

High Tech Brilliance

What is the hot new look that innovative electronics are wearing these days?

Anodized Aluminum!

Continuous-coil anodized aluminum adds excitement to all aspects of electronics, from the back light behind your computer screen to the metal brushed look on the front of your XM radio receiver. And aluminum is non-conductive and heat absorbing, making it an excellent material choice for any electronics application.

Create some Hi-Tech brilliance with anodized aluminum!

Why Not Anodized?

Decorative Electronics Solutions

- Cell Phone and PDA Skins
- Electronics Equipment Face Plates
- Electronics Storage Cabinets

Data Storage Solutions

- Shutter Doors for Data Storage Discs
- Back Plates

Functional Electronic Solutions

- Back Light / LCD (Liquid Crystal Display) Solutions
- Printed Circuit Boards
- Heat Sync Alternatives



Product Solutions

Product	UV Stable	Product	UV Stable
Commercial Gauge Products			
AlumaPlus Long Line Brush	N	ColorIn – Black	Y
AlumaPlus Matte Mill Finish	N	ColorIn – Extra Light Bronze	Y
AlumaPlus Short Line Brush	N	ColorIn – Light Bronze	Y
AlumaPlus Micro	N	ColorIn – Medium Bronze	Y
AlumaPlus Polished Mill Finish	N	ColorIn – Dark Bronze	Y
		ColorIn – LA Extra Dark Bronze	Y
BlackBrite	N		

Product Solutions

Product	UV Stable	Product	UV Stable
Commercial Gauge Products			
ClearBrite	Y	GoldBrite	Y
ClearBrite Ultra	Y	GoldBrite Ultra	Y
ClearBrite Brushed Short Line	Y	GoldBrite Brushed Short Line	Y
ClearMatt	Y	GoldMatt – Medium Gold	Y
ClearMatt Brushed Short Line	Y	GoldMatt – Dark Gold	Y
ClearMatt Micro	Y	GoldMatt Micro	Y
		GoldMatt Brushed Short Line	Y
CopperBrite	N		
CopperMatt Brush	N	SmokeBrite	N
CopperMatt Micro	N	SmokeMatt Brushed Short Line	N
		SmokeMatt Micro	N
Note: ColorIn products available on Mill Finish, Short Line Brush and MicroMatt aluminum finishes.			
Foil Gauge Products (Lamina)			
AlumaPlus Long Line Brush	N	NaturalMatt 50 Gloss	Y
AlumaPlus Polished Mill Finish	N	NaturalMatt 90 Gloss	Y
		NaturalMatt Butler Brush	Y
GoldMatt Butler Brush	Y	NaturalBrite Butler Brush	Y
GoldBrite Butler Brush	Y		
Functional Product Solutions			
AnoGrip	Y	Adhere	Y
High Strength Anodized Solutions			
MacPac-S Products			

Product Enhancements, Standards & General Information

Adhere	Most interior grade products are available with Adhere on the backside. Additional charges and minimum order quantities apply to all products with Adhere.
Color Stability	Not all products in our portfolio are UV stable and will fade with direct exposure to sunlight over time. These products are identified in the Product Solutions section of this file as well as on their respective SpecData sheets. If additional coatings will be applied to your finished product, consider utilizing an UV stable coating to maintain the anodized color.
Crazing	Crazing is a natural reaction of the anodic film when bent beyond its capabilities. We recommend using thinner anodic film products for end applications that require a high degree of bending and/or forming. In addition, for high touch end applications, we recommend a matte or brushed aluminum finish to soften the appearance of finger prints and other oils transferred from human skin onto the metal surface.

Product Enhancements, Standards & General Information

Forming Capabilities	Most standard Lorin products are produced using half-hard to full-hard tempers. Better forming tempers are available for applications such as formed cellular phone and PDA skins upon request. Minimum order quantities on an ingot may apply.
High Strength Aluminum Options	Lorin now features MacPac-S products featuring a high strength aluminum anodized to your specifications. Not all gauges and widths are stocked. Inquire through Sales / Inside Sales.
Material Inspection	Material is reviewed for visual consistency from edge to edge at a distance of 5 feet or 1.5 meters looking straight at the material hanging from a vertical surface.
Surface Protection	Lorin recommends that surface protection be applied to all specular / high reflective finish products as well as any anodized product with a thin anodic film to reduce surface scratching during the production process.
Visual Standards & Limitations	Due to deviations which are inherent to the raw aluminum surface, anodized aluminum products may display a range of color shades which do not indicate a product defect. Please confirm with your Inside Sales / Sales Manager if your order is for standard inventory stock or a specific product that requires consistency throughout. Aluminum finishes are directional by nature and may show a color shift or shift in visual appearance when viewed at different angles. Please communicate running direction at time of assembly or finished product production.

Fabrication Characteristics

Bending (Brake Press)	<ul style="list-style-type: none">• Handling pre-anodized stock has been found to be similar to handling other metals.• Half hard tempers are most often used because of their formability and structural integrity.• Where possible, use scrap material to adjust the depth of stroke required to accomplish the desired bend.• Gradual bending of the material will help to minimize crazing of the anodic film.• Strippable surface protection will protect the anodized surface during the bending process.
Laminating	<ul style="list-style-type: none">• Polyfilm surface protection is helpful and can be left on throughout the production process.• Clean the substrate with a clean brush prior to laminating.• Cut the sheet to size using sharp shears or a saw.• Consider experimenting with saw and feed speed on scrap material prior to full production runs.• Cut into the sheet so that the rough edges are on the back-side.• Spray-guide contact adhesives work best. Apply them on the anodized aluminum first, then on the core material.

Fabrication Characteristics

Roll Forming

- In many cases, no tooling changes are required when transitioning from other metals to anodized aluminum.
- Pre-anodized aluminum will take all minimum bend-radii as specified by the Aluminum Association.
- As with other metals, tooling should be kept polished.
- Chrome-plated rolls typically perform the best.
- Using surface protection will sometimes eliminate the need for lubricants.

Stamping & Blanking

- No major modifications in tool design are necessary.
- Consider reducing male-female die clearance to 2%-8%.
- Keep dies sharp.
- Consider adding a looping pit ahead of the press allows for smooth coil feeding.
- Synthetic grippers on feed work best.
- Lubricants may be eliminated, depending on the process.
- Use lint-less gloves when handling pre-anodized stock.
- Anodized blanks are protected and stackable.

Lorin Industries has enjoyed a rich history since 1943. Our world leadership in metal finishing continues through innovation and creativity, keeping us at the leading edge of technology.

Our success can be attributed to Lorin's people – our greatest asset. We strive to meet our customer requirements without fail and to identify new ways that we can work together to enhance our customers success.

