thyssenkrupp Materials (UK) Ltd

AMAG TopPlate® EN AW-5083

Material Data Sheet

Properties

Due to the appropriate homogenization of the EMC cast ingots, AMAG TopPlate® is guaranteed stree-free and therefore offers excellent dimensional stability and strength.

Availability

Plates in thickness from 8-210mm in different variations:

- AMAG TopPlate® C - cast plates, sawn on both sides
- AMAG TopPlate® CM - cast plates, top and bottom surface machined
- AMAG TopPlate® RM - rolled plate, top and bottom surface machined

Supplied Forms

- Shate
- Plain sheet
- Plain sheet with a PVC coating on one side
- Stucco sheet
- Stucco sheet with a PVC coating on one side

Chemical Composition

Pursuant to EN 573-3 (weight %)

EN AW-5083	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others max.
Min				0.40	4.0	0.05			Each 0.05
Max	0.40	0.40	0.10	1.0	4.9	0.25	0.25	0.15	Total 0.15

Typical Mechanical Properties

	Direction	R_m (MPa)	$R_{po.2}$ (MPa)	A_5 (%)	HBW
AMAG TopPlate® C AMAG TopPlate® CM	90°	240	115	10	70
AMAG TopPlate® RM	90°	Acc. EN 485-2			

Physical Properties

Property	Value
Density	2.66 g/cm³
Melting Range	574 - 638 °C
Thermal Expansion Coefficient	23.8 x 10^{-6} /K
Modulus of Elasticity	ca. 70000 MPa
Thermal Conductivity 25°C	117 W/mK
Electrical Conductivity	16-19 MS/m

Processing Properties

Processing Properties	
Weldability	Good
Recommended Welding Filler	SG-A14,5MnZr
Machinability	Very Good
Anodising Ability	Technically Good

Corrosion Properties

In general, the corrosion resistance characteristics of EN Aw-5754 are excellent. However, joins with steel and other metals should be covered with surface protection and/or be electrically insulated, in order to minimise the contact corrosion of the aluminium. Moreover, special corrosion characteristics characteristics are dependent upon local factors.

Special Properties

- Excellent dimensional stability due to stress relief (homogenized)
- Closest dimensional tolerances (flatness, thickness)
- Homogeneous structure

Standards

- EN 485-2, EN 485-3 and EN 573-3

Areas of Application

- Mechanical engineering (plastics, printing and packaging machinery)
- Automotive industry tools
- Medical instrumenyts
- Housings, container and apparatus construction
- Food production machinery
- formed parts for heating and cooling systems
- Vacuum technology

Important Notice

Whenever a new application of this alloy is under consideration and this application involves special material properties, it is strongly recommended that the user consult the producer, in order to ensure precise and appropriate material selection.

	AMAG TopPlate® C	AMAG TopPlate® CM	AMAG TopPlate® RM
Thickness (mm)	8-210	8-210	8-000
Width (mm)	1000, 1250, 1500	1000, 1250, 1500	1000-1520
Length (mm)	2000-6050	2000-6050	2000-6600
Thickness Tolerance (mm)	+1 / -0	+1 / -0.1	+1 / -0.1
Length Tolerance (mm)	+4 / -0	+4 / -0	+4 / -0
Width Tolerance (mm)	+4 / -0	+4 / -0	+4 / -0
Diagonal Difference (mm)	≤ 2.4	≤ 2.4	≤ 2.4
Flatness (thickness ≤ 15mm/m)	≤ 0.8	≤ 0.15	≤ 0.35
Flatness (thickness ≤ 15mm/m)	≤ 0.5	≤ 0.15	≤ 0.20
Surface	Paper interleaved possible	Both sides machined film protection possible on one or both sides	Both sides machined film protection possible on one or both sides
Roughness (µm)		≤ 0.40	≤ 0.40
Edges	Sawn	Sawn	Sawn
Marking	Adhesive label	Adhesive label	Adhesive label

Editor

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Important Note

Information given in this data sheet about the condition or usability of materials respectively products are no warranty for their properties, but act as a description.
The information, we give on for advice, comply to the experiences of the manufacturer as well as our own. We cannot give warranty for the results of processing and application of the products.