COOPER

COOPER PLATING INC.

Cooper Plating Inc.

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CGP QUALITY SERVICE COMMITMENT ISO 9001 IATF16949

www.cooperplating.com

Cooper Plating Inc. is an IATF 16949, ISO 9001, CGP registered company, which was established in 1978. We are a highly diversified specification electroplater in a 110,000 sq. ft. facility located in Newmarket, Ontario.

We specialize and provide plating solutions for customers in the automotive, medical, defense, aerospace, electronic and commercial industries. Our expertise include, plating with Gold, Silver, Copper, Nickel, Electroless Nickel, Tin and Passivation. We offer a variety of these finishes in Barrel, Rack and Continuous Strip Plating.

We have designed and built a number of dedicated plating lines to run high volume production parts. Innovative technologies and continuous R & D have made it possible to meet specifications for a wide range of diverse applications.

COOPER PLATING HAS THE PEOPLE, KNOWLEDGE AND THE EQUIPMENT TO HANDLE ALL OF YOUR METALFINISHING REQUIREMENTS… LARGE OR SMALL.

COOPER

CONTINUOUS STRIP PLATING ▼

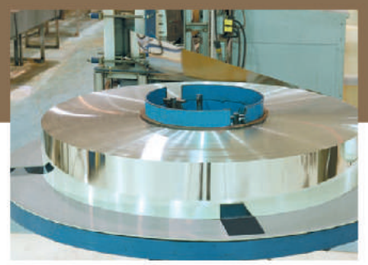
Continuous strip plating is offered in a variety of finishes. Each plating line is custom designed to provide the required plating and processing steps necessary to meet customer specifications.

PREPLATES:

Copper and Nickel

FINISHES:

Reflow Tin, Pure Dull Tin, Pure Bright Tin



BARREL PLATING ▲

Barrel plating provides an economical means to electroplate manufactured parts. Parts suitable for this method are usually relatively small and durable enough to resist deformities. Parts that have a tendency to tangle, nest or telescope are typically not suitable for Barrel Plating. Cooper Plating offers a wide variety of finishes and barrel sizes allowing for flexibility to accommodate your requirements.

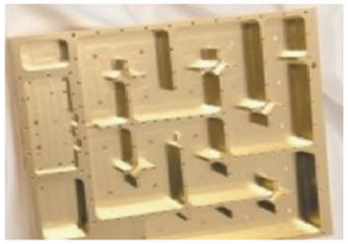
BARREL SIZES:

Button Barrels, 12”, 18”, 24”, 30”, & 42”.

FINISHES:

Gold, Silver, Copper, Nickel, Electroless Nickel, Tin and Passivation

RACK PLATING



Rack plated parts are fixtured to a coated metal rack for processing. Parts may be attached by spring fingers, wire or screws depending on part size, configuration and weight. This process allows parts to be plated all over or selectively plated by plugging or masking locations where plating is not required. As we have an abundant selection of fixturing in house we are able to reduce costs without compromising quality.

FINISHES:

Gold, Silver, Copper, Nickel, Electroless Nickel, Tin and Passivation

2021 Rev.2

ELECTROLESS NICKEL AND QUALITY

QUALITY

X-Ray Thickness Testers

Process Control Lab

Why Cooper Plating Inc?

We pride ourselves on customer service and have a 40 year track record to prove it.
At Cooper we have, and will continue to invest heavily in research and development. Having experience plating, we are more than willing to look into new processes

Excellent traceability system to ensure we can provide you with historical production information within 24 hours.
We have various lines in electroless nickel to handle large or small volume work.

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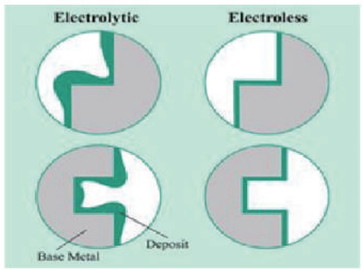
ELECTROLESS NICKEL PLATING

Why Electroless Nickel?

