Fabrication & Services

Bright Tin Plating

Used to provide:

* 99.5% Tin
* Bright Silver Finish
* Surface with great solderability
* Some corrosion protection

* Typically used in the printed circuit board industry, the food industry, as well as for decorative purposes.

* Main application for tin plating in the circuit board industry is to make use of the tin's solderability.

ASTM B545 ; MIL-T-10727

Type I - Electrodeposited Tin

Base Materials that Tin Plating can be applied to include steel, stainless steel, brass, copper, zinc die cast, and aluminum.

Request for quote :

Email: quickhelp@alytainternational.com

Fabrication & Services

Cadmium Plating

Cadmium plating offers:

- Low galvanic corrosion in contact with aluminum
- Exceptional white luster similar to silver plating
- Corrosion resistance in marine environment
- Excellent Lubricity
- Low electrical contact resistance
- Uniform ductile deposit
- Pliant
- Solid Rust Prevention
- Can be solder almost as well as tin

Cadmium closely resembles to **Zinc plating** for some applications. Typical chromates applied include clear, yellow, olive drab and black. Cadmium is extremely toxic and should not be used on any part intended for use where direct food contact may occur. Typical thickness is .0002" - .0008" deposit. Cadmium use in harsh environments and aerospace application has no equal and Cadmium is second to none in aquatic or brackish application.

QQ-P-416F is the Federal standard for Cadmium Plating.

Type I: As plated.
Type II: Supplementary chromate treatment. Type II plating shall not show white corrosion products of cadmium, pitting, or basis metal corrosion products at the end of 96 hours (20%) salt spray exposure per following table:
Type III: Supplementary phosphate treatment. Type III shall conform to Type I of TT-C-490. Type III is used as a paint base.

Class 1: 0.0005" minimum thickness
Class 2: 0.0003" minimum thickness
Class 3: 0.0002" minimum thickness

Fabrication & Services

Copper Plating

It provides:

* A coating reddish in appearance
* Copper can range from a matte to bright finish. It depends on the surface brightness of the part.
* Provides good corrosion resistance, but also has the tendency to easily tarnish
* Copper is a great coating for solderabilty of small parts
* An economical finish for parts that require low electrical resistance.

Class 0: (Unless otherwise specified .001-.005") For heat treatment stop-off.
Class 1: (.001" minimum thickness) For carburizing and decarburizing shield, also plated through printed circuit boards.
Class 2: (.0005" minimum thickness) As an undercoat for nickel and other plating.
Class 3: (.0002" minimum thickness) To prevent basis metal migration into tin (prevents poisoning of solderability).
Class 4: (.0001" minimum thickness).
Brightness of part can depend greatly on surface finish of base material.

Steel part with a Copper Coating

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Fabrication & Services

Electroless Nickel Plating - MIL-C-26074B

Also known as EN or E/Ni, can be plated over a wide variety of metals including aluminum, titanium, mild steels, stainless steel, hardened steel, copper, brass and zinc die-cast. Electroless nickel provides:

* Uniform coating on most complex,and/or Irregular surfaces
* Improved resistance to galling
* Provides a hard, wear resistant surface

Electroless Nickel is an auto-catalytic chemical reduction coating requiring no electricity to process. The phosphorus content of the bath determines the hardness and corrosion resistance of the coating as well as the matte, semi-bright or bright finish.
With the addition of a baking operation following the plating, hardness of coating is enhanced

Bright Nickel Plating

* Excellent resistance to corrosion
* Strong, durable, and malleable coating
* Versatile finish
* Bright finish

Appearance of nickel can vary from dull to very high luster depending on the phosphorous levels in the wash.

QQ-N-290A is the Federal standard for Bright Nickel plating.

Class 1: For corrosion protection. Plating shall be applied over an underplating of copper on zinc and zinc based alloys.
Class 2: For engineering applications.
Class A: 0.0016" minimum thickness
Class B: 0.0012" minimum thickness
Class C: 0.0010" minimum thickness
Class D: 0.0008" minimum thickness
Class E: 0.0006" minimum thickness
Class F: 0.0004" minimum thickness
Class G: .0002" minimum thickness d soldering should be considered.

Request for quote :

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Fabrication & Services

Gold Plating provides:

* Excellent corrosion and tarnish resistance.
* Great finish if conductivity is a major concern.
* Extremely low contact resistance for electricity.
* Great finish for solderabilty.

If you are looking for a supplier that can provide a full service (Part & Gold Plating) or just contract the service for plating, Alyta can be your preferred source.

Type I: 99.7% gold minimum (Grades A, B, or C).
Type II: 99.0% gold minimum (Grades B, C, or D).
Type III: 99.9% gold minimum (Grade A only).

Grade A: 90 Knoop maximum.
Grade B: 91-129 Knoop.
Grade C: 130-200 Knoop.
Grade D: 201 Knoop and over.

Class 00: .00002" minimum thickness
Class 0: .00003" minimum thickness
Class 1: .00005" minimum thickness
Class 2: .00010" minimum thickness
Class 3: .00020" minimum thickness
Class 4: .00030" minimum thickness
Class 5: .00050" minimum thickness
Class 6: .00150" minimum thickness

MIL-G-45204C

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ASTM B545 ; MIL-T-10727

Type I - Electrodeposited Tin

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ALYTA
International Corp.

Fabrication & Services

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Type III: Supplementary phosphate treatment. Type III shall conform to Type I of TT-C-490. Type III is used as a paint base.

