

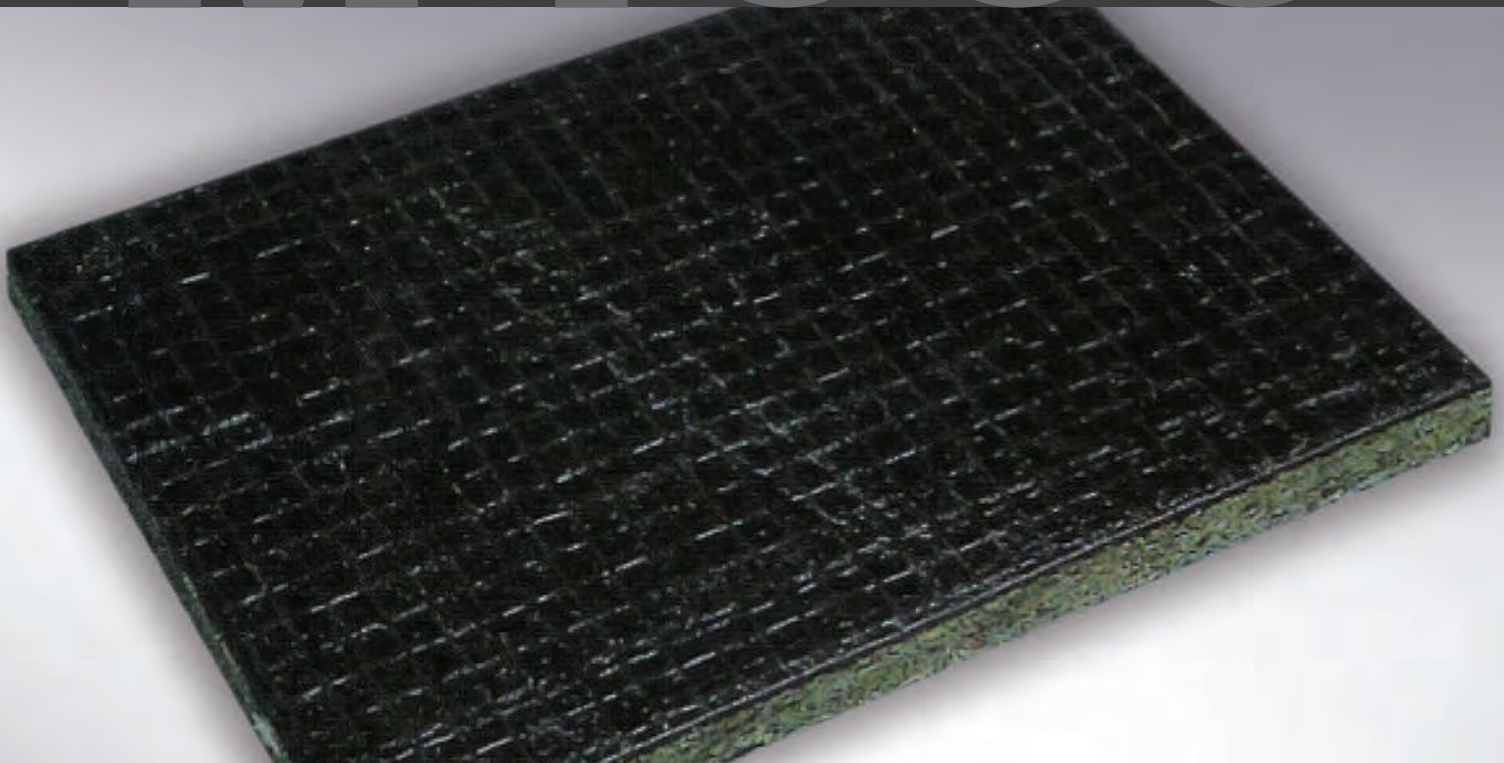
alfakel

TECHNOLOGY FOR SOUNDPROOFING



SOUND ABSORBING SYSTEM

M4000



Description

The sound insulating panels **Alfakel M4000** are also known as “sandwich” panels because they are multi-layered. They effectively increasing the sound insulation of various types of walls and they block noise radiated from panels or other structures mechanically stimulated.

