

ISOTEC[®]

PARETE



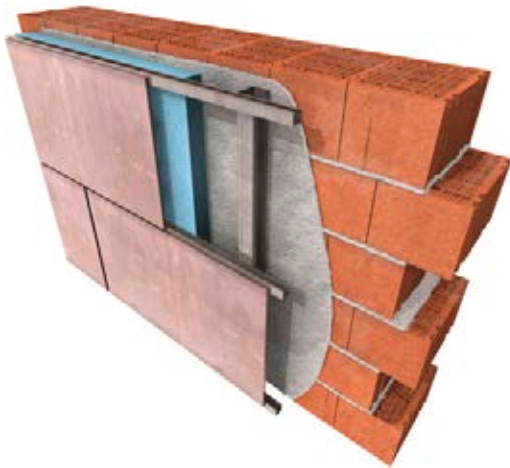
ISOTEC PARETE.
INSULATION SYSTEM FOR VENTILATED FACADES



ISOTEC
PARETE

Isotec Parete is a thermal insulation system for the dry installation of an insulating and structural exterior finishing for ventilated facades.

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 create 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. Vertical locking systems, that secure the insulating panel to the outside of the wall, offer greater energy efficiency and performance.



The ventilated façade with Isotec Parete.

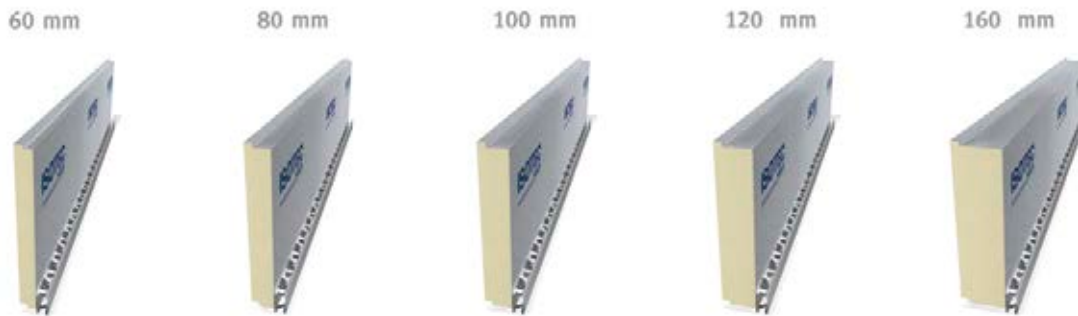
Isotec Parete offers a new system for ventilated façades, which in one single product provides a continuous and uniform exterior finishing and support structure for the external cladding. In addition, the load-bearing perforated stiffener forms a ventilated air chamber between the insulating panels and 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 UNI 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 covering)		± 5 mm

Accessories.



Polyurethane foam



Butyl coated aluminium tape



Metal stiffener



Black stiffener (on request)

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 wall, steel or wooden structures) **with screw anchors or log bolts, passing through the stiffener in coated steel.**

The resulting system acts as an insulating jacket equipped with support profiles for the finishing elements of the facade and allows the application of different types of external cladding, both light and heavy (terracotta tiles, fibre-cement slabs, cement slabs, stone slabs, ceramic tiles, wooden panelling, metal claddings, etc.).

