

# Aluminum slugs | Forging stock



Aluminium - made for infinity



**NEW!** Recycling slugs  
made from secondary  
aluminum

Aluminum center of excellence

# Holistic portfolio for the highest customer requirements

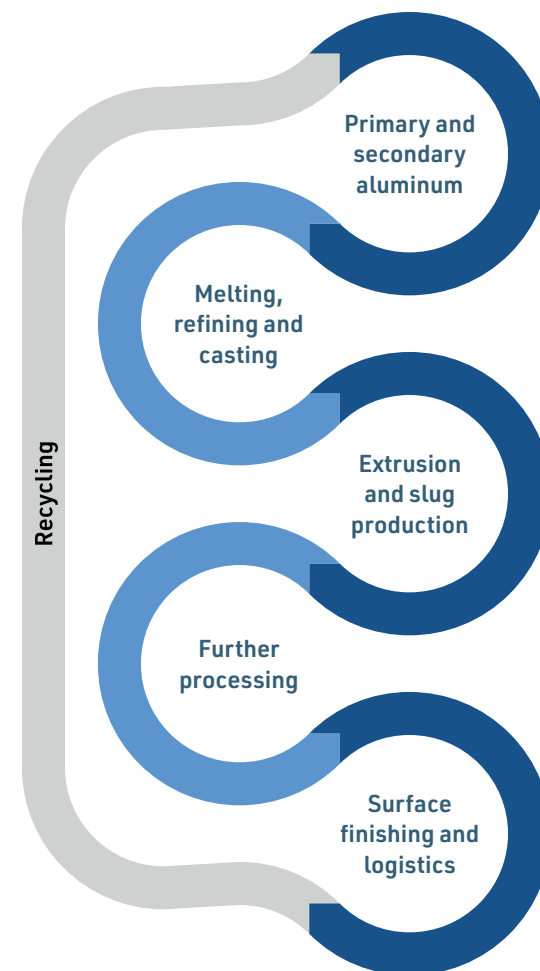
	Punched Slugs	Sawn Slugs	Forging stock
Diameter	10 - 200 mm	10 - 150 mm	10 - 128 mm
Thickness / Length	3 - 40 mm	7 - 1000 mm	on request

## Your reliable partner

AWW combines the entire **value chain of aluminum processing** in one **competence center**: foundry operations, toolmaking, press shop, mechanical processing and surface finishing.

We produce **punched** and **sawn slugs** with **individual geometries** and **sizes**, made from various alloys.

With our **know-how** and our own **foundries**, we can offer you slugs made from almost **100 % recycled material**.



## Our range of services

### Base material

Punched – cast-rolled strip, pressed strip or blank  
Sawn – round bar, tube or profile

### Design

- Round (with hole)
- Round (without hole)
- Oval
- Square
- According to drawing
- Flat
- Shaped
- Domed

### Surface finish

- Untreated
- Vibrated
- Shot blasted

### Heat treatment

- 0 – Soft annealed
- T4 – Solution annealed & naturally aged
- T6 – Solution annealed & artificially aged

## Alloy overview

### According to (DIN) EN 573-3

Numerical EN AW	Alpha-numeric EN AW	Area of application / properties
1050A	Al99,5	Good corrosion resistance, very good formability, good thermal and electrical conductivity, good solderability, weldability and coatability
1070A	Al99,7	Good corrosion resistance, very good formability, good thermal and electrical conductivity, good solderability, weldability and coatability
3003	AlMn1Cu	Very good corrosion resistance, good formability, good solderability and weldability, naturally hard
3004	AlMn1Mg1	Very good corrosion resistance, good formability, good solderability and weldability, naturally hard
3102	AlMn0,2	Very good corrosion resistance, good formability, good solderability and weldability
3103	AlMn1	Very good corrosion resistance, good formability, good solderability and weldability, naturally hard
5754	AlMg3	Very good corrosion resistance, good formability, naturally hard, decorative anodization, very good solderability and weldability, good machinability, naturally hard
6005A	AlSiMg	Very good corrosion resistance, good solderability and weldability, hardenable
6060	AlMgSi	Very good corrosion resistance, bending and anodizing quality, optimized strength, good solderability and weldability, good formability, decorative anodization, age-hardenable
6061	AlMg1SiCu/A	Good corrosion resistance, good formability, good solderability and weldability, age-hardenable
6063	AlMg0,7Si	Good corrosion resistance, good solderability and weldability, good formability, age-hardenable
6082	AlSiMgMn	Very good corrosion resistance, good solderability and weldability, high strength, good recrystallization resistance, age-hardenable

