



POLY

LANEMA

TECHNICAL CATALOGUE 2019
TECHNICAL ALUMINIUM
and ENGINEERING PLASTICS



THE PURPOSE OF LANEMA



LANEMA's mission is to create long-term economic and social value by transmitting the benefits of progress and innovation to an increasing number of people.

The company promotes a Quality of excellence policy, counting on a specialized and ambitious multidisciplinary team that continuously has access to the most advanced technological means.

The bet on innovation, quality and rigor are the basis of our leadership and positioning strategy, promoting distinction and unique prestige in the market.

THE PRINCIPLES AND OBJECTIVES OF QUALITY



- To promote the continuous improvement of internal processes;
- To raise and exceed the level of satisfaction of the most demanding customers;
- Commitment to meet applicable requirements:
- To continuously train HR in order to develop individual skills and value teamwork;
- To use the Q.M.S. as an important means of assisting the organization's mission;
- The correct functioning of the Q.M.S. based on standard NP EN ISO 9001.

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**SHAPING
YOUR PROJECTS**



OUR VALUES



CONTINUOUS IMPROVEMENT. EXCELLENCE. INNOVATION.

We live with the existence of daily challenges! We believe that identification and standardization of processes are the key to our differentiation. By reinventing processes and identifying opportunities, innovation for LANEMA will always be the result of curiosity combined with dedication and creativity. We want to be different and that involves improvement in everything we do! Excellence will always be our motivation!

COMMITMENT.

It is the promise of daily dedication! It is a bond and an individual commitment. "To be company people" is what makes us ready for any challenge. Consistency and our professional integrity are the air we breathe!

PEOPLE. TEAM. KNOWLEDGE.

We believe that people and their motivation are the lever for success. Teams are the mirror of responsibility and excellence that ensure that every day we can grow and achieve goals.

FOCUS ON THE CUSTOMER.

The Customer is the reason why we exist. Our focus is the anticipation of their expectations and learning about them. Getting their trust and loyalty is the basis of our sustainability.





BENEFIT YOUR PROJECT WITH OUR KNOWLEDGE

A specialized team prepared to suggest the best solution.



WE HAVE THE MOST INDICATED MATERIAL FOR YOUR APPLICATIONS

In order not to delay your projects, we provide more than 3,000 tons in stock of engineering plastics and technical aluminium distributed over an area of approximately 13,000 sqm.

THE ADVANTAGES YOU CAN GET FROM OUR PROCESS



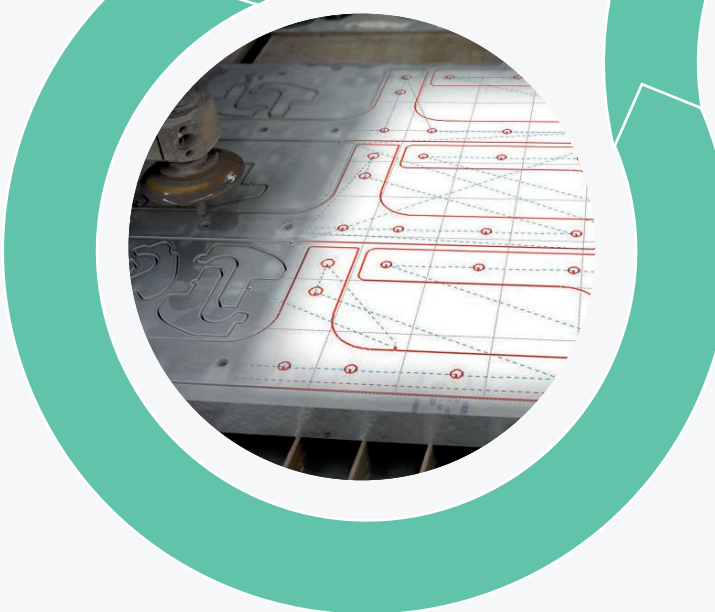
PRECISION AND OPTIMIZATION AT YOUR DISPOSAL

We cut your materials without changing their technical and mechanical characteristics. In order to do so, we provide modern and precise cutting tools.



CNC MACHINING

Versatility and manufacturing availability of parts of great complexity and dimension, reducing the delivery time and ensuring the success of your projects.



REDUCE YOUR COSTS WITH OUR WATERJET CUTTING SERVICE

Through specific dimensional use software programs, we obtain optimized nesting, thus reducing waste.



DON'T DELAY
YOUR PROJECTS.
**WE HAVE
THE MATERIAL!**







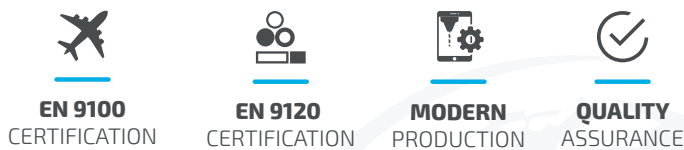
POLY
LANEMA®
 AERONAUTICS

The aeronautics industry is known for its high complexity and quality control.

The sector, in great expansion, increasingly requires the mastery of all the parameters that assure quality. All processes, whether operational or productive, must be robust.

Polylanema Aeronautics® is created, representing the portfolio of Aluminium and Engineering Plastics available for the Aeronautics, Aerospace and Defence Industries.

This evolution has been sustainable, representing the Group's reputation throughout more than 25 years, during which we have had the opportunity to supply materials and components to the most complex and rigorous industries, including Aeronautics.



CERTIFIED ALUMINIUM

- AW 2014
- AW 2024
- AW 2024 ALCLAD
- AW 2124
- AW 2214
- AW 2219
- AW 2219 ALCLAD
- AW 2618
- AW 6061
- AW 7010
- AW 7020
- AW 7050
- AW 7075
- AW 7075 ALCLAD
- AW 7150
- AW 7175
- AW 7475
- AW 7475 ALCLAD



ADVANTAGES OF TECHNICAL ALUMINIUM



LOW WEIGHT
DENSITY



RECYCLABLE



ALTERNATIVE
TO STEEL

Brinell hardness up to 180HB



EASY
MACHINING



GOOD
COLD
CONFORMATION



TREATABLE
SURFACE



EXCELLENT
THERMAL
CONDUCTIVITY



EXCELLENT
CORROSION
RESISTANCE



GOOD
WELDABILITY

INDEX BY SERIES

SPECIAL ALLOYS FOR MOULD MANUFACTURING

Alumold®-500	18
Certal®	20
Certal® SPC	22
Hokotol®	24
Weldural®	26

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Alloy 2007	36
Alloy 2011	38
Alloy 2017 A	40
Alloy 2030	42

SERIES 5000

Alloy 5083 Laminated	46
Alloy 5083 Rectified	48
Alloy 5083 CAST	50
Alloy 5754	52
Alloy 5754 Non-slip	54

SERIES 6000

Alloy 6082	58
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SERIES 7000

Alloy 7021	62
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Alloy 7075	66

PROFILES

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Alloy 6082	74

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INDEX BY FORMATS

SHEETS

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Alloy 5083 Rectified	48
Alloy 5754	52
Alloy 5754 Non-slip	54
Alloy 6082	58
Alloy 7075	66

PLATES

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Certal®	20
Certal® SPC	22
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Weldural®	26
Alloy 2017 A	40
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Alloy 5083 Rectified	48
Alloy 5083 CAST	50
Alloy 5754	52
Alloy 6082	58
Alloy 7021	62
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Alloy 2011	38
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TUBES AND PROFILES

Alloy 6063	70
Alloy 2007	74
Alloy 2030	74
Alloy 6082	74

OTHER ALLOYS AVAILABLE ON REQUEST.

INTRODUCTION TO TECHNICAL ALUMINIUM

The characteristics of aluminium allow it to have a wide range of applications. That is why this is one of the most used metals in the world. Light, durable and beautiful material that shows an excellent performance and superior properties in most of the applications. Products that use aluminium also gain competitiveness due to the innumerable attributes that this metal incorporates, as it can be checked below:

LIGHTNESS

An essential characteristic in the transportation industry, the lightness of aluminium means less fuel consumption, lower wear, more efficiency and load capacity. For the food industry it brings functionality and practicality to the packaging due to its reduced weight when compared to other materials.

HIGH ENERGY CONDUCTIVITY

Aluminium is an excellent means of transmitting energy, whether electrical or thermal. An electric conductor of aluminium can conduct as much electric current as a copper conductor which is twice as heavy and therefore expensive. Therefore, aluminium is widely used by the wire and cable industry. The metal also offers a good heating and cooling environment. Aluminium heat sinks are widely used in the food, automotive, chemical, aeronautical, oil, and other industries.

PERMEABILITY AND OPACITY

Key characteristic for aluminium packaging for food and medicines. Aluminium does not allow the passage of moisture, oxygen and light. This property causes the metal to prevent deterioration of food, medicine, and other consumables.

HIGH RESISTANCE / WEIGHT RATIO

Important for the automotive and transportation industry, it delivers exceptional performance to any piece of transportation equipment that consumes energy to move. With a tensile strength of 90 MPa, by cold working, this property can be practically doubled, allowing its use in structures with excellent mechanical behaviour, approved for aeronautical applications.

BEAUTY

The external appearance of the aluminium in addition to giving a good finish only with its pure application, gives modernity to any application because it is a noble, clean material that does not deteriorate with the passage of time. On the other hand, aluminium allows a wide range of paint applications and other finishes, always keeping the original look and allowing creative design solutions.

DURABILITY AND CORROSION RESISTANCE

Aluminium provides exceptional resistance to external agents, adverse weather conditions, ultraviolet rays, abrasion and scratches, providing high durability, including when used on the seashore and in aggressive environments. Aluminium has a natural self-protection that is only destroyed by an aggressive condition or by a certain substance that dissipates its protective oxide film.

MALLEABILITY AND WELDABILITY

The high malleability and ductility of aluminium allows the industry to use it in a variety of ways. Its mechanical properties facilitate its conformation and enable the construction of forms suitable for a wide variety of projects.

POSSIBILITY OF MANY FINISHES

Whether by anodizing or painting, aluminium takes on the suitable appearance in construction, for example, with finishes that further strengthen the natural resistance of the material to corrosion.

INFINITELY RECYCLABLE

One of the main characteristics of aluminium is its high recyclability. After many years of safe and efficient service life, aluminium can be reused, with significant investment recovery and energy savings. In addition, the environment is benefited by the reduction of waste and saving of raw materials provided by recycling.



HOW TO CHOOSE THE SUITABLE ALUMINIUM?

Poly Lanema offers an extensive range of engineering plastics. For a correct selection of the material, the context of the application must be considered and, in turn, several factors such as: hardness required, thermal or electrical conductivity, machinability, polishing, and weldability, among others.



1. MACHINABILITY



ALUMINIUM	MACHINABILITY	AVAILABLE FORMATS	PAGE
Alumold® 500	EXCELLENT	—	18
Certal®	EXCELLENT	—	20
Certal® SPC	EXCELLENT	—	22
Hokotol®	EXCELLENT	—	24
Weldural®	EXCELLENT	—	26
AW 2007	GOOD	■●	36
AW 2011	EXCELLENT	■●	38
AW 2017 A	GOOD	— ■●	40
AW 2030	GOOD	■●	42
AW 5083 Laminated	GOOD	— —	46
AW 5083 Rectified	GOOD	— —	48
AW 5083 CAST	GOOD	—	50
AW 5754	FAIR	— —	52
AW 5754 Non-slip	FAIR	—	54
AW 6082	GOOD	— — ■●	58
AW 7021	GOOD	—	62
AW 7021 Rectified	GOOD	—	64
AW 7075	EXCELLENT	— — ■●	66
AW 6063	FAIR	L □ □ □ H T	70

2. ELECTRICAL/THERMAL CONDUCTIVITY



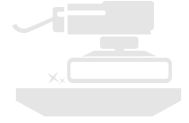
ALUMINIUM	ELECTRICAL/THERMAL CONDUCTIVITY	AVAILABLE FORMATS	PAGE
Alumold® 500	EXCELLENT	—	18
Certal®	EXCELLENT	—	20
Certal® SPC	EXCELLENT	—	22
Hokotol®	EXCELLENT	—	24
Weldural®	EXCELLENT	—	26
AW 2007	FAIR	■●	36
AW 2011	FAIR	■●	38
AW 2017 A	FAIR	— ■●	40
AW 2030	FAIR	■●	42
AW 5083 Laminated	FAIR	— —	46
AW 5083 Rectified	FAIR	— —	48
AW 5083 CAST	FAIR	—	50
AW 5754	FAIR	— —	52
AW 5754 Non-slip	FAIR	—	54
AW 6082	GOOD	— — ■●	58
AW 7021	FAIR	—	62
AW 7021 Rectified	FAIR	—	64
AW 7075	GOOD	— — ■●	66
AW 6063	GOOD	L □ □ □ H T	70

3. BRINELL HARDNESS



ALUMINIUM	BRINELL HARDNESS	AVAILABLE FORMATS	PAGE
Alumold® 500	≈ 175 HB	—	18
Certal®	≈ 165 HB	—	20
Certal® SPC	≈ 160HB	—	22
Hokotol®	≈ 180HB	—	24
Weldural®	≈ 130HB	—	26
AW 2007	≈ 95HB	●	36
AW 2011	≈ 90HB	●	38
AW 2017 A	≈ 105HB	— ●	40
AW 2030	≈ 115HB	●	42
AW 5083 Laminated	≈ 75HB	—	46
AW 5083 Rectified	≈ 68HB	—	48
AW 5083 CAST	≈ 70HB	—	50
AW 5754	≈ 52HB	—	52
AW 5754 Non-slip	≈ 52HB	—	54
AW 6082	≈ 95HB	— ●	58
AW 7021	≈ 120HB	—	62
AW 7021 Rectified	≈ 120HB	—	64
AW 7075	≈ 150HB	— ●	66
AW 6063	≈ 75HB	L L U H T	70

4. POLISHING



ALUMINIUM	POLISHING	AVAILABLE FORMATS	PAGE
Alumold® 500	EXCELLENT	—	18
Certal®	EXCELLENT	—	20
Certal® SPC	EXCELLENT	—	22
Hokotol®	EXCELLENT	—	24
Weldural®	EXCELLENT	—	26
AW 2007	GOOD	●	36
AW 2011	GOOD	●	38
AW 2017 A	GOOD	— ●	40
AW 2030	GOOD	●	42
AW 5083 Laminated	FAIR	—	46
AW 5083 Rectified	FAIR	—	48
AW 5083 CAST	FAIR	—	50
AW 5754	POOR	—	52
AW 5754 Non-slip	POOR	—	54
AW 6082	GOOD	— ●	58
AW 7021	EXCELLENT	—	62
AW 7021 Rectified	EXCELLENT	—	64
AW 7075	GOOD	— ●	66
AW 6063	POOR	L L U H T	70

5. DENSITY



ALUMINIUM	DENSITY	AVAILABLE FORMATS	PAGE
Alumold® 500	2.82	—	18
Certal®	2.76	—	20
Certal® SPC	2.76	—	22
Hokotol®	2.83	—	24
Weldural®	2.84	—	26
AW 2007	2.85	●	36
AW 2011	2.83	●	38
AW 2017 A	2.78	— ●	40
AW 2030	2.85	●	42
AW 5083 Laminated	2.66	—	46
AW 5083 Rectified	2.66	—	48
AW 5083 CAST	2.66	—	50
AW 5754	2.67	—	52
AW 5754 Non-slip	2.67	—	54
AW 6082	2.70	— ●	58
AW 7021	2.80	—	62
AW 7021 Rectified	2.80	—	64
AW 7075	2.80	— ●	66
AW 6063	2.70	L L U H T	70

6. WELDABILITY



ALUMINIUM	WELDABILITY	AVAILABLE FORMATS	PAGE
Alumold® 500	ON REQUEST	—	18
Certal®	ON REQUEST	—	20
Certal® SPC	ON REQUEST	—	22
Hokotol®	POOR	—	24
Weldural®	GOOD	—	26
AW 2007	POOR	●	36
AW 2011	POOR	●	38
AW 2017 A	FAIR	— ●	40
AW 2030	POOR	●	42
AW 5083 Laminated	EXCELLENT	—	46
AW 5083 Rectified	EXCELLENT	—	48
AW 5083 CAST	EXCELLENT	—	50
AW 5754	EXCELLENT	—	52
AW 5754 Non-slip	EXCELLENT	—	54
AW 6082	GOOD	— ●	58
AW 7021	GOOD	—	62
AW 7021 Rectified	GOOD	—	64
AW 7075	FAIR	— ●	66
AW 6063	EXCELENTE	L L U H T	70





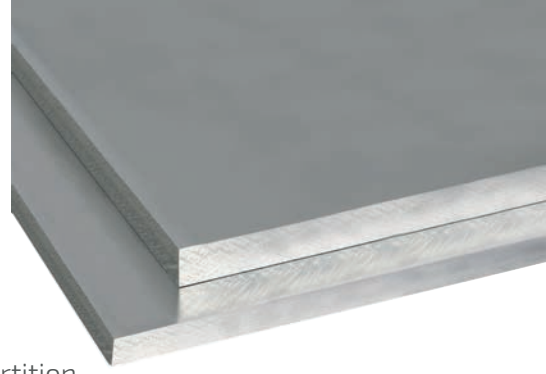
SPECIAL ALUMINIUM ALLOYS FOR MOULD MANUFACTURING

Alumold®-500	18
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SPECIAL ALLOYS FOR MOULDS

ALUMOLD®-500

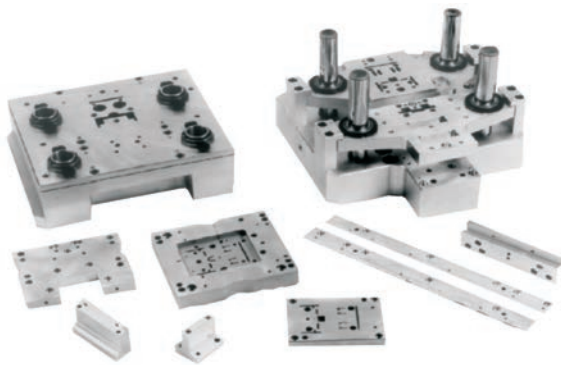
A 7000 series aluminium alloy that has successfully replaced steel in many mould applications. It combines high thermal conductivity, resistance, ease of machining and polishing, dimensional stability and consistency across the entire thickness of the plate. The use of this material results in reduced operating costs and increased production of parts. Alumold®-500 moulds should have a maximum operating temperature of 110 ° C and a partition line stress of 5000 PSI (nominal) and 7200 PSI (maximum).



CHEMICAL COMPOSITION (WEIGHT %)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
Minimum	-	-	-	-	-	-	-	-	-
Maximum	0.04	0.08	1.6	-	2.4	-	6	-	Rest

Information transcribed from the supplier datasheet.



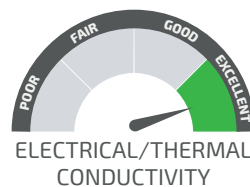
MAIN CHARACTERISTICS

- Excellent machining
- Excellent polishing
- Good dimensional stability and high mechanical properties (free of stresses)
- It is possible to weld* (TIG/MIG)
- High hardness

* Welding for recharging is possible under certain conditions. The reduction of the resistance in the welding area must be considered.

APPLICATIONS

- Injection-blow moulds
- Thermoformed moulds
- End baseboards
- Machine elements subject to high mechanical stresses
- Moulds for toys and automotive industry
- Industrial tools and supports
- Mechanical guides





SPECIAL ALLOYS FOR MOULDS

MECHANICAL PROPERTIES

MINIMUM GUARANTEED VALUES

THICKNESSES (from...to)	Rm (MPa)	Rp0.2 (MPa)	A50 (%)
25 - 76.2 mm	560	504	5
76.2 - 127 mm	550	497	4
127 - 152.4 mm	540	476	2.5
152.4 - 203.2 mm	525	473	1
203.2 - 254 mm	405	455	1
254 - 305 mm	470	435	0.5

TYPICAL MECHANICAL VALUES BY DIFFERENT THICKNESSES

THICKNESSES (from...to)	Rm (MPa)	Rp0.2 (MPa)	A50 (%)	HB- BRINELL HARDNESS
25 - 76.2 mm	590	540	10	185
76.2 - 127 mm	580	530	6	185
127 - 152.4 mm	570	520	4	180
152.4 - 203.2 mm	555	510	2	180
203.2 - 254 mm	535	490	1.5	175
254 - 305 mm	510	470	1.5	175

Information transcribed from the supplier datasheet.

PHYSICAL PROPERTIES

DENSITY	2.82 g/cm ³
MODULUS OF ELASTICITY	72 000 MPa
LINEAR EXPANSION COEFFICIENT	23.7 10 ⁻⁶ K ⁻¹
THERMAL CONDUCTIVITY	153 W/mK
ELECTRICAL CONDUCTIVITY	18 - 22 MS/m

DELIVERY PROGRAM

PLATES

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT (kg)	STOCK T651
230	1450 x 3020	2820.00	●
250	1450 x 3020	3065.30	●
300	1450 x 3020	3678.36	●

Other measures on request.
Average production weights.

ADVANTAGES OF ALUMOLD®- 500

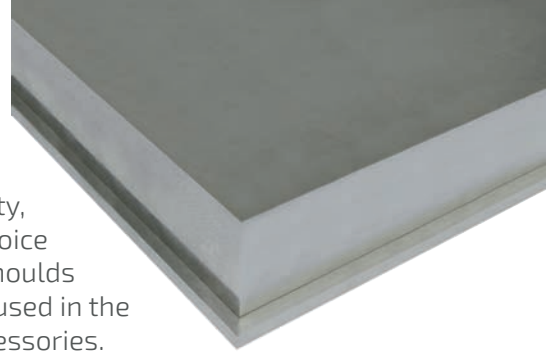
- Three to six times higher thermal conductivity than P20 steel
- Milling three to five times faster
- Polishing up to four times faster
- Accepts surface treatments to increase hardness
- Dimensionally stable
- No additional heat treatment required
- Enables TIG/MIG welding*

* Welding for recharging is possible under certain conditions. The reduction of the resistance in the welding area must be considered.

● Standard: generally available from stock
 ● Semi-standard: generally not available from stock
 ○ Non-standard: generally not available from stock, manufactured to order and subject to special conditions.

SPECIAL ALLOYS FOR MOULDS

CERTAL® (Al Zn5Mg3Cu)



Certal® is an aluminium that offers a combination of excellent machinability, dimensional stability and high resistance. This makes this alloy an ideal choice in the production of industrial tools, including blow moulds and injection moulds that are used to create plastic bottles and containers. Certal® can also be used in the production of heating plates, mechanical guides, tool holders, jigs and accessories.

CHEMICAL COMPOSITION (WEIGHT %) (EN 573-3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti + Zr	Al
Minimum	-	-	0.5	0.1	2.6	0.1	4.3	-	-
Maximum	0.5	0.5	1.0	0.4	3.7	0.3	5.2	0.2	Rest



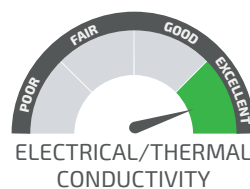
MAIN CHARACTERISTICS

- Excellent machining and polishing
- Good dimensional stability and high mechanical properties (free of stresses)
- It is possible to weld* (TIG/MIG)
- High hardness

APPLICATIONS

- Injection-blow moulds
- Thermoformed moulds
- End baseboards
- Components of machines subject to high mechanical stress
- Moulds for toys and automotive industry
- Industrial tools and supports
- Mechanical guides

* Welding for recharging is possible under certain conditions. The reduction of the resistance in the welding area must be considered.





