

The alloy EN AW-6082 is a high strength alloy for highly loaded structural applications. Typical applications are scaffolding elements, rail coach parts, offshore constructions, containers, machine building and mobile cranes. Due to the fine grained structure this alloy exhibits a good resistance to dynamic loading conditions. EN AW-6082 is certified for use in marine applications.

Chemical composition according to EN573-3 (weight%, remainder Al)

| Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | remarks | others | |
|-----------|-----------|-----------|------------|-----------|----------|----------|----------|---------|----------|----------|
| | | | | | | | | | each | total |
| 0.7 – 1.3 | max. 0.50 | max. 0.10 | 0.40 – 1.0 | 0.6 – 1.2 | max 0.25 | max 0.20 | max 0.10 | | max 0.05 | max 0.15 |

Mechanical properties according to EN755-2

| Temper* | Wallthickness e*** | Yield stress Rp _{0.2} [MPa] | Tensile strength Rm [MPa] | Elongation | | Hardness** HB |
|---------|--------------------|--------------------------------------|---------------------------|------------|-----------------------|---------------|
| | | | | A [%] | A _{50mm} [%] | |
| T4 | e ≤ 25 | 110 | 205 | 14 | 12 | 65 |
| T5 | e ≤ 5 | 230 | 270 | 8 | 6 | 80 |
| T6 | e ≤ 5 | 250 | 290 | 8 | 6 | 95 |
| | 5 < e ≤ 25 | 260 | 310 | 10 | 8 | 95 |

*Temper designation according to EN515: T4-Naturally aged to a stable condition, T5-cooled from an elevated temperature forming operation and artificially aged, T6-Solution heat treated, quenched and artificially aged (T6 properties can be achieved by press quenching)

** Hardness values are for indication only

***For different wall thicknesses within one profile, the lowest specified properties shall be considered as valid for the whole profile cross section

Physical properties (approximate values, 20 °C)

| Density [kg/m ³] | Melting range [°C] | Electrical conductivity [MS/m] | Thermal conductivity [W/m.K] | Co-efficient of thermal expansion 10 ⁻⁶ /K | Modulus of elasticity [GPa] |
|------------------------------|--------------------|--------------------------------|------------------------------|---|-----------------------------|
| 2700 | 585-650 | 24-32 | 170-220 | 23.4 | ~70 |

Weldability¹

Gas: 3 TIG: 2 MIG: 1 Resistance welding: 3 Spot welding: 2
 Typical filler materials (EN ISO18273): AlMg5Cr(A), AlMg4.5Mn0.7(A) or AlSi5. Due to the heat input during welding the mechanical properties will be reduced by approximately 50% (ref. EN1999-1).

Machining characteristics¹:

T4 temper: 4 T5 and T6 temper: 2

Corrosion resistance¹

General: 2 Marine: 2

Coating properties¹

Hard/protective anodising: 2 Bright/colour anodising: 3

¹ Relative qualification ranging from 1-very good to 6 – unsuitable