Post consumer Recyclate alloys (PCR)	Based on material EN 573-3	Description
RAW-T050	EN AW 1050A	Alloy from offset printing plates (50% PCR), AWW-alloy 600
RAW-T100	EN AW 1235	Alloy from offset printing plates (100% PCR), AWW-alloy 601
RAW-D100	EN AW 3105	Alloy from 50% used beverage cans and 50% other scrap after use (100% PCR), AWW-alloy 608

Further alloys, conditions and information are available on request.



Material with a future

# Recycling slugs for a sustainable circular economy



## Aluminum - made for infinity

As **pioneers in aluminum processing**, we have been firmly convinced of the advantages of our **aluminum products** for over 100 years and see **the benefits** this material has for everyone's quality of life.

**Sustainable products** and their **development** are part of our business model. We focus on **reducing the consumption of energy and resources** and are constantly increasing the use of **recycled materials**.

Coupled with the use of **renewable energies**, this results in a future-proof strategy for implementing the **transformation** to a climate-neutral and **resource-conserving circular economy**.

## Our alloy variants with secondary aluminum

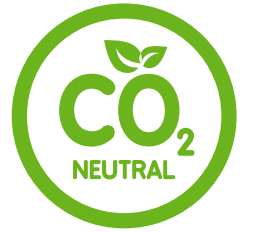
We offer you **three alloys** with up to **100% recycled content**. This allows us to close **material cycles** and make your processes demonstrably more sustainable.



low carbon footprint  
50-100% recycled material  
made with green energy

## Post-industrial-recycled Aluminium (PIR)

PIR aluminum stands for **post-industrial recycled aluminum**. According to **DIN EN ISO 14021**, this includes scrap that is generated during the processing of **aluminum into semi-finished products** or **during the manufacture of aluminum products** and cannot be reused in the same process. This includes, for example, offcuts from **pressing, rolling or punching**.



## Post-consumer-recycled Aluminium (PCR)

PCR aluminum results from the **recycling of post-consumer recycled aluminum scrap** and is referred to as waste after use. According to the definition of **DIN EN ISO 14021**, post-consumer scrap is material that can no longer be used for its **intended purpose** after its actual use: **End-of-life scrap**.

## PCR alloy variants

Alloy 608	100% PCR
PCR composition:	50% recycled beverage cans 50% other scrap after use
Aluminum content:	min. 98.6%
Hardness:	~30 HBW

Alloy 601	100% PCR
PCR composition:	100% recycled offset plates
Aluminum content:	min. 99.3%
Hardness:	~24 HBW

Legierung 600	50% PCR
PCR composition:	50% recycled offset plates 50% primary aluminum (incl. 40% recycled scrap)
Aluminum content:	min. 99.5%
Hardness:	~21 HBW

## Process route for punched cast-rolled strip slugs

The **alloy variants** are used in our **cast-rolled strip process**. Starting with from a slug production order to the production of cast-rolled strip from remelted sows, the products are **punched** and **heat-treated** with the additional option of **surface treatment**. After final **quality control**, the slugs can be packaged and dispatched.

CO <sub>2</sub> footprint	Share Secondary aluminum	CO <sub>2</sub> emissions in kg per kg Al (input material and process energy)
AWW Cast-rolled strip slugs 100% PCR	100%	1.3
AWW Cast-rolled strip slugs	40%	7.2
AWW Bar slugs	52%	3.8
AWW Strip-/board slugs	52%	3.4
AWW Forging stock	82%	3.2

## Chain of Custody Certification

The **PCR content** is certified according to **ISO 22095** (5.3.2 Segregated Model).  
**Audit date:** 16.11.2022.



# Impulses for a sustainable future

## Our goal: CO<sub>2</sub> neutral semi-finished aluminum products by 2035

Sustainability is firmly anchored in our corporate activities. With our **sustainability guidelines** and our vision and mission, we have set the framework for sustainable management.