SPECIAL ALLOYS FOR MOULDS

MECHANICAL PROPERTIES

MINIMUM GUARANTEED VALUES

THICKNESSES (from...to)	Rm (MPa)	Rp0.2 (MPa)	A50 (%)
7.9 - 12.5 mm	540	460	8
12.5 - 25 mm	540	460	8
25 - 50 mm	530	460	7
50 - 100 mm	500	420	6
100 - 140 mm	490	400	6

Information transcribed from the supplier datasheet.

TYPICAL MECHANICAL VALUES BY DIFFERENT THICKNESSES

THICKNESSES (from...to)	Rm (MPa)	Rp0.2 (MPa)	A50 (%)	HB - BRINELL HARDNESS
7.9 - 25 mm	555	495	9	170
25 - 100 mm	550	495	8	165
100 - 140 mm	545	490	7	165

Information transcribed from the supplier datasheet.

PHYSICAL PROPERTIES

DENSITY	2.76 g/cm ³
MODULUS OF ELASTICITY	72 000 MPa
LINEAR EXPANSION COEFFICIENT	23.6 10 ⁻⁶ K ⁻¹
THERMAL CONDUCTIVITY	120 - 150 W/mK
ELECTRICAL CONDUCTIVITY	18 - 22 MS/m

DELIVERY PROGRAM

PLATES

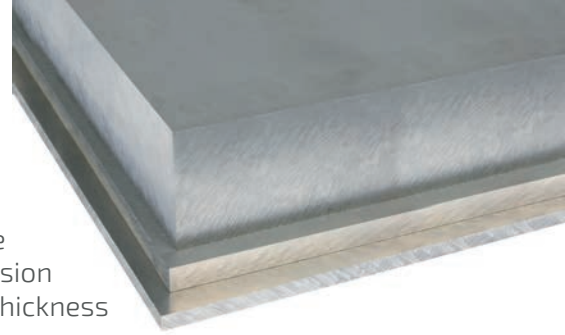
THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT (kg)	STOCK T651
8	3020 x 1520	101.356	●
10	3020 x 1520	126.695	●
12	3020 x 1520	152.034	●
15	3020 x 1520	190.043	●
20	3020 x 1520	253.390	◐
25	3020 x 1520	316.738	●
30	3020 x 1520	380.085	●
35	3020 x 1520	449.859	●
40	3020 x 1520	506.780	◐
45	3020 x 1520	570.128	●
50	3020 x 1520	633.475	◐

Average production weights.

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT (kg)	STOCK T651
60	3020 x 1520	760.170	●
70	3020 x 1520	886.317	◐
80	3020 x 1520	1013.560	◐
90	3020 x 1520	1140.255	◐
100	3020 x 1520	1266.950	●
110	3020 x 1400	1283.621	●
120	2520 x 1270	1059.973	○
120	3020 x 1270	1270.285	●
130	3020 x 1020	1105.248	●
140	3020 x 1020	1190.267	●

- Standard; generally available from stock
- ◐ Semi-standard; generally not available from stock
- Non-standard; generally not available from stock, manufactured to order and subject to special conditions.

CERTAL® SPC

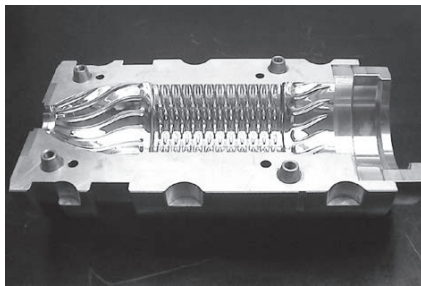


Certal® SPC has been optimized to provide excellent machinability, good dimensional weldability and high mechanical resistance across the entire thickness of the plate. Typical applications include injection and compression moulds for plastics. It is distinguished from Certal® by the availability in thickness over 150mm.

CHEMICAL COMPOSITION (WEIGHT %)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Zr	Ti
Minimum	-	-	0.5	-	2.6	-	4.3	0.15	-
Maximum	0.25	0.35	1.0	0.1	3.7	0.1	5.2	0.25	0.15

Information transcribed from the supplier datasheet.



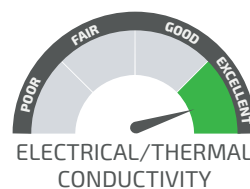
MAIN CHARACTERISTICS

- Excellent machining
- Good shape stability and high uniform mechanical properties (on plate thickness)
- High thermal conductivity (shorter cycles) and possibility of thicker parts
- Uniform resistance
- It is possible to weld* (TIG/MIG)

* Welding for recharging is possible under certain conditions. The reduction of the resistance in the welding area must be considered.

APPLICATIONS

- Hydraulic distribution blocks
- Injection and compression moulds for plastics
- Injection-blow moulds
- Thermoformed moulds
- End baseboards
- Machine elements
- Moulds for toys and automotive industry
- Industrial tools and related holders
- Mechanical guides





SPECIAL ALLOYS FOR MOULDS

MECHANICAL PROPERTIES

MINIMUM GUARANTEED VALUES

ESPESSURAS (de...até)	Rm (MPa)	Rp0.2 (MPa)	A50 (%)
150 - 240 mm	510	440	4
240 - 305 mm	490	430	2

Information transcribed from the supplier datasheet.

TYPICAL MECHANICAL VALUES BY DIFFERENT THICKNESSES

ESPESSURAS (de...até)	Rm (MPa)	Rp0.2 (MPa)	A50 (%)	HB - BRINELL DUREZA
150 - 240 mm	530	460	7	160
240 - 305 mm	520	450	5	140

Information transcribed from the supplier datasheet.

PHYSICAL PROPERTIES

DENSITY	2.76 g/cm ³
MODULUS OF ELASTICITY	72 000 MPa
LINEAR EXPANSION COEFFICIENT	23.6 10 ⁻⁶ K ⁻¹
THERMAL CONDUCTIVITY	150 W/mK
ELECTRICAL CONDUCTIVITY	18 - 22 MS/m

DELIVERY PROGRAM

PLATES

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT (kg)	STOCK T652
150	3020 x 1520	1900.426	●
160	3020 x 1520	2027.121	●
180	3020 x 1520	2280.511	●
200	3020 x 1520	2533.901	●

Average production weights.

CERTAL® vs CERTAL® SPC

- Certal® is available up to 150mm thickness
- Certal® SPC is available from 150 mm up to 200 mm thickness

● Standard; generally available from stock
 ● Semi-standard; generally not available from stock
 ○ Non-standard; generally not available from stock, manufactured to order and subject to special conditions.

HOKOTOL®

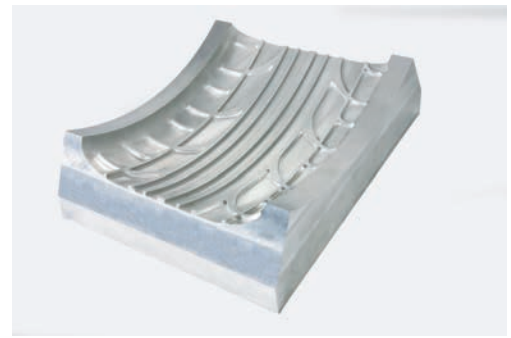
Hokotol® has been developed to ensure high hardness across the entire thickness of the plate. This is an advantage when surfaces need to be polished or machined. Polished surfaces are often used in translucent elements such as headlights, spotlights or lamp housings.



CHEMICAL COMPOSITION (WEIGHT %)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Zr	Ti
Minimum	-	-	1.5	-	1.8	-	5.7	0.08	-
Maximum	0.30	0.35	2.6	0.1	2.6	0.05	7.6	0.25	0.06

Information transcribed from the supplier datasheet.

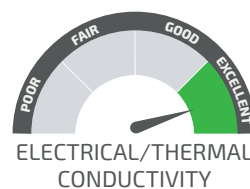


MAIN CHARACTERISTICS

- Excellent machining
- Uniform mechanical properties in total plate thickness
- Excellent mechanical properties in the centre of the plates
- Excellent dimensional stability during and after machining (release of stresses)
- Excellent thermal and electrical conductivity
- Excellent polishing

APPLICATIONS

- Blow moulds for plastic injection
- Technical parts for the drilling industry (pads, power plates)
- Machine parts for high resistance requirements with low weight
- Machine elements where high resistance and low weight are required
- Mechanical elements with high mechanical properties



SPECIAL ALLOYS FOR MOULDS

MECHANICAL PROPERTIES

THICKNESSES (mm)	Rm (MPa)	Rp0.2 (MPa)	A50 (%)	HB - BRINELL HARDNESS
100	575	532	7.8	180
200	533	479	3.6	180

Typical traction properties at room temperature; measured by S / ; test direction L-T

Information transcribed from the supplier datasheet.

PHYSICAL PROPERTIES

DENSITY	2.83 g/cm ³
MODULUS OF ELASTICITY	70 300 MPa
LINEAR EXPANSION COEFFICIENT	23.5 10 ⁻⁶ /K
THERMAL CONDUCTIVITY	154 W/mK
ELECTRICAL CONDUCTIVITY	23 m/Ohm mm ²

DELIVERY PROGRAM

PLATES

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT (kg)	STOCK T651
60	3020 x 1520	779.45	●
80	3020 x 1520	1028.25	●
90	3020 x 1520	1156.80	●
100	3020 x 1520	1299.00	●
120	3020 x 1520	1558.90	●
140	3020 x 1520	1799.45	●
150	3020 x 1520	1948.60	●
180	4165 x 1210	2567.20	●
200	3550 x 1050	2109.75	●

Average production weights.

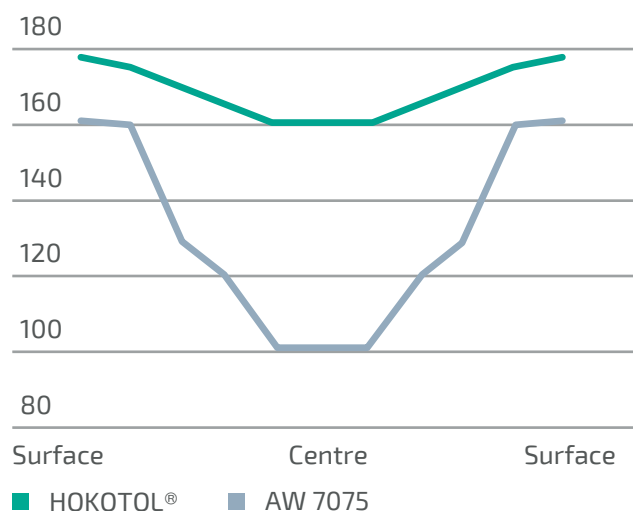
- Standard: generally available from stock
- ◐ Semi-standard: generally not available from stock
- Non-standard: generally not available from stock, manufactured to order and subject to special conditions.

ADVANTAGES OF HOKOTOL®

- Consistent hardness across the entire thickness of the plate
- Good polishing for critical surface components/optical surfaces
- Very good thermal conductivity
- Extremely uniform mechanical properties across the entire thickness
- High dimensional stability due to low residual stress
- Excellent machinability

HARDNESS ACROSS THE THICKNESS OF THE PLATE

HARDNESS HB (2.5/187,5)



WELDURAL®

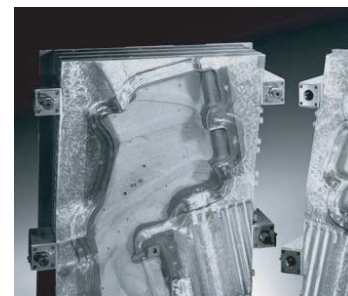
Weldural® has been developed to provide the best possible mechanical stability over a temperature range of up to 250°C. Even when exposed to heat for over 1,000 hours, the resistance is significantly higher than that of 7075 alloy.



CHEMICAL COMPOSITION (WEIGHT %)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Zr	Ti
Minimum	-	-	5.8	0.2	-	-	-	0.10	0.02
Maximum	0.3	0.4	6.8	0.4	0.10	0.05	0.10	0.25	0.10

Information transcribed from the supplier datasheet.

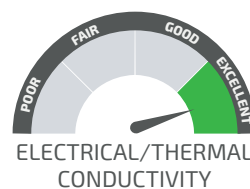


MAIN CHARACTERISTICS

- Very good thermal conductivity
- Excellent electrical conductivity
- Greater thermal stability
- Excellent dimensional stability
- Very good machining and polishing
- High wear resistance
- Extremely uniform mechanical properties
- Excellent weldability
- Good resistance to corrosion

APPLICATIONS

- Injection and blow moulds
- Moulds for high temperature parts
- High precision mechanical parts (requires high dimensional stability)
- Moulds with welded constructions
- Refrigeration engineering
- Machine elements





MECHANICAL PROPERTIES

THICKNESSES (mm)	Rm (MPa)	Rp0.2 (MPa)	A50 (%)	HB - BRINELL HARDNESS
100	449	335	8.9	130
200	436	329	6.8	130
300	427	327	4.0	130

Typical traction properties at room temperature; measured by S/4; test direction L-T

Information transcribed from the supplier datasheet.

PHYSICAL PROPERTIES

DENSITY	2.84 g/cm ³
MODULUS OF ELASTICITY	73 800 MPa
LINEAR EXPANSION COEFFICIENT	22.5 10 ⁻⁶ /K
THERMAL CONDUCTIVITY	130 W/mK
ELECTRICAL CONDUCTIVITY	17.4 m/Ohm mm ²

DELIVERY PROGRAM ON REQUEST.

ADVANTAGES OF WELDURAL®

- Resistance to high temperatures (to long term heating)
- Suitable for welding
- Superior thermal conductivity
- High and uniform mechanical properties across the entire thickness
- High dimensional stability due to low residual stress
- Excellent machinability

TYPICAL RESISTANCE PROPERTIES UNDER TEMPERATURE INFLUENCE

TEMPERATURE (°C)	Rm (MPa)	Rp0.2 (MPa)	A (%)
24	449	335	9
100	414	324	15
149	338	276	17
204	248	200	20

TYPICAL RESISTANCE PROPERTIES UNDER LONG TERM TEMPERATURE INFLUENCE¹

TEMPERATURE (°C)	Rm (MPa)	Rp0.2 (MPa)	A (%)
24	272	161	20
100	253	155	24.2
149	198	150	26.2
204	138	135	37.5

¹Measured in S / 4 after 1000 h under test temperature; S / 4 corresponds to 25% of the thickness depth

ADVANTAGES OF THE PRODUCTION OF ALUMINIUM MOULDS

ALUMINIUM vs. STEEL

WEIGHT

Aluminium is one third of steel in terms of weight. The lightness of this material greatly facilitates the handling of large blocks, reducing costs such as transport cost.

MACHINING

Compared to steel, aluminium is an easier material to be machined; therefore, it is possible to improve delivery times when the mould is made of aluminium.

MOULDS FOR THE PRODUCTION OF PLASTIC PARTS

Aluminium is a great conductor and heat sink. The temperature is evacuated from the mould 3 to 4 times faster than in the same steel mould; the cycles reduce up to 25% in time, hence the increase in productivity. For years, every effort has been invested in reducing the cycle time of the production of the plastic part through pressures, materials and rendering of blowing-injection transformation machines. It is in the cooling/heating process of the mould that we can notice great benefits in the use of aluminium moulds.

MACHINING PROCESS	TIME IN % - STEEL	TIME IN % - ALUMINIUM
FACE AND SIDE MILLING	100 %	16 %
DRILLING	100 %	17 %
TOTAL MACHINING TIME	100 % (2h40min)	30 % (40min)
THINNING	100 %	20 %
FINISHED	100 %	24 %

OTHER ADVANTAGES OF THE PRODUCTION OF ALUMINIUM MOULDS

- Excellent (mirrored) polishing
- Production of parts: up to 2 million units
- High thermal conductivity, reducing stabilization times
- Less machine and tool wear
- Lower cost of production



REDUCE YOUR COSTS WITH OUR WATERJET CUTTING SERVICE!

SPECIAL ALLOYS FOR MOULDS

In order to show the advantages of the production of aluminium moulds compared with the production of steel moulds, we present two practical cases, in which the same moulds were produced in 7075 aluminium alloy and in steel 37. In table 1 we can obtain information about the parts and in table 2 the gains/benefits in using the aluminium mould.

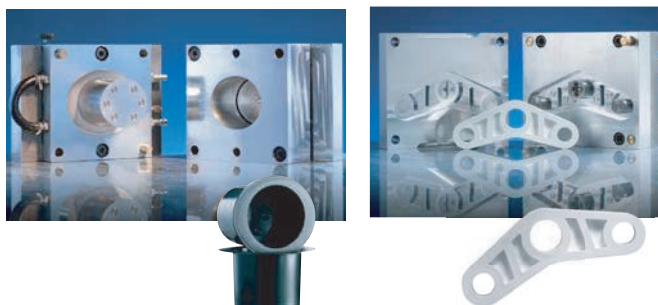


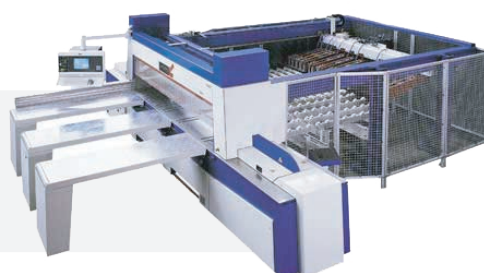
TABLE 1 - INJECTION PROCESS OF PARTS

Weight/part	0.022 KG	0.055 KG
Parts produced so far	700 000	1 000
Type of Plastic	PP	PA6 + 30% GF
Plastic injection temperature	225° C	235°
Mould Temperature	25° - 30° C	80°
Injection Pressure	600 bar	800 bar
Mould Material	Alumínio 7075 e Aço 37	Alumínio 7075 e Aço 37

TABLE 2 - GAINS/BENEFITS IN USING ALUMINIUM MOULD

GAINS/BENEFITS IN USING AN ALUMINIUM COMPOSITE MOULD		
Mould weight	- 42%	- 54%
Price of material	- 47%	- 50%
Mould machining costs	- 33%	- 24%
Production/min	+ 35%	+ 10%
Price/part	- 33%	- 9%

BUY ONLY WHAT YOU NEED
WE TAKE CARE OF THE SURPLUS!



SPECIAL ALLOYS FOR MOULDS COMPARISON WITH STEEL

HOKOTOL® VS STEEL

PHYSICAL PROPERTIES IN COMPARISON WITH STEEL

Property	Hardness	Density	E-Modulus	Thermal expansion coefficient 20°C - 100°C	Thermal conductivity at room temperature	Electrical conductivity at room temperature
	[HB]	[g/cm ³]	[MPa]	[10 ⁻⁶ /K-1]	[W/(m·K)]	[m/Ω · mm ²]
HOKOTOL®	180	2.83	73,800	23.5	154	23
Steel 1.2312 (40CrMnMoS8-6)	300	7.85	215,000	12.5	35	10.3
COMPARISON	1: 1.7	1: 2.8	1: 3.1	1.9 : 1	4.4 : 1	2.2 : 1

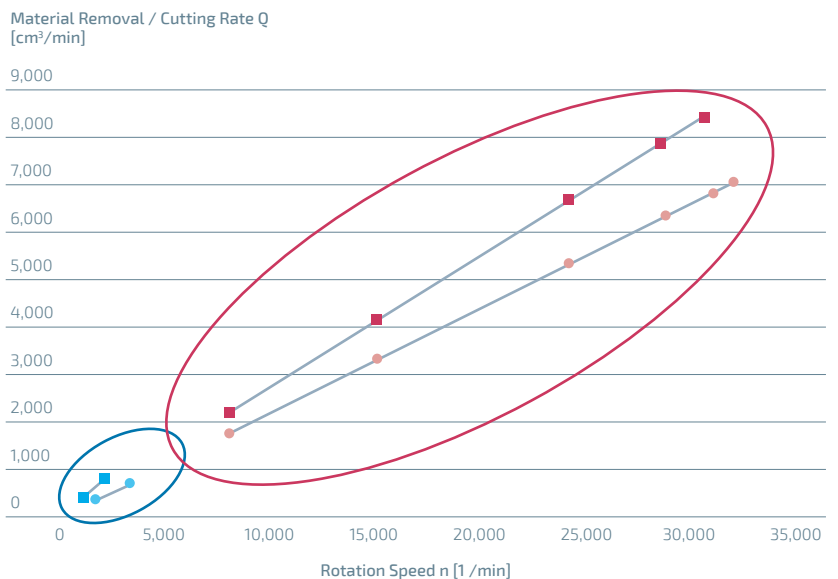
WELDURAL® VS STEEL

PHYSICAL PROPERTIES IN COMPARISON WITH STEEL

Property	Hardness	Density	E-Modulus	Thermal expansion coefficient 20°C - 100°C	Thermal conductivity at room temperature	Electrical conductivity at room temperature
	[HB]	[g/cm ³]	[MPa]	[10 ⁻⁶ /K-1]	[W/(m·K)]	[m/Ω · mm ²]
WELDURAL®	130	2.84	73,800	22.5	130	17.4
Steel 1.2312 (40CrMnMoS8-6)	300	7.85	215,000	12.5	35	10.3
COMPARISON	1: 2.3	1: 2.8	1: 2.9	1.9 : 1	3.7 : 1	1.7 : 1

MATERIAL REMOVAL/ALUMINIUM CUTTING RATE VS STEEL

Aluminium supports high speed machining where removal rate can be up to 10 times higher when compared to steel.



- Revolutions per minute aluminium tool $f_r(\text{max}) - 0.220 \text{ mm}$
- Revolutions per minute aluminium tool $f_r(\text{max}) - 0.098 \text{ mm}$

- Surface Milling (Aluminium)
- Corners Milling (Aluminium)
- Surface Milling (Steel)
- Corners Milling (Steel)

QUANTITY OF PARTS TO BE INJECTED BY ALUMINIUM QUALITY

MATERIAL	Temp. of Material (°C)	Temp. of Mould (°C)	Injection Pressure (bar)	Pressure Maintained (bar)	AW 5083 CAST	CERTAL® / CERTAL® SPC	ALUMOLD®	HOKOTOL®
Polyethylene BD (PEBD)	160 - 260	20 - 70	500 - 1000		●●	●●●●	●●●●	●●●●
Polyethylene HD (PEHD)	260 - 310	50 - 70	600 - max.	30 - 100%	●●	●●●●	●●●●	●●●●
Polypropylene (PP)	250 - 270	40 - 100	600 - max.	50 - 100%	●●	●●●●	●●●●	●●●●
Polystyrene (PS)	180 - 230	20 - 60	1000 - max.		●●	●●●●	●●●●	●●●●
Polystyrene CHOC (PSC)	< 250	45 - 60			●●	●●●●	●●●●	
SAN	220 - 260	50 - 70	1000 - max.		●	●●●●	●●●●	
ASB	220 - 280	60 - 80	800 - 1400		●	●●●●	●●●●	●●●●
Polyamide 6/6 (PA 6/6)	250 - 290	80 - 90	700 - 1200	30 - 100 %	●	●●●●	●●●●	●●●
Polyamide 6 (PA 6)	240 - 290	80 - 90	800 - 1300	20 - 60 %	●	●●●	●●●	●●●
Polyamide 11 (PA11)	230 - 300	30 - 90	400 - 700		●	●●●	●●●	●●●
POM	180 - 220	50 - 120	800 - 2000	PI	●	●●●	●●●	●●●
PC	270 - 320	80 - 120	800 - 2000	70 %	●	●●●	●●●	●●●●
PETP	260 - 270	140	1200 - 1700		●	●●●	●●●	●●●●
PETP amorphous	270 - 290	70 - 80	1000 - 2000		●●	●●●●	●●●●	●●●●
PBTP	260 - 270	40 - 50	1200 - 1700	60 - 100 %	●●	●●●●	●●●●	
PPO	260 - 300	80 - 110	1000 - 2000	60 - 80 %	●●	●●●●	●●●●	●●●
PVC	170 - 190	50 - 60	1200 - 1400	50 - 80 %	●●	●●●●	●●●●	
PMMA	200 - 250	40 - 90	500 - 2000	8	●●	●●●●	●●●●	●●●
PA 6/6 + glass fibers	260 - 290	90 - 120	900 - 1500	40 - 100 %	●●	●●	●●	●●●
PA 6 + glass fibers	240 - 290	90 - 120	1000 - 1500	20 - 60 %	●	●●	●●	●●●
PC + glass fibers	300 - 325	90 - 110	1000 - 200	70 %	●	●●	●●	●●●

●●●● 1,000,000 to 2,000,000 (large S. of parts)

●● 100,000 to 50,000 (small S. of parts)

●●● 100,000 to 500,000 (mean S. of parts)

● up to 5,000 parts

ECONOMY - PRODUCTION OF 100,000 PARTS

COSTS	STEEL AISI P20		HOKOTOL®		DIFFERENCE
RAW MATERIAL	76 Kg x 2.5 €/Kg	190 €	26 Kg x 10€/Kg	260 €	+ 70€
MACHINING	100 H. x 30€/H.	3.000€	60 H. x 30€/H.	1.800€	- 1.200€
TOTAL	3.190 €		2.060 €		- 1.130 €



POLISHING

WELDURAL® and HOKOTOL® have excellent mechanical properties in a wide range of applications. An important factor in the production of moulds is the excellent surface quality for components with aesthetic requirements. This can only be achieved if the surface of the mould material is well polished.

