CATALOGUE #2018

laTònedil MILANO

INSULATES AND PROTECTS OVER TIME

10 PRODUCTION PLANTS. LATTONEDIL GROWS EVERY DAY WITH YOU

MILANO laTTonedil

INSULATES AND PROTECTS OVER TIME

FOUNDED IN 1969 IN BRIANZA, A LAND CHARACTERISED BY AN OUTSTANDING CULTURE OF WORK AS SOCIAL VALUE, LATTONEDIL GREW OVER THE YEARS TO BECOME AN INFLUENTIAL GROUP, CURRENTLY COUNTING 10 MANUFACTURING PLANTS: SIX IN ITALY, ONE IN GERMANY, ONE IN SPAIN, ONE IN BOSNIA-HERZEGOVINA AND ONE UPCOMING IN FRANCE.
THE PLANT IN CARIMATE (CO) EXTENDS OVER A TOTAL AREA OF 126,000 SQUARE METRES NESTLED IN THE SEVESO VALLEY.
IT FEATURES THREE PRODUCTION LINES THANKS TO WHICH IT CAN MEET THE DEMAND OF THE NORTHERN ITALY MARKET FOR SANDWICH PANELS. THE COMPANY'S SHOWROOM IS LOCATED AT THE PLANT IN CANTÙ (CO), SPECIALISED IN THE ASSEMBLY OF SPECIAL PANELS FINISHED IN STONE, ASSEMBLY OF STONE-FINISHED AND PORCELAIN OR CASED GRES-FINISHED SPECIAL PANELS. THE MANUFACTURING PLANT IN VENZONE (UD) IS SPECIALISED IN THE PRODUCTION OF PANELS WITH MINERAL FIBRE AND GLASS WOOL INSULATION, WHILE THE PLANT IN CROTONE, IN THE EASTERN PART OF CALABRIA, SUPPLIES PANELS FOR INDUSTRIAL ARCHITECTURE DESTINED TO MEDITERRENEAN MARKETS.
IN SOUTHERN ITALY, LATTONEDIL IS ALSO PRESENT IN BATTIPAGLIA (SA) WITH A PLANT THAT PRODUCES SHEETS IN POLYCARBONATE. WHILE AT ITS NEW PLANT IN FROSINONE, IT MANUFACTURES BENT PANELS.
THE PLANT IN DINKELSBÜHL, GERMANY, IS DEDICATED TO THE PRODUCTION OF PANELS FOR THE NORTHERN EUROPEAN MARKET, WHILE THE PLANT IN HUERTA SALAMANCA, SPAIN, IS LATTONEDIL'S OUTLET TOWARDS THE SPANISH AND PORTUGUESE MARKETS.
WITH THE INAUGURATION OF THE PLANT IN NOVA TOPOLA, IN BOSNIA-HERZEGOVINA, AND THE OPENING OF THE PLANT IN FRANCE IN THE NEAR FUTURE, LATTONEDIL ASSERTS ITSELF AS ONE OF THE MAJOR GROUPS MANUFACTURING SANDWICH PANELS AT THE EUROPEAN LEVEL.

CARIMATE

VENZONE

DINKELSBÜHL

CROTONE

FROSINONE

HUERTA SALAMANCA

CANTÙ

BATTIPAGLIA

NOVA TOPOLA

MANUFACTURING ACCORDING TO THE HIGHEST QUALITY STANDARDS

LATTONEDIL® OBSERVES, STUDIES AND ACQUIRES KNOWLEDGE FROM THE RESIDENTIAL AND INDUSTRIAL CONSTRUCTION SECTOR, TO OFFER MANUFACTURING METHODS THAT TAKE FULL ADVANTAGE OF THE OPPORTUNITIES OFFERED BY INDUSTRIALISATION. ITS MANUFACTURING PROCESS IS FULLY AUTOMATED TO GUARANTEE PERFECT PRODUCTS AND UTMOST QUALITY AND GUARANTEE THE UTMOST QUALITY. LATTONEDIL ALSO PLACES GREAT IMPORTANCE ON PEOPLE, AS IT IS THANKS TO SKILLED AND EXPERIENCED STAFF THAT EVERY STEP OF THE MANUFACTURING PROCESS IS CAREFULLY MONITORED BY THE KEEN AND EXPERT EYES OF TECHNICAL STAFF FROM THE DESIGN STAGE ALL THE WAY TO MANUFACTURING AND DELIVERY, FROM THE DESIGN STAGE THROUGH TO PRODUCTION AND DELIVERY.

