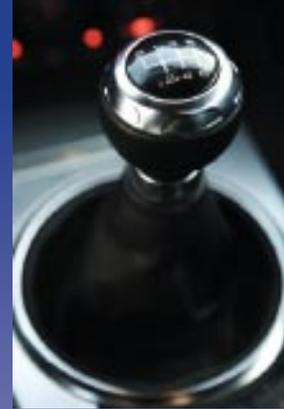


Automotive & Transportation Solutions

ADD SOME SIZZLE TO YOUR RIDE

Add some sizzle to your car interior, the local bus or perhaps a Boeing interior.



Anodized Aluminum

The metal look is hot in the automotive and transportation industry and at one third the weight of other metals, anodized aluminum makes more and more sense.



Continuous-coil anodized aluminum adds excitement to every automotive & transportation project.
Create something brilliant with anodized aluminum.

 **Lorin**
*Infinite possibilities
in aluminum finishing solutions*

Why Not Anodized?

Why Not Anodized?	Automotive & Transportation Solutions	
	Dashboard and Control Panel Components	Interior Decorative and Functional Trim Components
	Emblems	Interior Dome Light Reflectors
	Head Light and Brake Light Reflectors	Mass Transit Rest Room Partitions
	High Pressure Laminate Panel Applications	Mass Transit Window Spacer Bar
		VIN Tags

Product Solutions

Product	UV Stable	Product	UV Stable
Decorative Product Solutions			
AlumaPlus Long Line Brush	N	BlackBrite	N
AlumaPlus Matte Mill Finish	N		
AlumaPlus Short Line Brush	N	ColorIn – Black	Y
AlumaPlus Micro	N	ColorIn – Extra Light Bronze	Y
AlumaPlus Polished Mill Finish	N	ColorIn – Light Bronze	Y
		ColorIn – Medium Bronze	Y
ClearBrite	Y	ColorIn – Dark Bronze	Y
ClearBrite Ultra	Y	ColorIn – LA Extra Dark Bronze	Y
ClearBrite Brushed Short Line	Y		
ClearMatt	Y	GoldBrite	Y
ClearMatt Brushed Short Line	Y	GoldBrite Ultra	Y
ClearMatt Micro	Y	GoldBrite Brushed Short Line	Y
		GoldMatt – Medium Gold	Y
CopperBrite	N	GoldMatt – Dark Gold	Y
CopperMatt Brush	N	GoldMatt Micro	Y
CopperMatt Micro	N	GoldMatt Brushed Short Line	Y
SmokeBrite	N		
SmokeMatt Micro	N		
SmokeMatt Brushed Short Line	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		Note: Available in long line and short line brushed and mill finish aluminum with any Lorin standard or custom color.	



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.
High Pressure Laminate Applications	<p>Lorin products have successfully performed within High Pressure Laminate (HPL) process under the following conditions:</p> <ul style="list-style-type: none">• High Pressure / High Heat• Bonded with a phenolic resin soaked core sheet. <p>We encourage you to purchase a small quantity of anodized aluminum to confirm product performance within your own process prior to ordering full production quantities.</p>
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)**
- 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**
- 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.
- 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 to allow 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.



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