

# Extruded products Technical datasheet

## Alloy EN AW-6063 [Al Mg0,7Si]

Alloy 6063, historically one of the most popular alloys in the 6000 series, provides good strength, very good corrosion resistance and is suitable for decorative anodising. Increasingly replaced by alloy 6060 with equal strength but improved surface finish.

Used primarily for structures requiring good strength, good surface finish and good anodising response, such as profiles for windows, doors, entrance lots, ceilings and furniture. This is also a commonly used alloy for thermal applications such as heat sinks.

### Typical Applications

- Architectural and building products
- Railings and furniture
- Door and window frames
- Pipe and tube for irrigation systems
- Electrical components and conduit
- Truck and trailer flooring
- Heat sinks
- Ladders

### Chemical Composition <sup>1</sup>

Si		Fe		Cu		Mn		Mg		Cr		Zn		Ti		Pb		Bi	Sn	Others	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Max	Max	Max	Tot
0,20	0,60		0,35		0,10		0,10	0,45	0,90		0,10		0,10							0,05	0,15

<sup>1</sup> Chemical composition according to EN-573-3:1994

### Mechanical Properties <sup>2 3</sup>

Temper	Wall thickness <i>t</i> [mm]	R <sub>p0,2</sub> [MPa]	R <sub>m</sub> [MPa]	A [%]	A <sub>50mm</sub> [%]	HBW <sup>c</sup> TYPICAL VALUE	Vickers <sup>c</sup> TYPICAL VALUE	Webster <sup>c</sup> TYPICAL VALUE
T4 <sup>a</sup>	t ≤ 25	65	130	14	12	50	56	9
T5	t ≤ 3	130	175	8	6	65	74	13
	3 < t ≤ 25	110	160	7	5	65	74	13
T6 <sup>a</sup>	t ≤ 10	170	215	8	6	75	86	14
	10 < t ≤ 25	160	195	8	6	75	86	14
T64 <sup>a b</sup>	t ≤ 15	120	180	12	10	65	74	13
T66 <sup>a</sup>	t ≤ 10	200	245	8	6	80	92	15
	10 < t ≤ 25	180	225	8	6	80	92	15

<sup>2</sup> Properties according to EN 755-2:2008 for extruded profile, minimum values unless else specified

<sup>3</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile section

<sup>a</sup> Properties may be obtained by press quenching

<sup>b</sup> Bending quality

<sup>c</sup> Brinell hardness values for information only. Vickers and Webster converted from Brinell value and should be considered approximate

### Temper Designations <sup>4</sup>

T4	Solution heat treated and naturally aged
T5	Cooled from an elevated temperature shaping process and then artificially aged
T6	Solution heat treated and then artificially aged
T64	Solution heat treated and then artificially aged in underageing conditions (between T6 and T61) to improve formability
T66	Solution heat treated and then artificially aged – mechanical property level higher than T6 achieved through special control of the process

<sup>4</sup> Temper designations according to EN 515:1993

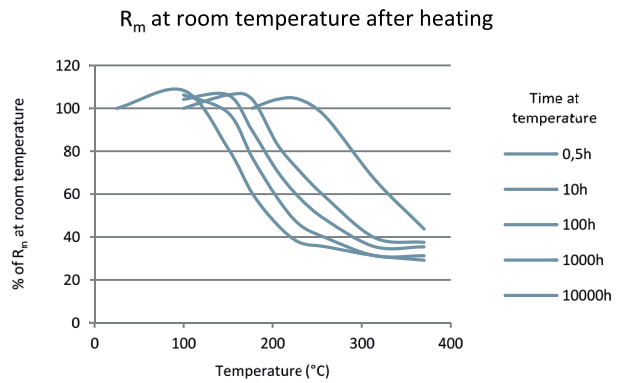
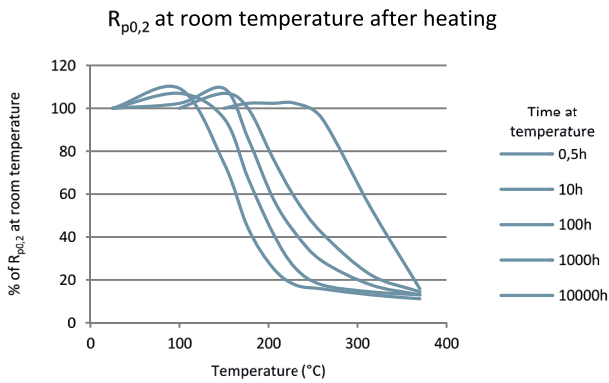
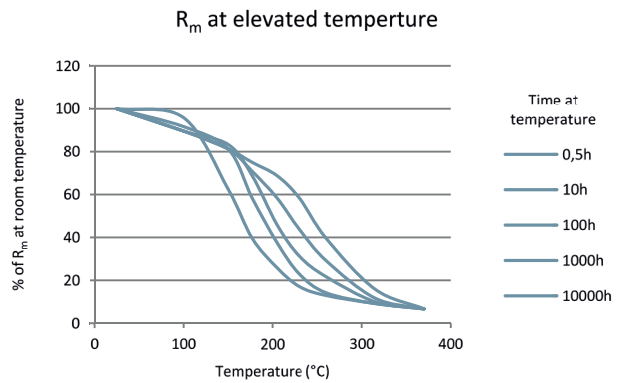
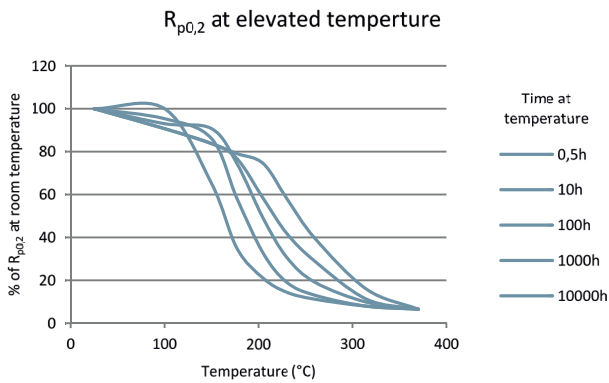


