



**We make it  
sustainable,  
stronger, harder  
and durable**



**aluminium bozen**





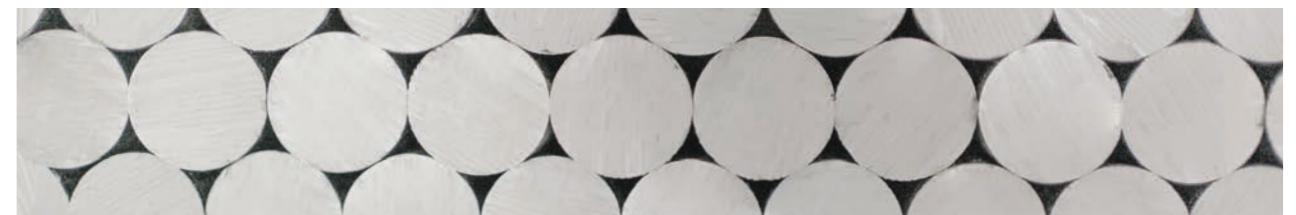
## Our history began 85 years ago

In the historic factory in Bolzano, primary aluminum was produced since 1936. Subsequently, in 1976 the plant was converted to **produce extruded hard alloys**.

The plant in Bolzano is **strategically located to respond** quickly and efficiently to the needs of European customers, as well as providing its services all over the world.

From the highest temperatures in the foundry, to the extrusion phase, from quality tests to the moment when our aluminum is leaving the Factory. What is leading us is the competence and passion for our work.

We work with commitment, dedication, attention, talent, all supported by technology. 50 years allow us to say that our aluminum is really to be found almost everywhere.





# Aluminum Bozen has been operating in the production of aluminum for more than half a century

Aluminium Bozen is a historical company that supplies extruded profiles with the possibility of detensioning them up to a diameter of 160 mm for soft alloys and 120 mm for hard alloys. Secondly, it has an off-line **hardening furnace** that is used to achieve consistent and on average higher mechanical properties.

Moreover, the company offers different metal-lurgical tempers and performs **ultrasonic testing** on billets and semi-finished products up to class AA. In addition to this, it can supply small formats up to 15 mm in length. Finally, there is a tehcnical department and a die shop with decades of experience that are able to formulate **product feasibility studies** to meet the most demanding customer requiriments.

**Why is aluminum so important?**  
Aluminum is one of the most common and cheapest elements found in nature. It is a very

light and **environmentally friendly** metal. Nothing is thrown away as it can be 100% almost endless recycled.