FROM PREPAINTED STEEL, ALUMINIUM, COPPER OR PORCELAIN STONEWARE ALL THE WAY TO STONE: ALL PANELS ARE FINISHED TO MEET THE DESIGNER AND CLIENT'S NEEDS. EVERY ORDER CAN BE PROCESSED QUICKLY AND AD-HOC THANKS TO A VOLUME PRODUCTION LINE AND CONSTANT WORK CYCLE. MANUFACTURING OCCURS AT A CONSTANT PACE, FROM THE STEEL COILS TO PACKAGING.

PRODUCTION OF PANELS WITH A MINERAL FIBRE INSULATION SYSTEM. THE ENTIRE PROCESS IS AUTOMATED. THE FIBRE IS CUT TO SIZE BEFORE BEING INSERTED INTO THE PANEL, WHICH IS THEN PASSED THROUGH A HEATED DOUBLE BELT THAT ACTIVATES THE CHEMICAL COMPONENTS IN THE GLUE TO ENSURE UTMOST PRODUCT COMPACTNESS.

TESTING LABORATORY

LATTONEDIL PAYS GREAT ATTENTION TO PRODUCT CHARACTERISTICS.
THE QUALITY OF THE RAW MATERIALS USED LEADS TO THE HIGH AESTHETIC VALUE DISTINGUISHING ITS PRODUCTION.
HIGH QUALITY STANDARDS ARE ALSO UPHELD BY QUALITY CONTROL TESTS.
LATTONEDIL BOASTS AN IN-HOUSE LABORATORY, CREATED TO TEST PRODUCT QUALITY ON A CONTINUOUS BASIS. FOR EACH ORDER, WE ARE ABLE TO CERTIFY EVEN THE SMALLEST DEVIATION FROM THE DECLARED VALUES: CAPACITY, INSULATION DEGREE, AND AIR OR WATER-PROOFING. THE CERTIFICATION SUPPLIED WITH THE PRODUCT (IN ACCORDANCE WITH THE EC STANDARD AND OTHER NON-EUROPEAN CERTIFICATIONS) CONFIRMS ALL OF THE TESTS PERFORMED BY THE LAB.

LATTONEDIL'S CUSTOM PRODUCTS. TAILOR-MADE TO THE CENTIMETRE.

WE CREATED THE LARGEST CUSTOM LABORATORY IN ITALY, READY TO TRANSFORM EACH SINGLE LATTONEDIL'S PRODUCT IN AN EXTREMELY CARED FOR PRODUCT, GUARANTEED TO MEET EVERY CUSTOM NEED OF YOUR PROJECT.

SARTORIA

TAILOR MADE PROJECT

- STEEL WITH HIGH PERFORMANCE AGAINST CORROSION
- CUSTOM MANUFACTURING
- BIM DESIGN
- COLOURS AND FINISHES MADE ACCORDING TO YOUR DESIGN
- CUSTOM WORKS
- INTEGRATION OF PANELS AND NATURAL LIGHT OPENINGS
- SUPERVISION DURING THE ASSEMBLY PHASE
- ENGINEERING OF THE INSTALLATION SYSTEM
- PRODUCT WARRANTY

THE FOLLOWING IMAGES EXPLAIN THE CUSTOM WORK OFFERED BY LATTONEDIL.

LIVORNO:
BENETTI SHIPYARD
26,420 sq.m.

ROOF PANELS:
EUROCINQUE HP
10,420 sq.m.

WALLS
ISOPARFIRE ELEGANT
16,000 sq.m.

BUILDING SIZE:
130 x 60 m
95 x 70 m

NO. OF
CUSTOM PIECES:
4,550

LIVORNO:
GIGAYACHT
SHIPYARD
16,900 sq.m.

ROOFS:
ISOPARFIRE
ELEGANT

CORNERS:
30°, 45°, 60°
AND 90°

LOGISTICS CENTRE
107,000 sq.m.

WALL PANELS: ISOPAR ELEGANT
15,591 sq.m.

THE PANELS WERE MADE IN CUSTOM COLOURS

NO. OF CUSTOM PIECES:
2,370

BRITAIN:
ARCHITECTURE,
DESIGN, HIGH-TECH
CORNER

ROOF PANELS:
TTACK
305 sq.m.

WALLS
ISOPAR ELITE
DOGA 500
496 sq.m.

BUILDING SIZE:
16 x 16 m

NO. OF
CUSTOM PIECES:
187

YORKSHIRE:
ARCHITECTURE,
DESIGN, GRES
FINISH

WALL PANELS:
GIANO
192 sq.m.

BUILDING SIZE:
15 x 17 m

NO. OF
CUSTOM PIECES:
120

BORGOTARO:
SHEET PLANT
65,000 sq.m.