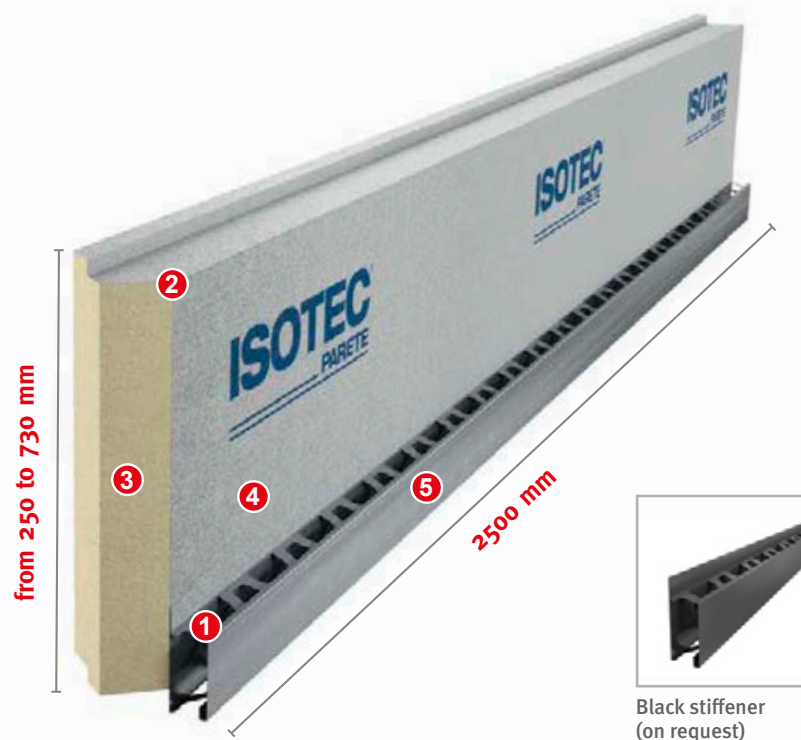
The creation of a continuous ventilated air chamber between the insulation and cladding allows reducing the solar heating of walls in summer and limiting the risk of condensation in winter.



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 ribbed stiffener in surface protected steel.

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.

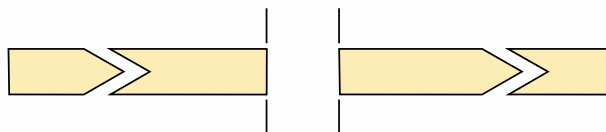


1.



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.

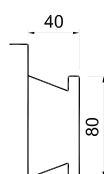
3.

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

4.

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

5.



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



Isotec Parete: technical data.



FEATURE	M.U.	VALUE	TEST METHOD
Density	kg/m ³	38,0	UNI EN ISO 845
Declared thermal conductivity λ_D (time-weighted value over a period of 25 years of use)	W/mK	0,022	UNI EN 13165 Annexes A and C
Thermal conductance U	W/m ² K	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 mm)
Declared thermal resistance R_D (time-weighted value over a period of 25 years of use)	m ² K/W	2,70 for 60 mm 3,60 for 80 mm 4,50 for 100 mm 5,45 for 120 mm 7,25 for 160 mm	UNI EN 13165
Constant temperature	°C	- 50 ÷ +100	UNI 9051
Dimensional stability DS(70,-)	level	3	UNI EN 1604
Resistance to compression at 10% of deformation CS(10\Y)	kPa	≥ 120	UNI EN 826
	kg/cm ²	≥ 1,22	UNI EN 826
Resistance to water vapour diffusion MU	μ	> 50.000	UNI EN 12086
Long term water absorption WL(T)	%	< 0,6	UNI EN 12087
Specific heat	J/kgK	1400	UNI EN ISO 10456
Emission of dangerous substances	//	Compliant	UNI EN 13165 Annex ZA
Fire reaction	class	0-2	DM 26/06/84 - DM 03/09/01
	Euroclass	F	EN 13501-1

CE marking in accordance with EC Regulation 305/2011, UNI EN 13165:2016 and UNI 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 and euroclass F (EN 13501-1) with **declared thermal conductivity λ_D of 0,022 W/mK** (according to the UNI 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, 4.50 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.