Class 1: 0.0005" minimum thickness
Class 2: 0.0003" minimum thickness
Class 3: 0.0002" minimum thickness

Fabrication & Services

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Bright Nickel Plating

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* Versatile finish
* Bright finish

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Class 00: .00002" minimum thickness
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Class 5: .00050" minimum thickness
Class 6: .00150" minimum thickness

MIL-G-45204C

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Fabrication & Services

Silver Plating

Silver Plating provides a coating which is matte-white in appearance. This finish provides good corrosion resistance, but also has the tendency to easily tarnish.

It is inferior to gold plating, but silver plating provides many of the same characteristics at a more economical price.

Silver is a great coating for solderabilty of small parts, it provides a good coating for parts that require low electrical resistance, and great lubricity.

QQ-S-365D is the Federal Standard which covers electrolytic silver plating on various metals.

Type I - Matte
Type II - Semi-bright
Type III - Bright
Grade A: Chromate post-treatment to improve tarnish resistance.
Grade B: No supplementary treatment.
ASTM-B-700 covers electrolytic silver plating on various metals.

Type I - 99.9%
Type II - 99.0%
Type III - 98.0%
Grade A: Matte
Grade B: Bright
Grade C: Bright - Polished
Grade D: Semi-bright
Class S: Chromate post-treatment to improve tarnish resistance.
Class N: No supplementary treatment.
Brightness of part can depend greatly on surface finish of base material.

Request for quote :

Email: quickhelp@alytainternational.com

Fabrication & Services

Zinc Cobalt Plating

A few of the characteristics of the zinc-cobalt plating process includes enhanced corrosion resistance for the base metal compared to **traditional zinc plating** of the same thickness. Additionally, bright luster is produced when the zinc cobalt alloy coating is applied. By electroplating zinc and cobalt to the particular metal, the end result is a uniform ductility that will withstand up to six times the corrosion resistance of conventional zinc plating. Zinc cobalt alloy plating is also becoming more popular because of its affordable operation costs compared to other zinc alloy coatings.

Things to Note:

- Zinc-Cobalt has greater corrosion resistance than traditional Zinc plating
- Increased corrosion resistance when combined with sealers and chromates
- Ductility characteristic of zinc-cobalt allows the part to be formed or shaped with minimal degradation to corrosion.
- Cobalt content and post treatment handling is extremely important

We can offer zinc cobalt plating in a variety of colors. Chromate colors offered are:

- Clear (Silver)
- Olive Drab
- Black
- Yellow (Gold)
- Red (small quantities)
- Green (small quantities)

Fabrication & Services

Zinc Plating

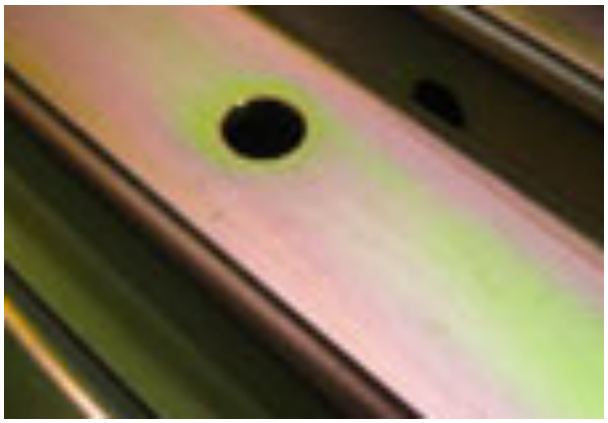
The zinc plating process offers several advantages to the metal. Zinc plated characteristics include an increase in corrosion resistance (comparable to cadmium) with an addition increase in resistance when chromates and sealers are used during the process. By zinc plating metal, it prolongs the life of the basis metal improves aesthetic value of the part and serves as a good paint base. Additionally, zinc plating increases the lubricity and can be used for identification purposes when combined with chromates and dyes.

Things to note:

Corrosion resistance of zinc is comparable to cadmium
Corrosion resistance can be increased with the use of chromates & sealer

ASTM-B-633 QQ-Z-325B

Type I - Without supplementary treatment
Type II - With supplementary chromate treatment
Type III - With supplementary colorless chromate treatment
Type IV - With phosphate conversion treatment
Fe/Zn 25 - SC 4 (very severe)
Fe/Zn 12 - SC 3 (severe)
Fe/Zn 8 - SC 2 (moderate)
Fe/Zn 5 - SC 1 (mild)



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Type III - Bright
Grade A: Chromate post-treatment to improve tarnish resistance.
Grade B: No supplementary treatment.
ASTM-B-700 covers electrolytic silver plating on various metals.

Type I - 99.9%
Type II - 99.0%
Type III - 98.0%
Grade A: Matte
Grade B: Bright
Grade C: Bright - Polished
Grade D: Semi-bright
Class S: Chromate post-treatment to improve tarnish resistance.
Class N: No supplementary treatment.
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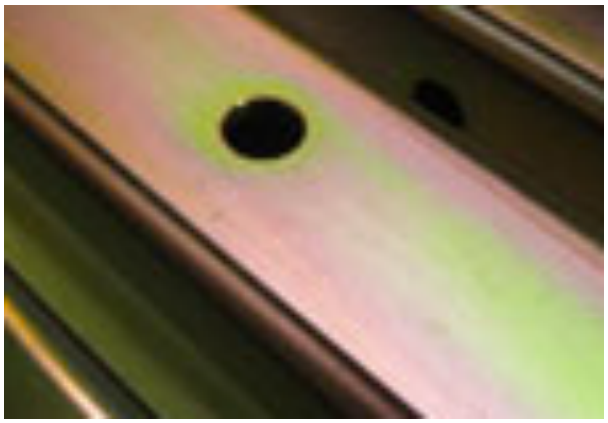

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