### Our path to the goal

Continuous **process optimization** (technology, process control, ...) with regard to **energy savings** and **resource minimization**

Complete supply with **renewable energies**

**Maximizing** the proportion of **post-consumer scrap** in melting processes

Expansion of own generation of **renewable energies**

Responsible **procurement** of **raw materials** and **energy**

Use of new **process heat technologies**

Continuous **product optimization** and development together with our customers to reduce the **CO<sub>2</sub> footprint**.

Optimization of **recycling cycles** (pre-consumer scrap)



# 100% recyclable

## Aluminum - a material with an infinite service life

Over decades, we have built up a high level of expertise in the production of high-quality products and solutions made from **secondary aluminum** and have continuously increased the proportion of **recycled material** in our products. With our own **foundry expertise**, we can offer products that consist of up to **100% recycled materials** (including process scrap).

## Regional sources of supply for secondary aluminum

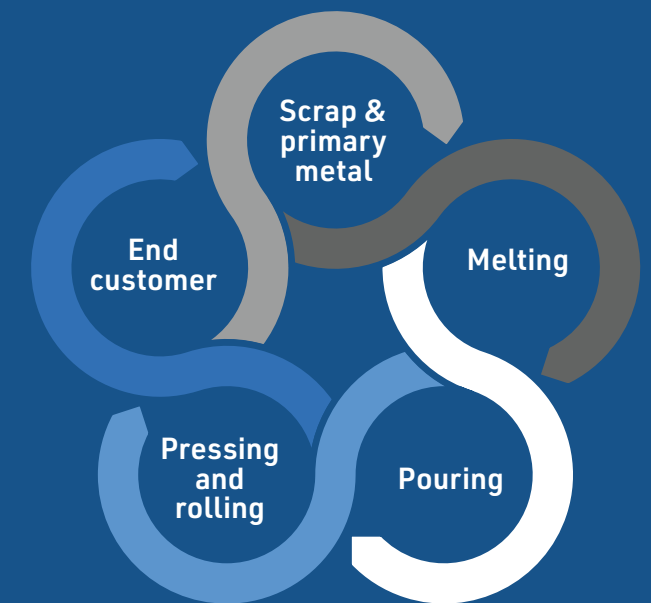
We have established our **raw material supply** over many years with long-term, reliable partnerships and **sustainable sources of supply**. This enables us to guarantee a stable supply of **secondary aluminum** from predominantly **regional sources**. We return **production scrap** to the cycle by melting it down **directly on site**, using the shortest possible transportation routes.

## Alloys and metallurgy

Aluminum can be used in many functions and forms. The choice of the alloy is crucial. It influences the **strength**, **flow behavior**, **machinability** and stability of the product.

Alloys can be formed with secondary phases such as manganese, **magnesium**, copper, **silicon**, zirconium or zinc. AWW offers a wide **range of alloys** and, if required, develops **customized alloys** that are optimally adapted to customer requirements. We test the functionality of these alloys together with you in **casting and extrusion tests**.

With modern **testing methods** in our **metallurgical laboratory**, as well as with an **ultrasonic testing** of the extrusion billets, we guarantee consistently high quality.





Multi-talented aluminum

# Worldwide growing demand



## Wide range of applications

AWW offers a **wide range** of aluminum slugs that can be used for **cold forming** in the extrusion process and in the **packaging industry**. You choose the **base material**, the **alloy type** and the **slug design** - and decide on the **appropriate surface finish** and **heat treatment**.

Our slugs are characterized by excellent **microstructural properties** such as **fine grain size** and **homogeneity**.

## Technical extruded parts // Alloy slugs

The broad spectrum of **mechanical properties** and our diverse range of **alloys** is ideal for demanding, technical extruded parts.

Our high-quality **products** can be manufactured in various **processes**, depending on the area of application.

