GBR

FLAT ROOF SOLUTIONS

ISOPAN SYSTEMS FOR FLAT ROOFS

PART OF MANNI GROUP

ISOPAN
BUILDING ENVELOPE SOLUTIONS
by Manni Group

WORLDWIDE LEADERS

40

YEARS OF EXPERIENCE

4.205

CUSTOMERS PER YEAR

6

COMPANIES

9

PRODUCTION AND
COMMERCIAL FACILITIES

629

EMPLOYEES
THROUGHOUT THE WORLD

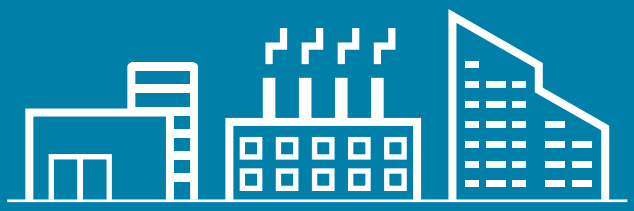
100%

ITALIAN DESIGN

298

MILLION EUROS
TURNOVER

MORE VALUE FOR YOUR PROJECT



A SOLUTION FOR EVERY NEED

thermal and sound insulation, sturdiness, airtightness, fire resistance; in addition to high technology and creative freedom. With the widest range of insulated panels for walls and roofs, Isopan is able to meet every need: aesthetic, functional and productive for any type of building.

MORE EFFICIENCY

The competence of a team of constantly updated professionals and highly specialised technicians will guide you in choosing the solution most suited for the thermal insulation of your building.

GREATER INNOVATION

Proven knowledge of the market, in-depth research on materials, continuous updates on the main trends of the sector and on reference standards allow us to create cutting-edge solutions with an innovative design which combine aesthetics and functionality.

GREATER QUALITY

The quality certification is Isopan's first commitment towards its customers. We only make use of selected suppliers, capable of assuring materials of proven reliability in full compliance with international regulations.

GREATER SAFETY

Thanks to their specific technical specifications, Isopan panels contribute to protecting buildings against fire, preventing it from spreading and limiting its extension (passive protection).

GREATER SUSTAINABILITY

Isopan promotes sustainable construction by providing solutions for building redevelopment, reducing consumption and increasing energy and resource savings. Our panels contribute to obtaining the BREEAM® and LEED certification for buildings and are manufactured in plants powered by renewable energy sources.

FLAT ROOF SOLUTIONS

Unique and exclusive Solutions and Advantages

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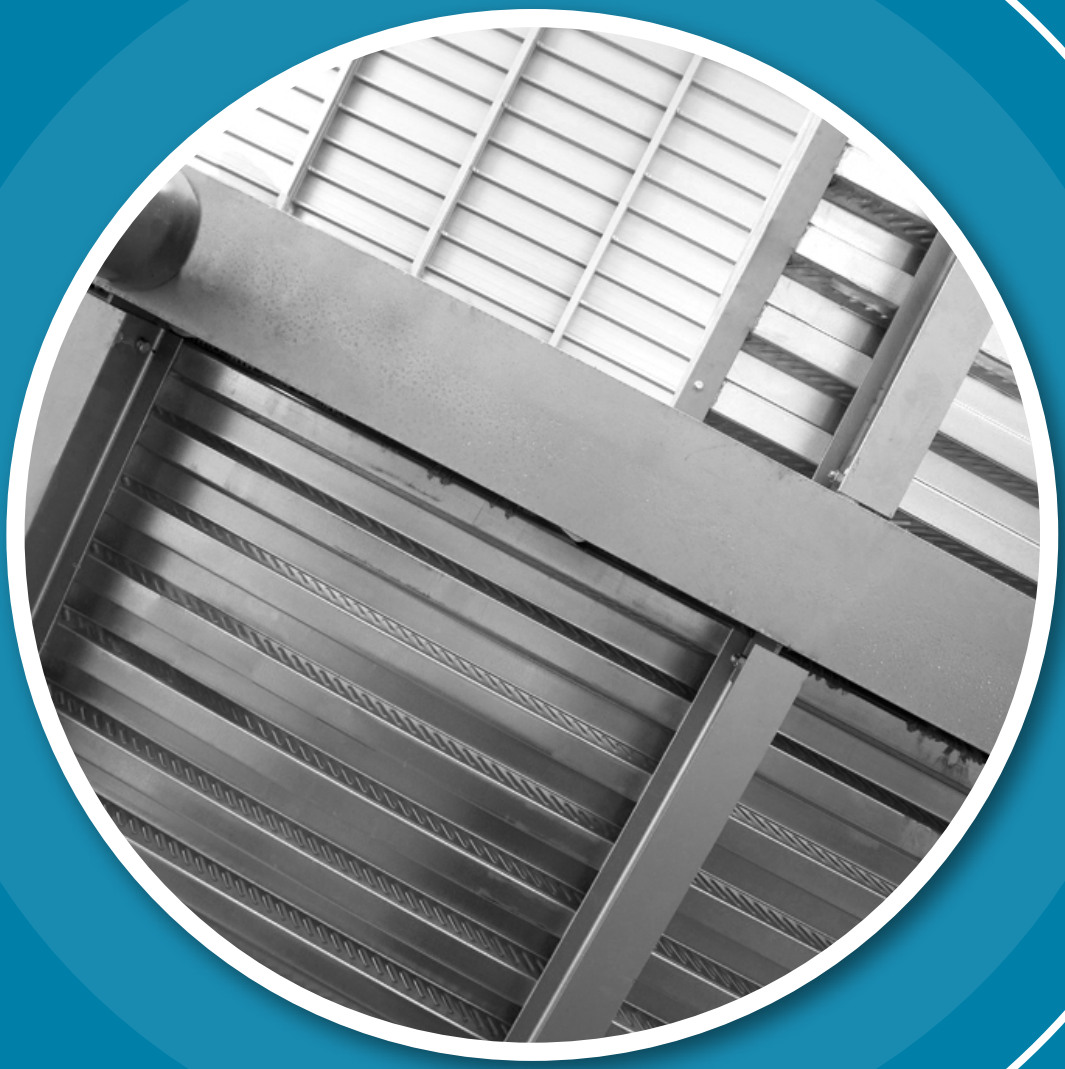
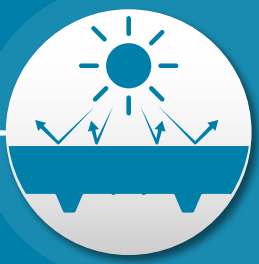
SOLUTIONS FOR FLAT ROOFS



THE FLAT ROOF SOLUTIONS by Isopan include prefabricated solutions and systems assembled on site, designed to make installation operations easy, fast and safe. Resistance to external weathering, waterproofness and durability over time are ensured by the use of high quality components such as pre-coupled sheets with synthetic membranes, accessories and supplementary systems.

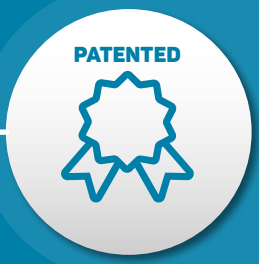
** ISOPAN GREEN ROOF has obtained the Declare Label, the label created by the International Living Future Institute (ILFI) and the Living Future Europe Initiative (LFEI), which certifies the safety of the materials used in products for the European construction market.*



WATERPROOFNESS RESISTANCE TO UV RAYS

SYNTHETIC MEMBRANES

The components used contribute to effectively counteract the overheating of roofs in summer, thanks to the use of synthetic membranes with high heat-reflecting properties.



TECHNOLOGICAL AND PATENTED SYSTEMS

PRE-COUPLED SYNTHETIC MEMBRANES

The Isopan pre-coupled sheets, featuring perfect adhesion between the synthetic membrane and the metal layer, offer many advantages, including greater resistance, flatness and absence of interstitial condensation.

GREATER VALUE AND GREATER SUSTAINABILITY

COOL ROOF AND GREEN ROOF*

FlatRoof systems can be integrated with various types of green roofs, specially designed by Isopan with the aim of offering effective solutions for all design requirements.

THERMAL INSULATION AND FAST INSTALLATION

ISODECK PVSTEEL RANGE

Thanks to the use of polyurethane foams or mineral rock wool, any design and performance requirement can be met.

LARGE CLEARANCES FOR LOGISTICS

ISODECK LG PRODUCTS AND SOLUTIONS

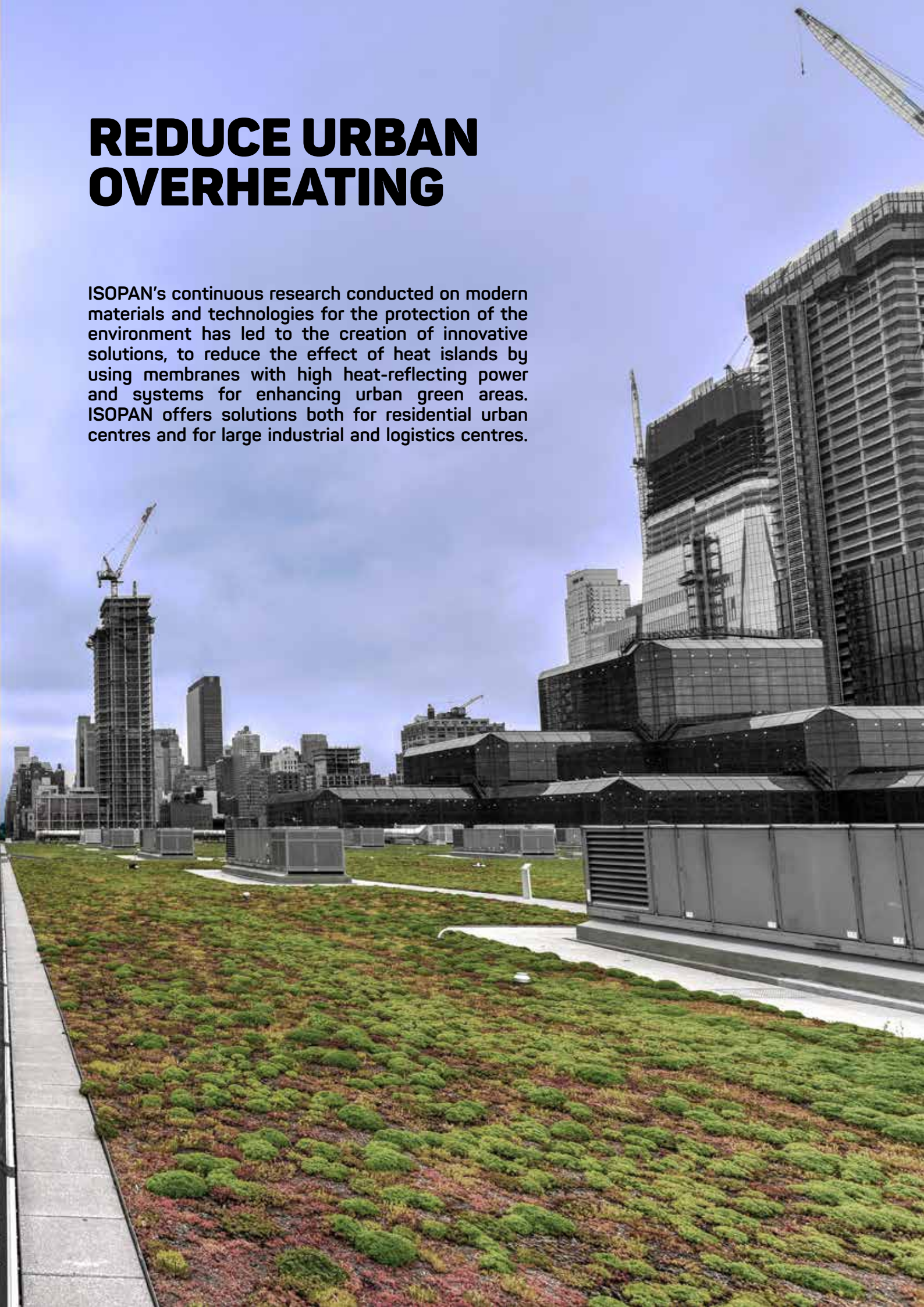
The FlatRoof solutions by Isopan are designed to obtain roofs featuring high load-bearing capacity, even in the presence of large spans between the load-bearing structural elements.

HEAT ISLANDS

In urban and industrial centres there is an increase in local temperatures compared to suburban areas. This microclimatic phenomenon is called heat island. The cause of heat islands is to be found in intense urbanisation.

REDUCE URBAN OVERHEATING

ISOPAN's continuous research conducted on modern materials and technologies for the protection of the environment has led to the creation of innovative solutions, to reduce the effect of heat islands by using membranes with high heat-reflecting power and systems for enhancing urban green areas. ISOPAN offers solutions both for residential urban centres and for large industrial and logistics centres.



Isopan FlatROOF

COOL ROOF

The **COOL ROOF** roofing solutions feature high solar reflectance and thermal emissivity properties. This means that they are able to reflect incident solar radiation and at the same time emit infrared thermal energy.

The **COOL ROOF** solutions, therefore, feature a low surface temperature, even under direct sunlight.

LEED®

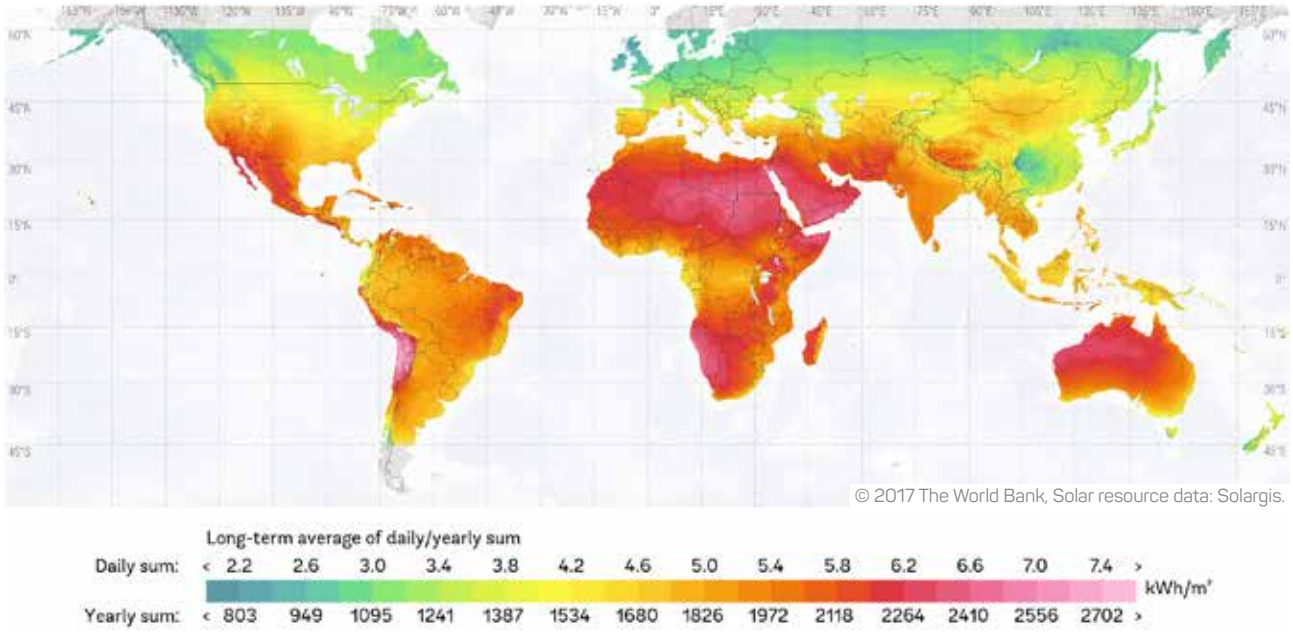
LEED *(Leadership in Energy and Environmental Design) is a system used for the classification of buildings in terms of eco-sustainability, environmental impact and energy performance, developed in the United States in the early '90s and introduced in Italy by the Green Building Council Italia in 2008.*
The **LEED** *certification refers to the entire building as a whole and is based on the attribution of credits grouped into different categories.*
*In particular, with regard to the hedges "***COOL ROOF***" roofing solutions, credits can be attributed in the following categories:*

- *Category 1: Site sustainability*
- *Credit 7.2: Roof heat island effect*

To obtain the credit due to the reduction of the heat island effect, the following is necessary:

- *Build roofs with* **SRI ≥ 78** *(for roofs with slope ≤15%)*
- *Build roofs with* **SRI ≥ 29** *(for roofs with slope >15%)*

GLOBAL MAP OF HORIZONTAL IRRADIATION



COOL ROOF ADVANTAGES

The strengths of a cool roof are many:

- **IMPROVEMENT OF THERMAL COMFORT** inside the building in the summer season
- **ENERGY SAVINGS** for the air conditioning of the building
- **IMPROVEMENT OF THE ENERGY EFFICIENCY** of the entire building envelope
- **REDUCTION OF THE HEAT ISLAND EFFECT**
- **GREATER DIMENSIONAL STABILITY** of the substructures and the layers making up the roof solution, due to the reduction of the effects of high temperatures (less movement, expansion, cracking, etc.)
- **INCREASED DURABILITY OVER TIME** of the waterproof roof membranes, as the action of natural ageing induced by heat is reduced by the low surface temperature.

Isopan FlatROOF

COOL ROOF

SOLAR REFLECTANCE

Solar reflectance measures the tendency of a material/surface to reflect solar radiation. A surface with high solar reflectance is, therefore, able to reflect most of the incident solar radiation and maintains a lower temperature. This value is particularly high for light colours, especially white. The reflectance is expressed as a percentage (%) or by defining a value ranging between 0 and 1.

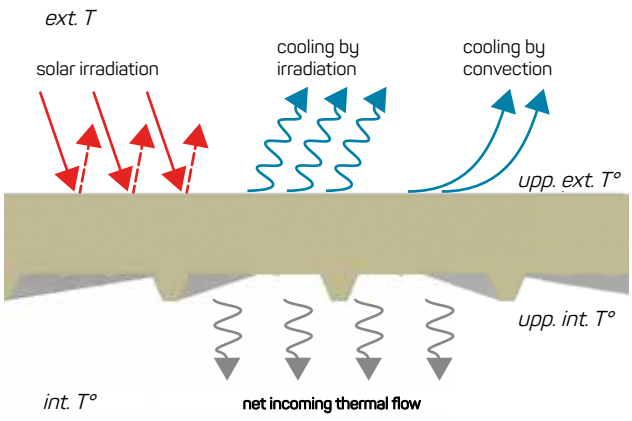
SRI VALUE (SOLAR REFLECTANCE INDEX)

The Solar Reflectance Index (SRI) measures the combined impact between the reflectance and emissivity properties of a material/surface. The parameter is measured according to the ASTM E1980 standard and is calculated according to three wind conditions (low, medium, high). The SRI index is expressed as a percentage (%); the higher its value, the lower the surface temperature of the roof under solar radiation.

ISOPAN SRI* VALUE

	PVC-P	TPO
Solar Reflectance Index: SRI (%)	116.2 low wind 114.7 medium wind 113.9 high wind	84.3 low wind 85.3 medium wind 85.9 high wind
Solar Reflectance: SR	0.904	0.696

* Values obtained by testing samples at the EELAB laboratory of the "Enzo Ferrari" Department of Engineering of the University of Modena and Reggio Emilia



SOLUTIONS

GreenROOF

The installation of a Green Roof on buildings to isolate the structure is a traditional technique from the Nordic countries, which has now become one of the main elements of sustainable construction worldwide.

In fact, integrating urban buildings with green roofs is not only an operation that affects the quality of the air and the landscape, but also a way to transform buildings by giving them greater energy efficiency.

Declare.

DECLARE *is the label created by the International Living Future Institute (ILFI) and the Living Future Europe Initiative (LFEI), which certifies the safety of the materials used in products for the European construction market. Each product bearing the* **DECLARE** *label declares that it does not contain any "ingredients" included in the Red List, i.e. the list of the most dangerous materials in the construction industry. Isopan is the first company in Italy to have obtained the Declare label for two of its innovative products: LEAF and* **GREEN ROOF**.

ADVANTAGES

ENHANCING THE BUILDING

Using a green roof improves the architectural appearance, and the functionality of the available areas increases. As a result, it acts as a strong distinctive and enhancement element of the building.

HIGH WATER RETENTION

The high water storage capacity of the FSD elements and the substrates allow up to 80% of the annual rainfall to be retained on the roof, thereby reducing the flow of water towards the drains. The efficiency of the systems is verified and certified according to the methods set forth in UNI 11235/15 Standards.

THERMAL INSULATION AND ENERGY SAVING

The green roof represents technology with the best benefit-cost ratio to reduce roof temperatures, with reductions of up to 40°C, as well as to produce a greater phase shift and damping of the thermal flow.

ECOCLIMATE IMPROVEMENT AND ENVIRONMENTAL IMPACT

A green roof is considered a valid tool to limit the "urban heat island" phenomenon and to obtain a climatic improvement of the entire urban ecosystem. It also safeguards the biodiversity of the biological mass that can fail due to cementation.

DUST RETENTION

Green roofs lead to a reduction in fine dust in the air thanks to the properties of the vegetative mass to capture the particles, retaining them and then releasing them on the substrate, where they lose their hazardous effect. A green roof also decreases the circulation of fine dust in the atmosphere, thereby reducing overheating of the surfaces and decreasing the formation of updrafts.

ROOF PROTECTION

A green roof protects the thermal insulation and waterproofing solutions, extending their duration and preserving their functionality, as they protect them from U.V. rays, from atmospheric events, and from chemical agents.

USABLE SURFACES

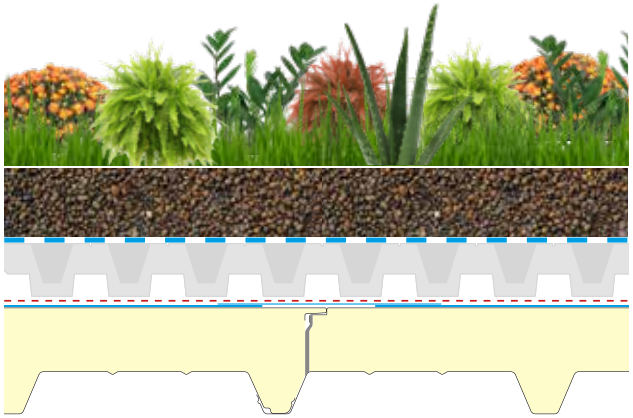
The exploitation of unused areas is one of the most interesting aspects linked to using a green roof. Recreating spaces to increase the quality of life is an increasingly important prerogative in modern life, and Isopan Greenroof solutions provide great design freedom. Green also allows users to enjoy enhanced psychophysical well-being.

Isopan FlatROOF

The ISOPAN GREENROOF *roofing solutions consist in the integration of the green roof system on flat roofs made with prefabricated sandwich panels or with solutions assembled on site.*
Waterproofing is ensured by the synthetic membranes made of **PVC** *or* **TPO**. *Thermal insulation is ensured by the insulating core in polyurethane foam or mineral wool.*

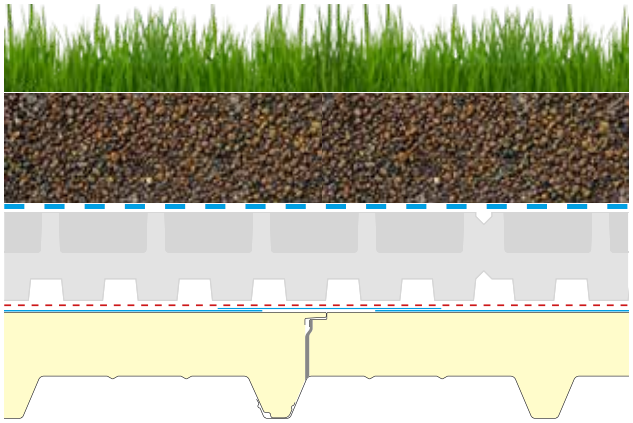
GREENROOF ESTENSIVO

Suitable for large buildings, sloping roofs and existing roofs due to their low substrate thickness (approx. 3 to 15 cm), with a maximum weight of 100 Kg/m^2; the colonising vegetation is very resistant (mosses, grasses, succulents) and does not require frequent maintenance (watered only in case of prolonged drought). The height of the plants does not exceed 25 cm and the combination of several varieties gives these roofs a multi-coloured appearance that varies with the seasons. This type of roof cannot be walked on and cannot be cultivated.



