



GENERAL CATALOGUE 2020





The **AMA International Group** grew up around AMA spa, which was set up in 1967 by Luciano Malavolti (who is still group president) to ensure the availability of accessories and spare parts for farming and gardening machinery. With its 11 production facilities and 14 distribution subsidiaries in major European countries, over 1,000 employees in 20 different countries and a range of over 100 thousand articles, the AMA group is

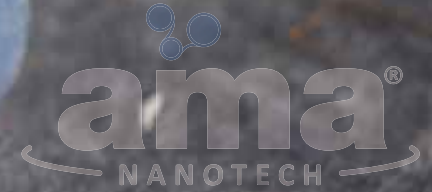
currently able to supply component parts and equipment for assembling and servicing slow-moving farm and greenery maintenance vehicles. AMA includes **AMA NANOTECH**, belonging to the AMA COMPOSITES division – based in Campogalliano (MO) - **design, structuring and development for the Building & Construction sector.** To better comply with increasingly more stringent regulations in the field of

sustainable development and home-living well-being, AMA NANOTECH has designed a range of products with one-of-a-kind and innovative technical-performance characteristics. Besides the line of nano-technological insulating products in Aerogel - in rolls or panels - AMA NANOTECH has recently extended its range of B&C solutions with the THERMOGEL PAINT paint line.

These are heat-reflecting paints containing Aerogel and other top-quality nano-technological components, without the use of glass or ceramic micro-spheres, which block the dispersion of energy through walls, drastically reducing thermal bridges and preventing any mould/mildew without using chemical additives.

# AEROGEL

a few more details



**Aerogel** are substances we encounter in our everyday lives! Take for instance the meringues which pastry cooks have been preparing since time immemorial: meringue consists of whipped egg white and sugar and when baked, a feeling of heat is immediately noticed.

This phenomenon is due to the fact that the air contained in the meringue is trapped in millions of microscopic bubbles. As in the case of the amorphous silica Aerogels, the air contained in the meringues cannot therefore circulate and exchange heat and this way it becomes an excellent heat insulator.

The first Aerogel molecules date back to 1931, the year Steven Kistler of the College of the Pacific at Stockton in California discovered the way to dry the gel without it collapsing.

By bringing the liquid to the super-critical state, and therefore

bringing both temperature and pressure to super-critical state, the pressure is gradually reduced: the super-critical fluid is then expelled by the gel without the destructive effects caused by surface tension. What remains is an Aerogel, still the lightest solid substance existing in the world, along with graphene, consisting of 98% air and 2% amorphous silica, the main component of glass. Besides being extra-light, Aerogel is an excellent heat insulator and withstands very high temperatures.

Aerogel is a type of synthetically amorphous silica which differs from crystalline silica. Synthetically amorphous silica has no effects on health – as declared by the OECD (United Nation's Organization for Economic Cooperation and Development) – unlike crystalline silica, which can cause respiratory diseases such as silicosis.

To best use the extraordinary heat characteristics of the product, a system has been patented to be able to trap the Aerogel inside a fibrous structure, ensuring the same levels of insulation, without having to do without the easy movement and transformation of the product.

Aerogel-based products have shown themselves to maintain the same heat insulation performance even under considerable mechanical stress.



# CERTIFICATES

## AEROGEL



  
 Organismo di Ricerca  
 Comunicazione Commissione Europea  
 3006/C-333/01

**RAPPORTO DI PROVA**  
 (SQM\_429\_2019)

**DETERMINAZIONE DELLA STABILITA' DIMENSIONALE IN CONDIZIONI SPECIFICATE DI UMIDITA' E TEMPERATURA DI UNA TIPOLOGIA DI ISOLANTE TERMICO PER EDILIZIA A BASE DI LANA MINERALE DENOMINATO "AMAGEL A2" FORNITO DALLA DITTA "AMA COMPOSITES S.R.L." - CAMPOGALLIANO (MO)**

LUOGO E DATA DI EMISSIONE:	Faenza, 13/12/2019
COMITENTE:	IRC CNR Istituto per la tecnologia della costruzione Segretario tecnico Unico del IAB Italiani
STABILIMENTO:	AMA Composites S.r.l. Via Repubblica 7 43011 Campogalliano (MO)
TIPO DI PRODOTTO:	Isolante termico per edilizia a base di lana minerale e aerogel
NORMATIVE APPLICATE:	EN ISO 10271-1:2011 EN 12088
DATA RECESSIONE CAMPIONI:	14/11/2019
DATA ESECUZIONE PROVE:	Novembre 2019
PROVE ESEGUITE PRESSO:	CertMac, Faenza

NOTA: I risultati contenuti nel presente rapporto di prova si riferiscono esclusivamente ai campioni etichettati alle prove di seguito descritte. E' vietato ad uso esclusivo del Committente nel proprio ed eventuale proprio stato nominale cogente e non può essere il prodotto di forme cartacee o digitali parzialmente, senza l'approvazione scritta del laboratorio.

Esecuzione	Redazione	Approvazione
<i>F. Geronzi</i>	<i>M. M. M. M.</i>	<i>L. L. L. L.</i>

Pagina 1 di 4

Gertimac - via Roma 40/1  
 44019 - Faenza (RA)  
 Tel. +39 0545 441001  
 www.gertimac.it  
 info@gertimac.it

E' un'entità che si occupa di ricerca e sviluppo in campo aerogel e nanotecnologie. S.p.A. di diritto italiano capitale sociale € 20.000.000,-




  
 Organismo di Ricerca  
 Comunicazione Commissione Europea  
 3006/C-333/01

**RAPPORTO DI PROVA**  
 (SQM\_277\_2019)

**DETERMINAZIONE SPERIMENTALE DELLE PROPRIETA' DI TRASMISSIONE DEL VAPORE ACQUOSO (NORMA UNI EN 12088) DI UNA TIPOLOGIA DI ISOLANTE TERMICO PER EDILIZIA A BASE DI LANA MINERALE DENOMINATO "AMAGEL A2" FORNITO DALLA DITTA "AMA COMPOSITES S.R.L." - CAMPOGALLIANO (MO)**

LUOGO E DATA DI EMISSIONE:	Faenza, 13/12/2019
COMITENTE:	IRC CNR Istituto per la tecnologia della costruzione Segretario tecnico Unico del IAB Italiani
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DATA RECESSIONE CAMPIONI:	14/11/2019
DATA ESECUZIONE PROVE:	Novembre - Dicembre 2019
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<i>G. De Marco</i>	<i>G. De Marco</i>	<i>L. L. L. L.</i>