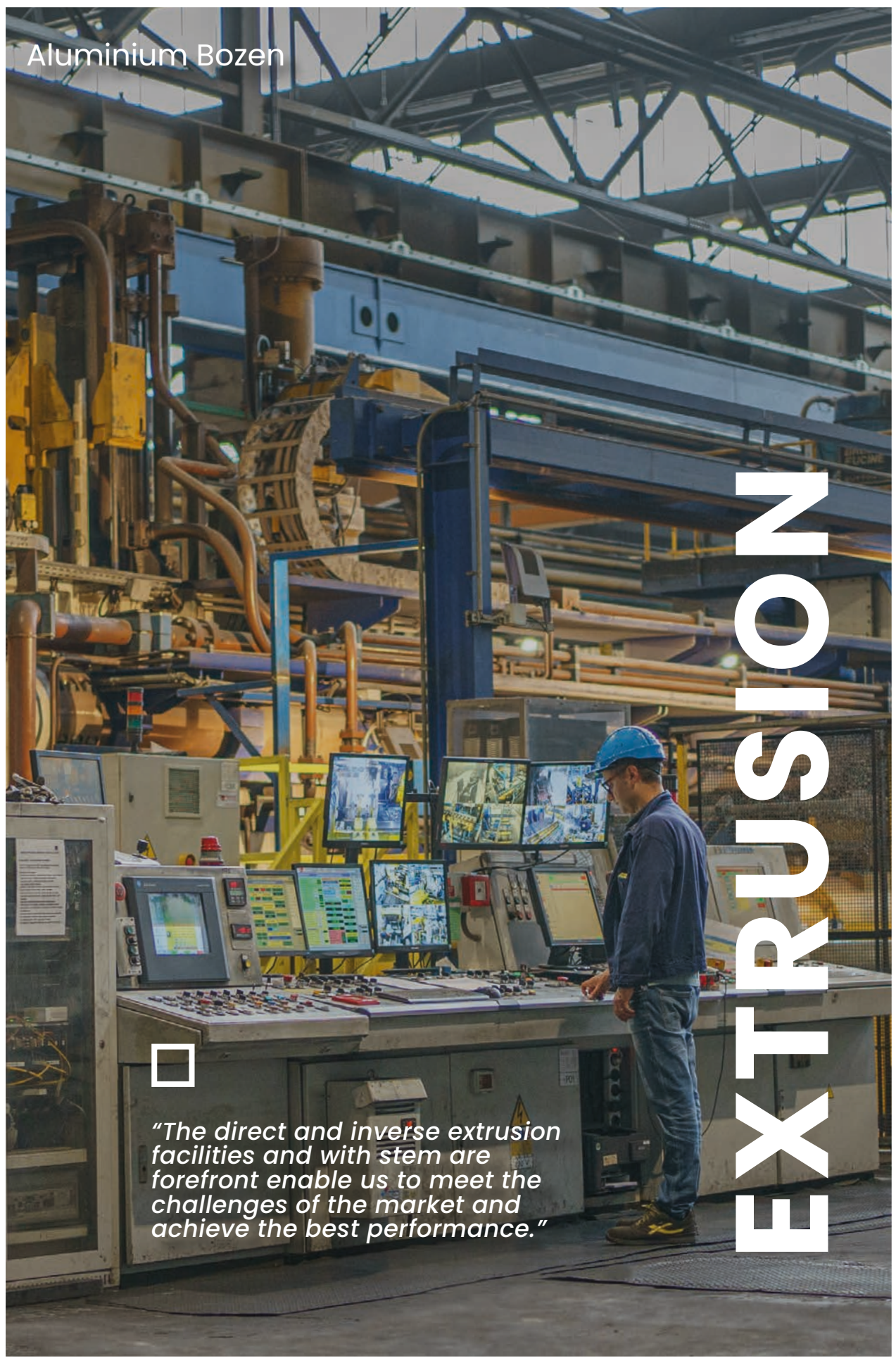
Everything without losing its special properties: **corrosion resistance and high electrical and thermal conductivity**. In addition, aluminum is easy to process even at low temperatures. Therefore, it can be used in many areas.

**Our mission**  
It is helping customers to find the best solutions to their needs. Great technical skills, the use of **new technologies** and continuous staff training in a safe environment, allow the company to look at the future with confidence.

Our commitment turns into concrete results. Our strength is the knowledge collected over the years.



Aluminium Bozen



*"The direct and inverse extrusion facilities and with stem are forefront enable us to meet the challenges of the market and achieve the best performance."*

EXTRUSION



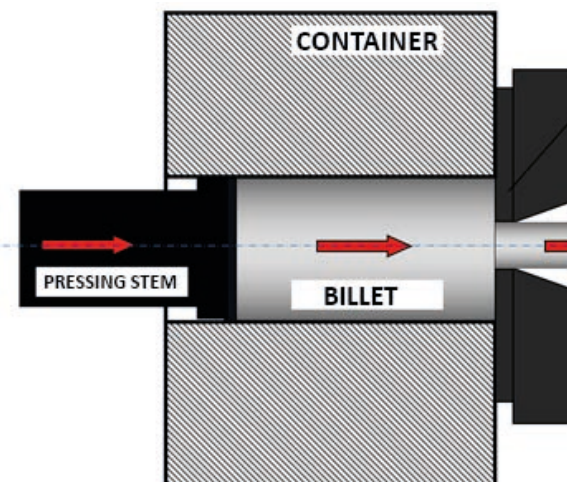


# Extrusion

High temperature extrusion in an industrial **plastic deformation** process that, by compressing a pre-heated billet of aluminium against a die, allows **extrusions to be obtained in the form of bars, tubes and profiles** with a cross-section corresponding to the shape of the die

itself. The aforementioned mechanical transformation, completed by appropriate **heat treatments**, allows the products to be given the desired **physical and mechanical properties**.

## □ Direct extrusion – 5.000 t press



During direct extrusion the container remains stationary and the billet is pressed.

With this press we can produce **round bars** up to 320 mm, **square bars** up to 220 mm, **flat bars** up to 400x100 mm.

