

Alcoa's 5xCE1 aluminum sheet has a superior anodizing quality that can match any color need and produce an attractive, hi-tech appearance. The finishing quality of this alloy is exceptional and the sheet can be finished in a variety of textures. Pre-polished/mirror finish is also available in coil form so there is no need to take an extra step in the finishing process.

Application

5xCE1 is an excellent choice for larger electronics like notebook computers and televisions. Its unique properties allow for final products to be anodized brilliantly and to be chemically etched or embossed. Alcoa offers multiple tempers for this alloy:

- >> 5xCE1 H242 – Higher formability, but least dent resistance
- >> 5xCE1 H25 – Balance of strength and formability
- >> 5xCE1 H28 – Lower formability, but highest strength

Finishing

5xCE1 is Alcoa's best 5xxx series aluminum alloy with regard to finishing characteristics. Mechanical finishes such as brushing, blasting, grinding, polishing and others are readily applied to this alloy and provide highly satisfactory results. Manufacturers have had excellent results using 5xCE1 with chemical etch. After etching, 5xCE1 has demonstrated superior color and brightness compared to 5052.

Anodizing Quality – 5xCE1 vs. 5052: 5xCE1 can be anodized to achieve an excellent bright finish with or without various colors, superior to 5052.

The aesthetic surface quality can be quantitatively measured using optical instruments such as gloss and color meters. The anodizing response of 5xCE1 versus 5052 aluminum alloys was evaluated under two different conditions:

1. As-rolled starting surface condition, bright-dipped and anodized to 7.5 micron oxide thickness
2. Polished starting surface condition, bright-dipped and anodized to 7.5 micron oxide thickness

In addition, the visual clarity of the 5xCE1 alloy was superior to 5052.

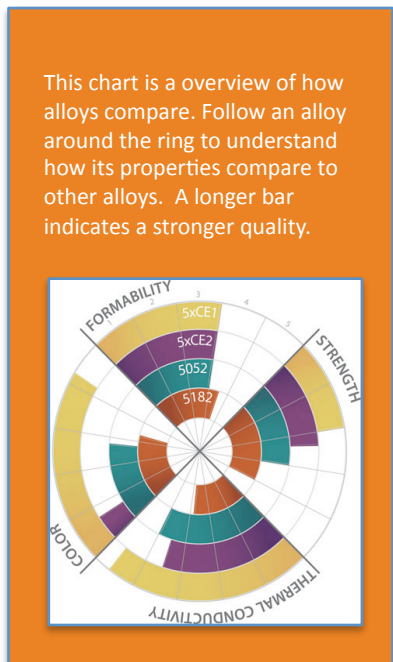
	Alloy	60° Gloss	Image Clarity ¹
7.5 µm oxide (as rolled)	5xCE1	7.6	8.3
	5052	2.7	8.6
7.5 µm oxide (polished)	5xCE1	73.1	78.6
	5052	25.6	16.2

¹Also known as distinctness of image. 100 = perfect mirror.



5xCE1 | 5052

- >> Best for mirror finish applications
- >> Excellent anodizing characteristics
- >> Most vibrant colors
- >> 3x brighter and clearer than 5052 alloy



Forming / Machining

TYPICAL BEND PERFORMANCE DATA:

Bending performance is dependent on the gage of material used (at 0.76 mm):

Alloy & Temper	Bend Radius (Radius/Thickness)	Springback (Deg)
5xCE1-H242	0t	Results Pending
5xCE1-H25	0t	Results Pending
5xCE1-H28	1.5t	Results Pending
5052-0	0t	Results Pending
5052-H32	0t	Results Pending

Mechanical and Thermal Properties

5xCE1 sheet products lack some of the strength characteristics of 5052. Thus, 5xCE1 is best suited for applications where superior aesthetics must be combined with reasonable mechanical properties. Typical properties are compared to 5052:

Alloy Temper	Tensile Strength		Yield Strength		Elongation	Thermal Conductivity ²
	MPa	KSI	MPa	KSI	% in 2" ³	BTU in/hr-ft ² F
5xCE1-H242	124	18			16%	1420
5xCE1-H25	159	23	138	20	12%	1420
5xCE1-H28	193	28	165	24	7%	1420
5052-0	193	28	90	13	25%	960
5052-H32	228	33	193	28	12%	960

Environmental

Aluminum is infinitely recyclable, and nearly 75% of all aluminum ever produced since 1888 is still in use today. Recycling aluminum uses 95% less energy and produces 95% less greenhouse gas emissions than making metal from new materials. 5xCE1 continues this tradition as a durable and fully recyclable product.

Availability

5XCE1 is available in a number of standard widths, tempers and gauges.

Alloy	Tempers	Gauges	Widths	Form
5xCE1	H242, H25, H28	0.014"-0.040" 0.35-1.01mm	Up to 48" Up to 1219mm	Coil or Sheet

For requirements outside of standard dimensions, please contact your Alcoa sales representative.

²Measured at 77° F

³At thickness of 1.6 mm

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