MAC016

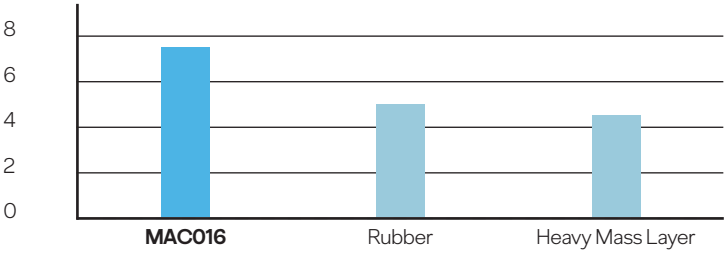
Material Datasheet

Material Description & Properties

Density (kg/m³)[1]	620-740
Tensile strength (MPa)[2]	>0,4
Thermal resistivity (m²K/W)[3]	7,5*
Stress at 10% compression (MPa)	0,10*
Glass transition temperature (Tg) (ºC)	-38*
Loss factor at 20 ºC @ 1 Hz	0,13*

[1] ASTM F1315 [2] ASTM F152 [3] ISO 8302
* Typical values

Thermal resistivity (m²K/W)



MAC016 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 technologies to different substrates like: plywood, aluminum, steel, GRP (glass reinforced plastic) or CFRP (carbon fiber reinforced plastic).

MAC016 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

Acoustic insulation

Thermal insulation

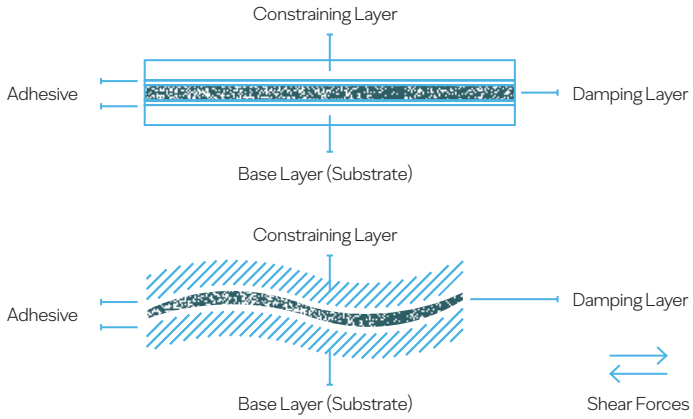
Vibration damping

Sustainable and energy efficient

Features

- Non-hazardours
- Meets FMVSS302 fire resistance
- Wear-resistant
- Low water absorption
- Good dimensional stability
- Non brittle
- No mould growth

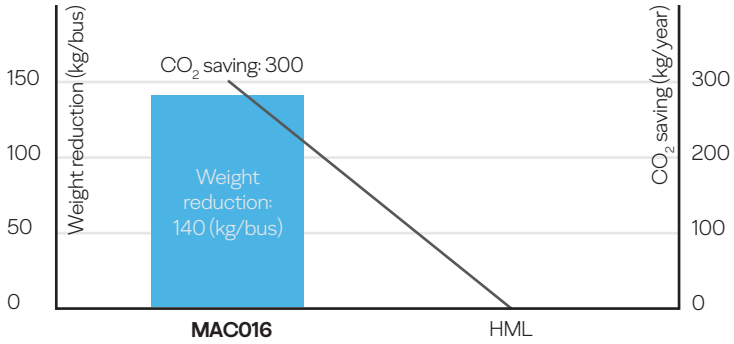
Constrained - layer damping



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

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

Panel surface weight



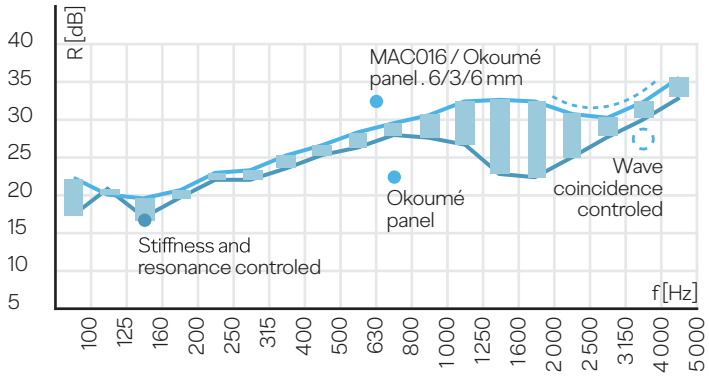
a) comparing against a HML core (2500 kg/m³), in a configuration 6/3/6 an 500kg/m³ plywood

Lightweight materials enable vehicles to reduce weight without reduction in size, load-carrying capacity and safety. It also allows the vehicle to acchieve 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^2 of composite panel, **MAC016** core material can reduce up to 140kg with an equivalent CO_2 saving of more than 300kg/ year (a).

Airborne sound isolation vibration damping



MAC016 is a multilayer panel material with a very good relationship between weight and noise control performance at low frequency and at the coincidence frequency.