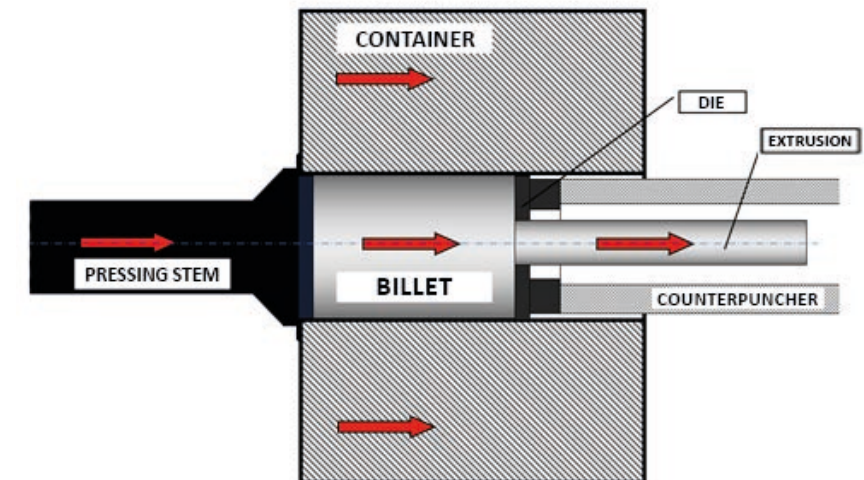
We distinguish ourselves by our flexibility in the production of many alloys, from large to small formats.



## □ Inverse extrusion – 3.500 t

During inverse extrusion the **container moves with the billet**; this involves the lack of friction between the billet and the container, affecting the flow of material. This way all the frictional resistance between

the billet and the container is eliminated, therefore, it's possible to extrude profiles in hard alloys such as 7075, 7012, 2014, 2024 and similar. With great benefit over conventional direct extrusion.

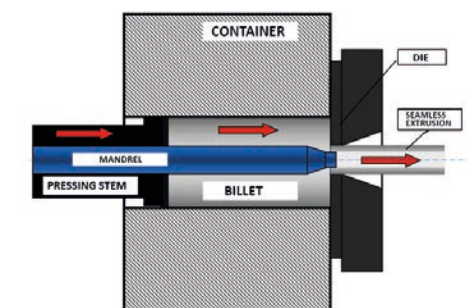


## □ Seamless extrusion

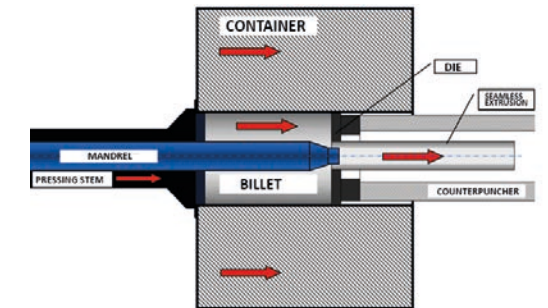
During seamless extrusion the pre-heated billet is inserted inside the container of the press and it's pushed by the stem against the die to **produce a specific shape**. We can produce hollow extruded products

in various alloys with both inverse and direct presses. These products are particularly complex. We can produce round tubes with outside diameters from 70 mm up to 290 mm.

DIRECT EXTRUSION WITH STEM (5.000 t press)



INVERSE EXTRUSION WITH STEM (3.500 t press)







# Bars and profiles

The possible applications of extruded aluminum allows us to **meet the diverse needs** of our customers. The technical staff makes its know-how available to contribute to the best feasibility of the product, thus

responding to the needs of the market. All non-standard inquiries, not included in the product range, are subject to a feasibility study by our technical department.

## Standard profiles



**Round bars**  
from Ø 30 mm up to  
Ø 320 mm



**Square bars**  
from 30 mm up to 220 mm



**Flat bars**  
minimum thickness of 30 mm  
maximum width of 400 mm

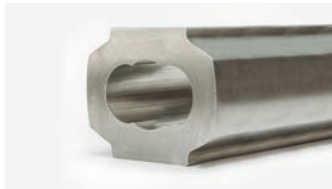
## Non-standard profiles



**Seamless round tubes**  
outside diameters from 70  
mm up to 290 mm



**Drawing profiles**  
we offer and produce  
profiles according to  
customer drawings



**Pump bodies**  
0.5 – 4.5 groups



## Aluminium Bozen

“In it’s in-house foundry, Aluminium Bozen produces a wide range of alloys and can also produce customised ones to meet customer requirements.”

