DATA SHEET 2015

RANGE OF RESIL BASE POLYMER PRODUCTS

COST REDUCTION USING EXTERNAL THERMAL INSULATION SYSTEMS FOR SAVING ENERGY FROM THE BEGINNING.

EVERYTHING IS MUCH EASIER WITH THE NEW CLASSIFICATION OF RESIL BASE POLYMERS

From now on, it will be much easier than before to find the ideal RESIL BASE POLYMER product for each application. As from January this year, RESIL BASE POLYMERS dispersible polymeric powders are available for clients. We have also taken the opportunity to simplify the nomenclature making it more transparent.

FIVE LETTERS. COUNTLESS ADVANTAGES

Each product has been assigned a letter that symbolizes its main property. By doing so, the identification of the products by their technical characteristics is simplified and internationally unified, guaranteeing the correct choice of the most suitable product.

ALWAYS UNIQUE; **RESIL BASE POLYMERS** DISPERSIBLE POLYMERIC POWDERS

RESIL BASE POLYMERS dispersible polymeric powders not only have certain specific properties, but in addition, they also share a high quality level that provides enormous advantages:

- Maximum quality for every application
- Complete application safety
- Superior and constant product quality
- Compliance of all relevant standards
- Extraordinary workability and extended open time
- Excellent mechanical strength
- Formulation free of any coalescent agents and plasticizers (low emissions)

All **RESIL BASE POLYMERS** dispersible polymeric powders share these.

RANGE OF RESIL BASE POLYMER PRODUCTS

RESIL BASE POLYMERS **N** for neutral rheology.

RESIL BASE POLYMERS dispersible polymeric powders are characterized for not altering the rheology. They allow an almost totally free formulation and are suitable for the most varied applications: adhesives for tiles, external thermal insulation systems and self-levelling mortars.

RESIL BASE POLYMERS **T** for high thixotropy.

RESIL BASE POLYMERS dispersible polymeric powders particularly improve thixotropy. They are excellent, for example, for formulating slump-resistant products and for efficient wall applications as adhesives for tiles and regulating layers.

EUROTAFF™ cement®

RESIL BASE POLYMERS **L** for optimum levelling.

RESIL BASE POLYMERS dispersible polymeric powders provide fluidity. They are especially suited for obtaining smooth surfaces as they improve antifoaming properties, prevent sedimentation and at the same time favour fluidity.

RESIL BASE POLYMERS **F** for maximum fluidity without any fluidizers.

RESIL BASE POLYMERS dispersible polymeric powders possess fluidising properties and can optionally display the rheology of synthetic fluidizers. They are especially recommended for all applications that require minimum ecological impact and a highly safe procedure.

RESIL BASE POLYMERS **H** for extraordinary hydrophobia.

RESIL BASE POLYMERS dispersible polymeric powders with a particularly high water-repellent effect. They are used in all types of rendering mortars and grouts, in external thermal insulation systems.

The depletion of world natural resources due to the abuse of non-renewable energies is combined with the aggravating factor of the enormous cost of finding other alternatives. Therefore, hikes in the price of energy are going to persist, leaving only one possible way of reducing costs: energy saving.

BALANCE BETWEEN ECOLOGY AND ECONOMY.

The best way of saving energy in buildings is through adequate thermal insulation. The better the insulation, the less energy is required to create a lasting and at the same time pleasant indoor climate. The type of acclimatization, air conditioning or heating, is indifferent, because the thermal balance depends on the transfer of energy. Thermal insulation reduces energy costs, contributes to conserving the constructive quality, reduces running costs and lowers impact on the environment.

CONSULT A SPECIALIST!

With the range of RESIL BASE POLYMER products, we have decisively contributed to developing external thermal insulation systems since they appeared on the market. RESIL BASE POLYMERS dispersible polymeric powders are polymeric binders that improve the properties of adhesives and base coats used in external thermal insulation systems. With modification, the intention is to transform precise properties of the mortar and, hence, of the whole system.

TABLE OF CONTENT

LOWERING ENERGY COSTS

All efficient thermal insulation always has the same starting point: Exterior walls. As described below, this is where external thermal insulation systems achieve substantial energy savings.

According to the type of construction, calorie loss through walls can reach 75%. In detached and semidetached houses, for example, installing a thermal insulation system can translate into an energy saving of up to 60%.

Real saving.

