



## Roofs are exposed to large thermal amplitudes

On a traditional roof, the insulation serves to support the waterproofing and there is a need to place a barrier to the steam under the insulating material, due to the permeability to steam of this solution. The protection layer (light or heavy) depending of the accessibility to the roof. The Expanded Cork board is practically inert and fully compatible to most

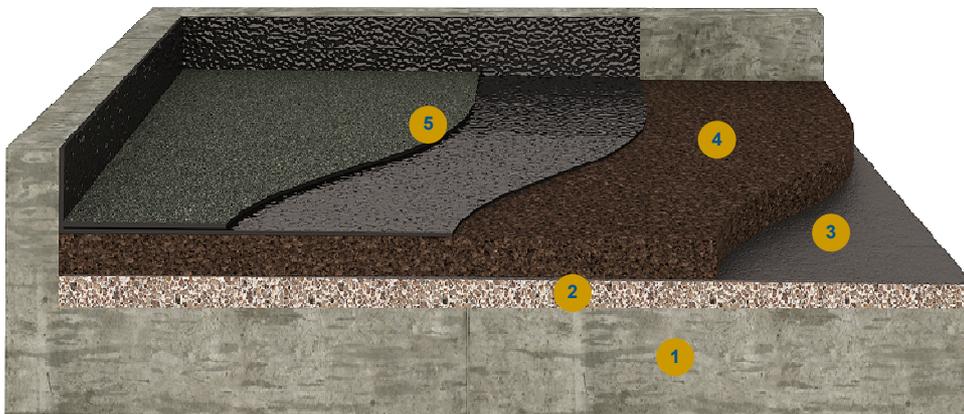
of the materials used in civil construction, thereby accepting the application of the waterproofing system (asphaltic membranes, waterproofing mortars, membranes, etc.), avoiding the carrying out of screeds, namely on roofs with limited accessibility, when restoring buildings.

The Expanded Cork Board is the most eco

friendly solution, maintaining its characteristics over time, simultaneously satisfying the thermal insulation and the soundproofing requirements, when faced by the most varied thermal amplitudes.



## THERMAL AND SOUND INSULATION OF ROOFS WITH LIMITED ACCESSIBILITY



- 1** Slab
- 2** Light weight concrete with granulate of expanded cork / formation of slope
- 3** Barrier to steam
- 4** Expanded Cork Board
- 5** Waterproofing with schist granulate finishing

### Thermal delay

The thermal calculation is based on the thermal conductivity value of the insulating materials and the exterior temperature differences are deemed to be negligible.

However, the temperatures of the exterior surfaces (for example on the roofs) are subject to thermal amplitudes throught the entire day. This temperature variation, leads to consider not only the thermal conductivity, but also the thermal inertia of the materials, resulting in a delay in the propagation of heat flow, from the exterior to the interior. This thermal

delay will be greater, the larger the heat capacity and the lower the thermal diffuivity of the materials that are going to be part of the roof. The economic thickness calculations of the thermal insulations, should bear in mind not only the thermal conductivity value, but also its thermal diffusivity.

When compared to other thermal insulators, the Expanded Cork Board - ICB has large adavantages on the thermal diffusivity.

### Kinds of traditional roofing

Insulation with light protection (self-protected)

Insulation with heavy protection (gravel, slab surfaces, etc.)

### Benefits

Stability to waterproofing

Safe installation

Resistant to wind

Excellent thermal delay

Temperature of usage from  $-180^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$

Excellent soundproofing

Long durability