ISOTEC®
PARETE

ISOTEC®
PARETE

λ_D 0,022

FIRE REACTION CLASS B-s2, d0

GREEN COMPLIANT PRODUCT ® GREENITOP

BIM ready

ISOTEC PARETE.

THE THERMAL INSULATION SYSTEM FOR VENTILATED FAÇADES.

Brianza Plastica

1962-2022 60 Years

ISOTEC® PARETE

The thermal insulation system for ventilated façades.

Isotec Parete is a thermal insulation system for the dry installation of an insulating coating and structural support for the exterior cladding of ventilated façades.

Why Isotec Parete system?

The traditional ventilated façade system.

The ventilated façade system is made up of a frame, made of metal clamps or profiles for wall anchoring, and of support profiles for the cladding, which creates an interspace of ventilated air between wall and cladding. To increase the thermal resistance of the wall, an insulating panel is placed inside the gap on the wall.

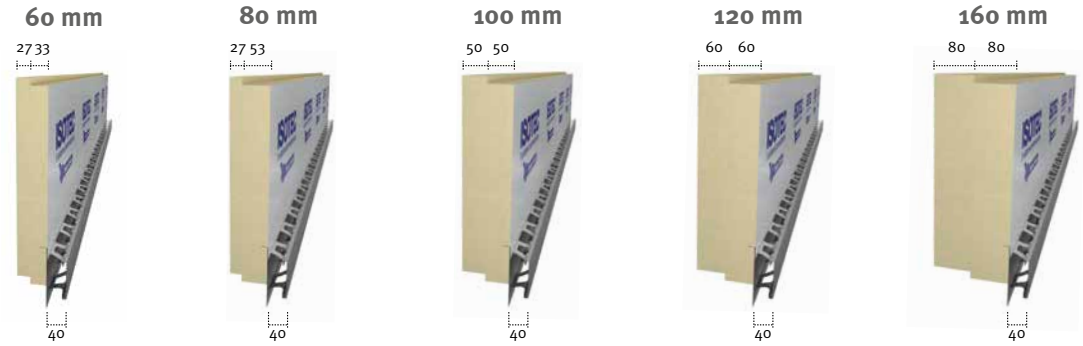
The ventilated façade with Isotec Parete.

Isotec Parete offers a new system to realize ventilated façades which, in one single product, provides a continuos and uniform exterior thermal insulation and a support structure for the external cladding. In addition, the load-bearing perforated stiffener forms a ventilated air chamber between the insulating panels and outer wall covering.

These features allow improving the living comfort of buildings, in full compliance with the energy-efficiency standards.

Isotec Parete range: technical characteristics.

Thicknesses.



Tolerances according with the EN 13165 standard.

PANEL THICKNESS	60 mm	80 - 100 - 120 - 160 mm
Thickness Class T2	± 3 mm	+5 ÷ -3 mm
Length (2500 mm)	± 10 mm	
Width (variable depending on the cladding)	± 5 mm	

Accessories.

Polyurethane foam

Butyl coated aluminium tape


Free steel stiffener


Free black steel stiffener

Applications.

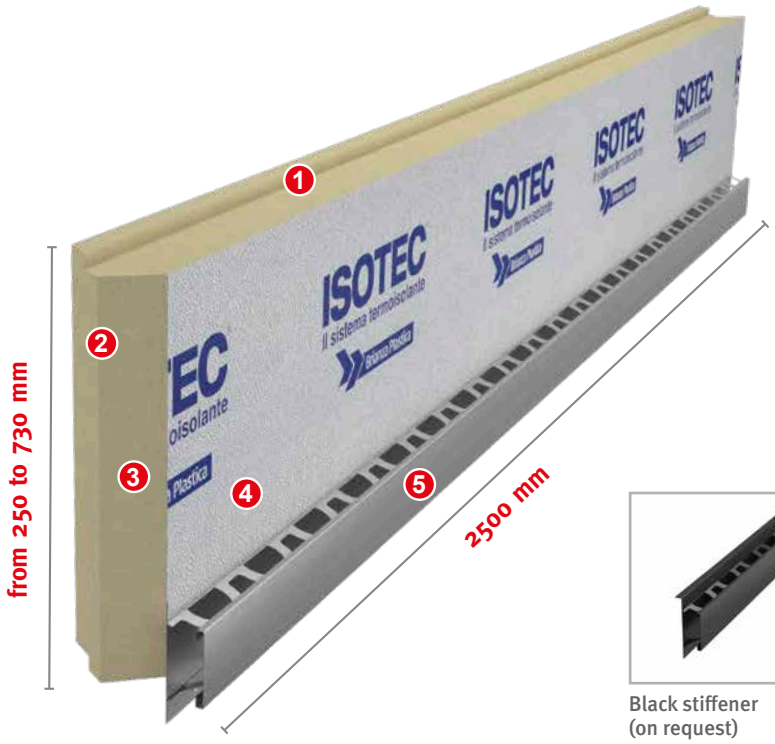
The Isotec Parete system can be used both for new constructions and renovations, for improving thermal performances of existing buildings. **The panels are fixed to the outer surface** (brick or concrete walls, steel or wooden structures) **with screw anchors or bolts, passing through the stiffener in coated steel.**

The resulting system acts as an insulating layer, equipped with support profiles for the finishing elements of the façade and allows the application of different types of external cladding, both light and heavy (terracotta tiles, fibercement boards, clay tiles, stoneware tiles, wooden slats, metal claddings, etc.).