Independent surveys prove this. According to a survey on a detached house with 24 cm thick walls, the installation of a thermal insulation system reduces energy consumption for heating, generated over 40 years, from 24,200 kwh/annum to 9,600 kwh/annum. Such a reduction means an approximate saving of 65,000 litres of oil, an amount which is sufficient for a car to travel 830,000 km, in other words, to go round the Earth 20 times.

In addition, a positive ecobalance.

The environment also benefits. If we accept that the fuel consumed in the above example was fossil based, using the thermal insulation system would have prevented the emission of 216 tons of carbon dioxide. External thermal insulation systems significantly reduce impact on the environment, provide an excellent ecobalance and comply with sustainability principles.

External as opposed to internal insulation.

Buildings without thermal insulation can resort to either external or internal thermal insulation. Whenever possible, preference should be given to external insulation. This type of insulation allows taking maximum advantage of the capacity of the walls to accumulate heat. Furthermore, thermal bridges are avoided and successfully prevent constructive damages due to the formation of water condensation without having to invest in costly corrective measures.

Exterior wall with interior lining.

Advantages:
-lower heating costs in less used rooms.

Disadvantages:
- thermal inertia is not used
-sudden thermal changes in the masonry
-conduits and pipes in the walls are in the frost area
-thermal bridges
-additional internal insulation is normally required against vapour to prevent condensation.

Exterior wall with exterior lining.

Advantages
-excellent thermal insulation
-large saving in heating costs
-only weak thermal bridges – full advantage taken of thermal inertia
-pleasant climate – protection against summer heat
-constructive damages of a thermal origin are avoided
-great design flexibility –increase in construction value

Disadvantages:
-not suitable for restoring facades of protected buildings.

SIMPLY INTELLIGENT: RATIONAL THERMAL INSULATION

External thermal insulation systems combine a series of materials that each have a specific function. The composition of the systems mainly depends on the climate and type of building.

1- Wall. Suitable bases for external thermal insulation systems include brick masonry, rendering or not, concrete, wood and certain wood-derived materials.

2- Adhesive. Dry cementitious mortars modified with RESIL BASE POLYMERS dispersible polymeric powders. Whenever necessary for safety reasons, thermal insulating sheets can be fixed using special plugs.

3- Insulating sheets. In addition to rigid polystyrene foam sheets, other insulating material can be used such as mineral fibre, cork or rock wool.

4- Base coat. Dry cementitious mortar modified with RESIL BASE POLYMERS dispersible polymeric powders reinforced with fibreglass mesh that provides mechanical stability and additional weather protection.

5- Alkali-resistant fibreglass mesh. Increases mechanical stability by providing high tensile strength.

6- Finish. Rendering or decorative cladding and ceramic tiling that make designing unlimited.

ONE BY ONE. THE MAIN COMPONENTS:

The insulating material.

This is the core of the system and can comprise rigid sheets of polystyrene foam, mineral fibre, cork or rock wool. They are all excellent thermal insulators. The insulting power of building materials is measured by the thermal transmission coefficient (K).

The thermal transmission coefficient.

Used to determine the heat flow, in watts, that crosses a square metre of wall when there is a temperature difference in Kelvin degrees between the two. Graphically it can represent a light bulb hanging in the centre of a sphere. The amount of heat transferred to the outside can vary depending on the type of wall. K values are therefore decisive factors of thermal balance. Temperatures of the state of balance depend upon the amount of heat that the wall can retain. The coefficient of thermal transmission of different building materials can vary enormously. Solid materials have very high K coefficients, whereas thermal insulating materials have very low values.

Table of thermal transmission coefficients.

Material	K Value	ºC
Concrete	4.40	1.4
Solid brick	2.29	1.6
Aerated concrete	1.398	4.3
Cork	0.353	17
Polystyrene foam	0.315	19
Mineral fibre boards	0.315	19

The adhesive.

This material carries out a double function. On the one hand, it is used for fixing insulating sheets to the wall and, on the other hand, it re-establishes the flatness of the base. Adhesives normally contain dry cementitious mortar and RESIL BASE POLYMERS dispersible polymeric powders. Adding RESIL BASE POLYMERS improves the adherence of the adhesive and gives it elasticity. This elasticity is extraordinarily important for durability, because only this can compensate slight displacements later on between the base and the sheets.

The base coat.

This layer acts as protection against mechanical loads and the weather. Generally, it is normally made up of a layer of mortar reinforced with fibreglass mesh. The crucial thing in these cases is that the joint between the base, the sheet and the mesh is strong and at the same time elastic.

Mechanical strength.

The amount of impact energy that a base coat is capable of absorbing without deteriorating depends upon:
- the insulting material used
- the type of fibreglass mesh
- the elasticity of the base coat.

