

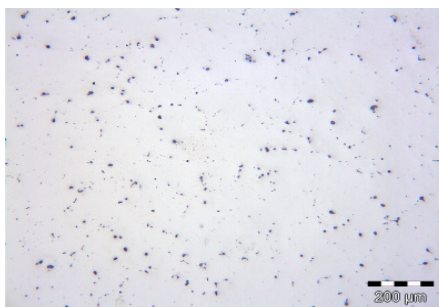
## Materials Data Specification

### PLANCAST® X-TREME 7xxx and PLANCAST® X-TREME PLUS 7xxx

Specification of the alloy 7xxx (Al Zn Mg)

This alloy is a hardening alloy with the following chemical composition in weight:

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
< 0,3	< 0,4	< 0,1	0,15 – 0,30	0,70 – 1,20	0,2	5,00 – 6,00	0,15



Microstructure of the Al Zn Mg

The delivery of the material happens in T1 which is the most stable condition of this alloy type concerning corrosion behaviour. PLANCAST® X-TREME 7xxx doesn't need a full hardening process for gaining maximum mechanical values. Avoiding a quenching with water the material is extremely stress less inside.

Mechanical properties	Tensile Strength R <sub>m</sub> [N/mm <sup>2</sup> ]		Yield Strength R <sub>p0.2</sub> [N/mm <sup>2</sup> ]		Elongation A <sub>5</sub> [%]		Brinell - Hardness [HB]	
Plate Thickness	20mm	200mm	20mm	200mm	20mm	200mm	20mm	200mm
<b>PLANCAST® X-TREME 7xxx</b>	~ 340		~ 300		~ 5		~ 115	
<i>Comparable alloys with the minimum standard requirements:</i>								
EN AW-6082 T6 (AlMgSi1)	295	275	240	230	8	4	89	83
EN AW-2017 T4 (AlCu4MgSi)	390	350	250	240	12	4	110	101
EN AW-7020 T6 (AlZn4,5Mg1)	350	330	280	260	9	6	104	98
EN AW-7075 T6 (AlZn5,5MgCu)	540	360	470	260	6	2	161	104

Physical properties	
Density [kg/dm <sup>3</sup> ]	2,77
Electrical Conductivity [MS/m]	20 – 23
Heat conductivity [W/mK]	110 - 120
Thermic expansion Coefficient 10 <sup>-6</sup> K	20,0 – 24,0
E-Modulus [MPa]	70.000 ± 2.000
Temperature range	-60 to +120°C

The weld ability of the PLANCAST® X-TREME 7xxx is good. Similar alloy types have to be used as welding wires. We recommend welding wires of the alloys AlZn4,5Mg or AlMg4,5MnZr. PLANCAST® X-TREME has the advantage, that the weld seam and the heat affected zone gain the same mechanical properties after the cooling process again due the cold ageing process! For the hardening a period between 3 to 4 weeks is necessary. The cold ageing must happen at room temperatures. The area of the welding seam must not be cooled down rapidly with water to achieve faster cooling speeds - otherwise stress corrosion cracking could happen.

Further advantages of the PLANCAST® X-TREME 7xxx alloy:

- > Perfect stress less material for machining (milling, drilling,...)
- > Perfect corrosion resistant against water (low copper)
- > Good corrosion resistant against saltwater (low copper)
- > Good resistant against environmental conditions
- > Good weldable (see details above)
- > Very good machinable (short broken chips)
- > Very good polish able (High glossy finish)
- > Good for technical anodization (protective)
- > Limited suitable for optical anodizing (special preparation of the material required)
- > No microporosity: Vakuum- and oil tight; Used for vacuum technologies and hydraulics

**SAG Aluminium Lend GmbH & CO. KG**

A-5651 Lend 25 - Austria - Phone +43 (0) 6416 6500 229 - Fax +43 (0) 6416 6500 369 - aluminium.lend@sag.at - www.sag.at