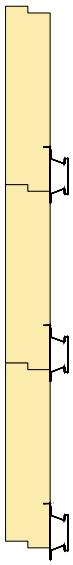
The creation of a continuous ventilated air chamber between the insulation and cladding allows reducing the solar heating of walls in summer and limiting the risk of condensation in winter.

Isotec Parete: composition.

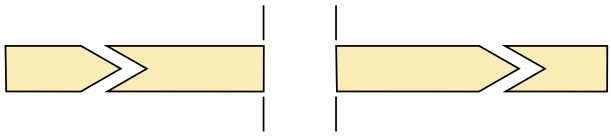
The Isotec Parete panel is a building component that brings together a system of functional elements and layers - thermal insulation, ventilation and load-bearing - which contribute to improving the thermal-hygrometric performance of the vertical closure. It is made up of an insulating central body in self-extinguishing rigid polyurethane foam covered by a waterproofing envelope in embossed aluminium, which is made rigid by a steel protected stiffener.
The holes on the metal profile ensure the ventilation of the façade and allow any accidental water infiltrations to flow out. The interlocking design of the Isotec Parete panels prevents the formation of thermal bridges.



Black stiffener
(on request)

1. 

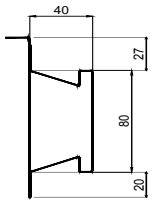
The Isotec Parete panel is shaped with opposing battens that ensure it wedges between the panels, eliminating the risk of thermal bridges.

2. 

The ends of the panels are cut in a dovetail fashion to ensure continuity of the insulation.

3. The Isotec Parete panel is made of self-extinguishing rigid polyurethane foam.

4. Both sides of the Isotec Parete panel are covered by an embossed aluminium foil.

5. 

The Isotec Parete panel is made load-bearing by a 4 cm-thick steel perforated stiffener which forms the ventilation chamber and the support structure of the façade cladding.

Isotec Parete: technical data.

FEATURE	U.M.	VALUE	TEST METHOD
Density	kg/m³	38,0	EN ISO 845
Declared thermal conductivity λ_D (time-weighted value over a period of 25 years of use)	W/mK	0,022	EN 13165 Annexes A and C
Thermal conductance **U**	W/m²K	0,37 for 60 mm 0,28 for 80 mm 0,22 for 100 mm 0,18 for 120 mm 0,14 for 160 mm	$U= \lambda_D/d$ (d= panel thick. in m)
Thermal resistance **R**	m²K/W	2,73 for 60 mm 3,64 for 80 mm 4,55 for 100 mm 5,45 for 120 mm 7,27 for 160 mm	$R= d/\lambda_D$ (d= panel thick. in m)
Constant temperature	°C	-50 ÷ +100	9051
Dimensional stability **DS(70,-)**	level	3	EN 1604
Resistance to compression at 10% of deformation **CS(10\Y)**	kPa	≥ 120	EN 826
	kg/cm²	≥ 1,22	EN 826
Resistance to water vapour diffusion **MU**	μ	> 50.000	EN 12086
Long term water absorption **WL(T)**	%	< 0,6	EN 12087
Specific heat	J/kgK	1400	EN ISO 10456
Emission of dangerous substances	//	Compliant	EN 13165 Annex ZA
Fire reaction	euroclass	F	EN 13501-1

CE marking in compliance with the European Regulation 305/2011/CE, EN 13165:2012+A2:2016 and EN 13172:2012 - System 3; notified body: CSI S.p.A. (0497).

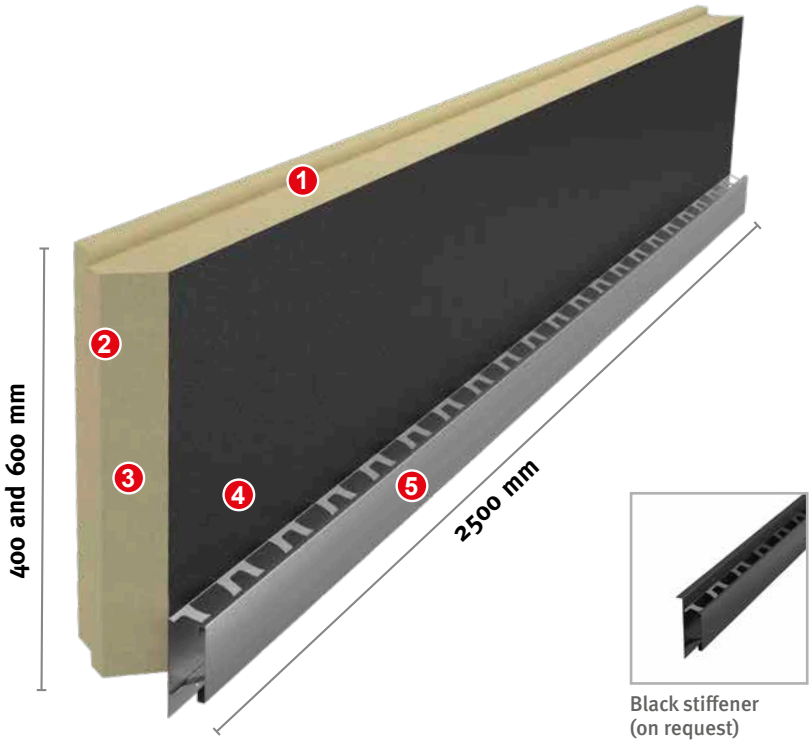
Isotec Parete: specifications.

