



**Aluminium alloy EN-AW 8079**  
**Pure aluminium, mat. no. 3.0502 (Al 99.0%)**

**1. Applications:**

Due to its low specific weight and good formability, aluminium can be used for a wide range of applications. EN-AW8079 contains iron and silicon, giving it a higher tensile strength. This alloy is therefore used for aluminium foils of a thickness of up to around 0.05 mm.

Due to its relatively good thermal conductivity, pure aluminium is also used for heat exchangers (however, alloys 3003 or 6063 should be used in soldered heat exchangers).

As a result of its high electrical conductivity, aluminium can also be used in the electronics industry and, thanks to its high reflective properties, in lamp reflectors

Aluminium is **not** suitable for springs.

**2. Material codes:**

	EN-AW 1200	EN-AW 8079
German Norm:	3.0205	No number given
EN:	EN-AW 1200 Al 99,0	EN-AW 8079
AFNOR:	1200	8079
UNS:	A 1200	A 8079

**3. Chemical composition: \***

Bezeichnung	Si	Fe	Cu	Mn	Zn	Ti	Andere	Al:
EN AW-1200	Max. 1,0%	<0,05%	<0,05%	<0,05%	<0,1%	<0,05%	<0,15%	>99,0%
EN AW-8079	0,05-0,3%	0,7-1,3%	<0,05%	-	<0,1%	-	<0,15%	Rest

\* the exact composition of each batch can be documented by a material certificate 2.2 or 3.1 according to DIN EN 10 204.

**4. Delivery condition:**

Condition: temper rolled, not hardenable

Surface: bright

Ultimate tensile str.: > 150 N/mm<sup>2</sup>

Further mechanical data: see chapter 7 and 8.

## 5. Sizes:

Thicknesses:	0.025 – 0.20mm
Standard size:	150 mm
Edges:	cut
Lengths:	individual lengths from 5 to 10 000mm or as coil

The following sizes are available from stock (without obligation),  
status: October 2015:

<b>Thickness in mm</b>	<b>Tensile strength</b>	<b>Alloy</b>	<b>Annotation</b>
0,025	>180 N/mm <sup>2</sup>	EN-AW 8079	No tensile strength available
0,05	>150 N/mm <sup>2</sup>	EN-AW 1200	
0,07	>150 N/mm <sup>2</sup>	EN-AW 1200	
0,10		EN-AW 1200	
0,15	>150 N/mm <sup>2</sup>	EN-AW 1200	
0,20	>150 N/mm <sup>2</sup>	EN-AW 1200	

## 6. Tolerances:

Thickness tolerance:	+/- 10% at 0,05mm,
Width tolerance:	normal
Straightness:	normal
Flatness:	wave height max. 1mm

## 7. Further mechanical data:

Yield str. Rp0,2 :	depending on the tensile strength
Elongation A 50:	depending on the tensile strength

Aluminium should not be used for springs.

Temperatures of more than 300 ° Celsius should be avoided.

## 8. Physical properties

Density:	2.71 g/cm <sup>3</sup>
Thermal conductivity:	210-230 W/(m °C) depending on the temperature
Spec. heat capacity:	897 J/(kg °C) mean value at 50 – 100 °C
Thermal expansion:	23,6 x 10 <sup>-6</sup> (between 30 - 100 °C)
Electric conductivity:	36.6 x 10 <sup>-6</sup> A/(V x m) (equivalent to 59 % IACS)

Modus of elasticity:	69 000 MPa at 20 °C
Relative permeability $\mu_r$ :	aluminium is not magnetisable

## 9. Blanking

We recommend a punch-to-die clearance of 4-10 % of the strip thickness.  
The corner radius should be at least 0.25 mm and the punching die should be at least twice the strip thickness.

## 10. Laser cutting

This alloy can be laser cut by solid state lasers.

## 11. Photo etching

Aluminium can be etched easily.

## **12. Bending**

Soft aluminium can be bent or drawn easily.

Please notice the following minimum bending radius for aluminium in the temper rolled condition (please see DIN EN 486-2, table 4):

Up to a thickness of 0.20mm:

1 x strip thickness at bending at right angle (90°) to the rolling direction.

2 x strip thickness at bending parallel to the rolling direction (this data is missing in the DIN EN 485-2).

## **13. Flat grinding and polishing**

Aluminium is not magnetic and can not be hold by magnetic clamping devices of flat grinding machines. Aluminium is difficult to polish.

## **14. Welding**

Aluminium is suitable for welding with MIG or WIG.

## **15. Corrosion resistance**

Aluminium has a passivating oxide layer and is resistant to many environmental conditions. A strong caustic or acidic environment solves the passivating layer and corrodes the material.

Aluminium is resistant against sea water.

At a contact to unalloyed steel can cause rust marks. We also suggest a galvanic isolation to copper and copper alloys.

## **Important Annotation**

The specifications which are given in this technical information sheet about the condition and application of the alloys are only for reference and are no confirmation about certain performances and characteristics.

The information correspond to our own experiences and experiences of our suppliers.

We can not guarantee for the results during processing and utilisation.