

ISOTEC PARETE



THE **ISOTEC PARETE SYSTEM**

The Isotec Parete insulated and ventilated system plays a decisive role in enhancing a building's energy by reducing heat loss during winter and mitigating the effects of solar radiation through the walls in warmer seasons. This results in a significant reduction in heating and cooling costs. The system also contributes to reducing CO₂ emissions into the atmosphere.

By consolidating multiple installation phases into a single, efficient product, the Isotec Parete System reduces construction times.

THERMAL INSULATION AND SUSTAINABILITY

Thermal insulation plays a crucial role in sustainability, addressing environmental, economic and social factors. Environmentally, it reduces energy consumption; economically, it lowers operating costs; and socially, it improves comfort and the overall healthiness of indoor spaces.

To implement policies that improve the environmental sustainability of buildings, it is essential to assess the contribution of thermal insulation, both during the construction and operational phases. The operational phase, in particular, has a significant impact on a building's environmental footprint. Sustainable design must, therefore, focus on the careful selection of high-quality materials that can effectively reduce energy consumption during a building's use.

POLYURETHANE

Polyurethane is one of the most effective thermal insulators available, delivering exceptional insulating performance even with minimal material thickness.

Thanks to its low mass and high efficiency, polyurethane foam insulation enables substantial energy savings for heating and cooling with minimal consumption of resources. For example, in roof insulation, the resources used to produce polyurethane are offset within the first year of operation of the heating system alone. The extremely low volume and weight of polyurethane insulation, combined with its efficiency and durability, also results in a minimal contribution to the overall waste at the end of a building's lifespan.





- Consistent performance and durability over the entire lifespan of the building.
- Polyurethane's closed-cell structure prevents transformations caused by water absorption, compression, sagging, etc. under normal usage conditions. It is also impervious to the most common chemical agents.
- Rigid polyurethane foam is a thermosetting material that remains stable across a wide temperature range (-50°C to +100°C).

ISOTEC PARETE

ECO DESIGN

Reducing CO₂ emissions, promoting the sustainable use of natural resources, and recycling of waste have now become standard practices across all production sectors. With decades of experience and an innovative mindset, Brianza Plastica has always paid particular attention not only to minimising the environmental impact of its production processes but, above all, to the extreme importance of analysing the entire life cycle of its products - from design to end-of-life management. For this reason, the company adopted the UNI EN ISO 14006 guidelines on eco-design in 2020.

NEW ISOTEC PACKAGING, **100% RECYCLABLE**

As part of its commitment to continuous innovation aimed at improving performance and reducing environmental impact, Brianza Plastica has revolutionised the traditional packaging system for Isotec panels. At its main production site in Carate Brianza, the company has begun replacing heat-shrinkable film with a new, lighter and 100% recyclable stretch film. This choice has led to a reduction in energy consumption from non-renewable sources, equivalent to 21 toe/year. Most importantly, it has also led to a 25% reduction in the amount of plastic used per packaging unit (pack). The new packaging is also much simpler and easier to dispose of on-site.





LEED® v4 CERTIFICATION

LEED® (Leadership in Energy and Environmental Design) is a voluntary certification system for buildings developed by U.S. Green Building Council (USGBC) and applied in over 140 countries worldwide. It evaluates the environmental sustainability and energy efficiency of buildings - residential, commercial, educational, hospital, etc. - and takes into account the entire life cycle of the building, from design to construction.

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 are the ones that give the score, which must be achieved to obtain the certification level defined as a certification objective.

ISOTEC RANGE: CREDITS AND PREREQUISITES

Isotec thermal insulation systems have been mapped by QualityNet certification in accordance with version v4 of the LEED® protocol.

The properties of the individual materials used can contribute positively to meeting requirements and earning credits to the building.



Isotec Parete and Isotec Parete Black products contribute to the LEED® v4 protocol score through 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

The mapping of the Brianza Plastica products has been monitored and verified by QualityNet and can be found at https://greenitop.com.

