

G.AL® C210R – mold plate

Plate's Characteristics	
Alloy:	EN AW/AA 5083
Type of Alloy:	non-heat-treatable
Temper:	homogenized and stress relieved, O3
Surface:	All sides sawn, roughness R _a 15 µm

Mechanical Properties ¹⁾		
Yield strength R _{p0.2}	[ksi]	16 – 19
Ultimate tensile strength R _m	[ksi]	33 – 42
Elongation A	[%]	10 – 15
Hardness HBW	[2.5/62.5]	68 – 73

Physical Properties ¹⁾		
Density	[lbs/cu in.]	0.096
Module of elasticity	[ksi · 10 ⁹]	10.2
Electrical conductivity	[% IACS]	29 - 32
Coefficient of therm. Expans.	[10-6/ °F]	13.1
Thermal conductivity	[BTU/ft hr °F]	64 – 75
Specific heat capacity	[BTU/ lb°F]	0.214

Characteristics:

- ✓ Extremely low-stress properties
- ✓ Very good dimensional stability
- ✓ Very good corrosion resistance
- ✓ Six-sides sawn surface

Applications:

- ✓ Mold-making
- ✓ Optical industry
- ✓ Medical technology
- ✓ Food industry
- ✓ Plant engineering, chemical industry
- ✓ Laser technology

Processing Characteristics ²⁾	
Dimensional stability	Excellent
Machinability	Very good
Erodability	Excellent
Weldability (Gas / TIG / MIG / Resistance / EB)	Good – Very good
Corrosion resistance (seawater / weather)	Excellent
Use at temperatures (max°F / long / short terms) ²⁾	356 / 536
Anodizing ³⁾	Very good
Polishability	Good
Etching	Poor
Contact with food (according to EN 602)	Yes

Tolerances			
Thickness in [in]	Flatness [in] ⁴⁾	Thickness [in]	Width & Length [in]
≤ 5.90	not specified	-0 / +0.100	-0 / + 0.790
> 5.90	not specified	-0 / +0.200	-0 / + 0.790
Cuts ≤ 5.90			DIN ISO 2768-1m
Cuts > 5.90			-0/ + 0.200

Standard Stock Sizes	
Plate Dimension [in]	Plate Thickness [in]
48.5 × 144.5	0.500 – 22.400
61.8 × 144.5	0.500 – 22.400
85.0 × 157.5	0.500 – 22.400
Other dimension upon request	

Date: October 27, 2023

1) Typical values at room temperature.

2) Without loss of strength after cooling down.

3) Technical anodizing only - no warranty towards optical demands

4) Surface flatness for whole plates is measured with a special, 1-meter long, digital flatness ruler

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