In turn, the elasticity of the base coat depends upon the quantity and the type of resin that the dispersible polymeric powder used contains. Mortars modified with RESIL BASE POLYMERS dispersible polymeric powders possess the adherence and elasticity necessary to guarantee maximum mechanical strength of the system.

The finish.

You can paint the base coats or even render or decorate them with ceramic cladding. In other words, design finish is completely free.

SIMPLY EFFICIENT: EASY TO INSTALL AND LONG-LASTING

Excellent versatility.

In most cases, external thermal insulation systems are the best option because they are easy to install, and do not require any complicated additional measures. Rendered or non-rendered walls, concrete, wood and certain materials are all equally suitable bases.

Refurbishment and new buildings.

External thermal insulation systems are used not only in old buildings but also for newly constructed ones. Regarding refurbishment, these systems comprise a unique and simple way of preparing buildings for the future.

Procedure: only four steps.

1. Apply the adhesive to the thermal insulating sheets.

2. Place the sheets flush on the old brickwork/masonry.

3. Once the adhesive has hardened, apply the base coat and install the fibreglass mesh.

4. Finally, cover the façade with a finish coat: mineral plaster or synthetic resin, silicone or silicate silicone, or either ceramic cladding.

TESTED AND PROVEN: FOR CONCERTING WELL-BEING INTO A STANDARD

External thermal insulation systems are normally subject to standards and procedures approved in various countries. Our experience is at your disposal. Our team of experts works closely with customers to continually improve the range of RESIL BASE POLYMERS dispersible polymeric powders and satisfy the most demanding requirements.

The certified Guides for the European technical approval document for systems comprising insulation with layers of rendering/plastering (ETAG 004) regulate the test methods for the various different components of the system such as, for example, thermal insulating sheets, fabrics, adhesives, base coasts and finishes. The most relevant properties are the tensile strength of the adhesive, the impact strength of the base coat (deformability) and the water repellence (hydrophobia). All the characteristics influence the quality of the system and can be adjusted to specific requirements using RESIL BASE POLYMERS dispersible polymeric powders.

Greater tensile strength of the adhesive.

RESIL BASE POLYMERS dispersible polymeric powders increase the tensile strength of the adhesive and in this way the durability and resistance of the whole system. Sufficient modification makes it possible for the tensile strength of the adhesive and the base coat to enjoy greater hardness than the insulting sheet itself, even after having been subject to decades of the action from heat, rain and freezing conditions.

Greater impact resistance of the base coat.

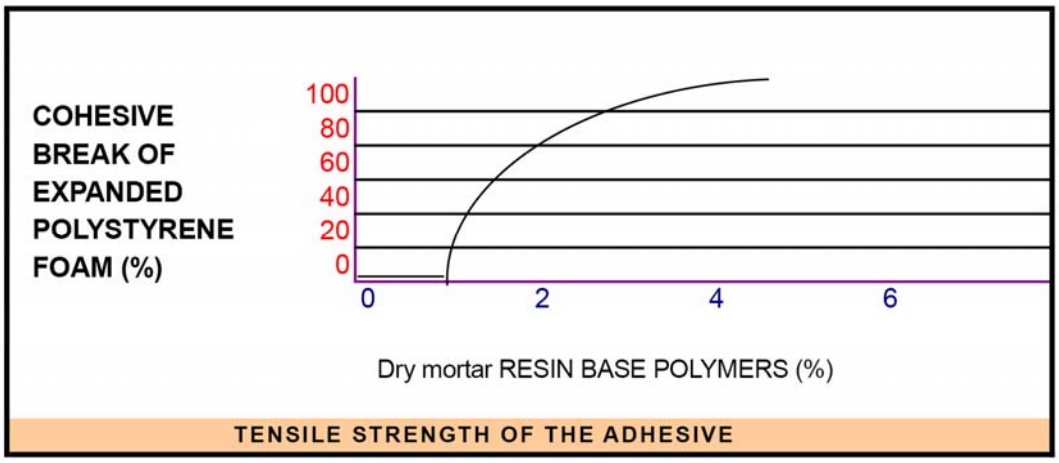
The base coat protects the sheets against the weather and provides mechanical resistance. The reinforcement mass must be elastic in order to comply with this double function. This elasticity is obtained by using RESIL BASE POLYMERS dispersible polymeric powders. This property has been proven by the ball impact test: the strength of the base coat quickly increases the content of RESIL BASE POLYMERS in the mortar.