External walls will be thermally insulated using an insulation system with a structural jacket, which is functional to create the ventilated façade. This system consists of a modular, self-supporting and insulating monolithic structural panel made from rigid closed-cell polyurethane foam (PUR) with a density of 38 kg/m³, self-extinguishing, euroclass F (EN 13501-1) with **declared thermal conductivity λ_D of 0,022 W/mK** (according to the EN 13165 standard) and declared thermal resistance R_D of not lower than 2.70 m²K/W for 60 mm thick panels, 3.60 m²K/W for 80 mm thick panels, 4.55 m²K/W for 100 mm thick panels, 5.45 m²K/W for 120 mm thick panels and 7.25 m²K/W for 160 mm thick panels.

The panel is covered by an embossed aluminium sheet both at the intrados and extrados, and comes with an integrated perforated stiffener in protected steel.
The metallic profile is ribbed in order to provide high mechanical resistance and to allow fixing the finishing elements of the façade. The stiffener is perforated, in order to create a natural flow of ventilation between the insulation and external finish. The panel is shaped with longitudinal overlapping battens on the long side and dovetail joints on the short side. The panel is provided with CE marking approved by certificates issued by accredited bodies.

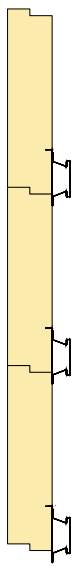
Height: according to the pitch of the finishing elements of the façade
Length: 2500 mm
Thicknesses: 60 mm - 80 mm - 100 mm - 120 mm - 160 mm

Isotec Parete Black: the thermal insulation system with fire reaction class B-s2, d0.

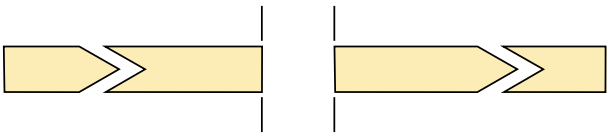


Black stiffener
(on request)

✔ FOR APPLICATIONS THAT REQUIRE A SPECIFIC AND HIGHER FIRE REACTION PERFORMANCE: B-s2, d0
✔ POLYURETHANE PIR

1. 

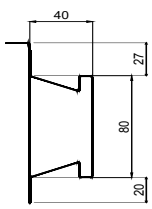
The Isotec Parete Black panel is shaped with opposing battens that ensure it wedges securely between the panels, eliminating the risk of thermal bridges.

2. 

The ends of the panel are cut in a dovetail fashion to ensure continuity of the insulation.

3. The Isotec Parete Black panel is made of self-extinguishing rigid polyurethane foam (PIR).

4. The Isotec Parete Black panel is covered by an embossed aluminium foil at the intrados and by a fireproof mineral coating at the extrados.

5. 

The Isotec Parete Black panel is made load-bearing by a 4 cm-thick steel perforated stiffener which forms the ventilation chamber and the support structure for the façade cladding.

Isotec Parete Black: technical data.

FEATURE	U.M.	VALUE	TEST METHOD
Density	kg/m³	38,0	EN ISO 845
Declared thermal conductivity λ_D (time-weighted value over a period of 25 years of use)	W/mK	0,024 60 mm - 80 mm - 100 mm 0,025 120 mm - 160 mm	EN 13165 Annexes A and C
Thermal conductance **U**	W/m²K	0,40 for 60 mm 0,30 for 80 mm 0,24 for 100 mm 0,21 for 120 mm 0,16 for 160 mm	$U= \lambda_D/d$ (d= panel thick. in m)
Thermal resistance **R**	m²K/W	2,50 for 60 mm 3,33 for 80 mm 4,16 for 100 mm 4,80 for 120 mm 6,40 for 160 mm	$R= d/\lambda_D$ (d= panel thick. in m)
Constant temperature	°C	-50 ÷ +100	9051
Dimensional stability **DS(70,-)**	level	3	EN 1604
Resistance to compression at 10% of deformation **CS(10\Y)**	kPa	≥ 100	EN 826
	kg/cm²	≥ 1,02	EN 826
Specific heat	J/kgK	1400	EN ISO 10456
Resistance to water vapour diffusion **MU**	μ	> 50.000	EN 12086
Emission of dangerous substances	//	Compliant	EN 13165 Annex ZA
Fire reaction	euroclass	B-s2, d0	EN 13501-1

CE marking in compliance with the European Regulation 305/2011/CE, EN 13165:2012+A2:2016 and EN 13172:2012 - System 1; notified body: CSI S.p.A. (0497).

Isotec Parete Black: specifications.

External walls must be thermally insulated using an insulation system with a structural jacket, which is functional to create the ventilated façade. This system consists of a modular, self-supporting and insulating monolithic structural panel made from rigid closed-cell polyurethane foam (PIR) with a density of 38 kg/m³, self-extinguishing, **euroclass B s2, d0** (EN 13501-1) with **declared thermal conductivity λ_D of 0,024 W/mK** for thicknesses of 60, 80, and 100 mm and λ_D of 0,025 W/mK for thicknesses of 120 and 160 mm (according to the EN 13165 standard) and declared thermal resistance R_D of not lower than 2.50 m²K/W for 60 mm thick panels, 3.30 m²K/W for 80 mm thick panels, 4.15 m²K/W for 100 mm thick panels, 4.80 m²K/W for 120 mm thick panels and 6.40 m²K/W for 160 mm thick panels.