Both HOKOTOL® and WELDURAL® alloys have a good polishing capacity. Below we show the data corresponding to the typical roughness of HOKOTOL® and WELDURAL®.

We can obtain very satisfactory roughness values with standard polishing procedures. This means that both alloys can also be used for other surfaces with different requirements, such as high-gloss surfaces (e.g. headlight tools), textured surfaces (e.g. car interiors), painted surfaces and sheet-shaped composites (for example, outer skin tools). It can be polished across the entire thickness of the plate

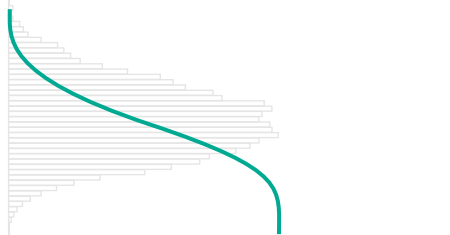
HOKOTOL®: It can be polished across the entire thickness of the plate

Profile Depth = 2.54 µm

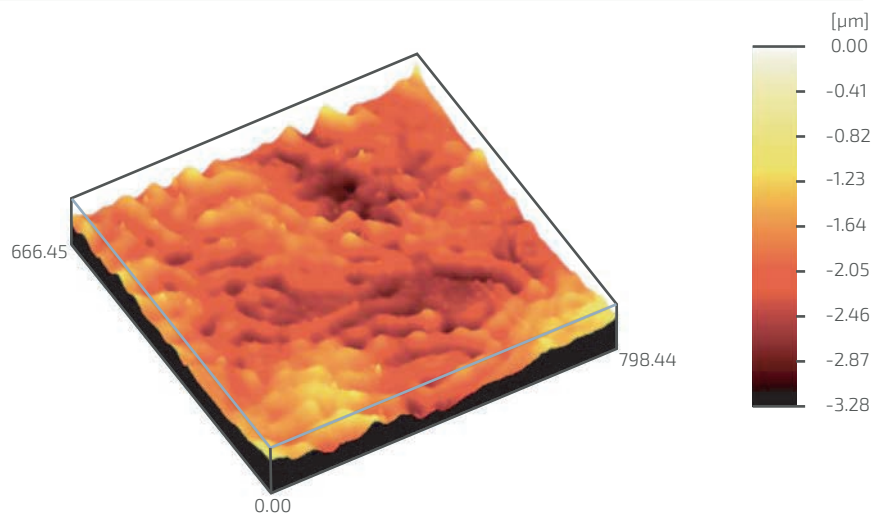
Arithmetic mean deviation of profile roughness [S_a] = 0.21 µm

Quadratic mean deviation of profile roughness [S_q] = 0.26 µm

-0.62 µm



-3.16 µm



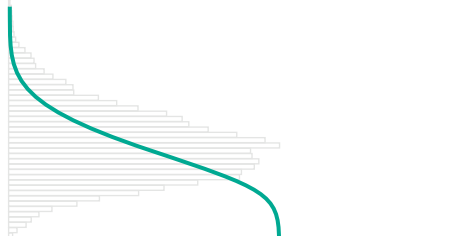
WELDURAL®: Shows good surface polishing

Profile Depth = 2.74 µm

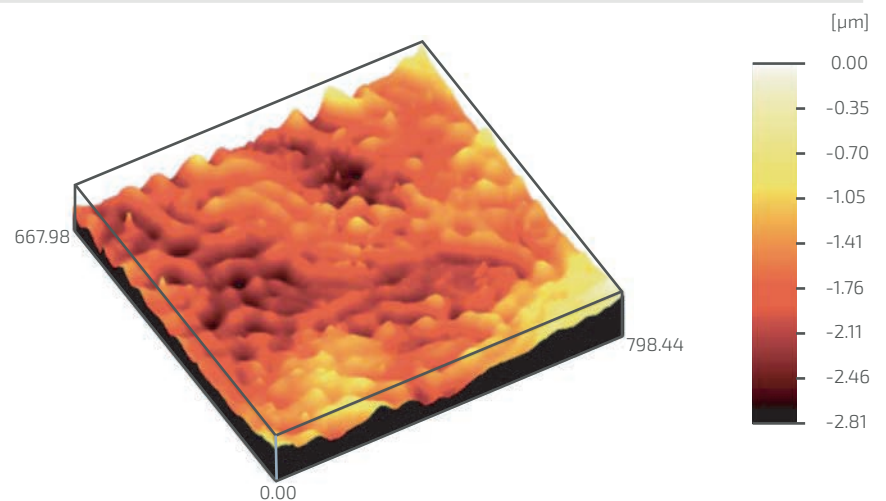
Arithmetic mean deviation of profile roughness [S_a] = 0.21 µm

Quadratic mean deviation of profile roughness [S_q] = 0.26 µm

0.00 µm



-2.74 µm



COATING

Many aluminium alloys, including WELDURAL® and HOKOTOL® can be coated to improve the characteristics of their specific surfaces. The coating material to be used depends on the alloy used. WELDURAL®, for example shows good rigid anodizing results.

Below we show two examples of coating for WELDURAL® and HOKOTOL®.

ADVANTAGES

- Improves mould service time
- Increases the number of production cycles
- Improves corrosion protection
- Improves surface quality

HARD CHEMICAL NICKEL COATING

Elemental Nickel is used for protection against wear or corrosion. A very clean surface finish is required for this process.

Visual Appearance:

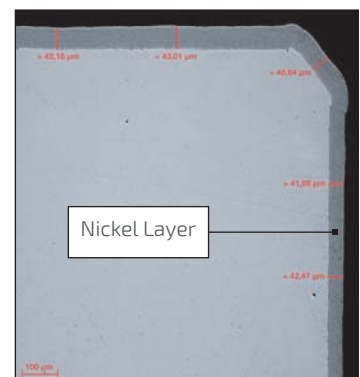
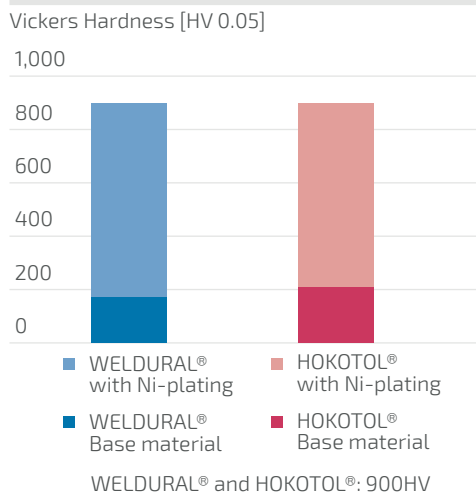


Explosion Surface
Matt



Polished Surface
Bright

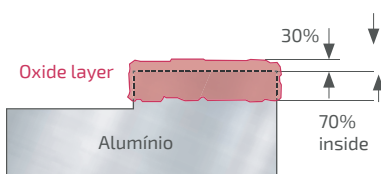
Surface treatment with hard chemical nickel



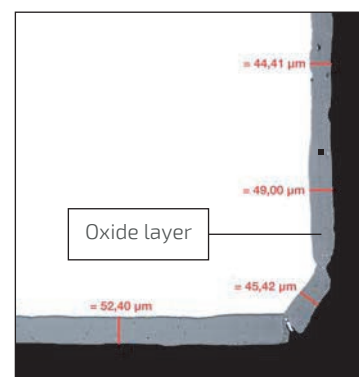
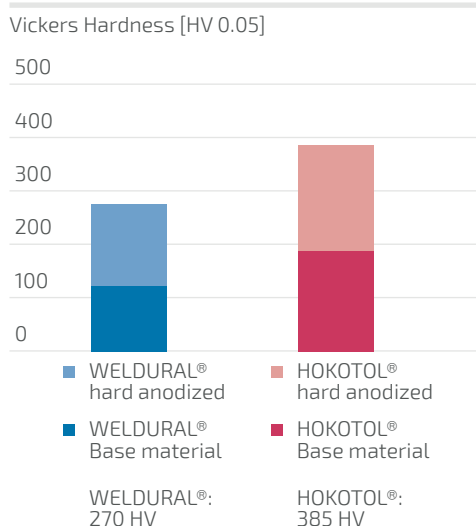
Alloy: WELDURAL®

HARD/INDUSTRIAL ANODIZING

The aluminium oxide layer is increased by the anodizing process to serve as a protective layer for the base metal against corrosion and abrasion. Oxide layers are produced between 0.5 and 150 µm in thickness. During the hard anodizing, the oxide layer can grow on all components exposed surfaces as shown in the figure below.



Anodized surface



Alloy: WELDURAL®





SERIES 2000

SERIES 2000
— ● ■

Alloy 2007	● ■	36
Alloy 2011	●	38
Alloy 2017 A	— ●	40
Alloy 2030	● ■	42



SERIES 2000 ●

AW 2007 (Al Cu4PbMgMn)

Among the aluminium alloys suitable for high-speed automatic lathes, alloy 2007 has the highest mechanical characteristics. This alloy is often selected when it is necessary to have a good combination of machinability and high mechanical properties. However, it has low resistance to corrosion.

CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Ni	Pb	Bi	Sn	Al
Minimum	-	-	3.3	0.5	0.4	-	-	-	-	0.8	-	-	-
Maximum	0.8	0.8	4.6	1	1.8	0.1	0.8	0.2	0.2	1.5	0.2	0.2	Rest

MECHANICAL PROPERTIES (EN 755 - 2)

EXTRUDED

TEMPER	DIAMETER (mm)	Rm* (MPa)	Rp0.2* (MPa)	A* (%)	HB - BRINELL HARDNESS
T4, T4510, T4511	≤ 80	370	250	8	95
T4, T4510, T4511	80 - 200	340	220	8	95
T4, T4510, T4511	200 - 250	330	210	7	95

*Minimum values

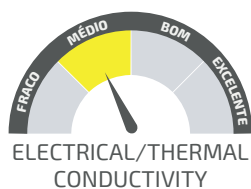
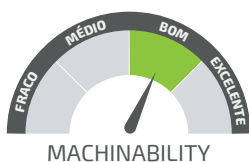


MAIN CHARACTERISTICS

- Alloy with the highest mechanical properties
- Often selected when a combination of good machining and high mechanical properties is required
- Low resistance to corrosion

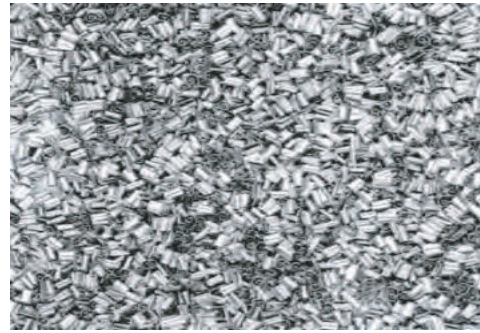
APPLICATIONS

- Screws
- Nuts
- Threads
- Threaded rods



PHYSICAL PROPERTIES

DENSITY	2.85 g/cm ³
MODULUS OF ELASTICITY	71 000 MPa
LINEAR EXPANSION COEFFICIENT	23.5 10 ⁻⁶ K ⁻¹
THERMAL CONDUCTIVITY	140 W/mK
ELECTRICAL CONDUCTIVITY	53 - 49 MS/m



PROPERTIES	T4
MACHINABILITY	GOOD
PROTECTIVE ANODIZING	FAIR
DECORATIVE ANODIZING	POOR
HARD ANODIZING	POOR
RESISTANCE TO ATMOSPHERIC CORROSION	FAIR
RESISTANCE TO MARITIME CORROSION	POOR
MIG-TIG WELDABILITY	POOR
RESISTANCE TO WELDABILITY	POOR
ABRASIVE WELDABILITY	POOR
COLD PLASTIC FORMABILITY	POOR
HOT PLASTIC FORMABILITY	FAIR

DELIVERY PROGRAM

ROUND RODS

DIAM. ¹ (mm) EXTRUDIDO	WEIGHT (kg/m)	STOCK T4	STOCK T4511	DIAM. ¹ (mm) EXTRUDIDO	WEIGHT (kg/m)	STOCK T4	STOCK T4511
Standard length 3000mm							
20	0.879	●	○	120	31.668	●	○
25	1.374	●	○	130	37.165	●	○
30	1.979	●	○	140	43.102	●	○
32	2.251	●	○	150	49.480	●	○
35	2.693	●	○	160	56.297	●	○
40	3.518	●	○	170	63.554	●	○
45	4.552	●	○	180	71.251	●	○
50	5.497	●	○	190	77.900	●	○
55	6.652	●	○	200	86.300	●	○
60	7.916	●	○	210	95.200	●	○
65	9.291	●	○	225	111.375	●	○
70	10.775	●	○	250	135.000	○	○
75	12.370	●	○	254	144.00	●	○
80	14.074	●	○	260	146.000	●	○
85	15.888	●	○	270	153.400	○	○
90	17.813	●	○	275	166.375	●	○
100	21.991	●	○	300	194.300	○	○
110	26.609	●	○	304.8	211.00	●	○
115	29.083	●	○				

SQUARE RODS

THICKNESS ¹ (mm)	WEIGHT (kg/m)	STOCK T4
Standard length 3000mm		
30	2.520	○
35	3.430	○
40	4.480	○
45	5.670	○
50	7.000	○
60	10.080	○
70	13.720	●
80	17.920	●
90	22.680	○
100	28.000	●
110	33.880	○
120	40.320	○
130	47.320	○
150	67.800	○

¹Other thicknesses available on request.
Material calibrated on request.
Average weights of production

¹Other diameters available on request.

Material calibrated on request.

Average weights of production.

- Standard: generally available from stock
- Semi-standard: generally not available from stock
- Non-standard: generally not available from stock, manufactured to order and subject to special conditions.



SERIES 2000 ●

AW 2011 (Al Cu6BiPb)

This alloy is the most often selected for high speed automatic lathes. 2011 alloy, having a lead content (Pb) registered between 0.2-0.6% will not comply with to produce final parts according to directive RoHS, 18/05/2021, and subject to specific authorization for REACH compliance (PB ≤ 0.1%).

CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Pb	Bi	Cr	Zn	Ti	Al
Minimum	-	-	5	0.2	0.2	-	-	-	-
Maximum	0.4	0.7	6	0.6	0.6	-	0.30	-	Rest

MECHANICAL PROPERTIES (EN 754 - 2)

CALIBRATED

TEMPER	DIAMETER (mm)	Rm* (MPa)	Rp0.2* (MPa)	A* (%)	HB - BRINELL HARDNESS
T3	≤ 40	320	270	10	90
T3	40 - ≤ 50	300	250	10	90
T3	50 - ≤ 80	280	210	10	90

*Minimum values

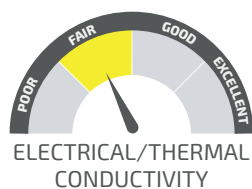


MAIN CHARACTERISTICS

- Easy machining
- Less stress cutting than most alloys
- Extended life of cutting tools
- Very fine scrap
- High mechanical properties
- Possibility of anodizing finished parts in different colours

APPLICATIONS

- Screws
- Nuts
- Threads
- Threaded rods



PHYSICAL PROPERTIES

DENSITY	2.83 g/cm ³
MODULUS OF ELASTICITY	70 000 MPa
LINEAR EXPANSION COEFFICIENT	22.9 10 ⁻⁶ K ⁻¹
THERMAL CONDUCTIVITY	151 W/mK
ELECTRICAL CONDUCTIVITY	53 - 49 MS/m



PROPERTIES	T3/T6
MACHINABILITY	EXCELLENT
PROTECTIVE ANODIZING	FAIR
DECORATIVE ANODIZING	POOR
HARD ANODIZING	POOR
RESISTANCE TO ATMOSPHERIC CORROSION	FAIR
RESISTANCE TO MARITIME CORROSION	POOR
MIG-TIG WELDABILITY	POOR
RESISTANCE TO WELDABILITY	FAIR
ABRASIVE WELDABILITY	POOR
COLD PLASTIC FORMABILITY	FAIR
HOT PLASTIC FORMABILITY	FAIR

DELIVERY PROGRAM

ROUND RODS

DIAMETER ¹ (mm) CALIBRATED h9	WEIGHT (kg/m)	STOCK T3
Standard length 3000mm		
3	0.019	●
4	0.035	●
5	0.055	●
6	0.079	●
7	0.107	●
8	0.140	●
9	0.178	○
10	0.219	○
11	0.266	○
12	0.316	○
14	0.431	○
15	0.494	○
16	0.562	○
18	0.712	○
19	0.793	○
20	0.879	○
21	0.969	○
22	1.064	○
25	1.374	○
26	1.486	○

¹ Other diameters available on request.
Average weights of production.

● Standard: generally available from stock
○ Semi-standard: generally not available from stock
○ Non-standard: generally not available from stock, manufactured to order and subject to special conditions.





SERIES 2000 ●

AW 2017 A (Al Cu4MgSi(A))

2017 A alloy rods have high mechanical properties and excellent resistance to fatigue. It can be replaced with 2007 alloy, which has the same mechanical properties, but better machinability, allowing greater productivity.



SERIES 2000

CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti + Zr	Al
Minimum	0.2	-	3.5	0.4	0.4	-	-	-	-
Maximum	0.8	0.7	4.5	1	1	0.1	0.25	0.25	Rest

MECHANICAL PROPERTIES

PLATES (EN 485-2)

THICKNESSES (from...to)	TEMPER	Rm* (MPa)	Rp0.2* (MPa)	A50* (%)	A* (%)	HB - BRINELL HARDNESS
0.4 - 1.5 mm	T451	390	245	14	-	110
1.5 - 6 mm		390	245	15	-	110
6 - 12.5 mm		390	260	13	-	111
12.5 - 40 mm		390	250	-	12	110
40 - 60 mm		385	245	-	12	108
60 - 80 mm		370	240	-	7	-
80 - 120 mm		360	240	-	6	105

*Minimum values

ROUND RODS (EN 755-2)

DIAMETERS (from...to)	TEMPER	Rm* (MPa)	Rp0.2* (MPa)	A* (%)	HB - BRINELL HARDNESS
25 - 75 mm	T4	400	270	10	105
75 - 150 mm	T4510	390	260	9	105
150 - 200 mm	T4511	370	240	8	105

*Minimum values

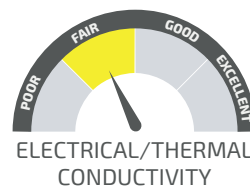


MAIN CHARACTERISTICS

- Very high mechanical resistance
- Moderate corrosion resistance

APPLICATIONS

- Parts of planes, vehicles and machinery subject to high stress
- High resistance forged parts
- Structural elements requiring high mechanical characteristics



DENSITY	2.78 g/cm ³
MODULUS OF ELASTICITY	72 000 MPa
LINEAR EXPANSION COEFFICIENT	3.6 10 ⁻⁶ K ⁻¹
THERMAL CONDUCTIVITY	125 - 140 W/mK
ELECTRICAL CONDUCTIVITY	19 - 21 MS/m



PROPERTIES	T451
MACHINABILITY	FAIR
PROTECTIVE ANODIZING	FAIR
DECORATIVE ANODIZING	POOR
HARD ANODIZING	POOR
RESISTANCE TO ATMOSPHERIC CORROSION	FAIR
RESISTANCE TO MARITIME CORROSION	POOR
MIG-TIG WELDABILITY	FAIR
RESISTANCE TO WELDABILITY	GOOD
ABRASIVE WELDABILITY	POOR
COLD PLASTIC FORMABILITY	POOR
HOT PLASTIC FORMABILITY	FAIR

DELIVERY PROGRAM

ROUND RODS

DIAMETER ¹ (mm) EXTRUDED	WEIGHT (kg/m)	STOCK T451
Standard length 3000mm		
30	1.979	●
32	2.251	●
35	2.693	●
40	3.518	●
45	4.552	●
50	5.497	●
55	6.652	●
60	7.916	●
65	9.219	●
70	10.775	●
75	12.370	●
80	14.074	●
90	17.813	●
100	21.991	●
110	26.609	●
120	31.668	●
130	37.165	●
140	43.102	●
150	49.480	●

¹Other diameters available on request.
Material calibrated on request.
Average weights of production.

PLATES

THICKNESS ¹ (mm)	DIMENSIONS (mm)	PLATE WEIGHT(kg)	STOCK T451
8	1520 x 3020	102.09	●
10	1520 x 3020	127.61	●
12	1520 x 3020	153.14	●
15	1520 x 3020	191.42	●
20	1520 x 3020	255.23	●
25	1520 x 3020	319.03	●
30	1520 x 3020	382.84	●
35	1520 x 3020	446.63	●
40	1520 x 3020	510.45	●
45	1520 x 3020	578.40	●
50	1520 x 3020	638.07	●
60	1520 x 3020	765.68	●
70	1520 x 3020	893.29	●
80	1520 x 3020	1020.91	●
90	1520 x 3020	1148.52	●
100	1520 x 3020	1276.13	●

¹Other thicknesses available on request.
Average weights of production

● Standard: generally available from stock
 ● Semi-standard: generally not available from stock
 ○ Non-standard: generally not available from stock, manufactured to order and subject to special conditions.



SERIES 2000 ●

AW 2030 (AL Cu4PbMg)

Among the aluminium alloys suitable for high-speed automatic lathes, alloy 2030 has the highest mechanical characteristics. This alloy is often selected when it is necessary to have a good combination of machinability and high mechanical properties. However, it has low resistance to corrosion.

CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
Minimum	-	-	3.3	0.2	0.5	-	-	-	-
Maximum	0.8	0.7	4.5	1	1.3	0.1	0.5	0.2	Rest

MECHANICAL PROPERTIES (EN 755 - 2)

EXTRUDED

DIAMETER (mm)	TEMPER	Rm* (MPa)	Rp0.2* (MPa)	A* (%)	HB - BRINELL HARDNESST
≤ 80	T4	370	250	8	115
80 - ≤ 200	T4510 T4511	340	220	8	115
200 - ≤ 250		330	210	7	115

*Minimum values

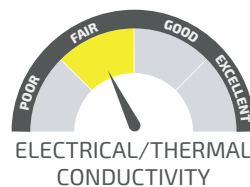


MAIN CHARACTERISTICS

- Combination of good machining and high mechanical properties
- Low resistance to corrosion

APPLICATIONS

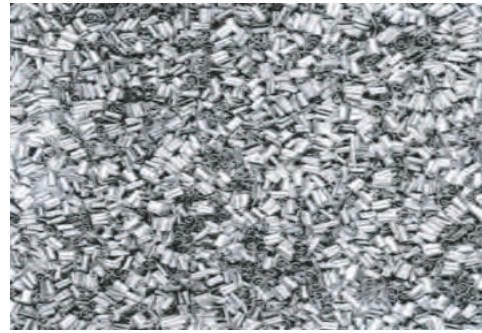
- Screws
- Threads
- Threaded rods



SERIES 2000

PHYSICAL PROPERTIES

DENSITY	2.85 g/cm ³
MODULUS OF ELASTICITY	71 000 MPa
LINEAR EXPANSION COEFFICIENT	23.5 10 ⁻⁶ K ⁻¹
THERMAL CONDUCTIVITY	140 W/mK
ELECTRICAL CONDUCTIVITY	53 - 49 MS/m



PROPERTIES	T3/T4
MACHINABILITY	GOOD
PROTECTIVE ANODIZING	FAIR
DECORATIVE ANODIZING	POOR
HARD ANODIZING	POOR
RESISTANCE TO ATMOSPHERIC CORROSION	FAIR
RESISTANCE TO MARITIME CORROSION	POOR
MIG-TIG WELDABILITY	POOR
RESISTANCE TO WELDABILITY	POOR
ABRASIVE WELDABILITY	POOR
COLD PLASTIC FORMABILITY	POOR
HOT PLASTIC FORMABILITY	FAIR

DELIVERY PROGRAM

ROUND RODS

DIAMETER ¹ (mm) EXTRUDED	WEIGHT (kg/m)	STOCK T4	DIAMETER ¹ (mm) EXTRUDED	WEIGHT (kg/m)	STOCK T4
Standard length 3000mm					
20	0.879	●	115	29.083	○
25	1.374	●	120	31.668	●
30	1.979	●	125	34.344	○
32	2.251	●	130	37.165	●
35	2.693	●	140	43.102	●
40	3.518	●	150	49.480	●
45	4.552	●	160	56.297	●
50	5.497	●	170	63.554	●
55	6.652	●	180	71.251	●
60	7.916	●	190	77.900	●
61	8.183	●	200	86.300	●
65	9.291	●	210	95.200	●
70	10.775	●	215	105.00	●
75	12.370	●	220	106.400	○
80	14.074	●	225	111.375	●
81	14.641	●	250	135.000	○
85	15.888	●	254	143.200	●
90	17.813	●	260	146.000	○
100	21.991	●	275	166.375	○
110	26.609	●	300	194.300	○

¹Other diameters available on request.

Material calibrated on request.

Average weights of production.

- Standard: generally available from stock
- Semi-standard: generally not available from stock
- Non-standard: generally not available from stock, manufactured to order and subject to special conditions.

SQUARE RODS

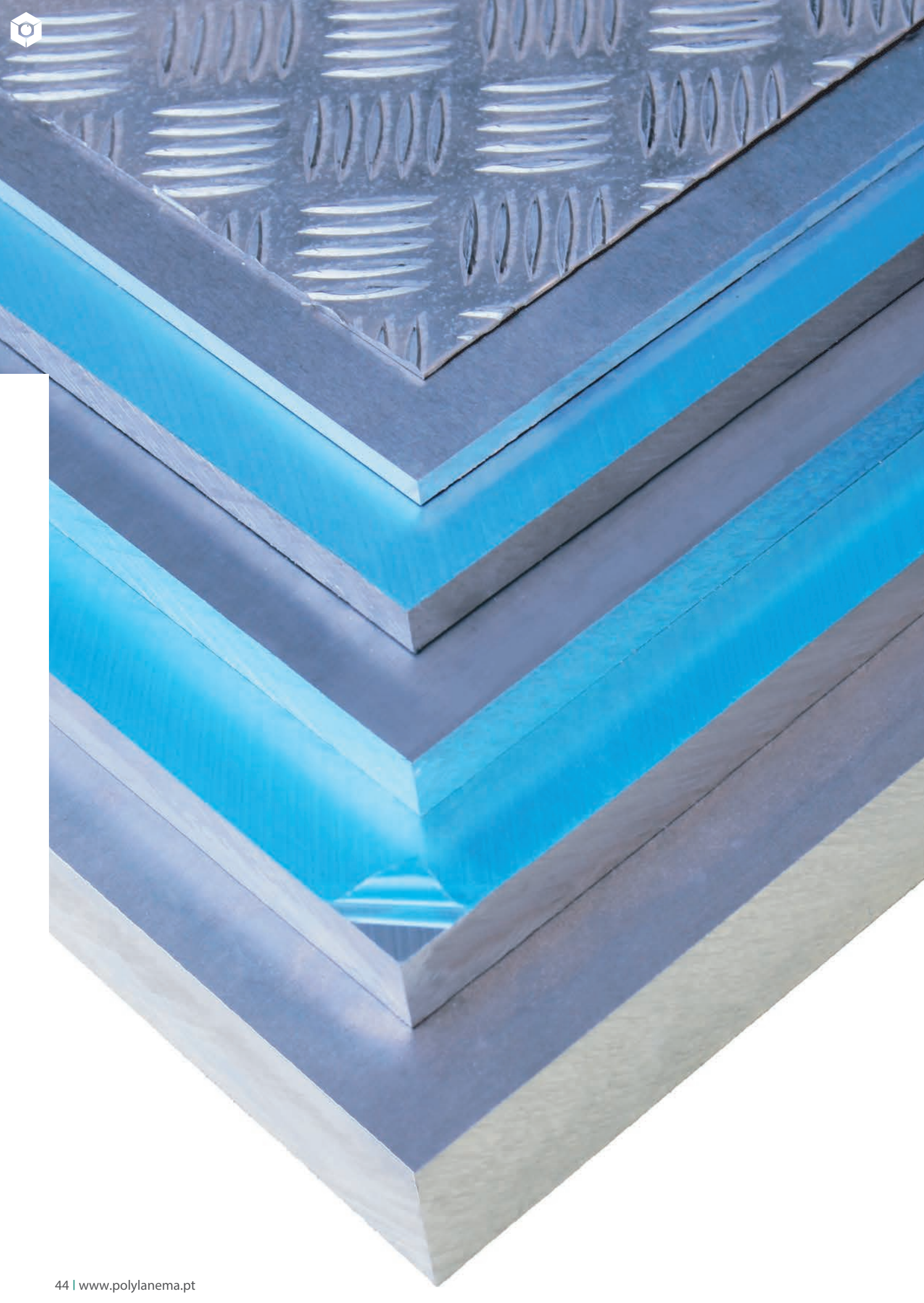
THICKNESS ¹ (mm) EXTRUDIDO	WEIGHT (kg/m)	STOCK T4
Standard length 3000mm		
35	3.430	●
40	4.480	○
45	5.670	○
50	7.000	○
60	10.080	○
70	13.720	●
80	17.920	●
90	22.680	●
100	28.000	○
110	33.880	●
120	40.320	●
130	47.320	●
150	67.800	●

¹Other thicknesses available on request.

Material calibrated on request.

Average weights of production







SERIES 5000

Alloy 5083 Laminated		46
Alloy 5083 Rectified		48
Alloy 5083 Cast		50
Alloy 5754		52
Alloy 5754 Non-slip		54



SERIES 5000 ●

AW 5083 LAMINATED (Al Mg4,5Mn0,7)

Aluminium 5083 contains from 3 to 5% addition of chromium and manganese, presenting the best characteristics of the 5000 series semi-finished aluminium alloys. It guarantees good weldability, and an interesting resistance, especially in the marine atmosphere. They are widely used in the naval segment and in the industry in general.



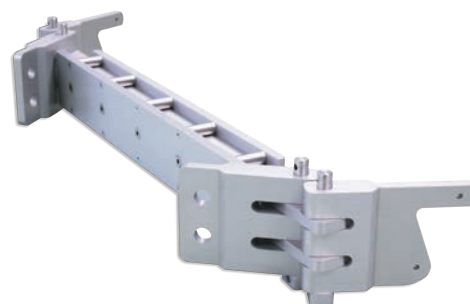
CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
Minimum	-	-	-	0.4	4	0.05	-	-	-
Maximum	0.4	0.4	0.1	1	4.9	0.25	0.25	0.15	Rest

MECHANICAL PROPERTIES (EN 485 - 2)

THICKNESS (mm)	TEMPER	Rm (MPa)		Rp0.2* (MPa)	A50 (%)	A (%)	HB - BRINELL HARDNESS
		min.	max.				
3 - 6.3	H111	275	350	125	15	-	75
6.3 - 12.5		270	345	115	16	-	75
12.5 - 50		270	345	115	-	15	75
50 - 80		270	345	115	-	14	73
80 - 120		260	-	110	-	12	70
120 - 200		255	-	105	-	12	69
200 - 250		250	-	95	-	10	69
250 - 300		245	-	90	-	9	69

*Minimum values.

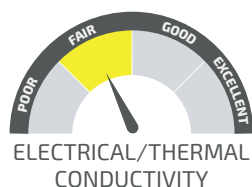


MAIN CHARACTERISTICS

- Good machining
- Excellent dimensional stability
- Very good weldability
- Excellent resistance to corrosion
- Very good thermal conductivity
- Excellent anodizing

APPLICATIONS

- Welded mechanical assemblies
- Chemical industry
- Refrigeration engineering
- Prototypes of mould support plates, blow moulds and mould tools
- Equipment and containers
- Shipbuilding





DENSITY	2.66 g/cm ³
MODULUS OF ELASTICITY	71 000 MPa
LINEAR EXPANSION COEFFICIENT	24.2 10 ⁻⁶ /K
THERMAL CONDUCTIVITY	120 W/mK
ELECTRICAL CONDUCTIVITY	17 - 19 m/Ohm mm ²

DELIVERY PROGRAM

PLATES

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT(kg)	STOCK H111
6	1020 x 2020	32.88	●
	1270 x 2020	51.08	●
	1500 x 3000	73.26	●
8	1020 x 2020	44.50	●
	1270 x 2520	68.11	●
	1520 x 3020	97.68	●
10	1020 x 2020	55.65	●
	1270 x 2520	85.13	●
	1520 x 3020	122.11	●
12	1020 x 2020	66.76	●
	1270 x 2520	102.16	●
	1520 x 3020	146.53	●
15	1020 x 2020	83.50	●
	1270 x 2520	127.70	●
	1520 x 3020	183.16	●
20	1020 x 2020	111.30	●
	1270 x 2520	170.26	●
	1520 x 3020	244.21	●
25	1270 x 2520	212.83	●
	1520 x 3020	305.26	●

Average weights of production.
Other dimensions on request.

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT(kg)	STOCK H111
30	1270 x 2520	255.39	●
	1520 x 3020	366.31	●
35	1270 x 2520	297.96	●
	1520 x 3020	427.37	●
40	1270 x 2520	340.52	●
	1520 x 3020	488.42	●
45	1270 x 2520	383.09	●
	1520 x 3020	549.47	●
50	1270 x 2520	425.65	●
	1520 x 3020	610.52	●
55	1270 x 2520	510.78	●
	1520 x 3020	732.63	●
60	1270 x 2520	595.92	●
	1520 x 3020	854.73	●
70	1270 x 2520	681.05	●
	1520 x 3020	976.84	●
80	1270 x 2520	766.18	●
	1520 x 3020	1098.94	●
90	1270 x 2520	1221.05	●
	1520 x 3020	1343.15	◐
100	1270 x 2520	1465.26	◐
	1520 x 3020	1587.36	◐
110	1270 x 2520	1709.47	◐
	1520 x 3020	1831.57	◐
120	1270 x 2520		
	1520 x 3020		
130	1270 x 2520		
	1520 x 3020		
140	1270 x 2520		
	1520 x 3020		
150	1270 x 2520		
	1520 x 3020		

SHEETS

THICKNESSES (mm)	DIMENSIONS (mm)	SHEET WEIGHT(kg)	STOCK H111
4	1020 x 2020	21.92	●
	1270 x 2520	34.05	●
	1500 x 3000	48.84	●
5	1020 x 2020	27.40	●
	1270 x 2520	42.57	●
	1500 x 3000	61.05	●

Average weights of production.
Other dimensions on request.

FOOD INDUSTRY

5083 alloy laminated plates are approved for food contact according to EN 602:2004. For this reason, this material is used in a variety of applications in industrial plants of the food industry.



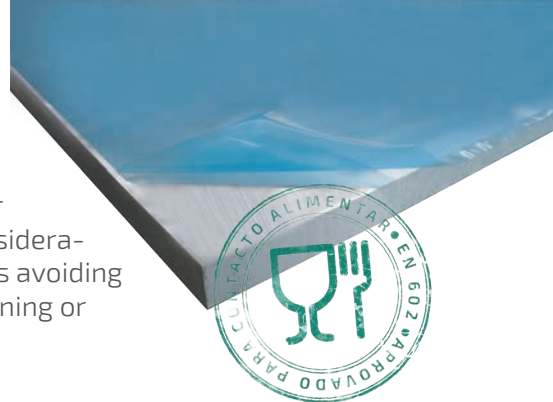
- Standard: generally available from stock
- ◐ Semi-standard: generally not available from stock
- Non-standard: generally not available from stock, manufactured to order and subject to special conditions.



SERIES 5000 ●

AW 5083 RECTIFIED (Al Mg4,5Mn0,7)

Rectified 5083 alloy plates are cast precision plates characterized by their excellent dimension stability. The low level of internal residual stress considerably reduces the deformation effects of the material during machining, thus avoiding nonconformities as well as additional operations such as the product thinning or reprocessing.



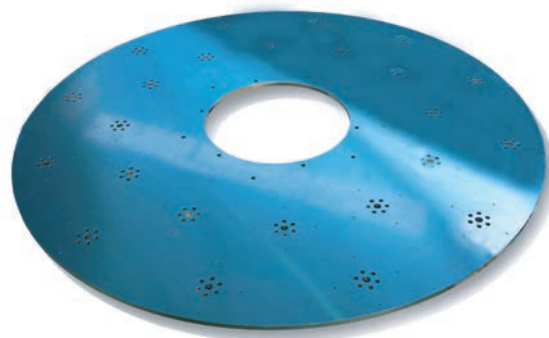
CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti + Zr	Al
Minimum	-	-	-	0.4	4.0	0.05	-	-	-
Maximum	0.4	0.4	0.1	1	4.9	0.25	0.25	0.15	Rest

MECHANICAL PROPERTIES

THICKNESSES (from...to)	Rm (MPa)	Rp0.2 (MPa)	A50 (%)	HB - BRINELL HARDNESS
6 - 100 mm	230 - 290	110 - 130	10 - 15	68 - 75

Information transcribed from the supplier datasheet.

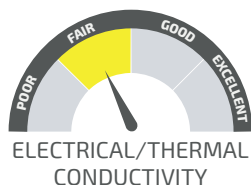


MAIN CHARACTERISTICS

- Excellent dimensional stability
- Low level of internal residual stresses, which considerably reduces the deformation effects of the material during machining
- Uniform flatness across the plate
- Guaranteed thickness tolerance +/- 0.1mm

APPLICATIONS

- Use in patterns and models
- Control and calibration tools
- In general, all applications where faces are not to be rectified





DENSITY	2.66 g/cm ³
MODULUS OF ELASTICITY	70 000 MPa
LINEAR EXPANSION COEFFICIENT	23.5 x 10 ⁻⁶ K ⁻¹
THERMAL CONDUCTIVITY	110 - 140 W/mK
ELECTRICAL CONDUCTIVITY	16 - 18 m/Ω mm ³
SURFACE ROUGHNESS	Ra 0.2 - 0.4 μm

DELIVERY PROGRAM

SHEETS

THICKNESSES (mm)	DIMENSIONS (mm)	SHEET WEIGHT(kg)	STOCK
5	1520 x 3020	61.97	●

Average weights of production.
Other dimensions on request.

PLATES

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT(kg)	STOCK	THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT(kg)	STOCK
6	1520 x 3020	74.40	●	30	1520 x 3020	371.85	●
6.35	1570 x 3020	81.30	●		2150 x 4000	696.60	●
8	1570 x 3020	102.50	●	35	1520 x 3020	433.80	●
10	1520 x 3020	123.95	●	40	1520 x 3020	495.79	●
	2150 x 4000	232.20	●		2150 x 4000	928.80	●
12	1520 x 3020	148.75	●	45	2150 x 4000	1044.90	●
	2150 x 4000	278.70	●	50	1520 x 3020	619.70	●
15	1520 x 3020	182.92	●		2150 x 4000	1161.00	●
	2150 x 4000	348.30	●	60	1520 x 3020	743.70	●
20	1520 x 3020	247.90	●		2150 x 4000	1393.20	●
	2150 x 4000	464.40	●	70	1520 x 3020	867.60	●
25	1520 x 3020	310.00	●	80	2150 x 4000	1857.60	●
	2150 x 4000	580.50	●	90	1520 x 3020	1115.49	○
				100	2150 x 4000	2322.00	●

Average weights of production.
Other dimensions on request.

TOLERANCES:

- Thickness ≥ 5 - ≤ 6: Thickness tolerance ± 0.1 mm / longitudinal and transverse flatness 0.77 - 0.85 mm
- Thickness ≥ 6 - ≤ 13: Thickness tolerance ± 0.1 mm / longitudinal and transverse flatness 0.38 - 0.44 mm
- Thickness ≥ 13: Thickness tolerance ± 0.1 mm / longitudinal and transverse flatness 0.10 - 0.14 mm

MACHINABILITY	
HOMOGENIZED	EXCELLENT
DIMENSIONAL STABILITY	EXCELLENT
ELECTRICAL DISCHARGE MACHINING	EXCELLENT
SURFACE TREATMENT	
PROTECTIVE ANODIZING	GOOD
ANIODIC QUALITY	-
DECORATIVE ANODIZING	UNSUITABLE
PAINTING / COATING	POOR
POLISHING	FAIR/GOOD
RESISTANCE TO CORROSION	
NORMAL ATMOSPHERE	EXCELLENT
MARITIME ATMOSPHERE	EXCELLENT

(COLD) FORMING	
FOLDING	UNSUITABLE
ROTARY MOVEMENT	UNSUITABLE
DEEP STAMPING	UNSUITABLE
BULGING	UNSUITABLE
COLD EXTRUSION	UNSUITABLE
WELDABILITY	
GAS	POOR
WIG	GOOD
MIG	GOOD
RESISTANCE FUSION WELDING	GOOD

IT CAN BE USED IN VARIOUS APPLICATIONS INCLUDING IN THE FOOD INDUSTRY

● Standard: generally available from stock
 ○ Semi-standard: generally not available from stock
 ○ Non-standard: generally not available from stock, manufactured to order and subject to special conditions.



SERIES 5000 ●

AW 5083 CAST (Al Mg4,5Mn0,7)

This quality is obtained by CAST process, which allows the material to have a good dimensional stability and homogeneity. Usually used in prototype moulds, stamping moulds, casting moulds, foam and blow moulds.



CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti + Zr	Al
Minimum	-	-	-	0.4	4.0	0.05	-	-	-
Maximum	0.4	0.4	0.1	1	4.9	0.25	0.25	0.15	Rest

MECHANICAL PROPERTIES

THICKNESSES (from...to)	Rm (MPa)	Rp0.2 (MPa)	A50 (%)	HB - BRINELL HARDNESS
30 - 500 mm	230 - 290	110 - 130	10 - 15	68 - 75

Information transcribed from the supplier datasheet.

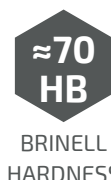
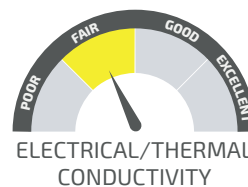


MAIN CHARACTERISTICS

- Excellent dimensional stability
- Low level of internal residual stresses, which considerably reduces the deformation effects of the material during machining
- Immediate availability (thicknesses up to 500mm)

APPLICATIONS

- Use in patterns and models
- Control and calibration tools
- Prototype moulds
- Thermoformed moulds



PHYSICAL PROPERTIES

DENSITY	2.66 g/cm ³
MODULUS OF ELASTICITY	71 000 MPa
LINEAR EXPANSION COEFFICIENT	23.5 x 10 ⁻⁶ K ⁻¹
THERMAL CONDUCTIVITY	110 - 140 W/mK
ELECTRICAL CONDUCTIVITY	16 - 18 m/Ω mm ³

DELIVERY PROGRAM

PLATES

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT(kg)	STOCK
30	1520 x 3020	371.85	●
	2150 x 4000	696.60	●
40	1520 x 3020	495.75	●
	2150 x 4000	928.80	●
50	1520 x 3020	619.70	●
	2150 x 4000	1161.00	●
60	1520 x 3020	743.70	●
	2150 x 4000	1393.20	●
70	1520 x 3020	867.60	●
	2150 x 4000	1625.40	●
80	1520 x 3020	991.60	●
	2150 x 4000	1857.60	●
90	1520 x 3020	1115.49	●
	2150 x 4000	2089.80	●
100	1570 x 3020	1280.20	●
	2150 x 4000	2322.00	◐
110	1520 x 3020	1363.35	●
	2150 x 4000	2554.20	●

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT(kg)	STOCK
120	1520 x 3020	1487.30	●
	2000 x 4000	2592.00	●
130	1520 x 3020	1611.25	●
140	1520 x 3020	1735.20	●
150	1570 x 3020	1920.30	●
160	1570 x 3020	2048.30	●
170	1570 x 3020	2176.29	●
180	1570 x 3020	2304.32	●
190	1570 x 3020	2432.33	◐
200	1570 x 3020	2560.36	●
220	1520 x 3020	2726.70	●
250	1520 x 3020	3098.52	●
280	1520 x 3020	3470.34	●
305	1700 x 3040	4255.85	●
350	1520 x 3020	4337.93	●
405	1570 x 3040	5219.10	●
500	1520 x 3020	6197.00	●

Average weights of production.
Other dimensions on request.

MACHINABILITY	
HOMOGENIZED	EXCELLENT
DIMENSIONAL STABILITY	EXCELLENT
EROSION	EXCELLENT
SURFACE TREATMENT	
PROTECTIVE ANODIZING	GOOD
SPECIAL ANODIZING QUALITY	-
DECORATIVE ANODIZING	UNSUITABLE
PAINTING / COATING	POOR
POLISHING	FAIR/GOOD
RESISTANCE TO CORROSION	
NORMAL ATMOSPHERE	EXCELLENT
MARITIME ATMOSPHERE	EXCELLENT

(COLD) FORMING	
FOLDING	UNSUITABLE
ROTARY MOVEMENT	UNSUITABLE
DEEP STAMPING	UNSUITABLE
BULGING	UNSUITABLE
COLD EXTRUSION	UNSUITABLE
WELDABILITY	
GAS	POOR
WIG	GOOD
MIG	GOOD
RESISTANCE FUSION WELDING	GOOD
IT CAN BE USED IN VARIOUS APPLICATIONS INCLUDING IN THE FOOD INDUSTRY (DIN EN 602:2004)	

● Standard: generally available from stock
◐ Semi-standard: generally not available from stock
○ Non-standard: generally not available from stock, manufactured to order and subject to special conditions.



