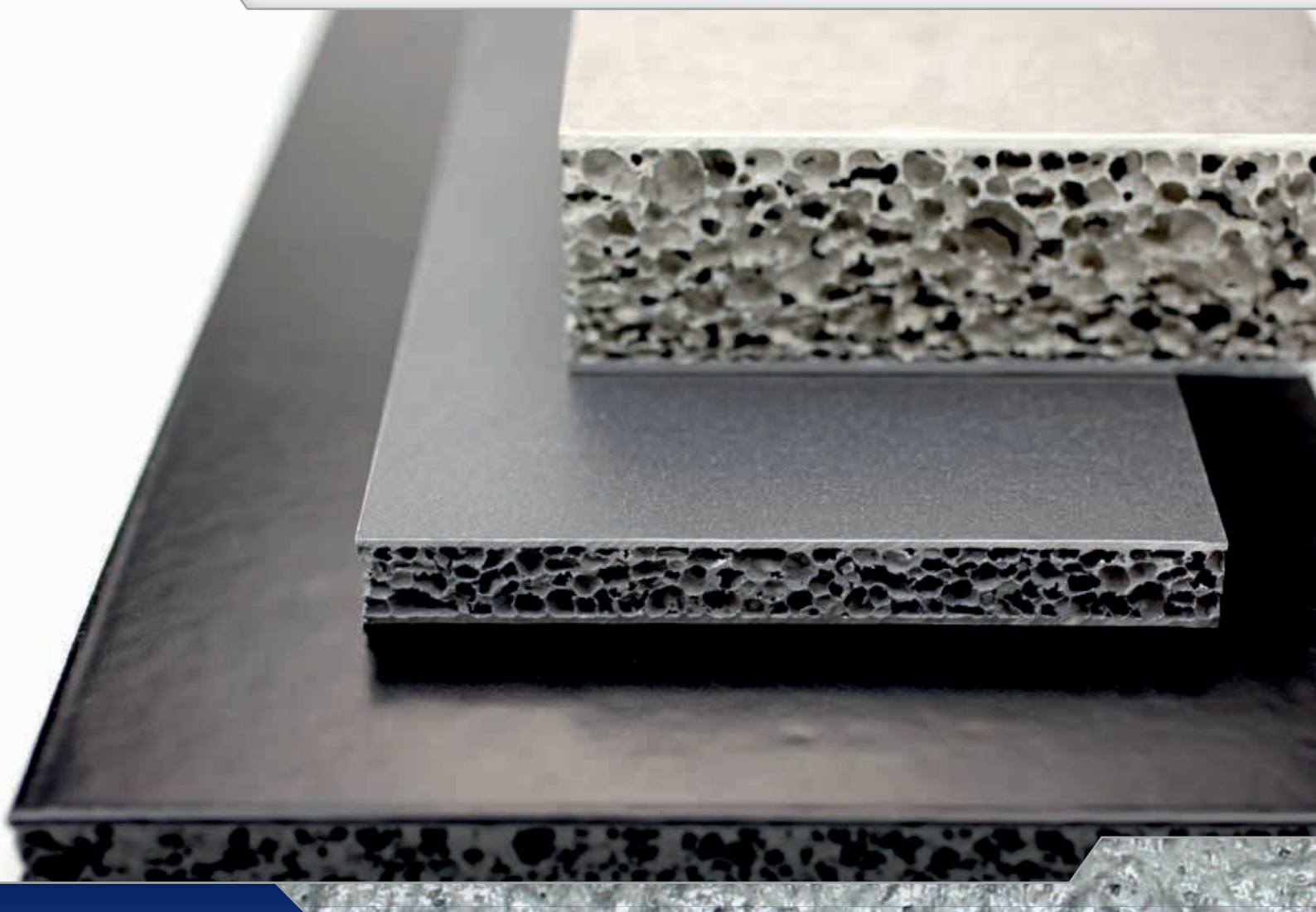