ISOTEC PARETE

WHY CHOOSE THE ISOTEC PARETE SYSTEM?

Traditional ventilated facades

The traditional ventilated facade system is made up of a substructure, equipped with metal brackets or profiles for wall anchoring, and support profiles for the external finish, which create a chamber of ventilated air between the wall and the cladding. To increase the thermal resistance of the wall, an insulating panel is placed inside the gap against the supporting wall.



Ventilated facade with Isotec Parete

Isotec Parete offers a new system for ventilated facades that uses a single technical solution to create a continuous and homogeneous thermal insulation and a support structure for the cladding.

Thanks to the load-bearing perforated stiffener, a ventilated air chamber between the insulating panel and outer wall covering is created once the cladding is applied.





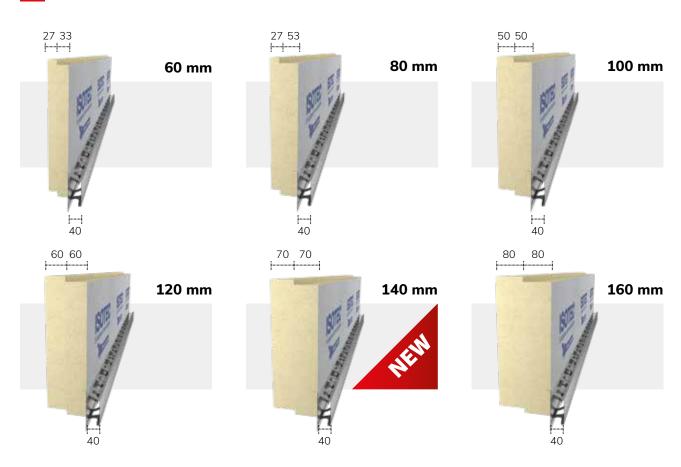
ISOTEC PARETE

The Isotec Parete system can be used for new constructions and renovations to improve the performance of existing buildings.

The panel is fixed to the external surface using mechanical anchors suitable for to the structure. The system allows for the application of different types of external cladding, both light and heavy. By creating a ventilated air chamber between the insulation and the cladding, Isotec Parete System minimises the overheating of walls in summer and reduces the risk of condensation in winter.

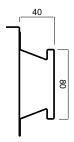


ISOTEC PARETE THICKNESSES

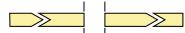




- 1 The Isotec Parete panel is made of self-extinguishing rigid polyurethane foam.
- 2 Both sides of the Isotec Parete panel are coated by embossed aluminium sheet.
- The Isotec Parete panel is made load-bearing by a 4 cm-high steel perforated stiffener that acts as a support for the facade cladding.



The end sides of the panel are cut in a dovetail fashion to maintain the continuity of the insulation.



The Isotec Parete panel is shaped with opposing battens on the longitudinal sides that enable them to interlock, eliminating the risk of thermal bridges.

TECHNICAL CHARACTERISTICS ISOTEC PARETE

CHARACTERISTIC	M.U.	VALUE	TEST METHOD
DENSITY	kg/m³	38,0	UNI EN ISO 845
Declared thermal conductivity $\lambda_{\scriptscriptstyle D}$ (weighted ageing value for 25 years of use)	W/m K	0,022	UNI EN 13165 Annexes A and C
Thermal conductivity U	W/m²K	0.37 per 60 mm 0.28 per 80 mm 0.22 per 100 mm 0.18 per 120 mm 0.16 per 140 mm 0.14 per 160 mm	$U=\lambda_{_{\rm D}}/{\rm d}$ (d= panel thickness in m)
Thermal resistance R	m² K/W	2.73 per 60 mm 3.64 per 80 mm 4.55 per 100 mm 5.45 per 120 mm 6.36 per 140 mm 7.27 per 160 mm	R= d/λ_D (d= panel thickness in m)
Thermal consistency	°C	- 50 ÷ +100	UNI 9051
Dimensional stability DS(70,-)	level	3	UNI EN 1604
Compressive strength at 10% deformation CS(10\Y) kg/cm²	kPa	≥ 120	UNI EN 826
	kg/cm²	≥ 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
Reaction to fire	Euroclass	F	EN 13501-1

CE marking in compliance with Regulation 305/2011/CE, UNI EN 13165:2013 and UNI EN 13172:2012 standards - System 3; notified body: CSI S.p.A. (0497).