PANELS:
EUROCINQUE HP,
THERMO G5;
VELARIO

BUILDING SIZE:
420 m x 55 m
160 m x 65 m

CUSTOM DESIGN
AND BUILT
THINSMITHERY

NO. OF
CUSTOM PIECES:
34,000

MILAN:
RELIGIOUS
BUILDING
3,000 sq.m.

PANELS:
WAPSTONE

BUILDING SIZE:
22 m x 14 m

CUSTOM DESIGN
AND BUILT
THINSMITHERY

NO. OF
CUSTOM PIECES:
220

EXPANDED POLYURETHANE AND ALL OF ITS INSULATING PROPERTIES
OFFERING EXCELLENT RESULTS AT THE RIGHT PRICE

CHAPTER 1
POLYURETHANE SANDWICH PANELS

THE FIRST AND ONLY PANEL IN THE WORLD FOR FLAT ROOF COVERINGS

Position the first roof panel

Fasten in place using a fixing bracket, which allows the expansion joints to slide with the possibility of choosing between lateral or upper fastening. For upper fastening, the panel is equipped with a channel to house the bolt.

Position the second panel and slide it into place until it is fully attached to the first panel

The “clack” sound indicates that the panels are connected

ALL THE ADVANTAGES OF TTACK:

REDUCTION IN STRUCTURAL COSTS
BY CHANGING THE ROOF COVERING FROM SLOPED TO FLAT, OR INCREASING INTERNAL VOLUME

MAKING USE OF THE MAXIMUM HEIGHT
ALLOWED BY PLANNING REGULATIONS

SAVE ENERGY
BY RECLAIMING UNUSED SPACE

SAVE TIME
THANKS TO THE EASE OF INSTALLATION WITH THE SPECIAL INTERLOCKING JOINT SYSTEM

IT PERFORMS INCREDIBLY WELL WITH WATER.

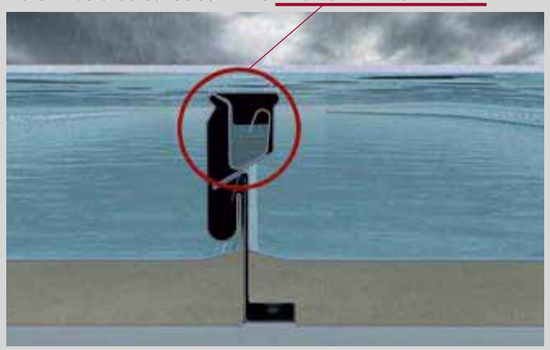
THE SPECIAL "TTACK" INTERLOCKING SYSTEM CREATES TWO NATURAL SAFETY CHANNELS TO DRAIN AWAY EXCESS WATER.

The accessories of TTack: from brackets to hold and tighten the panel, up to the service ones for mounting photovoltaic modules.

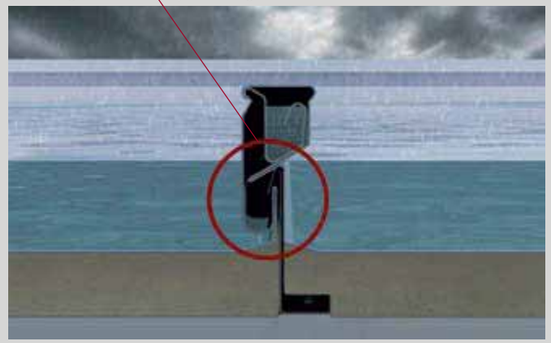
The decision to opt for a frontal rather than a upper connection also determines the choice of the TTack panel. See drawings on the following pages.

Under intense rain, the water level could reach the top part of the rib on a ttack panel ①

The pressure of the water seals the rib. If the rain persists, it may filter in due to water capillarity, in which case the water would be collected in the FIRST SAFETY CHANNEL. ②



For increased safety, a SECOND CHANNEL has been added to ensure the roof covering remains fully watertight. ③



Water drains away through the channels into the gutter as soon as the water flow allows. ④

TTACK®

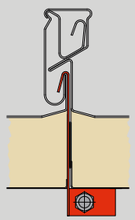
THE ONLY PANEL IN THE WORLD FOR FLAT ROOF COVERINGS

Metallic coatings
Hot dip and galvanized steel, SENDZIMIR system (UNI EN 10346) pre-painted on continuous lines with cycles based on polyester resins, high resistance polyester, PVDF (polyvinylidene fluorides), on the exposed side. A primer is applied to the underside of the panel.