GREENROOF INTENSIVO

Suitable for small and medium surfaces. The thickness of the substrate is greater (approx. 15 to 30 cm) and the overload weight is between 120 and 350 kg/m^2 (at maximum capacity in water). It allows the vegetation to have a strong root and aerial horticulture type such as grasses, turf, lively plants or shrubs. Moderate maintenance and regular watering are necessary. Comparable to traditional gardens, it is possible to sow or cultivate all types of vegetation.



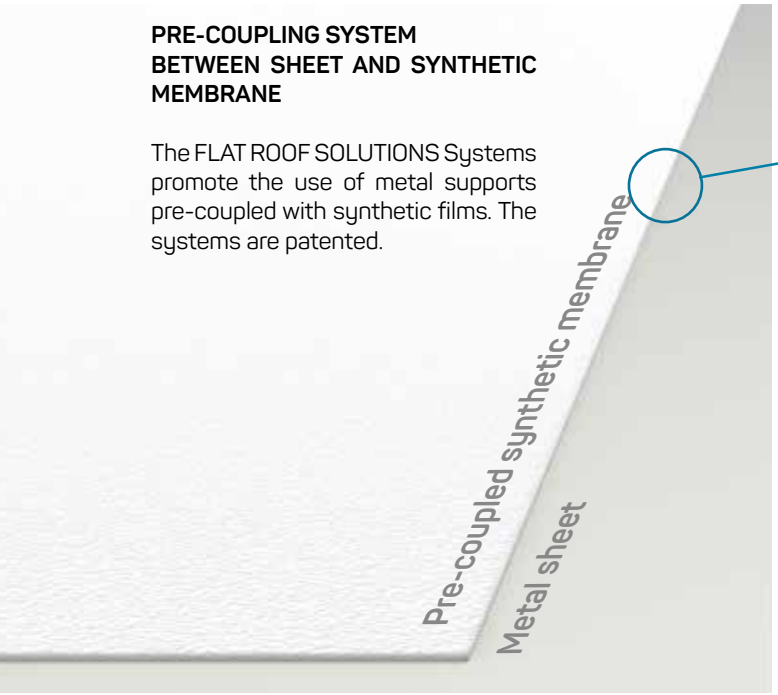
For technical information on usage and for the technical specifications, please refer to the documentation available on the www.isopan.com website.

Isopan FlatROOF

MEMBRANES AND SYNTHETIC FACINGS

PRE-COUPLING SYSTEM BETWEEN SHEET AND SYNTHETIC MEMBRANE

The FLAT ROOF SOLUTIONS Systems promote the use of metal supports pre-coupled with synthetic films. The systems are patented.



THE ADVANTAGES OF A TECHNOLOGICAL AND UNIQUE SOLUTION

PATENTED

UNIFORM ADHESION BETWEEN SHEET AND MEMBRANE NO SPOT WELDING GREATER PERFORMANCE

- Flatness of the roof surface, ensured by the adhesion of the membrane to the metal sheet.
- Mechanical and foot traffic resistance of the surface membrane.
- Great resistance to water infiltration, thanks to the presence of the sheet under the membrane.
- No risk of interstitial humidity between sheet and membrane.

FLAT ROOF SOLUTIONS by Isopan involve the use of systemic membranes of various types, tested and certified according to the strictest international standards. The membranes used feature high chemical and physical resistance properties, durability over time and excellent waterproof characteristics.

POLYVINYLCHLORIDE - PVC

PVC-P waterproof membranes are products that have been extensively tested and certified according to national and international standards, such as the BBA Certificate. They can last up to 40 years while maintaining excellent hydraulic seal, mechanical and chemical resistance characteristics.

THERMOPLASTIC POLYOLEFINS - TPO

TPO (synthetic material also known as polyolefins) waterproof membranes are products that have been extensively tested and certified according to national and international standards, such as the BBA Certificate. They can last up to 30 years while maintaining their functional, physical and chemical characteristics.

SUSTAINABILITY

The durability of PVC-P waterproof membranes, together with the possibility of recycling, makes it one of the most sustainable products ever. Modern membranes have a positive relationship between the resources used and the performance provided throughout its service life.

The absence of halogens and the sole presence of carbon and hydrogen in the polymer chain of the TPO membranes determine their innate ecological vocation. The chemical composition of the product prevents the release of harmful emissions during welding operations. The TPO membranes used by ISOPAN are equipped with EPD, featuring the quantification of environmental performance.

RESISTANCE

PVC-P is supplied with the so-called Solar Shield Technology, a special coating that protects the outer surface of the membrane from UV rays which are largely reflected, better resisting extreme hot-cold cycles, therefore slowing down the ageing process. Surface temperatures remain low. They can be used in any climatic conditions.

The membrane is made with a reflective treatment on the external face, to enhance the reflectance and emissivity characteristics. A special coating ("cool pigment") maintains low temperatures on the external surface of the membrane, which is protected from most of the UV rays. The ageing processes due to the extreme hot-cold cycles are therefore slowed down.

Isopan FlatROOF

INSULATING ELEMENT: FEATURES AND PERFORMANCE

POLYURETHANE FOAM

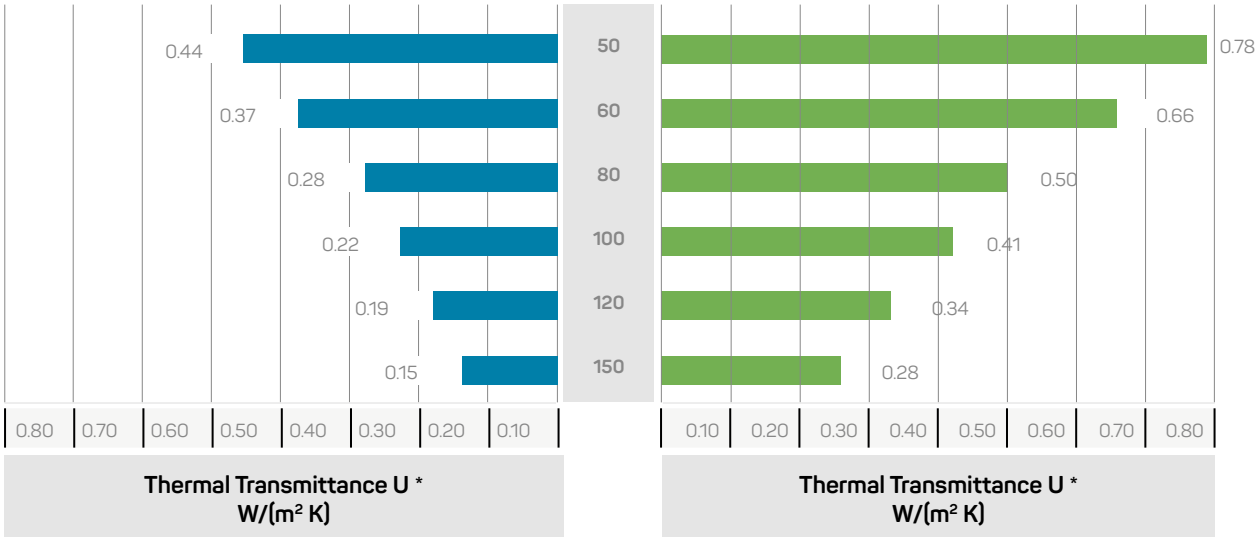
Standard closed-cell polyurethane foams. Foaming agent used N-pentane (in accordance with the Montreal protocol).

MINERAL ROCK WOOL

Mineral wool insulators ensure excellent heat-insulating and sound-absorbing characteristics, while the fire-retardant properties of the material prevent excessive heat from affecting the structure.

THERMAL TRANSMITTANCE*

According to EN 14509 A.10



* Values referred to the ISODECK PVSTEEL PU sandwich panel

* Values referred to the ISODECK PVSTEEL MW sandwich panel

BEHAVIOUR IN CASE OF FIRE*

According to EN 13501-1, EN 13501-2, EN 14509 A.10

Fire Reaction Class	Fire Resistance
C s3 d0*	REI 15*

* Values referred to the ISODECK PVSTEEL PU sandwich panel

Fire Reaction Class	Fire Resistance	Fire Resistance
B s1 d0*	REI 120*	REI 20**

* Values referred to the ISODECK PVSTEEL MW sandwich panel
** Values referred to the ISODECK LG 153 MW 100 System

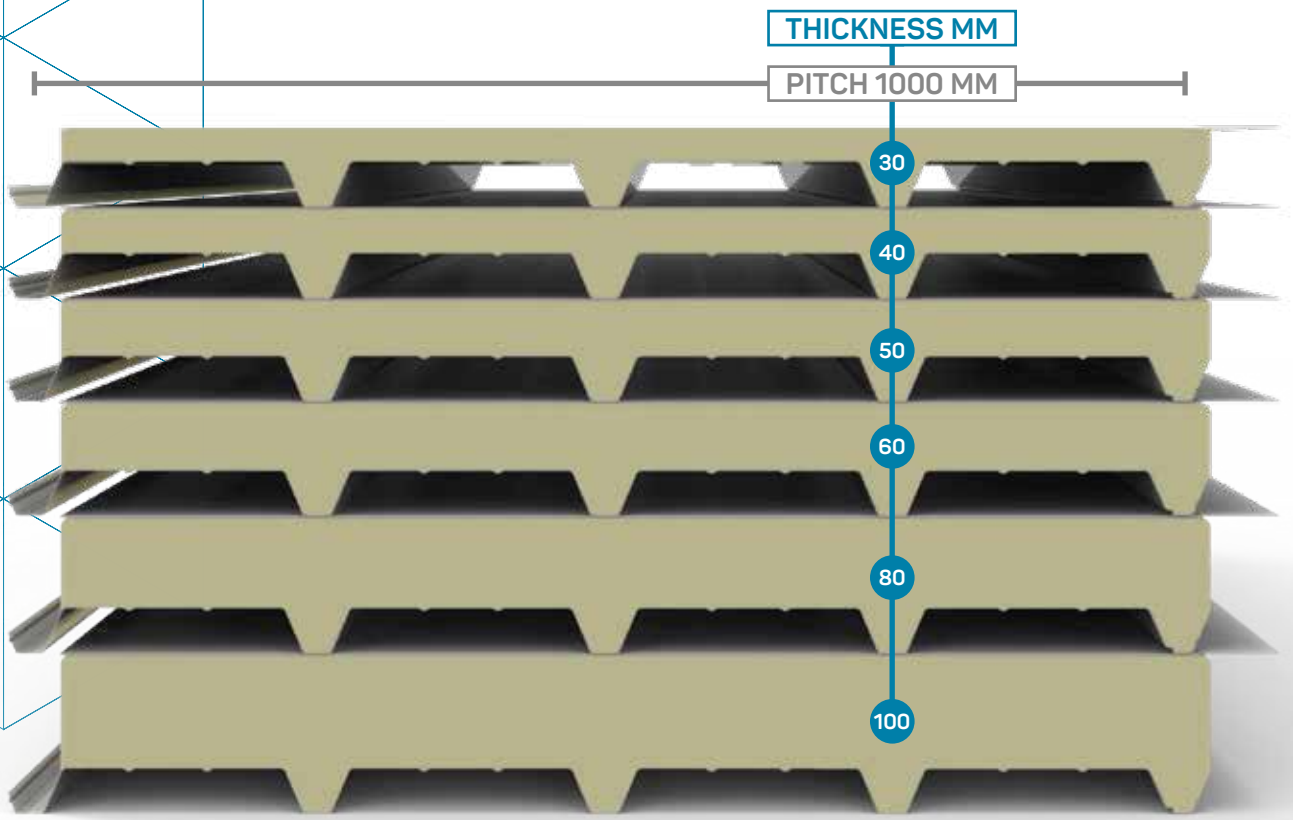
02 FLATROOF SOLUTIONS

ISOPAN
BUILDING ENVELOPE SOLUTIONS
by Manni Group

Panel designed for the construction of flat or low-slope roofs, featuring excellent waterproofing properties and, at the same time, high thermal insulation values. It is a single skin metal faced panel whose external surface is made of a synthetic PVC or TPO membrane.

2.1 ISODECK SYNTH

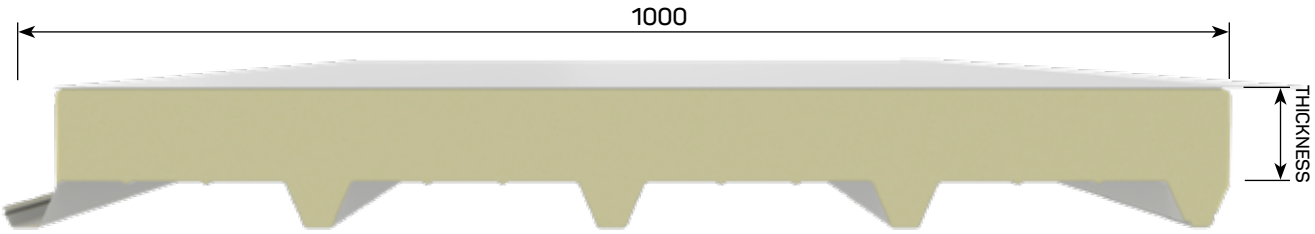
SINGLE SKIN METAL FACED PANEL WITH SYNTHETIC MEMBRANE



2.1 Isodeck Synth

Description

Panel designed for the construction of flat or low-slope roofs, featuring excellent waterproofing properties and, at the same time, high thermal insulation values. The great versatility is ensured by the lightness of the panel and the speed of installation. It is a panel with corrugated metal sheet on the inside and a synthetic membrane (in PVC or TPO) on the outside. The insulating mass consists of polyurethane foam.



PANEL WEIGHT

SHEET THICKNESS		NOMINAL PANEL THICKNESS mm					
		30	40	50	60	80	100
0.6	kg/m²	9.0	9.4	9.8	10.2	11.0	11.8
0.7	kg/m²	10.0	10.4	10.8	11.2	12.0	12.8
0.8	kg/m²	10.8	11.4	11.8	12.2	13.0	13.8

THERMAL INSULATION - According to EN 14509 A.10

U	NOMINAL PANEL THICKNESS mm					
	30	40	50	60	80	100
W/m² K	0.76	0.57	0.45	0.38	0.28	0.22
kcal/m²h°C	0.61	0.47	0.38	0.32	0.24	0.20

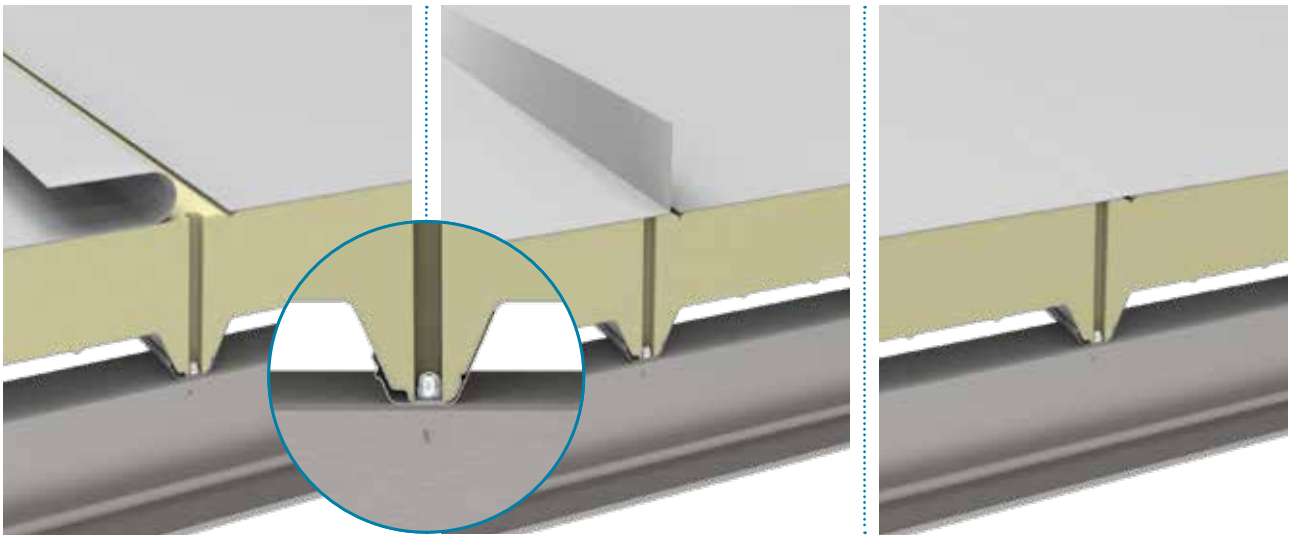
CHARACTERISTICS

- Internal face: pre-painted galvanised steel (EN 10346)
- Insulating mass: polyurethane foam
- External face: sheet coated with synthetic membrane

ADVANTAGES

- Versatile solution
- Energy performance ensured by the synthetic membrane
- Lightweight and easy to install product

FASTENING - BRIDGING



For technical information on panel usage and for the technical specifications of each product, please consult the Technical Manual available on the website www.isopan.com.

2.1 Isodeck Synth

Technical Data

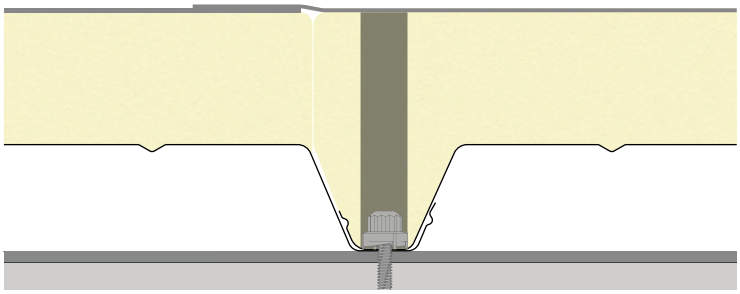
OVERLOADS - SPANS

LOAD TABLES - STEEL SHEETS										
EVENLY DISTRIBUTED LOAD	SHEET THICKNESS mm					SHEET THICKNESS mm				
	0.5	0.6	0.7	0.8	1.0	0.5	0.6	0.7	0.8	1.0
kg/m²	MAXIMUM SPAN cm					MAXIMUM SPAN cm				
60	245	260	275	290	315	275	295	310	325	350
80	220*	235	250	265	285	250*	270	285	295	320
100	200*	220*	235	245	265	220*	245*	260	275	295
120	180*	200*	215*	230	250	200*	225*	240*	260	280
140	165*	185*	200*	215*	235	185*	205*	225*	240*	265
160	155*	170*	185*	200*	225	175*	195*	210*	225*	255
180	145*	160*	175*	190*	215*	165*	180*	200*	210*	240*
200	140*	155*	165*	180*	200*	155*	170*	185*	200*	225*

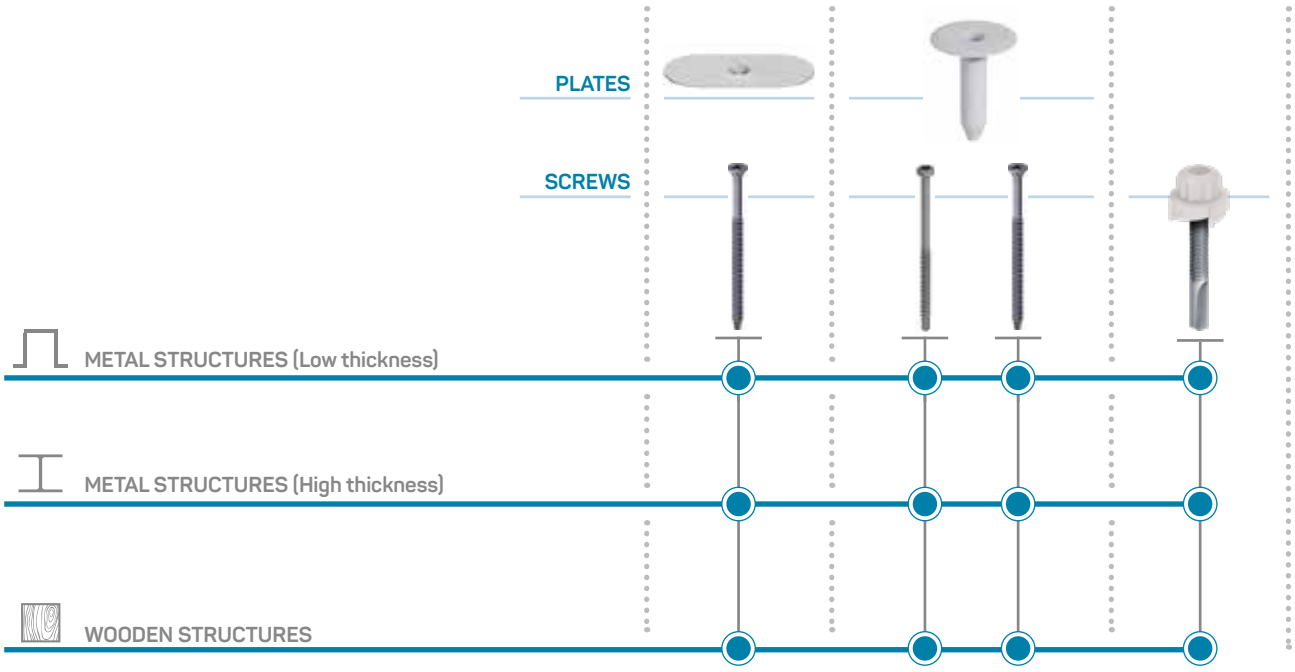
The calculation only takes into account the snow load; therefore, it is to be considered indicative. The values shown in the capacity tables do not take into account the thermal load.
*Values with stress limitations.

DIMENSIONAL TOLERANCES

DEVIATIONS mm		
Length		± 10 mm
Useful width		± 5 mm
Thickness		± 2 mm
Orthometry and rectangularity		± 3 mm
Length	L ≤ 3 m L > 3 m	± 5 mm ± 10 mm
Thickness	D ≤ 100 mm D > 100 mm	± 2 mm ± 2 %



SCREWS AND FASTENERS

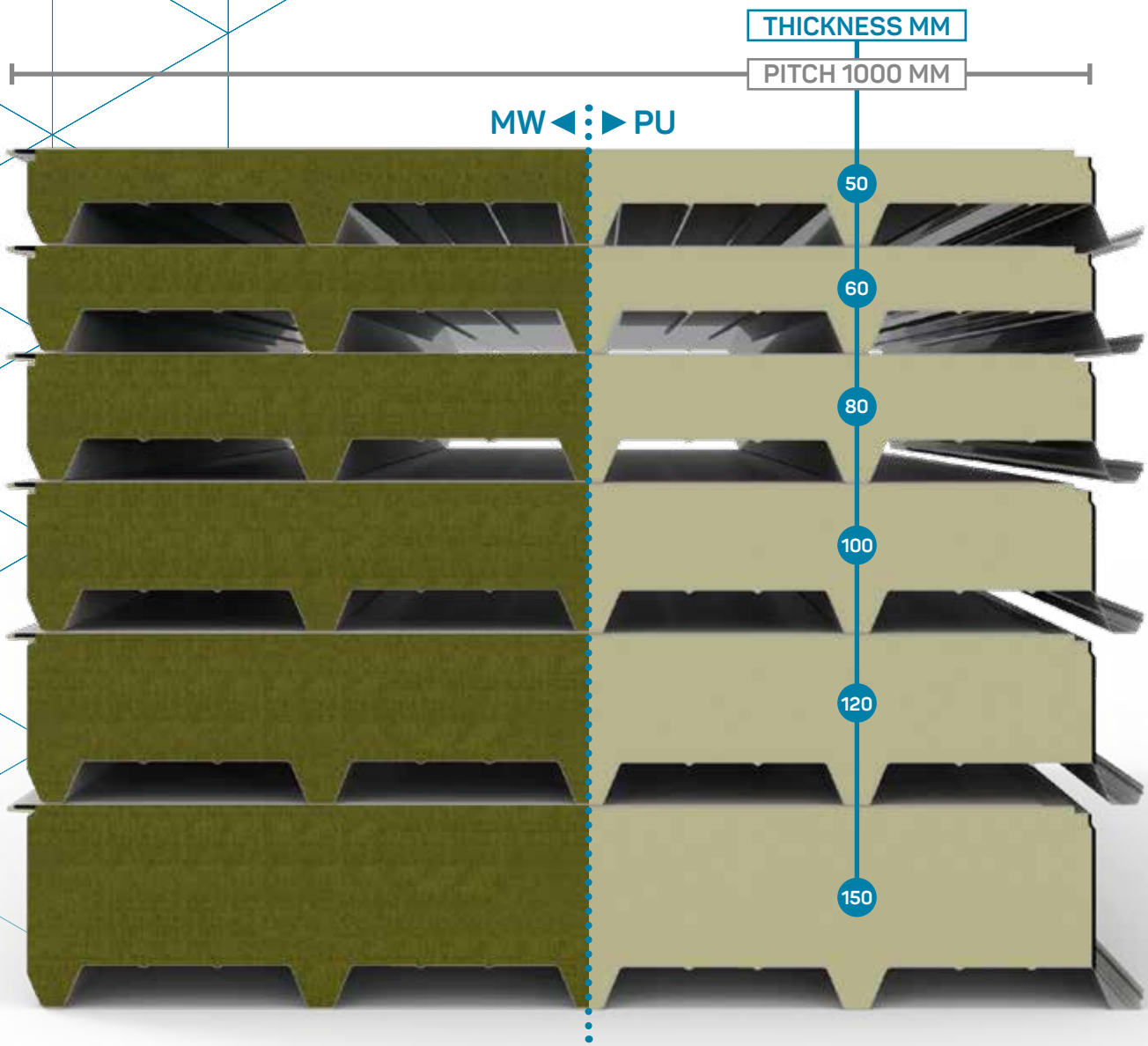


For information on the types of fasteners and installation methods, please refer to the fasteners section of the catalogue or contact ISOPAN.