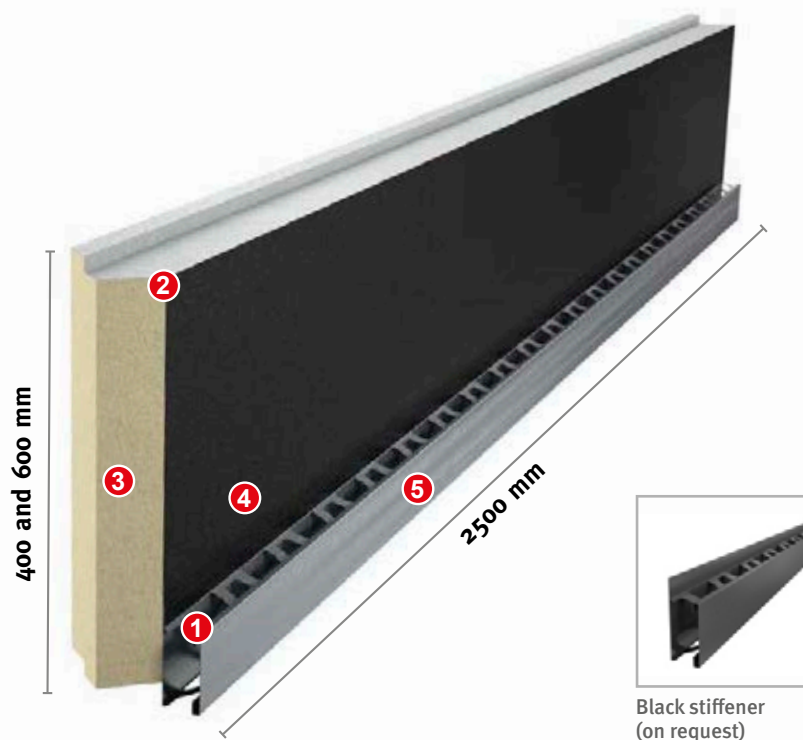
The panel is covered by an embossed aluminium sheet both at the intrados and extrados, and comes with an integrated structural stiffener in protected perforated steel.

The metallic profile is ribbed in order to provide high mechanical resistance and to allow fixing the finishing elements of the facade. The batten 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 must carry the 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 increased fire reaction performance (class B-s2, d0).



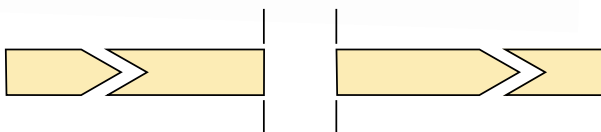
- ✓ SUITABLE FOR APPLICATIONS THAT REQUIRE A SPECIFIC AND HIGHER FIRE REACTION PERFORMANCE: B-s2, d0
- ✓ POLYURETHANE PIR

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.

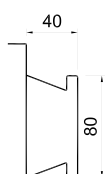
3.

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

4.

The Isotec Parete Black panel is covered by embossed aluminium foil at the intrados, which makes it impermeable, and by a fireproof mineral coating at the extrados.

5.



The Isotec Parete Black panel is made load bearing by a 4 cm thick protected perforated steel stiffener which forms the ventilation chamber and the support structure of the wall covering.



Isotec Parete Black: **technical data.**

FEATURE	M.U.	VALUE	TEST METHOD
Density	kg/m ³	38,0	UNI EN ISO 845
Declared thermal conductivity λ_D (time-weighted value over a period of <u>25 years</u> of use)	W/mK	0,024 60mm - 80 mm - 100 mm 0,025 120mm - 160 mm	UNI EN 13165 Annexes A and C
Thermal conductance U	W/m ² K	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)
Declared thermal resistance R_D (time-weighted value over a period of <u>25 years</u> of use)	m ² K/W	2,50 for 60 mm 3,30 for 80 mm 4,15 for 100 mm 4,80 for 120 mm 6,40 for 160 mm	UNI EN 13165
Constant temperature	°C	- 50 ÷ +100	UNI 9051
Dimensional stability DS(70,-)	level	3	UNI EN 1604
Resistance to compression at 10% of deformation CS(10\Y)	kPa	≥ 100	UNI EN 826
	kg/cm ²	≥ 1,02	UNI EN 826
Specific heat	J/kgK	1400	UNI EN ISO 10456
Resistance to water vapour diffusion MU	μ	> 50.000	UNI EN 12086
Emission of dangerous substances	//	Compliant	UNI EN 13165 Annex ZA
Fire reaction	Euroclass	B-s2, d0	EN 13501-1

CE marking in accordance with EC Regulation 305/2011, UNI EN 13165:2016 and UNI 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, λ_D of 0,025 W/mK for thicknesses of 120 and 160 mm (according to the UNI 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 embossed aluminium film both at the intrados and extrados and comes with a fireproof mineral coating and an integrated structural batten in protected perforated 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 must carry the 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.