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**RAPPORTO DI PROVA**  
 (SQM\_276\_2019)

**DETERMINAZIONE SPERIMENTALE DELLO SPESSORE DI UNA TIPOLOGIA DI ISOLANTE TERMICO PER EDILIZIA A BASE DI LANA MINERALE DENOMINATO "AMAGEL A2" FORNITO DALLA DITTA "AMA COMPOSITES S.R.L." - CAMPOGALLIANO (MO)**

LUOGO E DATA DI EMISSIONE:	Faenza, 17/12/2019
COMITENTE:	IRC CNR Istituto per la tecnologia della costruzione Segretario tecnico Unico del IAB Italiani
STABILIMENTO:	AMA Composites S.r.l. Via Repubblica 7 43011 Campogalliano (MO)
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## RAPPORTO DI PROVA

(SQM\_423\_2019)

**DETERMINAZIONE SPERIMENTALE DELLA RESISTENZA A TRAZIONE PERPENDICOLARE ALLE FACCE DI UNA TIPOLOGIA DI ISOLANTE TERMICO PER EDILIZIA A BASE DI LANA MINERALE DENOMINATO "AMAGEL A2" FORNITO DALLA DITTA "AMA COMPOSITES S.R.L." - CAMPOGALLIANO (MO)**

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**LUOGO E DATA DI EMISSIONE:** Firenze, 12/12/2019

**COMITANTE:** **RIC CNR**  
Istituto per le tecnologie della costruzione  
Segreteria Tecnica Unico del TAE Italiani

**STABILIMENTO:** **AMA Composites S.r.l.**  
Via Repubblica 7  
42011 Campogalliano (MO)

**TIPO DI PRODOTTO:** Isolante termico per edifici a base di lana minerale e aerogel

**NORMATIVE APPLICATE:** SIO 040037-00-1301  
EN 12467

**DATA RICEVIMENTO CAMPIONI:** 14/11/2019

**DATA ESECUZIONE PROVE:** Novembre 2019

**PROVE ESEGUITE PRESSO:** CertiMac, Firenze

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Esecuzione	Redazione	Approvazione
Ing. Maria Marganti	Ing. Maria Marganti	Ing. Luca Lighi

Firenze, \_\_\_\_\_ Pagina 1 di 1

Qualità e Sicurezza con  
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conformità CE

ENEA  
Ente Nazionale per le  
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Tecnologiche

Consiglio Nazionale delle Ricerche

Organismo di Ricerca  
Comunicazione Commissione Europea  
3004/C 302/01

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## RAPPORTO DI PROVA

(SQM\_273\_2019)

**DETERMINAZIONE SPERIMENTALE DELLA RESISTENZA A COMPRESIONE DI UNA TIPOLOGIA DI ISOLANTE TERMICO PER EDILIZIA A BASE DI LANA MINERALE DENOMINATO "AMAGEL A2" FORNITO DALLA DITTA "AMA COMPOSITES S.R.L." - CAMPOGALLIANO (MO)**

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**LUOGO E DATA DI EMISSIONE:** Firenze, 12/12/2019

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Istituto per le tecnologie della costruzione  
Segreteria Tecnica Unico del TAE Italiani

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42011 Campogalliano (MO)

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**DATA RICEVIMENTO CAMPIONI:** 14/11/2019

**DATA ESECUZIONE PROVE:** Novembre 2019

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## RAPPORTO DI PROVA

(SQM\_274\_2019)

**DETERMINAZIONE SPERIMENTALE DEL COMPORTAMENTO SOTTO CARICO CONCENTRATO DI UNA TIPOLOGIA DI ISOLANTE TERMICO PER EDILIZIA A BASE DI LANA MINERALE DENOMINATO "AMAGEL A2" FORNITO DALLA DITTA "AMA COMPOSITES S.R.L." - CAMPOGALLIANO (MO)**

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Istituto per le tecnologie della costruzione  
Segreteria Tecnica Unico del TAE Italiani

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# AEROPAN

Minimum space, maximal insulation



**Aeropan®** is a panel designed for the heat insulation of those building structures which require a higher degree of insulation in the least possible space. It consists of a nano-technological insulation in Aerogel coupled with a polypropylene breathing membrane reinforced with glass fibre and has been designed for reduced-thickness heat insulation.

With a thickness of 10 mm - and heat conductivity of 0.015 W/mK - Aeropan® allows reducing energy dispersion and recovering space in civil, commercial and residential buildings.

The properties of the panel - minimum heat conductivity, flexibility and compression resistance, hydrophobicity and easy installation - make it an indispensable product for providing high levels of heat insulation both in new buildings and in the rehabilitation of older ones.

**his product is ideal for application on outside perimeter walls and inside walls, intrados, window padding, roofs and for solving thermal bridges.**

Aeropan® is the perfect choice for outdoor and indoor restructuring, as well as building recovery and historical buildings subject to architectural restraints which require top levels of living comfort.

## PERFORMANCE LEVELS

Aeropan® is a semi-rigid insulating panel, made of reinforced high-density fibres, completely saturated with nano-porous Aerogel with very low heat conductivity and a PP finish reinforced with glass fibre.

With a thickness of just 10 mm, the panel is able to provide heat insulation between -200°C and + 200°C.

These features make Aeropan® **extremely suitable for use in a range of environmental conditions**, without performance levels and durability being affected in any way.

*The panel must be laid with the AEROPAN® writing facing the external side which will receive the finishing smoothing.*



## AEROPAN® TOOK PART IN THE CIP - ECO INNOVATION PROGRAMME

The CIP - Eco Innovation programme presents a consistent picture to increase the competitive edge and the innovation potential within the European Union. The ECO Innovation section has promoted the spreading on the market of eco-innovative technologies and/or processes through support to pilot and first-application commercial projects. In particular, it provided support to sustainable techniques, technologies, products and processes which can be replicated at community level, and which, in a synergic way, are able to reduce environmental impact and foster less and more efficient use of natural resources, including energy.



