

MATERIAL DATASHEET

ROLLED SHEETS EN AW 5005A [AlMg1(C)]

The EN AW-5005A aluminum alloy belongs to the 5000 series, which is primarily based on aluminum and magnesium. It is characterized by excellent corrosion resistance and good weldability, which makes it particularly suitable for applications that are exposed to strong environmental influences. The alloy has medium strength and is easy to anodize, which means that an attractive surface quality can be achieved. Thanks to these properties, EN AW-5005A is widely used in the decorative sector and for applications where corrosion protection is essential.

The difference between EN AW 5005 and EN AW 5005A lies mainly in the chemical composition and the specific requirements defined in the respective standards. The two alloys are similar in most properties. However, EN AW 5005A has more precise specifications and is therefore more suitable for applications where tighter material tolerances are required.

Typical applications of EN AW-5005A are:

- Construction industry: facade cladding, roof and wall panels, window frames and decorative elements
- Transportation: Body panels, containers and covers that require lightness and weather resistance
- Sign and advertising industry: billboards and signs where a high-quality anodized surface proves its worth
- Energy technology: cladding and housings for photovoltaic systems or electrical components

Chemical composition (according to EN 573-3:2013 in %)

| | | | | | | | | | | |
|------|------|------|------|-------------|------|------|----|----|----|-----------|
| Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Pb | Sn | Sonstige |
| 0,30 | 0,45 | 0,05 | 0,15 | 0,70 - 1,10 | 0,10 | 0,20 | 0 | 0 | 0 | max. 0,15 |

Mechanical properties (according to EN 485-2:2016, minimum values)

| Temper | Thickness [mm] | R _{p0,2} [MPa] | R _m [MPa] | A [%] | A ₅₀ [%] | Biegeradius [t] | |
|-----------|----------------|-------------------------|----------------------|-------|---------------------|-----------------|-----|
| | | | | | | 180° | 90° |
| H12 | 0,2 - 0,5 | 95 | 125 - 165 | - | 2 | 1,0 | 0 |
| | 0,5 - 1,5 | 95 | 125 - 165 | - | 2 | 1,0 | 0,5 |
| | 1,5 - 3,0 | 95 | 125 - 165 | - | 4 | 1,5 | 1,0 |
| | 3,0 - 6,0 | 95 | 125 - 165 | - | 5 | - | 1,0 |
| | 6,0 - 12,5 | 95 | 125 - 165 | - | 7 | - | 2,0 |
| H14 | 0,2 - 0,5 | 120 | 145 - 185 | - | 2 | 2,0 | 0,5 |
| | 0,5 - 1,5 | 120 | 145 - 185 | - | 2 | 2,0 | 1,0 |
| | 1,5 - 3,0 | 120 | 145 - 185 | - | 3 | 2,5 | 1,0 |
| | 3,0 - 6,0 | 120 | 145 - 185 | - | 4 | - | 2,0 |
| | 6,0 - 12,5 | 120 | 145 - 185 | - | 5 | - | 2,5 |
| H24 / H34 | 0,2 - 0,5 | 110 | 145 - 185 | - | 3 | 1,5 | 0,5 |
| | 0,5 - 1,5 | 110 | 145 - 185 | - | 4 | 1,5 | 1,0 |
| | 1,5 - 3,0 | 110 | 145 - 185 | - | 5 | 2,0 | 1,0 |
| | 3,0 - 6,0 | 110 | 145 - 185 | - | 6 | - | 2,0 |
| | 6,0 - 12,5 | 110 | 145 - 185 | - | 8 | - | 2,5 |

Temper descriptions

| | |
|------------|---------------------------------------------------|
| H12 | Strain-hardened - 1/4 hard |
| H14 | Strain-hardened - 1/2 hard |
| H24 | Strain-hardened and partially annealed - 1/2 hard |
| H34 | Strain-hardened and stabilized - 1/2 hard |

Reference values for physical properties

| Density [g/cm ³] | Elastic modulus [GPa] | Thermal conductivity [W/m ² K] | Thermal expansion [K * 10 ⁶] 20°C – 100°C | Specific heat [J / KG * K] | Electrical conductivity [m/Ω*mm ²] | Shear modulus [GPa] |
|---------------------------------|-----------------------------|-------------------------------------------------|-------------------------------------------------------------|-------------------------------|------------------------------------------------------|---------------------------|
| 2,69 | 69,5 | 160 – 220 | 23,6 | - | 23 – 31 | 26,1 |

Other data (empirical values)

Mechanical processing

| | |
|-------------------|---|
| Milling / Turning | 4 |
| Eroding | 1 |

Forming

| | |
|------------------|---|
| Bending | 2 |
| Upsetting | 3 |
| Pressure forming | 2 |

Welding

| | |
|--------------------|---|
| Gas | 2 |
| WIG | 2 |
| MIG | 2 |
| Resistance welding | 3 |

Solder

| | |
|----------------------|---|
| Brazing with flux | 5 |
| Brazing without flux | 4 |
| Soft with flux | 3 |

Surface treatment

| | |
|----------------------|------------|
| Technical anodizing | 1 |
| Decorative anodizing | 2 (Nur EQ) |
| Powder coating | 1 |
| Wet painting | 1 |

Corrosion resistance

| | |
|----------------|---|
| Normal climate | 1 |
| Sea climate | 2 |

1 - Very good | 2 - Good | 3 - Moderate | 4 - Poor | 5 - Unsuitable

Approvals

| EUROCODE acc. DIN EN 1999-1-1 | Food industry acc. DIN EN 602 | REACH | ROHS |
|----------------------------------|----------------------------------|-------|------|
| ✓ | ✓ | ✓ | ✓ |

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Our data sheets contain non-binding information for guidance only. Liability for this is excluded. We reserve the right to make changes to standards and specified values. Only the provisions of our order confirmation are binding. With regard to anodizability, we would like to point out that no liability is assumed for the anodizing result and the colour formation in the decorative area. We also accept no liability for corrosion resistance. Special agreements must be made in writing.