SERIES 5000 ●

AW 5754 (Al Mg3)

5754 alloy offers excellent resistance to corrosion (that caused by sea water); good weldability and mechanical resistance. This alloy is especially suitable for folding and bending.

CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Mn + Cr	Al
Minimum	-	-	-	-	2.6	-	-	-	0.1	-
Maximum	0.4	0.4	0.10	0.5	3.6	0.3	0.2	0.15	0.6	Rest

MECHANICAL PROPERTIES (EN 485 - 2)

TEMPER	THICKNESSES (mm)	Rm (MPa)		Rp0.2* (MPa)	A50 (%)	HB - BRINELL HARDNESS
		min.	max.			
H111	1.5 - 3	190	240	80	16	52
	3 - 6	190	240	80	18	52
	6 - 50	190	240	80	18	52

*Minimum values.

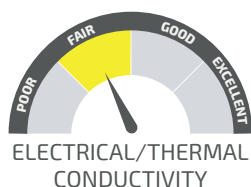


MAIN CHARACTERISTICS

- Average mechanical resistance also in annealed state
- Excellent resistance to corrosion, mainly to sea water
- Easy conformation
- Good weldability

APPLICATIONS

- Boats and vehicles
- Containers and household appliances
- Chemical and food industry
- Architecture and street furniture



DENSITY	2.67 g/cm ³
MODULUS OF ELASTICITY	70 000 MPa
LINEAR EXPANSION COEFFICIENT	23.2 10 ⁻⁶
THERMAL CONDUCTIVITY	130 - 140 W/mK
ELECTRICAL CONDUCTIVITY	53 - 49 MS/m

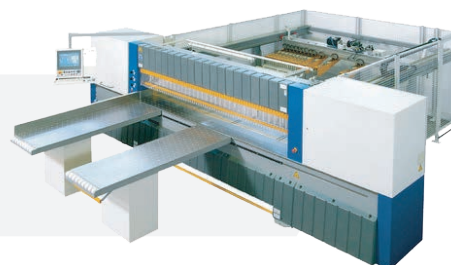
DELIVERY PROGRAM

SHEETS

THICKNESSES (mm)	DIMENSIONS (mm)	SHEET WEIGHT(kg)	STOCK H111
2	1000 x 2000	11.00	●
	1250 x 2500	17.09	○
	1500 x 3000	24.51	○
3	1000 x 2000	16.50	●
	1250 x 2500	25.64	○
	1500 x 3000	36.77	○
4	1000 x 2000	22.01	●
	1250 x 2500	34.18	○
	1500 x 3000	49.03	○
5	1000 x 2000	27.51	●
	1250 x 2500	42.73	○
	1500 x 3000	61.28	○
6	1000 x 2000	33.01	●
	1250 x 2500	51.27	○
	1500 x 3000	73.54	○

Average weights of production.
Other dimensions on request.

CUT TO MEASURE TO **REDUCE YOUR COSTS** WITH MATERIAL



● Standard: generally available from stock
 ○ Semi-standard: generally not available from stock
 ○ Non-standard: generally not available from stock, manufactured to order and subject to special conditions.

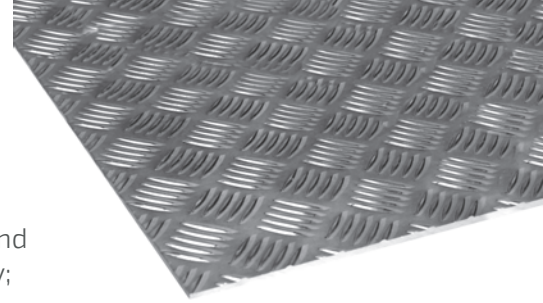




SERIES 5000 ●

AW 5754 NON-SLIP (Al Mg3)

5754 alloy offers excellent resistance to corrosion (that caused by sea water); good weldability and mechanical resistance. It is applied in boats and vehicles; containers and household appliances; chemical and food industry; architecture and street furniture, in cisterns, tanks and shipbuilding.



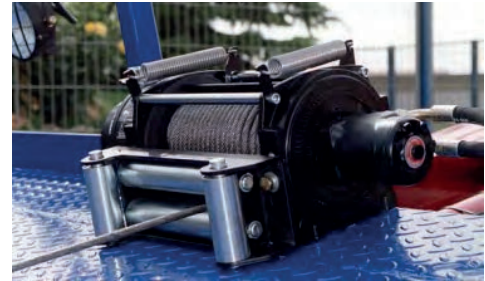
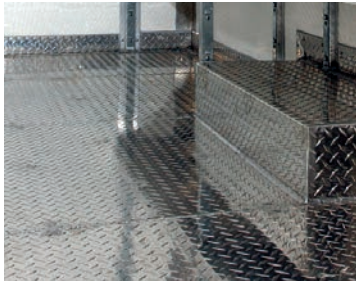
CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Mn + Cr	Al
Minimum	-	-	-	-	2.6	-	-	-	0.1	-
Maximum	0.4	0.4	0.10	0.5	3.6	0.3	0.2	0.15	0.6	Rest

MECHANICAL PROPERTIES (EN 485 - 2)

TEMPER	THICKNESSES (mm)	Rm (MPa)		Rp0.2* (MPa)	A50 (%)	HB - BRINELL HARDNESS
		min.	max.			
O/H111	1.5 - 3	190	240	80	16	52
	3 - 6	190	240	80	18	52
	6 - 50	190	240	80	18	52

*Minimum values.

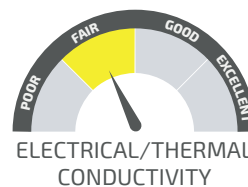


MAIN CHARACTERISTICS

- High mechanical resistance
- High resistance to corrosion

APPLICATIONS

- Anti-skid flooring
- Platforms and stairs
- Boards and corridors in industrial facilities
- Interior architecture





DENSITY	2.67 g/cm ³
MODULUS OF ELASTICITY	70 000 MPa
LINEAR EXPANSION COEFFICIENT	23.2 10 ⁻⁶
THERMAL CONDUCTIVITY	130 - 140 W/mK
ELECTRICAL CONDUCTIVITY	53 - 49 MS/m

DELIVERY PROGRAM

SHEETS

THICKNESSES (mm)	DIMENSIONS (mm)	THICKNESS W/ TEAR(mm)	WEIGHT (kg/m ²)	SHEET WEIGHT(kg)	STOCK H114
2	1000 x 2000	2.8/3.5	6.20	12.48	☉
	1250 x 2500	2.8/3.5	6.20	19.50	☉
	1500 x 3000	2.8/3.5	6.20	27.90	●
2.5	1000 x 2000	3.3/4.0	8.00	16.00	☉
	1250 x 2500	3.8/4.0	8.00	25.00	☉
	1500 x 3000	3.8/4.0	8.00	36.00	●
3	1000 x 2000	3.8/4.0	9.30	18.60	☉
	1250 x 2500	3.8/4.0	9.30	29.06	☉
	1500 x 3000	3.8/4.0	9.30	41.85	●
4	1000 x 2000	4.8/4.5	12.40	24.80	☉
	1250 x 2500	4.8/4.5	12.40	38.75	☉
	1500 x 3000	4.8/4.5	12.40	55.80	●
4.5	1500 x 3000	5.5/6.0	13.11	59	●
5	1000 x 2000	5.8/6.5	14.50	29.00	☉
	1250 x 2500	5.8/6.5	14.50	45.00	☉
	1500 x 3000	5.8/6.5	14.50	66.00	●

Average weights of production.
Other dimensions on request.



DIFFERENT TYPES OF HIGH PRECISION CUTTING **AT YOUR DISPOSAL!**

● Standard; generally available from stock
 ☉ Semi-standard; generally not available from stock
 ○ Non-standard; generally not available from stock, manufactured to order and subject to special conditions.





SERIES 6000

Alloy 6082



58

SERIES 6000
— ■ ● ■



SERIES 6000

AW 6082 (Al Si1MgMn)

6082 aluminium is a medium mechanical resistance and high resistance to corrosion alloy. In the 6000 series, it is the alloy that presents better resistance being able to replace 6021 alloy in many applications. It is also excellent for welding.



CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
Minimum	0.7	-	-	0.4	0.6	-	-	-	-
Maximum	1.3	0.5	0.1	1	1.2	0.25	0.2	0.1	Rest

MECHANICAL PROPERTIES

PLATES (EN 485-2)

THICKNESS (mm)	TEMPER	Rm* (MPa)	Rp0.2* (MPa)	A50 (%)	A (%)	HB - BRINELL HARDNESS
1.5 - 3	T6	310	260	7	7	94
3 - 6		310	260	10	10	94
6 - 12.5	T651	300	255	9	9	91
12.5 - 60		295	240	-	8	89
60 - 100		295	240	-	7	89
100 - 150		275	240	-	6	84
150 - 175		275	230	-	4	83

*Minimum values.

ROUND RODS (EN 755-2) - EXTRUDED

DIAMETER (mm)	Rm* (MPa)	Rp0.2* (MPa)	A (%)	A50 (%)	HB - BRINELL HARDNESS
≤ 20	295	250	8	6	95
20 - ≤ 150	310	260	8	-	95
150 - ≤ 200	280	240	6	-	95
200 - ≤ 250	270	200	6	-	95

ROUND RODS (EN 754-2) - CALIBRATED

DIAMETER (mm)	Rm* (MPa)	Rp0.2* (MPa)	A (%)	A50 (%)	HB - BRINELL HARDNESS
≤ 80	310	255	10	9	95

*Minimum values.

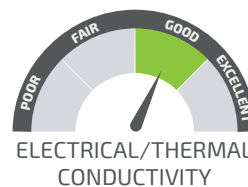


MAIN CHARACTERISTICS

- Good weldability
- Good resistance to corrosion
- Good polishing
- Good anodizing

APPLICATIONS

- Railway rails
- Shipbuilding industry
- Jigs and accessories
- Tools
- Footwear moulds





DENSITY	2.70 g/cm ³
MODULUS OF ELASTICITY	70 000 MPa
LINEAR EXPANSION COEFFICIENT	23.4 x 10 ⁻⁶ /K
THERMAL CONDUCTIVITY	170 W/mK
ELECTRICAL CONDUCTIVITY	27 m/Ohm mm ²



DELIVERY PROGRAM

SHEETS

THICKNESSES (mm)	DIMENSIONS (mm)	SHEET WEIGHT(kg)	STOCK T651
2	1000 x 2000	11.13	●
3	1520 x 3020	37.20	●
4	1520 x 3020	49.60	●
5	1520 x 3020	61.97	●

Average weights of production./ Other dimensions available on request.

PLATES

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT(kg)	STOCK T651
6	1520 x 3020	74.37	●
	1000 x 2000	44.51	●
8	1270 x 2520	69.13	●
	1520 x 3020	99.15	●
10	1020 x 2020	55.65	●
	1270 x 2520	86.41	●
	1520 x 3020	123.94	●
12	1020 x 2020	66.76	●
	1270 x 2520	103.69	●
15	1520 x 3020	148.73	●
	1020 x 2020	83.45	●
	1270 x 2520	129.62	●
20	1520 x 3020	185.91	●
	1020 x 2020	111.26	●
	1270 x 2520	172.82	●
25	1520 x 3020	247.88	●
	1020 x 2020	139.08	●
	1270 x 2520	216.03	●
30	1520 x 3020	309.85	●
	1020 x 2020	185.91	●
35	1520 x 3020	371.82	●
40	1270 x 2520	345.64	●
40	1520 x 3020	495.76	●
45	1520 x 3020	557.73	●
50	1270 x 2520	432.05	●
50	1520 x 3020	619.70	●
55	1520 x 3020	681.67	●
60	1270 x 2520	518.47	●
60	1520 x 3020	743.65	●
65	1520 x 3020	805.62	●
70	1270 x 2520	604.88	●
70	1520 x 3020	867.59	●
75	1520 x 3020	929.56	●
80	1520 x 3020	991.53	●
90	1520 x 3020	1115.47	●
100	1520 x 3020	1239.41	●
120	1520 x 3020	1487.29	●
150	1520 x 3020	1859.20	●

Average weights of production./ Other dimensions available on request.

● Standard: generally available from stock ○ Semi-standard: generally not available from stock
 O Non-standard: generally not available from stock, manufactured to order and subject to special conditions.

ROUND RODS

DIAM.(mm) EXTRUDED	WEIGHT (kg/m)	STOCK T6	STOCK T651
Standard length 3000mm			
20	0.879	●	-
22	1.064	●	-
25	1.374	●	-
30	1.979	●	-
35	2.693	●	●
40	3.518	●	-
45	4.552	●	●
50	5.497	●	●
55	6.652	●	-
60	7.916	●	●
65	9.291	●	-
70	10.775	●	-
75	12.370	●	-
80	14.074	●	-
85	15.888	●	●
90	17.813	●	-
95	19.837	○	-
100	21.991	●	-
110	26.609	●	-
120	31.667	●	●
130	37.165	●	-
140	43.102	●	-
150	49.480	●	-
160	56.297	●	-
170	63.554	●	-
180	71.251	●	-
190	77.900	○	-
200	86.300	●	-
203	90.800	●	-
210	95.200	●	-
250	135.000	○	-
260	146.000	○	-
300	194.300	○	-

Average weights of production.

Other diameters available on request.

ROUND RODS

DIAM.(mm) CALIBRATED h9/h11	PESO (kg/m)	STOCK T6
Standard length 3000mm		
8	0.140	●
9	0.187	●
10	0.219	●
12	0.316	●
14	0.431	●
15	0.494	●
16	0.562	●
18	0.712	●
20	0.879	●
22	1.064	●
25	1.374	●
26	1.486	●
28	1.724	●
30	1.979	●
31	2.113	●
32	2.251	●
35	2.693	●
36	2.850	●
38	3.175	●
40	3.518	●
41	3.696	○
42	3.879	○
43	4.066	○
45	4.552	○
48	5.066	○
50	5.497	○
55	6.652	○
60	7.916	○

Average weights of production.

Other diameters available on request.

BARRAS QUADRADAS

THICK.(mm) EXTRUDED	WEIGHT (kg/m)	STOCK T6
Standard length 3000mm		
30	2.520	●
32	2.867	●
35	3.340	●
40	4.480	●
45	5.670	●
50	7.000	●
60	10.080	●

Average weights of production.

Other thicknesses available on request.





SERIES 7000

Alloy 7021		62
Alloy 7021 Rectified		64
Alloy 7075		66



SERIES 7000 ●

AW 7021 (Al Zn5,5Mg1,5)

Aluminium obtained by CAST process, with high mechanical resistance, designed for the manufacturing of tools, moulds and other applications where a good dimensional stability is required.



CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Zr	Al
Minimum	-	-	-	-	1.2	-	5	-	0.08	-
Maximum	0.25	0.4	0.25	0.1	1.8	0.05	6	0.1	0.18	Rest

MECHANICAL PROPERTIES

Rm* (MPa)	Rp0.2* (MPa)	A (%)	A50 (%)	HB - BRINELL DUREZA
410	350	10	8	≈120

*Minimum values.

Information transcribed from the supplier datasheet.

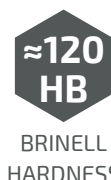
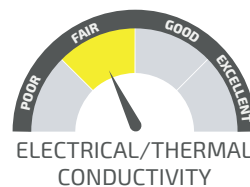


MAIN CHARACTERISTICS

- High resistance aluminium plates
- Very good dimensional stability
- Low internal stress
- Good weldability
- Good resistance to corrosion

APPLICATIONS

- Manufacturing of tools, moulds and models
- Injection moulds
- Construction of machinery and equipment
- Base plates, table tops and mounting plates





DENSITY	2.80 g/cm ³
MODULUS OF ELASTICITY	70 000 MPa
LINEAR EXPANSION COEFFICIENT	23 x 10 ⁻⁶
THERMAL CONDUCTIVITY	125 - 155 W/mK
ELECTRICAL CONDUCTIVITY	20 - 24 m/Ω mm ²

DELIVERY PROGRAM

PLATES

THICKNESSES (mm)	DIMENSIONS (mm)	STOCK T79
10 - 500	3020 x 2020 mm	●

MACHINABILITY	
HOMOGENIZED	EXCELLENT
DIMENSIONAL STABILITY	EXCELLENT
EROSION	EXCELLENT
SURFACE TREATMENT	
PROTECTIVE ANODIZING	FAIR/GOOD
SPECIAL ANODIZING QUALITY	-
DECORATIVE ANODIZING	UNSUITABLE
PAINTING / COATING	FAIR/GOOD
POLISHING	GOOD/EXCELLENT
RESISTANCE TO CORROSION	
NORMAL ATMOSPHERE	EXCELLENT
MARITIME ATMOSPHERE	EXCELLENT

(COLD) FORMING	
FOLDING	UNSUITABLE
ROTARY MOVEMENT	UNSUITABLE
DEEP STAMPING	UNSUITABLE
BULGING	UNSUITABLE
COLD EXTRUSION	UNSUITABLE
WELDABILITY	
GAS	UNSUITABLE
WIG	GOOD/EXCELLENT
MIG	GOOD/EXCELLENT
RESISTANCE FUSION WELDING	UNSUITABLE

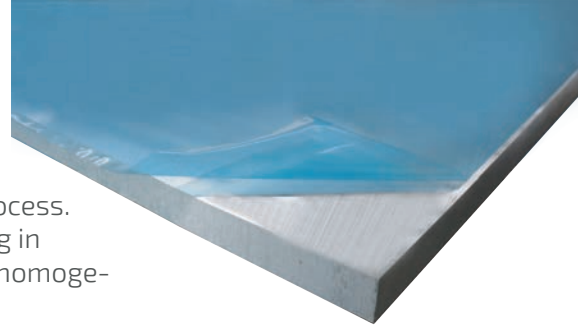
● Standard: generally available from stock
 ● Semi-standard: generally not available from stock
 ○ Non-standard: generally not available from stock, manufactured to order and subject to special conditions.



SERIES 7000 ●

AW 7021 RECTIFIED (Al Zn5,5Mg1,5)

This aluminium is produced from AW 7021 "Cast" obtained by casting process. It fills a gap between medium and high resistance alloys, the latter being in many cases undervalued. It is characterized by a very low microporous homogeneous structure, excellent machinability and high resistance.



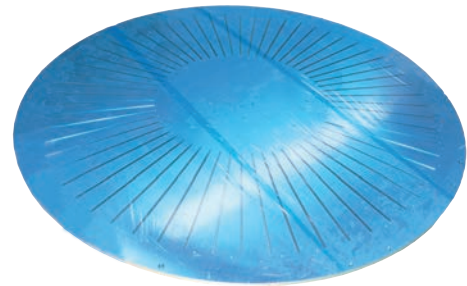
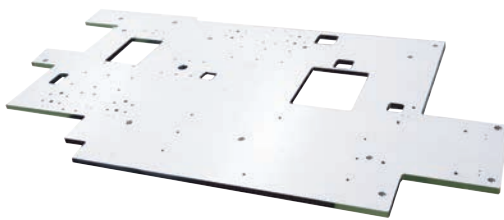
CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Zr	Al
Minimum	-	-	-	-	1.2	-	5	-	0.08	-
Maximum	0.25	0.4	0.25	0.1	1.8	0.05	6	0.1	0.18	Rest

MECHANICAL PROPERTIES

THICKNESSES (from...to)	Rm (MPa)	Rp0.2 (MPa)	A5 (%)	A (%)	HB - BRINELL HARDNESS
5 - 450 mm	330 - 380	250 - 300	3	10	110 - 120

Information transcribed from the supplier datasheet.

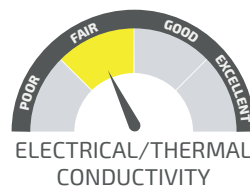


MAIN CHARACTERISTICS

- Guaranteed thickness tolerance, ± 0.1 mm
- High resistance aluminium plates
- Surface machined and coated with PVC film
- Very good dimensional stability
- Low internal stress
- Good weldability
- Good resistance to corrosion

APPLICATIONS

- Manufacturing of tools
- Construction of machinery and equipment
- Base plates, table tops and mounting plates
- All applications where the faces are not to be rectified and better performance is required compared to 5083 alloy.





DENSITY	2.80 g/cm ³
MODULUS OF ELASTICITY	70 000 MPa
LINEAR EXPANSION COEFFICIENT	23 x 10 ⁻⁶
THERMAL CONDUCTIVITY	125 - 155 W/mK
ELECTRICAL CONDUCTIVITY	20 - 24 m/Ω mm ²

DELIVERY PROGRAM

PLATES

THICKNESS (mm)	DIMENSIONS (mm)	PLATE WEIGHT(kg)	STOCK
10	1520 x 3020	128.53	●
12	1520 x 3020	154.30	●
15	1520 x 3020	192.80	●
20	1520 x 3020	257.10	●
25	1520 x 3020	321.40	●
30	1520 x 3020	385.60	●
35	1520 x 3020	449.90	●
40	1520 x 3020	514.95	●
50	1520 x 3020	642.70	●

Average weights of production.
Other dimensions on request.

TOLERANCES:

- Thickness < 15: Thickness tolerance ± 0.1 mm / Flatness 0.4 mm / Length 0/+20 and Width 0/+10
- Thickness > 15: Thickness tolerance ± 0.1 mm / Flatness 0.25 mm / Length 0/+20 and Width 0/+10

MACHINABILITY	
THERMICALLY TREATED	EXCELLENT
DIMENSIONAL STABILITY	EXCELLENT
EROSION	EXCELLENT
SURFACE TREATMENT	
PROTECTIVE ANODIZING	FAIR/GOOD
SPECIAL ANODIZING QUALITY	-
DECORATIVE ANODIZING	UNSUITABLE
PAINTING / COATING	FAIR/GOOD
POLISHING	GOOD/EXCELLENT
RESISTANCE TO CORROSION	
NORMAL ATMOSPHERE	FAIR
MARITIME ATMOSPHERE	POOR/UNSUITABLE

(COLD) FORMING	
FOLDING	UNSUITABLE
ROTARY MOVEMENT	UNSUITABLE
DEEP STAMPING	UNSUITABLE
BULGING	UNSUITABLE
COLD EXTRUSION	UNSUITABLE
WELDABILITY	
GAS	UNSUITABLE
WIG	GOOD/EXCELLENT
MIG	GOOD/EXCELLENT
RESISTANCE FUSION WELDING	UNSUITABLE

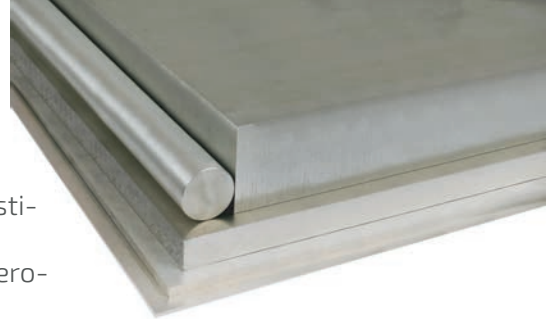
● Standard: generally available from stock
 ● Semi-standard: generally not available from stock
 ○ Non-standard: generally not available from stock, manufactured to order and subject to special conditions.



SERIES 7000

AW 7075 (Al Zn5,5MgCu)

It is the best known of the 7000 series alloys for its mechanical characteristics. Its resistance can be compared with numerous steels. Due to the high resistance/density ratio, it is often used in extreme applications such as aeronautics, aerospace, nuclear, automotive, etc.



CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
Minimum	-	-	1.2	-	2.1	0.18	5.1	-	-
Maximum	0.4	0.5	2	0.3	2.9	0.28	6.1	0.2	Rest

MECHANICAL PROPERTIES

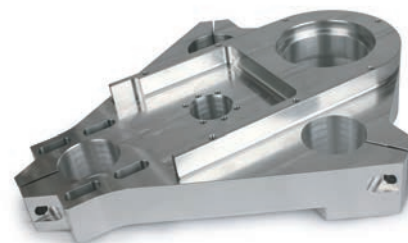
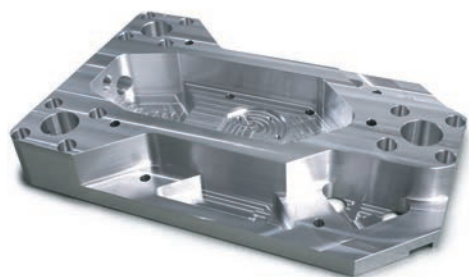
PLATES (EN 485 - 2)

THICKNESS (mm)	TEMPER	Rm* (MPa)	Rp0.2* (MPa)	A50* (%)	A* (%)	HB - BRINELL HARDNESS
1.5 - 3	T651	540	470	7	-	161
3 - 6		545	475	8	-	163
6 - 12.5		540	460	8	-	160
12.5 - 25		540	470	-	6	161
25 - 50		530	460	-	5	158
50 - 60		535	440	-	4	155
60 - 80		495	420	-	4	147
80 - 90		490	390	-	4	144

*Minimum values.

THICKNESS (mm)	TEMPER	Rm* (MPa)	Rp0.2* (MPa)	A50* (%)	A* (%)	HB - BRINELL HARDNESS
90 - 100	T651	460	360	-	3	135
100 - 120		410	300	-	2	119
120 - 150		360	260	-	2	104
150 - 200		360	240	-	2	104
200 - 300		360	220	-	1	104
120 - 150	T6	360	260	-	2	104
150 - 200		360	240	-	2	104
200 - 300		360	220	-	1	104

*Minimum values.

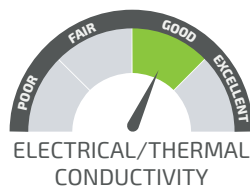


MAIN CHARACTERISTICS

- Very good machining
- Good polishing
- Good dimensional stability
- Good weldability with electron beam
- Limited fusion weldability

APPLICATIONS

- Railway rails
- Mechanical engineering
- Automation
- Jigs and accessories
- Tools





SERIES 7000

MECHANICAL PROPERTIES

ROUND RODS (EN 755 - 2)

DIAMETERS (mm)	TEMPER	Rm* (MPa)	Rp0.2* (MPa)	A* (%)	A50* (%)	HB - BRINELL HARDNESS
≤ 25	T6 T6511	540	480	7	5	150
25 - 100		560	500	7	-	150
100 - 150		550	440	5	-	150
150 - 200		440	400	5	-	150

*Minimum values.

PHYSICAL PROPERTIES

DENSITY	2.80 g/cm ³
MODULUS OF ELASTICITY	71 000 MPa
LINEAR EXPANSION COEFFICIENT	23.4 10 ⁻⁶ /K
THERMAL CONDUCTIVITY	130 W/mK
ELECTRICAL CONDUCTIVITY	19 m/Ohm mm ²

DELIVERY PROGRAM

ROUND RODS

DIAMETERS (mm)	WEIGHT (kg/m)	STOCK T6511	STOCK T6
Standard lenght 3000mm			
25	1.374	●	●
30	1.979	○	●
35	2.693	○	○
40	3.518	○	●
45	4.552	○	●
50	5.497	●	●
55	6.652	○	○
60	7.916	●	●
65	9.291	○	○
70	10.775	○	●
75	12.370	○	○
78	13.400	○	●
80	14.074	●	●
85	15.888	○	●
90	17.813	○	●
95	19.837	○	○
100	21.991	●	●
110	26.609	●	●
120	31.668	●	●
125	34.344	○	●
130	37.165	●	●
140	43.102	●	●
150	49.480	●	○
160	56.297	○	●
170	63.554	○	○
180	71.251	○	●
190	77.900	○	●
200	86.300	●	●
210	95.200	○	○
220	104.500	○	●
230	114.200	○	●
250	135.000	●	●
260	146.000	○	●
280	169.300	○	●
300	194.300	○	●
330	235.000	○	○
350	264.500	○	●
400	345.400	○	●

Average weights of production.
Other dimensions on request.

SHEETS

THICKNESSES (mm)	DIMENSIONS (mm)	SHEET WEIGHT(kg)	STOCK T651	STOCK T6
3	1020 x 2020	17.37	●	-
4	1520 x 3020	51.60	●	-
5	1520 x 3020	64.50	●	-

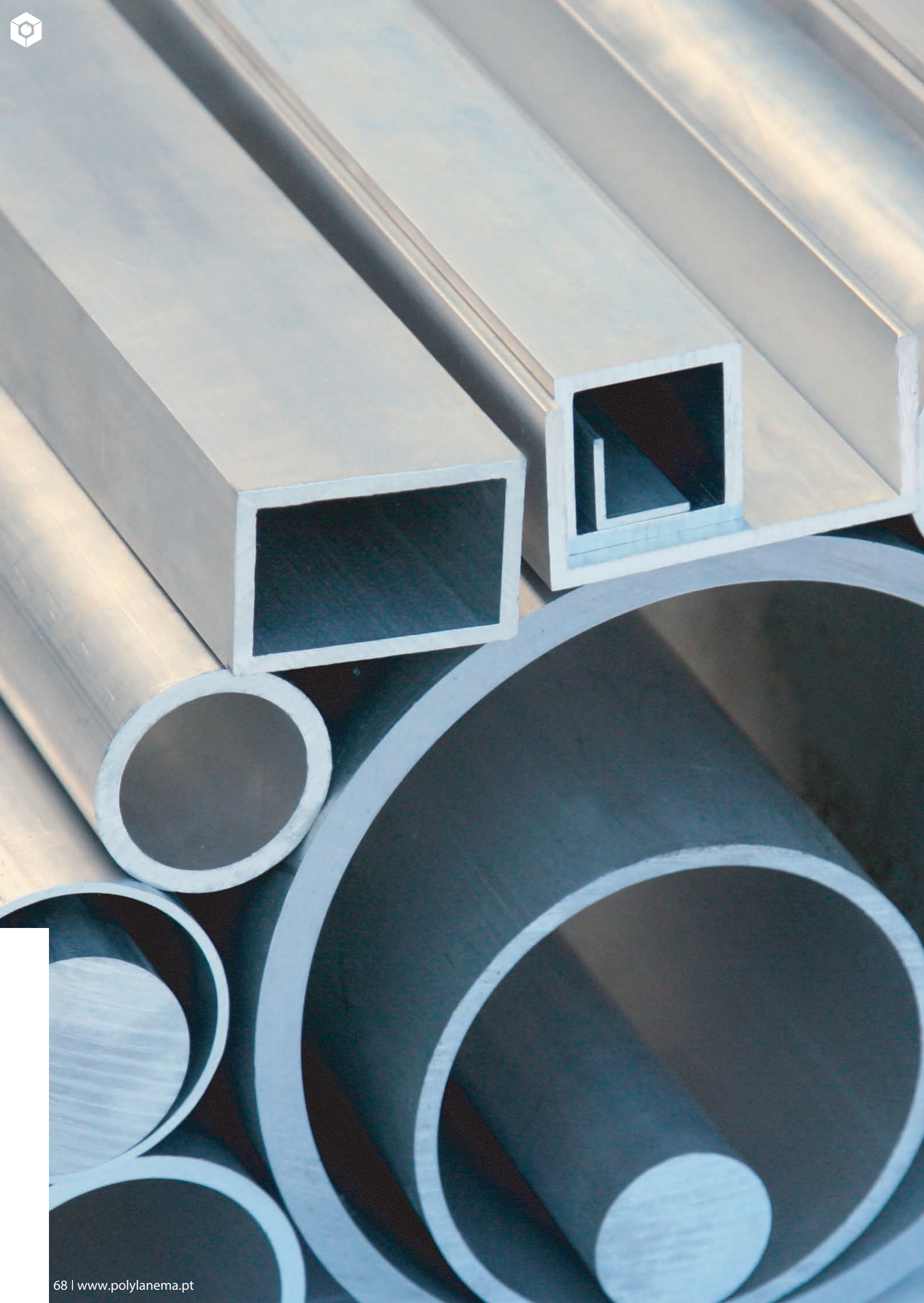
Average weights of production.
Other dimensions on request.

PLATES

THICKNESSES (mm)	DIMENSIONS (mm)	PLATE WEIGHT(kg)	STOCK T651	STOCK T6
6	1520 x 3020	77.39	●	-
8	1520 x 3020	103.19	●	-
10	1520 x 3020	128.99	●	-
12	1520 x 3020	154.79	●	-
15	1520 x 3020	193.49	●	-
20	1520 x 3020	257.98	●	-
25	1520 x 3020	322.48	●	-
30	1520 x 3020	386.97	●	-
35	1520 x 3020	451.47	●	-
40	1520 x 3020	515.96	●	-
45	1520 x 3020	578.40	●	-
50	1520 x 3020	644.95	●	-
55	1520 x 3020	707.00	●	-
60	1520 x 3020	773.94	●	-
70	1520 x 3020	902.93	●	-
80	1520 x 3020	1031.92	●	-
90	1520 x 3020	1160.92	●	-
100	1520 x 3020	1289.90	●	-
110	1520 x 3020	1418.89	●	-
120	1520 x 3020	1547.88	●	-
125	1520 x 3020	1606.70	●	-
130	1520 x 3020	1676.87	●	-
140	1520 x 3020	1805.86	●	-
150	1520 x 3020	1934.85	●	-
160	1520 x 3020	2056.50	●	●
170	1520 x 3020	2185.00	●	●
180	1520 x 3020	2313.60	●	●
200	1440 x 3020	2435.00	-	●

Average weights of production.
Other dimensions on request.

- Standard: generally available from stock
- Semi-standard: generally not available from stock
- Non-standard: generally not available from stock, manufactured to order and subject to special conditions.





PROFILES

Alloy 6063	□○□LLLHT■	68
Alloy 2007	■	74
Alloy 2030	■	74
Alloy 6082	■	74



PROFILES

AW 6063 (AL Mg0,7Si)

6063 alloy is one of the most popular in the 6000 series, which provides good extrusion capacity and a high-quality surface. Excellent welding properties, corrosion resistance and electrical conductivity



CHEMICAL COMPOSITION (WEIGHT %) (EN 573 - 3)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
Minimum	0.2	-	-	-	0.45	-	-	-	-
Maximum	0.6	0.35	0.1	0.1	0.9	0.1	0.1	0.1	Rest

MECHANICAL PROPERTIES (EN 755 - 2)

ROUND RODS

DIAMETERS (de...até)	TEMPER	Rm* (MPa)	Rp0.2* (MPa)	A* (%)	A50* (%)	HB - BRINELL HARDNESS
≤ 150	T6	215	170	10	8	75

*Minimal values.

PROFILES

WALL THICKNESS	TEMPER	Rm* (MPa)	Rp0.2* (MPa)	A* (%)	A50* (%)	HB - BRINELL HARDNESS
≤ 10	T6	215	170	8	6	75
10 - ≤ 25	T6	195	160	8	6	75

TUBES

≤ 25	T6	215	170	10	8	75
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*Minimal values.

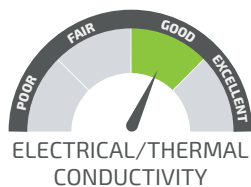


MAIN CHARACTERISTICS

- Good robustness
- Very good resistance to corrosion
- Suitable for decorative anodizing

APPLICATIONS

- Architecture and construction
- Handrails and furniture
- Door and window frames
- Pipes and tubes for irrigation systems
- Electrical components
- Truck and trailer flooring
- Heat sinks
- Stairs



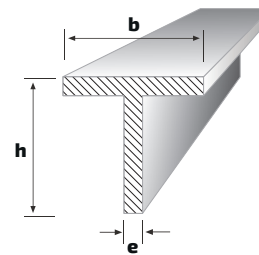
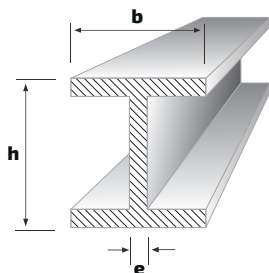
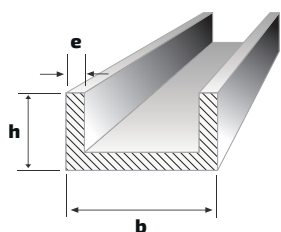
PROFILES

PHYSICAL PROPERTIES

DENSITY	2.70 g/cm ³
MODULUS OF ELASTICITY	69 000 MPa
LINEAR EXPANSION COEFFICIENT	23.5 x 10 ⁻⁶ K ⁻¹
THERMAL CONDUCTIVITY	201 W/mK
ELECTRICAL CONDUCTIVITY	28 - 34 MS/m

PROPERTIES	O	T1/T4	T5/T52	T53	T54/T6/T65
MACHINABILITY	POOR	POOR	FAIR	FAIR	FAIR
FORMABILITY	EXCELLENT	GOOD	GOOD	GOOD	FAIR
RESISTANCE TO CORROSION (GENERAL)	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT
WELDABILITY	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT
BRAZING	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT
ANODIZING REACTION	GOOD	GOOD	EXCELLENT	EXCELLENT	EXCELLENT

DELIVERY PROGRAM



“U” PROFILES

b x h x e (mm)	WEIGHT (kg/m)	STOCK T6
Standard length 6500 mm		
15 x 15 x 2	0.232	●
20 x 20 x 2	0.318	○
25 x 15 x 2	0.289	○
50 x 25 x 3	0.799	○
60 x 30 x 5	1.559	○
60 x 40 x 5	1.843	○
80 x 40 x 4	1.722	●
80 x 45 x 7	3.096	●
100 x 50 x 5	2.693	○
100 x 50 x 6	3.198	○
140 x 60 x 8	4.849	○
150 x 75 x 10/13	9.031	○
160 x 80 x 10	8.505	○

Average weights of production.
Other dimensions on request.

“H/I” PROFILES

b x h x e (mm)	WEIGHT (kg/m)	STOCK T6
Standard length 6500 mm		
46 x 25 x 2.5	0.793	○
46.5 x 82 x 3	1.436	○
80 x 60 x 4	2.402	○
80 x 60/50 x 6	3.025	○
80 x 60/50 x 8	3.943	○
100 x 100 x 10	7.931	○
108 x 50 x 5/8	3.499	○
200 x 150 x 7/13	14.110	○

Average weights of production.
Other dimensions on request.

“T” PROFILES

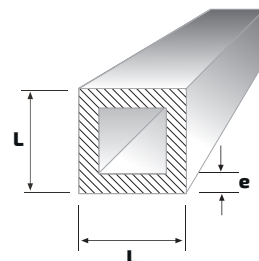
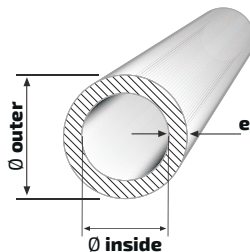
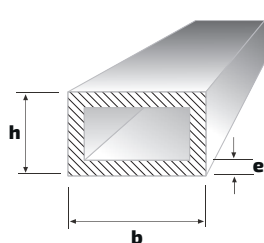
b x h x e (mm)	WEIGHT (kg/m)	STOCK T6
Standard length 6500 mm		
15 x 15 x 1.5	0.121	○
20 x 20 x 1.5	0.164	○
20 x 20 x 2	0.215	○
30 x 30 x 2	0.329	○
40 x 40 x 2	0.442	○
40 x 40 x 4	0.862	○
50 x 50 x 2	0.555	○
50 x 50 x 5	1.347	○
60 x 60 x 3	0.995	○

Average weights of production.
Other dimensions on request.

- Standard; generally available from stock
- Semi-standard; generally not available from stock
- Non-standard; generally not available from stock, manufactured to order and subject to special conditions.



PROFILES DELIVERY PROGRAM



RECTANGULAR TUBES

b x h x e (mm)	WEIGHT (kg/m)	STOCK T6
Standard length 6500 mm		
20 x 10 x 1.5	0.230	●
25 x 15 x 1.5	0.315	○
30 x 12.5 x 1.5	0.340	○
30 x 15 x 1.5	0.357	○
30 x 20 x 2	0.522	○
40 x 20 x 1.5	0.485	○
40 x 20 x 2	0.635	○
40 x 20 x 3	0.918	●
40 x 25 x 2	0.692	○
40 x 30 x 2	0.748	○
40 x 30 x 4	1.406	●
50 x 25 x 2	0.805	○
50 x 30 x 2	0.862	○
50 x 30 x 3	1.259	●
50 x 40 x 4	1.86	○
60 x 30 x 2	0.975	○
60 x 40 x 1.5	0.825	●
60 x 40 x 2	1.089	○
60 x 40 x 3	1.599	●
60 x 40 x 4	2.087	●
80 x 40 x 2	1.315	●
80 x 40 x 4	2.54	●
80 x 40 x 5	3.119	○
80 x 60 x 4	2.994	●
100 x 40 x 2	1.542	○
100 x 40 x 4	2.994	●
100 x 50 x 2	1.656	○
100 x 50 x 4	3.221	●
100 x 50 x 5	3.965	●
100 x 60 x 4	3.447	○
120 x 40 x 2	1.769	●
120 x 50 x 2	1.882	○
120 x 60 x 4	3.901	●
140 x 80 x 4	4.808	●
200 x 100 x 4	6.617	○

Average weights of production.
Other dimensions on request.

ROUND TUBES

Ø outer x e (mm)	WEIGHT (kg/m)	STOCK T6	D x e (mm)	WEIGHT (kg/m)	STOCK T6
Standard length 6500 mm					
10 x 1.5	0.080	●	60 x 2.5	1.219	○
12 x 1	0.098	○	60 x 3	1.522	○
16 x 1.5	0.184	○	60 x 5	2.333	●
18 x 1	0.151	○	60 x 10	4.241	●
18 x 1.5	0.210	●	70 x 2	1.210	○
20 x 1	1.161	○	70 x 2.5	1.431	●
20 x 1.5	0.235	○	70 x 3	1.789	○
20 x 2	0.305	●	70 x 5	2.757	●
22 x 1	0.178	○	70 x 10	5.339	○
22 x 1.5	0.261	○	80 x 2.5	1.643	○
25 x 1.5	0.299	●	80 x 3	1.959	●
25 x 2	0.390	●	80 x 5	3.181	●
25 x 2.5	0.477	○	80 x 8	4.889	●
30 x 1.5	0.363	○	80 x 10	5.938	●
30 x 2	0.475	●	85 x 2	1.436	○
30 x 2.5	0.583	●	85 x 2.5	1.749	○
30 x 3	0.687	○	90 x 3	2.214	○
30 x 4	0.882	○	90 x 5	3.605	○
30 x 5	1.060	○	90 x 10	6.786	○
32 x 1.5	0.388	○	100 x 2	1.663	○
32 x 2.5	0.626	○	100 x 3	2.468	●
33 x 2.5	0.647	○	100 x 5	4.029	●
33 x 4	0.984	○	100 x 10	7.634	●
35 x 2	0.560	●	106 x 3	2.621	○
35 x 2.5	0.689	○	110 x 5	4.453	○
38 x 1.5	0.464	○	110 x 10	8.482	○
40 x 1.5	0.490	○	120 x 3	2.977	○
40 x 2	0.645	●	120 x 4	3.935	○
40 x 3	0.988	●	120 x 5	4.877	●
40 x 5	1.484	○	120 x 8	7.600	○
40 x 10	2.670	○	120 x 10	9.331	●
45 x 4	1.391	○	120 x 15	13.360	○
50 x 1.5	0.617	○	125 x 5	5.089	○
50 x 2	0.854	●	130 x 2.5	2.704	○
50 x 2.5	1.007	○	130 x 15	14.632	○
50 x 3	1.196	○	135 x 5	5.514	○
50 x 5	1.909	●	200 x 5	8.270	●
50 x 10	3.393	○	200 x 8	13.029	○
60 x 2	0.984	●	200 x 10	16.116	●

Average weights of production.
Other dimensions on request.

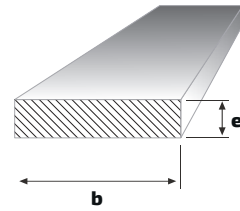
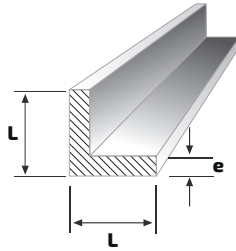
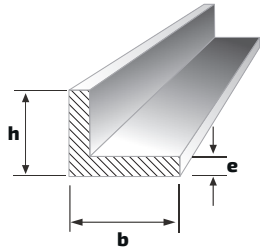
SQUARE TUBES

L x L x e (mm)	WEIGHT (kg/m)	STOCK T6
Standard length 6500 mm		
15 x 15 x 2	0.295	○
20 x 20 x 2	0.408	●
25 x 25 x 2	0.522	○
30 x 30 x 1.5	0.485	○
30 x 30 x 2	0.635	●
30 x 30 x 3	0.919	○
40 x 40 x 1.5	0.655	○
40 x 40 x 2	0.862	●
40 x 40 x 3	1.259	○
40 x 40 x 4	1.633	●
50 x 50 x 2	1.089	●
50 x 50 x 4	2.087	●
50 x 50 x 5	2.549	○
60 x 60 x 2	1.089	●
60 x 60 x 4	2.540	●
70 x 70 x 4	2.994	○
80 x 80 x 2	1.769	○
80 x 80 x 3	2.617	○
80 x 80 x 4	3.447	●
80 x 80 x 5	4.269	○
80 x 80 x 8	6.532	○
100 x 100 x 2	2.223	○
100 x 100 x 2.5	2.764	○
100 x 100 x 3	3.297	○
100 x 100 x 4	4.355	○
100 x 100 x 10	10.197	○
120 x 120 x 2	2.676	○
120 x 120 x 5	6.521	○
200 x 200 x 5	11.047	○

Average weights of production.
Other dimensions on request.

● Standard: generally available from stock
○ Semi-standard: generally not available from stock
○ Non-standard: generally not available from stock, manufactured to order and subject to special conditions.

PROFILES DELIVERY PROGRAM



"L" DIFFERENT SIDES

b x h x e (mm)	WEIGHT (kg/m)	STOCK T6
Standard length 6500 mm		
20 x 10 x 1.5	0.121	●
20 x 10 x 2	0.151	●
30 x 15 x 1.5	0.185	●
30 x 20 x 2	0.272	●
40 x 20 x 2	0.329	●
45 x 20 x 2	0.357	●
50 x 30 x 4	0.828	●
60 x 30 x 3	0.740	○
60 x 30 x 5	1.150	●
70 x 35 x 2	1.584	○
80 x 40 x 6	1.938	○

Average weights of production.
Other dimensions on request.

