

## ALLOY DATA SHEET

### EN-AW 7020[AlZn4.5Mg1]

(Type: High strength structural alloy)

The alloy EN AW-7020 is a high strength weldable extrusion alloy for highly loaded structural applications. The relative low formability of the alloy limits the complexity of the shapes that can be extruded. Typical applications are highly loaded construction parts, such as in rail transport, aircraft storage containers, (pontoon)bridges and mobile cranes.

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

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	remarks	others	
									each	total
max. 0.35	max. 0.40	max. 0.20	0.05- 0.50	1.0- 1.4	0.10- 0.35	4.5- 5.0	-	Zr 0.08-0.20 Zr+Ti 0.08-0.25	max. 0.05	max. 0.15

#### Mechanical properties according to EN755-2

Temper*	Wallthickness e*** [mm]	Yield stress Rp <sub>0.2</sub> [MPa]	Tensile strength Rm [MPa]	Elongation		Hardness** HB
				A [%]	A <sub>50</sub> [%]	
T6	≤ 40	290	350	10	8	105

\*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

#### Physical properties (approximate values, 20°C)

Density [kg/m <sup>3</sup> ]	Melting range [°C]	Electrical Conductivity [MS/m]	Thermal Conductivity [W/m.K]	Co-efficient of thermal Expansion 10 <sup>-6</sup> /K	Modulus of Elasticity [GPa]
2770	600-650	19-23	130-160	23.1	~70

#### Weldability<sup>1</sup>

Gas: 3      TIG: 2      MIG: 1      Resistance welding: 6      Spot welding: 3  
 Typical filler materials (EN ISO18273): SG-AlMg5Cr(A) or SG-Al4.5Mn0.7(A) or SG-Al4.5MnZr. The alloy exhibits a good recovery of mechanical properties after welding, approaching the original values of the base metal (depending on welding conditions). These properties can be achieved after natural aging for a prolonged period or after an additional artificial aging treatment.

#### Machining characteristics<sup>1</sup>

T4 temper: 3      T6 temper: 2

#### Coating properties<sup>1</sup>

Hard protecting anodising: 2      Decorative/bright/colour anodising: 3

#### Corrosion resistance<sup>1</sup>

General: 2      Marine: 4

<sup>1</sup>Relative qualification ranging from 1-very good to 6 unsuitable

