SOPHIA/STARCELL Product 1

1. Short and long description of the product (short description is one sentence long and the long one has no limit)
   Short description: Bio-based posidonia panel
   Long description: Bio-based Posidonia panel is an insulating panel intended for building of various uses. The panel is composed of posidonia leaves mixed with a two-component epoxy resin of organic origin and pressed together to obtain a compact panel. Posidonia leaves are collected from the beaches where they are deposited following meteorological events or due to the action of the sea.
   Often the posidonia leaves accumulated on the beaches represent a problem for tourism and therefore their reuse is strategic from a green-building perspective and reduction of CO_2 emissions. Posidonia is washed and dried before use. The use of resin is essential to join the posidonia leaves together and ensure good final compactness. The resin used is made of components of bio-origin with 56% carbon from renewable sources.
   The panel has a posidonia-to-resin weight ratio of 4 and therefore the use of resin is very limited considering the low density of the posidonia leaves.
   The panel can be produced in 2 densities, 100 kg/m^3 e 150 kg/$m^{3,}$ with the first favoring thermal performance and the second balancing thermal performance and greater compactness.
   Dimensions panel could be e freely adapted up to 500x1000 mm with a maximum thickness of 100 mm.
   Panels could be integrated into an insulating façade or in a ceiling.

2. Test standards used (ISOs etc.) for each test conducted (also name the test done)

Test/ Test Standard used:

Thermal Conductivity: UNI EN 12667:2002

Density: EN1602

Thickness: EN822-25

Compression: EN826

Specific Heat: ISO 22007-2

Thermal Resistance: UNI EN 12667:2002

Fire Resistance: Test Based on EN 13501-1

Fungi and Molds Resistance: Tests based on (Organization for Economic Co-operation and Development)

Density (Deviation) [kg/m3]	**Thickness (Deviation) [mm]**	**Thermal Conductivity [W/mK]**	**Water absorption [%]**	**COMPRESSION TEST**			**Specific Heat [J/gK]**	**Fire Resistance**	**Thermal resistance [(m²·K)/W]**
				Compressive strength [kPa]	**Relative deformation [%]**	**Compression stress at 10% relative strain [kPa]**			
100 (<5%)	20-100 (<1%)	0,37 @ 5°C 0,38 @ 15°C 0,40 @ 25°C	67	13400	56	25,9	1,60 @ 10°C 1,75 @ 30°C 2,03 @ 50°C	No fire propagation and absence of incandescent particles A2/S2 TBC	0,60 @ 5°C 0,57 @ 15°C 0,54 @ 25°C
150 (<5%)	20-100 (<1%)	0,38 @ 5°C 0,39 @ 15°C 0,41@ 25°C	53	13700	60	12,9	1,66 @ 10°C 1,83 @ 30°C 2,09 @ 50°C		0,59 @ 5°C 0,57 @ 15°C 0,54 @ 25°C