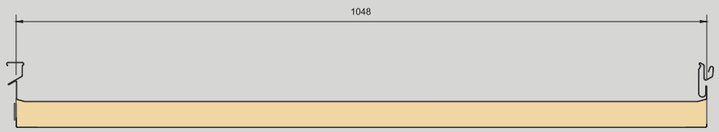
Insulation
Composed of rigid polyurethane foam that complies with European regulations concerning reaction to fire.
- Composition of polyurethane resin type formula (PUR, PUR B2 or PIR on request)
- Thermal conductivity coefficient λ = 0.023 W/Mk
- Average density 40 kg/m³ ± 10%
- Compressive strength ≥ 0.11 MPa (at 10% deformation)
- Tensile strength ≥ 0,1 Mpa
- Shear strength ≥ 0,1 Mpa
- Non-hygroscopic since more than 95% of it features closed cells
- Adherence to support surfaces 1 kg/cm²
- U-value thermal transmittance coefficient in accordance with EN14509

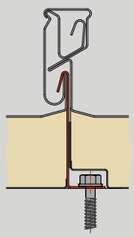
Joint
The TTACK panel joint is designed to prevent any kind of leakage and thermal bridges. A continuous gasket is inserted during the production process.

Static features
Clack panels are classified as self-supporting in accordance with the definition established by the UNI EN 14509 regulation "… a panel capable of supporting, by virtue of its materials and shape, its own weight and in case of panels fixed to spaced structural supports, all applied loads (snow, wind, air pressure), and transmitting these loads to the supports."
The loads vary depending on the supports and are defined in LATTONEDIL's catalogue.The load values refer to panels installed horizontally and subject to a distributed load, without taking into consideration thermal effects, which are verified by the designer.
The creep effect for insulating material, caused by accidental overloads, is taken into account in the static calculation.

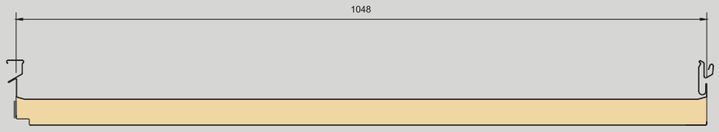


TTACK PANEL FOR FRONTAL FIXING

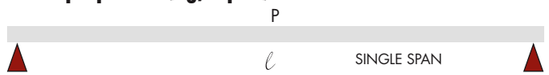




TTACK PANEL FOR UPPER FIXING
THE RIBBED PANEL PRESENTS A BAND IN RELIEF ON ALL ITS LENGTH.



Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.6 mm
INTERNAL facing:
Steel 0.5 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	WEIGHT (Kg/sq.m.)
50	260	195	155	105	75		**10.84**
80	415	315	255	205	155	120	**12.04**
100	520	390	315	260	215	170	**12.84**
120	625	470	380	310	265	220	**13.64**
150	785	590	470	390	335	290	**14.84**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ						

EXTERNAL facing:
Steel 0.8 mm
INTERNAL facing:
Steel 0.5 mm

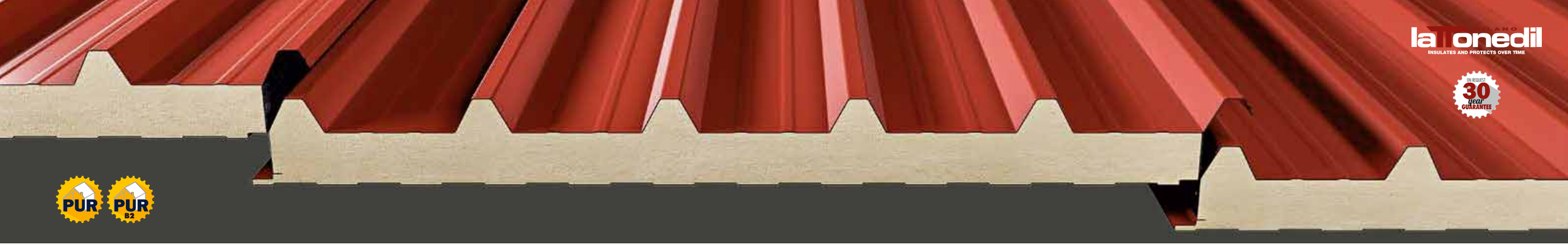
PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	WEIGHT (Kg/sq.m.)
50	275	210	169	131	90		**13.23**
80	435	325	269	215	170	135	**14.43**
100	540	410	335	275	230	185	**15.23**
120	645	485	395	335	285	235	**16.03**
150	795	605	485	410	345	310	**17.23**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ						

U Transmittance	50	80	100	120	150
W/sq.m. K	0.44	0.28	0.22	0.19	0.15
Kcal/sq.m. h °C	0.38	0.24	0.19	0.16	0.13

TOLERANCES (See UNICMI standards)
Coating thickness: according to reference standards for the products used.
Length: if ≤ 3000 mm ± 5 mm; if > 3000 mm ± 10 mm
Panel thickness: if ≤ 100 mm ± 2 mm; if > 100 mm ± 2%
Perpendicularity deviation: so = horizontal deviation
so ≤ 0.6% of the nominal width covered
Not perpendicular: max 3 mm

METALLIC COATINGS PROTECTION
All the panels made with the pre-painted metal materials mentioned above are supplied upon request with a protective polyethylene adhesive film to prevent damage to the painted layer. If the material is supplied without a protective film, LATTONEDIL is not responsible for any damage on the painting.
The protective film must be completely removed during the panel installation and, in any case, within a maximum of thirty days from the delivery of the materials. The panels, still covered by the protective film, must not be exposed to direct sunlight for long periods of time.

