ASAŞ

Aluminium **Foam**



About ASAŞ


SAKARYA - **TÜRKİYE**


NEUWIED - **GERMANY**


RUGLES - **FRANCE**

Founded in 1990, **ASAŞ** is one of Europe's leading industrial companies, operating state-of-the-art production, logistics, and R&D facilities across **Türkiye, Germany, and France.** With over **3,000 employees** and exports to more than 90 countries, ASAŞ creates end-to-end value for strategic global sectors.
Driven by continuous investment, innovation, and a strong global footprint, ASAŞ serves as a single-source solution partner with extensive manufacturing capabilities across its integrated locations:

Türkiye (Sakarya): Integrated production hub covering **1,450,000 m²** total area (450,000 m² enclosed) for Aluminium Extrusion, Flat Rolled Products, Architectural Systems, Composite Panels, PVC, and Advanced Technologies.

Germany (Neuwied/Koblenz): European logistics hub and Robotics Education, Research, and Application Center operating on an **880,000 m²** site.

France (Rugles): ASAŞ S.A.S. operating a **130,000 m²** facility specialized in high-quality aluminium foil production for packaging, pharmaceutical, and automotive sectors.

Production capacities in our integrated facilities:

Aluminium Extrusion Profiles:
- **Aluminium Billet:** 130,000 tons/year
- **Aluminium Profile:** 130,000 tons/year
- **Anodized Aluminium Profile:** 40,000 tons/year
- **Powder Coated Aluminium Profile:** 24,000 tons/year

Aluminium Flat Rolled Products:
- Casting: 150,000 tons/year
- Rolling: 250,000 tons/year
- Foil: 100,000 tons/year
- Pre-painted Sheet: 50,000 tons/year
- Lacquered Foil: 10,000 tons/year

Aluminium Composite Panel: 8,000,000 m²/year
PVC Profile: 35,000 tons/year
Lamella Roller Shutter: 30,000,000 linear meters/year
Door & Window Systems: 150,000 units/year

Aluminium Foam Plant:
- **Aluminium Powder:** 10,000 tons/year
- **Aluminium Foam:** 5,000 tons/year (Till 2030)

Video

Aluminium Foam at a Glance

A lightweight closed-cell aluminium architecture combining structural efficiency with multifunctional performance.

WHAT IT ENABLES

Aluminium foam creates engineering value through a metallic cellular structure that can combine lightweighting, energy absorption, damping and integration in one architecture.

- Closed-cell metallic structure
- High compressive energy-absorption potential
- Natural vibration and acoustic damping
- Fire-safe metallic architecture and thermal stability
- Machinable and compatible with sandwich / hybrid designs

0,5–0,9 g/cm³
DENSITY RANGE

1500 × 3000 × 500 mm
MAXIMUM BLOCK SIZE

100%
RECYCLED ALUMINIUM

100%
RENEWABLE ELECTRICITY

Large-format manufacturing + engineering integration turn the material into an application-ready structural platform.



From Powder to Application-Ready Foam

An integrated manufacturing route that links powder preparation, precursor production, controlled foaming and value-added operations.

POWDER PREPARATION
ATEX-protected grinding under inert atmosphere

→

RECIPE & COMPACTION
Foaming-agent blends - 2500 t billet compaction

→

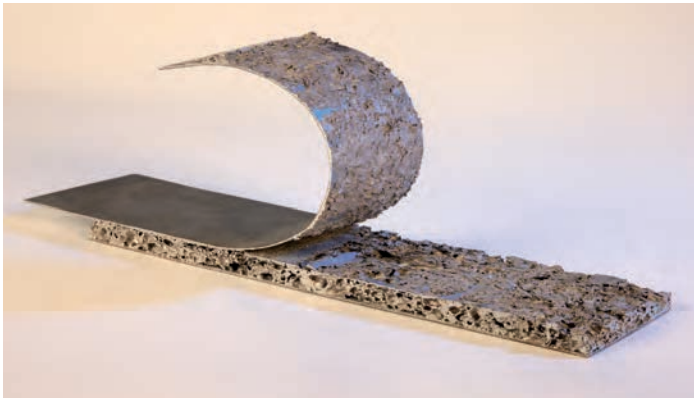
PRECURSOR EXTRUSION
Extruded precursor geometries on extrusion presses

→

CONTROLLED FOAMING
Tailored thermal cycles for monolithic and sandwich products

→

MACHINING & ASSEMBLY
CNC - drilling - routing - inserts - joining



PRODUCTION & INDUSTRIALIZATION

- Initial aluminium foam capacity: 1,000 t/y; scalable to 5,000 t/y
- Foamable precursor produced from tailored powder blends
- Metallurgical bonding with metallic cover sheets during foaming
- Stable foaming through controlled thermal cycles
- Machining, assembly and surface-treatment capability for finished components

