

# alfakel

TECHNOLOGY FOR SOUNDPROOFING



## SOUND ABSORBING TILES

# M6000



### Description

The sound absorbing tiles **Alfakel M6000** are made of textile based porous materials designed to absorb sound waves and greatly reduce sound reflection of the surfaces they cover.

### Applications

The sound absorbing tiles **Alfakel M6000** can be applied to surfaces of various shapes and types. They are the perfect choice for additional sound absorption when used in concurrence with the sound absorbing tiles Series Idikell B or other types.

Another application is to improve sound insulation of double walls, as the panels' absorption power eliminates the resonance that develops in the spacing between the walls.

Additionally, they can be used whenever it's necessary to absorb sound bounding waves, inside test cabins, in soundproof cabins and generally in enclosures housing machinery.

**Acoustic Properties**

The sound absorbing power of the tiles **Alfakel M6000** varies according to their thickness at high and medium frequencies.

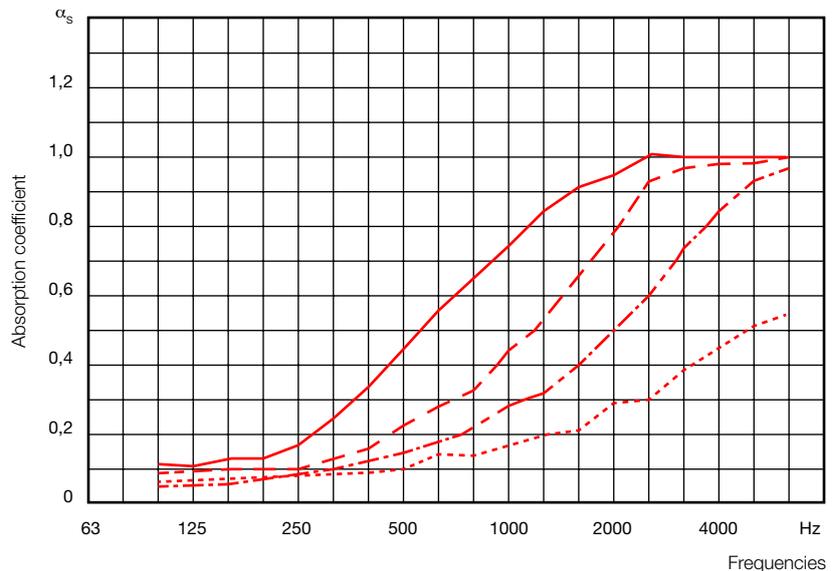
As all porous materials, when applied directly to the surface to be treated, they show a limited absorbing power at low frequencies.

This limited effectiveness can be greatly increased by creating an air gap between the tile and the surface to be covered.

Figure 1 shows the absorption curves of some **Alfakel M6000** tiles applied directly to the surface to be mitigated..

**Measurements taken using the Kundt tube method**

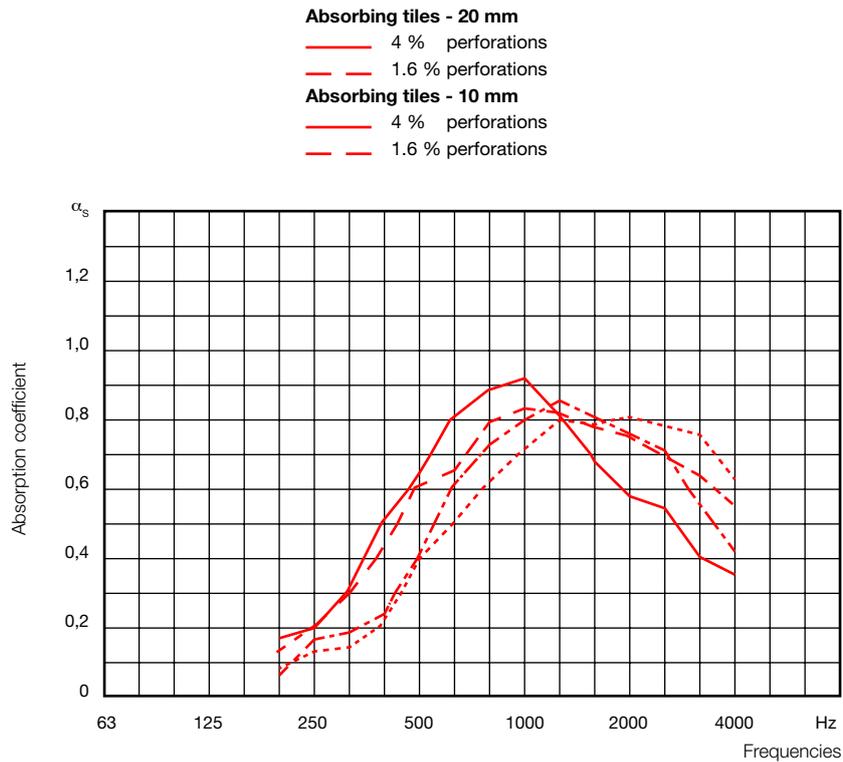
D = 32	weight by sq.m	2500	gr.	—
= 20	»	1500	»	- - -
= 14	»	730	»	- - - -
= 8	»	400	»	· · · · ·



**Fig. 1 - Sound absorbing Alfakel M6000 tiles**  
Absorption coefficient as function of the frequency

For special applications, the sound absorbing **Alfakel M6000** tiles can be protected with a membrane of perforated plastic material tightly stretched over it. By adjusting the rate of perforations of the membrane and the thickness of the sound absorbing tile, it's possible to edge the peak of the absorption curve until it will coincide with the selected frequency.

Figure 2 shows the absorption curves as functions of the sound frequency for two different degrees of perforation of the membrane and two different thicknesses of the sound absorbing tile protected with the PVC membrane perforated and stretched over it.



**Fig. 2 - Sound absorbing Alfakel M6000 tiles protected with stretched perforated membrane.**  
 Absorption coefficient as function of the frequency

### General Properties

Color:	yellow-green
Density:	40÷60 Kg/m <sup>3</sup>
Thickness:	10-20-40 ± 3÷5 mm
Size:	1230 x 830 mm
Temperature of usage:	— 40 ÷ +80 °C
Vibration resistance:	good
Tensile strength:	good
Compressive strength:	good
Shear strength:	medium
Humidity resistance:	good
Thermal insulation:	= 0.03÷0.04 Kcal/m h °C

### Further Benefits

- Fit well to the various shapes of the substrate
- Very easy to cut
- Do not require safety protection of the installation team

### Application Methods

For a direct application to the surface to be treated, the sound absorbing **Alfakel M6000** tiles can be glued or applied mechanically.

When applied at a distance from the surface to be treated they can be glued or mounted on wood or metal supports.

When they are installed between double walls or in the back of a vertical sound absorbing panel, they can be hung with steel or plastic wires.

Used as additional absorption layer on a horizontal surface they can be simply laid on the surface.



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