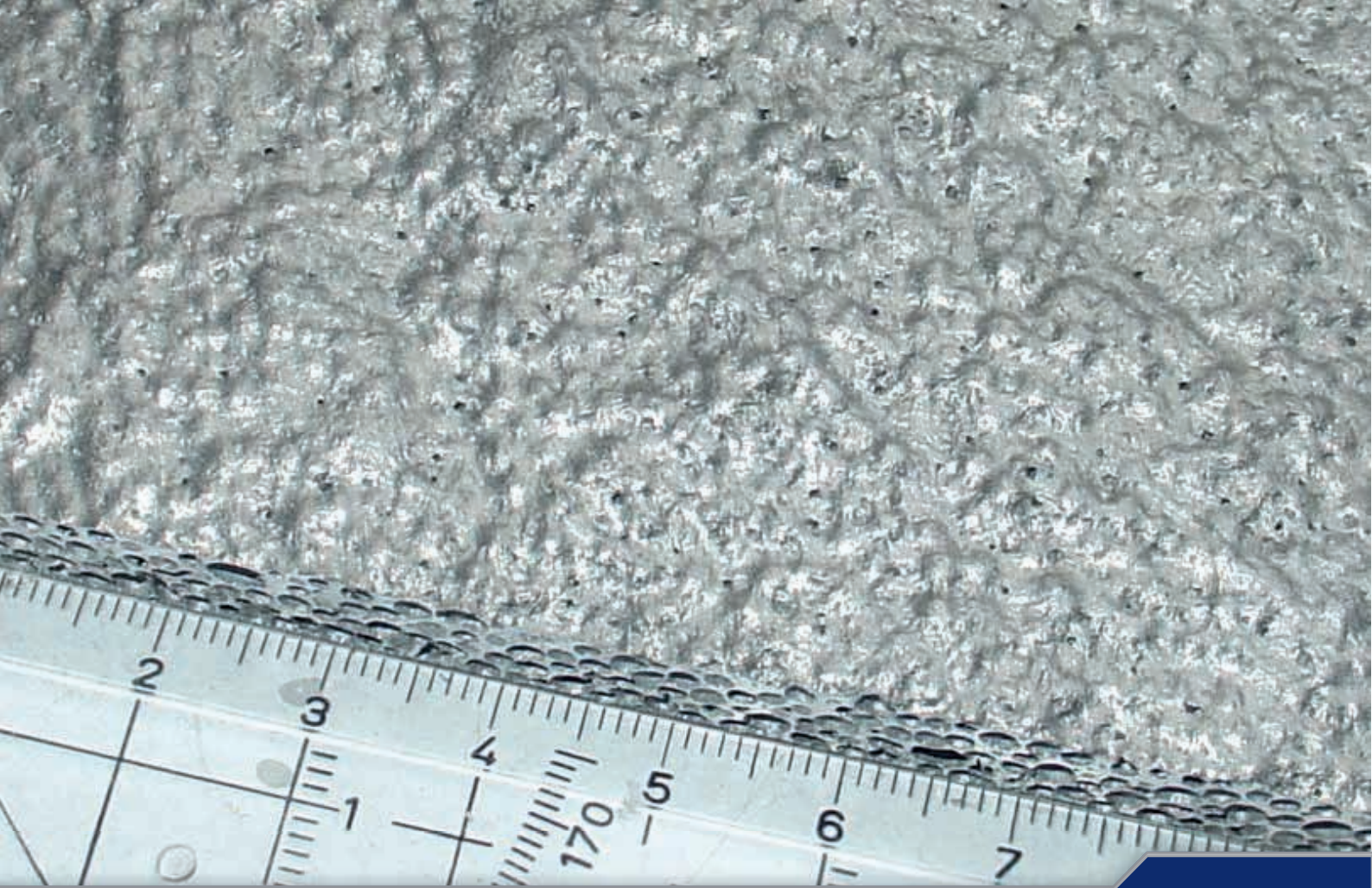