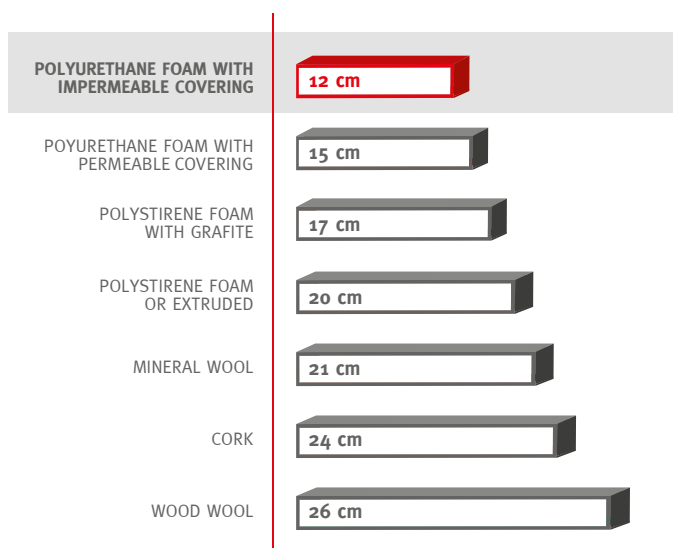
Advantages of the Isotec Parete system.



Thermal insulation (polyurethane).

Isotec Parete has a central core made of rigid, closed-cell polyurethane foam with a density of 38 Kg/m³; this material is currently one of the best thermal insulation materials available on the market. The thicknesses of the Isotec Parete panels available, depending on the thermal performances of the load-bearing wall, 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 cooling costs in summer.

Material thicknesses necessary to obtain $U = 0,18 \text{ W/m}^2\text{K}$ or $R = 5,45 \text{ m}^2\text{K/W}$



ISOTEC[®]
PARETE



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.

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.

The ventilation induced inside the air chamber located between the outer cladding and the insulating panel greatly improves the building's natural heat regulating properties. The "chimney effect" generates a continuous 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.



Protection against humidity and accidental infiltrations.

The ventilation reduces the risk of condensation inside the wall, while the facade system forms a protection against accidental infiltrations.



New buildings and renovations.

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



Maximum compatibility.

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



Fast and cost-effective installation.

The Isotec Parete system allows creating a ventilated and load-bearing insulating jacket for the finishing elements of the facade in one installation solution. Moreover, the conformation of the panel with opposing battens allows safe, fast and cost-effective installation.



Living comfort.

Isotec Parete is the ideal solution to improve living comfort throughout the year inside the building. In fact, the outstanding performances of the system allow achieving a constant temperature in both summer and winter, which in turn reduces and optimises heating and cooling costs.



Durability.

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



Energy saving.

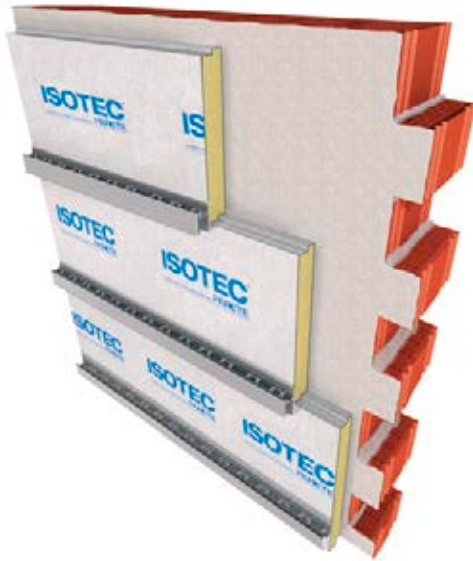
The characteristics of the modular panel (thermo-insulation, plus ventilation) guarantee effective thermal insulation of the wall, which allows achieving a considerable saving on heating costs in winter and on cooling costs in summer.