FOUNDRY





# Foundry

It all starts here, where aluminium is melted and turned into billets

Thanks to its foundry, Aluminium Bozen can produce a wide **range of aluminium alloys**.

The technical department can assess the feasibility of customer's requests, with the utmost attention and professionalism. By producing commodities, we are at the origin of an entire production chain.

We offer more than **25 different alloys** in our catalogue, divided into the following types. All specific alloy inquiries that are not included in the standard product range are subject to a feasibility assessment by the technical office. Aluminum Bozen can meet almost all customer requirements and manufacture **special alloys**.



## Alloys catalogue

### 2xxx – Al Cu

- 2007

EN AW-2007  
Chemical symbol: Al Cu4PbMgMn  
**Features:**  
Excellent free machining characteristics.  
It allows high cutting speeds, forms short chips, long cutting tool life.  
High strength heat treatable alloy. High fatigue strength.  
Low resistance to atmospheric corrosion. Hard anodizing or other protection is recommended.
- 2014/2014A

EN AW-2014/2014A  
Chemical symbol: Al Cu4SiMg/Al Cu4SiMg(A)  
**Features:**  
High mechanical strength slightly higher than 2011 and 2017A alloys.  
High fatigue resistance.
- 2017A


EN AW-2017A  
Chemical symbol: Al Cu4MgSi (A)  
**Features:**  
Heat-treatable alloy. High mechanical strength. High fatigue resistance.  
Excellent machining properties. Suitable for welding resistance. Corrosion resistance only with coating or other forms of protection.
- 2024

EN AW-2024  
Chemical symbol: Al Cu4 Mg1  
**Features:**  
Heat-treatable alloy. Excellent machining properties. Alloy with high strength with slightly higher strength than 2014(A), 2017A and 2030 alloys. High fatigue resistance. Suitable for welding. Corrosion resistance only with coating or other forms of protection.
- 2030


EN AW-2030  
Chemical symbol: Al Cu4 Mg1  
**Features:**  
Heat-treatable alloy. Excellent machining properties. Alloy with high strength with slightly higher strength than 2014(A), 2017A and 2030 alloys. High fatigue resistance. Suitable for welding. Corrosion resistance only with coating or other forms of protection.

- 2033 (Lead free)

AW-2033  
Chemical symbol: Al Cu4PbMg  
**Features:**  
Heat-treatable alloy. Excellent machining properties.  
Permits high cutting speeds, forms short chips, long cutting tool life. High fatigue resistance.  
Poor resistance to atmospheric corrosion.


- 2030AB (Lead free)

AW-2030  
Chemical symbol: Al Cu4 Mg1  
**Features:**  
Heat-treatable alloy. Excellent machining properties. Alloy with high strength with slightly higher strength than 2014(A), 2017A and 2030 alloys. High fatigue resistance. Suitable for welding. Corrosion resistance only with coating or other forms of protection.


- 2618A

EN AW-2618A  
Chemical symbol: Al Cu2Mg1,5Ni  
**Features:**  
Aluminium alloy containing 2% Cu and 1.5 % Mg. High mechanical properties combined with moderate corrosion resistance. Good retention of mechanical properties at temperatures of 200° or more. Low thermal expansion at high temperature. Heat treatment alloy with good machinability.

### 4xxx – Al Si

- 4032

EN AW-4032  
Chemical symbol: Al Si12,5MgCuNi  
**Features:**  
Like alloy 2618A, alloy 4032 has a limited decay of mechanical properties at temperatures even above 200°, with a lower coefficient of expansion than the average of other alloys. Good machinability with excellent surface finish.  
Heat treatment alloy.

All specific alloy inquiries that are not included in the standard product range are subject to a feasibility assessment by the technical office. Aluminum Bozen can meet almost all customer requirements and manufacture special alloys.



## 5xxx – Al Mg

- 5019

EN AW-5019  
Chemical symbol: Al Mg5  
**Features:**  
Alloy characterised by excellent resistance to aggressive environments such as the marine environment. Cold work hardening alloy.
- 5083

EN AW-5083  
Chemical symbol: Al Mg4,5Mn0,7  
**Features:**  
Alloy characterised by excellent resistance to aggressive environments such as the marine environment. Cold work hardening alloy.
- 5754

EN AW-5754  
Chemical symbol: Al Mg3  
**Features:**  
Alloy characterised by excellent resistance to aggressive environments such as the marine environment. Cold work hardening alloy.

