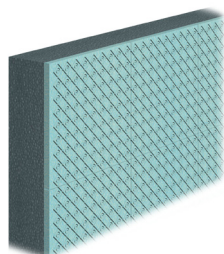


# EPS RESPHIRA

## DATA SHEET

EPS RESPHIRA is the patented micro-perforated EPS panel for external thermal insulation composite systems with excellent thermal insulation characteristics, breathability and high impact resistance



### Composition

The EPS RESPHIRA moulded thermal insulation panel is made from two layers of expanded polystyrene: one predominantly with graphite additives, and the other green, high-density layer, around 2 cm thick, which acts as protection against impact and sunlight. The rear layer of the panel with graphite has a roughened pattern designed to improve adhesion of the adhesive, while on the high-density front surface there are detensioning cuts to avoid the build up of tension due to thermal shock.

Every single EPS RESPHIRA panel has 1800 microscopic holes to ensure exceptional breathability and prevent the formation of condensate inside the panel.

These panels are manufactured without the use of flame retardants and expanding agents, with an ozone depletion potential greater than zero, and contain a quantity of recycled material greater than or equal to 10% by weight. This ensures that EPS RESPHIRA panels comply with the Minimum Environmental Criteria (CAM).

### Supply

- The panels are supplied in UV-resistant polyethylene packaging.

### Use

Excellent breathability, thermal insulation and strength make the EPS RESPHIRA panel ideal for the construction of a reinforced external thermal insulation composite system, ensuring high energy savings, indoor comfort and long life. The thickness of the panel will be defined according to the thermal insulation requirements and, in any case, in compliance with current legislation in force in the place where it is used.

### Substrate preparation

The application surface must be solid, clean, resistant, dry and disinfected. If it is not, you must remove any dust, dirt, traces of release agents and crumbling or loose parts. Make sure the substrate is level, and if necessary level off using plaster such as KC 1, KD 2 or KI 7. Remove the excess parts where there are any specific protrusions. Deteriorated concrete must be repaired using special repair mortar from the FASSA GEOACTIVE line. Any paints or coatings that are weak, crumbling or detaching must be removed mechanically. Once all the removal, repair and substrate preparation operations have been completed, the surfaces then need to be washed; when fully dry, the surfaces can be treated using a specific primer with high penetration, such as MIKROS 001.

Treat substrates with enamel or glazed surfaces by sand-blasting. In this case, full contact surface bonding is recommended, using A 50 high performance adhesive/skim coat.



## Mixing and application

EPS RESPHIRA panels do not require any special protective measures for application on the wall: the scaffolding does not need to be shielded by dark covers.

The panels are attached using A 96 RESPHIRA adhesive, applying the adhesive across the entire surface using a notched trowel, or around the perimeter and in spots in the centre, on the grey side of the panel. This operation shall be performed assuring the specified minimum bonding surface of at least 50% of the total panel surface area. The adhesive must always be applied on the board perimeter, making sure that it does not ooze out from the board after it is laid.

The panels are applied from the bottom upwards, in a staggered pattern, avoiding gaps between panels. Any joints between panels should be filled with strips of insulating material or FASSA MOUSSE polyurethane sealing foam. The panels are fixed mechanically using 6 anchors/m<sup>2</sup>, in a "T" arrangement. The anchor must be chosen depending on the type of substrate the External Thermal Insulation Composite System is installed on. Once the panels have been mechanically fixed, the reinforced skim coat can be applied. The panels are always finished with two layers of skim coat, using A 96 RESPHIRA skim coat, and reinforced using alkali-resistant fibreglass reinforcing mesh, such as FASSANET 160.

When the layer of reinforced skim coat has cured, the external thermal insulation composite system finish cycle is completed by applying RSR 421, RX 561 or FASSIL R 336 thick protective coating, after first having applied the specific primer.

For further technical information and details on application procedures, see the instructions provided in the FASSATHERM External Thermal Insulation Composite System application manual. For special applications and substrates, contact Fassa Technical Service.