## TECHNICAL FEATURES

TECHNICAL DATA	VALUES	UNIT	TEST METHOD
Panel format	1400x720	mm	
Thicknesses	6/10/20/30/40/50/60	mm	
Thermal conductivity ( $\lambda_p$ ) a 10 °C	0,015	W/m·K	EN12667
Permeability to water vapor	0,07	m	EN12086
Engagement limit temperatures	-50 +450	°C	
Compressive strength (for a deformation of 10%)	80	KPa	EN826
Specific heat	1.000	J/kgK	ASTM E 1269
Nominal density	230 ± 10%	kg/m <sup>3</sup>	
Fire reaction class	C S <sub>1</sub> D <sub>0</sub>		EN 13501-1
Long-term water absorption by partial immersion	Wp ≤ 0,01	kg/m <sup>2</sup>	EN 1609
Color	white		

## HEAT RESISTANCE

THICKNESS	6	10	20	30	40
R (m <sup>2</sup> K/W)	0,40	0,67	1,34	2,01	2,68

## OUTDOOR/INDOOR THERMAL INSULATION FINISHING

Heat insulation of the outdoor/indoor finishing system type, for vertical and horizontal surfaces, such as overhanging balconies and the like, consisting of a semi-rigid panel, made up of a layer of Aerogel silica reinforced with PET fibres (felt), of the Aeropan® type, water repellent and breathing, supplied in 1400x720 mm panels, with a nominal thickness of 20 mm, 30 mm, 40 mm) with volumetric density of 230 kg/m<sup>3</sup>, heat conductivity 0.015 W/mK, heat resistance Rd 0.67 m<sup>2</sup>K/W per cm of thickness, temperature of use between -200°C /+200°C, fire reaction Euroclass CS<sup>1</sup>D<sub>0</sub>, permeable to water vapour ( $\mu$  5), impermeable to surface water and/or immersion with water contact angle of no less than 150°,

extended on flat or curved surfaces, vertical or horizontal, after gluing, installed on smooth, dry, dust-free and perfectly integral surfaces devoid of any roughness.

# AEROPAN APPLICATION

The correct Aeropan installation

## Examination of the state of the existent support

The plaster layer is fundamental to obtain the perfect flatness of the substrate. This requisite is ideal to install correctly a system which envisages the use of a very reduced-thickness insulation. Noteworthy is that it is necessary to prepare a cohesive and dust-free base: this is what allows the perfect adhesion of the adhesive. In case of necessity, it is appropriate to proceed with the drafting of a surface fixing primer.

## Adhesive

The application of the adhesive must be realised on the back of the panel (the part with the rigid crust is the one that has to remain extern and receive the successive finishing shaving); use a toothed spatula (teeth of 6-8 mm) applying the appropriate pression, lay evenly the adhesive on the entire surface of the panel.

The adhesive must not penetrate the joints, but in case they form themselves, these must always be filled with the same insulating material to prevent the formation of thermal bridges and possible cracks.

Between the insulating panel and the support there must not circulate air, hence the insulating panel must be fixed to the support in an even way applying the adhesive on the entire surface of the panel itself. To guarantee a better adhesion, it is possible to apply a layer of adhesive on the support too (use the same toothed spatula).

Afterwards, apply the panel to the support being careful to properly make every area adhere (if necessary, proceed with the superficial beating of the panel with a plastic plastering trowel); verify the perfect adhesion and flatness with the use of an aluminium straight edge.



## Plug

The insulating sheets must be mechanically fastened using plugs. The plugging diagram and number of plugs varies according to the type of wall, but always respecting at least 6 plugs per square metre. The choice of the correct plug will depend on the length and type of the substrate.

The length of the plugs will depend on the anchor depth, on the thickness of the old plaster, on the thickness of the glue

and on the thickness of the insulating material. The plugs must be installed after the hardening of the adhesive, taking care of maintaining a minimal distance of 15 cm to the corners of the panel. Use exclusively plugs of type DIPK Fischer or similar.



### Smoothing product

For smoothing, the same product can be used as that for gluing. This step necessarily requires 2 coats.

- The first coat creates 2/3 of the total final thickness and must be applied with a 5mm American toothed spatula
- After the first coat, the reinforcing mesh, which is a fundamental element to prevent the creation of cracks between the joints of a panel and the other, must be applied
- The second layer must be applied with a smooth spatula
- We recommend a coverage of at least 1.5 Kg per mm of thickness.



### Reinforcing mesh

Fibreglass mesh is used to prevent cracks which could be created in the facade due to mechanical forces and heat fluctuations that the facade itself has to endure. This also is useful to prevent cracks between the joints of the panels. This will have to be suitably treated to protect it against the alkalis contained in the smoothing product which could break it down. It must also have a good gram weight, between 160-220 g/m<sup>2</sup>. The mesh must be positioned in the third external of the smoothing layer. The inner angles of architraves-soffits must be reinforced with mesh strips and at all opening angles a sweepback will have to be placed on the mesh.



### Primer/Fixative

Use of the primer prepares the surface and makes it uniform. This will then be covered with the finishing coat, avoiding colour irregularities due to different reactions between materials and/or different absorption possibilities.

### Finish

The system must be protected against the weather with finishing coats or by painting. Various types of products are available on the market: silica, siloxane, acrylic, vinyl, quartzes, etc. Between all of these alternative products, we always recommend using good-quality products with high transpiration.

# AEROPAN FAST

The pre-finished Aerogel system for internal/external heat insulation



From the synergy of **Ama Composites** and **Edilteco Group**, and their international patents in the heat insulation sector comes **AEROPAN FAST**: the pre-finished Aerogel system for interior/exterior heat insulation.

**AEROPAN FAST** is a pre-finished heat-insulating wall and ceiling panel (indoor or outdoor).

**It consists of a nano-technological Aerogel insulating product** coupled with a breathing membrane in polypropylene reinforced with fibreglass.

The **AEROPAN FAST** panel is supplied already smoothed with drowned fibreglass mesh and side overlaps, as well as ready to accommodate fastening plugs. The panel is also pre-prepared for filling in between the various panels.

After installing the filled and smoothed **AEROPAN FAST panel** apply suitable colour finish in paste to obtain a perfect workmanlike result. Thanks to its pre-applied finish, installation can also be performed in bad weather conditions and what is more this protects the panels during worksite jobs and handling and protects them against accidental deterioration.

**The AEROPAN FAST panel provides superior-level thermal performance**, which makes it ideal for reaching energy levels suitable for certification according to applicable standards even in small spaces.