A system with maximum flexibility.

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

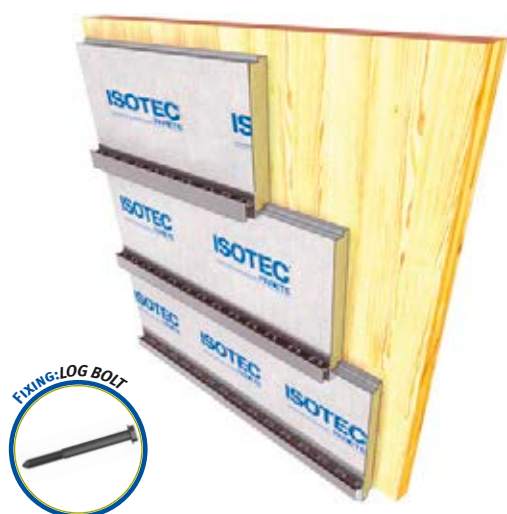
Bricks



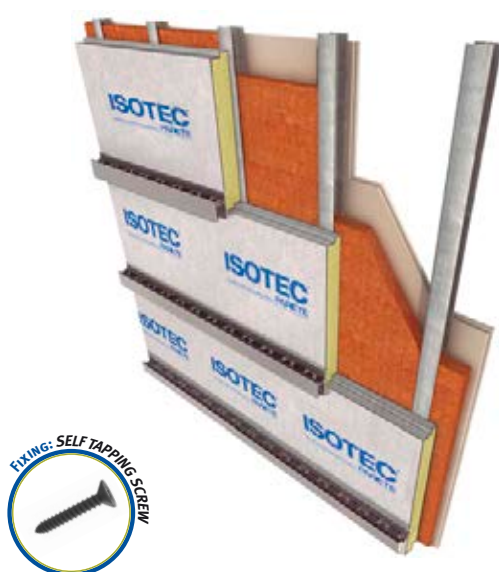
Concrete



XLam



Discontinuous structure



Installation instructions.



- The panels are installed from the bottom upwards.
- Use a drill to make holes for fixing the panels.
- The Isotec Parete panel is fixed to the supporting structure by screw anchors and fixing screws passing through the stiffener. The type and number of fixing holes depend on the type of structure and weight of the cladding.
- The cladding is secured to the metal stiffener through proper mechanical fixing.
- Once positioned, the cladding generates a ventilated chamber.
- The choice of the cladding material determines the height 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 the parts where the polyurethane is exposed.
- The “loose” (not coupled to the insulating panel) metal stiffener is used in areas where there is no support for fixing the cladding (e.g. near openings, edges, front summits, etc.)
- **The installation video is available on Brianza Plastica's YouTube channel.**

* The fixing systems are not provided by Brianza Plastica



A system with maximum compatibility.

ISOTEC PARETE can be combined with all types of cladding used in facades by means of special mechanical fixing devices. In fact, it is a universal solution, suitable for all kinds of needs.

