

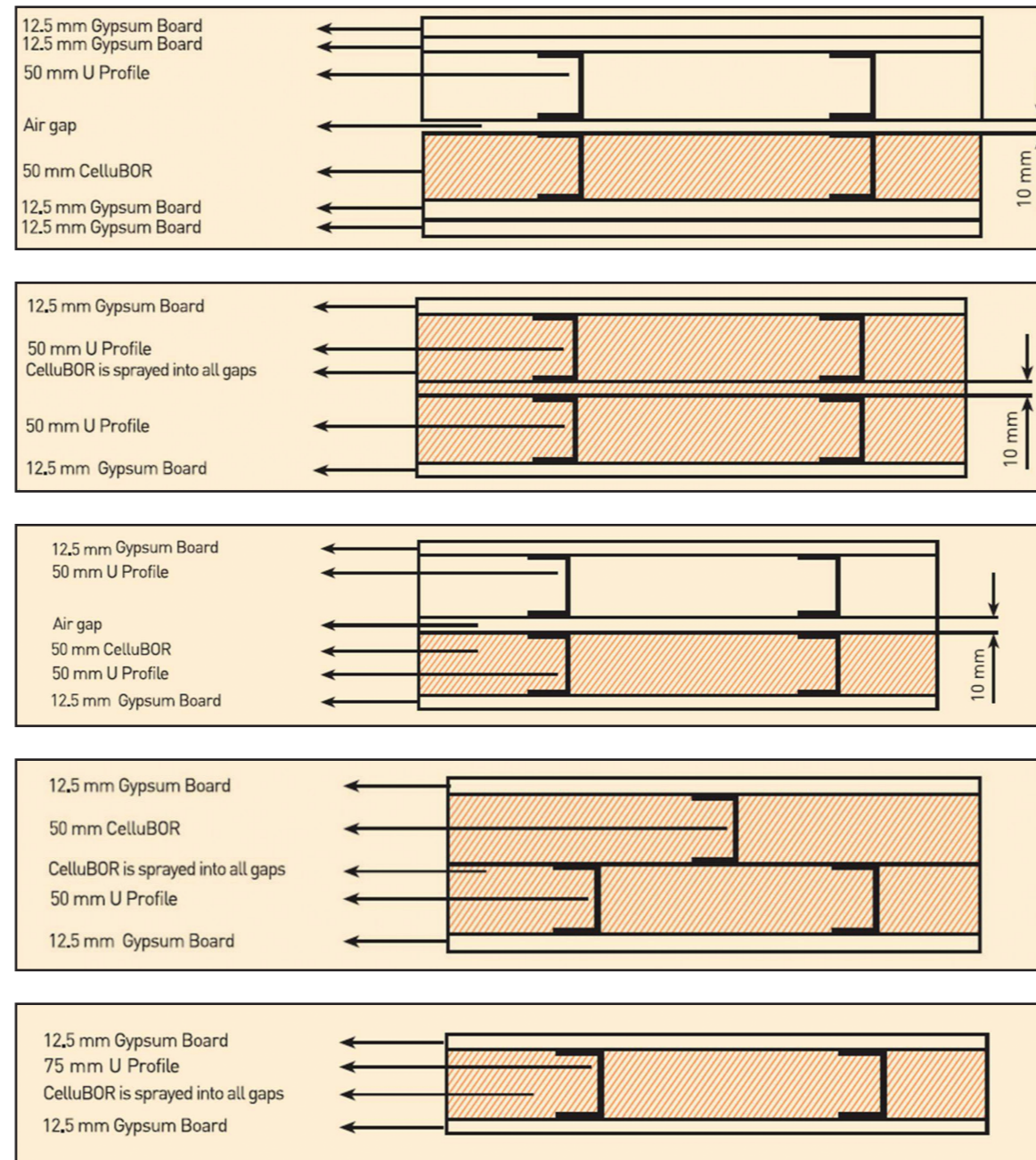


### SOUND INSULATION

CelluBOR absorbs sound waves thanks to its flexible and soft structure. Its irregular and fibrous structure (high surface weight and porous structure) prevent reverberation and echo. In combination with the appropriate components and applied in an appropriate thickness, the CelluBOR system can absorb sound up to 70 dB. Acoustically, the sound absorbing property is perfect. Its sound absorption coefficient is 1.0, which corresponds to class A. Its irregular and fiber texture prevents echoes and ringing. It cuts noise pollution up to 90% and creates a peaceful and comfortable environment.