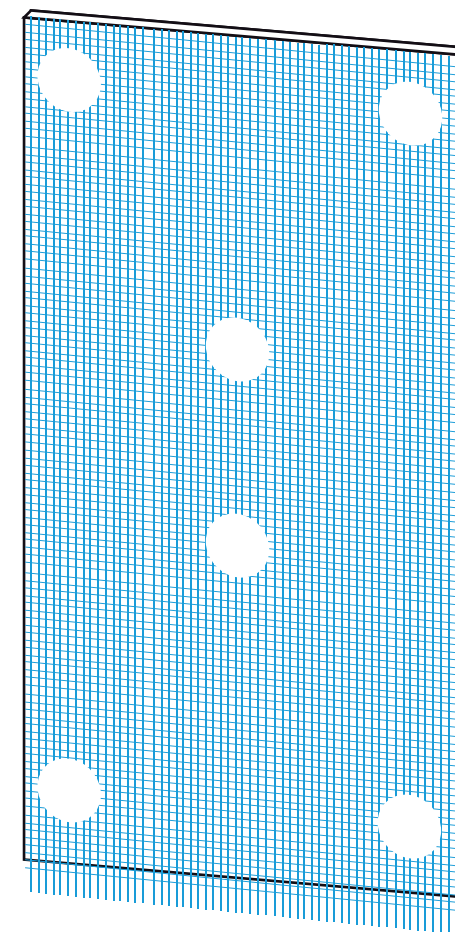
**AEROPAN FAST makes installation on worksites fast and safe**, considerably increasing productivity.

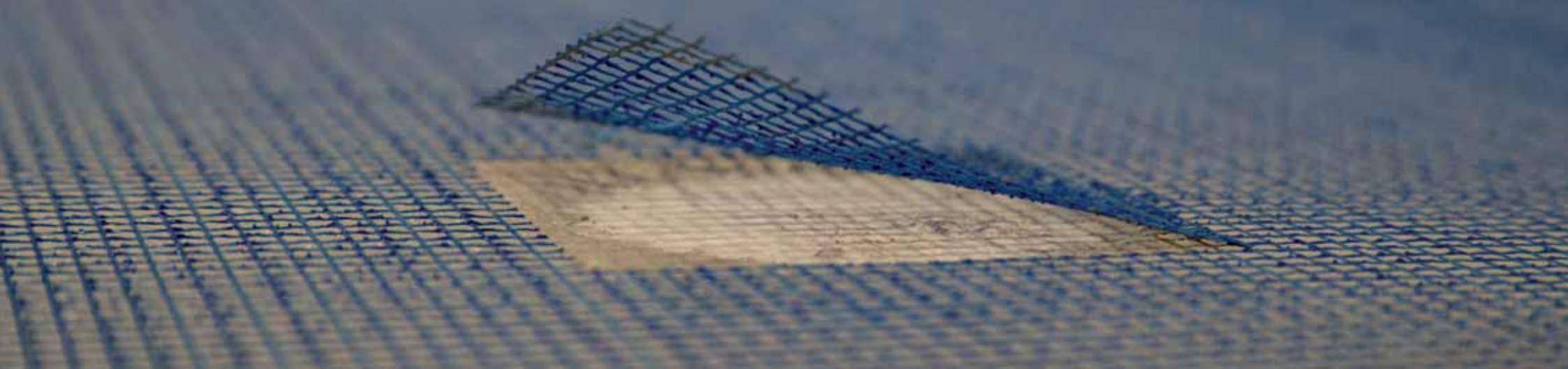
**AEROPAN FAST is perfect for indoor and outdoor heat insulation within the field of energy requalification**, permitting the elimination of heat bridges and the total protection of

surfaces from adverse weather conditions. It is the ideal product for applications on external perimeter walls and indoor walls, intrados, window intrados, ceilings and for solving thermal bridges.

**AEROPAN FAST is the right choice for indoor and outdoor restructuring jobs, for building rehabilitation and for historical buildings subject to architectural restraints** which require utmost living comfort.

*In partnership with:*





## TECHNICAL FEATURES

TECHNICAL DATA	VALUES	UNIT	TEST METHOD
Panel format	1400x720	mm	
Thicknesses	10/20/30/40/50/60	mm	
Thermal conductivity ( $\lambda_p$ ) a 10 °C	0,015	W/m·K	EN12667
Permeability to water vapor	0,07	m	
Engagement limit temperatures	-50 +450	°C	
Compressive strength (for a deformation of 10%)	80	KPa	EN826
Specific heat	1.000	J/kgK	ASTM E 1269
Nominal density	230 ± 10%	kg/m <sup>3</sup>	
Fire reaction class	C S <sub>1</sub> D <sub>0</sub>		EN 13501-1
Long-term water absorption by partial immersion	Wp ≤ 0,01	kg/m <sup>2</sup>	EN 1609
Color	white		

## HEAT RESISTANCE

THICKNESS	10	20	30	40
R (m <sup>2</sup> K/W)	0,67	1,34	2,01	2,68

## INTERIOR/EXTERIOR HEAT INSULATION SPECIFICATION

Realization of interior/exterior heat insulation, for vertical and horizontal surfaces, such as overhanging balconies or the like, made up of a semi-rigid panel, consisting of a layer of silica AEROGEL reinforced with PET fibres (felt), of the AEROPAN FAST type, water-repellent and transpiring, supplied in 1400x720 mm panels, already smoothed with drowned fibreglass mesh and with overlaps ready for fastening plugs, for a nominal thickness of 10 mm (or in panels with 20 mm, 30 mm, 40 mm, 50 mm, 60 mm thickness) with volumetric density 230 kg/m<sup>3</sup>, heat conductivity 0.015 W/mK, heat resistance Rd 0.67 m<sup>2</sup>K/W per cm of thickness, working temperature between -200°C /+200°C, fire reaction euroclass CS<sup>1</sup>D<sub>0</sub>, permeable to the diffusion of vapour ( $\mu$  5), impermeable to surface water and/or immersion with

water contact angle of not less than 150°, spread on flat or curved, vertical or horizontal surfaces, after gluing and installed on smooth, dry, non-dusty, perfectly integral surfaces without any trace of roughness.

# AEROPAN FAST APPLICATION

The correct installation of Aeropan Fast

## **Examination of the state of the existent support**

The plaster layer is fundamental to obtain the perfect flatness of the substrate. This requisite is ideal to install correctly a system which envisages the use of a very reduced-thickness insulation. Noteworthy is that it is necessary to prepare a cohesive and dust-free base: this is what allows the perfect adhesion of the adhesive. In case of necessity, it is appropriate to proceed with the drafting of a surface fixating primer.