Isodeck PVSteel is a panel designed for use on flat roofs, made with a metal support covered with a PVC or high strength TPO membrane.

2.2 ISODECK PVSTEEL

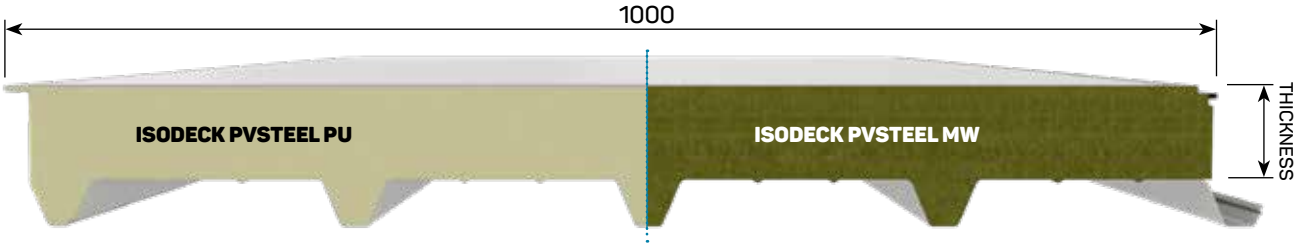
ISODECK PVSTEEL PU
ISODECK PVSTEEL MW
ISODECK PVSTEEL MW FONO



2.2 ISODECK PVSTEEL range

Description

Panel designed for the construction of flat or low-slope roofs, with corrugated metal sheet on the inside and a pre-coupled sheet with synthetic membrane (in PVC or TPO) on the outside. The insulating mass can consist of polyurethane foam (ISODECK PVSTEEL PU) or mineral rock wool (ISODECK PVSTEEL MW).



ISODECK PVSTEEL PU - Isolamento in Poliuretano

ISODECK PVSTEEL MW - Isolamento in Lana minerale

PANELS WEIGHT [kg/m²]

NOMINAL PANEL THICKNESS mm						INTERNA SHEET THICKNESS	NOMINAL PANEL THICKNESS mm							
50	60	80	100	120	150		50	60	80	100	120	150	170	200
15,2	15,6	16,4	17,2	18,0	19,2	0,6 mm	18,4	19,4	21,4	23,4	25,4	28,4	30,4	33,4
17,1	17,5	18,3	19,1	19,9	21,1	0,8 mm	20,4	21,4	23,4	25,4	27,4	30,4	32,4	35,4

THERMAL INSULATION - EN 14509 A.10

NOMINAL PANEL THICKNESS mm						U	NOMINAL PANEL THICKNESS mm							
50	60	80	100	120	150		50	60	80	100	120	150	170	200
0,44	0,37	0,28	0,22	0,19	0,15	W/m² K	0,78	0,66	0,50	0,40	0,34	0,27	0,24	0,20
0,38	0,32	0,24	0,19	0,16	0,13	kcal/m² h °C	0,67	0,57	0,43	0,34	0,29	0,23	0,21	0,17

BEHAVIOUR IN CASE OF FIRE* - According to EN 13501 (parts 1 and 2) and EN 14509

C s3 d0	PU	REACTION TO FIRE	MW	B s1 d0
REI 15 (100mm thickness and above)		FIRE RESISTANCE		REI 120 (120mm thickness and above)

CHARACTERISTICS

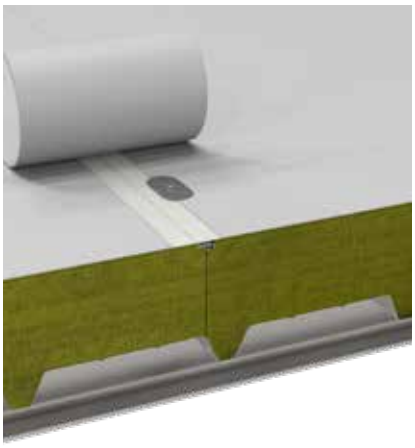
- Internal face: pre-painted galvanised steel (EN 10346)
- Insulating mass: polyurethane foam or mineral wool
- External face: sheet coated with PVC membrane

ADVANTAGES

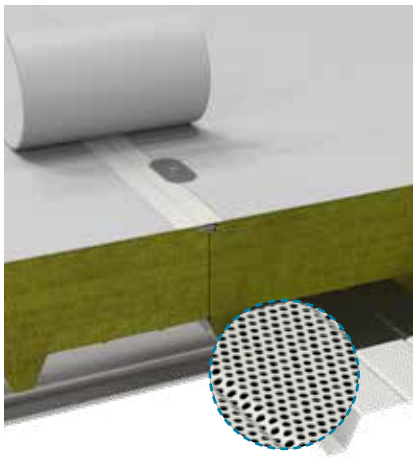
- High resistance to static and dynamic loads
- Fast installation
- Excellent resistance to U.V. rays
- High waterproofing properties

ISODECK PVSTEEL PU

ISODECK PVSTEEL MW



ISODECK PVSTEEL MW FONO



* The declared performances, associated with the different types of insulation, may vary according to the Production Facility, in accordance with the local and national regulations in force. Please check with Isopan. Unless expressly requested, the performance values will not be provided.

2.1 ISODECK PVSTEEL range

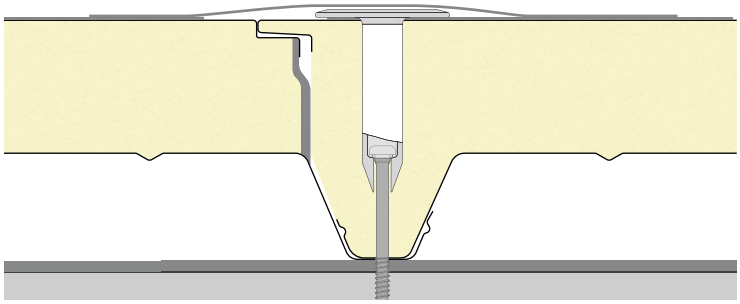
Technical Data

OVERLOADS - SPANS

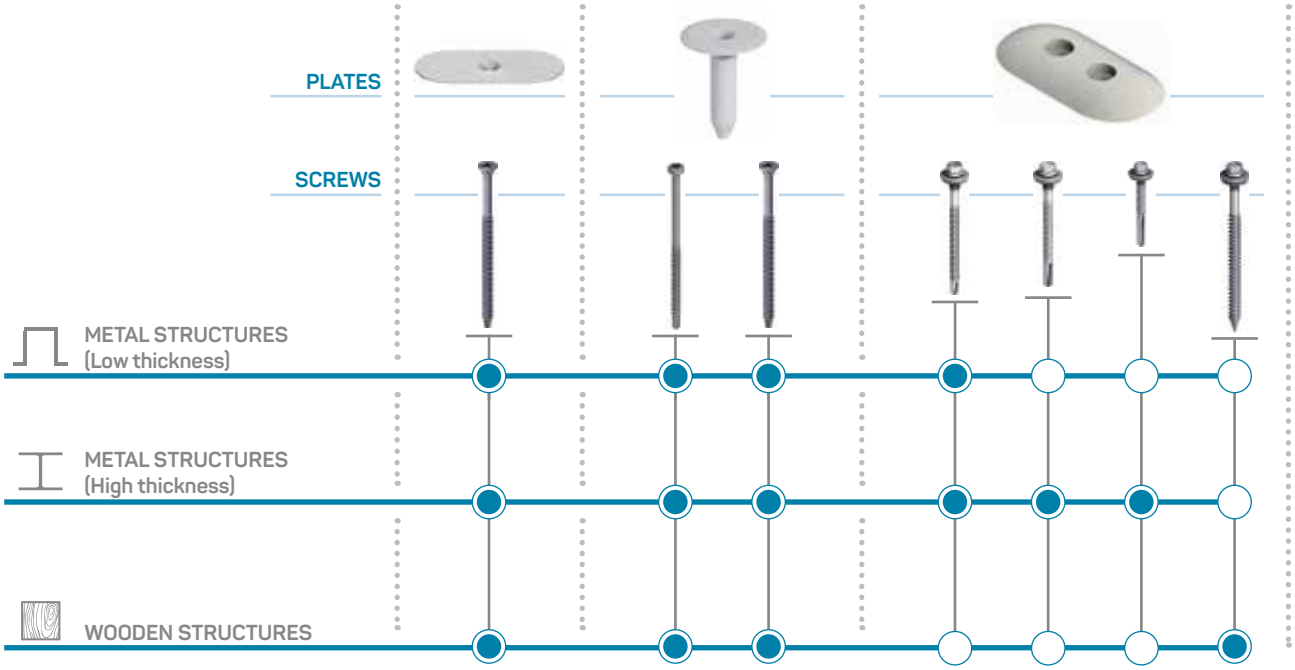
ISODECK PVSTEEL PU - 120 mm support						Int. Steel 0.6 mm	ISODECK PVSTEEL MW - 120 mm support							
NOMINAL PANEL THICKNESS mm						EVENLY DISTRIBUTED LOAD	NOMINAL PANEL THICKNESS mm							
50	60	80	100	120	150	kg/m²	50	60	80	100	120	150	170	200
MAXIMUM SPAN cm							MAXIMUM SPAN cm							
385	405	485	495	520	580	80	335	360	415	480	525	575	*585*	*595*
360	395	440	450	485	525	100	305	325	380	430	480	520	*530*	*540*
325	360	410	425	450	485	120	270	300	340	390	435	470	*475*	*480*
305	340	390	400	420	455	140	250	280	315	355	400	425	*430*	*435*
300	310	360	370	405	435	160	235	250	290	325	360	390	*395*	*400*
280	300	350	355	380	410	180	220	235	270	305	330	365	*370*	*375*
235	295	320	340	365	400	200	200	220	255	290	320	335	*340*	*345*
215	270	305	320	345	375	220	185	210	240	270	300	320	*320*	*325*
180	225	295	305	325	355	250	160	185	220	250	280	290	*295*	*300*

Calculation for static Sizeng carried out according to the contents of Annex E of UNI EN standard 14509. Deflection limit 1/200 ℓ. The values shown in the capacity tables do not take into account the thermal load. Values not referred to the Isodeck Pvsteel MW Fono version. *In blue, value considered with support width 150mm.*.

DEVIATIONS mm		
Useful width		± 2 mm
Perpendicularity deviation		6 mm
Misalignment of internal metal facings		± 3 mm
Lower sheet coupling		F = 0 + 3 mm
Length	L ≤ 3 m L > 3 m	± 5 mm ± 10 mm
Thickness	D ≤ 100 mm D > 100 mm	± 2 mm ± 2 %



SCREWS AND FASTENERS



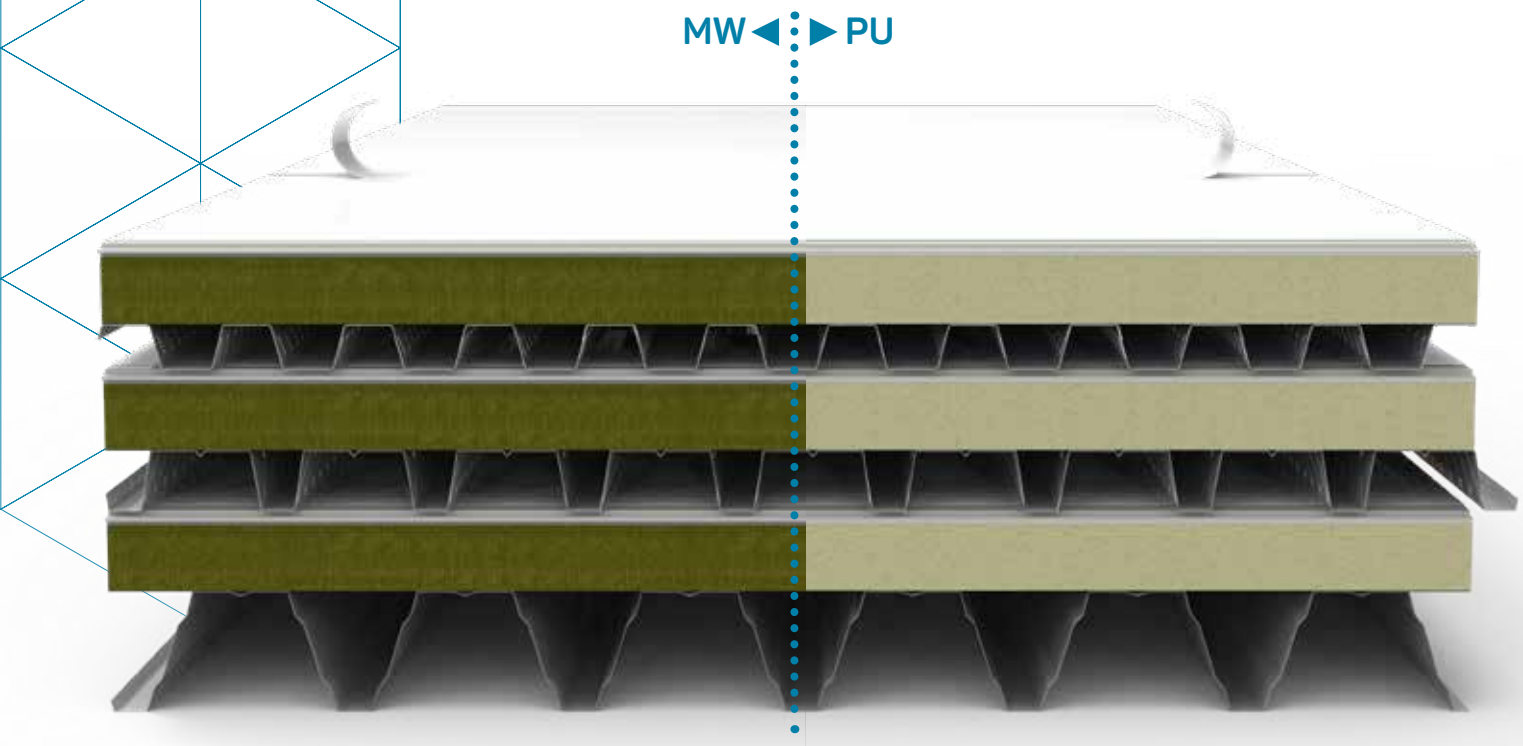
For information on the types of fasteners and installation methods, please refer to the fasteners section of the catalogue or contact ISOPAN.

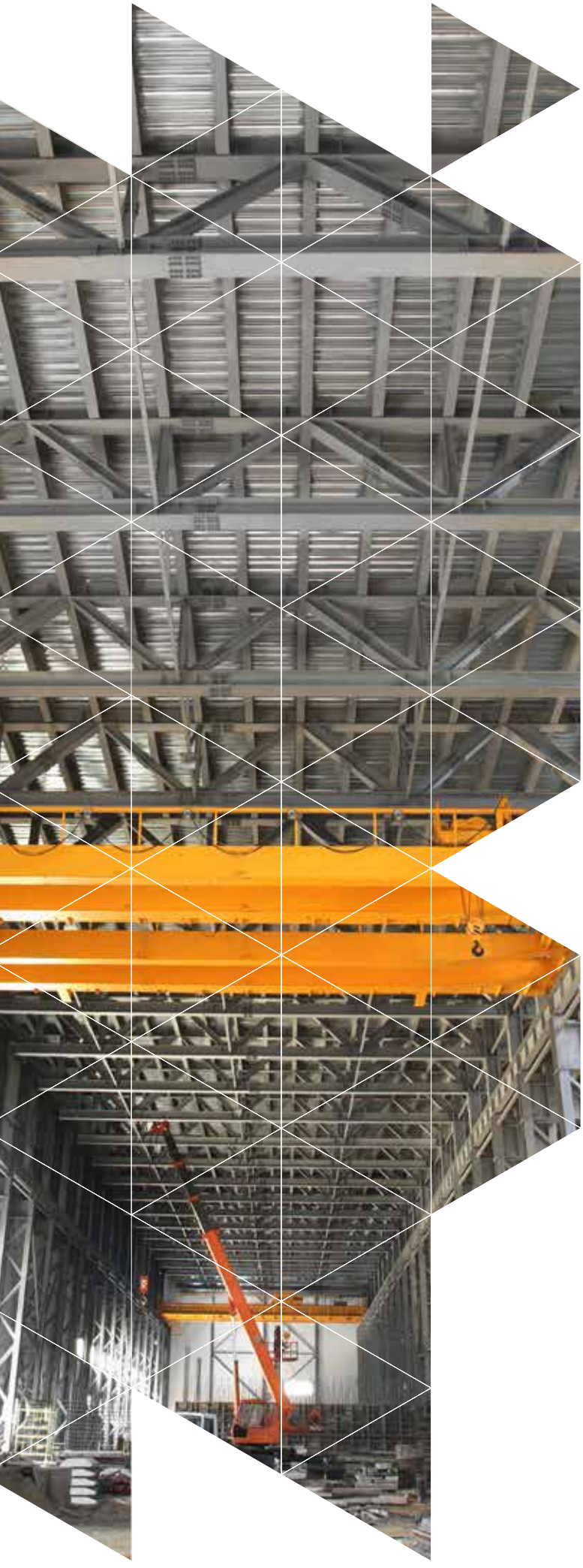
Double skin metal faced panel, with metal support covered with a high resistance PVC or TPO membrane. Isodeck PVSteel is a panel designed for a wide range of applications, specifically for flat roofs.

ISOPAN
BUILDING ENVELOPE SOLUTIONS
by Manni Group

2.3 ISODECK LG RANGE

SYSTEM FOR THE ON-SITE CONSTRUCTION OF FLAT ROOFS WITH ISOPAN PRODUCTS





2.3 ISODECK LG range

THE ISODECK LG SYSTEM

ISODECK LG is the new on-site solution designed by Isopan for flat roofs and large clearances.

ISODECK LG consists of two groups of main elements:

CORRUGATED METAL SHEETS	INSULATING PANELS
LG 153 LG 75 LG 55	Wall Panels Range ISODECK LG-PVSTEEL

UP TO 8-METRE SPANS

The profiles of the corrugated metal sheets LG 55, LG 75 and LG 153 are specially designed for the construction of floors and walkable roofs. The geometric conformation of the metal profile ensures a high load-bearing capacity of the permanent and accidental loads acting on the roof. This results in the possibility to cover large structural clearances.

The possibility to choose the thickness of the metal sheet and the insulating panel makes the ISODECK LG system a flexible solution that can be adapted to any type of project.

Large clearances

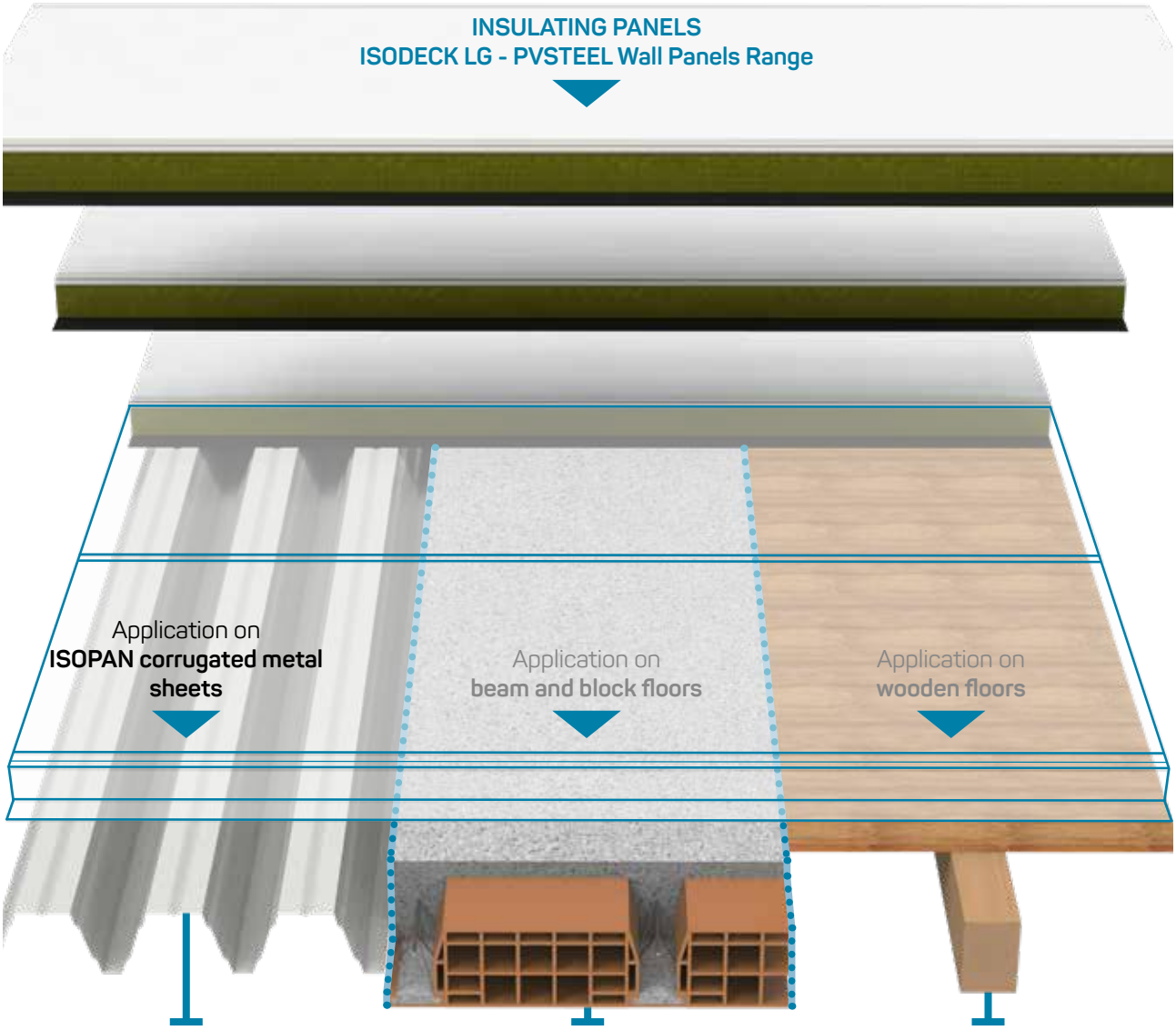
Design flexibility

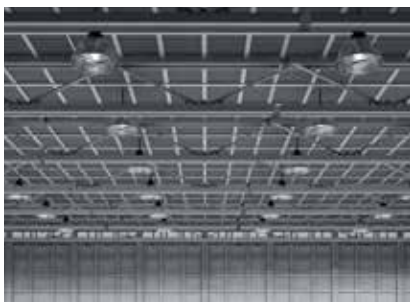
CERTIFIED SYSTEM - Fire resistance REI 20*

* Certificate obtained in the ISODECK LG 153 MW configuration, with SK-MW PVSTEEL 100mm mineral wool panel:
- Corrugated Metal Sheet LG 153
- PVSTEEL SK MW 100mm panel

2.3 ISODECK LG range

ISODECK LG SYSTEM and CONFIGURATIONS





CORRUGATED METAL SHEETS
LG 153, LG 75, LG 55

+

ISODECK LG - PVSTEEL Wall Panels Range

ISODECK LG ROOF

BEAM AND BLOCK FLAT ROOF

+

WOODEN FLAT ROOF

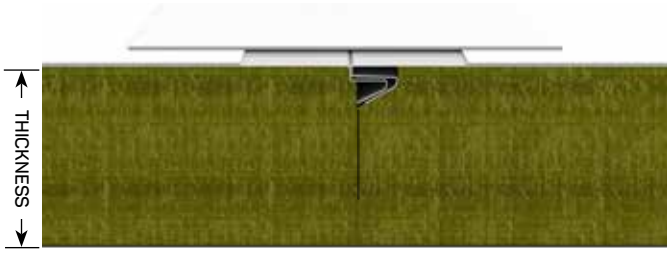
+

ISODECK LG - PVSTEEL Wall Panels Range

ISODECK LG - PVSTEEL wall panels can be used in combination with existing roofs, with beam and block or wooden structures.

