

stiferite[®]
thermal insulation

EXTERNAL THERMAL INSULATION applications

with STIFERITE Class SK



STIFERITE Class SK designed for QUALITY external thermal insulation

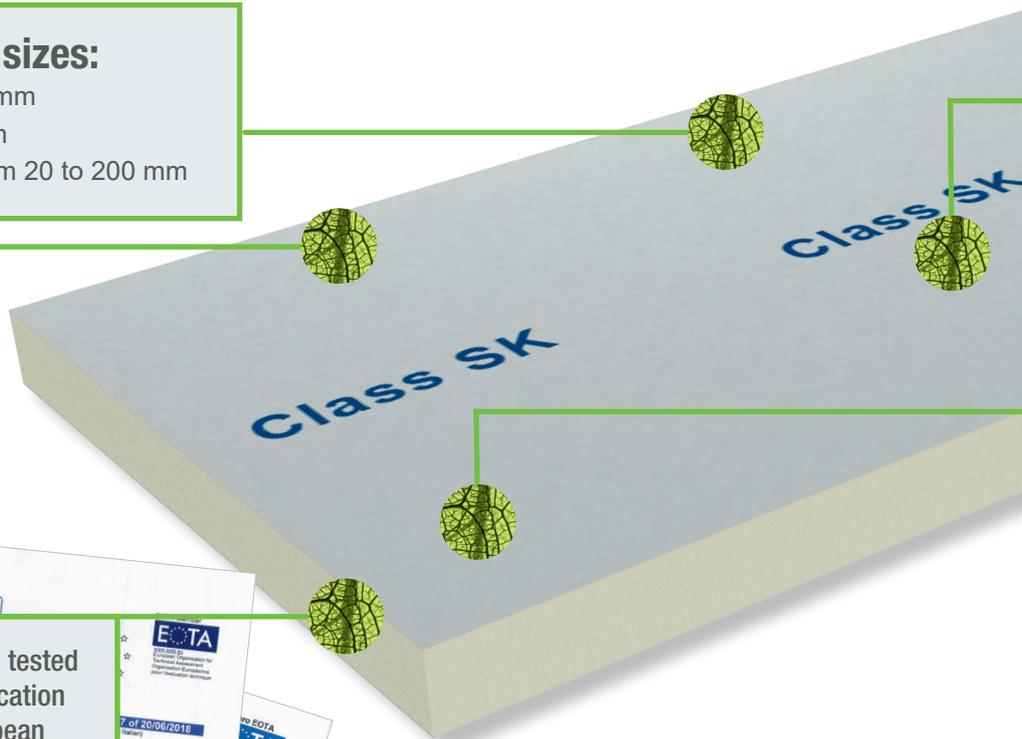
STIFERITE Class SK is a panel made of polyiso polyurethane foam (PIR), designed by the R&D Division of STIFERITE and specifically conceived for external insulation applications with the ETICS systems (External Thermal Insulation Composite Systems), commonly known as THERMAL INSULATION systems. STIFERITE Class SK consists of a polyiso foam insulating component that is coated on both sides with saturated glass fibre tissue. Over the past twenty years and more, STIFERITE Class SK has been the main element in external thermal insulation systems, both in Italy and in Europe, showing tested efficiency, economic and environmental sustainability, and durability.

Standard sizes:

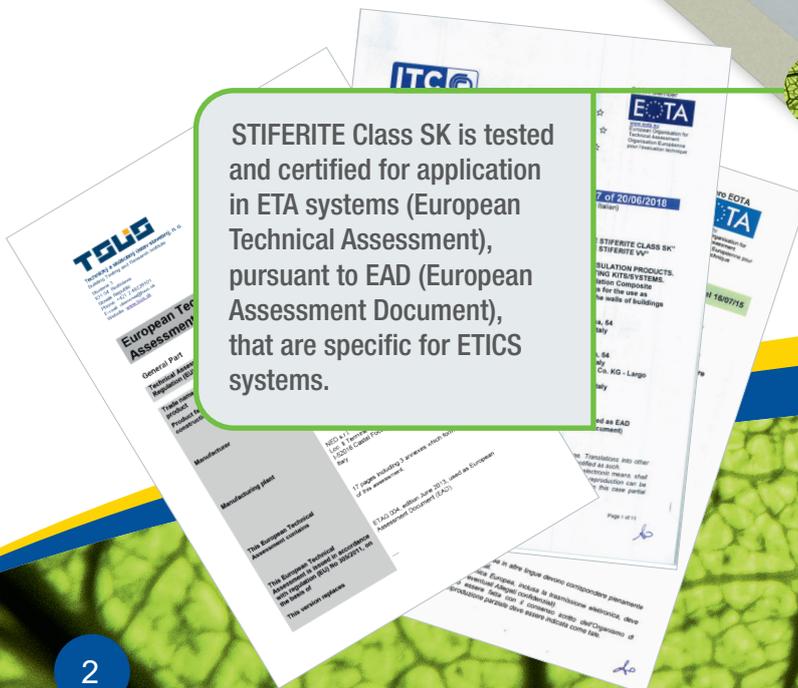
Length 1200 mm
Width 600 mm
Thickness from 20 to 200 mm