## **Adhesive**

The application of the adhesive must be realised on the back of the panel (the part with the rigid crust is the one that has to remain external and receive the finishing shaving); use a toothed spatula (teeth of 6-8mm) applying the appropriate pressure, lay evenly the adhesive on the entire surface of the panel. The adhesive must not penetrate the joints, but in case they form themselves, these must always be filled with the same insulating material to prevent the formation of thermal bridges and possible cracks. Between the insulating panel and the support there must not circulate air, hence the insulating panel must be fixed to the support in an even way applying the adhesive on the entire surface of the panel itself. To guarantee a better adhesion, it is possible to apply a layer of adhesive on the support too (use the same toothed spatula). Afterwards, apply the panel to the support being careful to properly make every area adhere (if necessary, proceed with the superficial beating of the panel with a plastic plastering trowel); verify the perfect adhesion and flatness with the use of an aluminium straight edge.

## **Plug**

The insulating sheets must be mechanically fastened using plugs. The locations for the insertion of the plugs are already existent on every panel. The choice of the correct plug will depend on the length and type of the substrate. The length of the plugs will depend on the anchor depth, on the thickness of the old plaster, on the thickness of the glue and on the thickness of the insulating material. The plugs must be installed after the hardening of the adhesive, taking care of maintaining a minimal distance of 15 cm to the corners of the panel. Use exclusively plugs of type DIPK Fischer or similar.

### **Smoothing product**

For smoothing, the same product can be used as that for gluing. This step necessarily requires 2 coats.

The first coat creates 2/3 of the total final thickness and must be applied with a 5mm American toothed spatula

the second layer must be applied with a smooth spatula

Total thickness of the two smoothing coats is 2-4 mm.

We recommend a coverage of at least 1.5 Kg per mm of thickness.

### **Primer/Fixative**

Use of the primer prepares the surface and makes it uniform. This will then be covered with the finishing coat, avoiding colour irregularities due to different reactions between materials and/or different absorption possibilities.

### **Finish**

The system must be protected against the weather with finishing coats or by painting. Various types of products are available on the market: silica, siloxane, acrylic, vinyl, quartzes, etc. Between all of these alternative products, we always recommend using good-quality products with high transpiration.

# AEROGIPS

The plasterboard and Aerogel panel



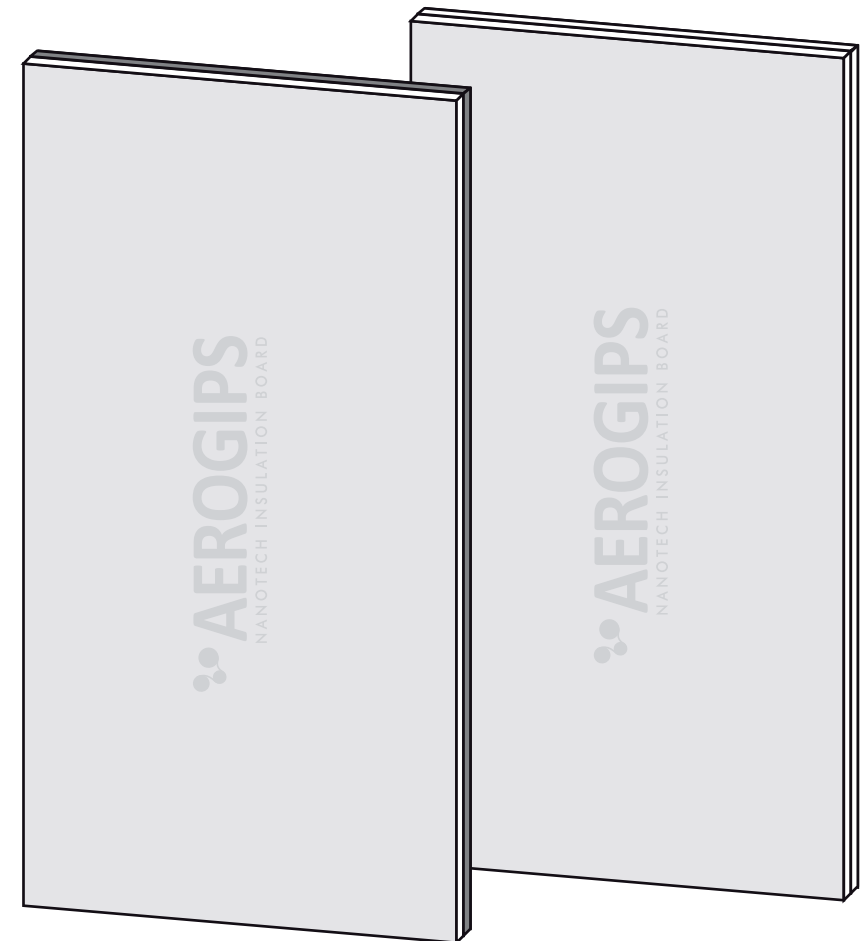
**Aerogips** is a panel designed for the interior heat insulation of building structures which require maximum level of insulation in the least possible space.

Aerogips® is a high-performance insulating panel made up of a nano-technological insulating substance containing Aerogel **coupled with a sheet of plaster with high-density coating for excellent heat-acoustic comfort.**

Aerogips® has been designed for the **energy requalification of existing buildings, for rehabilitation and restructuring, where interior jobs have to be performed while safeguarding spaces.** It also permits designing new walls in all those buildings where dry systems and lightweight walls are used.

Aerogips® is suitable for both vertical partitions and for false ceilings. With a **thickness of only 20 mm** and heat

conductivity of 0.015 W/mK, **Aerogips® permits reducing energy dispersion** and recovering space in residential and commercial building applications. Aerogips® uses coated plaster panels with a thickness of 9.5 mm and is available in different thicknesses and dimensions. It is also available in different technical variants: standard, with vapour barrier, water repellent, water repellent with vapour barrier. **Aerogips® is an ideal product for interior restructuring, building rehabilitation and historical buildings subject to architectural restraints** and whenever greater living comfort is required, thereby considerably reducing installation times and costs.





