



CNC DIRECT

SUPPLIERS OF QUALITY CNC MACHINES & ACCESSORIES



Aluminium Formodal ®030 Properties and Applications

Alloy designation:

| | |
|-------------------------------|-----------------------|
| EN AW | 5083 |
| EN AW | Al Mg4,5 Mn0,7 |
| Old term | Al Mg4,5 Mn |
| Material no. according to DIN | 3.3547 |
| Great Britain BS | N8 |
| Italy UNI | 7790 |
| Spain | L-3321 |
| Sweden | 144140 |
| Norway | 17215 |
| France AFNOR | A-G4,5MC |
| Colour code | RAL 8002 Signal Brown |

Typical physical properties:

| | |
|--------------------------------------------------------------------|--------------|
| Density [g/cm ³] | 2,66 |
| Elastic modulus [GPa] | 70 |
| Thermal conductivity [W/m ² K] | 110-140 |
| Thermal expansion Coefficient [K ⁻¹ ·10 ⁻⁶] | -50°C - 20°C |
| | 20°C - 100°C |
| | 20°C - 200°C |
| | 20°C - 300°C |
| Specific heat capacity J/(kg·k) | 900 |
| Electrical conductivity [m/Ω*mm ²] | 16-18 |
| Shear modulus [GPa] | |

Chemical composition^x (EN 573-3):

| Figures in % Remainder: Aluminium | | | | | | | | | | | Other | | |
|-----------------------------------|------|------|------------|-----------|-------------|----|------|------|----|---|---------|------|--------------------|
| Si | Fe | Cu | Mn | Mg | Cr | Ni | Zn | Ti | Ga | V | Comment | Each | Total ² |
| 0,40 | 0,40 | 0,10 | 0,40 - 1,0 | 4,0 - 4,9 | 0,05 - 0,25 | - | 0,25 | 0,15 | - | - | - | 0,05 | 0,15 |

^x Chemical figures are percentages of weight. If no range of values indicated the alloying content represents the maximum value

² Includes all items listed elements without defined limits/tolerances

Forming:

| | |
|------------------|---|
| Cold forming | |
| Bending | 5 |
| Spinning | 5 |
| Deep-drawing | 5 |
| Bulging | 5 |
| Cold extrusion | 5 |
| Hot working | |
| Die forging | - |
| Hot extrusion | - |
| Open die forging | - |

Machinability:

| | |
|---------------------------------|-----|
| Homogenized and stress-relieved | 1-2 |
| Dimensional stability | 1 |
| Electrical discharge machining | 1 |

Welding:

| | | |
|---------------------------|---|-----------|
| GAS | 4 | |
| WIG | 2 | S-Al 5183 |
| MIG | 2 | S-Al 5356 |
| Resistance fusion welding | 2 | S-Al 5087 |

Filler metal:

Soldering:

| | |
|--------------------------|---|
| Hard soldering with flux | - |
| Fluxless hard brazing | - |
| Friction soldering | - |
| Soft soldering with flux | - |

Surface treatment:

| | |
|-----------------------------------|-----|
| Anodising (protective anodising) | 2 |
| Anodic quality (AQ) ^{AQ} | - |
| Decorative anodising | 5 |
| Painting / coating | 4 |
| Polishing | 2-3 |

Resistance to corrosion:

| | |
|---------------------|---|
| Normal atmosphere | 1 |
| Seawater atmosphere | 1 |

| | |
|-------------------------------------------------------------------------|-----|
| Can be used in a wide field of applications including the food industry | Yes |
|-------------------------------------------------------------------------|-----|

EN485-2 mechanical characteristics:

| Temper ⁵ | Nominal thickness mm | | Tensile strength R _m MPa | | Yield strength R _{p0,2} MPa | | Ultimate elongation % min. | | Bending radius ⁹ | | Hardness ⁹ HWB |
|---------------------|-------------------------------|------|-------------------------------------|------|--------------------------------------|------|----------------------------|---|-----------------------------|-----|---------------------------|
| | From | To | Min. | Max. | min. | Max. | A10mm | A | 180° | 90° | |
| 03 | 6 | 1000 | 230 | 290 | 110 | 130 | 15 | - | - | - | 70-80 |
| ⁵ 03 | Homogenized | | | | | | | | | | |
| ⁹ | For information purposes only | | | | | | | | | | |

Material Specifications:

- Very good machinability
- Excellent resistance to corrosion
- Easily weldable
- Stress-relieved and dimensionally stable

Application areas:

- Tool, mould and model making
- Blow and injection mouldings
- Laminating tools
- Moulds for elastomer materials
- Moulds and heat-stressed parts
- Moulds with welding design
- Refrigeration technology

Legend:

1. Excellent
 2. Good
 3. Moderate
 4. Poor
 5. Unsuitable
- AQ Anodic quality must be ordered and confirmed separately

No liability or guarantee will be assured for the correctness, accuracy and completeness of the information and data supplied in this data sheet. Standards and informative values are subject to change. Agreements are valid as specified in the order confirmation. We also wish to point out that we do not assume liability for the results and formation of colour regarding decorative anodising and corrosion resistance. Special conditions may be agreed on a case-by-case basis and must be set down in writing.

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Aluminium Formodal ®030 Sizes Stocked

5083 Cast Plate – Machined two sides

| | |
|--------------------|---------------------|
| 8mm x 3020 x 1520 | 40mm x 3020 x 1520 |
| 10mm x 3020 x 1520 | 50mm x 3020 x 1520 |
| 12mm x 3020 x 1520 | 60mm x 3020 x 1520 |
| 16mm x 3020 x 1520 | 75mm x 3020 x 1000 |
| 20mm x 3020 x 1520 | 100mm x 3020 x 1000 |
| 25mm x 3020 x 1520 | |
| 32mm x 3020 x 1520 | |

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