Areas of application: **mobility/automotive**, **electrical engineering** and **mechanical engineering**

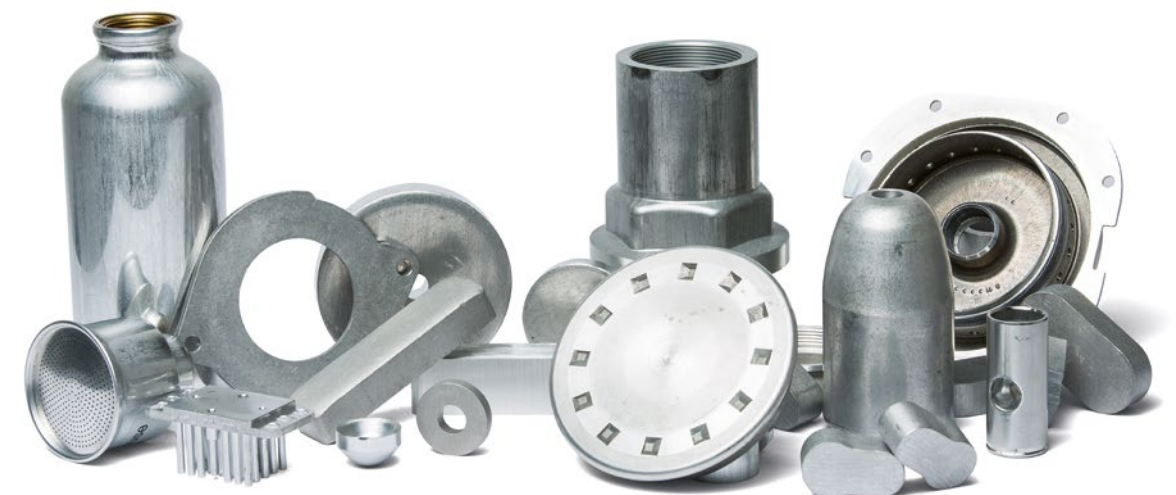
## Packaging industry

AWW is one of the **market and technology leaders** in the production of packaging slugs. As a packaging material, aluminum offers excellent **barrier properties** against gases, light, moisture and microorganisms. **Aluminum packaging** is **lightweight** and also almost completely recyclable **without any loss of quality**.

Areas of application: **food**, **cosmetics**, **pharmaceuticals**, **healthcare**, **chemicals** and **leisure**.

## Forging stock

We also use our **forging stock** to produce the basis for all products that are required in the **hot forging process**. These are available in various alloys as extruded **round bars** or **sawn sections**.







**Your team for further questions**  
 butzen@aww.de // +49 (0) 77 46 / 81 0

### Certified quality

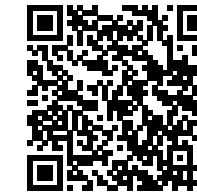
Our products are characterized by the highest quality and durability.  
 Our quality and environmental awareness is certified according to:

- DIN EN ISO 9001:2015
- IATF 16949:2016
- DIN EN ISO 14001:2015
- DIN EN ISO 50001:2018
- Richtlinie 2014/68/EU
- Environmental Product Declaration
- Chain of Custody

## Inquiry form



Scan the QR code and fill out our fill out our PDF form. We will be happy to calculate an offer with your desired specifications.



### Product relevance

<b>Slugs</b>	Dimensions [mm]		
	Weight [g]		
<b>Forging stock</b>	Dimensions [mm]		
<b>Design</b>	<input type="checkbox"/> Round (with hole)	<input type="checkbox"/> Flat	<input type="checkbox"/> Square
	<input type="checkbox"/> Round (without hole)	<input type="checkbox"/> Shaped	<input type="checkbox"/> Oval
		<input type="checkbox"/> Domed	<input type="checkbox"/> According to drawing
<b>Planned annual quantity [t]</b>			
<b>Which alloy(s)?</b> <small>Numerical designation (e.g. EN AW-3003)</small>	DIN EN-XXXX:		
	Percentage of recyclate[%]:		
	<input type="checkbox"/> PCR [%]:		
	<input type="checkbox"/> PIR [%]:		
<b>Intended use(s) / end product(s)</b>	Application:		
	<b>Tolerances [mm]</b>		
	<b>Slug</b>		
	<b>Forging stock</b>		
	<b>Deviation from tolerance</b>		
<b>Surface finish</b>	Shot blasted:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	Vibrated:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	Untreated:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Heat treatment</b>	0:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	T4:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	T6:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Safety part</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
<b>Safety-relevant characteristics</b>			
<b>IATF part</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
<b>Create initial sample inspection report</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
<b>Other requirements</b>			

**AWW**  
WUTÖSCHINGEN  
*We live aluminium®*



Aluminium - made for infinity

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