

SILENTecoEster

SELF-BEARING THERMAL-ACOUSTIC INSULATION PANELS WITH POLYESTER FIBRE BASE, NON-TOXIC, HEAT-SEALED, FREE FROM ADHESIVES, PRE-COUPLED WITH A HIGH DENSITY SOUNDPROOFING FOIL, AIRTIGHT AND RESISTANT TO VAPOUR, FOR INSULATING DOUBLE BRICK WALLS

CHARACTERISTICS		IMPACT ON THE ENVIRONMENT		
ACOUSTIC INSULATION	THERMAL INSULATION	ECO GREEN	RECYCLABLE	NON-DANGEROUS WASTE

PROBLEM

Many of the thermal insulation products used to fill-in the air spaces of walls do not insulate against noise, are permeable to air and vapour, are small in size and therefore laying is necessarily bound to the simultaneous building of the false-wall.

SOLUTION

SILENTecoEster is a large self-bearing pre-coupled panel obtained by joining a polyester fibre insulation product with a film of the same kind having very high air and water vapour tightness, and that acts as both acoustic and thermal insulation.

SILENTecoEster is the self-bearing and large version of the naked SILENTeco panel.

The fibre is an excellent thermal insulator whose efficiency is maintained over time by the built-in vapour barrier, which is always positioned facing the inside of the room to be insulated and which keeps the insulating fibres dry and unaltered in the insulation of external perimeter walls.

With regard to acoustic insulation, the fibre of the composite material dissipates the sound energy that crosses the air space of the double wall.

SILENTecoEster is a thermal-acoustic insulation product whose fibrous part consists of non-toxic polyester wool obtained from recovering and recycling mineral water and soft drink bottles in PET through the environment friendly disposal of Solid Urban Waste

The fibre thus obtained is to be considered as a dually ecological material because it frees the environment of high volumes of waste and because the product obtained through an adhesive-free thermal process does not irritate the skin and does not sting.

The production cycle of the fibres of **SILENTecoEster**, seeing as it is a recycling process, also has very low environmental impact and low consumption of energy compared to that of other insulation materials that derive from raw virgin materials.

The fibres of **SILENTecoEster** do not irritate the skin of builders, not even when cutting the panels and this is why the panels are not packed in plastic sacks.

FIELDS OF USE

SILENTecoEster is suitable for the thermal-acoustic insulation of air spaces in external perimeter double walls but can also be used in association with plasterboard walls and false-walls just as a preventive insulation of the wall to be treated, on which the metal framework will then be installed to which the plasterboard panels are screwed.

The special configuration of the large panels in which it is produced (100x285 cm) cuts down application times and makes laying easier.

METHOD OF USE AND PRECAUTIONS

Laying is simple and quick and can be done by just one operator without having to simultaneously erect the false-wall and without having to use special tools.

SILENTecoEster is applied with the face lined with the film facing the inside of the building, the panel is light and self-bearing and generally holds itself in place once set next to the wall and the false-wall can be erected immediately.

If the false-wall is erected at a later date or in particular situations, a 15-cm strip of GIPSCOLL must be laid on the fibrous face at the top end.

It takes just a few minutes; the panel on which the adhesive is applied is put in place and lightly pressed against the wall using a painter's roller; it holds straight away and the operator can carry on fitting the next panel.

To guarantee better air and water vapour tightness, the joining lines between the panels are then sealed with an adhesive tape.

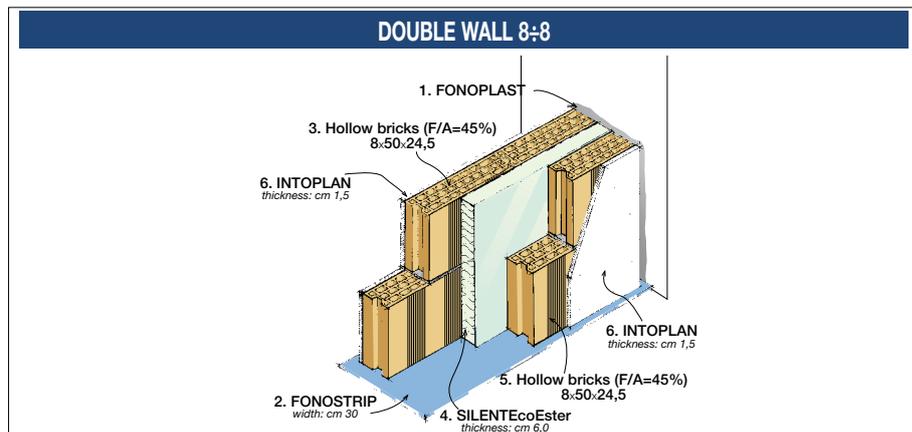
The adhesive feasibly used to secure the panel is



prepared by mixing GIPSCOLL powder with water (it takes 600 g per strip), until a thick paste is obtained, which will be applied using a trowel or a toothed trowel. Its consistency and adhesiveness should be such to hold the panel on the wall immediately, even when still wet, without having to wait for it to set and without having to use supports.

The false-wall that will be built subsequently will be kept slightly detached from the insulation to prevent the elastic reaction of the insulation layer from deforming it or knocking it down when the mortar sets.

If the material needs to be cut, first cut the foil with a Stanley knife and then cut the polyester wool with a long-bladed Stanley knife or an alternative saw with smooth blade. Do not use toothed-bladed saws.



SILENTEcoEster

Thickness of the polyester fibre	60 mm	80 mm
Panel sizes	1.00x2.85 m	1.00x2.85 m
Mass per unit area	1200 g/m ²	1600 g/m ²
Density	20 kg/m ³	20 kg/m ³
Diameter of fibres	17.9÷28 µm	17.9÷28 µm
PET film thickness	23 µm	23 µm
PET film mass per unit area	32 g/m ²	32 g/m ²
PET film vapour transmission		
• Sd	4.32 m	4.32 m
• µ	188,000	188,000
Composition	100% PET	100% PET
LEED credit (MR Credit 4)	contains 75% of material that can be recycled (1/2pre+1 post)	contains 75% of material that can be recycled (1/2pre+1 post)
Apparent dynamic stiffness	s't ≤ 30 MN/m ³	s't ≤ 30 MN/m ³
Specific heat	1,200 kJ/kg K	1,200 kJ/kg K
Water vapour diffusion coefficient (fibre)	µ = 1	µ = 1
Working temperature range	-40°C ÷ +110°C	-40°C ÷ +110°C
Thermal conductivity λ	0.040 W/m K	0.040 W/m K
Thermal Resistance R	1.50 m ² K/W	2.00 m ² K/W
Lower heating power	21,600 kJ/kg	21,600 kJ/kg
Airtightness r	2.26 KPas/m ²	2.26 KPas/m ²

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ANIT Associated

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Acoustic and thermal insulation for buildings