ALLOY EN AW 4017
ALLOY EN AW 4115
ALLOY EN AW 4115 mod

BASED ON 100% REMELTED METAL
Properties and formability equivalent to 3XXX-alloys. Alloy registered in EN 573-3/EN 485-2.

SELECTION OF ALLOYS	Chemical Composition [Weight %]										Sustainabilty
Alloy	Si	Fe	Cu	Mn	Mg	Zn	Ti	Other each	Total	Al	Carbon emissions [CO_2e tonne/tonne]
EN AW 4017	0.6-1.6	<0.7	0.10-0.50	0.6-1.2	0.10-0.50	<0.2	-	<0.05	<0.15	Rem	< 5 [1]
EN AW 4115	1.8-2.2	<0.7	0.10-0.50	0.6-1.2	0.10-0.50	<0.2	-	<0.05	<0.15	Rem	< 5 [1]
EN AW 4115 mod	1.8-2.2	<0.7	0.10-0.50	0.6-1.2	0.10-0.50	<0.2	<0.15	<0.05	<0.15	Rem	< 5 [1]

MECHANCAL PROPERTIES

Typical mechanical properties in delivered condition

Temper	$Rp_{0,2}$ [MPa]	Rm [MPa]	A_{50mm} [%]
O	min 35	100-145	min 10
H12	min 90	120-160	min 4
H14	min 120	150-190	min 2
H16	min 140	180-220	min 1
H18	min 170	200-	min 1

TECHNICAL DATA

Density at 20°C	2.72 kg/dm3	Thermal expansivity	23 x 10-6/ °C-1
Melting range	560–640°C	Resistivity at 20°C	32 nΩm
Thermal capacity	900 J/kg x °C	Modulus of elasticity	70 GPa
Thermal conductivity	200 W/m x °C	Modulus of rigidity	27 GPa

WORKABILITY
This alloy works very well for bending, roll forming and similar types of forming. Formability is equivalent to 3XXX alloys.

JOINING
The material can in normal conditions be melted by MIG, TIG, Laser and High frequency methods. Typical welding conditions: Recommended welding wire is 4043 (AlSi5), but other wires can also be used (Al99.5 Ti, AlMn1). Current to be used depends on the material, but 110 – 150 A is normal with a travel speed of 30 – 75 cm/min. This alloy is also suitable for other types of joining.

SURFACE TREATMENT
All types of lacquering could be used on this material. It can also be anodized in order to strengthen the corrosion resistance. When anodized the surface will be a little darker than 3XXX alloys under identical conditions. We do not recommend decorative anodizing.

HEAT TREATMENT
To obtain the lowest strength (O-temper) from H1X, soft annealing at 300-360°C with a holding time of 0.5H on temperature could be applied.

CORROSION RESISTANCE
According to field tests EN AW 4115 and 4117 shows similar results as 3XXX alloys. Also in simulated laboratory tests they performs similarly to AlMn-alloys. For normal applications this alloy is suitable either in mill finish or in painted condition. When aluminium is exposed outdoors it always develops a thin layer of oxidation which acts as a natural protection. If corrosion occurs all non-heat treatable aluminium alloys exhibit small pits. The depth of the deepest corrosion pits seldom exceeds 100µm and does not affect the strength of the material. As with all aluminium alloys, direct contact with a more noble material should be avoided and the surface should be kept clean and free from damage, in order to minimize the risk of corrosion.

1) Average data per core alloy from 2021 LCA-model. Variation on PN level.