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### Tensile Data at Elevated Temperature <sup>7</sup>

Provided for informational purposes only, not to be considered as guaranteed properties.



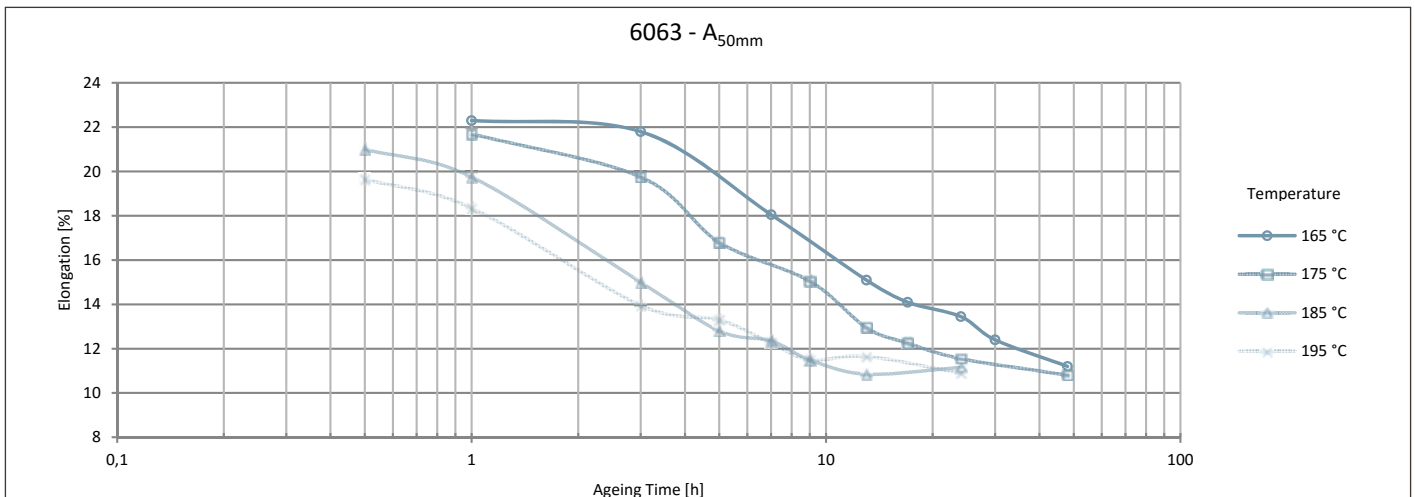
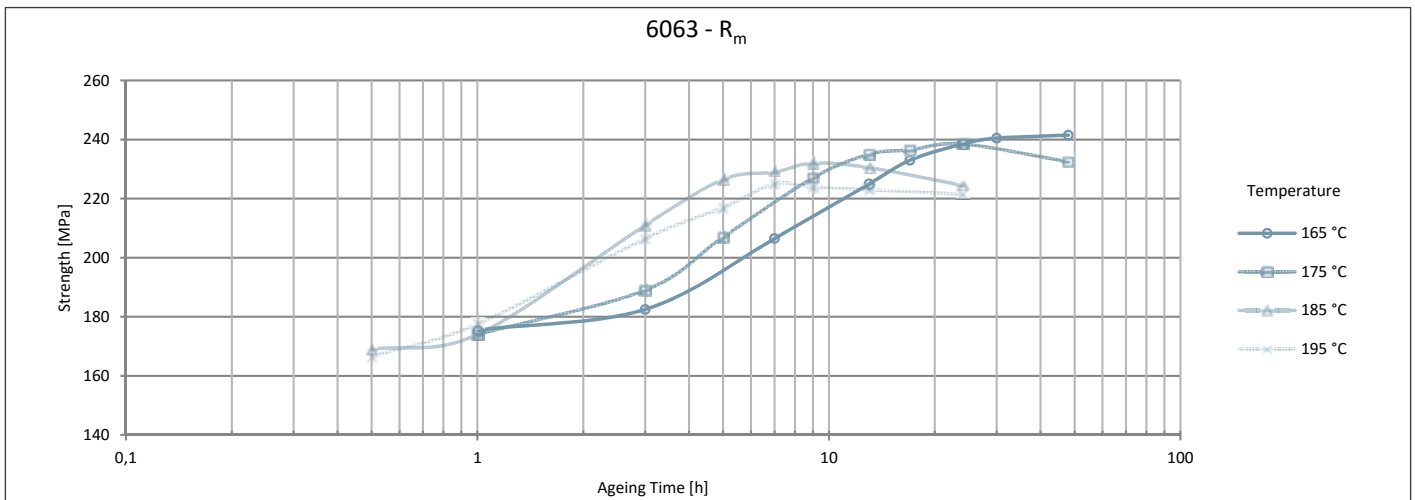
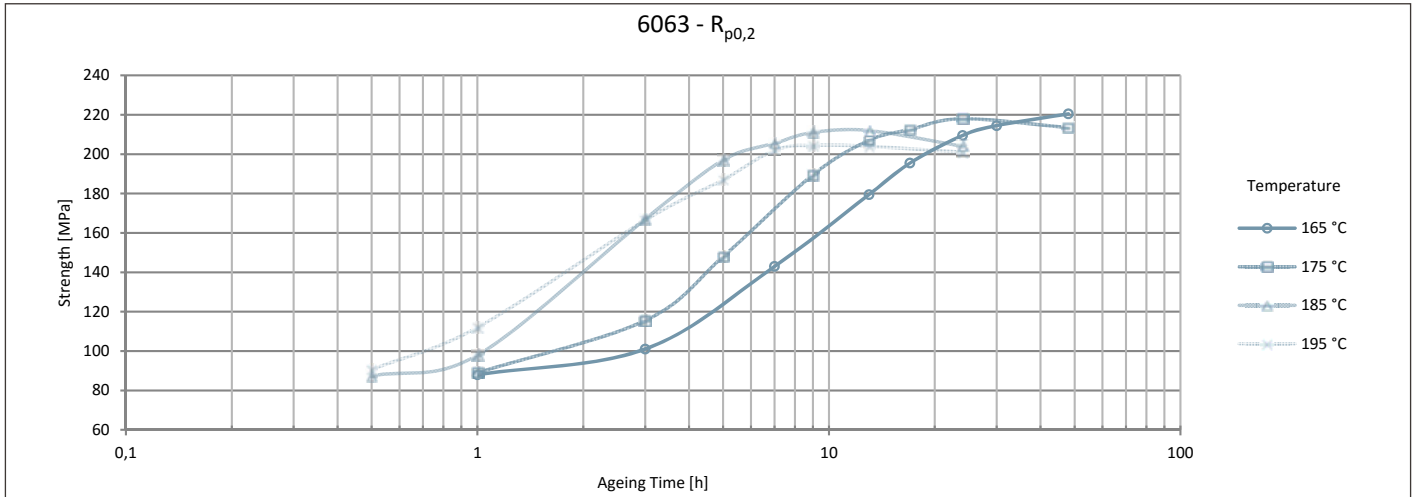
<sup>7</sup> Reference: J. Kaufman, Properties of Aluminium alloys -tensile, creep, and fatigue data at high and low temperatures, pp 176, ASM 1999

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## Alloy EN AW-6063 [Al Mg0,7Si]

### Heat Treatment Response <sup>8</sup>

Example of heat treatment response for alloy 6063.



<sup>8</sup> Solid profile, 200 x 3mm, air quenched after extrusion, 24h natural ageing prior to artificial ageing, samples are taken parallel to extrusion direction