## TECHNICAL FEATURES

TECHNICAL DATA	VALUES	UNIT	TEST METHOD
Panel format	1400x720	mm	
Aerogel thickness	5/10/20/30/40/50	mm	
Plasterboard thickness	9,5	mm	
Thermal conductivity at 10°C	0,015	W/m·K	EN 12667
Permeability to water vapor	10	g/smPa	EN 10465 - 2008
Engagement limit temperatures	-90 +90	°C	
Compressive strength (for a deformation of 10%)	80	KPa	EN 826
Specific heat	1.000	J/kgK	ASTM E 826
Nominal density*	11,00	kg/m <sup>2</sup>	
Fire reaction class	A2 S <sub>1</sub> D <sub>0</sub>		EN 13501-1
Color	gray-white		
Edge finish	cut		
Corrosion 60° C / 95% U.R./24h	0		

\* referred to 9.5 + 10 mm thick panel

## INTERIOR CLADDING SPECIFICATION

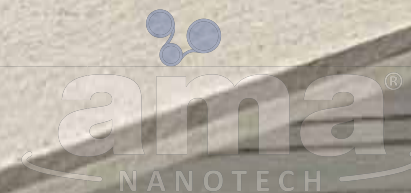
Realization of interior heat insulation, for vertical and horizontal surfaces, such as walls, floors, ceilings or the like, made up of a pre-coupled rigid panel, consisting of a layer of silica Aerogel reinforced with PET fibres (felt), of the Aerogips® type, water repellent and breathing, coupled with a sheet of coated plaster, supplied in 1400x720 mm panels, with a total nominal thickness of 20 mm (or in panels with thicknesses 30 mm, 40 mm, 50 mm, 60 mm) with heat conductivity 0.015 W/mK, heat resistance Rd 0.67 m<sup>2</sup>K/W per cm of thickness, working temperature between -90°C / +90°C, fire reaction euro class CS<sup>1</sup>D<sub>0</sub>, impermeable to surface water and/or immersion with water contact angle not below 150°, finished with careful filling of joints, installed on flat, vertical or horizontal

surfaces after full-spread gluing and installation on smooth, dry, dust-free and perfectly integral surfaces devoid of any roughness at all.



# AEROGIPS GF

The panel with fibre-reinforced sheet and Aerogel



**Aerogips GF®** is a panel designed for the interior heat insulation of building structures which require maximum level of insulation in the least possible space. Aerogips GF® is a high-performance insulating panel made up of a nano-technological insulating substance containing Aerogel coupled with a sheet of plaster with high-density coating for excellent heat-acoustic comfort.

Aerogips GF® has been designed for the energy requalification of existing buildings, for rehabilitation and restructuring, where interior jobs have to be performed while safeguarding spaces. It also permits designing new walls in all those buildings where dry systems and lightweight walls are used. It is also available in different technic variants: standard, with steam barrier, hydro repellent, hydro repellent with steam barrier.

Aerogips GF® is suitable for both vertical partitions and for false ceilings. With a thickness of only 20 mm and heat conductivity of 0.015 W/mK, Aerogips GF® permits reducing energy dispersion and recovering space in residential and commercial building applications. Aerogips GF® uses coated plaster panels with a thickness of 9.5 mm and is available in different thicknesses and dimensions.

Aerogips GF® is an ideal product for interior restructuring, building rehabilitation and historical buildings subject to architectural restraints and whenever greater living comfort is required, thereby considerably reducing installation times and costs.



## TECHNICAL FEATURES

TECHNICAL DATA	VALUES	UNIT	TEST METHOD
Panel format	1400x720	mm	
Aerogel thickness	5/10/20/30/40/50	mm	
Fiber-reinforced plasterboard thickness	10	mm	
Thermal conductivity at 10°C	0,015	W/m·K	EN 12667
Permeability to water vapor	10	g/smPa	EN 10465 - 2008
Engagement limit temperatures	-90 +90	°C	
Compressive strength (for a deformation of 10%)	80	KPa	EN 826
Specific heat	1.000	J/kgK	ASTM E 826
Nominal density*	11,00	kg/m <sup>2</sup>	
Fire reaction class	A2 S <sub>1</sub> D <sub>0</sub>		EN 13501-1
Color	gray-white		
Edge finish	cut		
Corrosion 60° C / 95% U.R./24h	0		

\* referred to 9.5 + 10 mm thick panel

## INTERIOR CLADDING SPECIFICATION

Realization of interior heat insulation, for vertical and horizontal surfaces, such as walls, floors, ceilings or the like, made up of a pre-coupled rigid panel, consisting of a layer of silica Aerogel reinforced with PET fibres (felt), of the Aerogips GF® type, water repellent and breathing, coupled with a sheet of coated plaster, supplied in 1400x720 mm panels, with a total nominal thickness of 20 mm impermeable to surface water and/or immersion with water contact angle not below 150°, finished with careful filling of joints, installed on flat, vertical or horizontal surfaces after full-spread gluing and installation on smooth, dry, dust-free and perfectly integral surfaces devoid of any roughness at all.

# AEROGIPS® APPLICATION

The correct installation of Aerogips

## Preparation of the support

The gluing of AEROGIPS® can be done only on walls that are exempt from traces of dust, humidity and fats. In case of very porous surfaces, such as visible brickwork, it will be appropriate to soak the surface or to apply a coat of a special treatment with resins with water dispersion to prevent the subtraction of water from the adhesive before the adhesion. Smooth surfaces, such as concrete walls or prefabricated manufactures obtained with a metallic formwork, must be treated with a specific gripping bottom made of quartz dust. Brickworks plastered with a hydraulic mortar without a treatment of superficial finishing must be probed on the entire surface to individuate cavities and eventual areas detached from the plaster, which will have to be removed and substituted. Generically covered walls must be deprived of the coverage in correspondence of the gluing points, which has to be guaranteed directly on the brickwork.



## Gluing of the panels

To fix the AEROGIPS® panels we use adhesives made of Knauf Perlifix gypsum, which will be prepared following the personal instruction of use. Always verify, in any case, that the chosen adhesive is suitable to the use on the support on which should be attached AEROGIPS®. Using a toothed spatula (teeth of 6-8 mm) apply the "full bed" adhesive on the entire surface of the panel on the side of the insulating material. Indicative waste of adhesive 4/6 kg/m<sup>2</sup> in alternative it is possible to use polyurethane adhesives in cylinder, specific for insulant panels and therefore with a very low expansion.