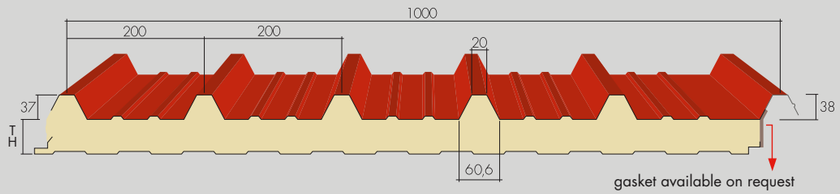
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.



ISOCOPRE®

THE COST EFFECTIVE ROOF PANEL

Insulating roof panels have become an important component in the world of contemporary construction. Designers demand panels that are solid, have good thermal insulation, are easy to install and have a good appearance. ISOCOPRE®, the result of advanced technology, interprets these values, condensing them into a single formula: six ribs, one metre wide.
It is no coincidence then that this is one of the most popular models with operators in the residential and industrial construction industry. ISOCOPRE® is composed of rigid facings in prepainted steel or aluminium with an insulating core of high-density expanded polyurethane, which is free from CFC and therefore environmentally friendly. The range of thicknesses and facings available on request make it possible to meet a variety of design requirements.



B ROOF (T2)

B ROOF (T3)

Micro-veining of the LOWER side of the panel (to be specified when ordering)

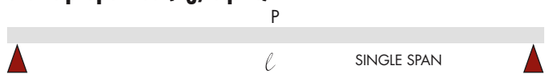
Scored

Staved

Smooth

ISOCOPRE®
IS ALSO AVAILABLE WITH
EXTERNAL HANGINGS IN
REAL COPPER.

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	260	205	120	85	55						**7.62**
40	315	225	150	110	80	50					**8.00**
50	380	270	190	135	100	75	50				**8.38**
60	450	320	225	165	125	95	65	50			**8.76**
80	580	425	305	225	175	135	105	80	60		**9.52**
100	710	530	390	290	225	175	140	115	85	65	**10.28**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

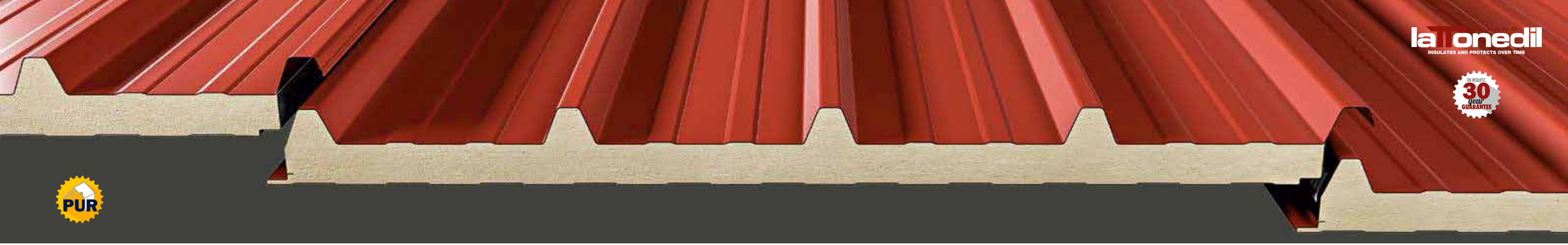
EXTERNAL facing:
Aluminium 0.6 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	270	185	140	100	70						**6.05**
40	342	235	185	130	95	65	50				**6.43**
50	396	285	225	170	125	90	65	50			**6.81**
60	450	335	265	210	155	110	80	60			**7.19**
80	580	435	345	285	220	165	120	95	70	55	**7.95**
100	715	535	425	350	285	220	170	130	100	80	**8.18**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

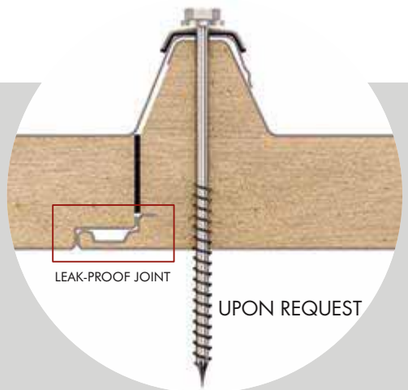
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