2.3 ISODECK LG Range - PVSTEEL Panels Range

SK-MW PVSTEEL



Useful panel width: 1000 mm

Stratigraphy	
SK-MW PVSTEEL	Sheet pre-coupled with PVC or TPO
	mineral wool insulating core
	Anti-condensation felt
Substrate installed on site	Separation layer (Site installation)

Maximum achievable length: 6000 mm

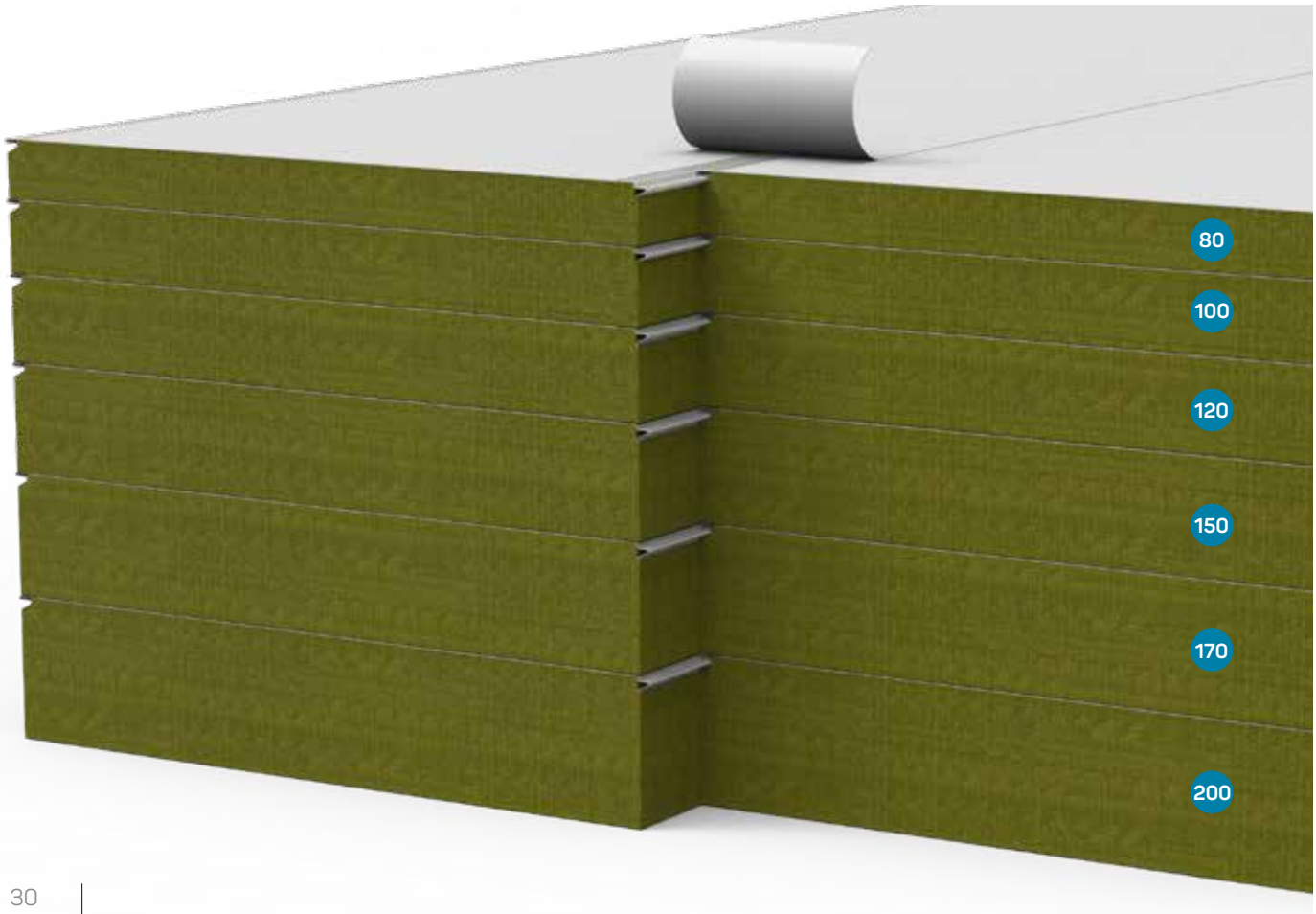
		NOMINAL PANEL THICKNESS mm				
		80	100	120	150	200
Thermal Insulation U	W/m² K	0.49	0.39	0.33	0.27	0.20
	kcal/m² h °C	0.42	0.34	0.28	0.23	0.17
Weight	kg/m²	19.8	21.8	23.8	26.8	31.8
Fire resistance	REI 20 *	-	●	●	●	●

* REI 20 Fire Resistance Certificate valid only for application with Isodeck LG 153 - SK MW PVSTEEL System, with a thickness of 100mm and above. For more information, please contact Isopan.

Insulation
Mineral Wool

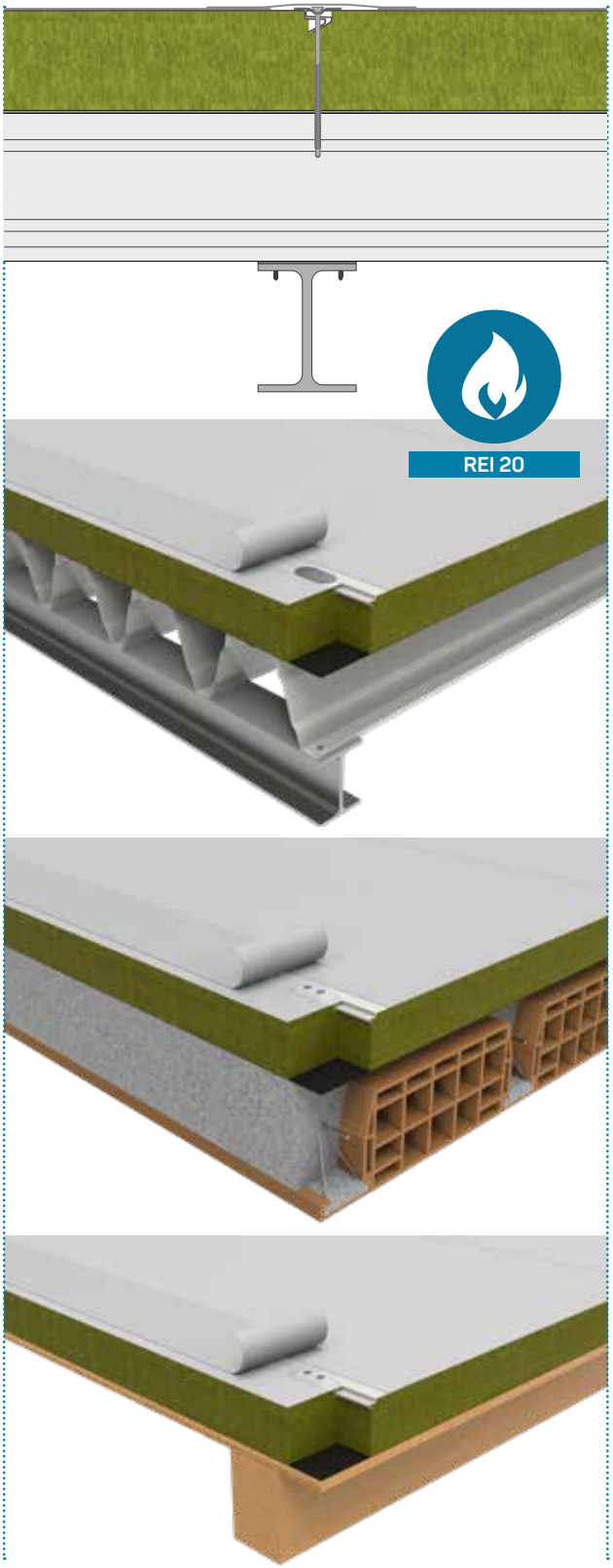
Waterproof synthetic membrane
Pre-coupled

Use with ISODECK LG 153 System
REI 20



2.3 ISODECK LG Range - PVSTEEL Panels Range

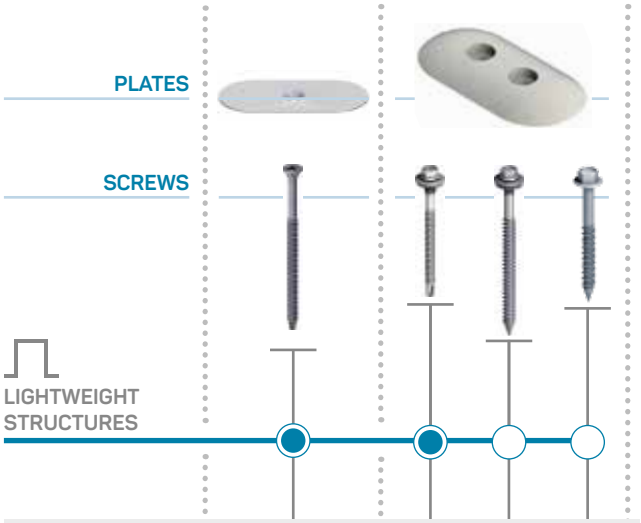
SK-MW PVSTEEL - Applications



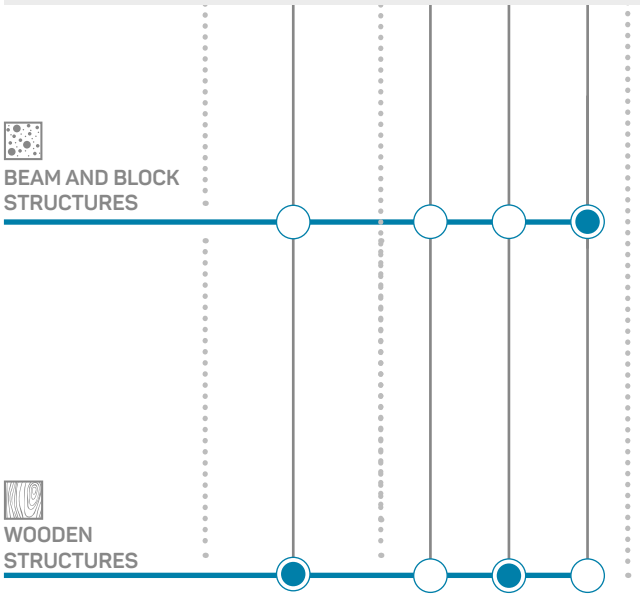
SK-MW PVSTEEL can be used for the composition of the ISODECK LG system, using Isopan corrugated metal sheets:

- **ISODECK LG 153 + SK MW PVSTEEL**
- **ISODECK LG 75 + SK MW PVSTEEL**
- **ISODECK LG 55 + SK MW PVSTEEL**

SCREWS AND FASTENERS



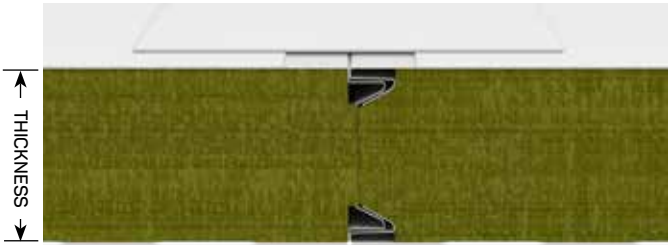
Pvsteel SK is an extremely versatile product, which can be used for the construction of flat roofs on any type of structure.



For information on the types of fasteners and installation methods, please refer to the fasteners section of the catalogue or contact ISOPAN.

2.3 ISODECK LG Range - PVSTEEL Panels Range

ISOFIRE WALL PIANO PVSTEEL



Useful panel width: 1000 mm

Stratigraphy	
Isofire Wall Piano PVSTEEL	Sheet pre-coupled with PVC or TPO
	Mineral wool insulating core
	Lower metal sheet
Substrate installed on site	Separation layer (Site installation)

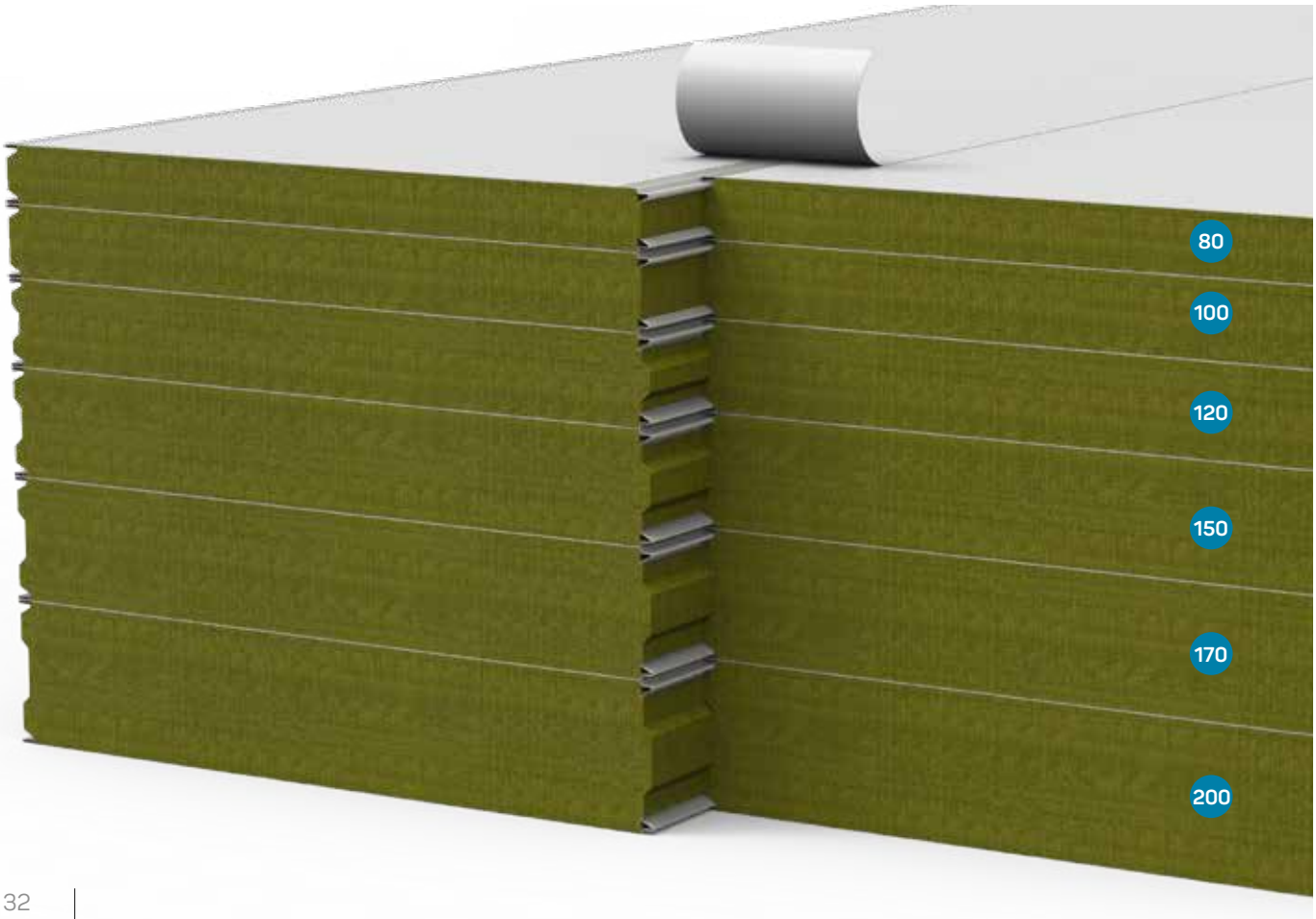
		NOMINAL PANEL THICKNESS mm				
		80	**100**	**120**	**150**	**200**
Thermal Insulation U	**W/m² K**	0.49	0.39	0.33	0.27	0.20
	kcal/m² h °C	0.42	0.34	0.28	0.23	0.17
Weight (with internal metal sheet 5/10)	**kg/m²**	18.8	20.8	22.8	25.8	30.8
Weight (with internal metal sheet 6/10)	**kg/m²**	19.7	21.7	23.7	26.7	31.7
Weight (with internal metal sheet 8/10)	**kg/m²**	21.3	23.3	25.3	28.3	33.3
Fire resistance	**EI 60** *	-	●	●	●	●

* For more technical information, please contact Isopan.

Insulation
Mineral Wool

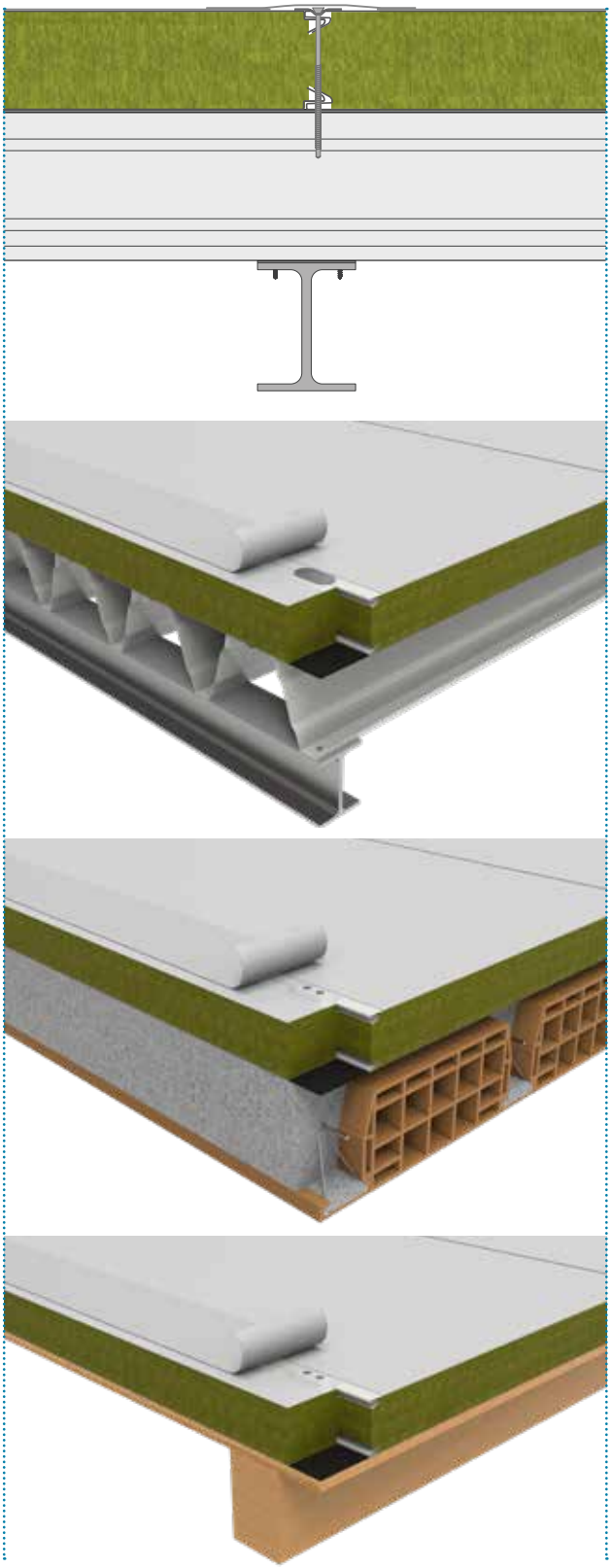
Waterproof synthetic membrane
Pre-coupled

Fire Resistance
EI 60



2.3 ISODECK LG Range - PVSTEEL Panels Range

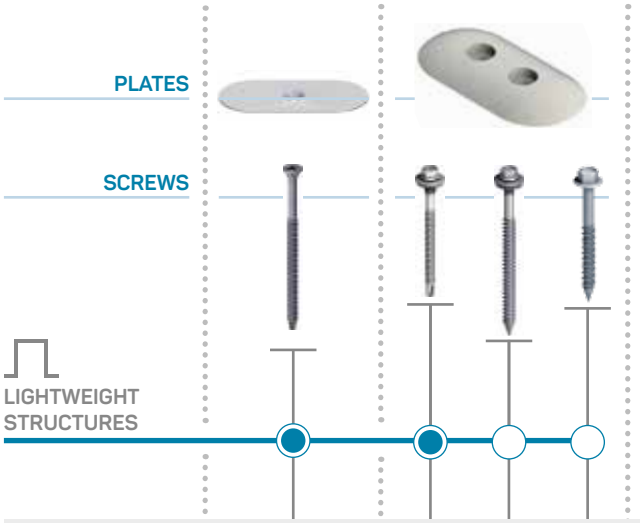
ISOFIRE WALL PIANO PVSTEEL - Applications



ISOFIRE WALL PVSTEEL can be used for the composition of the ISODECK LG system, using Isopan corrugated metal sheets:

- **ISODECK LG 153 + ISOFIRE WALL PVSTEEL**
- **ISODECK LG 75 + ISOFIRE WALL PVSTEEL**
- **ISODECK LG 55 + ISOFIRE WALL PVSTEEL**

SCREWS AND FASTENERS



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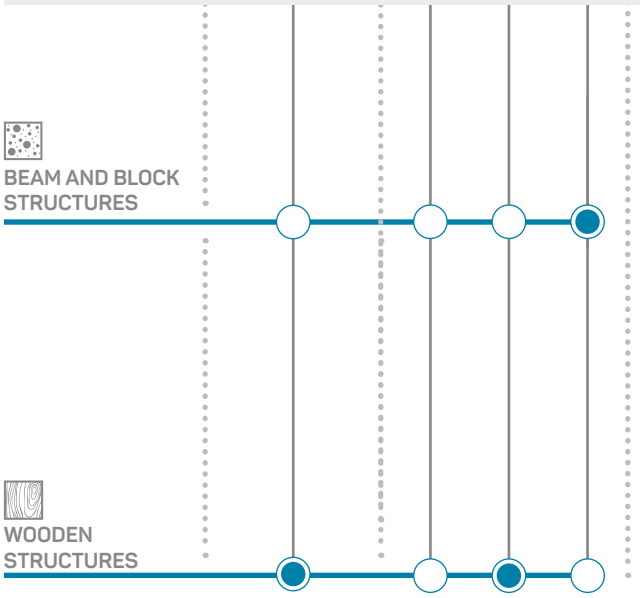
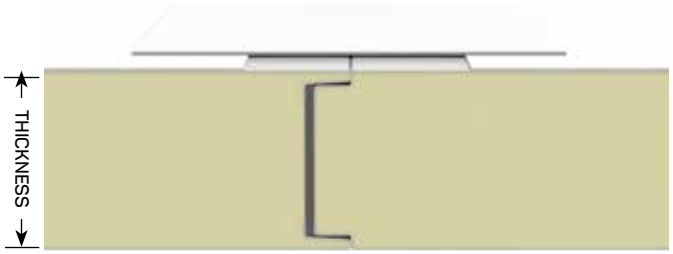


For information on the types of fasteners and installation methods, please refer to the fasteners section of the catalogue or contact ISOPAN.

