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# Material data sheet

## EN AW 5083 [EN AW-Al Mg4,5Mn0,7]

Compliance with the requirements of the EU directives RoHS 2011/65/EU and ELV 2000/53/EG

### 1 ) Chemical composition according to DIN EN 573-3 [% by mass, reminder Al]

| % | Si | Fe | Cu | Mn | Mg | Cr | Ni | Zn | Ti | Remarks | Each |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **min.** | - | - | - | 0.40 | 4.0 | 0.05 | - | - | - | - | - |
| **max.** | 0.40 | 0.40 | 0.10 | 1.0 | 4.9 | 0.25 | - | 0.25 | 0.15 | - | 0.15 |

### 2 ) Mechanical properties according to DIN EN 754-2 drawn/ DIN EN 755-2 extruded

| Temper | Dimension in mm | | $R_m$ MPa | | $R_{p0,2}$ MPa | | A% min. | $A_{50mm}$% | HBW |
|---|---|---|---|---|---|---|---|---|---|
| | $D^a$ | $S^b$ | min. | max. | min. | max. | min. | min. | Typical value |
| **O/H111** | ≤ 80 | ≤60 | 270 | 350 | 110 | - | 16 | 14 | 70 |
| **H 12** | ≤ 30 | - | 280 | - | 200 | - | 6 | 4 | 90 |
| **O/H111** | ≤200 | ≤200 | 270 | - | 110 | - | 12 | 10 | 70 |
| **H 112** | ≤200 | ≤200 | 270 | - | 125 | - | 12 | 10 | 70 |

$D^a$ = Diameter for round rod / $S^b$= Width across flat for square and hexagonal rod, Thickness for rectangular rod / c Properties may be obtained by press quenching.

**Classification: 1=very good / 6=insufficient**

| **Physical properties** | | **General properties** | | | |
|---|---|---|---|---|---|
| Density g/cm³ | 2.66 | **Corrosion resistance to** | | **Surface treatment** | |
| Modulus of elasticity MPa | 71000 | atmospheric influences | 1 | Protection anodizing | 2 |
| Thermal conductivity W/(m K) | 110-140 | seawater | 1 | Decorative anodizing | 4 |
| Coefficient of thermal expansion (20-100 °) $10^{-6}$/K | 24.2 | | | Painting/Coating | 4 |
| Electrical conductivity MS/m | 16-19 | **Brazeability:** | | | |
| | | Brazing with flux | 5 | | |
| | | Brazing without flux | 5 | | |
| | | Friction soldering | 3 | | |
| | | Soft soldering with flux | 5 | | |

| **Weldability** | | **Machining properties** | |
|---|---|---|---|
| Gas | 4 | Annealed | 3 |
| TIG | 2 | Work hardened | 2 |
| MIG | 2 | Precipitation hardened | - |
| Resistance fusion welding | 2 | Cutting speed v=m/min | 300-1500 |
| | | Chip shape | Spirals |

Errors and changes excepted/This document is not subject to revision.

Edition 12/18