

Brighter ideas with aluminum.



## Novelis Specialty Aluminum Finishes for Building and Architectural Applications

Aluminum is one of the most flexible and sustainable building solutions available. Novelis specialty finishes merge color and texture along with the basic benefits of aluminum - resulting in a cost efficient, versatile and sustainable material for both interior and exterior building and architectural applications.

Novelis decorative aluminum finishes and coatings product line was expressly created to provide architects, designers and metal fabricators with an aesthetically appealing solution to enhance and protect structures. Novelis decorative aluminum finishes are a perfect choice for high-end projects that require a durable and light material coupled with a modern, attractive look. Novelis decorative finishes are available in a myriad of semi-transparent patterned metallic surface colors perfectly suited for a variety of interior and exterior applications.

### Coil Coating Advantages

Novelis decorative aluminum finishes are produced by a coil coating process. Compared with a post painted material, coil coating can improve productivity, improve quality, and decrease cost and environmental emissions.

### Metal Patterns

To create the most dramatic effect on your project, Novelis decorative aluminum finishes and coatings are available in mill finish, preferred finish, brushed finish and micro-matte. The brushed finish product is regularly offered in two standard finishes: long and short strokes. Customized patterns are available upon request.



Novelis is the global leader in aluminum rolled products and aluminum can recycling. Operating 33 manufacturing facilities in 11 countries, with more than 12,700 dedicated employees, we are the only company of our size and scope focused solely on aluminum rolled products.

Our facilities are among the most modern in the industry, producing efficient, high-quality products around the world, holding leading positions in recycling, casting and rolling technologies.

### Discover the Novelis Advantage

- Worldwide leader in aluminum fabrication
- Proven leader in industrial and commercial applications
- Excellent technical support and responsive customer service
- Leading position in R&D and product development

### Typical Applications

- **Architectural Applications**
  - Wall panels, partitions, column wrapping, ceilings, elevators, clean rooms, kiosks, signage
  - Signage, kiosks, corporate identity
- **Appliances**
- **Lighting**

#### Architectural Applications (AAMA 2603)

<b>Impact Resistance</b>	No removal of film at 100 foot pounds reverse impact
<b>Chemical Resistance</b>	No effects of exposure to muriatic acid or mortar
<b>Detergent Resistance</b>	No loss of adhesion, blistering or visual change after exposure to detergent solution for 72 hours at 100 °F
<b>Corrosion Resistance:</b>	
1. Humidity Resistance	No blister formation after 1500 hours at 100 °F at 100% RH
2. Salt Spray Resistance	Rating 10 (No creepage from the scribe line) after 1500 hours neutral salt spray (ASTM B 117)
<b>Outdoor Exposure</b>	One year Florida exposure is underway
<b>Other Tests</b>	
<b>Cure</b>	100 double MEK rubs
<b>T-bend</b>	1 (for AA3003-H14 or 5205-H14 at 030 gauge)
<b>Food Staining</b>	No staining after 72 hours exposure per ASTM D1308
<b>Abrasion Resistance</b>	8.3 mg/100 cycles (Taber test)
<b>Heat Endurance</b>	1. No color change after 14 days at 170 °F 2. Gloss and color change meet requirements per 50 cycles of exposure to ASTM D2485 (maximum temperature 300 °F)
<b>Filiform Corrosion Resistance</b>	No corrosion after ASTM D 2803 exposure

Note: These charts reflect general available characteristics within the Novelis product offering. Refer to technical data sheets for individual products.

## Novelis Brushed Finishes

Novelis Brushed Finishes are ideal for creating products that convey a high-tech look and elegant metallic finish for the end-users. Whether it be lighting, interior applications or other architectural applications, Novelis Brushed Finishes are the right solution in terms of look, design flexibility, safety, and weight.

### Typical Applications

- Lighting fixtures, column covers
- Suspended ceilings, elevators
- Decorative trim
- Retail displays/cases

### Typical Values

Finish	R <sub>a</sub> (μm)	R <sub>z</sub> (μm)	R <sub>t</sub> (μm)	STIR (20)	STAR (20)
Long Line	1.47	12.4	13.5	5.2	0.037
Short Line	1.52	13.8	15.6	1.9	0.27
Mill	0.45	4.0	5.1	1.4	0.5
Micro-Matte*	4.5	25	30	N/A	N/A

Note:

R<sub>a</sub> = Average roughness (μm)

R<sub>z</sub> = Average peak to valley high (μm)

R<sub>t</sub> = Maximum peak to valley high in the measurement length (μm)

\* = Roughness can be modified to meet specific requirements.

To insure consistent product quality, Novelis introduced two new parameters to clearly define different brushed surface finishes offered:

**Surface Texture Isotropy Ratio - STIR (20).** This number measures the surface roughness directional relationship.

The higher the number, the longer the lines are.