STIFERITE Class SK is CE marked, pursuant to standard UNI EN 13165



STIFERITE Class SK is tested and certified for application in ETA systems (European Technical Assessment), pursuant to EAD (European Assessment Document), that are specific for ETICS systems.



High fire resistance performances

Systems fitting STIFERITE Class SK are awarded fire resistance Euro Class

B s1 d0

Best insulating performance

λ_D from 0,024 to 0,027 W/mK
depending on thickness

Helps save plenty of energy, live in comfortable spaces and reduces resource consumption.

Stability and resistance

Helps withstand shocks, tensile strengths and changes in temperature, and keeps system efficiency and quality over time.

During installation, the panel does not absorb water and can withstand exposure to ultraviolet rays, thanks to which no temporary protections are required.

Specific coatings for glued applications

Suitable for quick and stable wall mounting using adhesive mortars and glues.

External thermal insulation with **STIFERITE Class SK** for a smart investment

Improving the energy efficiency of buildings is a smart investment that helps to:

- **reduce energy consumption and costs;**
- **improve comfort** in the room from the point of view of temperature, humidity and noise;
- **promote re-qualification of the building** increasing its commercial value;
- **benefit from the subsidies** granted at both national and/or local level to finance building renovation and energy efficiency improvement;
- **safeguard the environment**, reducing hazardous emissions into the atmosphere.



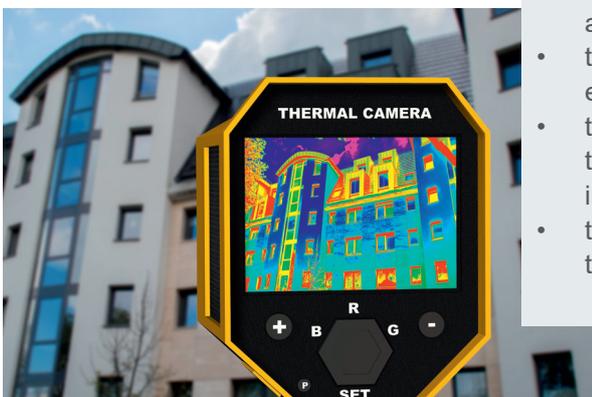
Why choosing STIFERITE Class SK for your external thermal insulation?

Insulation from the outside with STIFERITE Class SK thermal insulation systems offers advantages at performance, application and economic level:

- the installation of a continuous layer of insulating material contributes to eliminating thermal bridges;
- the insulating material protects the structures against changes in temperature, thus ensuring longer durability;
- as the “heavy” portion of the walls is inside the insulation system, the best can be made out of their thermal inertia: thanks to the system the walls work in synergy with the desired temperatures, keeping heat inside in winter and outside in summer;
- the construction of single wall buildings with an external insulation is more cost-effective than double wall solutions.

In renovation projects, the application of an external thermal insulation also offers additional benefits:

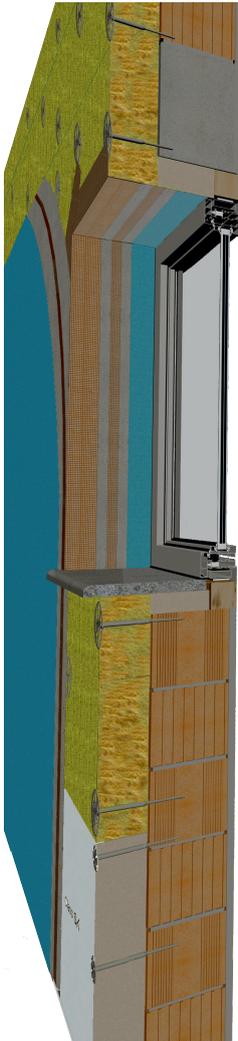
- it does not reduce the internal overall area of the home;
- it does not impair the practicability of the building and causes the people living in it minor nuisance;
- the material thickness and the weights applied to the façade are very small;
- the construction site outside the building can be managed easily and with a non invasive impact;
- the result of the process is a significant re-qualification of the building in terms of energy and appearance, which increases its value;
- the system can be installed at the time of maintenance of the building façade.



