

## Material Description & Properties

**ACM18** is an engineered cork, rubber and EVA composite material used in multilayer panel constructions as a CLD (constrained layer damper) preventing and dissipating structural vibration before it is transformed into airborne noise.

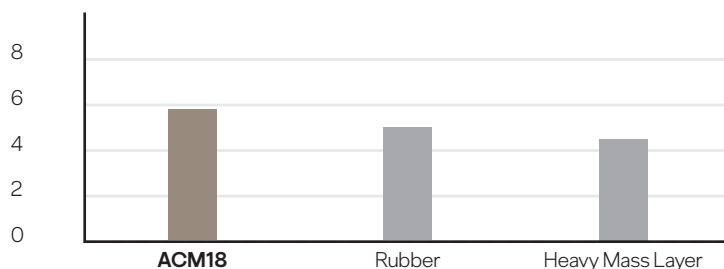
This product is suitable to be bonded using existing industry adhesives and technologies to different substrates like:

- Plywood
- Aluminum
- Steel
- GRP (Glass Reinforced Plastic)
- CFRP (Carbon Fiber Reinforced Plastic)

### Features

- Non-hazardous
- Meets FMVSS302 fire resistance in 3mm
- Wear-resistant
- Low water absorption
- Good dimensional stability
- Non brittle
- No mould growth

### Thermal resistivity (m<sup>2</sup>K/W)



### Acoustic isolation



### Vibration damping



### Sustainable and energy efficient



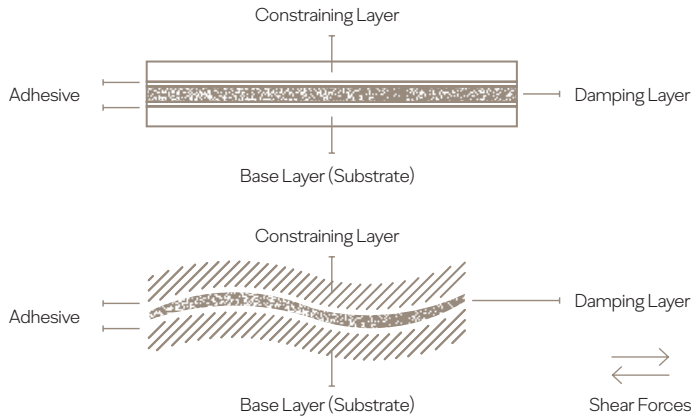
### ACM18 is free of:

- PVC (Poly Vinyl Chloride)
- Heavy Metals (Pb, Cd, Hg and Cr (VI))
- Formaldehyde

Complies with RoHS and ELV 2000/53/EC European Directives

|   |          |
|---|----------|
| Density (kg/m <sup>3</sup> ) <sup>(1)</sup>             | 900-1030 |
| Tensile strength (MPa) <sup>(2)</sup>                   | >0,7     |
| Thermal resistivity (m <sup>2</sup> K/W) <sup>(4)</sup> | 5,5*     |
| Stress at 10% compression (MPa)                         | 0,37*    |
| Glass transition temperature (T <sub>g</sub> ) (°C)     | -38*     |
| Loss factor at 20 °C @ 1 Hz                             | 0,14*    |

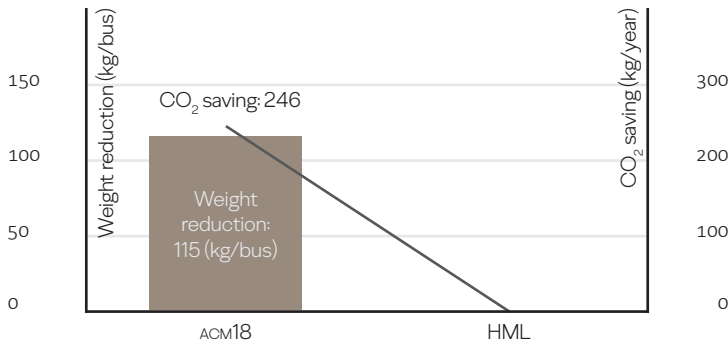
<sup>(1)</sup> ASTM F1315 <sup>(2)</sup> ASTM F152 <sup>(3)</sup> ISO 1856 <sup>(4)</sup> ISO 8302  
\*Typical values



## Constrained - layer damping

During vibration distortion the system flexes creating shear forces on the constrained layer.

It is these shear forces that cause the energy to dissipate and turn into heat.



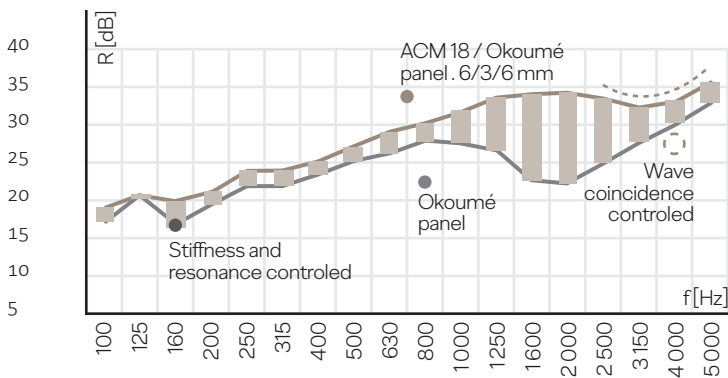
a) comparing against a HML core (2500 kg/m<sup>3</sup>), in a configuration 6/3/6 an 500kg/m<sup>2</sup> plywood

## Panel surface weight

Lightweight materials enable vehicles to reduce weight without reduction in size, load-carrying capacity and safety. It also allows the vehicle to achieve higher speeds.

When composite panels are used in the manufacture of such vehicles, the reduction of the panel surface weight is the most cost-effective mean to reduce fuel consumption and release of greenhouse gases to the atmosphere.

In the transportation sector and considering that a bus utilize 25m<sup>2</sup> of composite panel, **ACM18** core material can reduce up to 115kg with an equivalent CO<sub>2</sub> saving of more than 240kg/year (a).



## Airborne sound isolation vibration damping

**ACM18** is a multilayer panel material with a very good noise control performance at the mass controlled region and at the medium and high frequency region, while keeping a lower panel weight.

The data provided in this Material Data Sheet represents typical values. This information is not intended to be used as a purchasing specification and does not imply suitability for use in a specific application. Failure to select the proper sealing product may result in either product damage or personal injury. Please contact Amorim Cork Composites regarding recommendations for specific applications. Amorim Cork Composites expressly disclaims all warranties, including any implied warranties or merchantability or of fitness for a particular purpose. Amorim Cork Composites is not liable for any indirect, special, incidental, consequential, or punitive damages as a result of using the information listed in this material data sheet, any of its brochures, its products or any future use or re-use of them by any person or entity. For contractual purposes, please request our Product Specifications Sheet (PDA).

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