte black appearance and similar corrosion resistance to yellow zinc plating.

Zinc Plate, Chromate Plus Sealer: Currently Southco's standard finish of choice. A metallic (inorganic) sacrificial finish which provides excellent corrosion protection. "Sacrificial" means



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that the plating will corrode instead of the base material. This finish will protect even if the finish is scratched through to the base material. Most applications provide corrosion resistance averaging 500 hours of salt spray, per ASTM B117 or ISO 9227, and 5 cycles of moist sulphur-dioxide testing (ASTM G-87) without evidence of red rust for parts plated approximately .013mm (.0005") thick. This finish has a lubricious surface, which is more uniform and consistent, both visually and in terms of its mechanical properties. This finish also exceeds zinc-plating specifications as outlined by ASTM B633, BS 1706, DIN 50961 and AS1789.

Black Oxide: This is a black conversion finish used over steel parts for aesthetic purposes. The coatings have a deep glossy appearance. Salt Spray protection approaches 24 hours (ASTM-B117) depending on the sealant used.

Chrome Plating: A highly decorative and very hard silver finish achieved by an electroplating process which applies three or four layers of metal; copper, nickel and chromium. Depending on the surface preparation (polishing) and the final chrome thickness, the finish can range from satin to a high luster mirror-like surface. Properties of chrome plating include superior appearance and superior abrasion resistance.

Copper-Nickel-Chrome Plating: See chrome plating

Nickel Plating: As an electro-deposit, this coating is used primarily when a decorative bright silver finish is desired. If high hardness and good chemical resistance are required, parts are often coated with electroless nickel. This has the advantage of being able to build thickness evenly on both the inside and outside of a part. Other than E-coating, electroless nickel is one of the only coatings that will achieve total coverage. Other properties include excellent chemical resistance in a hard, durable finish. More decorative than zinc plating but does not provide sacrificial protection.