STIFERITE Class SK savings on different fronts, not only energy



Other insulation
110 mm



STIFERITE Class SK
70 mm



Using STIFERITE Class SK in external thermal insulation applications contributes to:

- limit the thickness of the insulating material required to achieve the desired thermal resistance;
- limit the weight of the insulating layer;
- reduce the impact of the costs incurred for accessories and finishing materials (anchors, profiles, thresholds, etc.);
- make installation operations leaner, thus reducing the construction site times and costs;
- make the entire system and the insulating and mechanical performances as well as dimensional stability durable over time;
- use a smaller amount of resources and thus minimise the environmental impacts of the structures built.

Comparison between STIFERITE Class SK and a different insulating material – λ_D 0,04 W/mK density 100 kg/m³ – used to build an external thermal insulation on a single-layered wall to achieve a surface transmittance of 0.28 W/m²K.

The solution with STIFERITE Class SK offers highly significant advantages as to costs and performances.

Advantages of EXTERNAL THERMAL INSULATION implemented with STIFERITE Class SK

Thickness of insulating layer (mm)	-32%
Weight of insulating layer (kg/m ²)	-77%
Length of anchors (mm)	-24%
No. anchors per m ²	-10 to -25 %
Thickness of containment and reinforcement profiles (mm)	-32%
Depth of thresholds for openings (mm)	-32%

STIFERITE Class SK advantages offered by EXTERNAL THERMAL INSULATION solution



excellent insulating performance: to save energy and space



eco-sustainable solution - EPD level III (Environmental Product Declaration)



enhanced comfort in the room as to temperature and humidity, all year round



perfect compatibility with glues, levelling grouts and plasters



safety and reaction to fire - External Thermal Insulation Systems in Euro Class B s1 d0



lightweight and easily workable - suitable for complex façades, including curved façades



