



Department of Physics
**Architectural Constructions and Building
Engineering Group**

Determining the thermal conductivity of posidonia oceanica (Neptune grass)

Upon the request of the IBAVI (Balearic Institute of Housing), the Architectural Construction and Building Engineering Group (Department of Physics) at the UIB (University of the Balearic Islands) was asked to determine the thermal conductivity of dry bulk posidonia oceanica without any type of added binder at densities for use in construction systems.

The tests to determine the thermal characteristics of the samples supplied by the IBAVI were carried out in line with what is set out in standard UNE-EN 12664:2002 to determine thermal resistance by means of guarded hot plate and heat flow meter methods for dry and moist products of medium and low thermal resistance.

The samples were tested by hot box (box as per standard ISO 8301:1991 determination of steady-state thermal resistance and related properties) on which basis

WE STATE THAT:

1. Thermal conductivity (λ -lambda) for the **compact block sample of Posidonia Oceanica, with an apparent density of 185Kg/m³ contained in waterproof non-breathable EPDM** was determined at:

$$\lambda = 0.044 \text{ W/mK}$$

2. Thermal conductivity (λ -lambda) for the **compact block sample of Posidonia Oceanica, with an apparent density of 215Kg/m³ contained in waterproof non-breathable EPDM** was determined at:

$$\lambda = 0.041 \text{ W/mK}$$

Palma, 11th May 2015

UIB-IBAVI IP agreement. Joan Muñoz Gomila, Bartomeu Alorda Ladaria

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