

# BioTHERMOVENT

TRANSPIRING AND MACROPOROUS, HEAT-INSULATING FIRE-PROOF FIBRE-REINFORCED DAMP-PROOFING PLASTER, BASED ON NATURAL HYDRAULIC LIME, FOR RENOVATING WALLS AFFECTED BY CAPILLARY RISING DAMP AND SURFACING SALTS, FOR EXTERNAL WALL INSULATION AND FOR FIRE PROTECTION

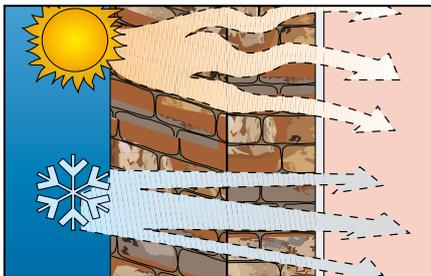
GRANTS *LEED* CREDITS



CHARACTERISTICS				ENVIRONMENTAL		METHOD OF USE			PRECAUTIONS
THERMAL INSULATION	ALLOWS TO BREATHE	DAMP-PROOFING	REACTION TO FIRE	ECO GREEN	RECYCLABLE	MIX MECHANICALLY	APPLY MECHANICALLY USING A SPRAY PUMP	APPLY BY TROWEL	STORAGE: IN A DRY PLACE

## PROBLEM

**THERMAL INSULATION OF EXTERNAL WALL, ALSO IF SUBJECT TO CAPILLARY RISING DAMP. FIRE PROOF PROTECTION RATING REI 120**



Thermal insulation is an extremely important problem also due to the cost of heating homes. When it is also necessary to protect the transpirability of the walls it is necessary to use special plasters suitable also for being applied on old humid masonry. The fire proofing of parts of the building work requires suitable products which are easy to apply on any architectural solution.

## SOLUTION

**BioTHERMOVENT** is a dry pre-mixed plaster with special light very pure silicate-based aggregates, natural hydraulic lime, fibres and additives that facilitate laying also in high thicknesses, guaranteeing maximum adhesion and compatibility on any type of masonry. The special formulation with a completely inert material makes **BioTHERMOVENT** a unique render in its class which put characteristics of thermal insulation, mechanical resistance, durability, permeability and absolute resistance to fire together.



## APPLICATION FIELDS

**BioTHERMOVENT** is ideal for use in the external insulation of buildings on any type of masonry. Its high degree of transpirability also makes it suitable for insulating and renovating old damp masonry. Also, thanks to its natural silicate-based formulation, it falls within the category of A1 class products for fire reaction as a non-combustible material, and can therefore be applied in all cases where fire protection with REI120 certification is required.

**BioTHERMOVENT** is an absolutely ecological insulating product and can be used widely in bio-architecture.

## ADVANTAGES

- High insulating power.
- Possibility to make plaster with high thicknesses in just one coat.
- High mechanical resistance.
- Absolutely fire proof.
- Ecological product perfectly compatible in renovation interventions on old masonry work.

## METHOD OF USE

### • SURFACE PREPARATION

Carefully clean surfaces to be rendered by removing loose particles, oils, dust and general dirt either by chiselling, brushing or high pressure water cleansing.

### • MIX PREPARATION

**BioTHERMOVENT** is prepared by mixing the product with right quantity clean water (see table) (1).

### • APPLICATION

The application can be carried out either by hand or mechanically (2). With thicknesses over 4 cm, carry out the application in 2 separate

coats. The exceptional handling qualities allow application on any architectural solution.

### • FINISHES

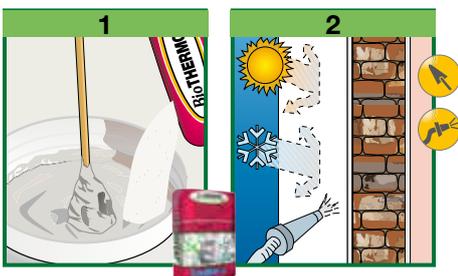
For painting purposes, it is advisable to use highly breathable lime-, silicate- or siloxane-based wall paints, such as **BioCALCE-COLOR** or **SILICOLOR**, or decorative mineral coatings such as **DECORFINE**

### • COVERAGE

The consumption is approx 6 kg/m<sup>2</sup>×cm.

### • PRECAUTIONS

- Use cold water during summer and water at 20°C during winter.
- Application temperature: from +5 °C to +35°C.
- Do not add other materials such as binders, aggregates or additives.
- During the hot season, keep the surface of the laid mortar damp so as to prevent the product from drying rapidly, for at least 8 hours.
- Don't prepare quantities smaller than one sack.
- Wet the surfaces in case of high temperatures.
- Do not add water when the mix starts setting.
- Avoid sudden temperature changes while the plaster dries.
- Joints involving different elements must be reinforced with special fibreglass mesh, **RETIN-VETRO PER INTONACI**, which should be embedded in the last layer of plaster.
- Store the product in its original closed packaging in a dry place. Protect against frost and high temperatures.