2.3 ISODECK LG Range - PVSTEEL Panels Range

ISOPIANO BOX PVSTEEL



Useful panel width: 1000 mm

Stratigraphy	
Isopiano Box PVSTEEL	Sheet pre-coupled with PVC or TPO
	Polyurethane foam insulating core
	Lower metal sheet
Substrate installed on site	Separation layer (Site installation)

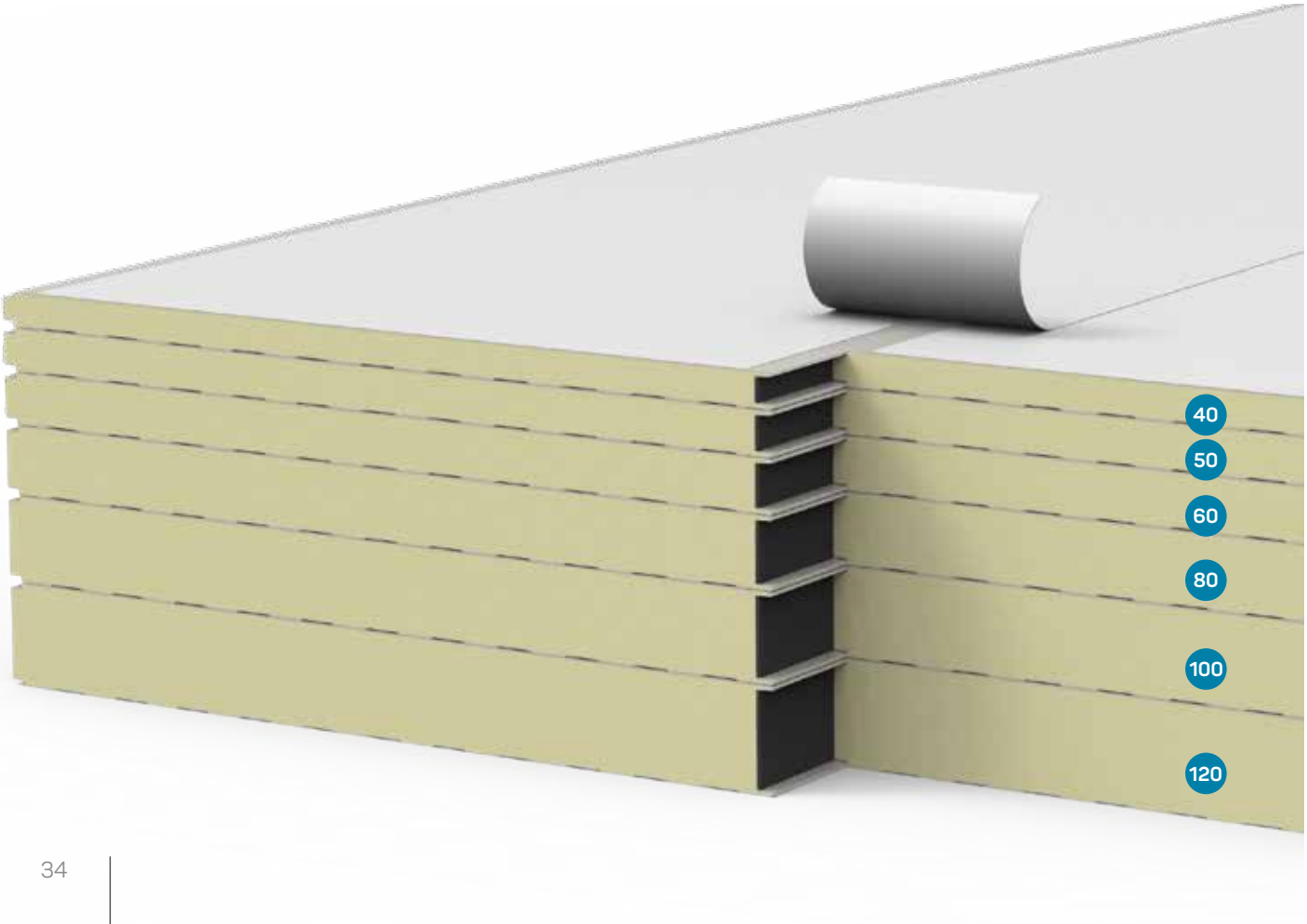
		NOMINAL PANEL THICKNESS mm					
		40	**50**	**60**	**80**	**100**	**120**
Thermal Insulation U	**W/m² K**	0.54	0.44	0.37	0.28	0.22	0.19
	kcal/m² h °C	0.46	0.38	0.32	0.24	0.19	0.16
Weight (with internal metal sheet 4/10)	**kg/m²**	11.7	12.1	12.5	13.3	14.1	14.9
Weight (with internal metal sheet 5/10)	**kg/m²**	12.5	12.9	13.3	14.1	14.9	15.7
Weight (with internal metal sheet 6/10)	**kg/m²**	13.3	13.7	14.1	14.9	15.7	16.5
Weight (with internal metal sheet 8/10)	**kg/m²**	15.0	15.4	15.8	16.6	17.4	18.2
Fire resistance	**EI 15** *	-	-	●	●	●	●

* EI15 fire resistance valid for false ceiling application. For more information, please contact Isopan.

Insulation
Polyurethane

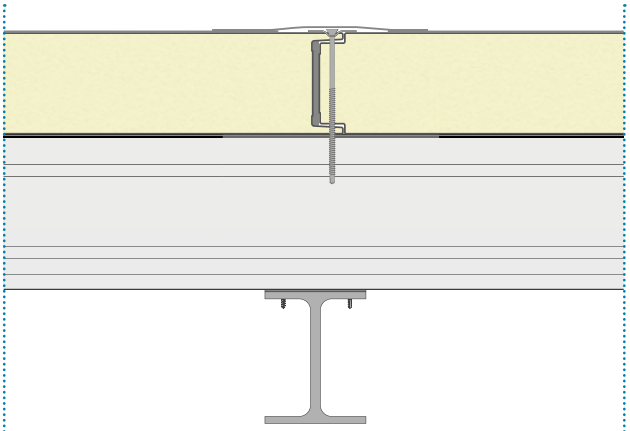
Waterproof synthetic membrane
Pre-coupled

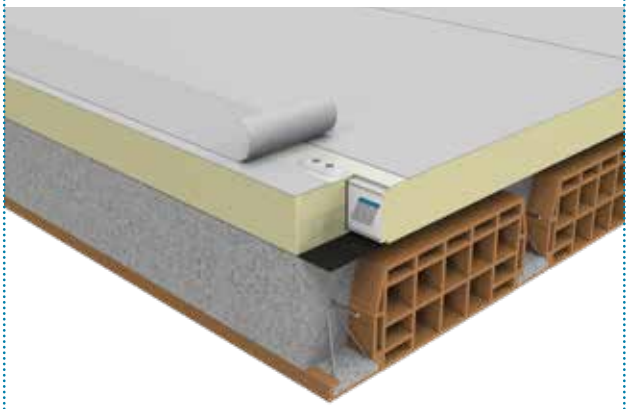
Fire Resistance
EI 15

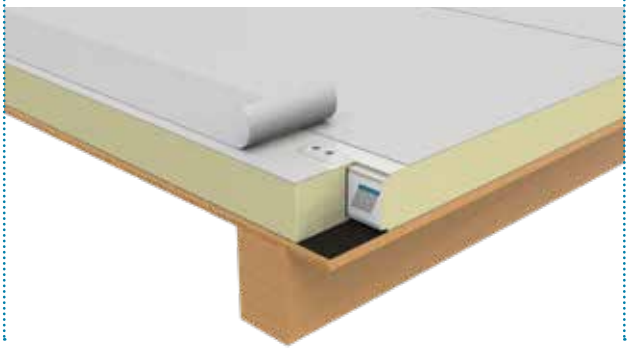


2.3 ISODECK LG Range - PVSTEEL Panels Range

ISOPIANO BOX PVSTEEL - Applications



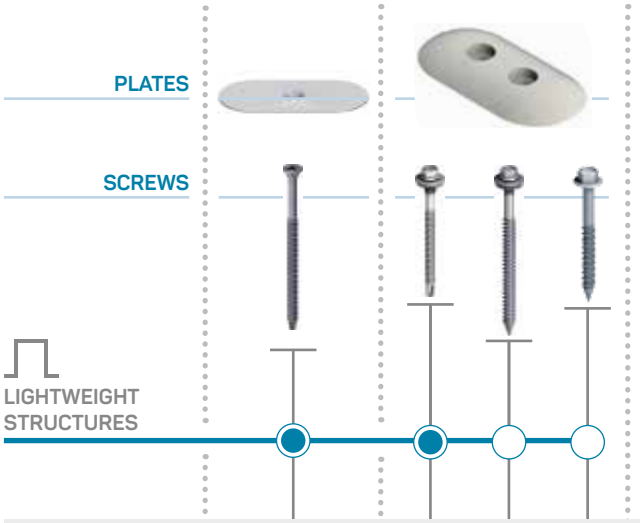




ISOPIANO BOX PVSTEEL can be used for the composition of the ISODECK LG system, using Isopan corrugated metal sheets:

- **ISODECK LG 153 + ISOPIANO PVSTEEL**
- **ISODECK LG 75 + ISOPIANO PVSTEEL**
- **ISODECK LG 55 + ISOPIANO PVSTEEL**

SCREWS AND FASTENERS



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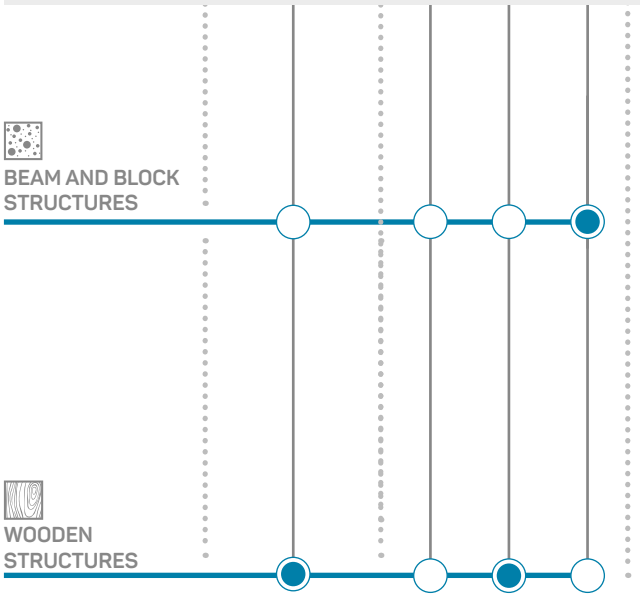
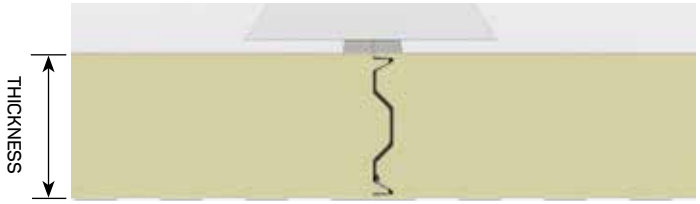


For information on the types of fasteners and installation methods, please refer to the fasteners section of the catalogue or contact ISOPAN.

2.3 ISODECK LG Range - PVSTEEL Panels Range

ISOFROZEN PIANO PVSTEEL

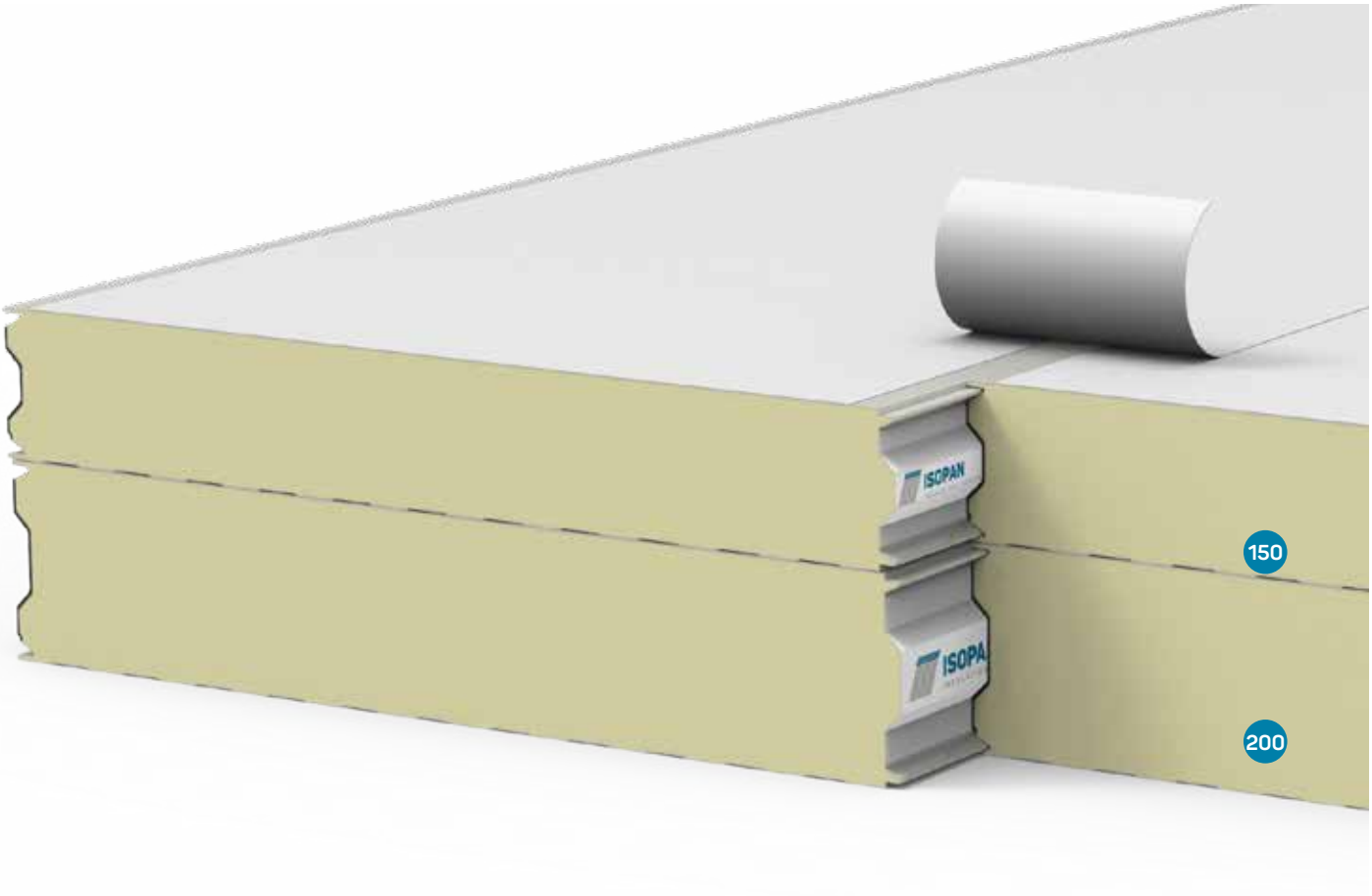


Stratigraphy	
Isofrozen Piano PVSTEEL	Sheet pre-coupled with PVC or TPO
	Polyurethane foam insulating core
	Lower metal sheet
Substrate installed on site	Separation layer (Site installation)

Useful panel width: 1000 mm

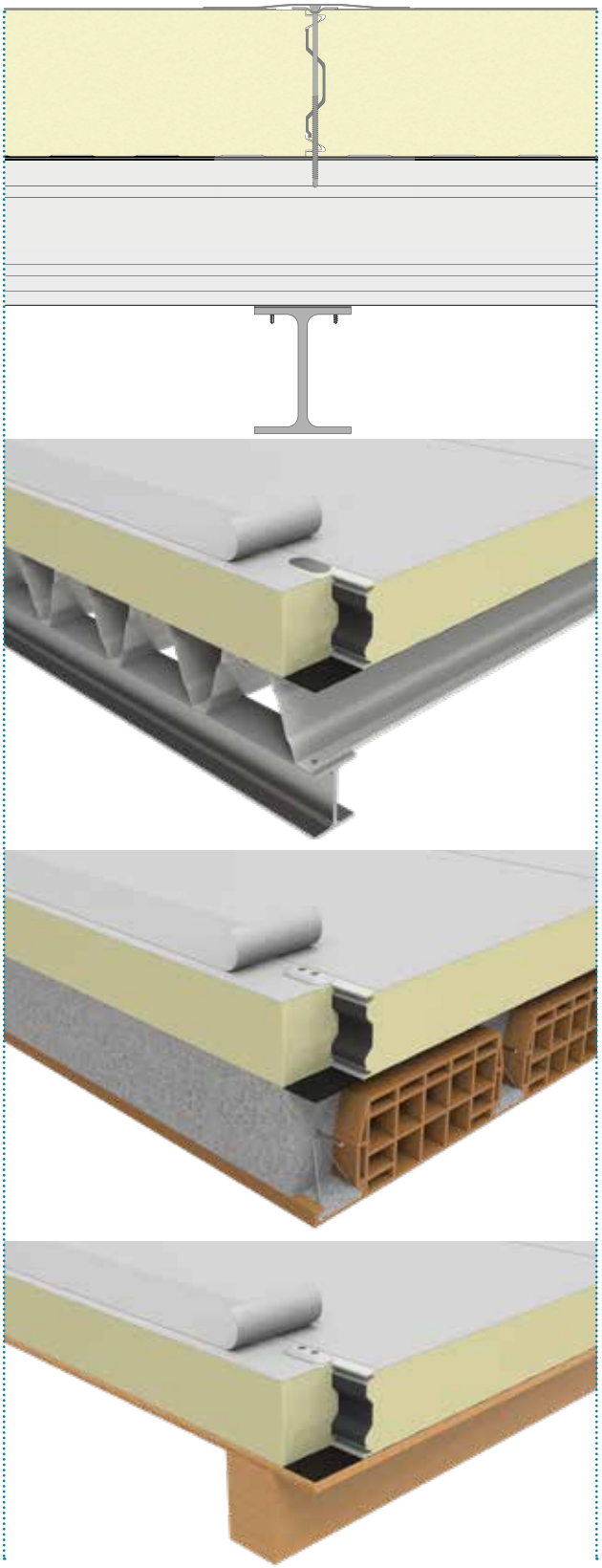
		NOMINAL PANEL THICKNESS mm	
		150	**200**
Thermal Insulation U	**W/m² K**	0.15	0.11
	kcal/m² h °C	0.13	0.09
Weight (with internal metal sheet 4/10)	**kg/m²**	16.1	18.1
Weight (with internal metal sheet 5/10)	**kg/m²**	16.9	18.9
Weight (with internal metal sheet 6/10)	**kg/m²**	17.7	19.7
Weight (with internal metal sheet 8/10)	**kg/m²**	19.4	21.4

Insulation	*Waterproof synthetic membrane*
Polyurethane	Pre-coupled



2.3 ISODECK LG Range - PVSTEEL Panels Range

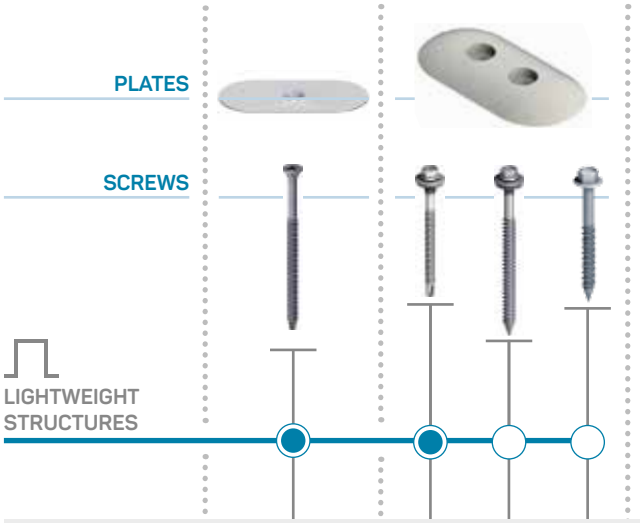
ISOFROZEN PIANO PVSTEEL - Applications



ISOFROZEN PIANO PVSTEEL can be used for the composition of the ISODECK LG system, using Isopan corrugated metal sheets:

- **ISODECK LG 153 + ISOPIANO PVSTEEL**
- **ISODECK LG 75 + ISOPIANO PVSTEEL**
- **ISODECK LG 55 + ISOPIANO PVSTEEL**

SCREWS AND FASTENERS



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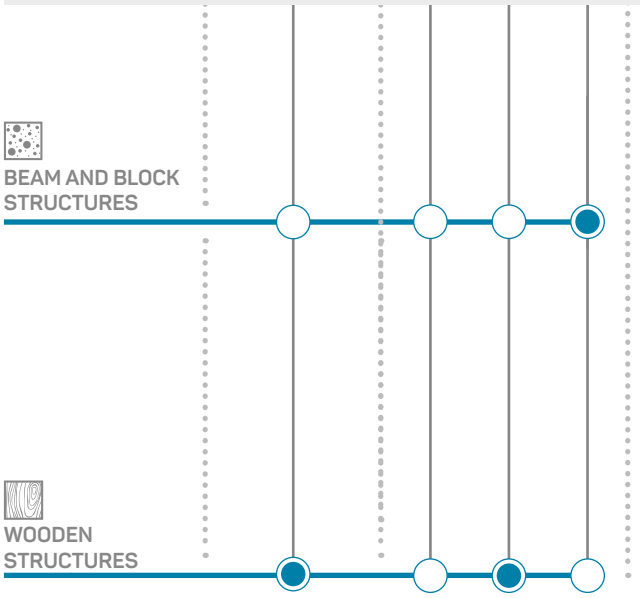

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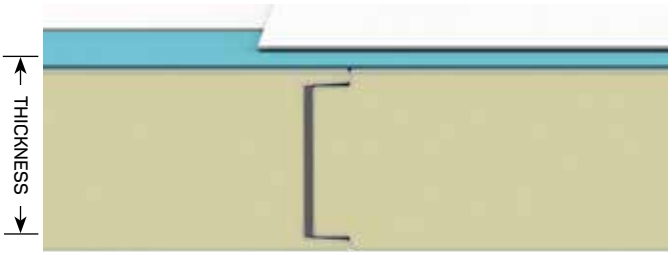
2.3 ISODECK LG Range - PVSTEEL Panels Range

ISOPIANO FLAT SYSTEM



Useful panel width: 1000 mm

System stratigraphy	
Membrane installed on site	PVC or TPO membrane (site installation)
Layer installed on site	Separation layer (Site installation)
Sandwich Panel Isopiano	Upper metal sheet
	Polyurethane foam insulating core
	Lower metal sheet
Substrate installed on site	Separation layer (Site installation)

		NOMINAL PANEL THICKNESS mm					
		40	**50**	**60**	**80**	**100**	**120**
Thermal Insulation U	**W/m² K**	0.54	0.44	0.37	0.28	0.22	0.19
	kcal/m² h °C	0.46	0.38	0.32	0.24	0.19	0.16
Weight (Sheets 6/10+ 5/10)	**kg/m²**	10.2	10.6	11.0	11.8	12.6	13.4
Weight (Sheets 6/10+ 6/10)	**kg/m²**	11.0	11.4	11.8	12.6	13.4	14.2
Weight (Sheets 8/10 + 6/10)	**kg/m²**	12.7	13.1	13.5	14.3	15.1	15.9
Weight (Sheets 8/10 + 8/10)	**kg/m²**	14.3	14.7	15.1	15.9	16.7	17.5
Fire resistance	**EI 15 ***	-	-	●	●	●	●

* EI15 fire resistance valid for false ceiling application. For more information, please contact Isopan.
The Fire Resistance and Broof performance values refer to the individual Sandwich Panel components (EI performance) and synthetic PVC or TPO membranes (Broof).