Electroless nickel plating is the deposition of nickel-phosphorous alloy onto a substrate. Unlike typical nickel plating it is an autocatalytic process instead of electrodeposited, meaning no electricity is used to deposit the coating. Since the process is not dependent on current distribution it offers a more uniform coating than nickel plating. This allows it to deposit in recesses and threads without having excessive thickness build up on the outer edges. The coating conforms very similarly to the substrate surface so cosmetic finishes can be maintained using this coating.

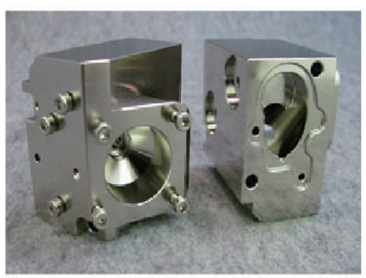
This finish is commonly used in the automotive industry due to its high wear resistance, hardness and adhesion. It can be applied to many base materials including but not restricted to aluminum, titanium, various steels, copper and brass. Heat treating the parts after coating can achieve hardness requirements above 48 HRc.

Cooper Plating runs high volume medium phosphorus of 6-9% as well as high phosphorous of 10-14%. Medium phos. gives a good resistance to wear while being economically feasible. We have three lines set up for rack and barrel applications to serve your needs.



Electrolytic vs Electroless Nickel

Electroless Nickel Plating on Threads



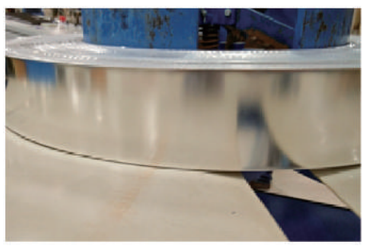
Electroless Nickel Plating in Recesses

2021 Rev.2

REFLOW TIN AND BET

BRIGHT AND MATTE TIN COIL

.093" material BET plated winding



Plated look of BET plating

Bright Electro Tin (BET)

BET is another process we offer here at Cooper Plating in reel to reel. Unlike reflow tin it does not get heated to its melting point and deposits on the substrate with a bright appearance.

Bright tin contains brighteners, which are additives causing the formation of fine grain deposits and is characterized by high internal stresses. The bright shiny finish that results from the process is aesthetically pleasing, offers good lubricity, corrosion protection and high electrical conductivity. For this reason, it is in high demand throughout the automotive and electronics industry.

Matte Electro Tin

Matte tin coatings are made in electrolytes without the addition of brighteners. Matte tin has a dull appearance (non reflective) and the level of internal stresses in matte tin is much lower than it is in bright tin. Matte tin is characterized by low whisker growth, electrical enhancement, improved ductility and good solderability.

EFLOW TIN COIL

Why Reflow Tin?

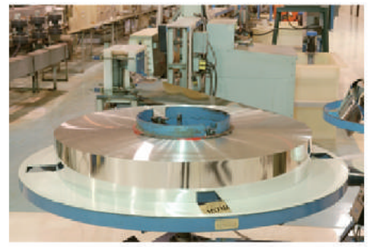
Reflow tin is a 99.9% pure tin, high speed process. It is a very efficient solution and has been proven to mitigate the growth of tin whiskers with excellent solderability compared to electroplated tin. Additional benefits are improved contact resistance, reliability and insertion force with excellent formability during the stamping process. Reflow tin is RoHs compliant.

In the reflow tin process tin is first deposited onto the substrate with a matte appearance. It is then heated to above its melting point which allows a diffusion between the tin and the underlying layers. After reflowing the appearance is a uniform bright reflective finish, and it keeps this appearance after cooling.

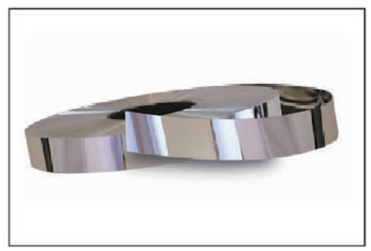
Reflow tin has a uniform tin distribution and thinner tin thickness than conventional tin plating without sacrificing the performance resulting in lower metal cost.

Here at Cooper Plating, we offer this above process with the option of a copper and/or nickel under plate in continuous coil process.