REQUIREMENTS ON TOLERANCES EXPRESSED IN ACCORDANCE WITH UNI EN 13165 (PAR. 4.2.2, 4.2.3)				
PANEL THICKNESS	60 mm	80 - 100 - 120 - 140 - 160 mm		
Thickness Class T2	± 3 mm	+ 5 ÷ -3 mm		
Length	± 10 mm			
Width	± 5 mm			

SPECIFICATIONS ISOTEC PARETE

The thermal insulation of the external walls should be achieved using a structural thermal insulation system designed to create a ventilated facade. This system, comprising a structural, monolithic panel that is modular, load-bearing and insulating, is made of rigid closed-cell polyurethane foam (PUR) with a density of 38 kg/m³, classified as self-extinguishing in **Euroclass F** (EN 13501-1). It offers a declared thermal conductivity $\lambda_{\rm D}$ of **0.022 W/mK** (according to UNI EN 13165) and thermal resistance R of no less than:

- 2,73 m² K/W for 60 mm thick panels
- 3,64 m² K/W for 80 mm thick panels
- 4,55 m² K/W for 100 mm thick panels
- 5,45 m² K/W for 120 mm thick panels
- 6,36 m² K/W for 140 mm thick panels
- 7,27 m² K/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 metal stiffener is ribbed in order to provide high mechanical resistance and to allow fixing the finishing elements of the facade. The stiffener has slots to create a natural flow of ventilation between the insulation and the external finish. The panel is shaped with longitudinal overlapping battens on the long side and dovetail joints on the short side. The panel must bear the CE marking, supported by certificates issued by accredited bodies.

Height: according to the depth of the finishing elements of the facade

Length: 2.500 mm

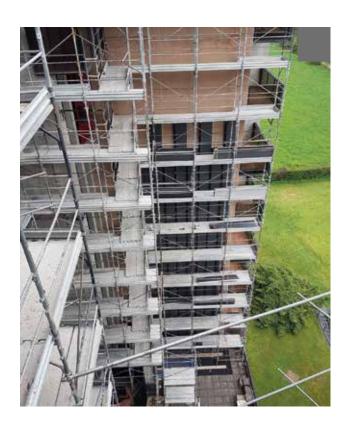
Thicknesses: 60 mm - 80 mm - 100 mm - 120 mm - 140 mm - 160 mm

MATERIAL THICKNESSES REQUIRED TO ACHIEVE U = 0.18 W/m²K or R = 5.45 m²K/W				
POLYURETHANE FOAM WITH WATERPROOFING COATINGS	12 cm ISOTEC*			
POLYURETHANE FOAM WITH WATERPROOFING COATINGS	15 cm			
EXPANDED POLYSTYRENE WITH GRAPHITE	17 cm			
EXPANDED OR EXTRUDED POLYSTYRENE	20 cm			
MINERAL WOOLS	21 cm			
BLOND CORK	24 cm			
WOOD WOOL	26 cm			

