Aluminium

Metal Foam

The key properties of metal foam are as follows:

✓ The metal foams of Al Aluminium are commercially most utilized because of their high thermal conductivity, low density, high ductility, and metal competitive cost.

✓ Aluminium metal foam materials, which can be synthesized into a variety of functional geometries, offer significant performance benefits for weight-sensitive applications.

✓ Aluminium metal foams are manufactured with distinct methods, for instance, powder metallurgy technique, sintering technique, the addition of a gas in melt injection, using agent in melt foaming, and investing casting.

✓ Aluminium Metal foams are materials that show a distinctive combination of physical and mechanical properties like lightweight, high specific stiffness, high strength to weight ratios.

✓ The highest thermal efficiency of aluminium foam is in the vertical position.

✓ The aluminium foams produced by the powder metallurgy method, resulting in high pore connectivity which gives better results for the analysis of mechanical applications.

✓ Aluminium foam as a suitable absorbent material with smart quality performance.

✓ Aluminium Metal Foam are greatly incremented energy absorbing capabilities create use within the automotive and aerospace industries.

✓ Aluminium Metal Foam show high stiffness-to-weight and strength-to-weight ratios and thus offer potential weight savings.

✓ Aluminium Metal Foam also have the potential to absorb high amounts of energy during compressive deformation for efficient crash energy management.

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Technical Specification

Aluminium Metal Foam Closed Cell

✓ Stock No: NS6130-10-1214
✓ Length: 100mm
✓ Width: 100mm
✓ Thickness: 10mm
✓ Pore Size: 2-11 mm
✓ Porosity: 60-90%

Aluminium Metal Foam Closed Cell

✓ Stock No: NS6130-10-1215
✓ Length: 600mm
✓ Width: 200mm
✓ Thickness: 10mm
✓ Pore Size: 5 mm
✓ Porosity: 70%

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Aluminium Metal Foam Closed Cell

- Stock No: NS6130-10-1215A
- Length: 600mm
- Width: 200mm
- Thickness: 15mm
- Pore Size: 5 mm
- Porosity: 70%

Aluminium Metal Foam Closed Cell

- Stock No: NS6130-10-1215B
- Length: 600mm
- Width: 200mm
- Thickness: 15mm
- Pore Size: 5 mm
- Porosity: 70%
- Bonded Sheet: 0.5mm (On Either Side)

Aluminium Foam Panel

- Stock No: NS6130-10-1267
- Available of Different Sizes
- Thickness: 6mm-250mm
- Pore Size: 50 PPI

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Properties of Aluminium Metal Foam

The key properties of metal foam are as follows:

✓ Ultralight material (75–95% of the volume consists of void spaces)
✓ Very high porosity
✓ High compression strengths combined with good energy absorption characteristics
✓ Thermal conductivity is low
✓ High stiffness
✓ High melting point
✓ Better damping
✓ Thermal insulation
CHARACTERISTICS
OF ALUMINIUM METAL FOAM

Ultra-lightweight aluminum metal foams possess unique microstructural characteristics and physical properties that make them attractive for automotive, as well as other applications:

✓ Ultra-lightweight foam
✓ Alluring porous structure and the micro structures tailor able over the range 40 to 80% porosity
✓ High stiffness-to-weight and strength-to-weight ratios
✓ Ability to absorb energy from impact, crash, and explosive blasts
✓ Vibration damping and sound absorption
✓ Fire resistance and thermal insulating properties
✓ Metal foams are readily recycled

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Applications

Of Aluminium Metal Foam

✓ Through aluminium foam, ships become lighter and consumed less fuel
✓ Provide individual and unique architecture
✓ Enhance the crashworthiness design of the vehicle
✓ Assists in the assembly process of a vehicles
✓ Protects the battery from external impacts and provide safety in battery failure
✓ Reduced manufacturing steps in High-speed trains
✓ Blast mitigation panels in military vehicles
✓ Foams blot up the sound, vibrations and shocks
✓ Weight reducing components of Al foam use in aircraft or automotive applications
✓ Matrix for chemical beds and scrubbers
✓ Filters and mist elimination of water and oils
✓ Forged super insulated building
✓ Mitigate the heating and airconditioning requirements in buildings
✓ Foamed aluminum cores for aluminium castings
✓ Heat sinks and exchangers
✓ Core structure for high strength panels
✓ Utilizable as catalyst carrier
Ordering Information and Stock Availability

✓ Product: Aluminium Metal Foam Closed Cell
✓ Stock Availability: Available
✓ Distribution: Global
✓ Packing Sizes: 1 Piece, 2 Piece, 5 Piece, 10 Piece, & Bulk Orders

DEALS WITH

Our aluminium foams purchased by well-established and spectacular research centres and organizations:

IISER | SCL | DRDO | NASA | ISRO | TISS