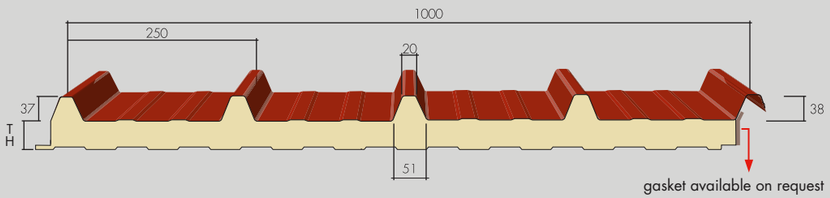


EUROCINQUE®

ROOF PANELS FOR RESIDENTIAL AND INDUSTRIAL USE

EUROCINQUE® is a roof panel suitable for both residential and industrial buildings. It has five ribs and is composed of a layer of insulating polyurethane sandwiched between two sheet metal facings. It has a distinctive appearance and good static resistance, resulting in excellent load performance.
We are proud to say that its versatility of use and pleasing appearance has made it the best selling and most sought after panel on the market.





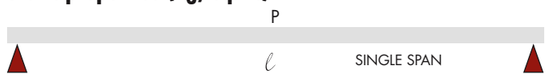
B ROOF (T2)

B ROOF (T3)

Micro-veining of the LOWER SIDE Of the panel (to be specified when ordering)

EUROCINQUE® IS ALSO AVAILABLE WITH EXTERNAL HANGINGS IN REAL COPPER.

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	250	195	105	70							**7.42**
40	290	200	135	90	65						**7.80**
50	315	230	160	115	85	65					**8.18**
60	370	275	195	145	110	85	60				**8.56**
80	485	360	265	200	155	120	95	70	50		**9.32**
100	595	445	340	260	200	160	125	105	80	60	**10.08**
120	710	530	420	320	250	195	160	130	105	85	**10.84**
150	880	655	520	410	325	260	210	170	145	120	**11.98**
160	935	700	555	445	350	280	225	185	155	130	**12.36**
180	975	725	580	480	400	320	260	215	180	150	**13.12**
200	1000	745	595	495	420	360	295	245	205	170	**13.88**

Effective span width: 120 mm

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

EXTERNAL facing:
Aluminium 0.6 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	260	150	115	80	55						**5.88**
40	332	196	150	110	80	60					**6.26**
50	386	245	185	145	105	80	60				**6.64**
60	435	295	220	180	135	100	75	55			**7.02**
80	485	360	285	235	195	150	110	85	65	50	**7.78**
100	600	445	355	295	250	200	155	120	95	75	**8.54**
120	710	530	420	350	300	250	200	155	125	95	**9.30**
150	880	660	525	435	370	320	260	215	175	140	**10.44**
160	940	700	560	460	395	345	280	230	190	155	**10.82**
180	975	725	580	480	410	355	315	265	220	185	**11.58**
200	1000	750	595	495	420	365	325	290	250	210	**12.34**

Effective span width: 120 mm

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

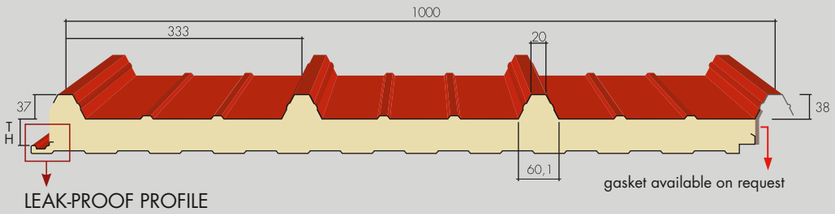
U Transmittance	30	40	50	60	80	100	120	150	160	180	200
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19	0.15	0.14	0.12	0.11
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16	0.13	0.12	0.11	0.10

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

EUROCOPRE®

INSULATING PANELS FOR INDUSTRIAL CONSTRUCTION

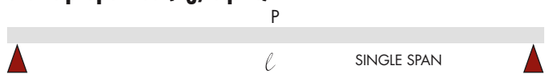
The industrial construction industry selects products that offer a successful balance of quality and price.
To meet these needs, Lattonedil® has created EUROCOPRE®, an insulating panel with four ribs that can be used as a roof covering for both residential and industrial buildings and on the walls of industrial buildings. EUROCOPRE® is available in the same range of thicknesses and facings as the ISOCOPRE® panel, confirming its versatility.