"L" EQUAL SIDES

L x L x e (mm)	WEIGHT (kg/m)	STOCK T6
Standard length 6500 mm		
20 x 20 x 2	0.208	●
25 x 25 x 2	0.272	○
25 x 25 x 3	0.400	○
30 x 30 x 1.5	0.249	○
30 x 30 x 2	0.329	●
30 x 30 x 3	0.485	○
35 x 35 x 3	0.570	○
40 x 40 x 1.5	0.330	○
40 x 40 x 2	0.442	●
40 x 40 x 3	0.655	●
40 x 40 x 4	0.862	●
50 x 50 x 2	0.556	●
50 x 50 x 3	0.825	○
50 x 50 x 4	1.089	○
50 x 50 x 5	1.347	●
50 x 50 x 6	1.599	○
60 x 60 x 3	0.995	○
60 x 60 x 5	1.630	●
60 x 60 x 6	1.939	●
60 x 60 x 8	2.540	●
80 x 80 x 8	3.447	●
100 x 100 x 10	5.387	●
120 x 120 x 10	6.516	●

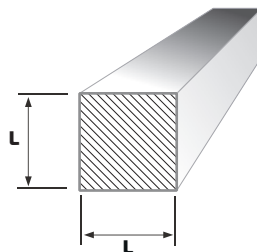
Average weights of production.
Other dimensions on request.

RECTANGULAR BARS

b x e (mm)	WEIGHT (kg/m)	STOCK T6	A x B (mm)	WEIGHT (kg/m)	STOCK T6
Standard length 6500 mm					
15 x 3	0.126	●	50 x 25	3.500	○
15 x 8	0.336	●	50 x 30	1.200	○
20 x 3	0.168	○	60 x 3	0.504	○
20 x 4	0.224	○	60 x 4	0.672	○
20 x 5	0.280	●	60 x 5	0.840	●
20 x 8	0.448	○	60 x 6	1.008	●
20 x 10	0.560	●	60 x 8	1.344	●
20 x 12	0.672	○	60 x 10	1.680	●
25 x 3	0.210	●	60 x 12	2.016	●
25 x 5	0.350	●	60 x 15	2.520	●
25 x 8	0.560	●	60 x 20	3.360	●
25 x 10	0.700	●	60 x 30	5.04	○
25 x 12	0.840	○	70 x 5	0.980	●
30 x 3	0.252	●	70 x 10	1.960	○
30 x 4	0.336	○	70 x 15	2.940	○
30 x 5	0.420	●	70 x 20	3.920	○
30 x 6	0.504	●	80 x 4	1.120	○
30 x 8	0.672	○	80 x 5	1.344	●
30 x 10	0.840	●	80 x 8	2.240	●
30 x 12	1.008	○	80 x 10	2.688	●
30 x 15	1.260	●	80 x 15	4.480	○
30 x 20	1.680	○	80 x 20	5.600	●
40 x 4	0.448	●	90 x 10	2.520	○
40 x 5	0.560	●	90 x 15	3.780	○
40 x 6	0.672	○	100 x 5	1.400	○
40 x 8	0.896	●	100 x 6	1.680	●
40 x 10	1.120	●	100 x 8	2.240	●
40 x 12	1.344	●	100 x 10	2.800	●
40 x 15	1.680	●	100 x 15	4.200	●
40 x 20	2.240	●	100 x 20	5.600	●
40 x 30	3.300	○	120 x 10	3.360	●
50 x 2	0.280	○	120 x 20	6.720	○
50 x 3	0.420	●	140 x 10	3.920	○
50 x 4	0.560	○	150 x 10	4.249	●
50 x 5	0.700	●	150 x 15	6.373	●
50 x 6	0.840	●	150 x 20	8.497	○
50 x 8	1.120	●	180 x 10	5.098	○
50 x 10	1.400	●	200 x 10	5.665	●
50 x 12	1.680	○	200 x 15	8.497	○
50 x 15	2.100	○	200 x 20	11.330	○
50 x 20	2.800	●	200 x 30	16.995	○

Average weights of production.
Other dimensions on request.

- Standard: generally available from stock
- Semi-standard: generally not available from stock
- Non-standard: generally not available from stock, manufactured to order and subject to special conditions.

**SQUARE RODS****AW 2007**

L x L (mm)	WEIGHT (kg/m)	STOCK T4
Standard length 3000mm		
30 x 30	2.520	●
35 x 35	3.430	●
40 x 40	4.480	●
45 x 45	5.670	●
50 x 50	7.000	●
60 x 60	10.080	●
70 x 70	13.720	●
80 x 80	17.920	●
90 x 90	22.680	●
100 x 100	28.000	●
110 x 110	33.880	●
120 x 120	40.320	●
130 x 130	47.320	●
150 x 150	67.800	●

¹Other thickness available on request.
Material calibrated on request.
Average weights of production.
Technical information about the 2007 alloy on page 36.

AW 2030

L x L (mm) EXTRUDED	WEIGHT (kg/m)	STOCK T4
Standard length 3000mm		
35 x 35	3.430	●
40 x 40	4.480	●
45 x 45	5.670	●
50 x 50	7.000	●
60 x 60	10.080	●
70 x 70	13.720	●
80 x 80	17.920	●
90 x 90	22.680	●
100 x 100	28.000	●
110 x 110	33.880	●
120 x 120	40.320	●
130 x 130	47.320	●
150 x 150	67.800	●

¹Other thickness available on request.
Material calibrated on request.
Average weights of production.
Technical information about the 2030 alloy on page 42

AW 6063

L x L (mm)	WEIGHT (kg/m)	STOCK T6
Standard length 6500 mm		
10 x 10	0.277	●
12 x 12	0.403	●
15 x 15	0.620	●
16 x 16	0.716	●
20 x 20	1.120	●
25 x 25	1.731	●
30 x 30	2.430	●

Other thickness available on request.
Average weights of production.

AW 6082

L x L (mm) EXTRUDED	WEIGHT (kg/m)	STOCK T6
Standard length 3000mm		
30 x 30	2.520	●
32 x 32	2.867	●
35 x 35	3.340	●
40 x 40	4.480	●
45 x 45	5.670	●
50 x 50	7.000	●
60 x 60	10.080	●

Average weights of production.
Technical information about the 6082 alloy on page 58.

TECHNICAL DATA

Tempers	76
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Aluminium alloys are supplied in a wide range of tempers, but there are 2 major groups:

- Alloys whose resistance/mechanical properties are obtained by cold (Non-Heat), temper is designated by the letter "H".
- Alloys whose strength/mechanical properties are obtained by thermal treatment, followed by cooling and natural or artificial ageing, temper is designated by the letter "T".

Temper	Definition
F	Raw aluminium (without specifying the limits of the specified mechanical characteristics).
O	Annealed - Products which, after hot forming, exhibit the properties required for the annealed status, may be designated by status O.
O1	Thermally treated at the temperature and time required for solubilisation followed by slow cooling to room temperature (formerly designated T41).
O2	Thermomechanical treated to improve adequacy for forming as required for superplastic forming (SPF).
O3	Homogenized.
H12	Work hardened - 1/4 hard.
H14	Work hardened - 1/2 hard.
H16	Work hardened- 3/4 hard.
H19	Work hardened - extra-hard.
H111	Annealed and slightly hardened (less than H11) during subsequent operations such as traction or flattening.
H112	Slightly hardened by deformation at high temperature or by limited cold deformation (specified limits of mechanical characteristics).
H116	It applies to aluminium-magnesium alloys with a magnesium content of 4% or more and for which the limits of mechanical characteristics and resistance to corrosion by exfoliation are specified.
H22	Partially hardened and annealed - 1/4 hard
H14	Partially hardened and annealed - 1/2 hard
H16	Partially hardened and annealed - 3/4 hard
H19	Partially hardened and annealed - 4/4 hard
T1	Cooled after hot forming and naturally aged
T2	Cooled after hot forming, hardened and naturally aged.
T3	Solubilised, hardened and naturally aged.
T351	Solubilised, with controlled tensile stress reduction (permanent deformation of 0.5% to 3% for sheets, 1.5% to 3% for plates, 1% to 3% for laminated or cold-finished pegs, 1% to 5% for parts or forged bushes and laminated bushes) and naturally aged the products are not subjected to any straightening after the traction.
T3510	Solubilised, with controlled tensile stress reduction (permanent deformation of 1% to 3% for pegs, profiles and extruded tubes, 0.5% to 3% for drawn tubes) and naturally aged. The products are not subjected to any straightening after the traction.
T3511	Same as T3510, except that a small straightening after the traction can meet the tolerances of the standards.
T4	Solubilised and aged naturally.
T451	Solubilised, with controlled tensile stress reduction (permanent deformation of 0.5% to 3% for sheets, 1.5% to 3% for plates, 1% to 3% for laminated or cold-finished pegs, 1% to 5% for parts or forged bushes and laminated bushes) and naturally aged the products are not subjected to any straightening after the traction.
T4510	Solubilised, with controlled tensile stress reduction (permanent deformation of 1% to 3% for pegs, profiles and extruded tubes, 0.5% to 3% for drawn tubes) and naturally aged the products are not subjected to any straightening after the traction.

TECHNICAL DATA
TEMPERS

Temper	Definition
T4511	Same as T4510, except that a small straightening after the traction can meet the tolerances of the standards.
T5	Cooled after hot forming and artificially aged.
T6	Solubilised and artificially aged.
T651	Solubilised, with controlled tensile stress reduction (permanent deformation of 0.5% to 3% for sheets, 1.5% to 3% for plates, 1% to 3% for laminated or cold-finished pegs, 1% to 5% for parts or forged bushings and laminated bushes) and artificially aged. The products are not subjected to any straightening after the traction.
T6510	Solubilised, with controlled tensile stress reduction (permanent deformation of 1% to 3% for pegs, profiles and extruded tubes, 0.5% to 3% for drawn tubes) and artificially aged. The products are not subjected to any straightening after the traction.
T6511	Same as T6510, except that a small straightening after the traction can meet the tolerances of the standards.
T652	Solubilised, with compression stress reduction with a permanent deformation degree of 1% to 3% for pegs and artificially aged.
T66	Solubilised and artificially aged - level of mechanical characteristics greater than T6 obtained by special control of the process (6000 series alloys).
T7	Solubilised and artificially over-aged.
T7351	Solubilised, with controlled tensile stress reduction (permanent deformation of 0.5% to 3% for sheets, 1.5% to 3% for plates, 1% to 3% for laminated or cold-finished pegs, 1% to 5% for parts or forged bushings and laminated bushes) and artificially over-aged in order to obtain the best resistance to corrosion under stress. The products are not subjected to any straightening after the traction.
T73510	Solubilised, with controlled tensile stress reduction (permanent deformation of 1% to 3% for pegs, profiles and extruded tubes, 0.5% to 3% for drawn tubes) and artificially over-aged in order to obtain the best resistance to corrosion under stress. The products are not subjected to any straightening after the traction.
T6511	Same as T73510, except that a small straightening after the traction can meet the tolerances of the standards.
T7352	Solubilised, with compression stress reduction with a permanent deformation degree of 1% to 3% for pegs artificially over-aged in order to obtain the best resistance to corrosion under stress.
T7354	Solubilised, with stress reduction by single cold stroke to the finishing matrix, artificially over-aged in order to obtain the best resistance to corrosion under stress.
T7451	Solubilised, with controlled tensile stress reduction (permanent deformation of 0.5% to 3% for sheets, 1.5% to 3% for plates, 1% to 3% for laminated or cold-finished pegs, 1% to 5% for parts or forged bushings and laminated bushes) and artificially over-aged (between T73 and T76). The products are not subjected to any straightening after the traction.
T74510	Solubilised, with controlled tensile stress reduction (permanent deformation of 1% to 3% for pegs, profiles and extruded tubes, 0.5% to 3% for drawn tubes) and artificially over-aged (between T73 and T76). The products are not subjected to any straightening after the traction.
T74511	Same as T74510, except that a small straightening after the traction can meet the tolerances of the standards.
T7452	Solubilised, with compression stress reduction with a permanent deformation degree of 1% to 5% pegs and artificially aged (between T73 and T76).
T7651	Solubilised, with controlled tensile stress reduction (permanent deformation of 0.5% to 3% for sheets, 1.5% to 3% for plates, 1% to 3% for laminated or cold-finished pegs, 1% to 5% for parts or forged bushings and laminated bushes) and artificially over-aged in order to obtain the best resistance to corrosion by exfoliation. The products are not subjected to any straightening after the traction.
T76510	Solubilised, with controlled tensile stress reduction (permanent deformation of 1% to 3% for pegs, profiles and extruded tubes, 0.5% to 3% for drawn tubes) and artificially over-aged in order to obtain the best resistance to corrosion by exfoliation. The products are not subjected to any straightening after the traction.
T76511	Same as T76510, except that a small straightening after the traction can meet the tolerances of the standards.
T7652	Solubilised, with compression stress reduction with a permanent deformation degree of 1% to 5% artificially over-aged in order to obtain the best resistance to corrosion by exfoliation.
T7654	Solubilised, with stress reduction by single cold stroke to the finishing matrix, artificially over-aged in order to obtain the best resistance to corrosion by exfoliation.
T8	Solubilised, hardened and artificially aged.
T9	Solubilised, artificially aged and hardened.

THICKNESS TOLERANCE

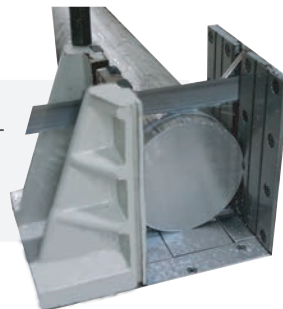
EN 485-4 - COLD LAMINATED

THICKNESSES	THICKNESS TOLERANCE ACCORDING TO SPECIFIED WIDTH						
	FROM - TO	≥ 1000	1001 - 1250	1251 - 1600	1601 - 2000	2001 - 2500	2501 - 3000
3.5 - 4	± 0,15	± 0,20	± 0,22	± 0,23	± 0,25	± 0,34	± 0,38
4 - 5	± 0,18	± 0,22	± 0,24	± 0,25	± 0,29	± 0,36	± 0,42
5 - 6	± 0,20	± 0,24	± 0,25	± 0,26	± 0,32	± 0,40	± 0,46
6 - 8	± 0,24	± 0,30	± 0,31	± 0,32	± 0,38	± 0,44	± 0,50
8 - 10	± 0,27	± 0,33	± 0,36	± 0,38	± 0,44	± 0,50	± 0,56
10 - 12	± 0,32	± 0,38	± 0,40	± 0,41	± 0,47	± 0,53	± 0,59
12 - 15	± 0,36	± 0,42	± 0,43	± 0,45	± 0,51	± 0,57	± 0,63
15 - 20	± 0,38	± 0,44	± 0,46	± 0,48	± 0,54	± 0,60	± 0,66
20 - 25	± 0,40	± 0,46	± 0,48	± 0,50	± 0,56	± 0,62	± 0,68
25 - 30	± 0,45	± 0,50	± 0,53	± 0,55	± 0,60	± 0,65	± 0,70
30 - 40	± 0,50	± 0,55	± 0,58	± 0,60	± 0,65	± 0,70	± 0,75
40 - 50	± 0,55	± 0,60	± 0,63	± 0,65	± 0,70	± 0,75	± 0,80

EN 485-3 - HOT LAMINATED

THICKNESSES	THICKNESS TOLERANCE ACCORDING TO SPECIFIED WIDTH				
	FROM - TO	up to 1250	1251 - 1600	1601 - 2000	2001 - 2500
2.5 - 4	± 0,28	± 0,28	± 0,32	± 0,35	± 0,40
4 - 5	± 0,30	± 0,30	± 0,35	± 0,40	± 0,45
5 - 6	± 0,32	± 0,32	± 0,40	± 0,45	± 0,50
6 - 8	± 0,35	± 0,40	± 0,40	± 0,50	± 0,55
8 - 10	± 0,45	± 0,50	± 0,50	± 0,55	± 0,60
10 - 15	± 0,50	± 0,60	± 0,65	± 0,65	± 0,80
15 - 20	± 0,60	± 0,70	± 0,75	± 0,80	± 0,90
20 - 30	± 0,65	± 0,75	± 0,85	± 0,90	± 1,0
30 - 40	± 0,75	± 0,85	± 1,0	± 1,1	± 1,2
40 - 50	± 0,90	± 1,0	± 1,1	± 1,2	± 1,5
50 - 60	± 1,1	± 1,2	± 1,4	± 1,5	± 1,7
60 - 80	± 1,4	± 1,5	± 1,7	± 1,9	± 2,0
80 - 100	± 1,7	± 1,8	± 1,9	± 2,1	± 2,2
100 - 150	± 2,1	± 2,2	± 1,5	± 2,6	-
150 - 220	± 2,5	± 2,6	± 1,9	± 3,0	-
220 - 350	± 2,8	± 2,9	± 3,2	± 3,3	-
350 - 400	± 3,5	± 3,7	± 3,9	± 4,2	-

WE GUARANTEE MATERIAL
PRECISION CUTTING



PROPERTIES OF ALUMINIUM BARS

PROPERTIES	AW 1050 H18-H14	AW 2007 T4	AW 2011 T3 - T8	AW 2014 T4	AW 2017 T4	AW 2024 T4	AW 2030 T4	AW 2618 T6	AW 5083 F	AW 5086 F - H14
SHAVINGS FRAGMENTATION	EXCELLENT	EXCELLENT	EXCELLENT	GOOD	GOOD	GOOD	EXCELLENT	FAIR	FAIR	FAIR
SURFACE GLOSS	EXCELLENT	GOOD	GOOD	FAIR	GOOD	GOOD	FAIR	GOOD	EXCELLENT	GOOD
WELDABILITY										
FLAME	EXCELLENT	POOR	POOR	POOR	GOOD	GOOD	POOR	-	EXCELLENT	EXCELLENT
ARGON GAS	EXCELLENT	FAIR	FAIR	POOR	POOR	GOOD	POOR	POOR	EXCELLENT	EXCELLENT
ELECTRICAL RESISTANCE		GOOD	FAIR	EXCELLENT	EXCELLENT	EXCELLENT	GOOD	GOOD	EXCELLENT	EXCELLENT
BURNT	EXCELLENT	POOR	POOR	GOOD	POOR	GOOD	POOR	FAIR	POOR	POOR
RESISTANCE TO CORROSION										
IN RURAL ENVIRONMENT	EXCELLENT	FAIR	FAIR	FAIR	FAIR	FAIR	FAIR	FAIR	EXCELLENT	EXCELLENT
IN INDUSTRIAL ENVIRONMENT	GOOD	FAIR	FAIR	POOR	POOR	POOR	FAIR	FAIR	EXCELLENT	EXCELLENT
IN MARINE ENVIRONMENT	GOOD	POOR	POOR	POOR	POOR	POOR	POOR	POOR	EXCELLENT	EXCELLENT
IN SEA WATER	GOOD	POOR	POOR	POOR	POOR	POOR	POOR	POOR	EXCELLENT	EXCELLENT
ANODIZED										
DECORATIVE	GOOD	POOR	POOR	POOR	FAIR	POOR	POOR	FAIR	FAIR	FAIR
PROTECTION INDUSTRY	EXCELLENT	GOOD	GOOD	FAIR	FAIR	FAIR	FAIR	FAIR	EXCELLENT	EXCELLENT
PURE ANODIZED	EXCELLENT	FAIR	FAIR	FAIR	GOOD	FAIR	FAIR	FAIR	EXCELLENT	EXCELLENT
TRACTION MECHANICAL CHARACTERISTICS										
RUPTURE LOAD (Rm)	100 - 160	445 - 460	290 - 420	190 - 485	380 - 390	435 - 460	445 - 460	440	300	240 - 320
ELASTIC LIMIT (Rp)	105 - 140	295 - 315	290 - 315	275 - 425	235 - 265	310 - 330	295 - 360	390	145	95
STRETCHING (5.65%)	6 - 42	10 - 14	10 - 15	10 - 20	7 - 10	12 - 20	11 - 14	8.5	231	15 - 18
BRINELL HARDNESS (HB)	20 - 24	110	95 - 120	110 - 140	105	120	115	135	70 - 80	65 - 95
RESISTANCE TO CUTTING	60 - 85	260	220 - 235	260	275	285	270	270	175	165 - 200
FATIGUE LIMIT (N/mm ²)	70 - 100	280	250	280	260	280	260	140	250	-

PROPERTIES	AW 5754 F - H14	AW 6012 T6	AW 6061 T6	AW 6060/63 T5	AW 6082 T6	AW 6262 T6 - T9	AW 7020 T6	AW 7049 A T6	AW 7075 T6
SHAVINGS FRAGMENTATION	FAIR	EXCELLENT	FAIR	FAIR	FAIR	EXCELLENT	GOOD	GOOD	GOOD
SURFACE GLOSS	EXCELLENT	GOOD	EXCELLENT	EXCELLENT	EXCELLENT	GOOD	GOOD	FAIR	GOOD
WELDABILITY									
FLAME	EXCELLENT	GOOD	EXCELLENT	GOOD	EXCELLENT	GOOD	GOOD	EXCELENTE	GOOD
ARGON GAS	EXCELLENT	GOOD	GOOD	GOOD	GOOD	FAIR	GOOD	EXCELENTE	POOR
ELECTRICAL RESISTANCE	EXCELLENT	EXCELLENT	GOOD	EXCELLENT	EXCELLENT	GOOD	GOOD	EXCELENTE	GOOD
BURNT	FAIR	GOOD	GOOD	EXCELLENT	GOOD	FAIR	GOOD	EXCELENTE	FAIR
RESISTANCE TO CORROSION									
IN RURAL ENVIRONMENT	EXCELLENT	GOOD	EXCELLENT	EXCELLENT	EXCELLENT	GOOD	GOOD	FAIR	FAIR
IN INDUSTRIAL ENVIRONMENT	EXCELLENT	GOOD	EXCELLENT	EXCELLENT	EXCELLENT	GOOD	GOOD	FAIR	FAIR
IN MARINE ENVIRONMENT	EXCELLENT	GOOD	GOOD	GOOD	GOOD	MÉDIO	FAIR	POOR	POOR
IN SEA WATER	GOOD	FAIR	FAIR	GOOD	GOOD	FAIR	FAIR	POOR	POOR
ANODIZED									
DECORATIVE	GOOD	GOOD	FAIR	EXCELLENT	FAIR	GOOD	FAIR	FAIR	FAIR
PROTECTION INDUSTRY	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	GOOD	GOOD	GOOD
PURE ANODIZED	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELENTE	EXCELLENT
TRACTION MECHANICAL CHARACTERISTICS									
RUPTURE LOAD (Rm)	180 - 290	275 - 315	280 - 310	220	340	310 - 400	380	590	485 - 530
ELASTIC LIMIT (Rp)	80	200 - 245	270	185	310	275 - 380	335	500	390 - 450
STRETCHING (5.65%)	15	4 - 8	14	13	11	10 - 17	13	7	2 - ago
BRINELL HARDNESS (HB)	-	-	95	75	95	95	120	-	130
RESISTANCE TO CUTTING	140 - 190	-	190	140	170 - 210	240	230	-	350
FATIGUE LIMIT (N/mm ²)	220	-	190	160	-	90	170	-	300