## 6xxx – Al MgSi

- 6012

EN AW-6012  
Chemical symbol: Al MgSiPb  
**Features:**  
It has good mechanical strength and acceptable corrosion resistance combined with a good response to both decorative and protective anodic oxidation at high thickness. It can be hot stamped. Heat treatment alloy.
- 6020


EN AW-6020  
Chemical symbol: Al MgSi  
**Features:**  
Suitable for products/parts requiring excellent processability, as well as high corrosion resistance, good jointing and excellent response to anodising.
- 6023

EN AW-6023  
Chemical symbol: Al SiSnMgBi  
**Features:**  
Suitable for those automotive components, electronic and electrical parts as well as 'forged parts' produced where mechanical strength and good corrosion resistance and finish must be standard.

- 6026

EN AW-6026  
Chemical symbol: Al MgSiBi  
**Features:**  
It is a machining alloy that, while containing Pb, complies with RoHs. Medium to high mechanical properties. Alloy 6026 offers good corrosion resistance and allows both decorative and protective thick anodising. Heat treatment alloy.
- 6026AB (Lead free)

AW-6026  
Chemical symbol: Al MgSiBi  
**Features:**  
It is a machining alloy with medium-high level characteristics. Alloy 6026 Lead Free offers good corrosion resistance and allows both decorative and protective anodising in thickness. Heat treatment alloy.


- 6056

EN AW-6056  
Chemical symbol: Al SiMgCuMn  
**Features:**  
High corrosion resistance. Good weldability. Medium to high fatigue resistance. Mechanical properties superior to 6082 alloy. Due to the above characteristics it is not suitable for the fabrication of complex shapes. Heat treatment alloy.
- 6060

EN AW-6060  
Chemical symbol: Al MgSi  
**Features:**  
Excellent corrosion resistance and weldability. Good cold deformability in intermediate physical states. Low to medium mechanical properties and fatigue strength. High quality standards can be achieved during the anodising process. Extremely complex shapes can be produced in the extrusion process. Heat treatment alloy.
- 6061

EN AW-6061  
Chemical symbol: Al MgSiCu  
**Features:**  
Very good corrosion resistance and weldability. Very good weldability. Medium mechanical properties. High toughness even at low temperatures. Good susceptibility to anodic oxidation. Heat treatment alloy.

- 6063

EN AW-6063  
Chemical symbol: Al Mg0,7Si  
**Features:**  
Excellent corrosion resistance and weldability. Good cold deformability in intermediate physical states. Low to medium mechanical properties and fatigue strength. High quality standards can be achieved during the anodising process. Extremely complex shapes can be realised in the extrusion process. Heat treatment alloy.
- 6082

EN AW-6082  
Chemical symbol: Al SiMgMn  
**Features:**  
Machine tool machinability very good. Formability poor in physical state T6, good in physical state T4, very good in physical state O. Weldability good. Good fatigue resistance. Medium to high mechanical properties. Medium to high fatigue strength. Heat treatment alloy.
- 6101B

EN AW-6101B  
Chemical symbol: Al MgSi(B)  
**Features:**  
Electrical resistivity in T5 state max. 3.25 Ω cm². Heat treatment alloy.
- 6262

EN AW-6262  
Chemical symbol: Al MgSiPb  
**Features:**  
Suitable for hardening, decorative and protective anodising.
- 6262A

EN AW-6262A  
Chemical symbol: Al MgSiSn  
**Features:**  
Good corrosion resistance and good response to protective and hard decorative anodising. Excellent machinability preserving tool life. Medium mechanical strength. Heat treatment alloy.

## 7xxx – Al Zn

- 7003

EN AW-7003  
Chemical symbol: Al Zn6Mg0,8Zr  
**Features:**  
Excellent weldability, medium-high mechanical properties, good susceptibility to protective and decorative anodising. High fatigue resistance. Heat treatment alloy.
- 7012

EN AW-7012  
Chemical symbol: Al Zn6Mg2Cu  
**Features:**  
Alloy with high mechanical properties and high fatigue strength. Reduced corrosion and good surface responses to anodic oxidation. Heat-treated alloy.
- 7020

EN AW-7020  
Chemical symbol: Al Zn4,5Mg1  
**Features:**  
It is widely used in welded structures due to its excellent weldability. It has excellent fatigue strength. Good corrosion resistance. Heat treatment alloy.
- 7022

