



PLATING SERVICES SUMMARY

Method:

Overall continuous electroplating of strip coil stock including dual gauge (milled edge) and pre-stamped flat coil strip.

Materials Plated:

Copper, Copper Alloys, Steel, Stainless Steel and Aluminum.

Plating:

- **100% Tin:** Bright and Matte finish up to 12.625 in. wide.
- **Tin/Lead (Solder):** Matte finish 60/40, 63/37, 90/10, 95/5, 97/3, 94/6, 93/7 to 6.50 in. wide.
- **Nickel:** Bright and Matte finish up to 6.50 in. wide.
- **Copper:** Matte finish to 12.625 in. wide.

Underplating:

- **Copper** is available as an under-plate for copper and copper alloys to 12.625 in. wide.
- **Nickel** as an under-plate for copper, copper alloys, steel & stainless steel to 6.50 in. wide.
- **Wood's nickel** is available for steel and stainless steel to 12.625 in. wide.

Size Range:

Coil size up to 50 in. diameter incoming and 52 in diameter outgoing,
 Strip widths from approx. 0.25 to 12.625 in. wide. Call for widths below 0.25 in.
 Inside Diameter (ID) Incoming: 8 to 20 in.
 Inside Diameter (ID) Outgoing: 6, 12, 16 & 20 in.

General width, gauge and hardness guidelines.

Width Range	Gauge Range	Hardness
.25 - .99	.003 - .090+	
1.0 - 8.0	.003 - .064	.003 - .008 1/2 hard or harder. .046 - .090+ 1/2 hard or softer.
8.01-12.50	.007 - .040	.007 - .010 1/2 hard or harder.

Paper interleaf capability:	Interleaf supplied by customer
Plating Thickness:	Per customer specifications.
Skid/Coil weight:	Up to 6,000 pounds max.

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PLATING PRODUCTS

FINISH PLATING

TIN: A ductile, non-toxic metal generally used to improve corrosion resistance and maintain solderability of the base metal.

Matte Acid Tin (RoHS compliant)

Whitish/grey matte surface appearance. Softer than bright tin. Larger grain size and lower internal stress than bright tin. 99.98+ percent Tin. Compatible with lead-free and leaded solders. Better solderability than bright tin. Rougher surface finish and higher coefficient of friction than bright tin.

Bright Acid Tin (RoHS compliant)

Shiny/bright surface appearance. Harder than matte tin. Smaller grain size and relatively higher internal stress deposit than matte tin. 99.8+ percent Tin. Compatible with lead-free and leaded solders. Smoother surface finish and lower coefficient of friction than matte tin.

Specifications: ASTM B545 Type I (Electrodeposited), MIL-T-10727

TIN/LEAD : Low melting temperature and good flow characteristics make this finish popular for solderability. Resists whisker formation. Tin/Lead finishes are NOT RoHS-compliant.

Matte Tin/Lead

Available in a variety of alloy ratios.

Specifications: ASTM B579, MIL-P-81728

NICKEL: Used to provide a decorative, wear resistant, corrosion resistant and anti-tarnishing surface with high temperature resistance.

Matte (Ductile) Nickel

Compliant with ASTM B689 Type 1 bath requirements. Provides a highly ductile deposit.

Bright Nickel

Compliant with ASTM B689 Type 2 bath requirements. Provides a harder, reflective nickel surface.

Specifications: ASTM B689, QQ-N-290

COPPER: A ductile metal used as a decorative finish or to provide improved conductivity.

Matte Copper

Our standard copper under-plate can also be applied as a finish plate. An anti-tarnish agent is applied to inhibit corrosion.

Specifications: ASTM B734, MIL-C-14550

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PLATING PRODUCTS (Cont'd)

UNDER-PLATING

COPPER: Applied under tin or nickel to improve ductility and adhesion of finish plating during part formation. Required to inhibit zinc migration (diffusion barrier) per ASTM B545 on certain alloys.

NICKEL (SULFAMATE): An optional solution to inhibit zinc migration (diffusion barrier) per ASTM B545. Can also be used to reduce stresses in tin plating (believed to play an important role in whisker formation) caused by the formation of the inter-metallic bond with copper alloys.

NICKEL (WOODS FLASH): Used as a preparatory layer to provide adhesion to stainless steel and nickel-bearing alloys.

ASTM SPECIFICATIONS FOR PLATING ANODE METALS

TIN	B339
TIN/LEAD	B32
NICKEL	B39
COPPER	B170

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PLATING PRODUCTS / MATERIAL MATRIX

Customer Base Metal	Underplate	Plating	Width (Max.)
Copper and Copper Alloys	Nickel Flash/Copper	Tin (Bright, Matte)	12.625"
	Copper and/or Sulfamate Nickel	Tin (Bright, Matte)	6.50"
		Tin / Lead (Matte)	
Stainless Steel & Nickel-bearing Alloys	Woods Nickel Flash	Copper (Matte) and/or Tin (Bright, Matte)	12.625"
		Tin / Lead (Matte)	6.50"
Cold-Rolled Steel	Woods Nickel Flash	Copper (Matte) and/or Tin (Bright, Matte)	12.625"
		Tin / Lead (Matte)	6.50"
Aluminum Alloys	N/A	Tin (Bright, Matte)	6.50"

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PLATING THICKNESS SPECIFICATIONS MINIMUM RANGE GUIDELINES

Use the tables below to determine minimum Tin plating thickness range based on material gauge, your minimum plating thickness requirement and strip width. Plating range values are in micro-inches.

Table 1. Thin gauge material, full width required.

.004 - .020" Gauge Minimum Plating Thickness	Material Width			
	0-3"	3-6"	6-8"	>8"
<100 uin.	50	50	40	40
100-300 uin.	100	100	75	75
> 300 uin.	150	150	125	125

Table 2. Thick gauge material, full width required.

> .020" Gauge Minimum Plating Thickness	Material Width			
	0-3"	3-6"	6-8"	>8"
<100 uin.	40	40	40	40
100-300 uin.	100	100	75	75
> 300 uin.	150	150	150	150

Table 3. Thin gauge material, edge to be slit.

.004 - .020" Gauge Minimum Plating Thickness	Material Width			
	0-3"	3-6"	6-8"	>8"
<100 uin.	40	40	30	30
100-300 uin.	75	75	60	60
> 300 uin.	100	100	100	100

Table 4. Thick gauge material, edge to be slit.

> .020" Gauge Minimum Plating Thickness	Material Width			
	0-3"	3-6"	6-8"	>8"
<100 uin.	30	30	30	30
100-300 uin.	60	60	60	60
> 300 uin.	125	125	125	125

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