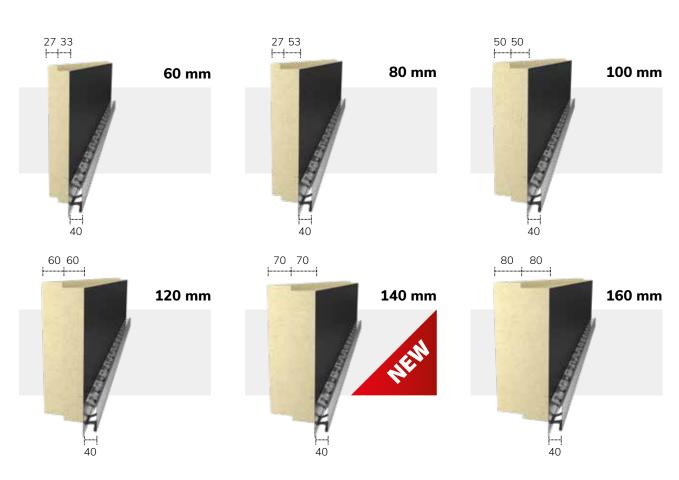
ISOTEC PARETE BLACK

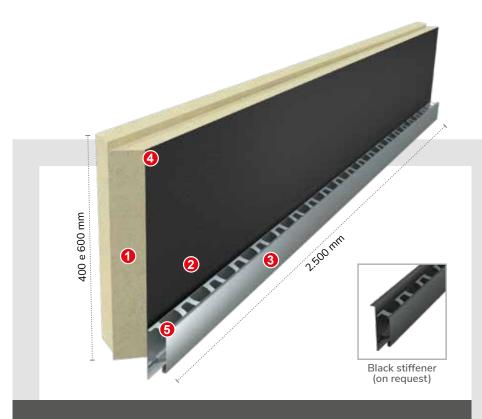
Isotec Parete Black has all the characteristics of the Isotec Parete panel, plus greater resistance to fire.

This is due to its composition, which includes a PIR polyurethane core and fire-retardant mineral coating on the outer surface. Isotec Parete Black is recommended for applications requiring a specific and higher fire reaction performance.

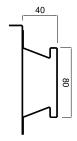


ISOTEC PARETE BLACK THICKNESSES

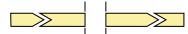




- 1 The Isotec Parete Black panel is made of self-extinguishing rigid polyurethane foam (PIR).
- 2 The Isotec Parete Black panel is coated by embossed aluminium sheet at the intrados, which makes it impermeable, and by a fireproof mineral coating at the extrados.
- The Isotec Parete Black panel is made load-bearing by a 4 cm-high steel perforated stiffener that acts as a support for the facade cladding.



The end sides of the panel are cut in a dovetail fashion to maintain the continuity of the insulation.



The Isotec
Parete Black
panel is shaped
with opposing
battens on the
longitudinal
sides that enable
them to interlock,
eliminating the
risk of thermal
bridges.

SACK BLACK

TECHNICAL CHARACTERISTICS ISOTEC PARETE BLACK

CHARACTERISTIC	M.U.	VALUE	TEST METHOD
DENSITY	kg/m³	38,0	UNI EN ISO 845
Declared thermal conductivity $\lambda_{_{D}}$ (weighted ageing value for 25 years of use)	W/m K	0.024 W/mK (thickn. 60, 80, 100 mm) 0.025 W/mK (thickn. 120, 140, 160 mm)	UNI EN 13165 Annexes A e C
Thermal conductivity U	W/m²K	0.40 for 60 mm 0.30 for 80 mm 0.24 for 100 mm 0.21 for 120 mm 0.18 for 140 mm 0.16 for 160 mm	$U=\lambda_{_{\rm D}}/d$ (d= panel thickness in m)
Thermal resistance R	m² K/W	2.50 for 60 mm 3.33 for 80 mm 4.16 for 100 mm 4.80 for 120 mm 5.60 for 140 mm 6.40 for 160 mm	R= d/λ_D (d= panel thickness in m)
Thermal consistency	°C	- 50 ÷ +100	UNI 9051
Dimensional stability DS(70,-)	livello	3	UNI EN 1604
Compressive strength at 10%	kPa	≥ 100	UNI EN 826
deformation CS(10\Y) kg/cm		≥ 1,02	UNI EN 826
Resistance to water vapour diffusion MU	μ	> 50.000	UNI EN 12086
Specific heat	J/kgK	1400	UNI EN ISO 10456
Emission of dangerous substances	//	Compliant	UNI EN 13165 Annex ZA
Reaction to fire	euroclass	B-s2, d0	EN 13501-1

CE marking in compliance with Regulation 305/2011/CE, UNI EN 13165:2013 and UNI EN 13172:2012 standards - System 3; notified body: CSI S.p.A. (0497).