EN AW-7022  
Chemical symbol: Al Zn5Mg3Cu  
**Features:**  
Very good fatigue resistance. Fair corrosion resistance. High mechanical properties. Heat-treated alloy.
- 7075

EN AW-7075  
Chemical symbol: Al Zn5,5MgCu  
**Features:**  
The alloy reaches its maximum mechanical properties in the T6 state. On the other hand, in this physical state the alloy shows its limit as far as stress corrosion cracking is concerned. In the T73 physical state, the alloy reaches a lower level of mechanical characteristics, on the other hand it manifests a significantly higher resistance to stress corrosion cracking compared to that obtainable in the T6 state..



# Alloys

We offer more than 25 different alloys in our catalogue

## Alloys Al-Cu 2000 series

- Thermally resistant parts
- Mechanical parts
- Aeronautical components
- Highly stressed structures
- Turning bars

## Alloys Al-Si 4000 series

- Applications requiring good heat resistance and low expandability
- Pistons
- Hot forged and stamped parts
- Hydraulic applications

## Alloys Al-Mg 5000 series

- Medium-stress corrosion-resistant panels and roofs
- Welded stressed corrosion-resistant structures (plating, piping)
- Marine applications, special bolts, accessories

## Alloys Al-MgSi 6000 series

- Decorative applications requiring excellent appearance together with good mechanical properties
- Medium-stress structures with good corrosion resistance
- Mechanical processing

## Alloys Al-Zn 7000 series

- Highly stressed structures
- High-strength welded structures (copper-free alloys)
- Panels with very high mechanical resistance

# Mechanical properties

Hard

## HARD ALLOYS

7075 - 7012 - 7022  
2014 - 2024 - 7020

Medium

## MEDIUM ALLOYS

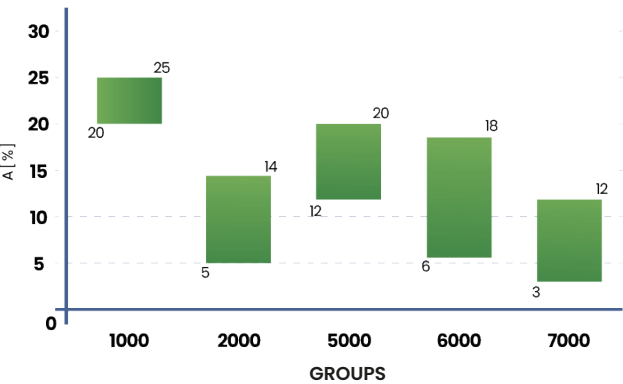
2007-2030-2017A-2030AB-2033  
4032-5083-5754-5019-6020-6056-6082  
6026-6026AB-6012-6061-6262-6023