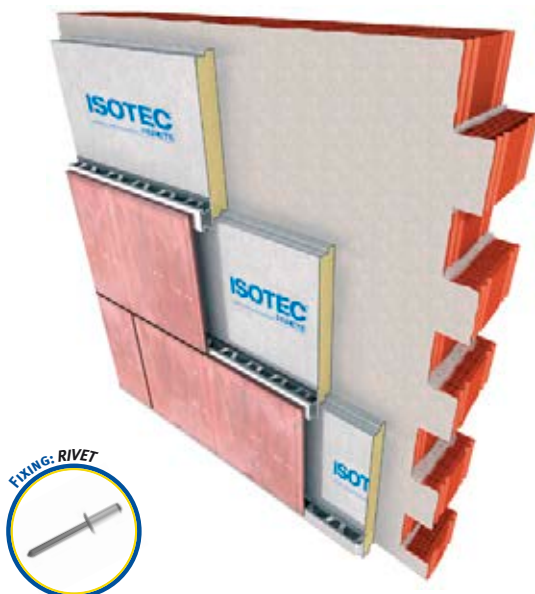
Fibercement boards



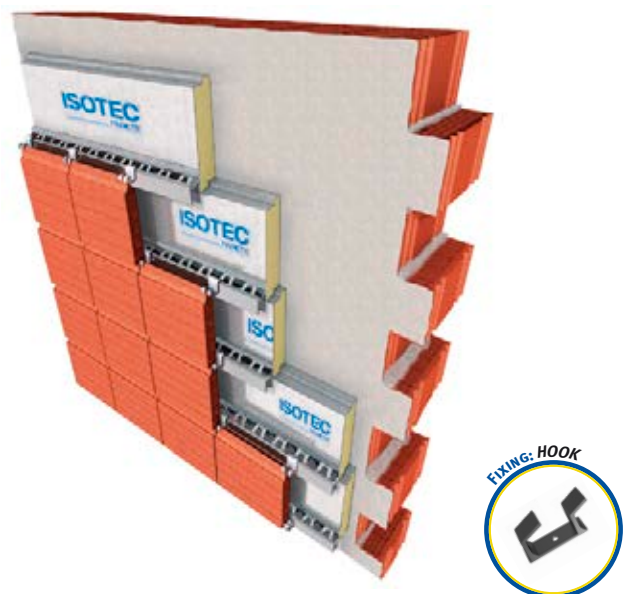
Stoneware slabs



Clay tiles



Terracotta tiles



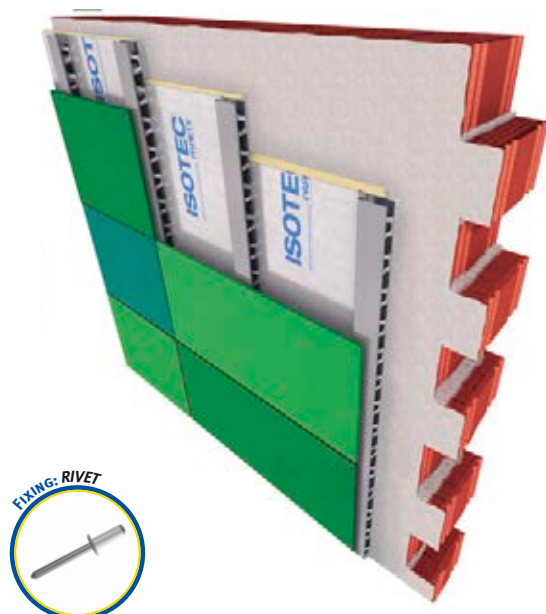
Metal sheets



Wooden slats



HPL panels



Metal slats



* The fixing systems are not provided by Brianza Plastica



Isotec Parete and the **LEED®** standard

LEED® - Leadership in Energy and Environmental Design.

The LEED building certification was introduced in the United States in 1993 by the US Green Building Council and currently has more than 16,000 members and is found in more than 40 countries around the world.

This system **allows certifying the environmental and economic sustainability of buildings**, promoting the design, construction sites, daily management, materials used and energy performances. LEED establishes specific measurable requirements, including the consumption of environmental and energy resources, quality of the internal environment, which define the level of eco-compatibility of buildings.

The LEED certification is issued to the building, not to products, but are of fundamental importance for obtaining the building's certification. All the **products** involved in the project can therefore **contribute to obtaining credits**, as long as they comply with the requirements.