**Surface Texture Anisotropy Ratio - STAR (20).** This number measures the length of the brush line in the rolling direction.

The higher the number, the shorter the lines are.



### Product Availability

	Coil or Sheets
<b>Alloy</b>	It can be applied to most alloys and tempers
<b>Thickness</b> (inches)	0.010 – 0.250
<b>Width</b> (inches)	Up to 74
<b>Coil ID</b> (inches)	20 or 24
<b>Coil Max Weight</b> (lb)	40,000

## Novelis Micro-Matte Aluminum Sheet

Novelis micro-matte aluminum sheet was created to provide architects, designers and metal fabricators with an aesthetically appealing aluminum sheet product. Novelis micro-matte enhances the optical characteristics of aluminum sheet, providing a touch of timeless beauty. An integral part of any design, Novelis micro-matte is a perfect choice for high-end projects that require a durable and light material coupled with a modern, attractive look. Novelis micro-matte aluminum sheet is available in a variety of semi-transparent, metallic surface colors perfectly suited for a variety of interior and exterior applications.

- Uniform, nondirectional surface finish
- Well suited for anodizing (clear or tinted) or painting (semi-transparent)



Ask about Novelis Fusion™ multi-alloy aluminum sheet products for applications outlined in this catalog. Produced with our breakthrough process, the sheet is comprised of a core of one aluminum alloy clad with one or more layers of a different aluminum alloy(s). The process essentially creates a perfect metallurgical bond between the layers of the clad sheet. This permits customized alloy combinations never before possible, providing enhanced aluminum sheet performance. With Novelis Fusion™, choosing between aluminum sheet attributes doesn't have to mean compromise. Novelis Fusion™ - the new aluminum.



# Novelis Anodizing Quality (AQ) Aluminum Sheet

## Architectural AQ and Guaranteed AQ

Novelis AQ product offerings sheet is the perfect substrate to be processed by both coil and batch anodizing to obtain excellent color uniformity, surface appearance and reflectivity. Novelis AQ Sheet affords end-users a cost-effective material with long life and easy maintenance. Novelis Architectural AQ Sheet is a premium anodizing quality sheet, specifically designed for the demanding requirements of modern architectural applications - both exterior and interior. Novelis Architectural AQ Sheet is also backed by warranty<sup>1</sup>. Novelis Guaranteed<sup>2</sup> AQ Sheet is intended for a wide range of consumer and industrial applications such as building exteriors, appliances, interior decor, and lighting fixtures.

## Anodizing Benefits

- Excellent corrosion resistance, resists fingerprints
- More scratch resistant than paint, non-toxic coating
- Resistant to high temperatures
- Many color options available
- Color stability

## Product Availability

	Coils or Sheets
Thickness - Architectural AQ	0.032" – 0.125"
Thickness - Guaranteed AQ	0.010" – 0.125"
Width	Up to 73"
Coil ID	20" or 24"
Coil Max Weight	40,000 lbs.

### Alloy 5205 Composition % - Maximum unless indicated:

Si	Fe	Cu	Mn	Cr	Ni	Zn	Ti	Each	Other
0.15	0.7	0.03 - 0.10	0.10	0.10	—	.05	—	.05	.15

## Properties: Typical Values

AA 5005 or 5205 H34 <sup>3</sup>			
Thickness (inches)	Tensile Strength ksi	Yield Strength ksi (min.)	Elongation % (min.)
<b>Guaranteed AQ</b>			
.010 – .012	20.0 – 26.0	15.0	2
.013 – .031	20.0 – 26.0	15.0	3
<b>Architectural AQ &amp; Guaranteed AQ</b>			
.032 – .050	20.0 – 26.0	15.0	4
.051 – .113	20.0 – 26.0	15.0	5
.114 – .125	20.0 – 26.0	15.0	6

AA 5005 or 5205 H14 <sup>3</sup>			
<b>Guaranteed AQ</b>			
.010 – .031	21.0 – 27.0	17.0	1
<b>Architectural AQ &amp; Guaranteed AQ</b>			
.032 – .050	21.0 – 27.0	17.0	2
.051 – .113	21.0 – 27.0	17.0	3
.114 – .125	21.0 – 27.0	17.0	5

<sup>1</sup> Novelis AQ sheet is guaranteed to anodize free of streaks. Since many variables can influence the final appearance of anodized sheet, the ultimate customer and anodizer should approve a range of acceptable color uniformity. Color uniformity requirements for a specific project should be discussed with your Novelis sales representative prior to placing orders to ensure optimum uniformity.

<sup>2</sup> Novelis Guaranteed AQ covered under separate warranty. Visit website for information.