Soft

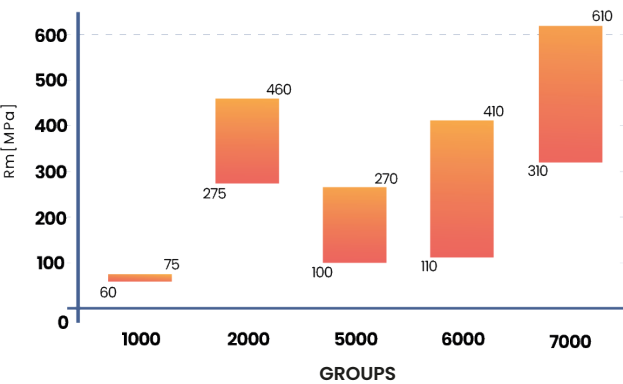
## SOFT ALLOYS

6060 - 6063

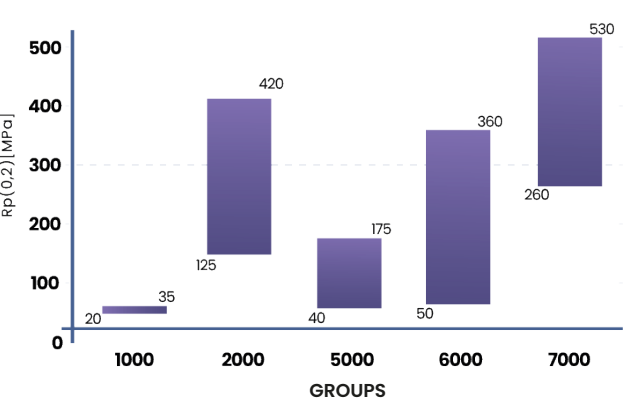
Elongation



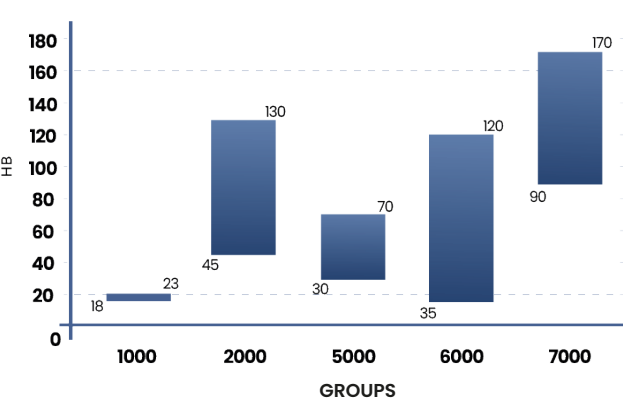
Tensile strength



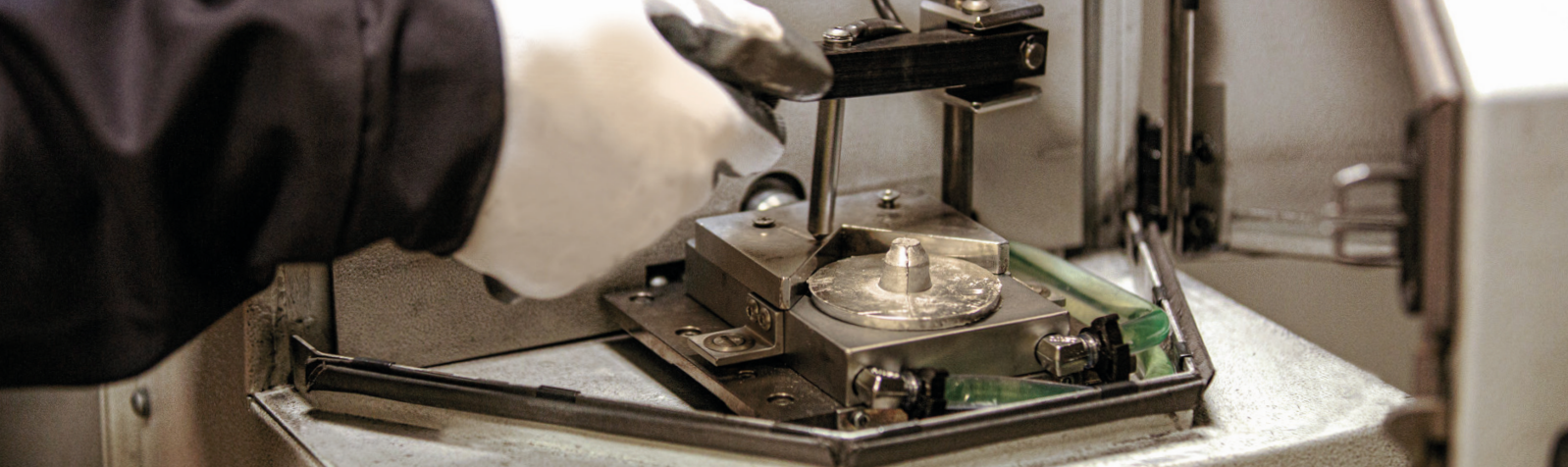
Yield strength



Hardness (typical value)