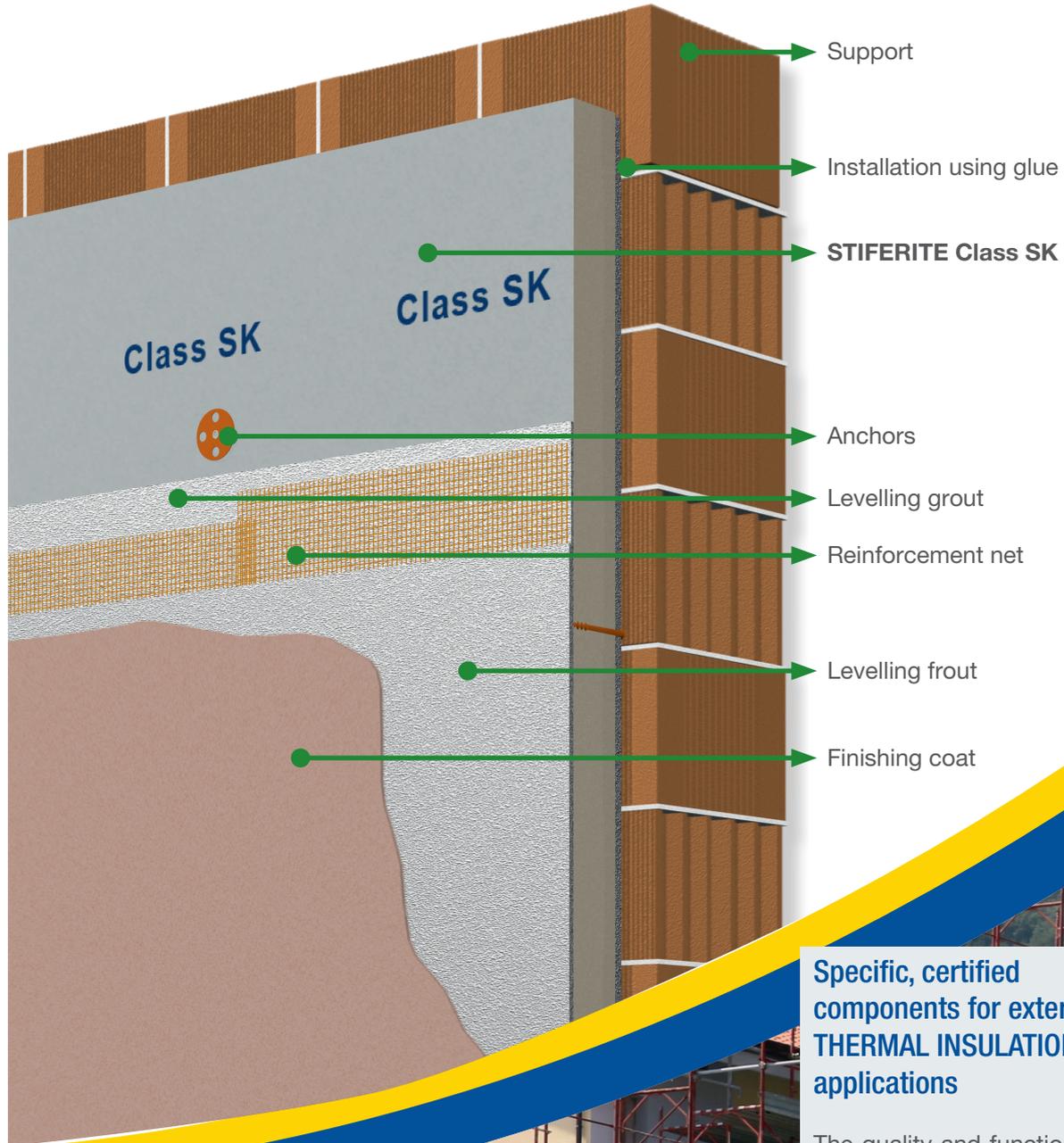
versatile, as it is applicable to all structures: concrete, masonry, OSBs, wood, etc.



cost-effective: less material, quicker installation



Components of the **STIFERITE Class SK** external thermal insulation system



Specific, certified components for external THERMAL INSULATION applications

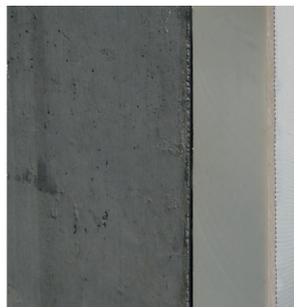
The quality and functionality of the entire system depend on state-of-the-art installation and the use of specific materials and components for application in ETICS systems. Our recommendation is to use ETICS-certified systems.

Steps for the installation of the external thermal insulation with **STIFERITE Class SK**

Initial tests and glueing

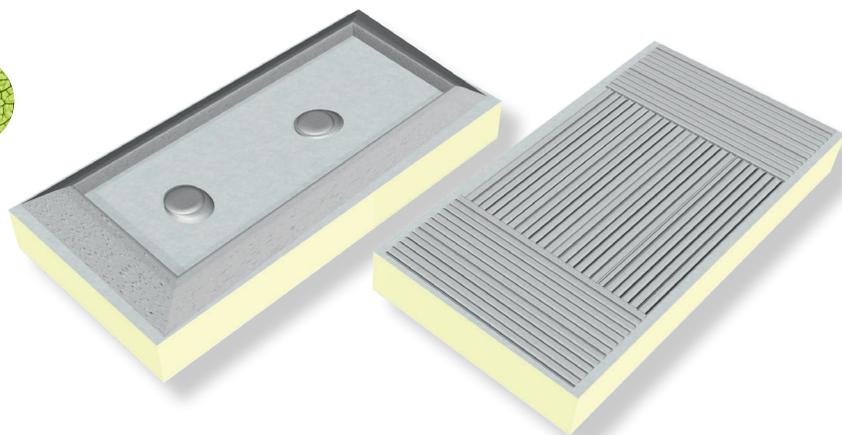
Support types and preliminary testing

STIFERITE Class SK is suitable for installation on all construction supports having the required continuity and load-bearing capacity, e.g. masonry walls, concrete blocks, panels or walls, tuff, wood for outdoor applications, lightweight construction panels, etc. Technicians from STIFERITE will be happy to offer advice and technical support.



