

# ACM40

## Material Data Sheet

**ACM40** is an engineered cork 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
- Wear-resistant
- Low water absorption
- Good dimensional stability
- Non brittle
- No mould growth



**Lightweight**



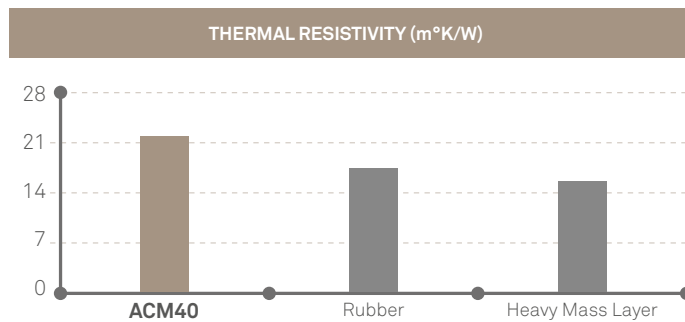
**Thermal insulation**



**Acoustic isolation**



**Sustainable and energy efficient**



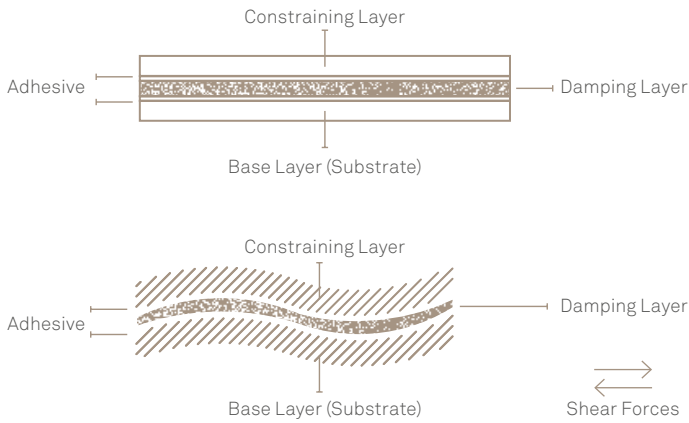
### ACM40 IS FREE OF:

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

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

DENSITY (kg/m <sup>3</sup> ) <sup>(1)</sup>	200-250
TENSILE STRENGTH (MPa) <sup>(2)</sup>	>0,4
STRESS COMPRESSION @ 10% (MPa) <sup>(3)</sup>	0,20*
THERMAL RESISTIVITY (m°K/W) <sup>(4)</sup>	21,7*
LOSS FACTOR: 20 °C @ 1 Hz - 3mm	0,09*

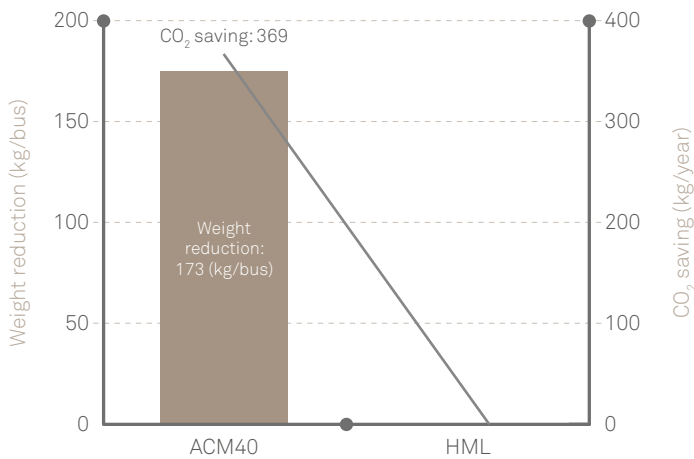
<sup>(1)</sup> ASTM F1315 <sup>(2)</sup> ASTM F152 <sup>(3)</sup> ISO 1856 <sup>(4)</sup> ISO 8301  
\* Typical values



## 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, **ACM40** core material can reduce up to 140kg with an equivalent CO<sub>2</sub> saving of more than 300kg/ year (a).