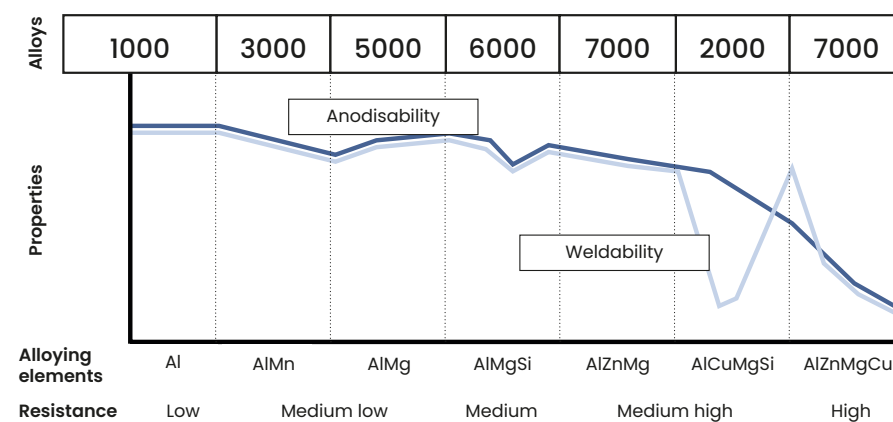




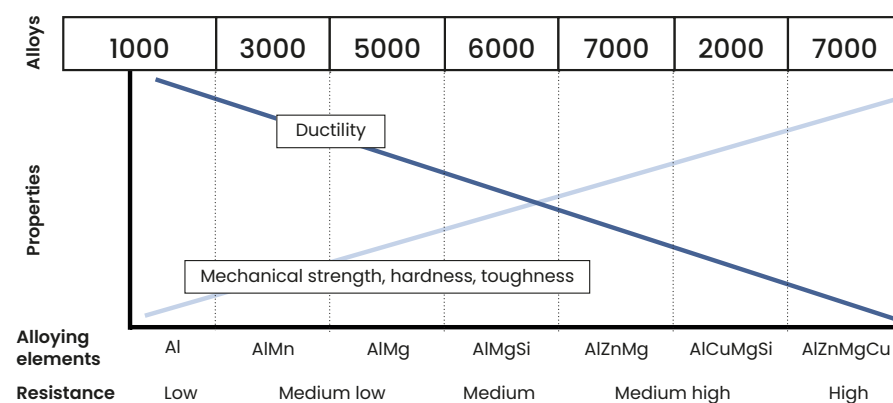


## Distinctive features

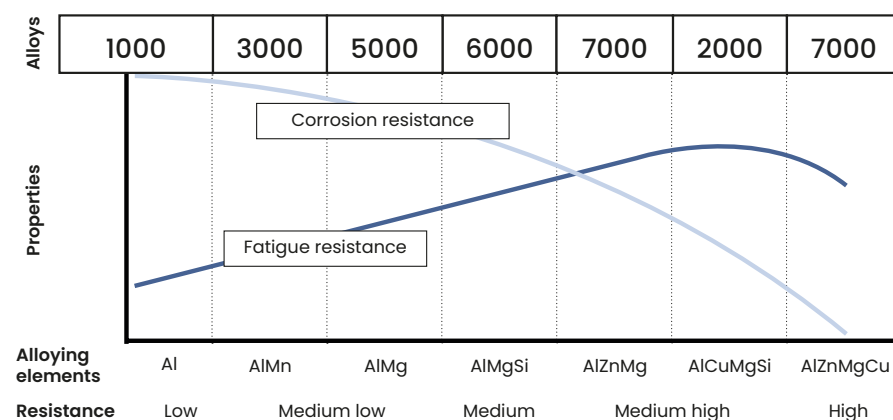
### □ Influence of the alloying elements on anodisability and weldability of aluminium products



### □ Influence of the alloying elements on ductility and mechanical strength, hardness, toughness of aluminium products



### □ Influence of the alloying elements on corrosion resistance and fatigue resistance of aluminium products



## Aluminium Bozen



"We deal with a green metal that is 100% recyclable and infinitely recyclable. Our commitment to the environment does not end there."

# SUSTAINABILITY



# A look at sustainability

## Recycling comes first

Aluminium Bozen, sensitive to the issues of **energy saving and sustainable development**, is constantly striving to respect the environment.

This manifests itself in various ways within our company:

- we generate and use **clean energy** thanks to the **environmentally sustainable photovoltaic** system located on the roof of our production facility, up to 3200 kWh per day
- zero energy waste thanks to continuous investments in replacing old lighting systems with the latest LED systems, water pumps with limited energy absorption and special high-efficiency gas burners
- we melt **recycled aluminium** for a large part of the alloys produced by Aluminium Bozen
- we work on a **zero-kilometre basis** since the foundry and production are located under the same roof, which allows us to reduce CO2 emissions for any transport and movements.

Scrap is guaranteed by a strict acceptance protocol, which includes 100% control through an automatic radioactivity meter.



## The importance of recycling

The high recovery capacity of production waste or scrap allows us to count ourselves among the companies operating in **the circular economy**, limiting the impact on the use of new natural resources and on our ecosystem as much as possible.



6026AB – 2030AB – 2033

used aluminium





# aluminium bozen

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