Glueing

STIFERITE Class SK panels are mounted on the structure using an adhesive mortar that needs to be applied along the structure perimeter in continuous kerbing and at 2 or 3 central points. If the support is very smooth, the glue may be spread over the entire surface of the panel using a toothed spatula. We recommend that the glue is spread to cover at least 40% of the panel surface.



Cutting, engraving and milling

STIFERITE Class SK panels can be cut to measure with the help of standard cutting tools commonly used on construction sites. The panels are compact to the extent that they can be cut or milled as required by curved façades or façades with particular groove patterns.



For additional information, visit our website: www.stiferite.com/CAPPOTTO and our tutorials.

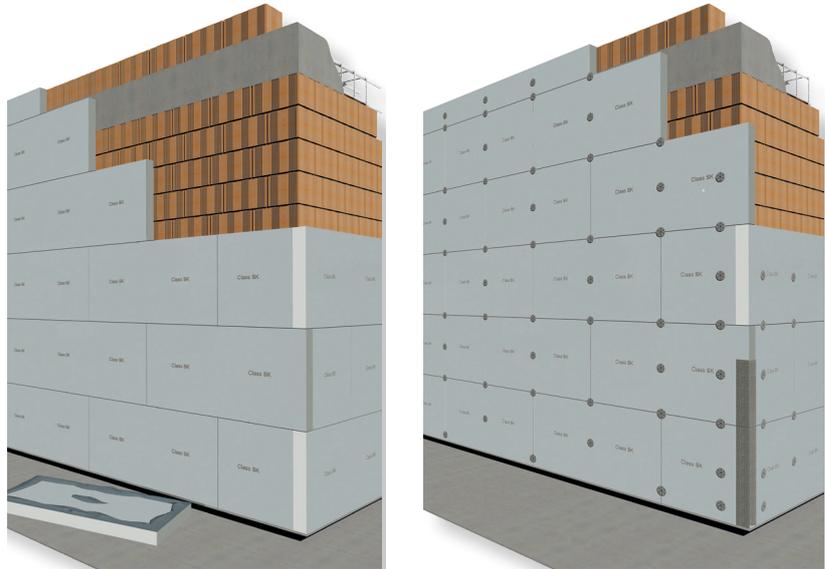
For detailed descriptions of the technology used for ETICS system installation, including all the steps for installation and treatment of critical knots, please refer to standard UNI/TR 11715 “Design and installation of external thermal insulation systems” and to the “Manual for external thermal insulation system application” posted by CORTEXA (Consorzio per la Cultura del Sistema Cappotto, lit. Consortium to promote the culture of external thermal insulation system - www.cortexa.it), of which STIFERITE is a main partner.

Steps for the installation of the external thermal insulation with **STIFERITE Class SK**

Installation and anchoring

Installation

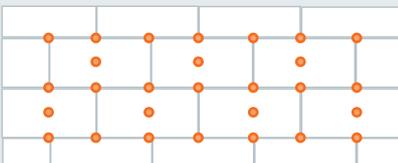
STIFERITE Class SK panels are installed in horizontal rows, bottom to top, with staggered joints. The heads of the panels must be alternated at the edges. Where gaps exist between the panels, they must be sealed with low expansion polyurethane foam and irregular surfaces must be removed through a mildly abrasive process.



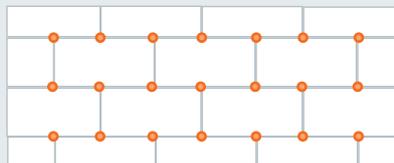
Anchoring

The anchoring elements - percussion driven or screw on anchors - must be sized in such way as to ensure an anchoring depth into the structure of at least 4 centimetres. The number of anchors shall vary according to the location of the building, its shape, the holding force of the support, etc. (ref. UNI/TR 11715 and diagrams concerning the most common anchors). The size of the panels - 600 x 1200 mm -, their small thickness and their excellent mechanical strength (ref. pull through test) have a positive impact on the cost of the anchoring elements and their installation.

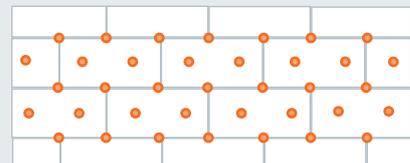
Edge and centre anchoring
4.12 anchors per square metre



Edge anchoring
2.75 anchors per square metre



Edge and centre anchoring (2)
5.5 anchors per square metre



Steps for the installation of the external thermal insulation with STIFERITE Class SK

Critical knots, edges and recesses

Skirting - Underground walls - Foundations

Thanks to their closed-cell structure, STIFERITE Class SK panels can be used in the most critical areas, including skirting, underground walls and foundations.