TIME ELAPSED IN THE BACKGROUND

Greater water repellence without additional water repellents.

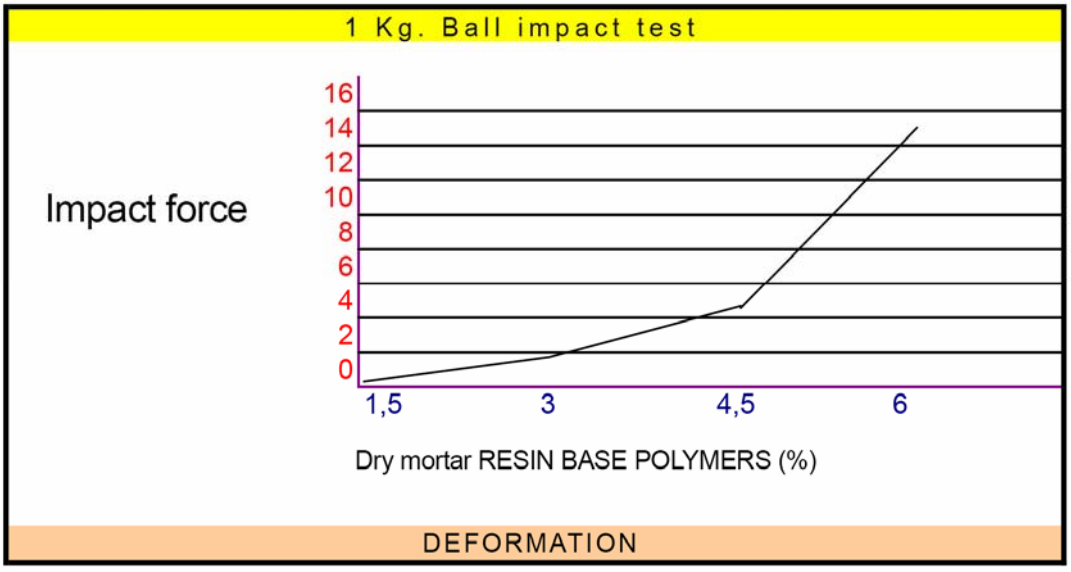
External thermal insulation systems are continually exposed to the weather. The durability of the system depends, above all, of the degree of humidity. To adequately protect not only the system but also the underlying materials, the base coat must be water repellent. In some cases, metallic soap type water repellents are used. By using RESIL BASE POLYMERS dispersible polymeric powders you can dispense with other water repellents. RESIL BASE POLYMERS dispersible polymeric powders H are hydrophobic and provide mortars with excellent water repellent properties.

GREATER TENSILE STRENGTH.

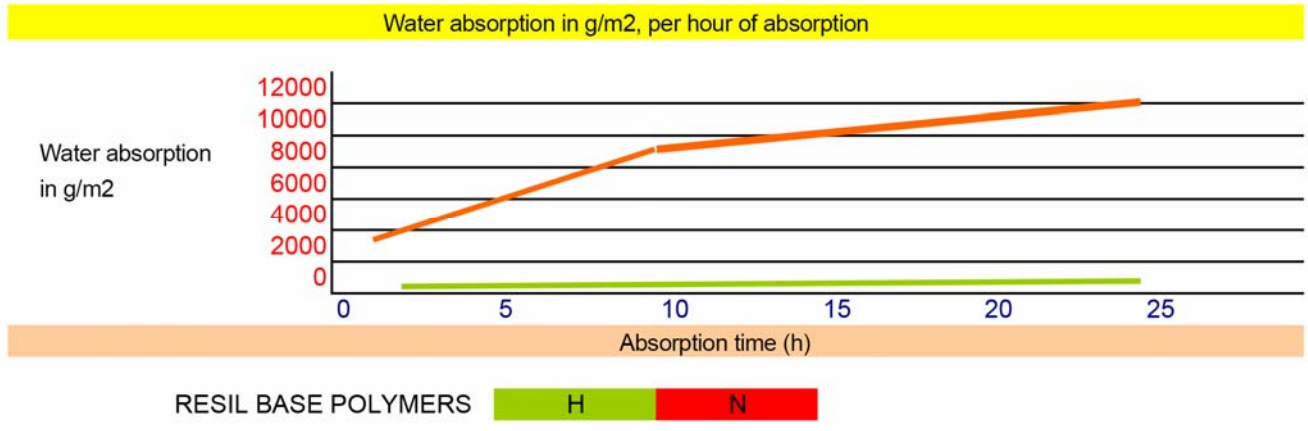


Tensile strength of the adhesive on a polystyrene sheet after ageing in the wet (12 days in standard weather conditions, 2 days immersed in water) and 20% cement content.