Insulation

Polyurethane

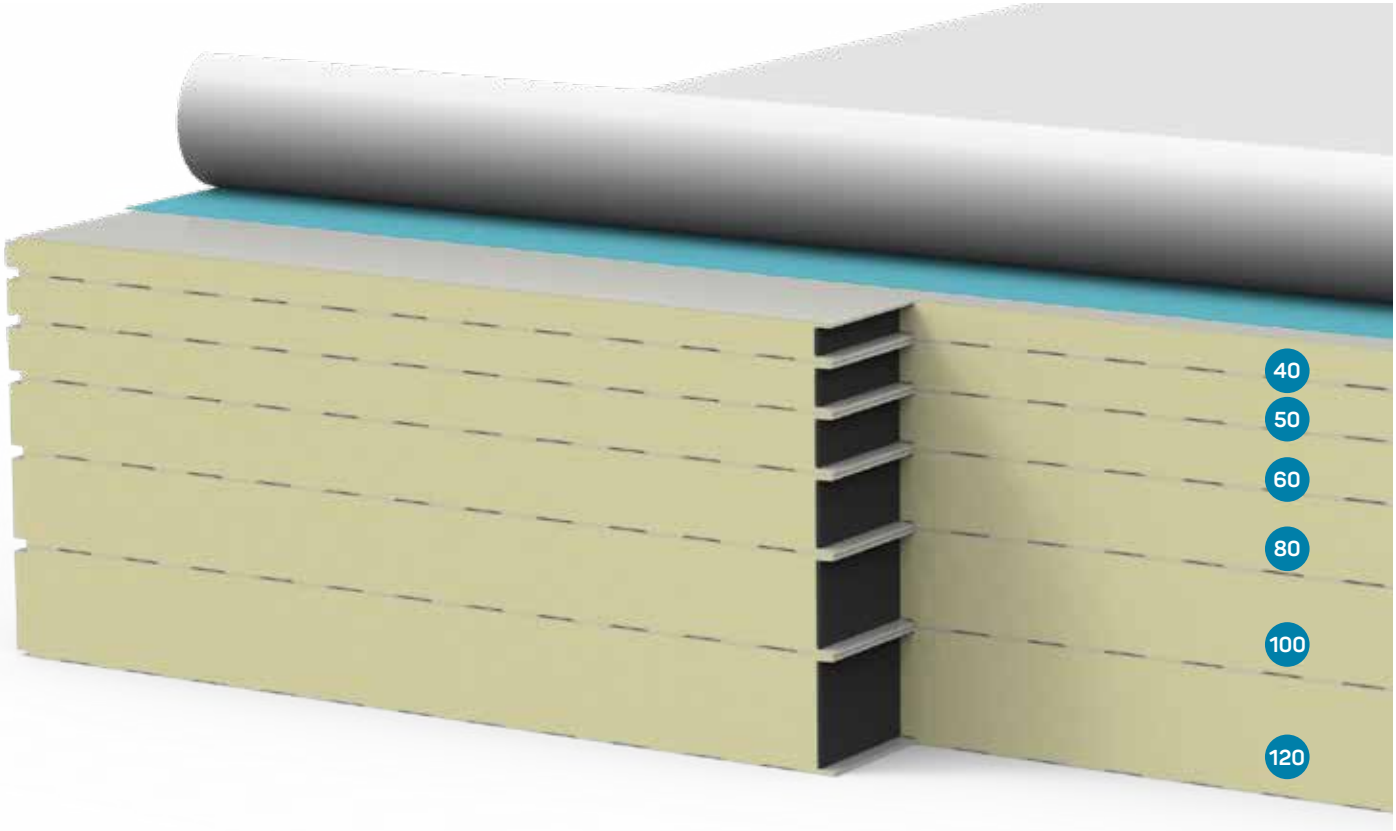
Waterproof synthetic membrane

Installed on site

Fire Resistance

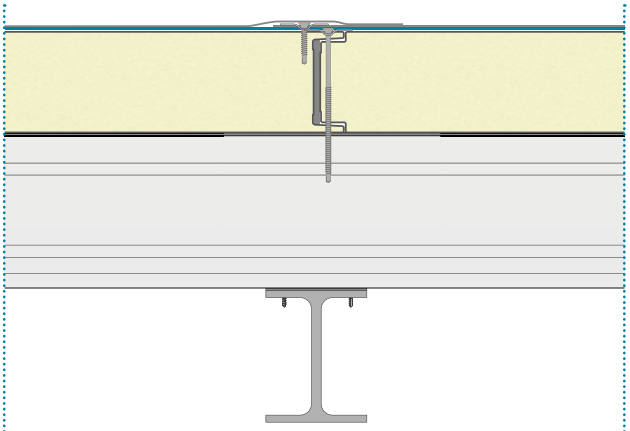
EI 15 (Panel)

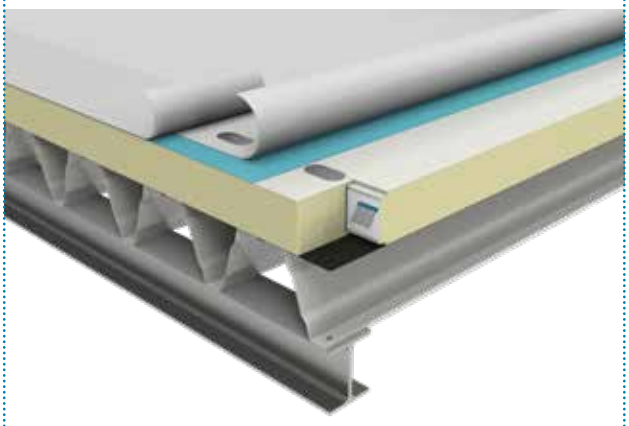
BROOF (Synthetic membrane)

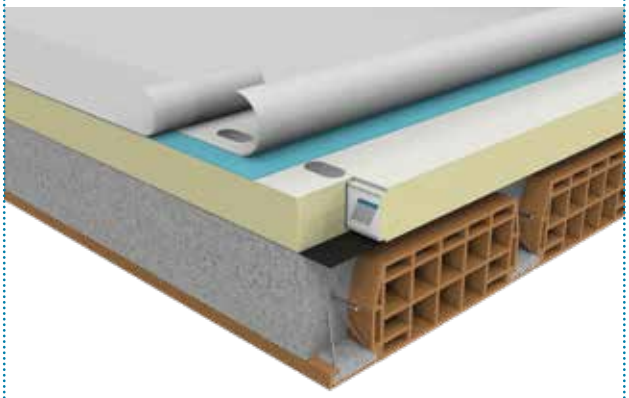


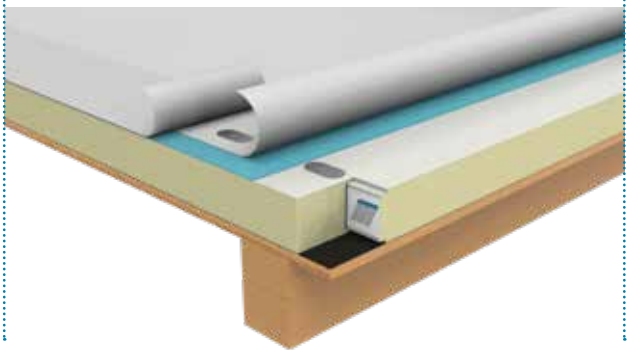
2.3 ISODECK LG Range - PVSTEEL Panels Range

ISOPIANO FLAT SYSTEM - Applications





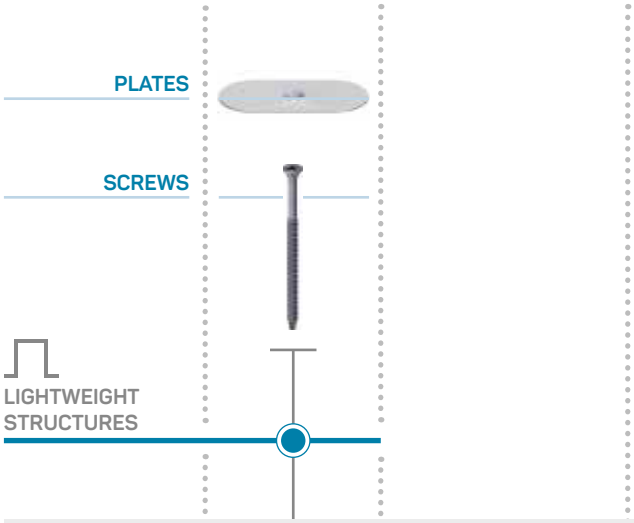




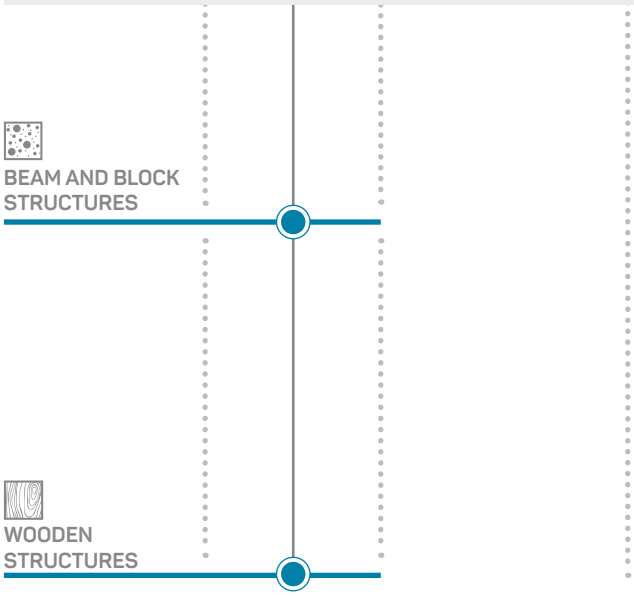
ISOPIANO FLAT SYSTEM can be used for the composition of the ISODECK LG system, using Isopan corrugated metal sheets:

- **ISODECK LG 153 + ISOPIANO FLAT SYSTEM**
- **ISODECK LG 75 + ISOPIANO FLAT SYSTEM**
- **ISODECK LG 55 + ISOPIANO FLAT SYSTEM**

SCREWS AND FASTENERS



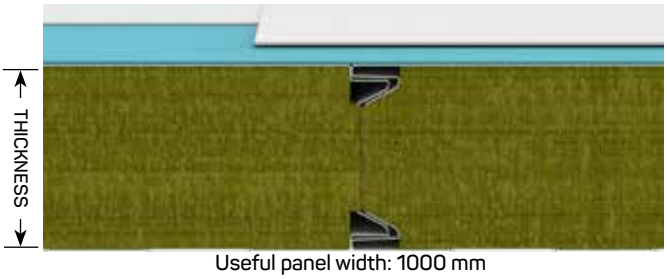
Pvsteel SK is an extremely versatile product, which can be used for the construction of flat roofs on any type of structure.



For information on the types of fasteners and installation methods, please refer to the fasteners section of the catalogue or contact ISOPAN.

2.3 ISODECK LG Range - PVSTEEL Panels Range

ISOFIRE WALL FLAT SYSTEM



Useful panel width: 1000 mm

System stratigraphy	
Extrados	PVC or TPO membrane (site installation)
Separation	Separation layer (Site installation)
Sandwich Panel Isofire wall	Upper metal sheet
	Mineral wool insulating core
	Lower metal sheet
Intrados	Separation layer (Site installation)

		NOMINAL PANEL THICKNESS mm				
		80	**100**	**120**	**150**	**200**
Thermal Insulation U	**W/m² K**	0.49	0.39	0.33	0.27	0.20
	kcal/m² h °C	0.42	0.34	0.28	0.23	0.17
Weight (Sheets 6/10+ 5/10)	**kg/m²**	16.6	18.6	20.6	23.6	28.6
Weight (Sheets 6/10+ 6/10)	**kg/m²**	17.3	19.3	21.3	24.3	29.3
Weight (Sheets 8/10 + 6/10)	**kg/m²**	19.0	21.0	23.0	26.0	31.0
Weight (Sheets 8/10 + 8/10)	**kg/m²**	20.6	22.6	24.6	27.6	32.6
Fire resistance	**EI 60 ***	-	●	●	●	●

* For more technical information, please contact Isopan. The Fire Resistance and Broof performance values refer to the individual Sandwich Panel components (EI performance) and synthetic PVC or TPO membranes (Broof).

Insulation

Mineral Wool

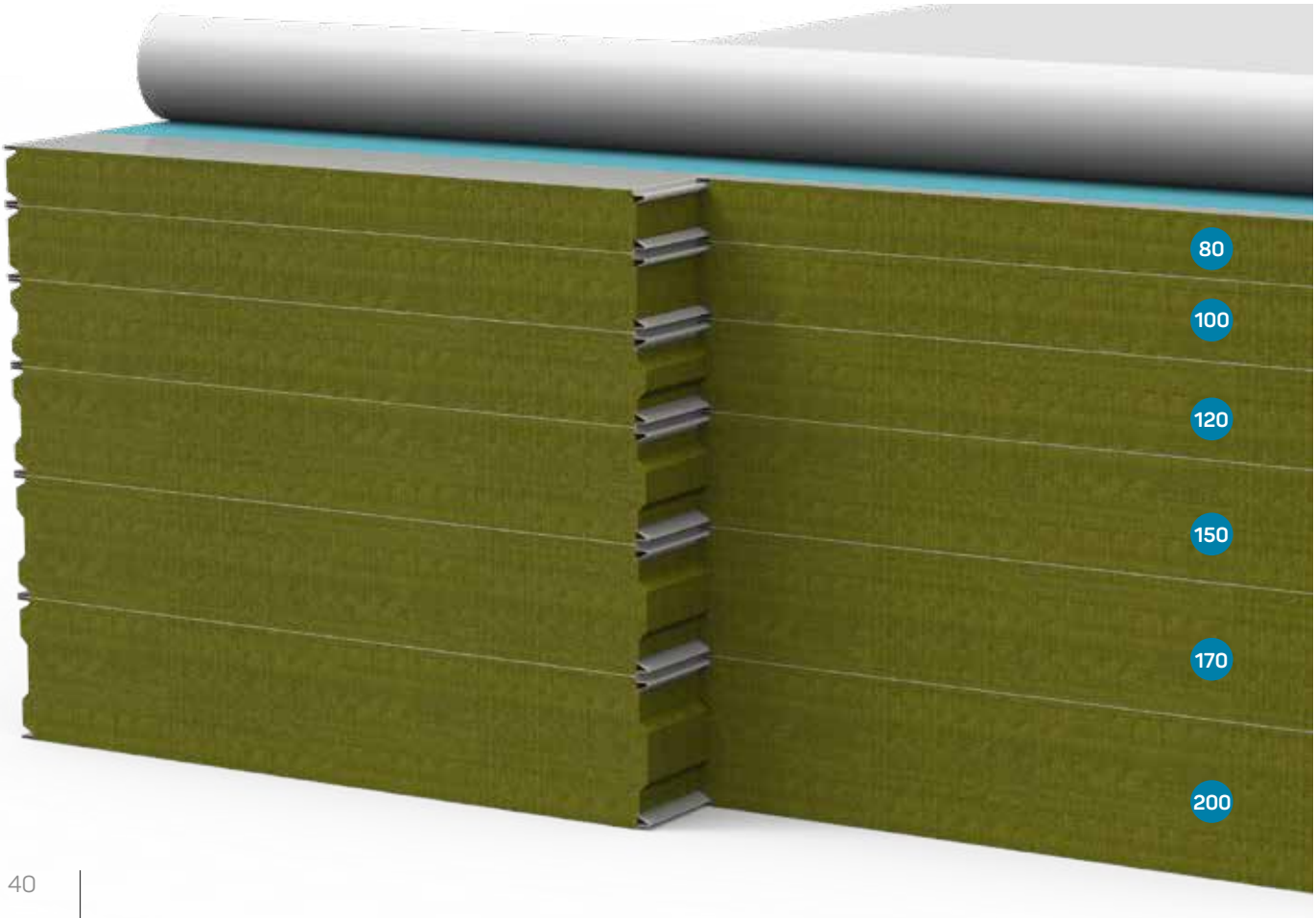
Waterproof synthetic membrane

Installed on site

Fire Resistance

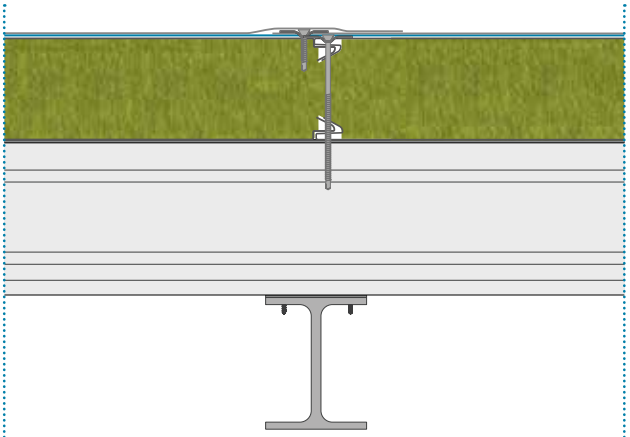
EI 60 (Panel)

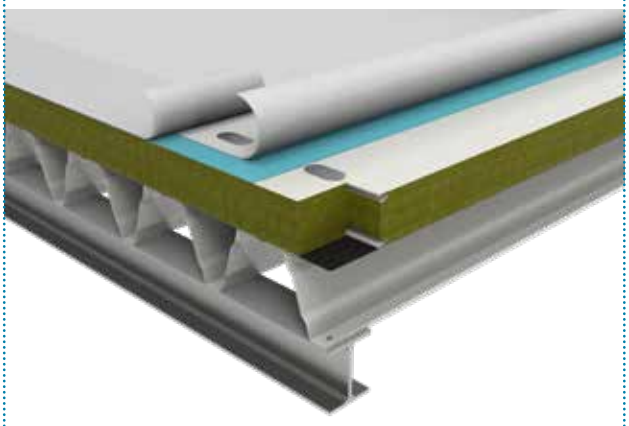
BROOF (Synthetic membrane)

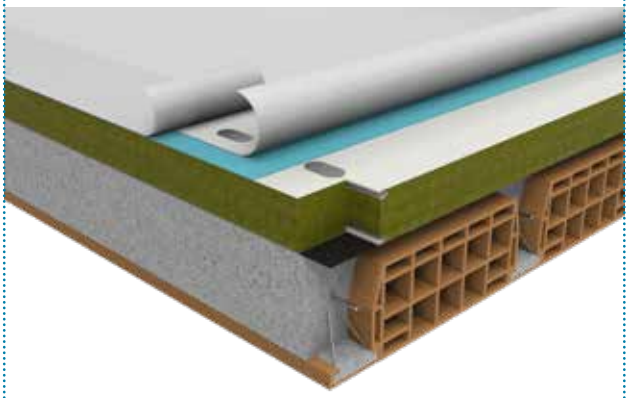


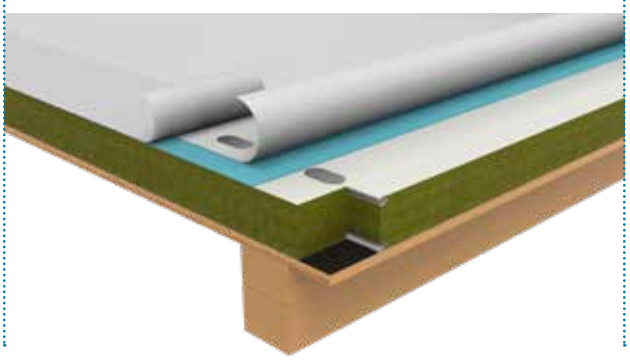
2.3 ISODECK LG Range - PVSTEEL Panels Range

ISOFIRE WALL FLAT SYSTEM - Applications





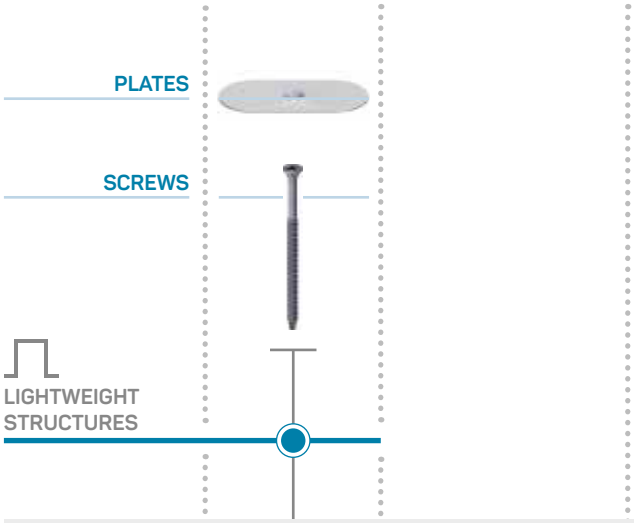




ISOFIRE WALL FLAT SYSTEM can be used for the composition of the ISODECK LG system, using Isopan corrugated metal sheets:

- **ISODECK LG 153 + ISOFIRE WALL FLAT SYSTEM**
- **ISODECK LG 75 + ISOFIRE WALL FLAT SYSTEM**
- **ISODECK LG 55 + ISOFIRE WALL FLAT SYSTEM**

SCREWS AND FASTENERS



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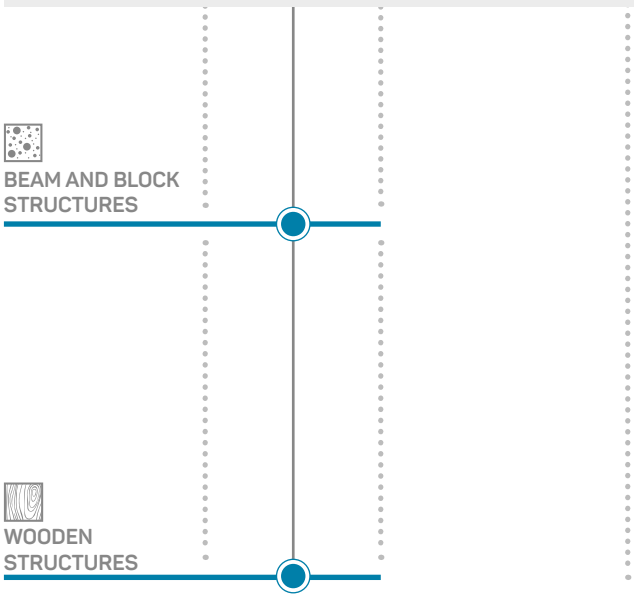


For information on the types of fasteners and installation methods, please refer to the fasteners section of the catalogue or contact ISOPAN.

2.3 Isodeck LG System

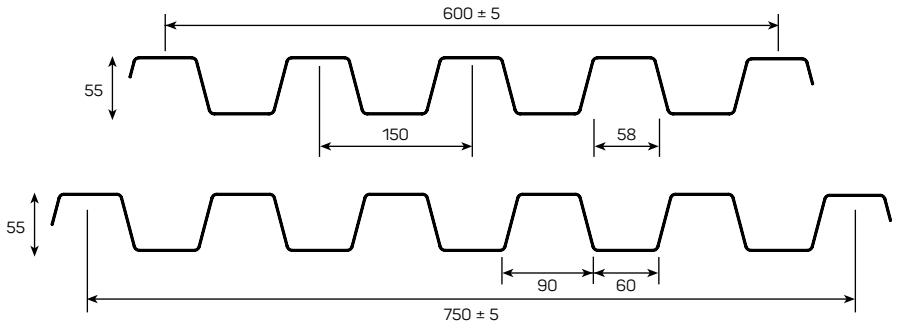
CORRUGATED METAL SHEETS

LG 55

Profiled sheet suitable for small surfaces where a high resistance to loads is not required. The minimum thickness is 0.70 mm and can reach a maximum thickness of 1.25 mm. The range of spans for which this sheet is recommended varies from 2.5 m up to 5 m.
Available with two different pitches.

CROSS-SECTION FEATURES

		THICKNESS mm			
		0.7	0.8	1.0	1.25
Weight	(kg/m²)	9.1	10.5	13.1	16.3

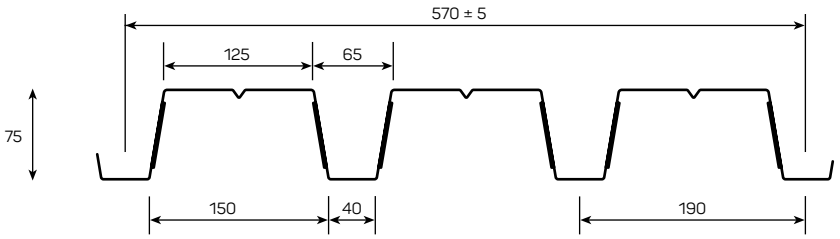


LG 75

Sheet with an articulated construction suitable for small and medium-sized surfaces in which a high resistance to loads is required. The minimum thickness is 0.70 mm and can reach a maximum thickness of 1.25 mm. The range of spans for which LG 75 is recommended varies from 2.5 m up to 5 m.

CROSS-SECTION FEATURES

		THICKNESS mm			
		0.7	0.8	1.0	1.25
Weight	(kg/m²)	9.64	11.02	13.77	17.21

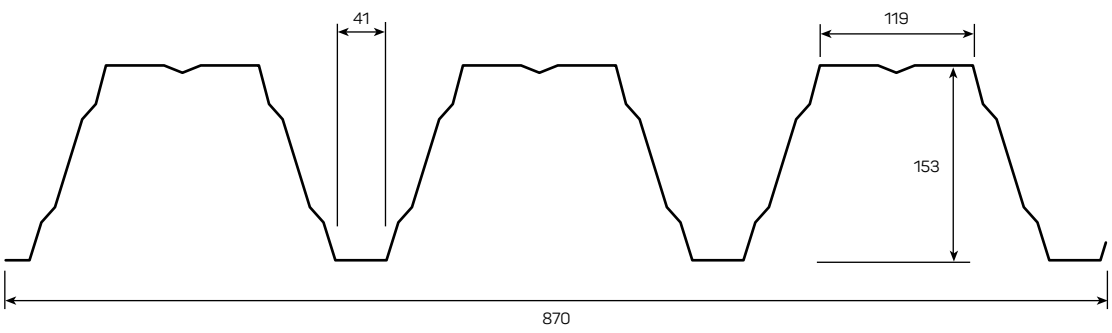


LG 153

Sheet with a complex construction suitable for large surfaces in which a high resistance to loads is required. The minimum thickness is 0.77 mm and can reach a maximum thickness of 1.25 mm. The range of spans for which this sheet is recommended varies from 4 m up to 8 m.