## Application of the panels

Trace on the floor and on the ceiling the fake wire of the extern surface and lay on the ground, against the wall that has to be covered, an eventual separative tape to detach the slabs from the floor and the ceiling. Lean against the wall the AEROGIPS® slabs, which will be lifted in relation to the floor plan. The slabs must be beat with light hits of hand or with a metallic ruler of an appropriate length to obtain the perfect alignment with the floor and the ceiling. Accurately lean the adjoining panels to prevent the leakage of the adhesive mortar and in that way eliminate thermal and/or acoustic bridges. Wait for the grip of the adhesive and then proceed with the application of the mechanic fastening in the measure of 5 plugs every square meter; in presence of straight border panels, preventively proceed with the formation of a countersink at 45° on the border of the adjoining slabs to permit the insertion of the plaster and prevent the creation of possible cracks.





Apply the second layer of stucco which will extend itself to a sufficient thickness to bring the plastered surface on the same level of the cardboard surface. Wait again for it to be completely dry before proceeding with the sanding if necessary and therefore the third coat of finishing, which will be very thin. Trim the excess protruding from the tape and proceed with the finishing just like a normal wall made of covered gypsum panels. Indicative waste of stucco 0,4/0,5 kg/ m<sup>2</sup>.

### Grouting of the panels

The grouting of the seams must be done with the use of suitable stucco (such as Fugenfüller Leicht by Knauf) and of tape covered with micro-perforated paper. Distribute an even and abundant coat of stucco for the joints along the border of the panels until the level of the surface of the panel. Lay the tape with micro-perforated mesh with the rough side towards the panel, centred in the centre of the joint; apply an appropriate pressure with the spatula to remove the excess of stucco under and on the sides of the tape, taking care of avoiding the formation of bubbles of air.

Before proceeding with the second and third coat, it is appropriate to ensure that the previous coat has adhered and is completely dry, so that every phenomena of withdrawal has ended. When it is completely dry, verify that there aren't any imperfections or micro-irregularities along the plastered joint.



# AEROPROOF

Reduced-thickness panel for roofs



**Aeroproof** is a panel designed for heat insulation and the preparation of the substrate for the subsequent waterproofing of all types of flat and pitched roofs, for civil and industrial buildings.

Aeroproof is a high-performance insulating panel made of a nano-technological insulating product containing Aerogel coupled with a bituminous membrane able to ensure excellent heat insulation, compression resistance, dimensional stability and a first waterproof layer.

Aeroproof is suitable for being subsequently flamed to allow the application of successive layers of bituminous sheathing.

The Aeroproof panels are usually applied to the roof by gluing or mechanical fastening; after installation, waterproofing is completed by recovery of the underlying sheath by means of the application of one or

more layers of bituminous membrane, either standard or self-protected.

## INSULATING TECHNICAL CHARACTERISTICS

TECHNICAL DATA	VALUES	UNIT	TEST METHOD
Panel format	1400x720	mm	
Aerogel thickness	10/20/30/40/50/60	mm	
Thermal conductivity at 10°C	0,015	W/m·K	EN 12667
Permeability to water vapor	0,05	g/s <sup>2</sup> /24h	DIN EN ISO 12572
Engagement limit temperatures	-90 +90	°C	
Compressive strength (for a deformation of 10%)	80	KPa	EN 826
Specific heat	1.000	J/kgK	ASTM E 826
Nominal density	1.600	g/m <sup>2</sup>	
Fire reaction class	C S <sub>1</sub> D <sub>0</sub>		EN 13501-1
Long time water absorption term for partial immersion	Wp < 0,01	Kg/m <sup>2</sup>	EN 1609
Color	gray-white		





## TECHNICAL SPECIFICATIONS MEMBRANE

TECHNICAL DATA	VALUES	UNIT	TEST METHOD
Armor	Fiber glass		
Weight	2	Kg/m <sup>2</sup>	EN 1849-1
Thermal conductivity at 10°C	0,2	W/m·K	EN 12667
Impermeability	60	KPa	EN 1928-B
Cold flexibility	-25	°C	EN 1109
Tensile elongation	2%		EN 12311
Thermal capacity	3,90	KJ/K	
Permeability to water vapor	100.000	g/m <sup>2</sup>	
Fire reaction class	E		EN 13501-1
Color	black		

### FLAT OR PITCHED ROOF WATERPROOFING SPECIFICATION

Realization of heat insulation and waterproofing of flat or pitched roofs made up of a pre-coupled, semi-rigid panel consisting of a layer of silica Areogel reinforced with PET fibres (felt), of the Aeroproof type, water repellent and breathing, coupled to a bituminous sheath reinforced with fibreglass weighing 2 Kg/m<sup>2</sup>, supplied in 1400x720 mm panels, with a total nominal thickness of 10 mm (or in panels with thicknesses of 20 mm, 30 mm, 40 mm) heat conductivity 0.015 W/mK, heat resistance Rd 0.67 m<sup>2</sup>K/W per cm of thickness, working temperature between -90°C / +90°C, impermeable to surface water and/or immersion with water contact angle not below 150°, installed on flat, horizontal or pitched surfaces after preparing installation surface, installing the panel and the vapour barrier.

# AEROPROOF APPLICATION

The correct application of Aeroproof

## Verify the state of the existent support

- Verify the flatness of the surfaces and even eventual strongly irregular differences in height
- Verify and guarantee the continuity and the sealing of eventual joints
- In case of dusty surfaces apply a coat of primer.

## LAYING OF THE PANELS

Proceed with the laying of the panels preferably with out of phase joints, with the longest side parallel to the gutter line and transversal to the slope line.

In case of covertures with at sight impermeable coat, it will be appropriate to prevent the line of between the panels from coinciding with eventual discontinuities in the laying plan (ex. Joints between tiles and prefabricated ceilings).

The membranes always have to be placed transversally to the direction of laying/offsetting of the panels and longitudinally to the slope direction of the coerture.

The herringbone laying of the panels is also possible and it allows the laying of the sealing element in both directions. For a deep description of the laying methods see the norm UNI 11442.



## FIXING

In the application of coverage, mostly under at sight impermeable membranes, it is important that the insulant coat is appropriately fixed to the structure. In case of at sight impermeable systems the adhesion between the panel, steam barrier and structure must be always higher, or at least equal, to the one between the panel and the impermeable structure. The AEROPROOF panels can be fixed with different methods depending on the applicative conditions and the type of coast used for the coverage.

### **Adhesion: adhesive or polyurethane foam.**

Using polyurethane adhesives or one-component foams in cans, form a series of continue curbs distanced of approximately 15 cm. then lay the panel and exercise an appropriate pressure.

