DATA SHEETS
Aluminium

FORMODAL®

precision milled rolled plates

FORMODAL® BM-6082

rolled • precision milled on both sides • PVC coated

Applications:
- shipbuilding
- railed vehicles
- boiler and container construction
- aerospace
- military technology

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BIKAR METALS

FORMODAL® BM-6082 rolled · precision milled on both sides · PVC coated

CHEMICAL COMPOSITION

Aluminium and aluminium alloys

rolled · precision milled on both sides · PVC coated

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Alloy designation:

EN AW	Al Si1 Mg Mn
Old designation	Al Mg Si1
Material no. according to DIN	3.2315
Great Britain BS	H30
Italy UNI	9006/4
Spain	L-3453
Sweden	144212
Norway	
France AFNOR	A-SGM0,7
Colour code	RAL 5010 Gentian blue

Typical physical properties:

Density [g/cm³]		2,70
Elastic modulus [GPa]		70
Thermal conductivity [W/m*K]		170 – 220
Thermal expansion coefficient[$K^{-1}*10^{-6}$]	-50°C – 20°C	
	20°C – 100°C	23,4
	20°C – 200°C	
	20°C – 300°C	
Specific heat J/(kg * K)		896
Electrical conductivity [m/Ω*mm²]		24 – 32
Shear modulus [GPa]		26,4

Chemical composition[x] (EN 573-3):

Specifications in % Remainder: Aluminium												Other	
Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Ga	V	Note	Individual	Total[2]
0,70 – 1,3	0,50	0,10	0,40 – 1,0	0,60 – 1,2	0,25	-	0,20	0,10	-	-	-	0,05	0,15

x *Chemical specifications as perc. of weight. If no ranges are specified, the alloy content has the maximum value.*

2 *Includes all items listed for which no limit values are specified.*

Special features of this material:

- Precision milled plates
- Good corrosion resistance
- Good welding properties
- Curable alloy
- Good machinability

Applications:

- Shipbuilding
- Railed vehicles
- Boiler and container construction
- Aerospace
- Military technology

Available forms:

Plates · Cuttings · Circular blanks · Rings · Parts from drawings

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Heat treatment:

Soft annealing / recrystallisation annealing	
Annealing temperature	380°C – 420°C
Heating-up time	1 – 2 hours
Cooling conditions	≤ 30°C/h to 230°C + 3 – 5 hours hold time, below 230°C in air

Hardening	
Solution annealing	470°C – 480°C
Quenching	water
Natural ageing treatment	Artificial ageing is usual
Artificial ageing treatment	1. stage 110°C – 125°C · 12 – 24 hours 2. stage 165°C – 180°C · 4 – 6 hours

Other data:

Processing / machinability

Soft annealed	4
Work-hardened	-
Heat-treated	2
Dimensional stability	3 – 4
Erosion	1

Surface treatment

Anodising - (protective anodisation)	1
Special anodising quality (EQ)[EQ]	-
Anodising - decorative	3
Painting / coating	2
Polishing	1 – 2

Welding

		Filler metal
Gas	3	SG-Al Mg4 SG-Al Mg4,5Mn SG-Al Si5
WIG	2	
MIG	1	
Resistance welding	3	

Solder

Brazing with flux	3 – 5
Brazing without flux	4
Abrasion soldering	2
Soft soldering with flux	3

Corrosion resistance

In a normal atmosphere/ weather conditions	1
Sea water atmosphere	2

Metal forming

Cold forming		Delivery condition
Bending	3	T3 · T4
Pressure forming	2	O
Deep drawing (condition-based)	2	O
Upsetting (condition-based)	2	O
Impact extrusion	2	O
Hot forming		
Drop forging	2	
Extrusion moulding	2	
Hammer forging	2	

Suitable for food industry according to DIN EN 602	yes
Working temperatures	Long-term approx. 120°C – 135°C Short-term approx. 155°C – 170°C

Legend:

1	very good
2	good
3	moderate
4	poor
5	unsuited
EQ	anodising quality must be ordered separately and confirmed

Version 110916 - This data sheet replaces all previous versions.

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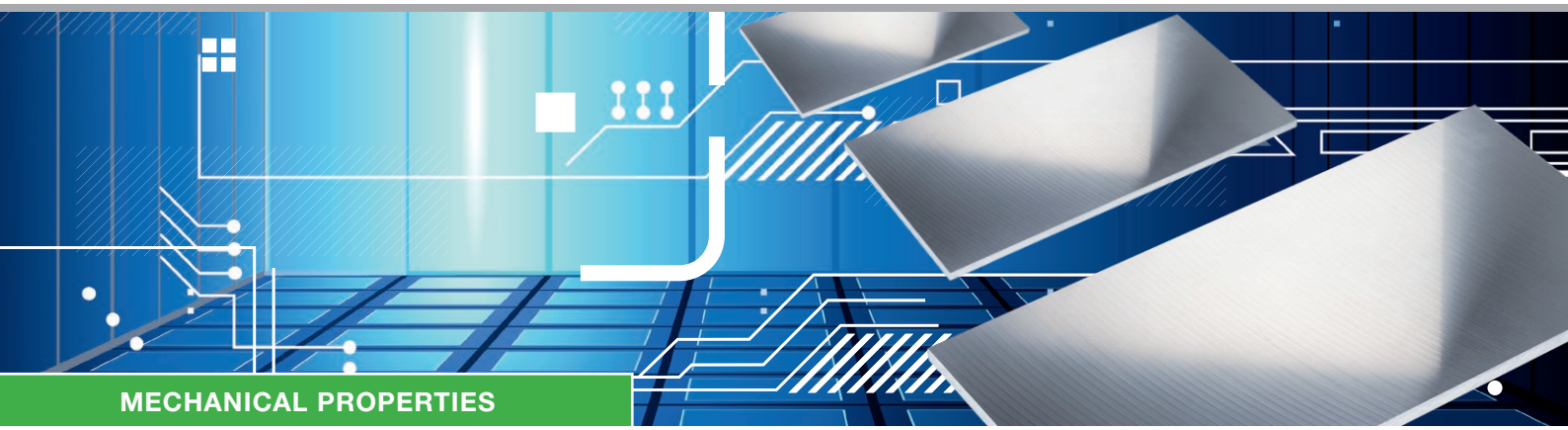

MECHANICAL PROPERTIES

Aluminium and aluminium alloys

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EN 485-2 Typical mechanical properties:

Delivery condition	Nominal thickness mm		Tensile strength R_m MPa		Elastic limit $R_{p0.2}$ MPa		Elongation % A50mm		Bending radius[9]		Hardness[9] HBW
	over	to	min.	typical	min.	typical	min.	typical	180°	90°	
T651	8,0	12,5	300	350	255	305	9	11	-	-	105
	12,5	25,0	295	350	240	305	8	11	-	-	105
	25,0	60,0	295	350	240	310	8	11	-	-	105
	60,0	100,0	295	350	240	310	7	11	-	-	105
	100,0	140,0	275	350	240	310	6	11	-	-	105

[9] *For information only*

We supply aluminium sheets and plates of alloy FORMODAL® BM-6082 in the following dimensions:

3020 x 1520 mm

Tolerances:

	Thickness tolerance	Flatness tolerance[1]
8-15 mm	±0,1 mm	max. 0,50 mm
15-140 mm	±0,1 mm	max. 0,35 mm

Other dimensions on request.

[1] This specification refers to the total area; not only to sections of a plate or a pre-cut part. By dividing the surface, the flatness is not reduced proportionately.

Surface roughness:	R_a 0,4 µm

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