The panel is covered with an embossed aluminium film at the intrados and with a fireproof mineral coating at the extrados, with an integrated structural perforated stiffener in protected steel.
The metallic profile is ribbed in order to provide high mechanical resistance and to allow fixing the finishing elements of the façade. The stiffener is also perforated in order to create a natural flow of ventilation between the insulation and external finish. The panel is shaped with longitudinal overlapping battens on the long side and dovetail joints on the short side. The panel is provided with CE marking approved by certificates issued by accredited bodies.

Height: according to the pitch of the finishing elements of the façade
Length: 2500 mm
Thicknesses: 60 mm - 80 mm - 100 mm - 120 mm - 160 mm

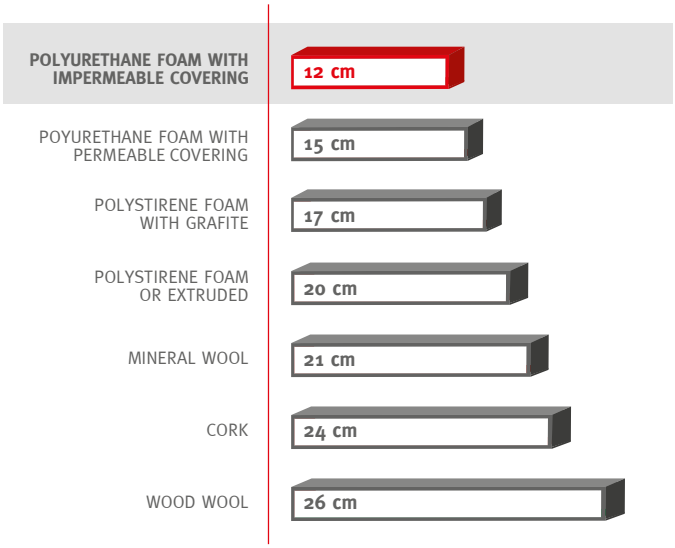
Advantages of the Isotec Parete system.

Thermal insulation

Thermal insulation in summer and in winter (polyurethane).

Isotec Parete has a central core made of rigid, closed-cell polyurethane foam; this material is currently one of the best thermal insulation material available on the market. The thicknesses of the Isotec Parete panels, depending on the required thermal performances, allow meeting the minimum requirements for each climate zone. The combined insulating and ventilating system plays an active role in energy efficiency, reducing heat loss in winter and decreasing the irradiation heat in summer, thanks to the ventilation.

Material thicknesses necessary to obtain U = 0,18 W/m²K or R = 5,45 m²K/W



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Thermal resistance

Thermal resistance.

Thermal resistance (R_t) takes into account the actual thicknesses of the panels and provides a clear value of the resistance of the insulation to heat exchange. Due to the low conductivity of polyurethane, Isotec Parete provides the highest thermal resistance values available in the market and the lowest cost per unit of thermal resistance.

No thermal bridges

No thermal bridges.

The system allows creating an insulating jacket that provides continuous and homogeneous insulation of the building envelope, eliminating thermal bridges and reducing temperature fluctuations.

Ventilation

Ventilation.

The ventilation induced inside the air chamber located between the insulating panel and the exterior cladding greatly improves the building's natural heat regulating properties. The "chimney effect" generates a flow of rising air inside the ventilation chamber, which improves the walls thermal performance in summer by removing excess heat and allows disposing of any condensation that forms inside the air chamber in the winter months.

Fast installation

Fast and cost-effective installation.

The Isotec Parete system allows creating a ventilated and load-bearing insulating coating for the finishing elements of the façade in only one installation solution. Moreover, the conformation of the panel, with dovetail joints on the short side and with opposing battens on the long side, allows safe, fast and cost-effective installation.

Maximum compatibility

Maximum compatibility.

Isotec Parete can be applied to any kind of structure, whether continuous or discontinuous, and is compatible with all types of façade cladding.

Protection against infiltrations

Protection against humidity and accidental infiltrations.

The ventilation reduces the humidity inside the air chamber, while the advanced cladding protects the wall against meteorological precipitations.

New buildings and renovations

Renovations and new buildings.

Isotec Parete can be used to update and renew existing buildings and in new constructions, improving the energy efficiency of the building.

Living comfort

Living comfort.

Isotec Parete is the ideal solution to improve living comfort throughout the year inside the building. The system allows to achieve a constant temperature in both summer and winter, thanks to the outstanding performances of the panel, to the ventilation and to the advanced cladding, which in turn reduce and optimise heating and cooling costs.

Durability

Quality and durability over time.

Isotec Parete offers outstanding durability over time thanks to its polyurethane core and its aluminium covering on both surfaces.

Energy saving

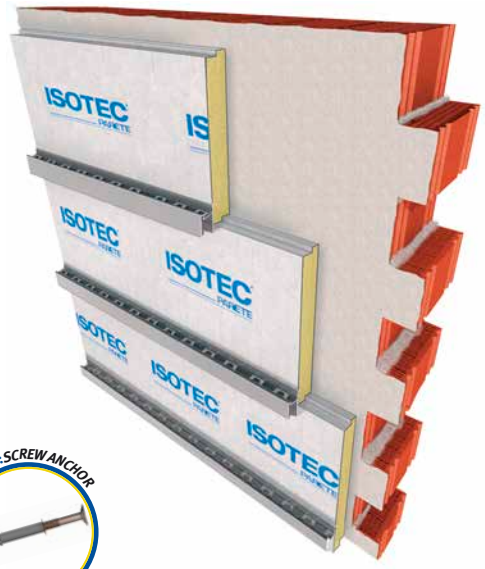
Saving.