METALFOAM: GLOBALLY UNIQUE
The solution for lightweight constructions



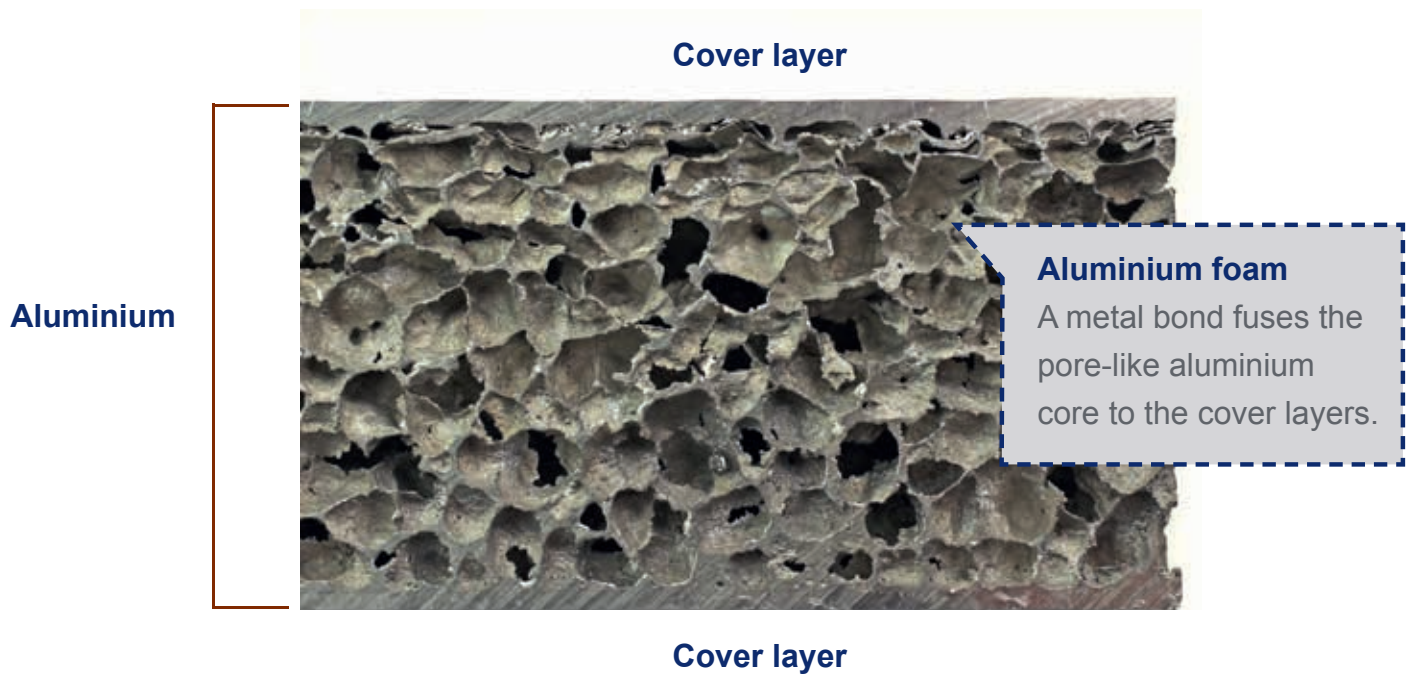


AFS® - Aluminium Foam Sandwich

AFS® is the only single-material aluminium sandwich system worldwide and offers completely new possibilities for applications and processing. The three-layer original material consists of a foamed aluminium core sandwiched between two aluminium cover layers. The cover layers are metallic, i.e. fused to the core layer without the need for adhesives.

AFS® - Aluminium Foam Sandwich

Globally unique



Fields of application



Transport

Transport, shipbuilding, aerospace industry etc.



Building services engineering

General



Engineering

Machine tools etc.



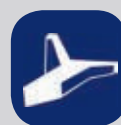
Safety engineering

Armour plating etc.



Consumer goods

Consumer products, sports equipment etc.



Architecture

Design etc.



Energy

Consumer products, sports equipment etc.



Fire protection

Safety/security doors etc.

AFS® Distinctive

Basic data

Sheet size	max. 2000 x 1000 mm and 2500 x 1100 mm (see below)
Thickness	9 - 80 mm
Cover layer thickness	0,75 - 10 mm
Flatness of sheets	1 mm / 1000 mm
Thickness tolerance	+/- 0.5 mm
Surface weight (<i>Sample plate 25 mm / 1.2 mm</i>)	10.5 kg/m²
E-module foam	5 GPa
E-module 1/10/1	21 GPa
E-module 2/28/2	18 GPa
Flexural strength	approx. 8% lower than solid aluminium of the same thickness
Tensile strength	120 - 200 MPa
Compressive strength of foam	4 - 8 MPa
Thermal expansion	25 x 10 ⁻⁶ 1/K
Thermal conductivity	10 - 15 W/mK