CROSS-SECTION FEATURES

		THICKNESS mm			
		0.77	0.88	1.0	1.25
Weight	(kg/m²)	10.51	12.34	14.02	17.52



2.3 Isodeck LG System

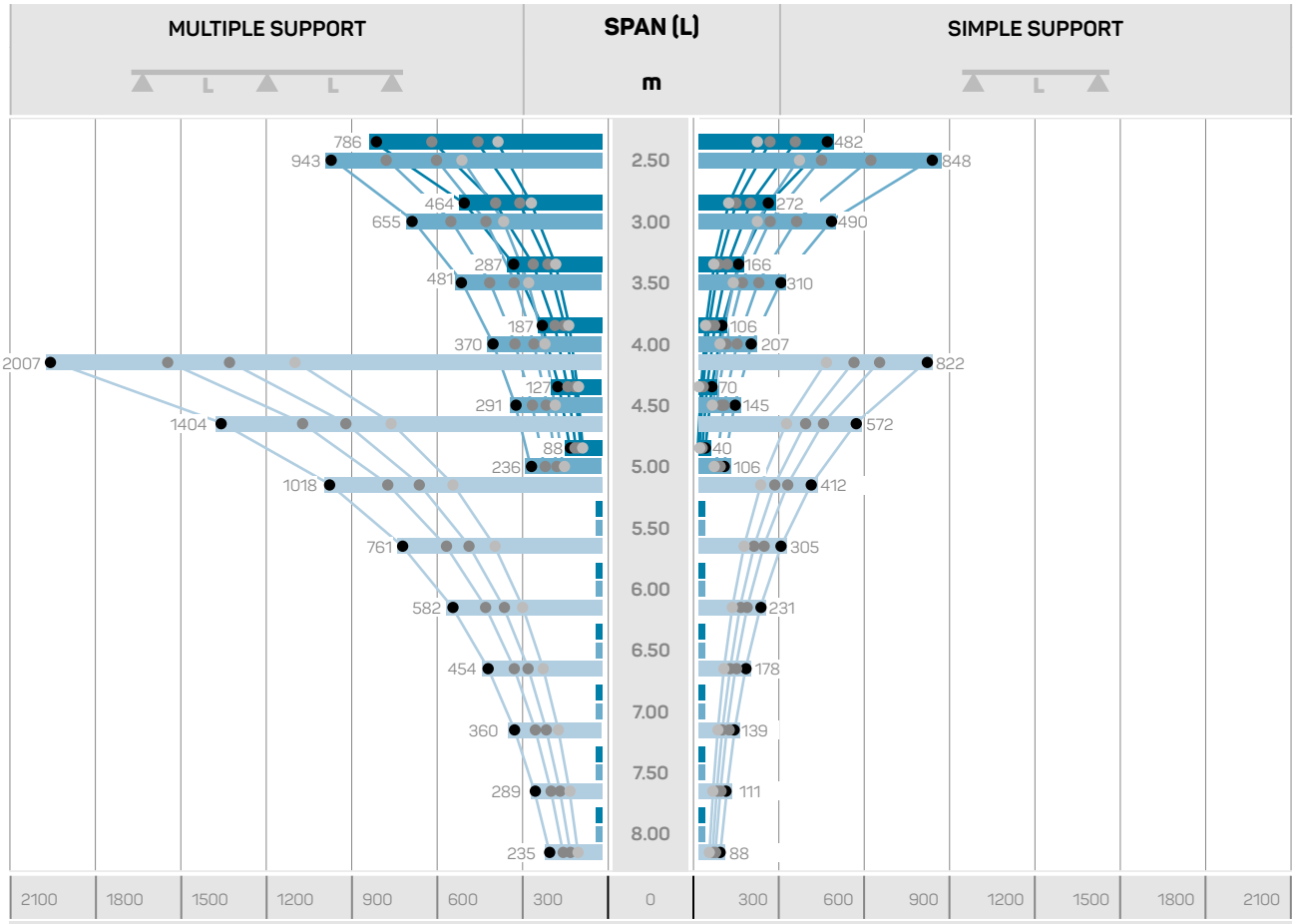
CORRUGATED METAL SHEETS

METAL SHEET CAPACITY TABLE

LG 55	LG 55 THICKNESS - mm			
	0.7	0.8	1.0	1.25
COLOUR KEY				

LG 75	LG 75 THICKNESS - mm			
	0.7	0.8	1.0	1.25
COLOUR KEY				

LG 153	LG 153 THICKNESS - mm			
	0.77	0.88	1.0	1.25
COLOUR KEY				



CAPACITY KG/m², WITH REFERENCE TO THE SHEET THICKNESS

The table simulates the performance of the sheets with single and multiple supports. In any case, it is advisable to refer to the capacity tables in the technical manual or to contact ISOPAN.

2.4 COMPATIBLE SYSTEMS

Photovoltaic systems

Walkways

Fall arrest systems

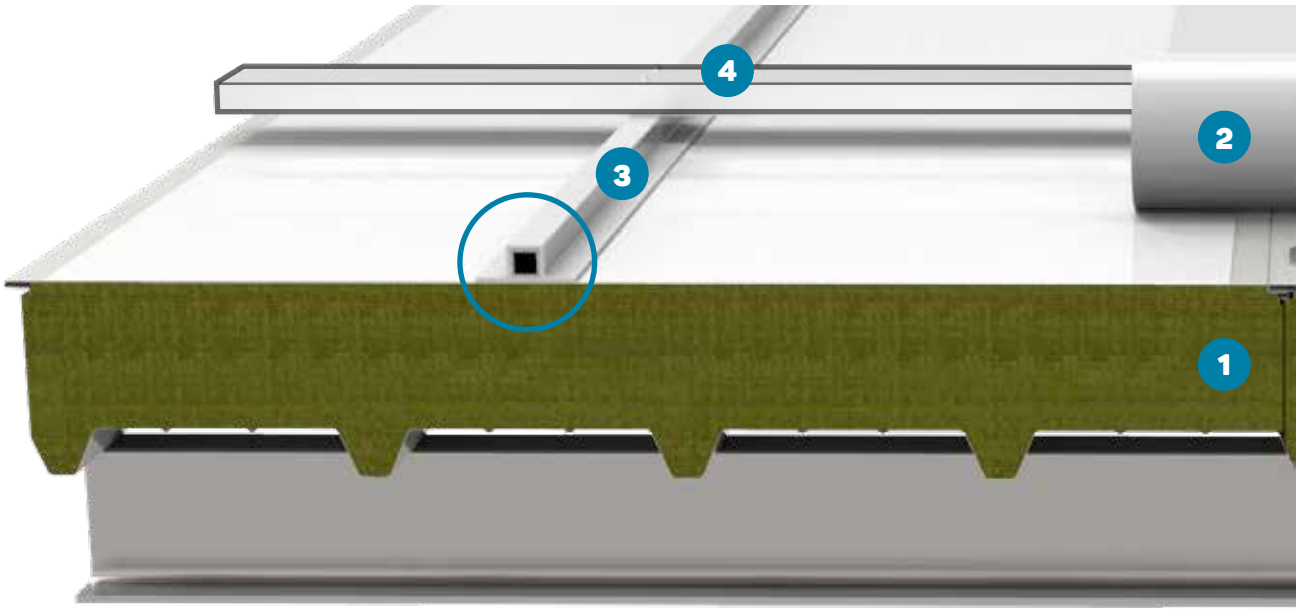
Isosky

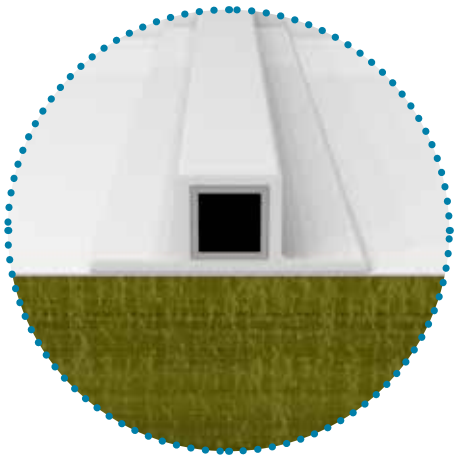
2.4 Compatible systems

PHOTOVOLTAIC SYSTEMS

Thanks to the use of reflective synthetic membranes, the FlatRoof surfaces never reach high temperatures. This condition is an advantage even in the presence of a photovoltaic system, whose performance can be positively affected by the absence of high surface temperatures. Photovoltaic systems can be installed by means of anchoring on coated and heat-welded metal profiles directly onto the synthetic surfaces.

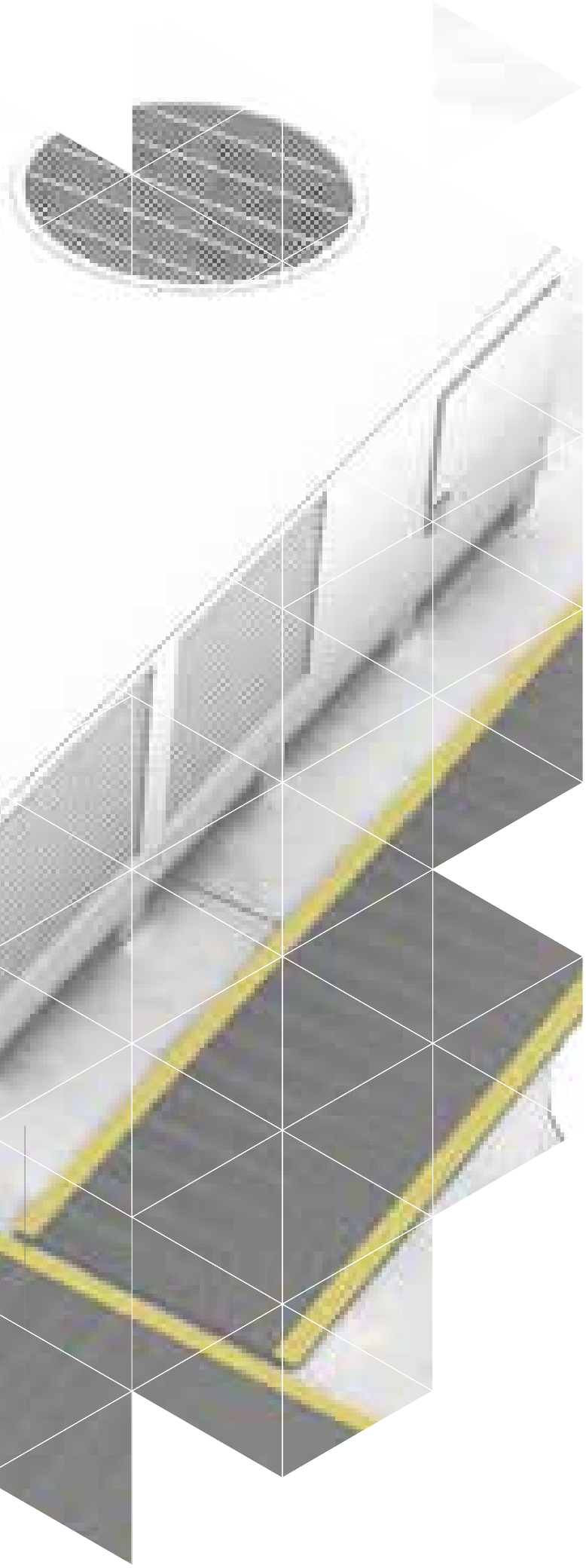
No.	PART	MATERIAL
1	ISODECK PVSTEEL	PU / MW
2	BRIDGING	PVC-P
3	PVC BAR	PVC-P + ALUMINIUM
4	SUBSTRUCTURE EXAMPLE **(NOT PROVIDED)**	-





	PVC-P	ALUMINIUM
LENGTH	3 metres	3 metres
THICKNESS	3 mm	2 mm
HEIGHT	33 mm	25 mm
WIDTH	30 mm	20 mm
	Base profile: 80 mm	Quality: EN6060 T6-AlMgSi 0.5 F22

For technical information on usage and for the technical specifications, please refer to the documentation available on the www.isopan.com website.



2.4 Compatible systems

WALKWAYS

Gangways and walkways are built by installing special metal profiles pre-coupled with high strength synthetic membranes, which are fastened directly to the surface of the waterproofing membranes by means of heat sealing. This way, no holes are made in the membrane, which could create discontinuity on the synthetic coat and cause water infiltration.
Anti-slip tested according to international reference standards, for safe roof access.

2.4 Compatible systems

FALL ARREST SYSTEMS

There are various Isopansafe systems available for securing roofs, compatible with any type of roof and compliant with the applicable Italian and European regulations in force.

2.4 Compatible systems

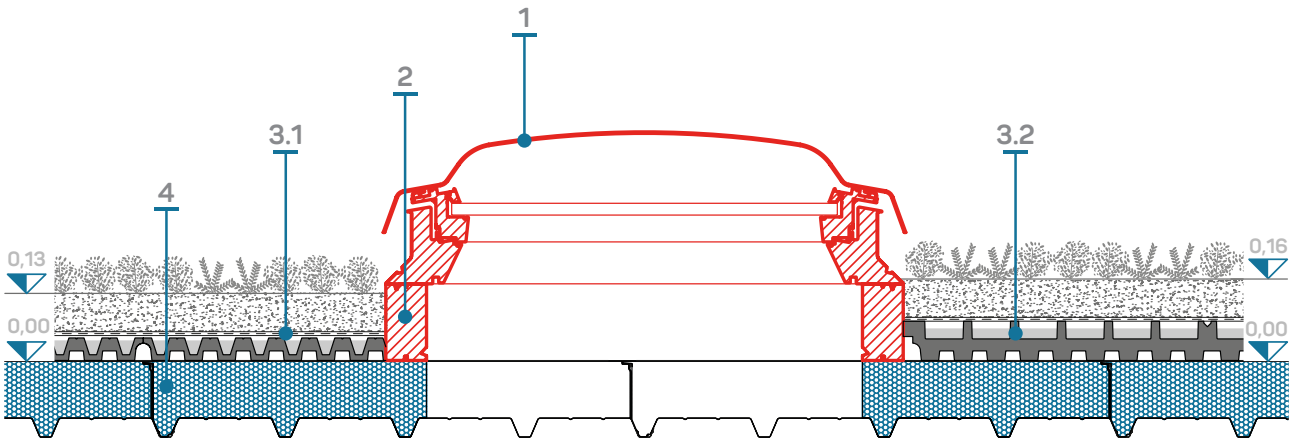
ISOSKY

ISOSKY is the innovative roofing system resulting from the collaboration between VELUX and ISOPAN.
ISOSKY is an ideal solution that integrates the best features of VELUX windows with ISOPAN panels: natural light and high insulating performance, putting the ease of assembly on site in the foreground.

ISOSKY consists of a window pre-mounted on a sandwich panel. With this solution, all the risks deriving from an on-site application have been eliminated by providing a finished element that arrives on site ready for installation.

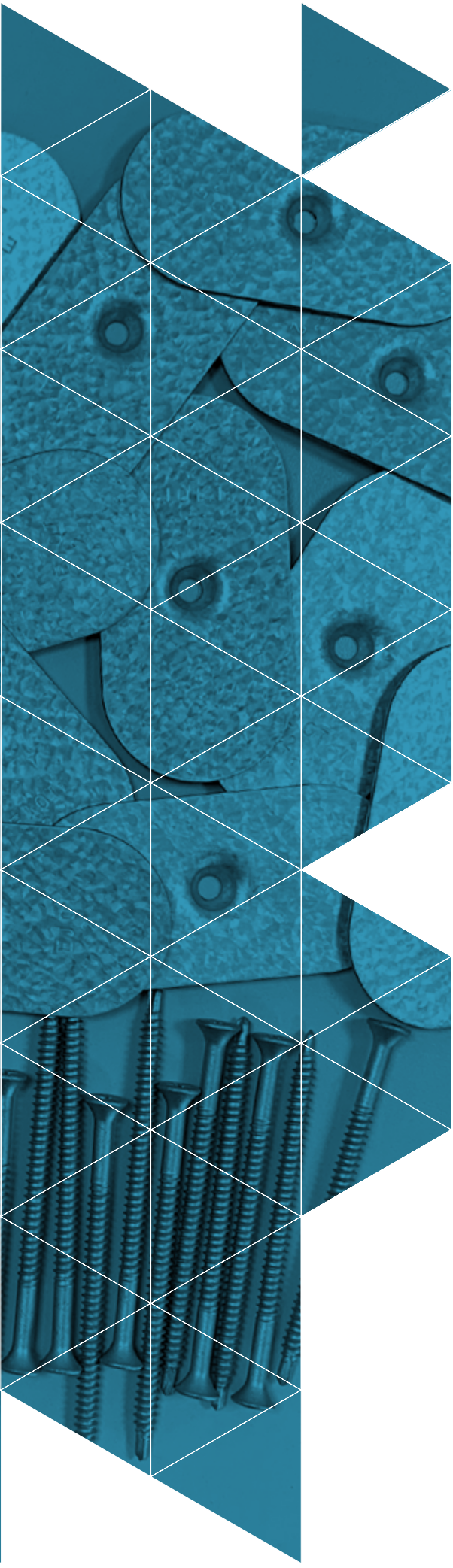
KEY

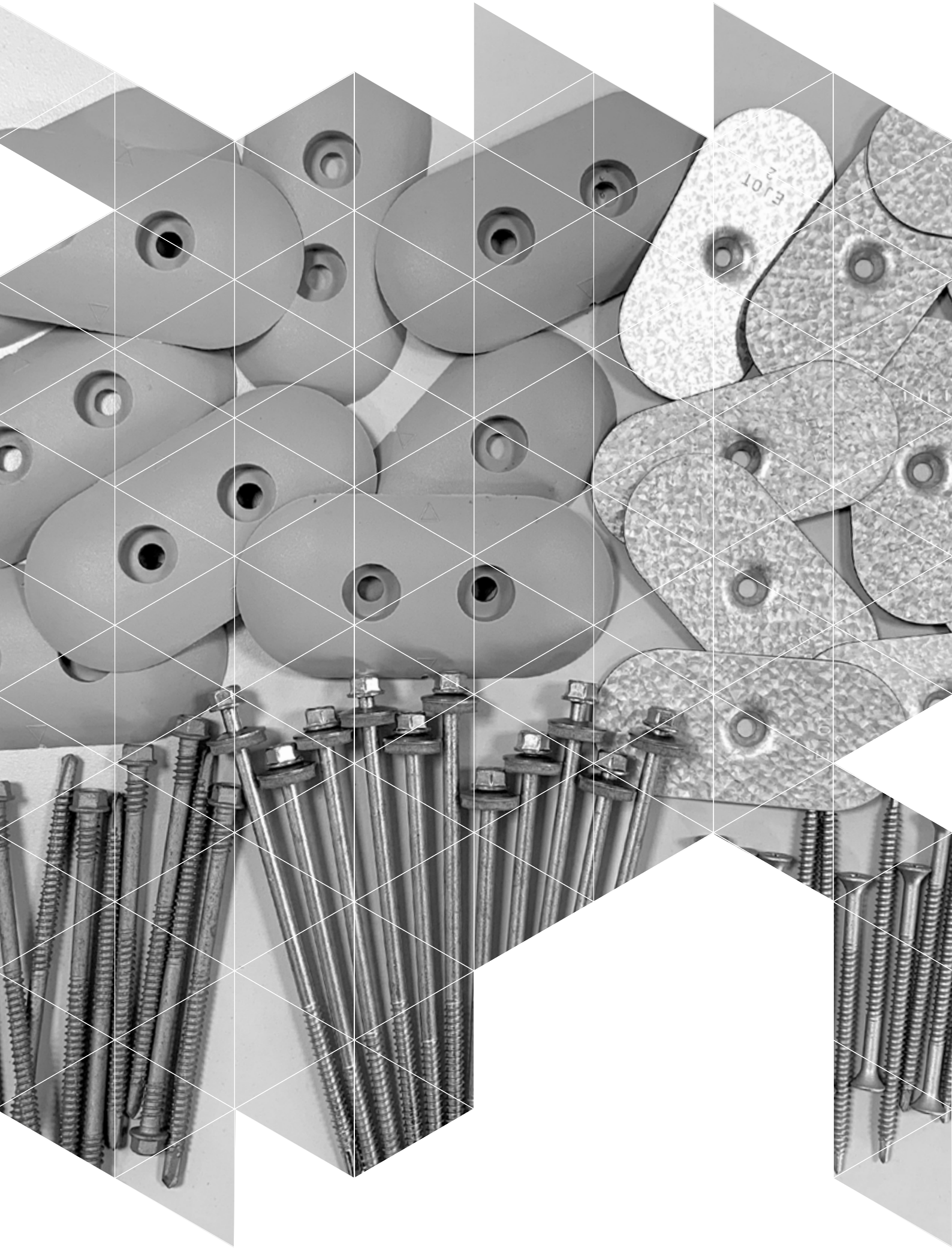
1. Dome (Velux CVP)
2. Window (Velux ZCE)
3.1. GREENROOF system (thickness 10cm)
3.2 GREENROOF system (thickness 20cm)
4. ISODECK PVSTEEL sandwich panel



03 FASTENERS AND ACCESSORIES

ISOPAN
BUILDING ENVELOPE SOLUTIONS
by Manni Group





3.1 FASTENERS AND BRIDGING

3.1 Fasteners and bridging

FASTENING SCREWS

Key
Isodeck Synth
Isodeck PVSteel
Isodeck LG Panels

KIT - SELF-TAPPING SCREW

Compatibility

Material Screw	Plate Material	Screw Ø (mm)	Screw L (mm)	SYNTH Panel Th. (mm)	PVSTEEL Panel Th. (mm)	Isodeck LG Panel Th. (mm)
Stainless Steel	Stainless Steel	Ø 5.5	40	50	-	-
			40	60	-	-
			40	80	-	-
			40	100	-	-
			40	120	-	-
			40	150	-	-

Self-tapping screw for fastening the single skin metal faced panels and extension for fastening.

COMPATIBLE SUBSTRUCTURES

Fastening on steel substructures up to 1.5 mm

Fastening on steel substructures with thickness >1.5 mm (pre-drilled)

Fixing on wooden substructures.

KIT - 1.5 mm STRUCTURE

Compatibility

Material Screw	Plate Material	Screw Ø (mm)	Screw L (mm)	SYNTH Panel Th. (mm)	PVSTEEL Panel Th. (mm)	Isodeck LG Panel Th. (mm)
Stainless Steel	Stainless Steel	Ø 4.8	110	50	50	80
			120	60	60	100
			140	80	80	120
			160	100	100	150
			180	120	120	
			220	150	150	

For fastening to a metal substructure (max thickness 1.5 mm) and countersunk screw, with 82x40mm metal plate

COMPATIBLE SUBSTRUCTURES

Fastening on steel substructures Thickness up to 1.5 mm

Fastening on steel substructures Thickness up to 4 mm (pre-drilled)

Fixing on wooden substructures.

KIT - 4 mm STRUCTURE - with SLEEVE

Compatibility

Material Screw	Plate Material	Screw Ø (mm)	Screw L (mm)	SYNTH Panel Th. (mm)	PVSTEEL Panel Th. (mm)	Isodeck LG Panel Th. (mm)
Stainless Steel	HDPE	Ø 4.8	90	50	50	-
			90	60	60	-
			90	80	80	-
			110	100	100	-
			110	120	120	-
			110	150	150	-

For fastening to a metal substructure (thickness 1.5-4 mm) and countersunk screw, with 50 x 35 mm sleeve.

COMPATIBLE SUBSTRUCTURES

Fastening on steel substructures Thickness up to 1.5 mm

Fastening on steel substructures Thickness up to 4 mm (pre-drilled)

Fixing on wooden substructures.

3.1 Fasteners and bridging

FASTENING SCREWS

Key
Isodeck Synth
Isodeck PVSteel
Isodeck LG Panels

KIT - 6 mm STRUCTURE - with SLEEVE

Compatibility

Material Screw	Plate Material	Screw Ø (mm)	Screw L (mm)	SYNTH Panel Th. (mm)	PVSTEEL Panel Th. (mm)	Isodeck LG Panel Th. (mm)
Stainless Steel	HDPE	Ø 4.8	90	50	50	-
			90	60	60	-
			90	80	80	-
			110	100	100	-
			110	120	120	-
			110	150	150	-

For fastening to a metal substructure (thickness 3-6 mm) and screw with torx head, with 50 x 35 mm sleeve.