REQUIREMENTS ON TOLERANCES EXPRESSED IN ACCORDANCE WITH UNI EN 13165 (PAR. 4.2.2, 4.2.3)				
PANEL THICKNESS	60 mm	80 - 100 - 120 - 140 - 160 mm		
Thickness Class T2	± 3 mm	+ 5 ÷ -3 mm		
Length	± 10 mm			
Width	± 5 mm			

SPECIFICATIONS ISOTEC PARETE BLACK

The thermal insulation of the external walls should be achieved using a structural cladding insulation system designed to create ventilated facades. This system, comprising a structural, monolithic panel that is modular, load-bearing and insulating, is made of rigid closed-cell polyurethane foam (PIR) with a density of 38 kg/m³, classified as self-extinguishing in **Euroclass B-s2, d0** (EN 13501-1). It offers a declared thermal conductivity $\lambda_{\rm D}$ of 0.024 W/mK for thicknesses of 60, 80 and 100 mm, $\lambda_{\rm D}$ of 0.025 W/mK for thicknesses of 120, 140 and 160 mm (according to UNI EN 13165) and thermal resistance R of no less than:

- 2,50 m² K/W for 60 mm thick panels
- 3,33 m² K/W for 80 mm thick panels
- 4,16 m² K/W for 100 mm thick panels
- 4,80 m² K/W for 120 mm thick panels
- 5,60 m² K/W for 140 mm thick panels
- 6,40 m² K/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 stiffener in protected perforated steel. The metal stiffener is ribbed in order to provide high mechanical resistance and to allow fixing the finishing elements of the facade. The stiffener has slots to create a natural flow of ventilation between the insulation and the external finish. The panel is shaped with longitudinal overlapping battens on the long side and dovetail joints on the short side. The panel must bear the CE marking, supported by certificates issued by accredited bodies.

Height: according to the depth of the finishing elements of the facade

Length: 2.500 mm

Thicknesses: 60 mm - 80 mm - 100 mm - 120 mm - 140 mm - 160 mm

MATERIAL THICKNESSES REQUIRED TO ACHIEVE U = 0.21 W/m²K and R = 4.80 m²K/W				
POLYURETHANE FOAM WITH WATERPROOFING COATINGS	12 cm SOTEC PARETE BLACK			
POLYURETHANE FOAM WITH WATERPROOFING COATINGS	15 cm			
EXPANDED POLYSTYRENE WITH GRAPHITE	17 cm			
EXPANDED OR EXTRUDED POLYSTYRENE	20 cm			
MINERAL WOOLS	21 cm			
BLOND CORK	24 cm			
WOOD WOOL	26 cm			







A SYSTEM WITH **MAXIMUM FLEXIBILITY**

EXAMPLES OF CONTINUOUS STRUCTURES:





Isotec Parete can be applied to any type of structure, whether continuous or discontinuous, using proper mechanical fasteners. This makes it a universal solution suitable for a wide range of applications.