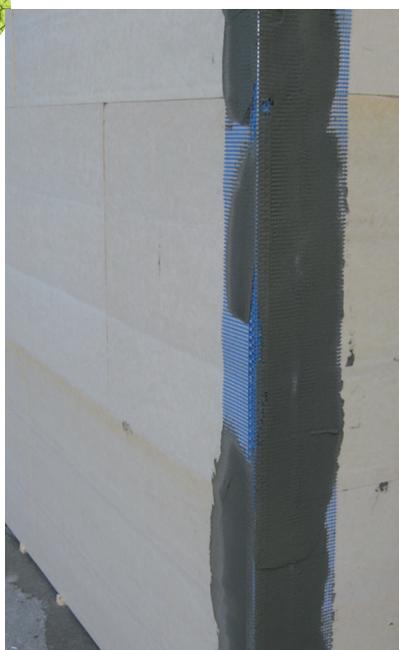
They are also compatible with all water-proofing systems.

Profiles and reinforcements

Sharp edges and recesses in the façade must be protected with suitable profiles.

All containment, protection and mechanical reinforcement profiles are installed using adhesive mortar.

At particular points (e.g. corners in openings, etc.) net sheets made of glass fibre are put in place, at a 45° angle, to serve as mechanical reinforcement (ref. picture).



Steps for the installation of the external thermal insulation with **STIFERITE Class SK**

System reinforcement and finishing

Plastering and finishing

Reinforced plaster is laid directly on the insulating layer prior application of a coat of levelling grout.

When the grout is still fresh, a reinforcement net is placed on the grout and pushed down to a depth of one third and the sheets are positioned so as to overlap by at least 10 cm.

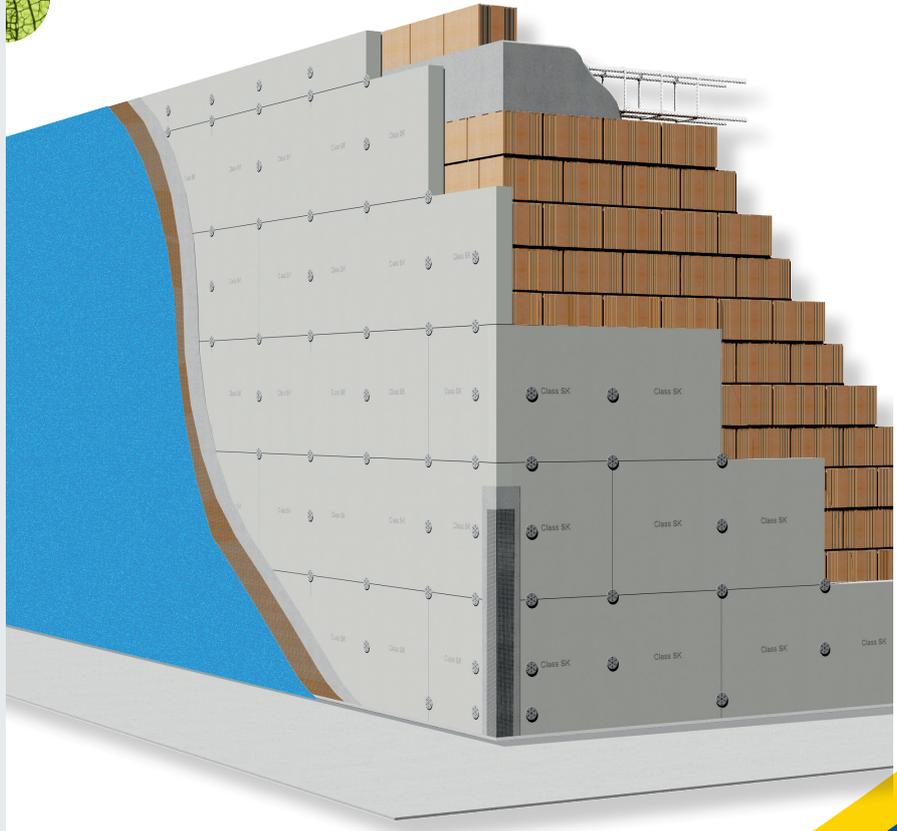
As soon as the first layer has fully dried, a second coat of levelling grout is laid.