The characteristics of Isotec Parete system (thermo-insulation and ventilation) ensure effective thermal insulation of the wall, which allows achieving a considerable saving on heating costs in winter and on cooling costs in summer.

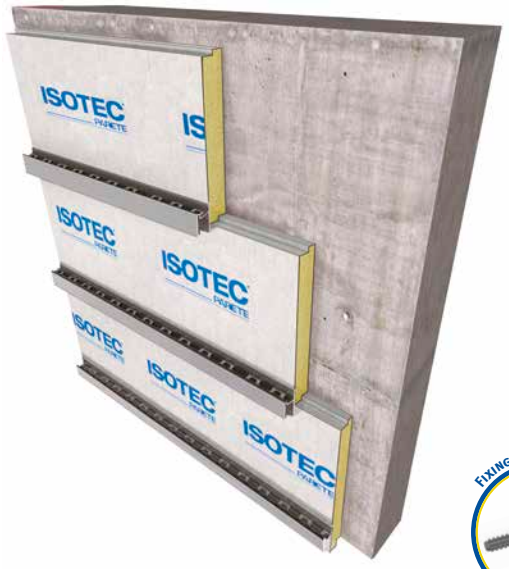
A system with maximum flexibility.

ISOTEC PARETE can be applied to any kind of load-bearing structure by means of mechanical fastenings. In fact, it is a universal solution suitable for all kinds of needs.

Bricks



Concrete

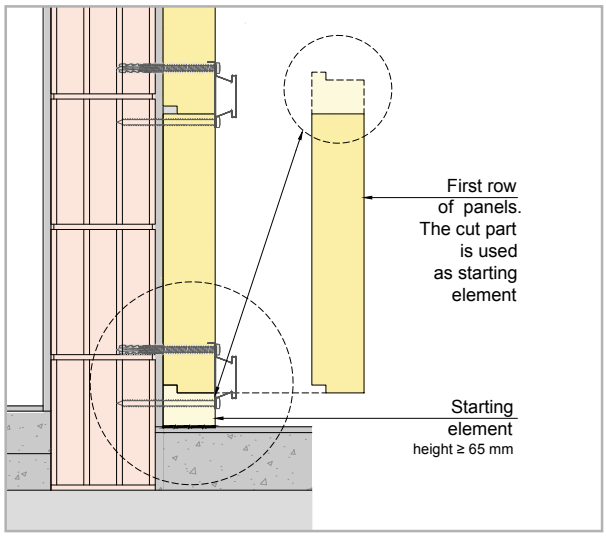


CLT (cross laminated timber)

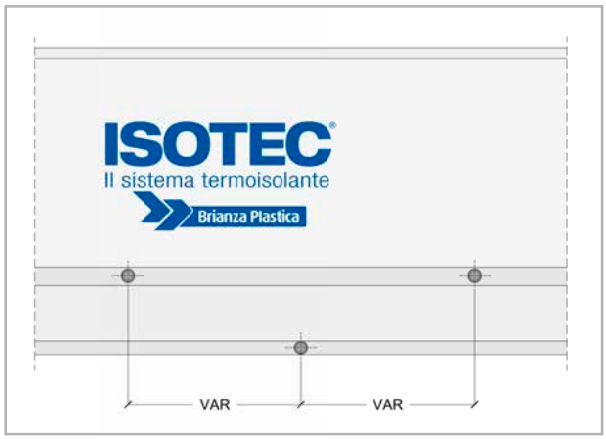
Discontinuous structure

The fixing systems are not provided by Brianza Plastica.

Horizontal laying instructions.



- The Isotec Parete panels are installed from the bottom upwards.
- Use a drill to make holes for fixing the panels.
- The Isotec Parete panels are fixed to the supporting structure by screw anchors, self tapping screws or bolts passing through the stiffener. Type and number of fixing holes depend on the type of the load-bearing structure and on the weight of the cladding. For this procedure, use the holes on the metal stiffener, paying attention to alternate their position.



- The cladding is secured to the metal stiffener through proper mechanical fixing.
- Once positioned the cladding, the ventilated chamber is generated.
- The choice of the cladding material determines the thickness of the Isotec Parete panel and its positioning (HORIZONTAL / VERTICAL).
- Polyurethane foam is used to fill the gaps resulting from irregular cuts in the panels.
- The butyl tape is applied on the joints between the panels and on the parts where the polyurethane is exposed.
- Free metal stiffeners (not coupled to the insulating panel) are used in areas where there is no support for fixing the cladding (e.g. near openings, edges, front summits, etc).
- For more detailed information about laying istructions, contact the Brianza Plastica technical sales department at: **sales-insulation@brianzaplastica.it**

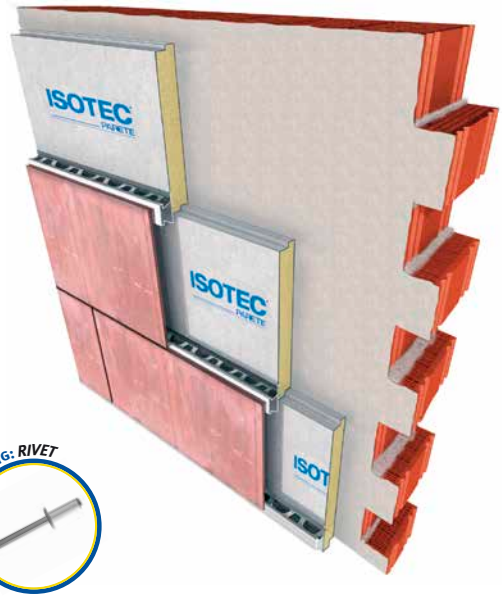
A system with maximum compatibility.