### **Mechanic: through plugs or other fixing elements.**

for the correct sizing of the fixing points please refer to the indications of the norm UNI 11442.

Place the plugs on the corners, at a distance of at least 100 mm from the border and at least two central plugs.

The fixing methods, plugs, screws, self-tapping screws, nails, etc. depends on the type of support.

For the use of plugs is recommended a plaquette/washer with a useful surface  $\geq 30 \text{ cm}^2$  and, in the case of impermeable coats hot applied, made of materials which are resistant to the temperature provided for the application.



### **LAYING THE FINISHING COAT**

After the laying of the panels and their fixing, proceed with the hot laying of the finishing coat (reinforced membrane) in a direction transversal to the laying of the panels.



# AMAGEL A2

The evolution of the species of insulant products made of Aerogel



**Amagel A2®** represents a new major step in the development of silica Aerogel-based nano-technological insulating products.

It consists in a fibreglass-based flexible insulating matrix and a high concentration of nanoporous aerogels, able to ensure the very best heat performance in any condition of application.

In the quest for utmost heat protection, AMAGEL A2® stands as an essential insulating product thanks to its unique properties: extremely low heat conductivity -  $0.015 \text{ W}/(\text{m}\cdot\text{K})$ -, superior flexibility, compression resistance, hydrophobicity and ease of use.

AMAGEL A2® can be used within a temperature range of  $-200^{\circ}\text{C}$  and  $+650^{\circ}\text{C}$ .

AMAGEL A2®, available in thicknesses of 3, 6 or 10 mm, permits optimizing interior spaces in building applications for commercial and residential buildings, providing the very highest values of heat resistance - thickness being equal - compared to insulating materials of conventional type. Its use permits achieving major results in complex situations, e.g., in insulating windows or roof sections, resulting in an effective increase in the total energy efficiency of the building with excellent heat and acoustic insulation results. Thanks to maximum R values per unit

of surface compared to any other insulating material, AMAGEL A2® is the ideal covering for achieving extremely high energy performance in making dry walls, under floors and roofs, mock frames and window frames.

Unlike rigid and preformed insulation, AMAGEL A2® adapts perfectly to any shape or design: the blanket is flexible, physically sturdy, but with excellent shape and project performance recovery even after any load compression. Its specific composition also ensures the best fire resistance performance (Euroclass A2) thus permitting use even in very heavy-duty conditions and where superior performance levels are required.

**AMAGEL A2® has achieved the CE label which attests the compliance to all the requirements in the energetic area, to the performances required by the European Union and satisfying the strictest standard of quality and safety.**



## TYPES AND SIZES

**AMAGEL A2®** is available in 3 different thicknesses depending on application needs and required performance levels, and 2 different sizes; wherever very low dust levels are required, typical of aerogel-based products.

- **AMAGEL A2®** in rolls, available in 3, 6 and 10 mm thickness.

- **AMAGEL A2®** in panels available in 10 mm thickness.



## TECHNICAL FEATURES

TECHNICAL DATA	VALUES	UNIT	TEST METHOD
Roll width	1500	mm	
Thicknesses	3 / 6 / 10	mm	
Thermal conductivity at 10°C	0,015	W/m·K	UNI-EN 12667:2002
Permeability to water vapor	0,07	m	
Engagement limit temperatures	-50 +450	°C	
Compressive strength (for a deformation of 10%)	30	KPa	ASTM 165
Specific heat	1.000	J/kgK	ASTM E 826
Nominal density	200 ± 30	kg/m <sup>3</sup>	
Fire reaction class	A <sub>2</sub>		EN 13501-1
Dimensional stability	<1%		EN 1604
Perpendicular tensile strength	>17	KPa	EN 1607
Resistance to concentrated load	>2550	N	EN 12430
Color	white		

# FIELDS OF APPLICATION

## AMAGEL A2®

### **Building**

- Floor insulation
- Roof insulation
- Thermal bridge insulation on beams and/or pillars
- Lift shaft insulation
- Insulation of radiator recesses
- Insulation of frames, wall ends and cornices
- Insulation of window blind boxes
- Insulation of doors, armoured doors and swing doors
- Insulation of dry plasterboard walls
- Thermal bridge insulation on beams and/or pillars
- Lift shaft insulation
- Insulation of radiator recesses

### **Oil & Gas**

AMAGEL A2® - in the applications oil&gas, petrochemical and chemical, allows to improve drastically the safety and reduce the waste of space and energy.



### **Automotive**

thanks to the flexible structure of the mattress AMAGEL A2® it is possible to thermally insulate every detail of the most complex shape, even in extremely limited spaces.



### **Medium temperature industrial applications**

With AMAGEL A2® it is possible to create workpieces processed to drawing, on specific of the client, for the electrical-mechanical, thermal-electrical and thermal-mechanical insulation.



### **High temperature industrial applications**

With AMAGEL A2® it is possible to accomplish the thermal insulation at high and very high temperatures, for the most various sectors: industrial electrical furnaces, blast furnaces, furnaces for the cooking of ceramic and brickworks, aluminium foundry, furnaces for thermal treatments in.

Metallurgy and steel industry, etc.



### **Naval and railway**

AMAGEL A2® is ideal for the thermal insulation of the equipment and components of the naval and railway industry for the climatization, the refrigeration, the distribution of the fluid and aeraulic facilities.

**AMAGEL A2® is certified following the norm EN 45545, level H3, for the use in the railway sector.**

### ***Industry of cold***

Thanks to the adaptability and modularity, the capacity of absorbing high mechanical forces and the exceptionally low thermal conductivity, AMAGEL A2® is the perfect thermal insulant for the industry of cold. It is also available in the version covered in aluminium  
With the function of steam barrier.



### ***Military and aerospace***

AMAGEL A2® is the solution for the thermal insulation (both at very high and very low temperatures), with extremely high fire resistance, both in the military and aerospace sector.



### ***Electronical equipment***

AMAGEL A2® is perfect for solving problems related to the thermal dispersion and the energetic conservation of electronical equipment in general and household appliances in particular.



**AMAGEL<sup>A2</sup>**  
NEW NANOTECH THERMAL INSULATION

**AEROPAN**  
NANOTECH THERMAL INSULATION

**AEROGIPS**  
NANOTECH INSULATION BOARD

**AKTIVEPAN**  
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**THERMOGEL**  
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**AEROPROOF**  
ROOF THERMAL NANOTECH INSULATION

**ama<sup>®</sup>**  
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