COMPATIBLE SUBSTRUCTURES

Fastening on steel substructures
Thickness up to 1.5 mm

Fastening on steel substructures
Thickness up to 4 mm (pre-drilled)

Fixing on wooden substructures.

KIT - 5 mm STRUCTURE - with HDPA PLATE

Compatibility

Material Screw	Plate Material	Screw Ø (mm)	Screw L (mm)	SYNTH Panel Th. (mm)	PVSTEEL Panel Th. (mm)	Isodeck LG Panel Th. (mm)
Steel Stainless steel	HDPA	Ø 5.5	135	50	50	-
			135	60	60	-
			135	80	80	-
			155	100	100	-
			155	120	120	-
			235	150	150	-

For fastening to a metal substructure (max thickness 5 mm) and hex head screw, with 100x50 mm HDPA Polyamide plate

COMPATIBLE SUBSTRUCTURES

Fastening on steel substructures
Thickness up to 1.5 mm

Fastening on steel substructures
Thickness up to 5 mm (pre-drilled)

Not compatible with wooden substructures.

KIT - 10 mm STRUCTURE - with HDPA PLATE

Compatibility

Material Screw	Plate Material	Screw Ø (mm)	Screw L (mm)	SYNTH Panel Th. (mm)	PVSTEEL Panel Th. (mm)	Isodeck LG Panel Th. (mm)
Steel Stainless steel	HDPA	Ø 5.5	135	50	50	-
			135	60	60	-
			135	80	80	-
			155	100	100	-
			155	120	120	-
			235	150	150	-

For fastening to a metal substructure (max thickness 10 mm) and hex head screw, with 100x50mm HDPA Polyamide plate

COMPATIBLE SUBSTRUCTURES

Not compatible with steel substructures
Thickness up to 1.5 mm

Fastening on steel substructures
Thickness up to 10 mm (pre-drilled)

Not compatible with wooden substructures.

3.1 Fasteners and bridging

FASTENING SCREWS

Key
Isodeck Synth
Isodeck PVSteel
Isodeck LG Panels

KIT - 16 mm STRUCTURE - with HDPA PLATE

Compatibility

Material Screw	Plate Material	Screw Ø (mm)	Screw L (mm)	SYNTH Panel Th. (mm)	PVSTEEL Panel Th. (mm)	Isodeck LG Panel Th. (mm)
Stainless Steel	HDPA	Ø 5.5	115	40	40	50, 60
			155	50, 60	50, 60	80, 100
			195	80, 100	80, 100	120, 150
			235	120, 150	120, 150	

For fastening to a metal substructure (max thickness 16 mm) and hex head screw, with 100x50mm HDPA Polyamide plate

COMPATIBLE SUBSTRUCTURES

Not compatible with steel substructures
Thickness up to 1.5 mm

Fastening on steel substructures
up to 16 mm

Not compatible with wooden substructures.

KIT - WOODEN STRUCTURE - with HDPA PLATE

Compatibility

Material Screw	Plate Material	Screw Ø (mm)	Screw L (mm)	SYNTH Panel Th. (mm)	PVSTEEL Panel Th. (mm)	Isodeck LG Panel Th. (mm)
Steel Stainless steel	HDPA	Ø 6.8	140			60
			160	50, 60	50, 60	80, 100
			180	80	80	120
			200	100	100	
			220	120	120	150
			240	150	150	

For fastening to a wooden substructure, with hex head screw and 100x50mm HDPA Polyamide plate

COMPATIBLE SUBSTRUCTURES

Not compatible with steel substructures.

Not compatible with steel substructures.

Compatible with wooden substructures.

KIT - BEAM AND BLOCK STRUCTURES - with HDPA PLATE

Compatibility

Material Screw	Plate Material	Screw Ø (mm)	Screw L (mm)	SYNTH Panel Th. (mm)	PVSTEEL Panel Th. (mm)	Isodeck LG Panel Th. (mm)
Steel Stainless steel	HDPA	Ø 5.5				

For fastening to beam and block substructures with hex head screw, with 100x50mm metal plate

COMPATIBLE SUBSTRUCTURES

Not compatible with steel substructures.

Compatible with beam and block substructures.

Not compatible with wooden substructures.

3.1 Fasteners and bridging

BRIDGING AND SYNTHETIC MEMBRANES KIT

Key
Isodeck Synth
Isodeck PVSteel
Isopiano - Isofire Wall - SK MW

BANDS FOR PVC AND TPO BRIDGING

Compatibility

PVC - thickness 1.2 mm		
Joint	**Width**	**Length**
Longitudinal	19.6 ; 23 cm	20 m
Butt joint	23 cm	20 m
Ridge	42 cm	20 m
Perimeter wall	160 cm	20 m

TPO - thickness 1.5 mm		
Joint	**Width**	**Length**
Longitudinal	19.6 ; 23 cm	25 m
Butt joint	23 cm	25 m
Ridge	42 cm	25 m
Perimeter wall	210 cm	25 m

The installation of the Bridging Bands consists in the application of bands made of synthetic material in the junction points between the panels, and in correspondence with all the elements that can create discontinuity on the waterproof synthetic membrane. This operation eliminates all the points where water infiltration can occur.
To ensure effective waterproofing, as well as to avoid damaging the synthetic membrane, it is necessary to use the Bridging Bands compatible with the installed panel. Using bridging Bands or other elements not supplied by Isopan can damage the PVC or TPO facing.

KIT and COMPONENTS with Isopiano and Isofire Wall FLAT SYSTEM

Compatibility

Components for KIT with PVC - White

COMPONENT	Thickness	Width	Length
Roll of PVC Membrane	1.2 mm	2.1 m	
TNT separation layer 300 g/m2 (1)		2 m	75m
Vapour barrier (2)			

(1) TNT 300 g/m2 separation layer: The item must be placed on the external sheet of the ISOPIANO FLAT SYSTEM and ISOFIRE WALL FLAT SYSTEM panels, before installing the Roll of PVC Membrane.

(2) Vapour barrier: The item must be installed below the ISOPIANO FLAT SYSTEM and ISOFIRE WALL FLAT SYSTEM panels.

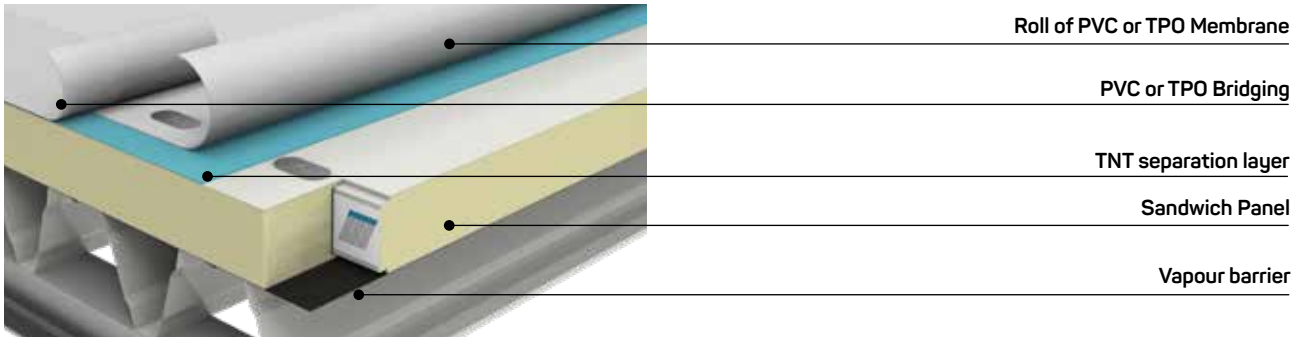
Components for KIT with TPO - Grey or White

COMPONENT	Thickness	Width	Length
Roll of TPO Membrane	1.5 mm	2.1 m	25 m
Roll of TPO Membrane	1.8 mm	2.1	20
Glass Fibre 100g/m2 (1)			
TNT separation layer 300 g/m2 (2)			
Vapour barrier (3)			

(1) 100 g/m2 Glass Fibre: to be installed under the roll of TPO Membrane; required for BROOF T2 Certificate.

(2) TNT 300 g/m2 separation layer: The item must be placed on the external sheet of the ISOPIANO FLAT SYSTEM and ISOFIRE WALL FLAT SYSTEM panels, before installing the Roll of PVC Membrane.

(3) Vapour barrier: The item must be installed below the ISOPIANO FLAT SYSTEM and ISOFIRE WALL FLAT SYSTEM panels.



3.1 Fasteners and bridging

BLOWERS AND WELDING MACHINES FOR BRIDGING

MANUAL WELDING MACHINE FOR BRIDGING

CODE		Characteristics	Description
		1 pc	Gun for manual welding

ONE-WAY BRIDGING WELDING MACHINE

CODE		Characteristics	Description
		1 pc	Machine for welding side of bridging strips

ADAPTER KIT

CODE		Characteristics	Description
		1 pc	Kit for welding profiles with automatic welding machine.

TWO-WAY BRIDGING WELDING MACHINE

CODE		Characteristics	Description
		1 pc	Machine for welding bridging strips on both sides

BRIDGING WELDING MACHINE

Isopan can provide devices for heat sealing the Bridging Bands on loan.
These devices can only be used by qualified personnel, and must be used solely for the installation of products supplied by Isopan.

3.1 Fasteners and bridging

MANUAL TOOLS FOR BRIDGING

SILICONE ROLLER FOR WELDING

CODE	Width	Characteristics	Description
	40mm	1 pc	Silicone roller for welding

BRASS ROLLER FOR WELDING

CODE	Width	Characteristics	Description
	40mm	1 pc	Brass roller for welding special parts

TESTING HOOK

CODE	Width	Characteristics	Description
	40mm	1 pc	Metal hook for welding tests and for the detection of infiltration points

3.2 GENERAL ACCESSORIES

3.2 General accessories

LEAF GUARD

UNIVERSAL PP LEAF GUARD

CODE	Colour	Ø mm	Characteristics
ISCTTPOPARAFG00001	■	80-125	Made of PE material
			50 pc

PP GRAVEL GUARD EXTENSION

CODE	Colour	Ø mm	Characteristics
	■		made of PP material
			1 pc

PP GRAVEL GUARD / UNIVERSAL ROD FOR GRAVEL GUARD

CODE	Colour	Ø mm	Characteristics
ISCTBANDPARA	■	80-160	made of PP material
ISCTBANDPARA		160-200	1 pc

3.2 General accessories

SHEETS AND METAL PROFILES

PROFILED BAR

Code	Colour	Length mm	Characteristics
		2250	Made of galvanised steel
			10 pcs

Galvanized steel with alternating 6 mm and 10 mm diameter holes. Bar for linear mechanical fixing of the membranes.

FIXING PROFILE

Code	Colour	Length m	Size mm	Versione
	☐	2000	10 x 40 x 10	Linear fixing rofile.
	☐	2000	10 x 10 x 40 x 10	Vertical connection profile.
	☐	2000	10 x 70 x 50 x 10	Crowning profile.

PLASTICISED SHEET - STAINLESS STEEL ON REQUEST

Code	Colour	Weight Kg/m2	Size mm	Characteristics
	☐	5.8	1000 x 2000	In PVC-P
				10 - 30 pcs

Galvanised steel sheet laminated with a homogenous waterproof PVC membrane. The lower steel sheet is protected by an antiorrosion layer.

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3.3 PVC ACCESSORIES

ELEMENTS FOR CONNECTION BETWEEN PANEL AND FLOOR

3.3 PVC Accessories

CORNERS AND FITTINGS

PREFABRICATED INTERNAL CORNER

Code	Colour	Ø mm	Characteristics
ISCTPVCANGINT	☐		Angle 90°, 20 pc
			Installation: Hot air welding

PREFABRICATED EXTERNAL CORNER

Code	Colour	Ø mm	Characteristics
ISCTPVCANGEST	☐		Angle 90°, 20 pc
			Installation: Hot air welding

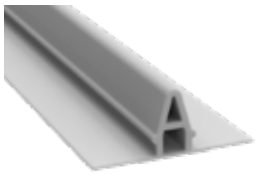
PVC-P CONICAL FITTING

Code	Colour	Ø mm	Characteristics
ISCTPVCRACC0000001	☐	13-49mm	H 120mm, 25 pc
			Installation: Hot air welding

3.3 PVC Accessories

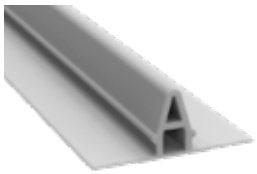
COATED PROFILES AND WALKWAY

ALKORBAR



Code	Colour	Size mm	Characteristics
		25x35 x 3000	40 pc
			PVC-P
			Installation: Hot air welding

ALKORBAR XL



Code	Colour	Size mm	Characteristics
		70x50 x 3000	20 pc
			PVC-P
			Installation: Hot air welding

EXTRUDED PVC BAR WITH ALUMINIUM CORE

Code	Colour	Size mm	Characteristics
ISCTPROF0000000005		20x25 x 3000	25 pc
ISCTPROF0000000004		80x33 x 3000	PVC-P
			Installation: Hot air welding

WALKWAY

Code	Colour	Size	Characteristics
		76cm x 15m	Delimitation of walkways on the roof, maintenance areas and mechanical protection of the membrane.

3.3 PVC Accessories

OUTLETS AND VENTS

VERTICAL OUTLETS - 235 mm with leaf guard

Code	Colour	Ø mm	Characteristics
ISCTPVCB0C23580		80	Height 235 mm, 6 pc
ISCTPVCB0C235100		100	
ISCTPVCB0C235125		125	
			Installation: Hot air welding

VERTICAL OUTLETS - 240 mm with leaf guard

Code	Colour	Ø mm	Characteristics
ISCTPVCB0C240110		110	Height 240 mm, 25 pc
			Installation: Hot air welding

RIGID OUTLETS WITH FLANGE

Code	Colour	Ø mm	Characteristics
		25, 32, 40, 50,	H from 250 to 600 mm
		63, 75, 80, 90,	1 pc
		100, 110, 125, 140,	(on demand)
		160, 180, 200, 225	Installation: Hot air welding

CORNER OUTLETS

Code	Colour	Ø mm	Lungh. mm	Characteristics
		100 x 65	425	5 pc
		100 x 100	425	
				Installation: Hot air welding

RIGID HORIZONTAL AND RECTANGULAR OUTLETS WITH FLANGE

Code	Angle	Ø mm	Characteristics
	45° / 90°	80x60; 100x60; 110x110; 125x125; 160x160	Lenght from 250 to 600mm, 1 pc
			Installation: Hot air welding

CONTACT GLUE

Code	Formato	Characteristics
ISCTSIG00000000002	6 x 1 lt.	Suitable for bonding vertical parts or for details
ISCTSIG00000000003	1 x 10 lt.	

CLEANER AND SOLVENT

Code	Formato	Characteristics
ISCTPVCCLEAN	6 x 1 lt.	Cleaner, Etilacetato
ISCTPVCCLEAN	1 x 5 lt.	Cleaner, Etilacetato
ISCTPVCSOLV	6 x 1 lt.	Solvent, consumption 25 g/m, tetraidrofurano (THF)

WATERPROOFING LIQUID, CATALYST, COMBI-PRIMER

Code	Formato	Characteristics
	1 x 10 kg	waterproofing liquid PMMA base
	1 x 100 g	Peroxide catalyst (powder)
	1 x 5 kg	Adhesion promoter PMMA
	26cm x 50m	TNT Polyester, roll 50m
	70cm x 50m	

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3.4 TPO ACCESSORIES

3.4 TPO Accessories

CORNERS AND FITTINGS

PREFABRICATED INTERNAL CORNER

Code	Colour	Tipo	Characteristics
ISCTTPOANGINT		Internal	Angle 90°
ISCTTPOANGEST		External	
			Installation: Hot air welding

CONICAL FITTING FOR PIPES

Code	Colour	Ø mm	Characteristics
ISCTTPORACC0000001		20 - 50	
ISCTTPORACC0000002		50 - 90	
ISCTTPORACC0000003		75 - 125	
			Installation: Hot air welding

SINGLE VENT

Code	Colour	Height mm	Ø mm	Characteristics
		200	75	
		325	110	Installation: Hot air welding

CONICAL OUTLET FITTING

Code	Colour	Ø mm	Lungh. mm	Characteristics
		170	203	
				Installation: Hot air welding

3.4 TPO Accessories

OUTLETS

SPIGOT-AND-SOCKET OUTLETS

Code	Colour	Height mm	Ø mm	Characteristics
	☐ ▒ ■	330	80, 100, 110, 125, 140, 160, 200	Installation: Hot air welding

SIMPLE OUTLET

Code	Colour	Height mm	Ø mm	Characteristics
	☐ ▒ ■	250	80, 100, 110, 125, 140, 160, 200	Installation: Hot air welding

90° CORNER OUTLETS WITH CIRCULAR CROSS-SECTION

Code	Colour	Size mm	Ø mm	Characteristics
	☐ ▒ ■	500mm	80	Installation: Hot air welding
			100	
			110	
			125	

ELBOW CONNECTION (RECTANGULAR HOLE SECTION)

Code	Colour	Size mm	Ø mm	Characteristics
	☐ ▒ ■	100 x 100	80	Installation: Hot air welding
		65 x 100	80	
		100 x 100	100	
		65 x 100	100	

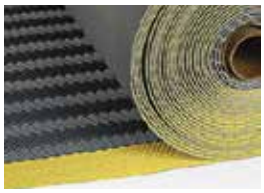
90° CORNER OUTLETS (RECTANGULAR HOLE SECTION)

Code	Colour	Size mm	Ø mm	Characteristics
ISCTTPOBOCRET100	☐ ▒ ■		100 x 100	Installation: Hot air welding
ISCTTPOBOCRET65			65 x 100	

3.4 TPO Accessories

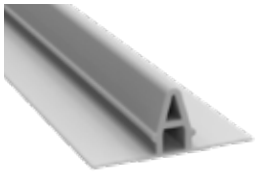
WALKWAYS AND COATED PROFILES

WALKWAY AND PROTECTIVE LAYER



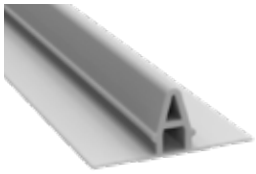
Code	Colour	Size	Characteristics
		75cm x 30m, sp. 1.8mm	Delimitation of walkways on the roof, maintenance areas and mechanical protection of the membrane, thickness 4mm

ALKORBAR



Code	Colour	Size mm	Characteristics
		25x35 x 3000	40 pc
			Installation: Hot air welding

ALKORBAR XL



Code	Colour	Size mm	Characteristics
		70x50 x 3000	40 pc
			Installation: Hot air welding

3.4 TPO Accessories

FINISHES AND SOLVENTS

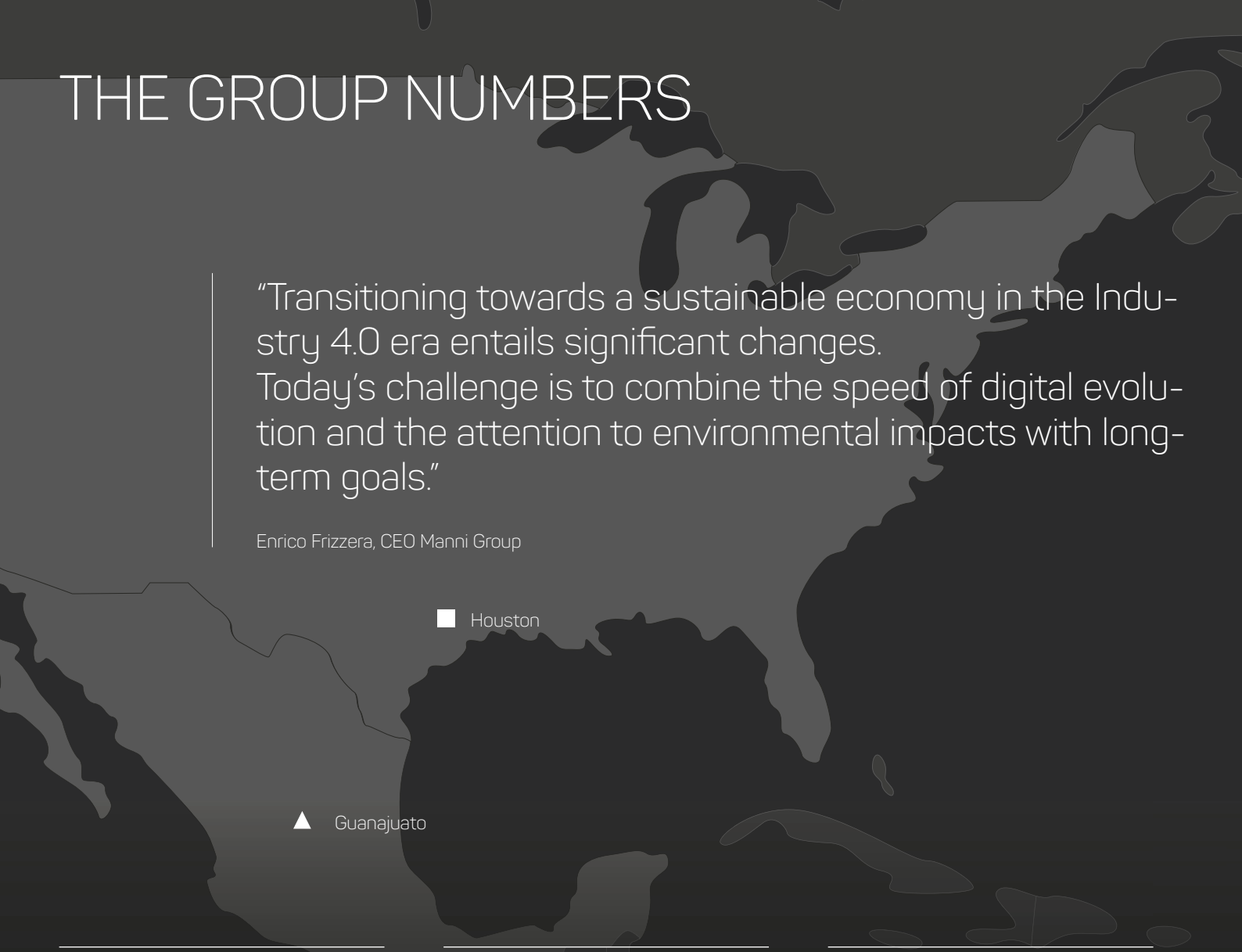
SOLVENT, CLEANER, SEALANT

Code	Formato	Characteristics
	1 x 20 kg	contact glue
	1 x 12 kg	Polyurethane (PUR) glue
	12 x 1 lt.	Cleaner
	1 x 1 lt.	Adhesion promoter
	12 x 310 ml	Sealant

THE GROUP NUMBERS

"Transitioning towards a sustainable economy in the Industry 4.0 era entails significant changes.
Today's challenge is to combine the speed of digital evolution and the attention to environmental impacts with long-term goals."

Enrico Frizzera, CEO Manni Group



Operational companies

14

Countries served

78

Customers

10.200

Investments 2018

12,3 milioni

Turnover in Euro

630,4 milioni

Employees

1.127

Tons/year of CO2eq avoided

oltre 32 mila

Risultato attività Manni Energy 2018

Square metres/year of panels sold

circa 15 milioni

Tons/year of steel purchased

circa 450 mila

MANNI GROUP

Headquarters
Sede di Verona

RENEWABLE ENERGIES AND SERVICES

- MANNI ENERGY
  Verona
- MANNI STORE
  Turin
- MANNI IMMOBILIA
  Verona
- ICOM ENGINEERING
  Verona

STEEL

- MANNI SIPRE
  Mozzecane VR
  Div. 1: lamiere
  Div. 2: laminati e tubi
  Div. 7: travi

  Crema CR
  Div. 8: travi
  Div. 9: commercial

  Monteprandone AP
  Div. 6: travi

  Campoformido UD
  Div. 3 travi

- MANNI INOX
  Verona
  Div. via Righi
  Div. Via Torricelli

- MANNI GREEN TECH
  Verona

  Houston (TX)
  Manni Green Tech USA

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  Div. Patrica FR

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  Isopan Est

  Halle, Germany
  Isopan Deutschland

  Volgorad, Russia
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