ISOTEC PARETE can support every type of cladding used in façades by means of special mechanical fixing devices. In fact, it is a universal solution, suitable for all kinds of needs.

Fibercement boards

Stoneware tiles

Clay tiles

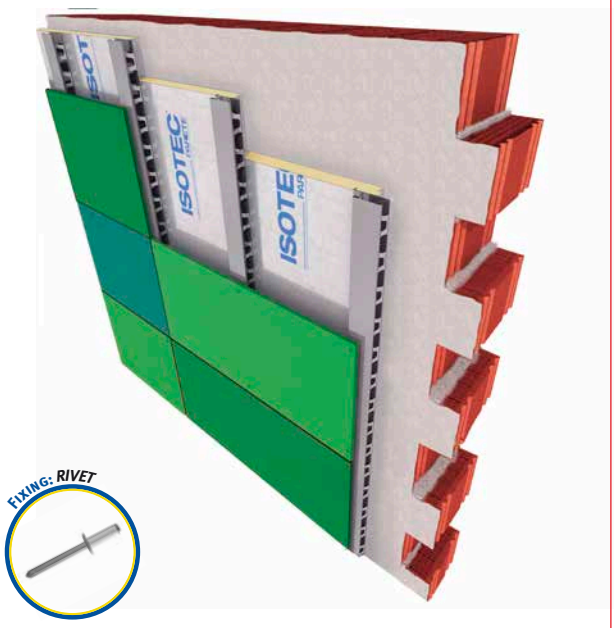


Terracotta tiles

Metal sheets

Wooden slats

HPL panels



Metal slats

The fixing systems are not provided by Brianza Plastica.

Isotec Parete and LEED® V4 rating system.

LEED® - Leadership in Energy and Environmental Design

LEED® - Leadership in Energy and Environmental Design - is a certification system for buildings that is created on a voluntary basis and is applied in over 140 countries worldwide. The LEED standard was born in America by U.S. Green Building Council (USGBC), a non-profit association founded in 1993, which currently has more than 20,000 members and whose aim is to promote and develop a global approach to sustainability, acknowledging virtuous performance in key areas of health human and environmental.

LEED® is a **voluntary** and consensus-based **system** for the **design**, **construction and management of sustainable buildings** and **high performance** territorial areas that is developing more and more internationally; it can be used on any type of building and **promotes an integrated design system that covers the entire building**.

The LEED® rating system certifies the building, does not certify the individual products or building components that can help meet the requirements of the protocol and consequently achieve the score for the building.

The protocol is organized in areas / chapters that contain the prerequisites and credits. The prerequisites are mandatory and do not give points, while the credits can be chosen or not by the design team but they are the ones that give the score, which must be achieved to obtain the certification level defined as a certification objective.

ISOTEC PARETE and ISOTEC PARETE BLACK can contribute to achieve the LEED® V.4 certification score in the following credits and prerequisites:

- **EAp2 -** Minimum Energy Performance
- **EAc2 -** Optimize Energy Performance
- **MRc3 -** Building product Disclosure and Optimization – Sourcing of Raw Material
- **MRc4 -** Building product Disclosure and Optimization – Material Ingredient
- **MRc5 -** Construction and Demolition Waste Management
- **EQc1 -** Enhanced Indoor Air Quality Strategies
- **EQc5 -** Thermal Comfort

For more detailed information, contact the technical sales department at the address **sales-insulation@brianzaplastica.it** or consult **isotec.brianzaplastica.it/en**

The compliance document of Brianza Plastica Products has been written by Quality Net® and the products can be found on **greenitop.com**

Service information.

Identification, traceability and packaging.

The Isotec Parete panels are marked with the production batch number and packed by Brianza Plastica with polyethylene film resistant to water and to UV rays. The packages have an identification label with a barcode that guarantees the traceability of the product. The CE marking is affixed to each label.

Transport.

The packages are equipped with support beams in expanded polystyrene placed at suitable distances so as to distribute the weight evenly and to make it easy to pick up the package for handling.

Storage.

Do not remove the film until installation; any loose panels must be kept in their original packaging and lifted off the ground. If necessary, 2 packages can be stacked on top of each other in order to minimise the space occupied.

Lifting and handling.

The packages must be secured at two points, with a distance between them of not less than half the length of the package itself. Special spacers must be used to prevent direct contact of the belts with the package. The packages must only be lifted using a rocker arm. The packages must be deposited on the roof on plans suitable to support them, in terms of resistance and the resting and safety conditions. The Isotec panel is light enough to allow easy and quick handling, which can be done manually by one operator.

Isotec Parete Certifications.