<sup>3</sup> Novelis 5005 and 5205 alloys will meet the requirements of ASTM B209- 5005 H14 or 5005 H34. Certification provided upon request.

# Novelis Painted Aluminum Products

Novelis offers a variety of painted aluminum products. A leader in the demanding European painted market, Novelis combines its proven experience, research and development capabilities, and quality customer service to supply customers in North America with painted aluminum product solutions.

## Product Availability

### Paint Systems

- Polyesters, Modified Polyesters, Polyurethanes
- Acrylics, Epoxys, Fluorocarbons, Vinyls
- Variety of colors

## Typical Applications

- Building and construction, signage
- General industrial applications
- Metal ceilings, fascia, downspouts and soffits

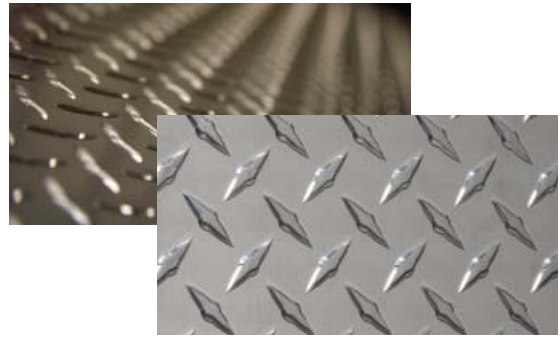


## Product Range

Coils or Sheets	
Thickness (inches)	0.010 – 0.160
Width (inches)	Up to 62

Slitting and Protective Film Available

# Novelis Tread & Bright Tread Aluminum Sheet/Plate



## Typical Applications

### Storage/Other

- Tool boxes, product displays, signage, cabinetry

### Industrial/Comm.

- Skid resistant flooring & stairs, chair rails, kick plate

## Characteristics

- Skid resistance, durability, corrosion resistance, weldability
- Attractive appearance

## Chemistry

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Each	Total	Aluminum
3003	0.6	0.7	.05-2.0	1.0-1.5	-	-	.10	-	.05	.15	Remainder
3004	.30	0.7	.25	1.0-1.5	.8-1.3	-	.25	-	.05	.15	Remainder
4015A	1.4-2.2	0.7	0.35	0.6-1.2	0.10-0.50	0.05	0.2	0.05	0.05	0.15	Remainder
5052	.25	.40	.10	.10	2.2-2.8	.15-.35	.10	-	.05	.15	Remainder
6061	.4-.8	0.7	.15-.4	.15	.8-1.2	.04-.35	.25	.15	.05	.15	Remainder

## Availability & Properties

Alloy	Temper	Thickness <sup>1</sup>	Width	Tensile Strength (ksi)	Yield Strength (ksi)	Elongation (%)
<b>Bright Finish</b>						
3003	H22	.056"-.063"	up to 70"	17.0 min.	12.0 min.	7-9
<b>Mill Finish</b>						
3003	H22, H34	.056"-.125"	up to 70"	17.0 min.	12.0 min.	5-7
3004	H22, H34	.056"-.125"	up to 70"	28.0 min.	21.0 min.	4-6
4015A	H22, H32, H34	.056"-.125"	up to 70"	19.0 min.	15.0 min.	5-6
5052	H22, H32, H34	.056"-.125"	up to 70"	17.0 min.	12.0 min.	5-10
6061	O	.056"-.125"	up to 70"	22.0 max.	12.0 max.	16

<sup>1</sup> "Full Commercial" tolerance, other thicknesses available by inquiry.

# Novelis One-Side Bright Aluminum Sheet

## Typical Applications

- Decorative interior trim/banding
- Nameplates & emblems
- Point of purchase & retail displays
- Decorative electronics cases, skins & emblems

## Characteristics

- Good reflectivity, uniform appearance/color, high image quality

## Chemistry

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Each	Total	Aluminum
3003	0.6	0.7	0.05-0.20	1.0-1.5	-	-	.10	-	.05	.15	Remainder
1100	.95 Si + Fe		0.05-0.20	0.05	-	-	.10	-	.05	.15	99.00 min.

## Availability & Properties

Alloy	Temper	Brightness <sup>2</sup>	Thickness	Width <sup>3</sup>	Tensile Strength <sup>4</sup> (ksi)	Yield Strength <sup>4</sup> (ksi)	Elongation <sup>4</sup> (%)
3003	H25	A, B	< .040"	up to 52"	22 min.	-	1-4
1105	H18	A	< .040"	up to 52"	22 min.	-	1-4

2. A = suitable for surface critical, appliance-grade applications, B = semi-bright.

3. Inquiries up to 60".

4. Properties represent AA standards, exceptions by inquiry.

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