LEED is an "evaluation system" that works by assigning a score linked to the achievement of "Credits" in seven different areas. A credit can be obtained if the project and/or the construction meets the specific requirements set out therein. A certain number of mandatory requirements contained in so-called "Prerequisites" must also be met. The final score obtained by adding up the points obtained in each area determines the different level of certification.

The ISOTEC PARETE product contributes to meeting the following requirements of the **LEED® credits:**

LEED® Italia for New Constructions and Renovations, 2009

EAp2 - Minimum energy performance (mandatory to achieve certification)

EAc1 - Optimisation of energy performances (1 to 19 points)

MRC2 - Construction waste management

MRC5 - Regional materials (1 to 2 points)

GBC HOME

EAp1 - Minimum energy performances (mandatory to achieve certification)

EAp2 - Minimum energy performances (required to obtain the certification)

EAc1 - Optimisation of energy performances (1 to 19 points)

EAc2 - Advanced performances of the opaque envelop (2 points)

MRp2 - Construction waste management (required to obtain the certification)

MRC2 - Construction waste management (1 to 2 points)

MRC5 - Regional materials (1 to 2 points)

More information is available on the www.brianzaplastica.it website and www.greenmap.it website, the first Italian database on construction products that meet the requirements of **LEED** credits.



Service information.

Identification, traceability and packaging.

The Isotec Parete panels are marked with the production batch number and are packaged and packed by Brianza Plastica with polyethylene film resistant to water and UV rays. The packages have an identification label with a progressive number that guarantees 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, two 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.

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”.

Isotec Parete Certifications.

- Type-examination certificate of EC marking – certification system 3 – issued by CSI SPA (UNI EN 13165, UNI 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.
- LEED mapping report issued by Habitech – Technological District of Trento for Energy and the Environment
- Test report of initial/aged thermal conductivity issued by CSI SPA (UNI EN 12667, UNI EN 13165)
- Report on the sound insulating power of “Isotec” issued by CSI SPA (UNI EN ISO 140-3, UNI EN ISO 717-1)
- Test report of water vapour transmission issued by CSI SPA (UNI EN 12086)
- Test report of water absorption by long-term immersion issued by CSI SPA (UNI EN 12087)
- Test report of compression resistance issued by CSI SPA (UNI EN 826)
- Determination of the classification as non-hazardous waste.

Isotec Parete Black Certifications.

- Report on fire reaction classification
- Certificate of performance constancy issued by CSI S.p.a. certification system 1 (UNI EN 13165, UNI EN 13172)

Warranty.

The experience gained from our thermal insulation systems being present on the market for more than 35 years, together with the high quality materials used for their construction, has allowed us to achieve a quality level that has made us certain of its durability over time. **Isotec is guaranteed for 10 years.**

To take advantage of the warranty, fill out the form available on the <http://isotec.brianzaplastica.it> website and send it to the Company within 30 days of purchase.



New envelope for the Picchio Village, Ascoli Piceno, Italy.



The renovation involved the main structure, a multi-functional building more than 100 meters long placed parallel to two regulation-size playing fields, which houses the changing rooms and a gym of more than 300 square meters while the bleachers are on the roof. The design of the external insulation was guided by the choice of the HPL cladding and by the preference for a construction technology that offered thermal-hygrometric advantages to the ventilated facade, in addition to the insulating properties. The material chosen and the technical solution of the ventilated façade with ISOTEC PARETE offer many advantages. Mechanical resistance against impact of soccer balls, excellent performances in the summer thanks to the ventilation system and extreme freedom of expression.



ISOTEC
PARETE



The 8 cm thick ISOTEC PARETE thermo-insulating panels were mechanically fixed directly on the external walls of the building, made with a framed structure in reinforced concrete and single layer infills in anchored, cellular concrete blocks, unplastered. The HPL panels were then fixed to the stiffeners with extreme simplicity. The façade cladding stands out for its extreme linearity, elegant simplicity and original chromatic effect that recaptures the colours of the Ascoli Picchio 1898 F.C., with alternating black and white stripes.