The **Alfakel M4000** sound insulating system is composed of panels made of layers of porous material interspaced with layers called “Septum” of heavy, water proof, flexible, and damping materials.

The porous layers consist of a tile made of fiber material textile based, and the “Septum” heavy layers are made of special bituminous material, loaded with high density charges and enriched with elastomers.

In its simplest form this sound insulating system is made of one heavy layer and a porous one: this is what

we call a simple “sandwich”. A double sandwich is made by combining two simple elements together.

One of the great advantages of the **Alfakel M4000** is the adaptability to the shape of the surface requiring the sound insulation intervention.

Applications

The Idikell M sound insulating system is used for industrial soundproofing when the remediation is focused on increasing the insulation against airborne noises at medium or high frequencies.

They are particularly recommended in the following cases:

- Small size enclosures for machinery and engines
- Engine casings or flat sides
- Pipes or ducts carrying fluids or dust
- Housing for ventilating fans or exhaust systems etc.

If the area to be treated requires noise damping as well, we provide ready-made panels “sandwiched” with **Alfakel M4000** damper.

General Properties

Front side:	black
Weight:	6,5 Kg/mq
Thickness:	23/25 mm
Size:	1230 x 1040 mm.
Temperature range:	– 10 ÷ + 80°C
Heat resistance:	0.5÷1.5 sq. m h °C/kcal
Vibrations resistance:	
– Tensile strength :	good
– Shear strength:	medium
Gasoline and oil resistance:	scarce for unprotected surfaces
Humidity resistance:	good

Acoustic Properties

The **Alfakel M4000** sound insulating panels are extremely valid in the range of high and medium frequencies. Generally, the simple “sandwich” elements are sufficient to achieve the insulation needed, except in rare situations requiring high levels of insulation against airborne noise. By modifying the thickness of the porous layer and the weight of the heavy layer it is possible, to a certain extent, to adjust the insulation curve to the spectrum of the noise source for the specific frequencies. In general, increasing the thickness of the porous layer and the weight of the heavy layer will lead the curve towards low frequencies.

Figure 1 shows the range of sound insulating power of the most typical “sandwich” **Alfakel M4000**.

The range represents the difference ΔR between the sound insulation of a 1 mm. sheet metal treated with one **Alfakel M4000** “sandwich” and one untreated sheet metal taking in consideration four samples.

“Septum” 5÷6 Kg/mq (3÷4 mm)

“Poroso” 1.200 gr/mq (20 mm)

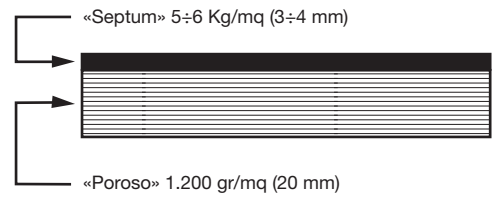
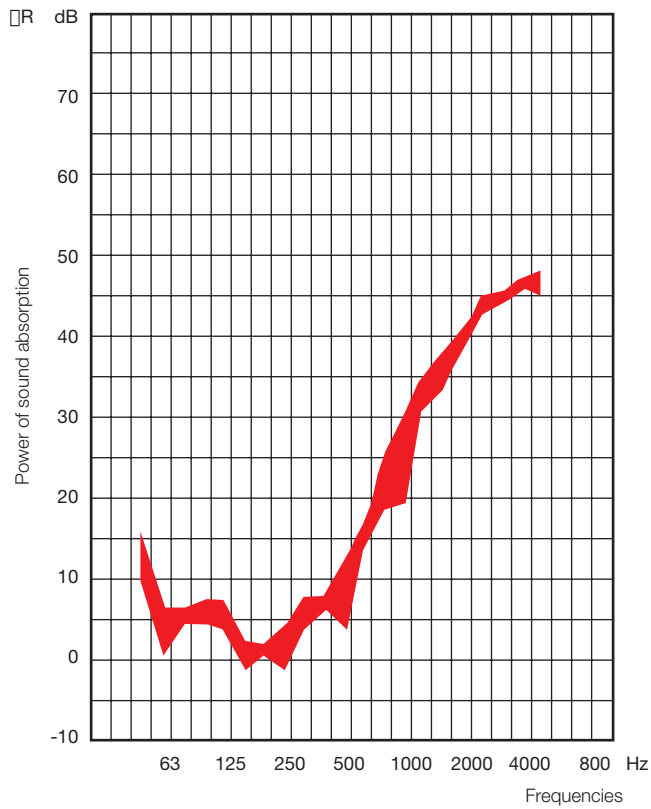