## Warnings

- Apply the product at temperatures between +5°C and +35°C.
- Store the packed panels in a dry and airy place, protecting them from weathering, direct sunlight and other heat sources.
- The surfaces of the panels must be clean and intact: only remove the packaging from the panels immediately before application.
- Avoid applying the adhesive only in dots.
- Avoid using boards that are damaged, deteriorated, dirty, etc.
- When installing the boards, protect them from water seepage caused by rain;
- Avoid applying the panels in contact with the ground.

**For the installation details please read the instructions indicated in FASSA technical installation manual for ETICS.**

## Quality

CE marking in accordance with EN 13163: 2012+A1:2015, compliance with EN 13499: 2003 and the careful checks performed on the panels in our factories guarantee the following performance properties: thermal conductivity, bending strength, perpendicular tensile strength at the faces, water absorption by partial immersion, vapour barrier, dimensional stability and reaction to fire class.

## Technical Data

Length	1.000 mm
Width	500 mm
Thickness	60-240 mm

## Technical features

The EPS panels are classified according to the standard EN 13163 that which requires the characteristics to be declared in terms of designation codes, showing the specific upper or lower limits.

Specifications	Designation code	Unit of measure	Values/Classes	Reference standard
Compressive strength at 10% deformation	CS(10)	kPa	≥ 100	EN 826
Tensile strength perpendicular to the faces	TR	kPa	≥ 150	EN 1607
Flexural strength	BS	kPa	≥ 150	EN 823
Thickness	T	-	T1 (± 1)	EN 823
Length	L	-	L2 (± 2)	EN 822
Width	W	-	W2 (± 2)	EN 822
Flatness	P	-	P5 (5)	EN 825
Squareness	S	-	S2 (± 2)	EN 824
Density	-	kg/m <sup>3</sup>	17.5 (± 6%)	EN 1602
Dimensional stability	DS	%	DS(N)2	EN 1603
Declared thermal conductivity	$\lambda_D$	W/m·K	0.031	EN 12667
Water vapour diffusion resistance	$\mu$	-	≤ 15	EN 12086
Water absorption by partial immersion	$W_{ip}$	kg/mq	≤ 0.5	EN 12087
Water absorption by total immersion	$W_{it}$	kg/mq	≤ 2	EN 12087
Specific thermal capacity	$C_s$	J/Kg·K	1,450	ISO 10456
Reaction to fire	Euroclass	-	E	EN 13501-1

## Thermal resistance

EPS RESPHIRA thermal insulation panels may have different thermal resistance values, depending on the panel thickness. Thermal resistance  $R_D$  (m<sup>2</sup>·K/W)

Panel thickness (mm)	Declared thermal resistance (m <sup>2</sup> k/W)
60	1.93
80	2.58
100	3.22
120	3.87
140	4.51
160	5.16
180	5.80
200	6.45
220	7.09
240	7.74

The above information refers to laboratory testing; it is possible that in practical applications on site these may differ considerably according to the conditions in which the material is applied. In any case the user must check that the product is suitable for the intended application, taking all responsibility for its use. Fassa reserves the right to make technical modifications without notice.

Technical specifications regarding the use of Fassa Bortolo products for structural or fire prevention applications will only be officially valid if provided by Fassa Bortolo's "Technical Service" and "Research, Development and Quality System". If necessary, contact Technical Service in your country of reference (IT: [area.tecnica@fassabortolo.com](mailto:area.tecnica@fassabortolo.com), ES: [asistencia.tecnica@fassabortolo.com](mailto:asistencia.tecnica@fassabortolo.com), PT: [assistencia.tecnica@fassabortolo.com](mailto:assistencia.tecnica@fassabortolo.com), FR: [bureau.technique@fassabortolo.fr](mailto:bureau.technique@fassabortolo.fr), UK: [technical.assistance@fassabortolo.com](mailto:technical.assistance@fassabortolo.com)).

Please note that for the aforementioned products, the assessment is required by the appointed professional, in accordance with regulations in force.