Maximum energy efficiency and top aesthetic 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 facades 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.

ISOTEC[®]
PARETE





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



ISOTEC
PARETE

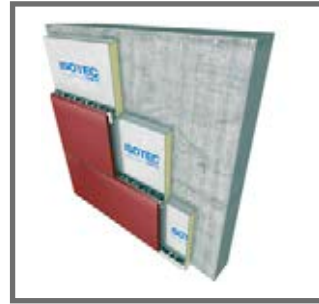


For the refurbishment of this old building in Antwerp centre the client was looking for a solution to insulate and upgrade the esthetics under time pressure. He found the right solution in the Isotec Parete system. The existing bricks wall has been entirely covered by the Isotec Parete panels, fixed 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 1200x3050x8 mm, and to subtain it without any problem. The fixing system used to fix the cladding to Isotec Parete stiffener were rivets.



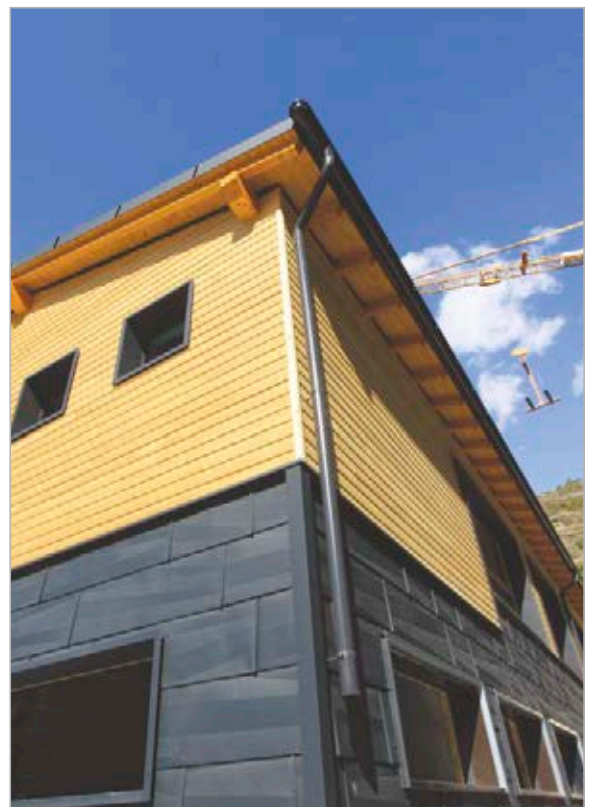


The new Rugby club house, Sondrio, Italy.



The new “Casa del Rugby” of Sondrio will house the new changing rooms for the athletes and Club House. The building was constructed and designed with the implementation of expertly integrated functional, sustainable and innovative solutions: the perimeter walls are made up of prefabricated concrete structures for the ground floor and structures in X-Lam wood for the upper floor, thermally insulated with the ISOTEC PARETE ventilated façade system. The versatility of ISOTEC PARETE in this project has been proven by the choice of an elegant aesthetic combination, created by alternating of the ground floor and larch slats,

which cover the upper floor. 160 mm ISOTEC PARETE panels were used to insulate the ground floor on prefabricated concrete walls and 120 mm thick on X-Lam walls on the first floor. Thanks to declared thermal conductivity λ_D of 0.022 W/mK and the maximum continuity of insulation, the ISOTEC PARETE has made it possible to achieve an energy performance during heating season (EPH) of 1.79 kWh/m³ (design value).



Distribuidor oficial:



EUROBUILD

Zona Industrial de Febres, Lote 14
 3060-318 Febres - Cantanhede - Portugal
 Tel. +351 231 027 943
 info@eurobuild.pt
 www.eurobuild.pt

ISOTEC is also available in the versions:



ISOTEC ROOF



ISOTEC LINEA

INSTALLATION VIDEO



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