The thickness of the grout must be as specified in the technical documentation supplied by its producer.

When laying the coat of grout, a check must be made that the surface is flat.

The finishing can only be applied after the reinforced levelling grout has dried out. The finishing coat must anyway be applied uniformly and on the entire surface.

We recommend that the finishing has a reflectance above 20%. Where the need arises to use finishing shades with a lower reflectance, dedicated systems should be selected, based on the specifications guaranteed by their producers.



STIFERITE Class SK

Specifications & Performances



excellent insulating performances, stability over time

Thermal Conductivity Declared	Thickness d (mm)	Thermal Transmittance U _D (W/m ² K)	Thermal resistance R _D (m ² K/W)
λ _D = 0,027 W/mK	20	1,35	0,74
	30	0,90	1,11
	40	0,68	1,48
λ _D = 0,026 W/mK	50	0,52	1,92
	60	0,43	2,31
	70	0,37	2,69
	80	0,33	3,08
	90	0,29	3,46
λ _D = 0,025 W/mK	100	0,25	4,00
	120	0,21	4,80
	140	0,18	5,60
	160	0,16	6,40
λ _D = 0,024 W/mK	180	0,13	7,50
	200	0,12	8,33



EPD - Environmental Product Declaration

EPD, label type III, issued according to procedures audited by a Third-Party Body (IBU - Institut Bauen und Umwelt) The Environmental Product Declaration is required by environmental building certification protocols (LEED[®]) and by the Minimum Environmental Criteria (MEC), pursuant to the Green Public Procurement (GPP).



contains recycled material

this specification is assessed by environmental building certification protocols (LEED[®]) and by the Minimum Environmental Criteria (MEC), pursuant to the Green Public Procurement (GPP).



is compatible with mortars and levelling grouts - specific for ETICS systems

for certified packages see the material available on-line on the website www.stiferite.com



is permeable to steam

μ = 56



offers excellent fire behaviour

many external thermal insulation systems using the STIFERITE Class SK panels are awarded Euro Class B s1 d0, which ensures compliance with strict fire safety requirements



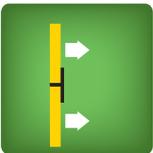
is characterised by mechanical strength

≥ 150 kPa (tested at 10% compression) - crucial for good resistance to shocks High tensile strength, ≥ 80 kPa - useful for good resistance to wind



is stable at high temperatures and with changes in temperature

the panels can be used for continuous temperatures between -40 °C and +110 °C. They can withstand the most severe radiation without the need for surface protection during installation



has pull-through strength

> 750 N, for secure panel mounting



provides wall-mounted noise insulation

As assessed in stratigraphy studies illustrated in the Technical File titled "Noise Insulation" is available online



is supplied with CE marking

STIFERITE Class SK is CE marked, pursuant to standard UNI EN 13165. The Declared Performance of Construction Product (DPoCP) is available on our website: www.stiferite.com



all-round quality

STIFERITE complies with the voluntary system certifications below:
UNI EN ISO 9001:2015 - Quality Management System
UNI EN ISO 45001:2018 - Occupational Health and Safety
UNI EN ISO 14001:2015 - Environmental management system

Wording in STIFERITE Class SK specification

Thermal insulating material STIFERITE CLASS SK made of polyiso foam (PIR), ...(*) thick, coated with saturated glass fibre tissue on both sides, having the following specifications:

Thermal Conductivity Declared: $R_D = \dots \text{ m}^2\text{K/W}$ (EN 13165, Annexes A and C) (please fill out this specification item with the most significant specifications and performances to the application in question).

The panel manufacturer is a company certified against UNI EN ISO 9001:2015 (quality management system), UNI EN ISO 14001:2015 (environmental management system), UNI EN ISO 45001:2018 (occupational health and safety system). The entire product range is CE marked.

The Environmental Product Declaration (EPD) is also available, as audited by a Third-Party Body, together with the Minimum Environmental Criteria (MEC) assessment, pursuant to the Green Public Procurement (GPP).

(*) Parameters vary according to thickness. Reference the product data sheet to enter the values corresponding to the thickness in use.

