AFON CASA
BUILDING INNOVATION

AFONTERMO®
IL NANOCAPPOTTO®

The 1st Thermo-reflective skimming coat for insulation

Patented and applied for over 15YEARS

CAM

MADE IN ITALY

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The 1st Thermo-reflective skimming coat for insulation

Afontermo® il Nanocappotto®, Thermo-reflective skimming coat, the first extra-thin insulating coat, which revolutionises the common concept of insulation based on the use of traditional bulky thermal coats. The product, composed of natural insulating and reflective aggregates, was conceived, and invented in 2007 with the aim to solve the countless problems resulting from the use of traditional insulation such as: poor breathability, the consequent formation of mould and condensation, invasiveness, difficulty of application and flammability.

Afontermo® innovates the traditional insulation systems thanks to its very high reflective, thermal and breathable properties. Applying a layer of just a few millimeters, Afontemo provides the necessary thermal insulation to the living quarters, meanwhile it prevents or eradicates problems of condensation and consequent mold. All this is possible because **Afontermo®** reflects heat directly and indirectly, this way it prevents the wall from absorbing the heat flow.
In the winter season, the heat produced in the household is recovered and maintained, while in the summer season the external heat is rejected, keeping the heat out and maintaining a comfortable temperature inside the living quarters.

The effectiveness of the insulating properties of the product, applied both to the Winter and Summer seasons allow an immediate reduction in the use of the heating system or air conditioning, lowering noticeably energy consumption and leading to significant savings.

Afontermo® is not invasive, permeable, non-toxic and hypoallergenic.

Afontermo®, covered by an exclusive patent, is produced and marketed by **Afon Casa** for over 15 years, counting hundreds of thousands of applications in private homes, schools, large hotels, etc.

AFONTERMO®: PROPERTIES AND FUNCTIONALITIES

Afontermo®, applied in a thin layer of just 4/10 mm, achieves extraordinarily high thermal insulating capacity; this is proven by laboratory tests performed on a 3 mm steel plate treated on one side with 1 mm of **Afontermo®**. Exposing the treated side of the sample to 155°C, the opposite side detects only 18°C of temperature; this means that 1 mm of **Afontermo®** shields 137°C.

Advantages of using AFONTERMO® as a thermal insulating coat:

- It doesn't alter the breathability of the wall because it has a very low vapor permeability value μ (μ=9.1);
- It prevents or eliminates condensation and mold;
- It helps to achieve considerable energy savings since its thermal conductivity is 10 times lower respect to traditional thermal coating systems;
- It 's compatible with bio-architecture constructing methods;
- If necessary, it can be applied only on the inside walls, avoiding extra costs and time loss for scaffolding.

The insulation that we obtain with AFONTERMO®, in a simple and affordable way, restores the health of the walls and helps to save space in the living area.

AFONTERMO®: REFLECTANCE

A key feature of **Afontermo®**, in addition to its high thermal properties, is its reflectance, which allows energy to be recovered and not dispersed.
To ensure thermal insulation, it is advisable to use high reflective products on the inside or the outside of buildings, in order increase energy savings and promote eco-sustainability by limiting the use of heating systems and air conditioners.

DIRECT ADVANTAGES of using **Afontermo®** reflective coating:

- Reduces the cost of heating in winter and air conditioning in summer;
- Increases living comfort;
- Less structural stress;
- Absence of chemical-physical deterioration of the masonry compared to common insulating materials.

INDIRECT ADVANTAGES of using **Afontermo®** reflective coating:

- Less overheating of the surrounding urban areas;
- No release of pollutants through chemical-physical deterioration of common insulating materials;
- Reduction of energy consumption resulting in lower carbon dioxide emissions.