- Type-examination certificate of EC marking – certification system 3 – issued by CSI S.p.A. (EN 13165, EN 13172)
- Technical Report for assessing the resistance to downward load “Isotec Parete 80mm + Aquapanel Outdoor 12.5 mm” issued by the Institute for CNR Construction Technologies (internal method)
- Technical resistance reaction to load in evenly distributed depression (ETAG034) issued by I.T.C.
- Test report of initial/aged thermal conductivity issued by CSI S.p.A. (EN 12667, EN 13165)
- Report on the sound insulating power of “Isotec” issued by CSI S.p.A. (EN ISO 140-3, EN ISO 717-1)
- Test report of water vapour transmission issued by CSI S.p.A. (EN 12086)
- Test report of water absorption by long-term immersion (internal method)
- Test report of compression resistance issued by CSI S.p.A. (EN 826)
- Determination of the classification as non-hazardous waste
- LEED® V4 mapping report issued by Qualitynet®

Isotec Parete **Black** Certifications.

- Report on fire reaction classification
- Certificate of performance constancy issued by CSI S.p.A. certification system 1 (EN 13165, EN 13172)
- LEED® V4 mapping report issued by Qualitynet®

Disposal.

Based on the characteristics, the Isotec Parete panel is classified as NON-HAZARDOUS SPECIAL WASTE. Therefore, it can be disposed of as solid municipal waste at any authorised landfill or ecological dumpsite. Recommended disposal code: CER 170604 – “insulating materials other than those mentioned in items 170601 and 170603”.

Maximum energy efficiency and top aestetic finish in Geneva, Switzerland.

The structure of this new building, characterised by a geometric and linear architecture, is entirely in reinforced concrete and has been completely insulated with ventilated façades made of 160 mm thick Isotec Parete panels; for the external cladding has been chosen a ceramic white “Calacatta” marble glossy finish, for a very elegant effect, for a total surface area of 700 sqm.

Isotec Parete has been fixed directly on the prefabricated infill panels in reinforced concrete. The 60 x 120 mm ceramic slabs have been anchored to the Isotec Parete steel stiffener by means of a special mechanical anchor in patented steel, which is inserted in the kerf cut on the thickness of the ceramic to create an attractive concealed effect. The final result is an **energy-efficient building of great appeal**, characterised by an original and elegant finish.

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New Ski Trab headquarters, Bormio, Italy.

The new headquarters of Ski Trab, a historic company in Bormio that manufactures technical materials for ski mountaineering, will house the production facilities, offices and a ski museum. It consists of several adjoining buildings, characterised by large sheds inspired by the peaks of the surrounding mountains. The **Isotec Parete** ventilated façade system was chosen for the thermal insulation of the vertical opaque envelope, particularly stressed by the winter climate. With a thickness of 120 mm and pitch of 600 mm, this system was **installed dry by mechanical anchoring on the reinforced concrete surface** of the more than 1,000 square metres of façades. The impermeability of panel - insensitive to humidity and protected by an embossed aluminium coating - and the dry installation of the system played a fundamental role in optimising the timing of the construction site, as it allowed to work without any problems or limitations in the winter months. To create the **original metal cladding in seam tape**, chosen in three nature-inspired colours, the Nieder company fixed OSB panels to the Isotec Parete metal stiffener, in order to create a continuous substrate suitable for fixing the aluminium. When the work was completed, the building was characterised by **original and refined aesthetics**, well integrated into the landscape, and by the **excellent energy performance of the envelope**, which allowed it to achieve an **A3 energy certification**.

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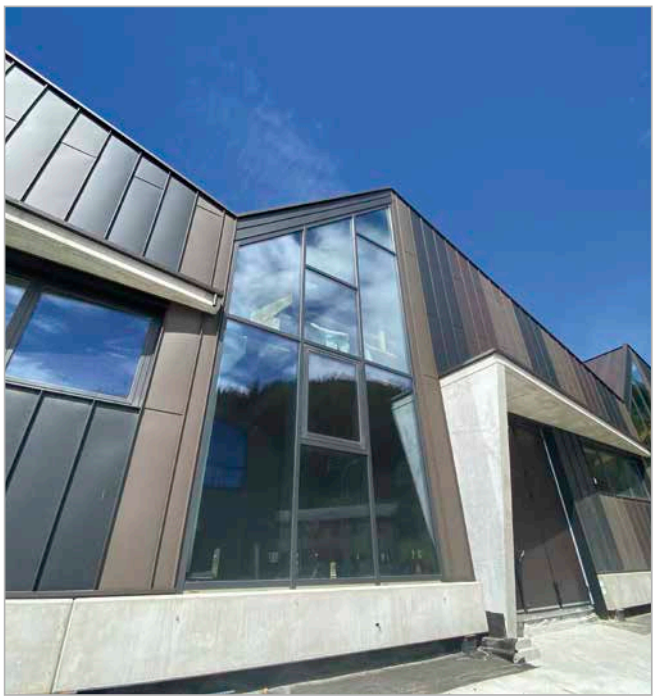
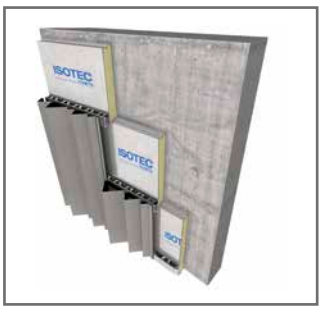
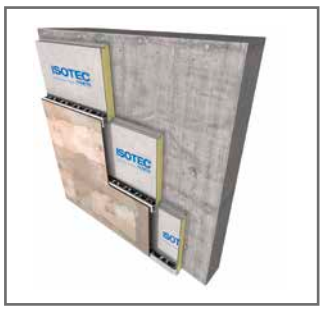


New villas in Mandello del Lario, Italy.