B ROOF

Micro-veining of the LOWER SIDE of the panel (to be specified when ordering)

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	205	135	90	60							**7.26**
40	265	175	120	85	60						**7.64**
50	315	220	155	110	80	60					**8.02**
60	360	265	190	140	105	80	55				**8.40**
80	475	355	255	195	150	115	90	70	50		**9.16**
100	585	435	335	255	200	155	125	100	80	60	**9.92**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

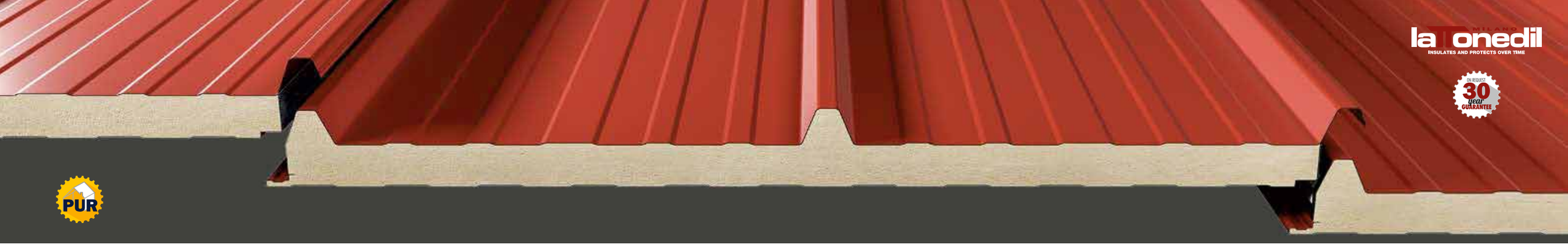
EXTERNAL facing:
Aluminium 0.6 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	210	155	100	70	50						**5.79**
40	270	186	145	100	75	55					**6.17**
50	330	235	175	135	100	75	55				**6.55**
60	390	290	210	170	125	95	70	55			**6.93**
80	510	350	275	225	185	145	110	80	65	50	**7.69**
100	595	435	345	285	240	195	150	115	90	70	**8.45**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

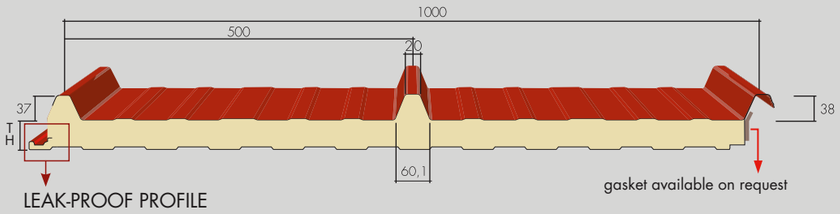


EUROTRE®

THE COST EFFECTIVE ROOF PANEL

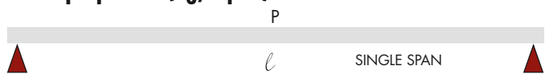
Lattonedil's EUROTRE® panel has three ribs, is available in six different thicknesses to guarantee versatility of application and offers good aesthetic performance and reliability in terms of strength.

The main benefit offered by EUROTRE® is that it is extremely cost effective and affordable, making it ideal for use in situations where severe operating conditions are not expected.



Micro-veining of the LOWER SIDE Of the panel (to be specified when ordering)

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	190	120	75	45							**7.09**
40	250	160	105	70							**7.47**
50	300	205	140	90	65						**7.85**
60	345	250	170	120	90	65					**8.23**
80	460	340	240	180	135	100	75				**8.99**
100	570	410	320	240	185	140	110				**9.75**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

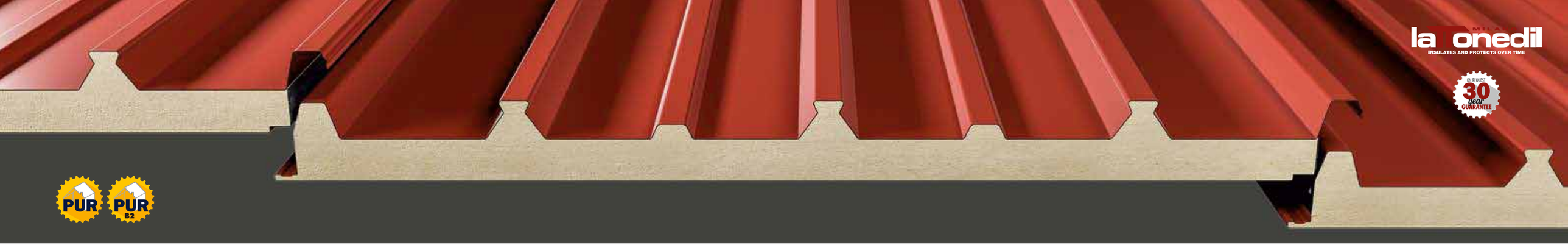
EXTERNAL facing:
Aluminium 0.6 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	195	140	95	55							**5.67**
40	255	171	130	85							**6.05**
50	315	230	160	120	85						**6.43**
60	375	275	195	155	110	80					**6.81**
80	495	335	260	210	170	130	95				**7.57**
100	580	420	330	270	225	180	135				**8.33**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.