One of Cooper's Reflow Lines



Coil winding



Finished Reflowed Coil

2021 Rev.2

TINSILVER.
COPPER NICKEL GOLD

TIN AND SILVER PLATING

Tin Plating

Silver Plating

Silver Plating

Tin:

Tin plating is typically used for applications of electrical conductivity and solderability. This type of plating is relatively inexpensive in comparison to most others. However due to its low melting temperature, tin plating is used on materials that are not exposed to high temperatures after plating. Tin is also used extensively in the food processing industry as it is non-toxic, ductile and corrosion resistant.

Silver:

Coating in silver offers superior heat resistance and solderability to tin. Silver has the highest electrical conductivity of any pure metal, especially at high frequencies. Silver plating is also extensively used in coating fasteners due to its lubricity.

Cooper Plating is a large electroplater of both tin and silver plating. We have the capability of plating on many alloys and have capacity for small and large production. We honour quick turnaround time with superior quality at a completive price.

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COPPER, NICKEL AND GOLD PLATING

Copper:

Copper plating is a process that is widely used as an underplate in multi layer requirements. It is also used as a decorative over plate. Copper is a good conductor of electricity.

Nickel:

Nickel plating is offered in a matte, semi-bright and bright appearance. Bright nickel is used for decorative and corrosion protection purposes, however the brighter the deposit the less ductile it becomes. Semi-bright is used where ductility is important but a bright appearance is still required.

Gold:

Gold plating is commonly used in the electronics and decorative industries. It is a good conductor of electricity and is extremely ductile. Gold comes in various purities.

Cooper Plating offers the above finishes in rack and barrel applications.

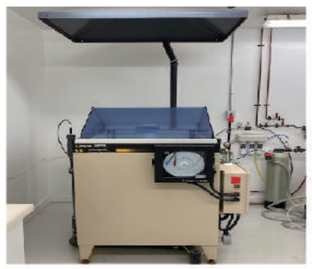
Copper Plating

Nickel Plating

Gold Plating

SCIENTIFIC RESEARCH & EXPERIMENTAL DEVELOPMENT

Cooper Plating continuously operates a Neutral Salt Spray chamber to facilitate the ongoing development of corrosion resistant finishes that go beyond the typical upper limit of 1000 hours to red rust. Our test chamber can also be made available to our customers for environmental testing of their products, as a service.



WASTEWATER TREATMENT SYSTEM

Cooper Plating operates a Wastewater Treatment facility under York Region Bylaw. The wastewater system used is a fully automated constant flow system designed to automatically remove cyanide and metals from industrial wastewater. We currently recycle all plating metals to our suppliers. Technicians constantly monitor and record the ongoing effluent discharge to ensure we meet or exceed required values. An Atomic Absorption unit is used for fast and accurate analysis for metal content.

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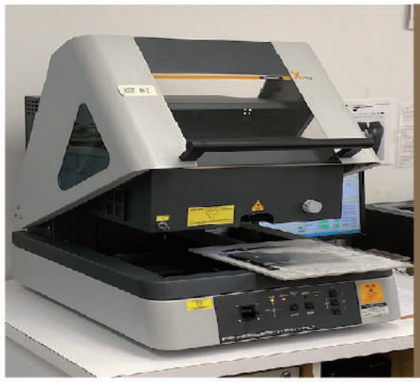
CHEMICAL LAB

Our Chemical Lab contributes to the advancement of Cooper Plating by providing high performance, reliable and accurate analytical testing. The Chemical Lab provides rigorous testing and evaluation of all electroplating solutions through the use of state of the art equipment and excellent analytical techniques.



QUALITY CONTROL LAB

Quality Assurance is the key to our successful plating operation. Through on-line monitoring and process control, maximum quality is always assured. With exceptional accuracy and reproducibility, samples from all of our different products are measured for plating thickness using our X-ray fluorescence equipment, combined with adhesion testing, solderability testing and visual inspection by means of microscopic measurement.

FINAL INSPECTION AND PACKAGING

We are a team dedicated to innovation, quality and continual improvement through our partnership with Customers, Employees and Suppliers. Our commitment is to provide you the highest quality product in a reliable, responsive and cost-effective manner. This procedure is incorporated from receipt of product through to final inspection and packaging.