### CELLUBOR Applied Drywall Systems



www.cellubor.com



### CelluSWISS & CAG ENGINEERING COMPANY

CelluSWISS, which started its activities with engineering services in 1999, started mass production of CelluBOR, the first and only cellulose-based boron added insulation material of Turkey and the Middle East, and CelluMAK insulation spraying machines, which are the application systems, in its factory in Konya in 2005. Our vision as Cag Engineering; to reduce heating and cooling costs, to make thermal and sound insulation in buildings, to produce fire resistant structures, to create buildings where microorganisms are not sheltered. While doing all these, it is to reveal buildings that breathe, to eliminate all possibilities against human health and to convey the necessary technical information and application methods to its users.



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## What is CelluBOR ?



**CelluBOR is a natural insulating material based on recycled cellulose, which is thermal and sound insulating and has fire retardant properties.**

### Thermal insulation

The value of thermal conductivity  $\lambda$  is 0.038 W / m.K. CelluBOR achieves highly efficient thermal insulation by maintaining the temperature of the conditioned environment longer due to its high heat storage capacity in addition to its low heat transfer coefficient. The  $\lambda$ -value of CelluBOR is not affected by density and changes in outdoor temperature. The R-value, expressed as the resistance of components and insulating materials to heat transfer, is an important criterion for the selection of materials. The thermal resistance of CelluBOR is 1.32 m<sup>2</sup>K / W at 50 mm thickness. The R-value is fixed at low and high temperatures. The advantage of the application method by spraying is that all surfaces are covered as a monolithic insulation layer. Thanks to the monolithic insulation cover, the highest efficiency results are achieved without thermal bridges.

### Soundproofing

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### Fire Retardant

The fire-retardant components in CelluBOR provide the necessary fire protection (duration, amount of smoke, no dripping and no pre-fire, etc.) for the building. They provide the ability to escape from the dangerous environment and the time necessary to intervene in unintended situations such as a fire disaster.



### Health advantages

CelluBOR does not contain any substances harmful to human health or carcinogenic. Its physical structure allows buildings to breathe. Cellulose insulation prevents mold, damp and rust. It takes care of the health of buildings and people who live in them. Thanks to its high efficiency in thermal insulation, it ensures a reduction in greenhouse gasses as less energy is consumed in the areas used by CelluBOR, promoting a healthy environment. It is environmentally friendly as it uses at least 80% recycled waste paper in its manufacture. It also does not allow fungi and insects to grow and is antibacterial.

It does not contain formaldehyde and phenol. It does not cause allergic effects on the eye. There is no itching or discomfort in case of short or long-term skin contact. No damage is observed when CelluBOR is inhaled. There is no odor during the application.



### Advantages for the environment

More than 80% of the content of CelluBOR, also known as cellulose wool, is made from recycled waste paper. The conversion of unused waste paper into a qualified thermal and acoustic insulation material makes a significant contribution to the environment and the economy in our plant. The production of CelluBOR uses 20 times less energy than the production of mineral wool.

### Performance

CelluBOR is made exclusively from natural materials, so the performance of the product remains constant throughout its lifetime. There is no loss of volume and no deterioration in thermal, sound and fire insulation values over time. There are no thermal or sound bridges as the surface is monolithically insulated. This advantage alone improves the efficiency of CelluBOR applications by 15-20% when compared to board insulation materials. It is well-known that mineral wool used at low density loses its shape over time (collapse, loosening, open joints). CelluBOR, thanks to the spraying process, has the same lifetime as the structure. For this reason, the performance values do not change over the years.