GREATER IMPACT RESISTANCE OF THE BASIC COATING

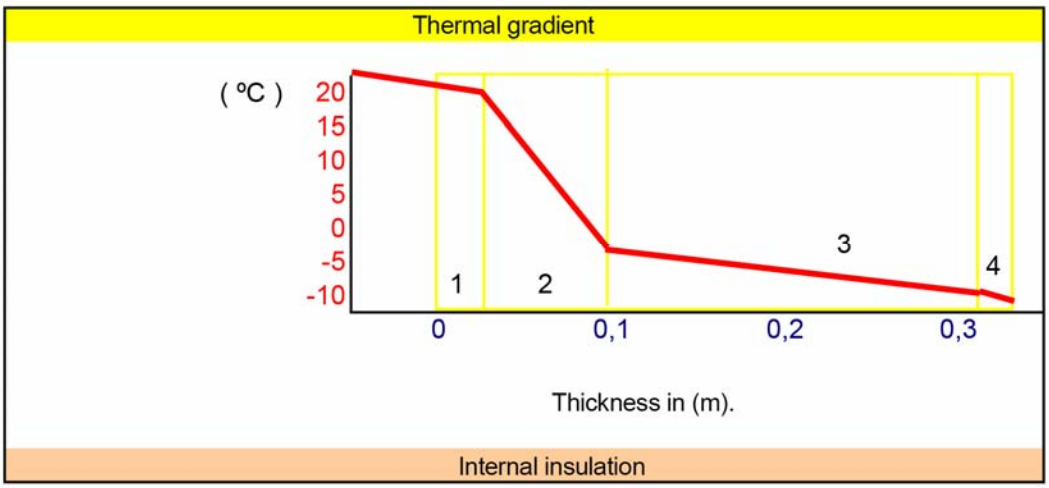


GREATER WATER REPELLENCE WITHOUT ADDITIONAL WATER REPELLENTS



Water absorption of a basic coating with other water-repellent dispersible polymeric powders, test tube of aerated concrete.

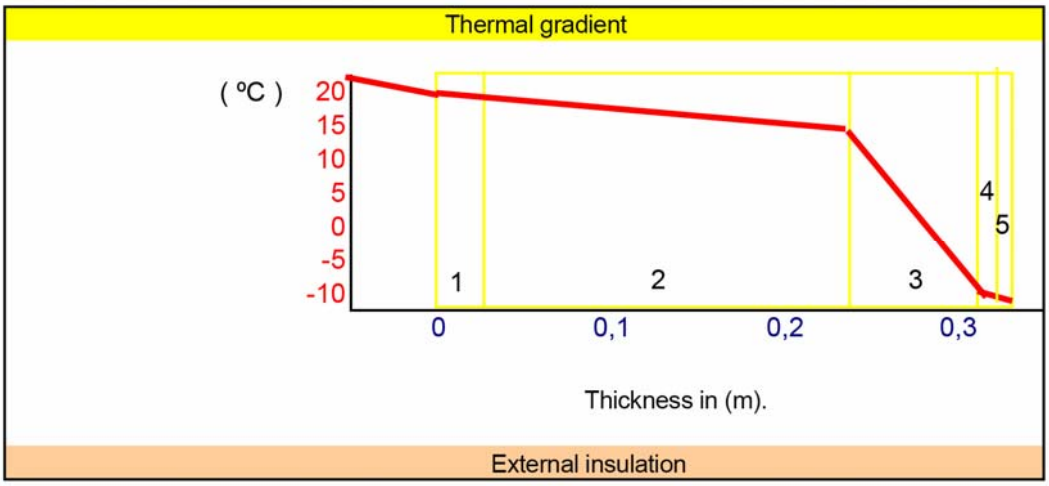
EXTERIOR BRICKWORK LINED ON THE INSIDE



1. 15 mm. Internal plastering
2. 80 mm. Expanded polystyrene foam sheet.
3. 240 mm. Brickwork.
4. 20 mm. External rendering

EUROTAFF™ cement ®

EXTERIOR BRICKWORK LINED ON THE OUTSIDE



1. 15 mm. Internal plastering
2. 240 mm. Brickwork.
3. 80 mm. Expanded polystyrene foam sheet.
4. 3 mm Basic coating with fibreglass mesh.
5. 4 mm. External rendering.