Fig. 1 - Alfakel M4600 simple "sandwich"
Sound insulation range

Figure 2 shows the range of sound insulating power of the most commonly used double "sandwich" Alfakel M.

"Septum" 5÷6 Kg/mq (3÷4 mm)
"Poroso" 1.200 gr/mq (20 mm)

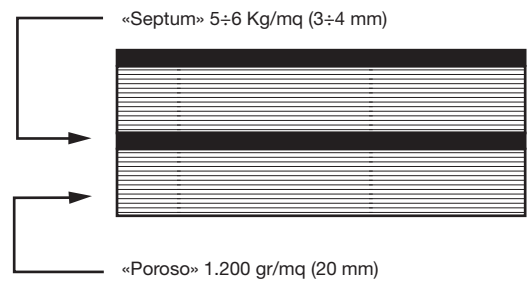
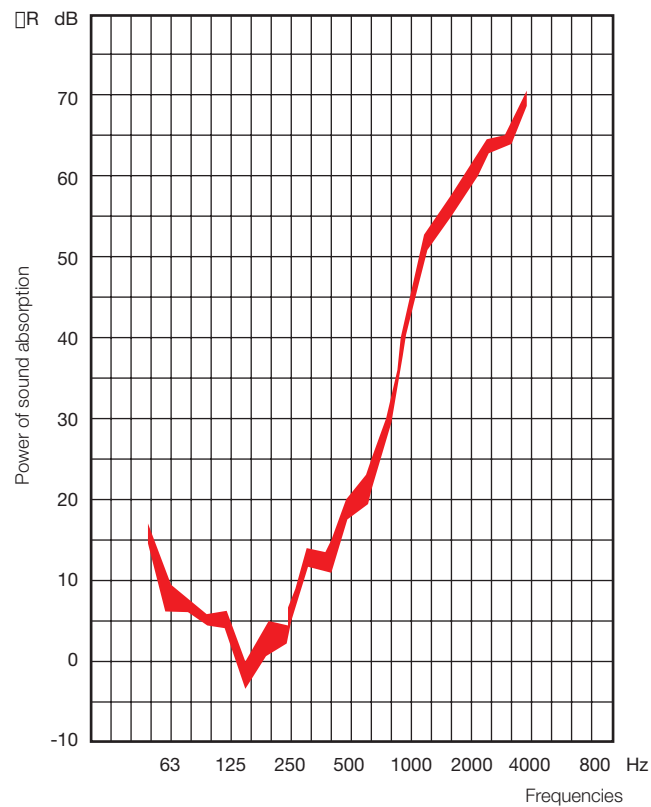


Fig. 2 - Alfakel M4646 double "sandwich"
Sound insulation range

More Benefits

- Fit well to the shape of the substrate
- Do not require safety protection of the installation team

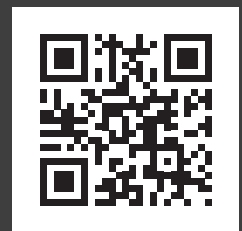
Installation

Idikell M damping tiles can be glued to the surfaces to be treated for sound insulation against airborne noises or they can be applied using with other techniques (such as staples, nails, metal clips, etc.).

If the “sandwich” tiles are used without the Idikell M damping product, the porous side of the “sandwich” needs to be applied directly onto the surface to be treated, so that the “Septum” side be on the visible face. When the “sandwich” tiles are used with the Idikell M damper, they need to be placed in direct contact with the surface to be treated.

Special Applications

In these applications the heavy side is exposed to thermal heat or solvents such as gasoline, oil, etc.



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