G.AL® C210R – sawed mould plate

Alloy's charcteristics	
Alloy:	EN AW-5083 [AlMg4,5Mn0.7]
Type of Alloy:	non heat treatable
Temper:	homogenized and stress relieved, O3
Surface:	six-sides sawed, roughness Ra 15 µm

Mechanical Properties 1)		
Yield strength $R_{p0,2}$	[MPa]	110 – 130
Ultimate tensile strength R_m	[MPa]	230 – 295
Elongation A_{50}	[%]	10 – 15
Hardness HBW		68 – 75

Physical Properties 1)		
Density	[g/cm³]	2,66
Module of elasticity	[GPa]	70
Electrical conductivity	[M/Ω·mm²]	16 – 18
Coeffic. of thermal expansion	[$K^{-1} \cdot 10^{-6}$]	23,3
Thermal conductivity	[W/m·K]	110 – 130
Specific heat capacity	[J/kg ·K]	900

Characteristics:

- ✓ Extremly low-stress properties
- ✓ Very good dimensional stability
- ✓ very good corrosiosion resistance
- ✓ available up to 1.100 mm thickness
- ✓ six-sides sawn surface

Applications:

- ✓ Mould-making
- ✓ Optical industry
- ✓ Medical technology
- ✓ Food industry
- ✓ Platn engineering, chemical industry
- ✓ Laser technology

Processing Characteristics 2)	
Dimensional stability	1
Machinability	2
Erodability	1
Weldability (Gas / TIG / MIG / Resistance / EB)	4 / 2 / 2 / 2 / 1
Corrosion resistance (seawater / weather/ stress cracking)	1 / 1 / 4
Use at temperatures (max °C long/short terms) 3)	180 / 280
Anodising (technical / decorative / hard-) 4)	2 / 4 / 2
Polishability	2 – 3
Etching	4 – 5
Contact with food (according to EN 602)	yes

Tolerances			
Thickness in[mm]	Flatness [mm/m]	Thickness [mm]	Length & width [mm]
≤ 150		-0/+2,5	-0/+20 / -0/+10
> 150		-0/+5	-0/+20 / -0/+10
Cuttings ≤ 150 mm			DIN ISO 2768-1m
Cuttings > 150 mm			-0/+5

Standard Stock Sizes		
Plate Dimension [mm]	1.520 x 3.020	
	1.590 × 3.670	
	2.160 × 4.000	
Plate Thickness [mm]	20 – 150 mm in 5 mm steps	
	160 – 220 mm in 10 mm steps	
	220 – 1070 mm upon request	
Other dimension upon request		

Date: 18.10.2023
1) Typical values at room temperature
2) Ratings evaluation rating from 1 (very good) to 6 (inapplicable)
3) Without loss of strength after cooling down..
4) Technical anodising only - no warranty towards optical demands