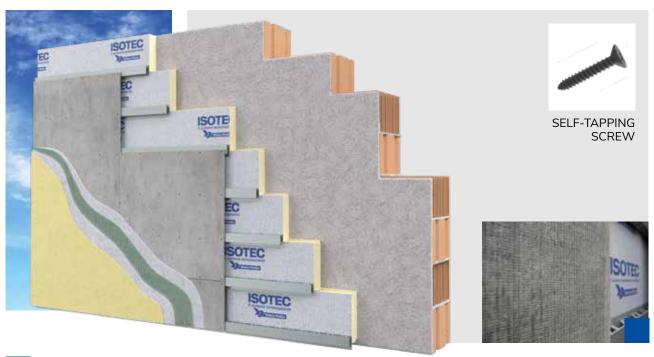
EXAMPLE OF DISCONTINUOUS STRUCTURE:





A SYSTEM WITH MAXIMUM COMPATIBILITY

FIBRE CEMENT RENDER-CARRIER BOARDS



STONEWARE SLABS



Isotec Parete is compatible with all types of facade cladding, whether continuous or discontinuous, thanks to the use of proper mechanical fixing devices.

The positioning of the panel is guided by the characteristics of the cladding material and can be installed either horizontally or vertically, depending on the specific application.

CORRUGATED OR RIBBED METAL SHEETS



COLOURED FIBRE CEMENT



ISOTEC PARETE

WOODEN OR WPC SLATS



HPL SHEETS



CONCRETE TILES



METAL SLATS



27

ISOTEC® PARETE

NATURAL STONE



METAL SHEET



STANDING SEAM PANELS



TERRACOTTA TILES





LAYING INSTRUCTIONS



1- Cutting the starting element, height \geq 65mm



2 - Laying the starting element



4 - Panel matching



5 - Arrival at the top



6 - Applying loose stiffeners

The pitch and arrangement (horizontally or vertically) of the Isotec Parete panel are determined by the choice of external cladding.



3 - Mechanical fixing in a lattice pattern



7 - Sealing of joints

- The "loose" (not coupled to the insulating panel) shaped stiffener is used in areas where there is no support for fixing the cladding (e.g. near openings, edges, front summits, etc.)
- The cladding is secured to the metal stiffener through proper mechanical fixing.
- Once the cladding is positioned, a ventilated chamber is created.

WATCH THE VIDEO FOR A DETAILED WALKTHROUGH OF ALL THE STEPS FOR INSTALLING THE ISOTEC PARETE SYSTEM



LAYING INSTRUCTIONS VIDEO

For further information on the product and its installation, please contact Brianza Plastica's technical sales department: sales-insulation@brianzaplastica.it



ACCESSORIESFOR SEALING AND FINISHING

The Isotec Parete panel comes with special accessories to complete the system, which are fundamental to ensure a professional installation that meets the highest standards.



Polyurethane foam



Isoband and Isoband Black butyl aluminium tapes



Loose metal stiffener



Loose black stiffener



ADVANTAGESOF THE ISOTEC PARETE SYSTEM



THERMAL INSULATION IN SUMMER AND WINTER

Isotec Parete has a core made of rigid closed-cell polyurethane foam with a density of 38 kg/m³, currently one of the best thermal insulators in existence. The available thicknesses of the Isotec Parete panel, depending on the thermal performance, allow meeting the minimum requirements for any climate zone. The insulated and ventilated facade system plays a decisive role in enhancing a building's energy efficiency by reducing heat loss during winter and mitigating the effects of solar radiation in warmer seasons. This results in a significant reduction in heating and cooling costs.



THERMAL RESISTANCE

Thermal resistance (R) takes into account the actual thickness of the panels and provides a clear measure of the insulation's ability to resist heat exchange. With its wide range of thickness options and the low thermal conductivity of polyurethane, Isotec Parete delivers the highest thermal resistance values on the market while offering the lowest cost per unit of thermal resistance.



ELIMINATION OF THERMAL BRIDGES

The Isotec Parete system provides continuous and homogeneous insulation of the building envelope, eliminating thermal bridges and minimising 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 an upward flow of air inside the ventilation chamber, which improves the envelope's thermal performance in summer by dissipating excess heat. In winter, it helps eliminate any condensation that may form inside the air chamber.