TYPICAL PROPERTIES OF STANDARD ALLOYS

ALLOYS	TEMPER	RUPTURE LOAD (Rm - N/mm ²)	ELASTIC LIMIT (Rp 0.2 - N/mm ²)	WIDENING (A 5.65%)	FATIGUE LIMIT (N/mm ²)	BRINELL HARDNESS (HB)	VICKERS HARDNESS (HV)	ELASTIC MODULE (N/mm ²)	SPECIFIC WEIGHT (g/cm ³)	MELTING RANGE (°C)	COEF. OF LINEAR EXPANSION (1/10 ³ K)	SPECIFIC HEAT (J/Kg K)	ELECTRICAL RESISTANCE (20 - μΩcm)	ELECTRICAL CONDUCT. (IACS%)
SERIES 1000														
1050 A	0	80	35	42	50	21	20	69.000	2.70	658 - 645	23.5	899	29.0	59.5
	H2	100	85	12	-	30	30	69.000	2.70	658 - 645	23.5	899	29.0	59.5
	H4	115	105	10	70	35	36	69.000	2.70	658 - 645	23.5	899	29.0	59.5
	H6	130	120	7	-	39	-	69.000	2.70	658 - 645	23.5	899	29.0	59.5
	H8	150	140	6	100	43	44	69.000	2.70	658 - 645	23.5	899	29.0	59.5
	H9	180	170	-	-	48	51	69.000	2.70	658 - 645	23.5	899	-	59.5
1200	0	90	40	40	70	23	22	69.000	2.72	657 - 645	23.4	898	29.5	58.5
	H2	110	90	11	-	32	32	69.000	2.72	657 - 645	23.4	898	29.5	58.5
	H4	125	115	9	100	37	38	69.000	2.72	657 - 645	23.4	898	29.5	58.5
	H6	140	130	7	-	41	42	69.000	2.72	657 - 645	23.4	898	29.5	58.5
	H8	160	150	6	130	45	46	69.000	2.72	657 - 645	23.4	898	29.5	58.5
	H9	190	180	-	-	50	53	69.000	2.72	657 - 645	23.4	898	-	58.5
SERIES 2000														
2007	T3	460	360	11	-	115	125	72.500	2.85	640 - 510	23.0	856	51.0	34.0
	T4	445	295	14	-	110	-	72.500	2.85	640 - 510	23.0	856	51.0	34.0
2011	T3	365	290	15	250	95	100	72.500	2.84	645 - 540	23.0	863	44.0	39.0
	T4	350	270	18	250	90	95	72.500	2.84	645 - 540	23.0	863	44.0	39.0
	T6	395	300	12	250	110	115	72.500	2.84	645 - 540	23.0	863	38.0	45.5
	T8	420	315	13	250	115	120	72.500	2.84	645 - 540	23.0	863	38.0	45.5
2014	0	190	85	20	180	55	60	73.000	2.80	640 - 505	22.7	869	34.0	50.5
	T4	430	275	18	280	110	120	73.000	2.80	640 - 505	22.7	869	51.0	34.0
	T6	485	425	12	290	140	150	73.000	2.80	640 - 505	22.7	869	43.0	40.0
2014 A	0	190	85	20	180	55	60	73.000	2.80	640 - 505	22.8	870	-	-
	T4/T451	430	275	18	280	110	120	73.000	2.80	640 - 505	22.8	870	51.0	34.0
2017 A	0	180	70	20	180	45	50	72.500	2.79	640 - 510	22.9	873	-	-
	T4	425	275	21	260	105	115	73.000	2.79	640 - 510	22.9	873	51.0	34.0
2024	0	185	75	20	180	55	60	73.000	2.79	640 - 500	23.1	874	34.0	50.5
	T3	475	340	18	280	-	125	73.000	2.79	640 - 500	23.1	874	57.0	30.0
	T4	460	330	20	280	120	125	73.000	2.79	640 - 500	23.1	874	57.0	30.0
	T8	485	450	-	250	-	140	73.000	2.79	640 - 500	23.1	874	45.0	38.5
2030	T3	460	360	11	270	115	125	72.500	2.82	640 - 510	23.0	864	51.0	34.0
	T4	445	295	14	260	110	-	72.500	2.82	640 - 510	23.0	864	51.0	34.0
SERIES 3000														
3003	0	110	50	29	100	29	29	69.500	2.73	655 - 640	23.1	892	34.0	50.5
	H2	140	120	11	110	40	40	69.500	2.73	655 - 640	23.1	892	41.0	42.0
	H4	160	145	9	130	45	46	69.500	2.73	655 - 640	23.1	892	41.0	42.0
	H6	180	165	8	140	50	50	69.500	2.73	655 - 640	23.1	892	41.0	42.0
	H8	205	185	6	150	55	55	69.500	2.73	655 - 640	23.1	892	41.0	42.0
	H9	245	215	4	-	65	70	69.500	2.73	655 - 640	23.1	892	41.0	42.0
3103	0	105	45	29	100	29	29	69.500	2.73	655 - 640	23.1	892	34.0	50.0
	H2	135	115	11	-	40	40	69.500	2.73	655 - 640	23.1	892	41.0	42.0
	H4	155	140	9	130	45	46	69.500	2.73	655 - 640	23.1	892	41.0	42.0
	H6	185	160	8	-	50	50	69.500	2.73	655 - 640	23.1	892	41.0	42.0
	H8	200	180	6	150	55	55	69.500	2.73	655 - 640	23.1	892	41.0	42.0
	H9	240	210	4	-	65	70	69.500	2.73	655 - 640	23.1	892	41.0	42.0
SERIES 5000														
5005 A	0	120	45	27	-	32	32	69.500	2.80	655 - 630	23.5	897	33.0	52.0
	H2	145	125	13	-	45	46	69.500	2.80	655 - 630	23.5	897	33.0	52.0
	H4	165	145	12	-	50	50	69.500	2.79	655 - 630	23.5	897	33.0	52.0
	H6	185	165	9	-	55	55	69.500	2.79	655 - 630	23.5	897	33.0	52.0
	H8	205	185	8	-	60	60	69.500	2.73	655 - 630	23.5	897	33.0	52.0
	H9	225	210	5	-	65	70	69.500	2.73	655 - 630	23.5	897	33.0	52.0
5052	0/H111	195	90	25	210	50	50	70.000	2.73	650 - 605	23.7	901	49.5	35.0
	H2	225	175	15	220	65	70	70.000	2.73	650 - 605	23.7	901	49.5	35.0
	H4	250	200	14	240	70	75	70.000	2.73	650 - 605	23.7	901	49.5	35.0
	H6	270	225	10	250	75	80	70.000	2.73	650 - 605	23.7	901	49.5	35.0
	H8	290	250	9	260	80	85	70.000	2.68	650 - 605	23.7	901	49.5	35.0
	H9	310	280	5	-	90	95	70.000	2.68	650 - 605	23.7	901	49.5	35.0

ALLOYS	TEMPER	RUPTURE LOAD (Rm - N/mm ²)	ELASTIC LIMIT (Rp 0.2 - N/mm ²)	WIDENING (A 5.65%)	FATIGUE LIMIT (N/mm ²)	BRINELL HARDNESS (HB)	VICKERS HARDNESS (HV)	ELASTIC MODULE (N/mm ²)	SPECIFIC WEIGHT (g/cm ³)	MELTING RANGE (°C)	COEF. OF LINEAR EXPANSION (1/10 ⁶ K)	SPECIFIC HEAT (J/Kg K)	ELECTRICAL RESISTANCE (20 - μΩcm)	ELECTRICAL CONDUCT. (IACS%)
SERIES 5000														
5083	O/H111	300	145	23	250	70	75	71.000	2.66	580 - 640	23.8	899	60.0	28.5
	H2	330	240	17	280	90	95	71.000	2.66	580 - 640	23.8	899	60.0	28.5
	H4	360	275	16	280	100	105	71.000	2.66	580 - 640	23.8	899	60.0	28.5
	H6	380	305	10	-	105	110	71.000	2.66	580 - 640	23.8	899	60.0	28.5
	H8	400	335	9	-	110	115	71.000	2.66	580 - 640	23.8	899	60.0	28.5
	H9	420	370	5	-	115	120	71.000	2.66	580 - 640	23.8	899	-	-
5086	O/H111	275	130	24	240	65	65	71.000	2.67	585 - 640	23.8	900	56.0	31.0
	H2	305	220	16	260	85	90	71.000	2.67	585 - 640	23.8	900	56.0	31.0
	H4	330	250	15	270	95	100	71.000	2.67	585 - 640	23.8	900	56.0	31.0
	H6	345	280	10	-	100	105	71.000	2.67	585 - 640	23.8	900	56.0	31.0
	H8	360	305	9	-	105	110	71.000	2.67	585 - 640	23.8	900	56.0	31.0
	H9	380	335	5	-	110	115	71.000	2.67	585 - 640	23.8	900	-	-
5154 A	O/H111	235	110	24	230	55	60	70.500	2.68	595 - 645	23.8	897	54.0	32.0
	H2	265	205	14	250	75	80	70.500	2.68	595 - 645	23.8	897	54.0	32.0
	H4	290	235	13	260	80	85	70.500	2.68	595 - 645	23.8	897	54.0	32.0
	H6	315	260	10	-	85	90	70.500	2.68	595 - 645	23.8	897	54.0	32.0
	H8	340	285	9	290	90	95	70.500	2.68	595 - 645	23.8	897	54.0	32.0
	H9	375	320	5	-	95	100	70.500	2.68	595 - 645	23.8	897	-	-
5251	O/H111	180	80	26	200	45	46	70.500	2.69	605 - 650	23.6	898	46.0	37.5
	H2	210	165	14	-	60	65	70.500	2.69	605 - 650	23.6	898	46.0	37.5
	H4	230	190	13	230	65	70	70.500	2.69	605 - 650	23.6	898	46.0	37.5
	H6	255	215	9	-	70	75	70.500	2.69	605 - 650	23.6	898	46.0	37.5
	H8	280	240	8	250	80	80	70.500	2.69	605 - 650	23.6	898	46.0	37.5
	H9	310	270	5	-	90	90	70.500	2.69	605 - 650	23.6	898	-	-
5754	O/H111	215	100	25	220	55	55	70.500	2.68	595 - 645	23.7	897	53.0	32.5
	H2	245	185	15	-	70	75	70.500	2.68	595 - 645	23.7	897	53.0	32.5
	H4	270	215	14	250	75	80	70.500	2.68	595 - 645	23.7	897	53.0	32.5
	H6	290	245	10	-	80	85	70.500	2.68	595 - 645	23.7	897	53.0	32.5
	H8	315	270	9	280	90	90	70.500	2.68	595 - 645	23.7	897	53.0	32.5
	H9	340	300	5	-	95	100	70.500	2.68	595 - 645	23.7	897	-	-
SERIES 6000														
6005 A	T1	200	100	25	-	-	-	69.500	2.71	605 - 655	23.3	892	-	-
	T4	210	110	16	-	-	-	69.500	2.71	605 - 655	23.3	892	-	-
	T5	270	240	13	-	-	-	69.500	2.71	605 - 655	23.3	892	-	-
	T6	285	260	12	190	90	95	69.500	2.71	605 - 655	23.3	892	35.0	49.5
6060	0	100	50	27	110	25	25	69.500	2.70	610 - 655	23.4	898	-	-
	T1	150	90	25	-	45	45	69.500	2.70	610 - 655	23.4	898	35.0	49.5
	T4	160	90	20	-	50	55	69.500	2.70	610 - 655	23.4	898	36.0	48.0
	T5	220	195	13	160	75	80	69.500	2.70	610 - 655	23.4	898	32.0	54.0
	T6	245	215	13	160	85	90	69.500	2.70	610 - 655	23.4	898	32.0	54.0
6061	0	125	55	27	120	30	30	70.000	2.70	580 - 650	23.3	895	37.0	46.5
	T4	235	140	21	180	65	70	70.000	2.70	580 - 650	23.3	895	43.0	40.0
	T6/T651	310	270	14	190	95	100	70.000	2.70	580 - 650	23.3	895	40.0	43.0
6063	0	100	50	27	110	25	25	69.500	2.70	615 - 655	23.5	898	30.0	57.5
	T1	150	90	26	150	45	45	69.500	2.70	615 - 655	23.5	898	34.0	50.5
	T4	160	90	21	150	50	50	69.500	2.70	615 - 655	23.5	898	35.0	49.5
	T5	215	175	14	150	60	65	69.500	2.70	615 - 655	23.5	898	31.0	55.5
	T6	245	210	14	150	75	80	69.500	2.70	615 - 655	23.5	898	33.0	52.0
	T8	260	240	-	-	80	85	69.500	2.70	615 - 655	23.5	898	33.0	52.0
	T6/T651	340	310	11	210	95	100	70.000	2.71	575 - 650	23.1	894	39.5	44.0
6082	0	130	60	27	120	35	35	70.000	2.71	575 - 650	23.1	894	31.0	55.5
	T1	260	170	24	200	70	75	70.000	2.71	575 - 650	23.1	894	-	-
	T4	260	170	19	200	70	75	70.000	2.71	575 - 650	23.1	894	41.0	42.0
	T5	325	275	11	210	90	95	70.000	2.71	575 - 650	23.1	894	-	-
7020	0	180	80	24	-	55	60	70.000	2.78	650 - 605	23.3	873	-	-
	T5	375	315	14	250	110	120	70.000	2.78	655 - 630	23.3	873	49.0	35.0
	T6/T651	380	335	13	270	120	125	70.000	2.78	655 - 630	23.3	873	49.0	35.0
	T6	590	500	7	-	-	-	71.500	2.81	650 - 605	23.0	915	43.0	-
7075	0	225	105	-	230	60	65	72.000	2.81	650 - 605	23.5	862	38.0	45.5
	T6/T651	570	505	10	300	150	160	72.000	2.81	650 - 605	23.5	862	52.0	33.0
	T7/T351	505	435	13	300	140	150	72.000	2.81	650 - 605	23.5	862	43.5	39.5

INTERNATIONAL EQUIVALENTS

LANEMA	US E.N.	SPAIN U.N.E.	FRANCE AFNOR	GERMANY D.I.M. (1712-1725)	UK B.S.	SWEDEN S.I.S	SWITZER LAND	CANADA C.S.A.	ITALY U.N.I.	C.E.I. GOST	AUSTRIA ÖNORM	
VIRGIN ALUMINIUM												
AW 1050	AW 1050	L-3051 38.114	A - 5	Al 99,5 3.0255	1 B	4007	Al 99,5	995 (25)	9001/2	A 5	Al 99,5	
AW 1350	AW 1350	L-3052 38.116	A 5L	E AL 3.0257	1 E	4008	E-AL 99	-	-	A 6	-	
AW 1070	AW 1070	L-3071 38.117	A 7	Al 99,7 3.0275	2 L 48	4005	Al 99,7	9970	9001/3	A 7	Al 99,7	
AW 1080 A	AW 1080 A	L-3081 38.118	A 8	Al 99,8 3.0285	1 A	4004	Al 99,8	9980	9001/4	A 8	Al 99,8	
AW 1200	AW 1200	L-3001 38.115	A 4	Al 99 3.0205	1 C	4010	Al 99	990 (25)	9001/2	A 0	Al 99	
ALUMINIUM WITH COPPER												
AW 2007	AW 2007	L-3121 38.139	-	AlCuMgPb 3.1645	-	4355	-	-	-	-	AlCuMgPb	
AW 2011	AW 2011	L-3191 38.322	A-USPbBi	AlCuBiPb 3.1655	FC 1	4338	AlCu6BiPb	CB 60 (28 S)	9002/5	-	-	
AW 2014	AW 2014	L-3130 38.313	A - U4SG	AlCuSiMn 3.1255	H 15	-	AlCuSiMn	CS 41 N	9002/3	-	AlCuSiMn	
AW 2017 A	AW 2017 A	L-3120 38.312	A - U4G	AlCuMg1 3.1325	H 14	GA 631	-	CM 41 /17 S)	9002/2	-	AlCuMg1	
AW 2024	AW 2024	L-3140 38.314	A - U4G1	AlCuMg2 3.1355	L 97 / L 98	5	AlCu4Mg1,5	CG 42 (24 S)	9002/4	1160	AlCuMg2	
AW 2030	AW 2030	L-3121 38.319	A - U4Pb	-	7 L 25	4335	-	-	-	-	-	
AW 2117	AW 20117	L-3180 38.318	A - U2G	AlCu2,5Mg0,5 3.1305	L 86	-	-	CG 30	9002/1	1180	AlCu2Mg	
AW 2618	AW 2618	L-3171 38.320	A - U2GN	-	H 16	-	-	-	9002/6	-	-	
ALUMINIUM WITH MANGANESE												
AW 3003	AW 3003	-	A - M1	AlMnCu 3.0517	N 3	-	-	MC10	9003/1	-	-	
AW 3004	AW 3004	L-3820 38.382	A - Mg1	AlMn1Mg1 3.0526	-	GA 5611	-	(D 35)	9003/2	-	-	
AW 3005	AW 3005	-	A - Mg0,5	AlMn1Mg0,5 3.0525	-	-	-	-	-	-	-	
AW 3103	AW 3103	L-3810 38.381	A - M	AlMn1 3.0515	N 3	4067	AlMn	-	9003/3	SvAMc	-	
AW 3105	AW 3105	-	-	AlMn0,5Mg0,5 3.0505	N 31	-	-	-	-	-	-	
ALUMINIUM WITH MAGNESIUM												
AW 5005	AW 5005	L-3350 38.335	A - G0,6	AlMg1 3.3315	N 41	4106	AlMg1	(B 57 S)	9005/1	1510	-	
AW 5050	AW 5050	L-3380 38.338	A G1	AlMg1,5 3.3316	3 L 44	-	(AlMg1,5)	(A 57 S)	9005/7	-	-	
AW 5052	AW 5052	L-3360 38.336	A - G2,5C	AlMg2,5 3.3523	L 80 / L 81	4120	AlMg2,5	GR 20 (57 S)	9005/2	1520	AlMg2,5	
AW 5056 A	AW 5056 A	L-3320 38.332	A - G5M	AlMg5 3.3555	N 6/2L58	4146	AlMg5	GM 50 R (56 S)	-	1550	AlMg5	
AW 5083	AW 5083	L-3321 38.340	A - G4,5M	AlMg4,5Mn 3.3547	N 8	4140	AlMg4,5Mn	GR 41 (D 54 S)	9005/5	1540	AlMg4,5Mn	
AW 5086	AW 5086	L-3322 38.341	A - G4MC	AlMg4Mn2 3.3545	-	-	AlMg4Mn	G 40	9005/4	-	-	
AW 5154 A	AW 5154 A	L-3394 38.331	A - G3,5M	AlMg3,5MnCr -	N 5	4133	-	GR 40 (C 54 S)	9005/8	1530 (Si0,6)	-	
AW 5251	AW 5251	L-3361 38.347	A - G2M	AlMg2Mn0,3 3.3525	N 4	-	-	(M 57 S)	9005/2	-	AlMg2Mn0,3	
AW 5454	AW 5454	L-3391 38.345	A - G2,5MC	AlMg2,7Mn 3.3537	N 51	-	AlMg2,7Mn	-	9005/3	-	-	
AW 5754	AW 5754	L-3390 38.339	A - G3M	AlMg3 3.3535	(N 51)	4130	AlMg3	-	(9005/3)	-	-	
ALUMINIUM WITH MAGNESIUM-SILICON												
AW 6005 A	AW 6005 A	L-3454 38.349	A - SG0,5	AlMgSi0,7 3.3210	-	-	AlMgSi0,7	-	9006/6	-	-	
AW 6060/3	AW 6060/3	L-3441 38.337	A - GS	AlMgSi0,5 3.3206	H 9	4104	AlMgSi0,5	50 S	9006/1	-	AlMgSi0,5	
AW 6061	AW 6061	L-3420 38.342	A - SGUC	AlMg1SiCu 3.3211	H 20	-	-	G 11 N	9006/2	1330	-	
AW 6081	AW 6081	L-3451 38.334	A - GSM0,3	AlMgSi1 3.2315	-	-	AlMgSi1	G 1 S	-	-	AlMgSi0,8Mn	
AW 6082	AW 6082	L-3453 38.348	A - SGM0,7	AlMgSi1 3.2315	H 30	4212	AlMgSi1Mn	SG 11 R	9006/4	-	AlMgSi1	
AW 6101	AW 6101	L-3431 38.343	A - GSL	EAlMgSi 3.2307	E 91 E	-	E AlMgSi0,4	-	-	-	AlSiMg	
AW 6261	AW 6261	L-3420 38.342	-	-	-	4102	-	-	-	-	-	
AW 6012	AW 6012	L-3452 38.344	-	AlMgSiPb 3.0615	-	-	-	-	-	1350	AlMgSiPbCd	
AW 6262	AW 6262	-	-	-	-	-	-	-	9006/7	-	-	
AW 6351	AW 6351	L-3451 38.334	A - SGM	AlMgSi1 3.2318	H 30	-	-	-	-	-	-	
ALUMINIUM WITH ZINC												
AW 7020	AW 7020	L-3741 38.374	A - Z5G	AlZn4,5Mg1 3.4335	H 17	4425	AlZn4,5Mg1	(D 74 S)	9007/1	-	AlZn4,5Mg1	
AW 7022	AW 7022	-	-	AlZnMgCu0,5 3.4345	-	-	-	-	9007/5	-	-	
AW 7049 A	AW 7049 A	L-3751 38.357	A - Z8GU	AlZn8MgCu -	-	-	-	-	9007/2	-	-	
AW 7075	AW 7075	L-3710 38.371	A - Z5GU	AlZnMgCu1,5 3.4365	2 L 95	-	AlZn6MgCu1,5	ZG 62	-	V 95	AlZnMgCu1,5	

COMPOSIÇÃO QUÍMICA (EN 573-3)

	Si (%)	Fe (%)	Cu (%)	Mn (%)	Mg (%)	Cr (%)	Ni (%)	Zn (%)	Ti (%)	%	Other (%)		Al (%)
											Each	Total	
AW 2007	0.80	0.80	3.30 - 4.60	0.50 - 1.00	0.40 - 1.80v	0.1	0.20	0.80	0.20	a	0.10	0.30	RESTO
AW 2011	0.40	0.70	5.00 - 6.00	-	-	0.01	-	0.30	-	b	0.05	0.15	RESTO
AW 2017 A	0.20 - 0.80	0.70	3.50 - 4.50	0.40 - 1.00	0.40 - 1.00	0.10	-	0.25	0.15	c	0.05	0.15	RESTO
AW 2030	0.80	0.70	3.30 - 4.50	0.20 - 1.00	0.50 - 1.30	0.10	-	0.50	0.20	d	0.10	0.30	RESTO
AW 5083	0.40	0.40	0.10	0.40 - 1.00	4.00 - 4.90	0.05 - 0.25	-	0.25	0.15	-	0.05	0.15	RESTO
AW 5754	0.40	0.40	0.10	0.50	2.60 - 3.60	0.30	-	0.20	0.15	e	0.05	0.15	RESTO
AW 6063	0.20 - 0.60	0.35	0.10	0.10	0.45 - 0.90	0.10	-	0.10	0.10	-	0.05	0.15	RESTO
AW 6082	0.70 - 1.30	0.50	0.10	0.40 - 1.00	0.60 - 1.20	0.25	-	0.20	0.10	-	0.05	0.15	RESTO
AW 7021	0.25	0.40	0.25	0.10	1.20 - 1.80	0.05	-	5.00 - 6.00	0.10	f	0.05	0.15	RESTO
AW 7075	0.40	0.50	1.20 - 2.00	0.30	2.10 - 2.90	0.18 - 0.28	-	5.10 - 6.10	0.20	g	0.05	0.15	RESTO

a - Bi 0.20 / Pb 0.80 - 1.50 / Sn 0.20

b - Bi 0.20 - 0.60 / Pb 0.20 - 0.60

c - Zr + Ti 0.25

d - Bi 0.20 / Pb 0.80 - 1.50

e - Mn + Cr 0.10 - 0.60

f - Zr 0.08 - 0.18

g - Zr + Ti 0.25

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