For a comprehensive description of the specifications and performances of our STIFERITE Class SK panel, please refer to the documentation available on our website www.stiferite.com and on www.stiferite.com/CAPPOTTO

Applications examples



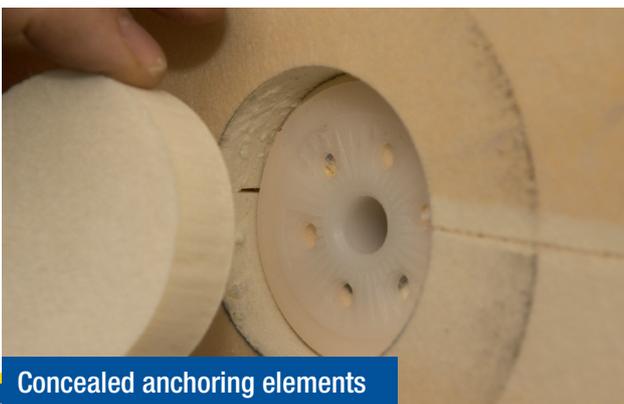
External thermal insulation on wooden structure



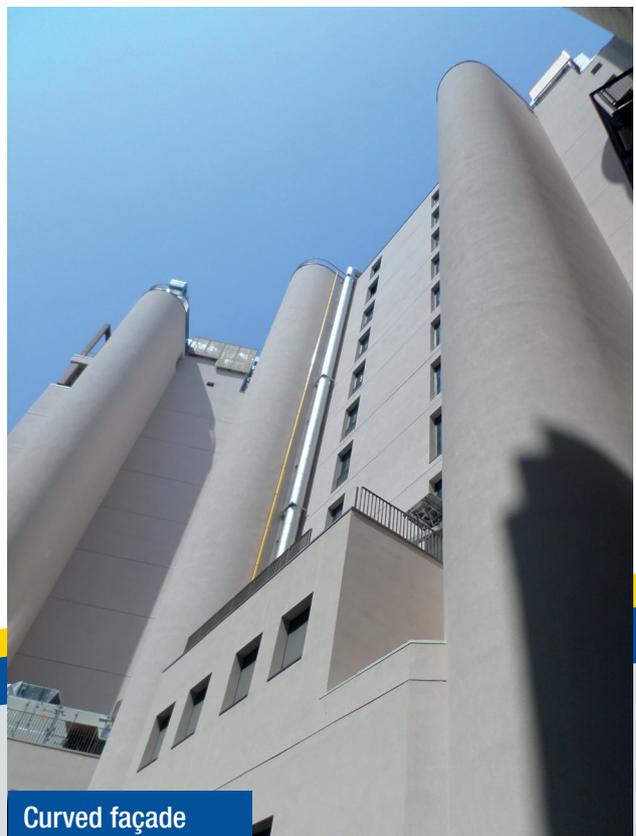
Engraving, grooving, pilaster strips



Efficiency enhancement in existing buildings



Concealed anchoring elements



Curved façade

STIFERITE Class SK

technical documentation

Product Data Sheets, Performance Declaration, Environmental Product Declaration, Safety Data Sheet, Installation Diagrams, CAD drawings and video tutorials showing how to install the STIFERITE Class SK panel are available on our website:

- www.stiferite.com
- www.stiferite.com/CAPPOTTO
- [canale STIFERITE YOUTUBE](#)

Contacts

Technical and Sales Office:

Tel + 39 049 8997911
Fax + 39 049 774727
www.stiferite.com

STIFERITE SpA with sole shareholder
Viale Navigazione Interna, 54/5
35129 - Padua (Italy)

STIFERITE SpA with sole shareholder is subject to the management and coordination of F.Stimamiglio & C. SpA



Product Data Sheet



Performance Declaration



EPD - Environmental Product Declaration



Voluntary Safety Data Sheet



Installation manual



Video tutorials



CAD Drawings



Installation with staggered heads on edges



Mixed solution with external thermal insulation and ventilated façade (STIFERITE Class SK and Fire B)

stiferite[®] **thermal insulation**

STIFERITE SpA with sole shareholder
Viale Navigazione Interna, 54/5
35129 - Padua (Italy)
TEL. +39 049 8997911 - FAX +39 049 774727

WWW.STIFERITE.COM

EXPORT DEPT. +39 0498997986



Company Certifications
ISO 9001 - Quality Management System
ISO 45001 - Occupational Health and Safety
ISO 14001 - Environmental Management System

