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## What is ALUCOM

# ALUCOM

Aluminium Composite Panel

ALUCOM is an aluminium composite panel consisting of two thin aluminium face sheets and a thermoplastic core made of polyethylene (PE). This sandwich construction combines low weight with high flexural rigidity, a flat surface and good formability and workability – properties that solid aluminium does not offer in this combination.

## Construction and Material

ALUCOM has a three-layer construction: two aluminium face sheets of alloy EN AW-5005A (AlMg1), each 0.50 mm thick, enclose a thermoplastic core of polyethylene (PE-LD, density 0.92 g/cm³). The face sheets are processed in temper H22/H42 to EN 515.

Thanks to this sandwich construction, the material achieves a significantly higher flexural rigidity than a solid aluminium sheet of the same weight, while remaining light (4.5 - 7.3 kg/m², depending on the overall thickness of 3 - 6 mm). Section modulus and flexural rigidity are tested to DIN 53293.

## Properties and Processing

The surface is finished by coil coating with a weather- and UV-resistant fluoropolymer coating (e.g. PVDF), available in gloss levels between 30 and 80 % depending on the version. The pencil hardness of the coating is HB-F to EN 13523-4.

The material can be sawn, routed, drilled, folded and grooved with common tools. Thanks to the PE core, it is easier to bend and form than solid aluminium while remaining dimensionally stable and flat.

## Advantages and Limitations

### Advantages

- Low weight combined with high flexural rigidity
- Flat, even surface
- Easily bent, folded and routed
- Weather- and UV-resistant coating

### Disadvantages

- Normal flammability (building material class B-s2,d0 / B2), not fire-retardant
- Lower local stiffness than solid aluminium under point loads
- Limited temperature resistance of the PE core (-50 to +80 °C)

## Fields of Application

Thanks to its combination of low weight, flat surface and good workability, ALUCOM is used in facade cladding, vehicle construction and vehicle graphics, advertising and signage technology, furniture manufacturing, exhibition construction and interior fit-out, among other applications.

## Processing in Facade Practice

In facade practice, the material is typically processed as rear-ventilated facade cladding – for example as a cassette system with a folded-over edge, as a visibly screwed or riveted panel, or using a concealed substructure. The specific design depends on the structural and building-regulatory requirements of the individual project as well as local fire-protection provisions.

For vehicle graphics, signage and exhibition construction, the material is usually laminated flat or mounted in frame systems; here too, processing benefits from the good foldability and the smooth surface, which is well suited for printing or applying self-adhesive films.


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## Reaction to Fire and Conformity

With its PE core, ALUCOM has normal flammability and is classified as building material class B-s2,d0 to EN 13501-1 and B2 to DIN 4102-1. A classification as fire-retardant (class A2 or B1) is not achievable with this PE core; for applications with higher fire-protection requirements (e.g. high-rise facades) this should be checked in advance. The product carries the CE marking and is RoHS and REACH compliant.

### Typical Properties

- Aluminium composite material with plastic (PE) core
- Low weight combined with high flexural rigidity
- Flat, even surface in many colours and gloss levels
- Weather- and UV-resistant PVDF coating
- Easily bent, folded and routed
- Normal flammability (building material class B-s2,d0 / B2)

### Product Examples

- Facade panels and facade cladding
- Vehicle graphics and advertising displays
- Display systems and exhibition stands
- Furniture and shopfitting elements

### Typical Industries

- Facade cladding
- Vehicle construction and vehicle graphics
- Advertising and signage technology
- Furniture manufacturing
- Exhibition and trade-show construction
- Interior fit-out

| | Test Method | Unit | Value |
|---|---|---|---|
| **Construction** | | | |
| Available thicknesses | Manufacturer's specification | mm | 3 / 4 / 6 |
| Areal weight (3 / 4 / 6 mm) | Manufacturer's specification | kg / m² | 4.5 / 5.5 / 7.3 |
| Production width | Manufacturer's specification | mm | 1000 / 1250 / 1500 |
| Face sheet alloy | | | EN AW-5005A (AlMg1) |
| Core material | | | Polyethylene (PE-LD), density 0.92 g / cm³ |
| **Mechanical and Thermal Properties** | | | |
| Section modulus W (3 / 4 / 6 mm) | DIN 53293 | cm³ / m | 1.25 / 1.75 / 2.75 |
| Flexural rigidity E·I (3 / 4 / 6 mm) | DIN 53293 | kNcm² / m | 1250 / 2400 / 5900 |
| Thermal conductivity λ (3 / 4 / 6 mm) | DIN 52612 | W / (m·K) | 0.43 / 0.39 / 0.35 |
| Service temperature range | Manufacturer's specification | °C | -50 ... +80 |


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| | Test Method | Unit | Value |
|---|---|---|---|
| Reaction to fire (building material class) | EN 13501-1 / DIN 4102-1 | | B-s2,d0 / B2 |

The values stated are typical average values for aluminium composite panels with a PE core. They serve solely as information about our products and as an aid to material selection. They do not constitute a legally binding assurance of specific properties or of suitability for a particular purpose. As properties also depend on the dimensions of the semi-finished products and on manufacturing conditions, the actual property values of a specific product may deviate somewhat from the figures stated.