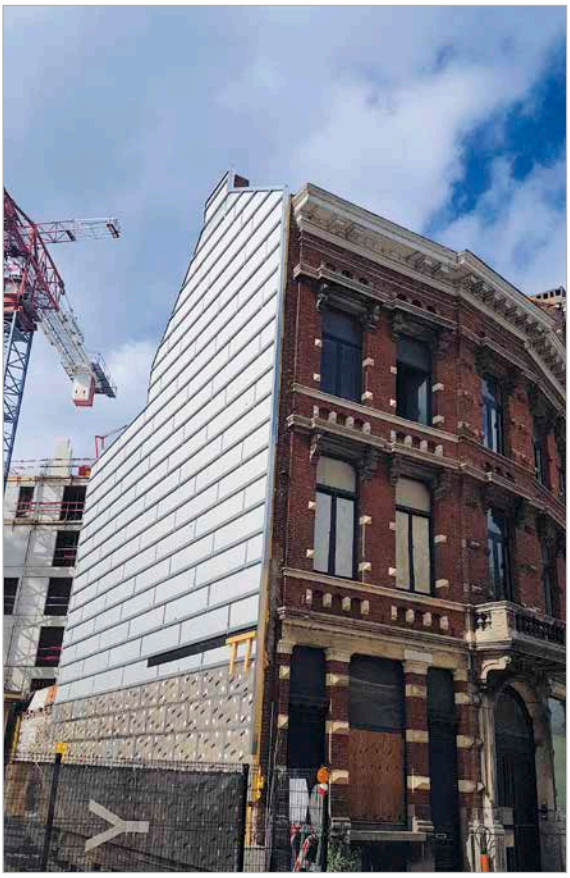


The system was **easily and quickly installed** by Nuova TS&C of Lecco, which oversaw the entire project. The cladding in Elycem fibercement boards was fixed to the Isotec Parete stiffener using simple screws. After grouting the joints, the fibercement sheets were smoothed over with plaster which, with its white tone, adds brightness and elegance. For the play of contrasts, the aluminium slat finish in a wood-effect oak colour was chosen to cover the façades of the upper floor. It took the company just two weeks to install the insulation and cladding system for each villa. The buildings have been **certified as Class A4**, in compliance with the regional building standards.

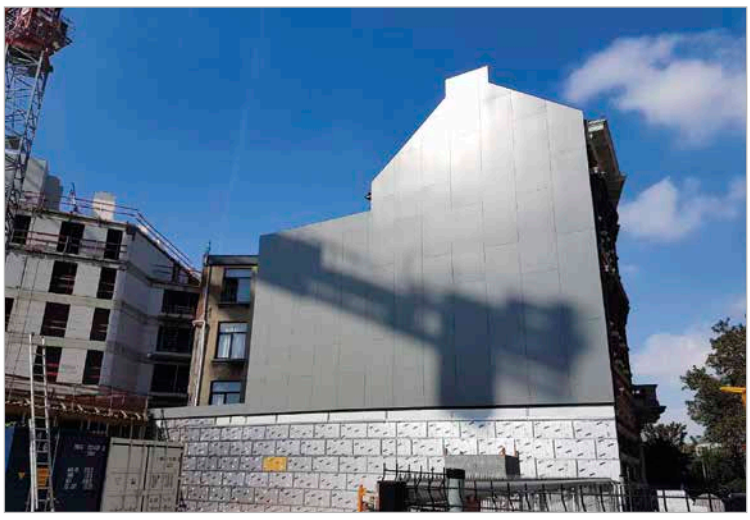
The project by the engineer Massimo Pozzi is focused on an essential and modern design. The complex consists of **four independent three-storey villas**, surrounded by greenery. The lower part of the structure, used as a garage, is made of reinforced concrete, while a system of reinforced concrete beams and pillars and curtain walls was used to make the upper floors. The Isotec Parete system, in a thickness of 100 mm, was chosen for the thermal insulation of the façades. For this project, the combination of **Isotec Parete** with **Elycem fibercement plasterboard panels** was chosen **for the ground floor**, which were supplied as a package by Brianza Plastica. **For the upper floor**, on the other hand, **Isotec Parete** was clad with 3-metre long, vertically mounted **aluminium slats** with a oak-effect finish.

New efficient skin for an old building in Antwerp, Belgium.

ISOTEC® PARETE



For the refurbishment of this old building in Antwerp centre the client was looking for a solution to insulate and upgrade the esthetics under time pressure. He found the right solution in the Isotec Parete system. **The existing bricks wall has been entirely covered by the Isotec Parete panels**, fixed directly on the existing structure. The height of the Isotec Parete panel was guided by the choice of the Rock Panel exterior cladding. **Isotec Parete** panel, in the thickness of 120 mm, has been **the ideal solution to anchor the external Rock Panel**, dimensions 1200 x 3050 x 8 mm, and to substain it without any problem. The fixing system used to fix the cladding to Isotec Parete stiffener were rivets.



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ISOTEC is also available in the versions:

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ISOTEC LINEA

Brianza Plastica SpA
Via Rivera, 50 - 20841 Carate Brianza - Italy
Tel. +39 0362 91601 - Fax +39 0362 990457
E-mail: sales-insulation@brianzaplastica.it - www.brianzaplastica.it/en

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