AFONTERMO®: ENERGY SAVING, HEALTH AND WELL-BEING

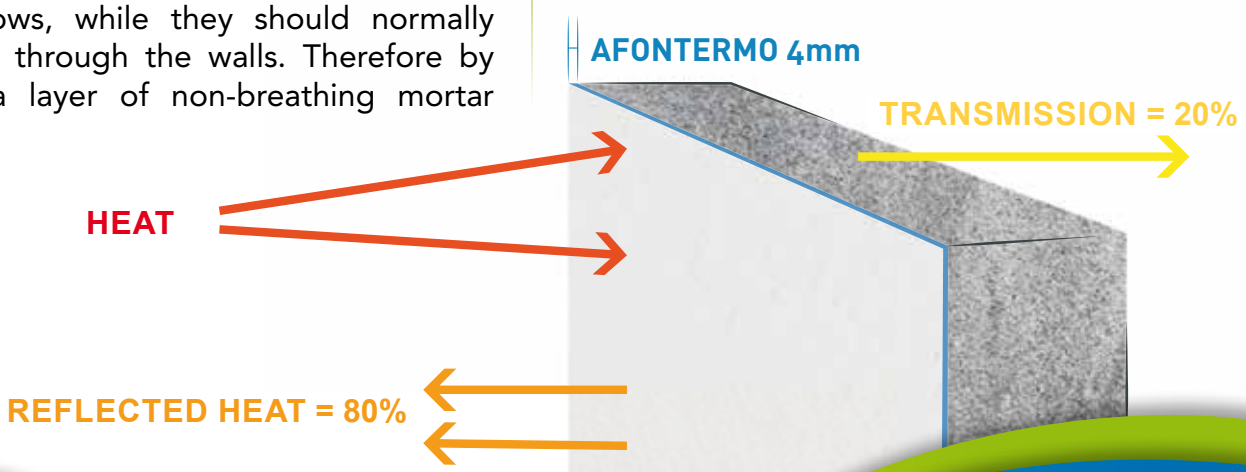
Insulation, low energy consumption, a nice feeling, a healthy environment are key principles that must be borne in mind in any new building or renovation project.

But how do you obtain such results? Certainly not by using the closed-cell impermeable insulation coats, as not only they are so thick that they take up too much space, and space is at a premium in a house, they can also compromise the health of the perimeter walls and, consequently, the comfort of the house, as a result of an uncontrollable onset of condensation between the insulation layer and the wall itself. In fact, the traditional coats have, yes, a low thermal conductivity value (λ=0,040-0,030 W/mK), but also have an extremely high breathability index, resulting as waterproof and therefore not breathable.

The use of plasters with reduced water vapor permeability, mixed with resins which slow down the setting process to make it easier to work with, has worsened the situation with the result that the vapors generated by the household can only escape through the doors and windows, while they should normally be let out through the walls. Therefore by applying a layer of non-breathing mortar on the interior walls and by making a thick layer of thermal insulation, using closed-cell materials, on the exterior walls, breathability, a primary characteristic for maintaining a healthy masonry, is completely compromised.

Actually, since the Eighties, the insulation systems used in residential homes have been a failure; they have actually been more harmful than beneficial, firstly because of the condensation formed by the gradient between the two temperatures (insulating layer and wall); secondly, because of the thermal bridges that frustrate any energy-saving attempt; thirdly, because the impassable insulating layer applied to the wall causes condensation and consequent Mold damaging the interior furnishings.

The long-term consequences of all this have been: serious damage to buildings, energy dispersion, heavy environmental impact and human health risks (eye, skin and airway irritations, increased allergies).



AFONTERMO®: SOME WORK DONE

PORDENONE:
Facade treated with **Afontermo®**

THE HOUSE OF "MONTALBANO" (RG):
Facade treated with **Afontermo®**

PISA: Facade treated with **Afontermo®**

AFONTERMO®: HOW TO APPLY

Afontermo®, is a ready-to-use paste contained in 14 lt. buckets. It can be applied indoors or outdoors in several layers, using a smooth-edged trowel, until the necessary thickness is reached, which is usualy between 4 and 12 mm.

Afontermo® can be painted using **Thermopittura Afon casa**
Fore more details regarding the application see the technical datasheet.

Applycation using a smooth-edged trowel

Grain size of the various finishes

TECHNICAL DATA SHEET

THERMAL CONDUCTIVITY	Applied indoors: λ = 0,001 W/mK - Applied outdoors: λ = 0,003 W/mK
REFLECTANCE	R=80%
VAPOUR RESISTANCE	μ = 9.1
SPECIFIC HEAT	1493 J/kgK (40°) - 2089 J/kgK (90°C)
APPROX YIELD TYPE A	2 lt/mq sp. mm 2/2,5
APPROX YIELD TYPE B	1.5 lt/mq sp. mm 1
SPECIFIC GRAVITY	490 Kg/mc
NON-COMBUSTIBLE	A1
CAPILLARITY WATER ABSORPTION RATIO	0.11 Kg/mq $min^{0.5}$
STRENGTH AND DEFLECTION CRITERIA	1.08 N/mm^2
RESISTANCE TO BUCKLING	0.38 N/mm^2
ADHERENCE BY DIRECT TRACTION	0.257 N/mm^2

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