Type	Cover layer finish	Cover layer [mm]	Total sandwich height [mm]	Length [mm]	Width [mm]	Area [m²]	Weight per sheet [kg]	Weight per m² [kg]
AFS® J-8/0,75	EN AW 6082	0.75	8.00	2500	1100	2.75	18.56	6.75
AFS® J-10/0,75	EN AW 6082	0.75	10.00	2500	1100	2.75	18.56	6.75
AFS® J-10/1	EN AW 6082	1.00	10.00	2500	1100	2.75	26.73	9.72
AFS® J-12/1	EN AW 6082	1.00	12.00	2500	1100	2.75	26.73	9.72
AFS® J-13/1	EN AW 6082	1.00	13.00	2500	1100	2.75	26.73	9.72
AFS® J-15/1,5	EN AW 6082	1.50	15.00	2500	1100	2.75	40.54	14.74
AFS® J-20/1,5	EN AW 6082	1.50	20.00	2500	1100	2.75	40.54	14.74
AFS® J-25/1,5	EN AW 6082	1.50	25.00	2500	1100	2.75	40.54	14.74
AFS® J-30/2	EN AW 6082	2.00	30.00	2500	1100	2.75	66.33	24.12
AFS® J-30/5	EN AW 6082	6.00	30.00	2500	1000	2.50	101.25	40.50
AFS® J-40/5	EN AW 6082	6.00	40.00	2000	1000	2.00	89.10	44.55
AFS® J-50/5	EN AW 6082	6.00	50.00	2000	1000	2.00	97.20	48.60
AFS® J-60/5	EN AW 6082	6.00	60.00	2000	1000	2.00	108.00	54.00
AFS® K-30/5	EN AW 5754	6.00	30.00	2000	1000	2.50	101.25	40.50
AFS® K-40/5	EN AW 5754	6.00	40.00	2000	1000	2.00	89.10	44.55
AFS® K-50/5	EN AW 5754	6.00	50.00	2000	1000	2.00	97.20	48.60
AFS® K-60/5	EN AW 5754	6.00	60.00	2000	1000	2.00	108.00	54.00

AFS®

Light and strong

Max. 60 % weight savings

AFS® has a lower density than paper due to its pores and cavities.

Flexural and torsional rigidity

The three-layer sandwich system provides significantly higher flexural strength than solid sheets of the same weight.

Absorption of kinetic energy

AFS® delivers an improved solution for vibration and safety due to its acoustic and thermal insulating properties.

Wide-ranging processing possibilities

Conventional processes for sheet metal processing can be used when processing AFS because due to the metallic bond.

Fire resistance

AFS® sheets meet stringent fire safety requirements due to the non-adhesive bond of the 3-layer material.

100 % recyclable

The foam composite can be fed back into existing material cycles at the end of its life cycle without any problems.

AFS®

Durable and cost-effective



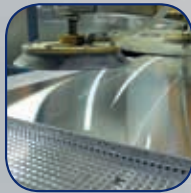
Deep drawing, punching or pressing

For 3D structures before foaming.



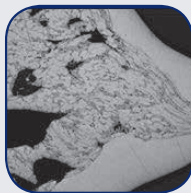
Forming

The original sheets can be formed before foaming and then foamed in a forming tool.



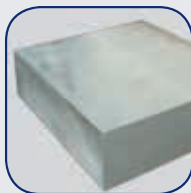
Sawing, milling, laser and water jet cutting

AFS® is ideally suited for mechanical processing. Milling, sawing, drilling and modern joining techniques are not a problem.



Grouting edge areas

AFS® provides an alternative to sealing edges by milling off a cover layer and the core and subsequently flattening down the remaining cover layer. The structure is not damaged in the process.