PROTECTION AGAINST HUMIDITY AND ACCIDENTAL INFILTRATION

The ventilation reduces humidity inside the air chamber, while the advanced shielding protects against atmospheric precipitation.



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 coating for the finishing elements of the facade in one installation solution. Moreover, the conformation of the panel, with a dovetail cut on the short side and opposing battens on the long side, allows for safe, fast and cost-effective installation.



LIVING COMFORT

Isotec Parete is the ideal solution to improve year-round living comfort inside buildings. In fact, the outstanding insulating performance, ventilation and advanced shielding help maintain a constant temperature both in summer and winter, which in turn reduces and optimises heating and cooling costs.



DURABILITY

With a polyurethane core and aluminium coating on both surfaces, Isotec Parete offers exceptional durability.



ENERGY SAVING

The characteristics of the Isotec Parete system (thermo-insulation plus ventilation) provide effective wall insulation. This ensures significant savings on heating costs in winter and cooling costs in summer.



CERTIFICATIONS AND TEST REPORTS



- 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.
- Test report of initial thermal conductivity issued by CSI SPA (UNI EN 13165, UNI EN 12667).
- Test report of water vapour transmission issued by CSI SPA (UNI EN 13165, UNI EN 12086).
- Test report of water absorption by long-term immersion issued by CSI SPA (UNI EN 13165, UNI EN 12087).
- Test report of compression strength issued by CSI SPA (UNI EN 13165, UNI EN 826).
- Report on the sound insulation power of "Isotec" issued by CSI SPA (UNI EN ISO 140-3, UNI EN ISO 717-1).
- Determination of the classification as non-hazardous waste.
- LEED® v4 mapping report issued by QualityNet®.



- Report on fire reaction classification.
- Certificate of performance constancy issued by CSI S.p.a. certification system 1 (UNI EN 13165, UNI EN 13172).
- Test report of initial thermal conductivity issued by CSI SPA (UNI EN 13165, UNI EN 12667).
- Test report of water vapour transmission issued by CSI SPA (UNI EN 13165, UNI EN 12086).
- LEED® v4 mapping report issued by QualityNet®.

SERVICE INFORMATION

■ IDENTIFICATION, TRACEABILITY AND PACKAGING

Isotec Parete panels are marked with the production batch number and are packaged and packed by Brianza Plastica using UV-resistant and waterproofing polyethylene film. Each pack features an identification label with a barcode, ensuring full product traceability. The CE marking is affixed to each label.

TRANSPORT

Packages are equipped with support beams in expanded polystyrene placed at appropriate intervals to distribute the weight evenly and to facilitate easy handling.

STORAGE

Do not remove the packing film until installation; any loose panels should remain in their original packaging and be stored off the ground.

If necessary, a maximum of two packs can be stacked on top of each other to minimise the area occupied.

■ LIFTING AND HANDLING

Packages must be secured at two points, with the distance between them no less than half the package length. Use special spacers to prevent direct contact between belts with the package. Packages must be lifted only with a rocker arm. Packages must be deposited on roof surfaces capable of supporting their weight, ensuring proper resting and safety conditions. Isotec Parete panels are light enough to allow for quick and easy manual handling by a single operator.

WARRANTY

With over 40 years of experience in thermal insulation systems and the use of high-quality materials, Isotec has reached a standard of excellence that ensures long-lasting durability and reliability. Isotec Parete can benefit from an extended warranty of up to 10 years by completing the appropriate form available on the website www.sistemaisotec.it within 30 days of purchase.

DISPOSAL

Based on its characteristics, the Isotec Parete panel can be classified as NON-HAZARDOUS WASTE and managed with EER Code 170604 - "insulating materials other than those mentioned in items 170601 and 170603."





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ISO 9001:2015 CERTIFIED QUALITY MANAGEMENT SYSTEM



UNI EN ISO 9001:2015 Certificate No. 106 o. u. Carate Brianza



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