## CERTIFICATIONS

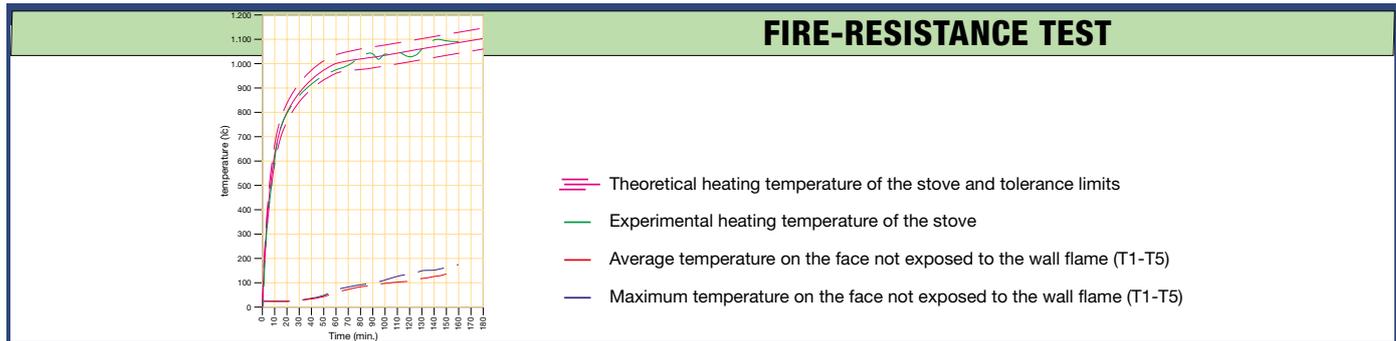


## TECHNICAL CHARACTERISTICS

	Standard	<b>BioTHERMOVENT</b>
Appearance		Powder
Colour		Whitish
Particle size		0 ÷ 1.3 mm
Apparent density	<b>EN 1015-6</b>	0.55 ± 0.05 kg/L
Mixing water		45% ± 1%
Storage in original packaging in a dry place		12 months
<b>Mix properties and workability</b>		
Density of the mix		0.75 ± 0.05 kg/L
Application temperature		+5°C ÷ +35°C
Minimum application thickness		8 mm
Maximum application thickness per layer		40 mm
Application		Manual or mechanical
<b>Performance characteristics</b>		
	<b>Normativa</b>	<b>Product performance</b>
<b>Class and type</b>	<b>EN 998-1</b>	<b>R - T</b>
<b>Resistance to compression - after 28 days</b>	<b>EN 1015-11</b>	1.3 N/mm <sup>2</sup> - CS I
<b>Resistance to bending - after 28 days</b>	<b>EN 196-1</b>	0.7 N/mm <sup>2</sup>
<b>Adhesion</b>	<b>EN 1015-12</b>	≥0.39 N/mm <sup>2</sup> - FP: A
<b>Adhesion - to concrete substrate</b>	<b>EN 1015-12</b>	0.39 N/mm <sup>2</sup> - FP: A
<b>Water absorption through capillarity</b>	<b>EN 1015-18</b>	w ≤ 0.4 kg/m <sup>2</sup> ·h <sup>0.5</sup> - W1
<b>Water vapour permeability coefficient</b>	<b>EN 1015-19</b>	μ = 7
<b>Thermal conductivity λ<sub>10,dry</sub></b>	<b>EN 1745 A.12</b>	0.08 W/mK
<b>Durability</b>	<b>EN 998-1</b>	5.2.3.2 compliant
<b>Thermal resistance - Working temperature</b>		-30°C ÷ +90°C
<b>Reaction to fire</b>	<b>EN 13501-1</b>	A1
<b>Hazardous substances</b>	<b>EN 998-1</b>	According note in ZA.1

Test conditions: temperature 23±2°C, 50±5% R.H. and air velocity in test area <0.2 m/s. These parameters may vary based on the specific conditions of the worksite: temperature, humidity, ventilation, porosity of the substrate.

Compliant with the general principles defined in EN 998-1 - Principles for evaluation of the use of products and systems.



<b>THERMAL-HYGROMETRIC TESTS</b>				
<b>SUMMARY OF THERMAL-HYGROMETRIC TESTS ON EXTERNAL PERIMETRIC STRUCTURES WITH "BioTHERMOVENT" THERMAL INSULATING PLASTER</b>				
STRUCTURE CODE	BASIC STRUCTURE TYPE (thickness in mm)	THERMAL RESISTANCE OF BASIC STRUCTURE UNI 7537 (m <sup>2</sup> K/W)	THERMAL RESISTANCE OF STRUCTURE INSULATED WITH BioTHERMOVENT (50 mm-thickness m <sup>2</sup> K/W)	EXTERNAL CHARACTERISTICS
M1/M5	LECA - 300	1,034	1,883	Room temperature +20°C Outdoor temperature -5°C Interior relative humidity 50% Exterior relative humidity 90%
M3/M7	POROTON - 300	0,698	1,546	
M41	POROTON - 350	0,814	1,662	
M53	POROTON - 380	0,884	1,732	

## PACKAGING

11-kg-Sack

• FOR ANY FURTHER INFORMATION OR ADVICE ON PARTICULAR APPLICATIONS, CONTACT OUR TECHNICAL OFFICE • IN ORDER TO CORRECTLY USE OUR PRODUCTS, REFER TO INDEX TECHNICAL SPECIFICATIONS •

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The numerous possible uses and the possible interference of conditions or elements beyond our control, we assume no responsibility regarding the results which are obtained. The purchasers, of their own accord and under their own responsibility, must establish the suitability of the product for the envisaged use.

The figures shown are average indicative figures relevant to current production and may be changed or updated by INDEX at any time without previous warning. The advice and technical information provided, is what results from our best knowledge regarding the properties and the use of the product. Considering