Lightweight

Fire Performance

Recyclability

Energy Absorption

Design Flexibility

Vibration Damping

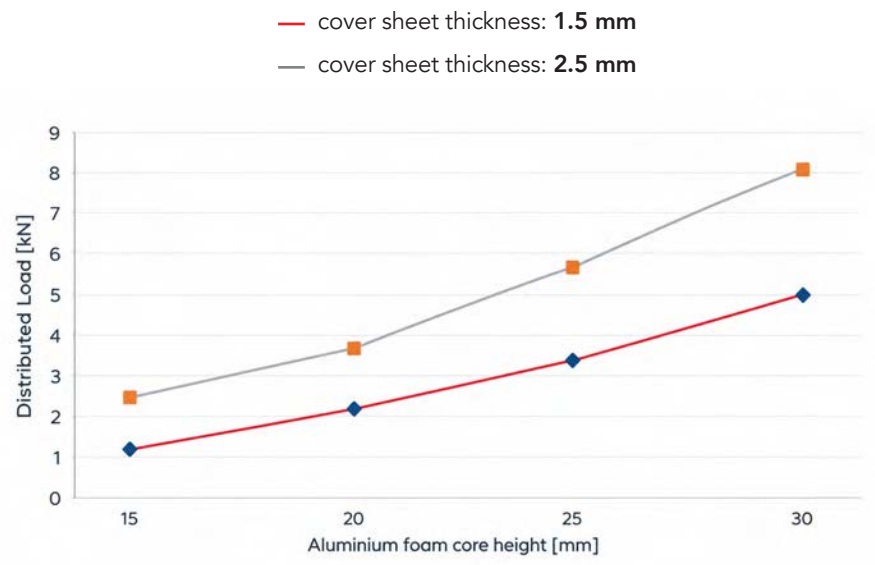
Acoustic Performance

Distinctive Aesthetics

Easy Integration

Load Capacity at 1 mm Deflection

A design-screening example showing how foam-core height and cover-sheet thickness influence distributed-load capacity.



WHAT THE GRAPH SHOWS

Core height

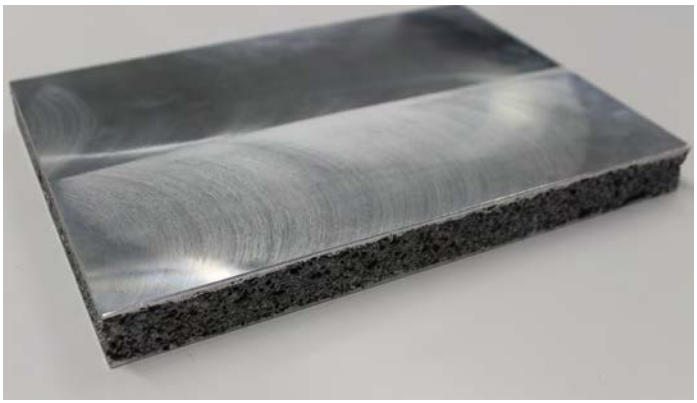
Increasing the foam-core height raises bending efficiency and load capacity at the same deflection limit.

Cover sheet

A thicker cover sheet further increases the load that can be carried for the same 1 mm deflection criterion.

Design implication

Depending on the selected configuration, typical panel masses are approximately 15–50 kg/m², enabling early-stage balancing of stiffness, load capacity and lightweighting targets.



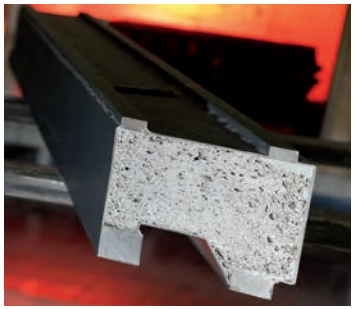
SANDWICH DESIGN VARIABLES

- Core height
- Face-sheet thickness
- Material selection
- Boundary condition
- Load case

Design-screening values should be confirmed for the final geometry, material state and application-specific boundary conditions.

Product Forms & Structural Integration

A compact design toolkit combining foam form, face-sheet architecture, machining and built-in interfaces.



Monolithic / 3D Foam

Large foam blocks can be cut and CNC-machined into application-specific 2D and 3D geometries.



AAS & SAS Sandwich

Aluminium or steel face sheets create high-bending-stiffness sandwich architectures with an aluminium foam core.



Tubes & Profiles

Tubes, profiles and reinforcement elements can be integrated to create hybrid, multifunctional structures.



Mounting Interfaces

Threaded inserts, fastener points and local interfaces support assembly-ready component design.

DESIGN ENVOLOPE



Integrated Tubes & Channels Inside Foam

Aluminum tubes or profiles can be embedded during foaming, creating a metallurgical bond with the foam core and enabling integrated cooling channels,fluid lines, or cable conduits.



Designed for Modularity

Bolts or rivets can be directly applied through the foamstructure without inserts, enabling simple, lightweight, andcost-efficient fastening.



Integrated Mounting Features

Aluminum tubes or profiles can be embedded during foaming, creating a metallurgical bond with the foam core and enabling integrated cooling channels,fluid lines, or cable conduits.



Sandwich Panel Surface Options

Sandwich panels can use aluminum, steel, stainless steel, orcopper sheets with metallurgical bonding. Ceramic, polymeric, & composite surfaces can attachedusing adhesives.

Key Industries

Versatile solutions for lightweight, energy-absorbing and multifunctional applications across industries.



Aerospace

Lightweight Superstructures
Cabin Noise & Fire Insulation
Vibration Damping



Railway

Side Wall & Floor Panels
Crash Energy Abosrbers



Automotive

Crash-Management Structures
Battery Protection / Enclosures



Trucks & Trailers

Armored Logistics
Cabin Noise & Fire Insulation



Offshore

Engine Room Sound Proofing
Lightweight Superstructures



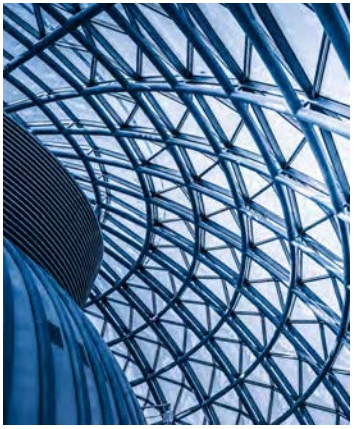
Energy

Heat Exchangers
Battery Thermal Management



Industrial

Machine Construction
Safety Enclosures
Noise / vibration control



Architecture

Facade Cladding
Acoustic Panels
Interiors

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