Welding

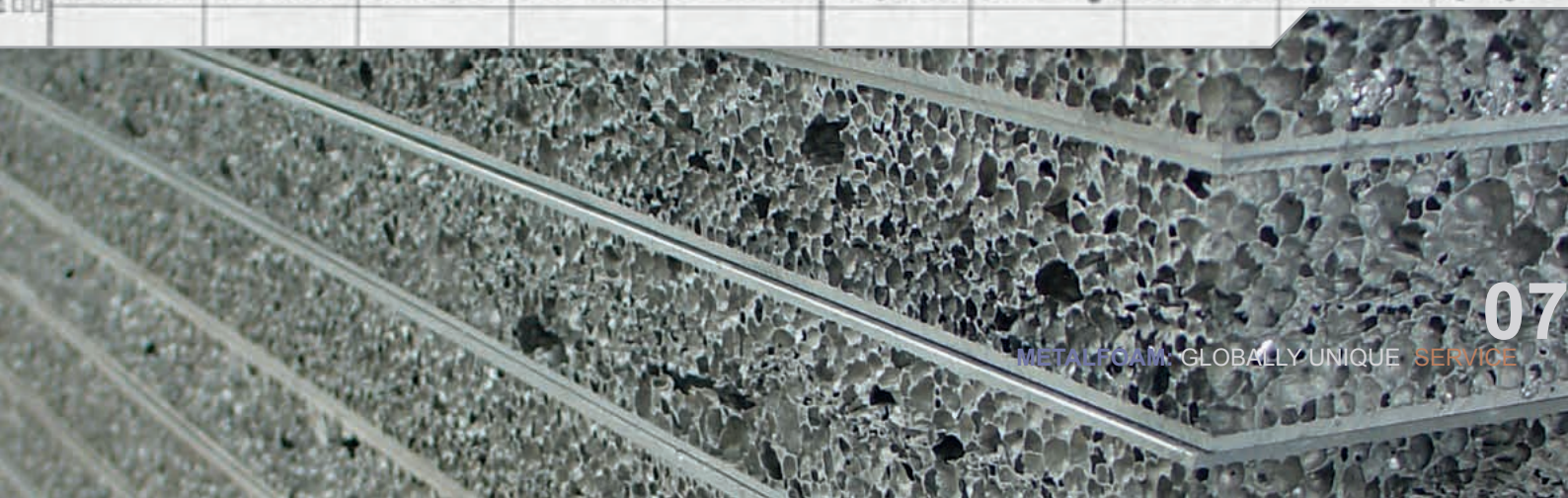
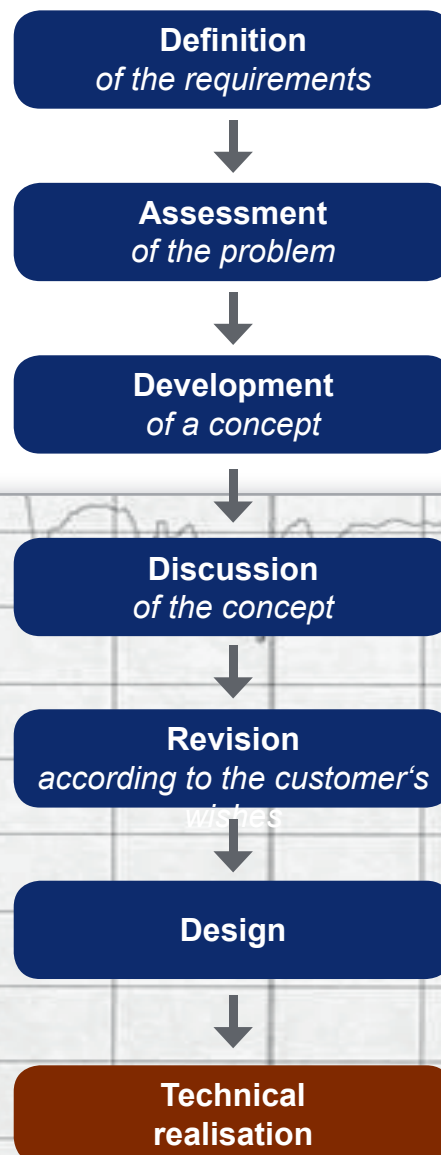
Generally only the cover layers are welded while the core remains untouched and serves as a kind of welding fixture. As a result, deformation of the components is considerably reduced.



Screwing, riveting and bonding

The material can be easily bonded like conventional aluminium because of its metallic character, thus making it much more cost-effective.

We can draw on of our long-term design experience to support you in integrating the new material into existing products and processes. We offer you a complete solution for your technical problems, from the identification of the problem through to the finished product.





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