

# DATA SHEETS

## Aluminium



precision milled rolled plates

# FORMODAL<sup>®</sup> BM-7075

rolled • precision milled on both sides • PVC coated

Applications:

- tool making, mould making, model making
- aerospace
- military technology

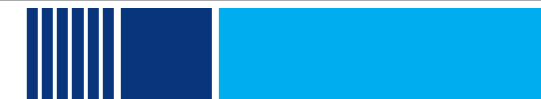


ALUMINIUM

COPPER

BRASS

BRONZE



## CHEMICAL COMPOSITION

### Aluminium and aluminium alloys

rolled · precision milled on both sides · PVC coated

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#### Alloy designation:

EN AW	Al Zn5,5 Mg Cu
Old designation	Al Zn Mg Cu1,5
Material no. according to DIN	3.4365
Great Britain BS	2L95
Italy UNI	9007/2
Spain	
Sweden	
Norway	
France AFNOR	A-Z5GU
Colour code	RAL 4005 Blue Lilac

#### Typical physical properties:

Density [g/cm³]	2,80	
Elastic modulus [GPa]	72	
Thermal conductivity [W/m*K]	130 – 160	
Thermal expansion coefficient [K <sup>-1</sup> *10 <sup>-6</sup> ]	-50°C – 20°C	21,6
	20°C – 100°C	23,4
	20°C – 200°C	24,3
	20°C – 300°C	25,2
Specific heat J/(kg * K)	862	
Electrical conductivity [m/Ω*mm²]	19 – 23	
Shear modulus [GPa]	27,1	

#### Chemical composition\* (EN 573-3):

Specifications in %												Remainder: Aluminium		Other	
Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Ga	V	Note	Individual	Total <sup>2</sup>		
0,40	0,50	1,2 – 2,0	0,30	2,1 – 2,9	0,18 – 0,28	-	5,1 – 6,1	0,20	-	-	<sup>3</sup>	0,05	0,15		

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

<sup>2</sup> Includes all items listed for which no limit values are specified.

<sup>3</sup> Sum for Zr+Ti max. 0,25. This applies to forged or extruded products when the value has been agreed upon between the customer and supplier.

#### Special features of this material:

- Precision milled plates
- Heat treatable alloy
- Very high strength
- Good machinability

#### Applications:

- Tool making, mould making and model making
- Aerospace
- Military technology

#### Available forms:

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

#### Heat treatment:

Soft annealing / recrystallisation annealing	
Annealing temperature	-
Heating-up time	-
Cooling conditions	-

#### Other data:

##### Processing / machinability

Soft annealed	-
Work-hardened	-
Heat-treated	2
Dimensional stability	4 – 5
<b>Erosion</b>	1

##### Surface treatment

Anodising - (protective anodisation)	3
Special anodising quality (EQ) <sup>EQ</sup>	-
Anodising - decorative	5
Painting / coating	3
Polishing	1

##### Welding

	Filler metal
Gas	5
WIG	5
MIG	5
Resistance welding	2

##### Solder

Brazing with flux	5
Brazing without flux	5
Abrasion soldering	5
Soft soldering with flux	5

#### Legend:

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

Hardening	
Solution annealing	-
Quenching	-
Natural ageing treatment	-
Artificial ageing treatment	-

#### Corrosion resistance

In a normal atmosphere/ weather conditions	3
Sea water atmosphere	4

#### Metal forming

Cold forming	Delivery condition	
Bending	4	O
Pressure forming	5	
Deep drawing (condition-based)	4 – 5	O
Upsetting (condition-based)	5	
Impact extrusion	5	
Hot forming		
Drop forging	4	
Extrusion moulding	4 – 5	
Hammer forging	4	

Suitable for food industry according to DIN EN 602	no
<b>Working temperatures</b>	Long-term approx. 90°C Short-term approx. 110°C – 125°C

The specifications in our data sheets are subject to correction and are only valid as references. Liability is excluded in this regard. We reserve the right to make changes to the standards and informative values. The agreements of our order confirmation are always authoritative. With regard to anodic oxidisability, we point out that we accept no liability for the anodisation result and the colour formation for decorative applications. The same applies to the corrosion resistance. Special arrangements must be made in writing.

# FORMODAL® BM-7075 rolled · precision milled on both sides · PVC coated



## MECHANICAL PROPERTIES

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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 %		Bending radius <sup>9</sup>		Hardness <sup>9</sup> HBW
	over	to	min.	max.	min.	max.	A50mm	A	180°	90°	
T7351	8,0	12,5	475	-	390	-	7	-	-	-	140
	12,5	25,0	475	-	390	-	-	6	-	-	140
	25,0	50,0	475	-	390	-	-	5	-	-	140
	50,0	60,0	455	-	360	-	-	5	-	-	133
	60,0	80,0	440	-	340	-	-	5	-	-	129
	80,0	100,0	430	-	340	-	-	5	-	-	126

<sup>9</sup>

For information only

#### We supply aluminium sheets and plates of alloy FORMODAL® BM-7075 in the following dimensions:

3020 x 1520 mm

#### Tolerances:

	Thickness tolerance	Flatness tolerance <sup>1</sup>
10-15 mm	±0,1 mm	< 0,8 mm
16-90 mm	±0,1 mm	< 0,5 mm

Other dimensions on request.

<sup>1</sup> 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  $\mu$ m

#### Available forms:

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