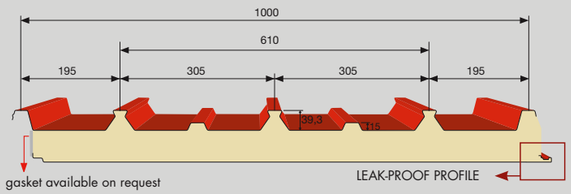
SOLARPAN® PLUS

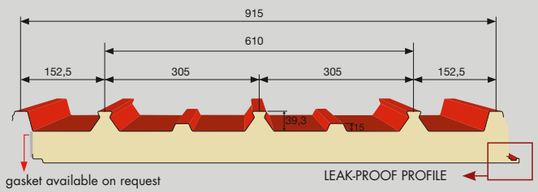
FIVE STAR SUPPORT FOR PHOTOVOLTAIC MODULES

Lattonedil presents the system that revolutionised the installation of photovoltaic modules.
Here is the complete SOLARPAN® PLUS solution:
– Its main advantage: essential design
– No costly supporting structure
– No additional gasket
– No need for useless and costly aluminium profiles
– Quick installation of the photovoltaic modules: components are fastened by snapping them into the brackets
– A pre-insulated roof that can be fitted without drilling any holes
– The light weight of the SOLARPAN® PLUS system compared to a traditional roof covering offers greater performance in all of its applications. SOLARPAN® PLUS offers a complete, low cost solution thanks to savings in terms of material and installation time. The SOLARPAN® PLUS system also provides all the accessories needed for installation of the photovoltaic modules. A SOLARPAN® PLUS roof today, a photovoltaic system tomorrow.

Looking towards the future, we have thought of everything: you can cover a roof or facade using SOLARPAN® PLUS panels today and decide to install a photovoltaic system in the future. Ideal for use on a facade or roof and thanks to the use of an inclined structure, the modules can also be mounted on roof pitches that do not face south and thus typically not used. Installation times are very fast thanks to the use of accessories such as support profiles, clamps and junction triangles, which can all be clipped onto the roof covering without the need to drill holes into it; this makes the SOLARPAN® PLUS system the best solution for roof coverings with photovoltaic modules.

Micro-veining of the LOWER side of the panel
(to be specified when ordering)






Stainless steel bracket for connection to the Solarpan® Plus panel


Aluminium bracket for connection to the Solarpan® Plus panel


Aluminium bracket for connection to the Solarpan® Plus panel with ZETA fixing for PV modules with frame


Aluminium bracket for connection to the Solarpan® Plus panel with OMEGA fixing for PV modules with frame


Bracket for fixing structures to the Solarpan® Plus panel


Aluminium bracket for connection to the Solarpan® Plus panel with single fixing for glass/glass PV modules

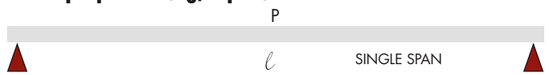

Aluminium bracket for connection to the Solarpan® Plus panel with double fixing for glass/glass PV modules


Anchor bracket for connecting a ladder to the Solarpan® Plus panel


Bracket for fixing snow guards to the Solarpan® Plus panel


Aluminium structure for slope change (contact our offices for more information)

Static properties (kg/sq.m.)



B ROOF (T2)
B ROOF (T3)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	330	245	175	105	65						**8.84**
40	420	315	225	145	90	60					**9.22**
50	510	380	280	190	125	85	60				**9.60**
60	605	450	335	240	160	110	80	55			**9.98**
80	785	585	450	340	240	170	125	90	70	50	**10.74**
100	965	720	570	435	335	240	180	135	100	80	**11.50**
120	1000	855	680	535	420	320	240	180	140	110	**12.26**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

EXTERNAL facing:
Aluminium 0.8 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	330	245	155	100	65						**6.85**
40	420	315	210	135	95	65					**7.23**
50	515	385	275	180	125	85	65				**7.61**
60	605	450	340	225	155	110	80	60			**7.99**
80	785	585	465	325	230	165	125	95	70	55	**8.75**
100	970	725	575	435	310	225	170	130	100	80	**9.51**
120	1000	860	685	555	400	295	220	170	135	105	**10.27**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

U Transmittance	30	40	50	60	80	100	120
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16

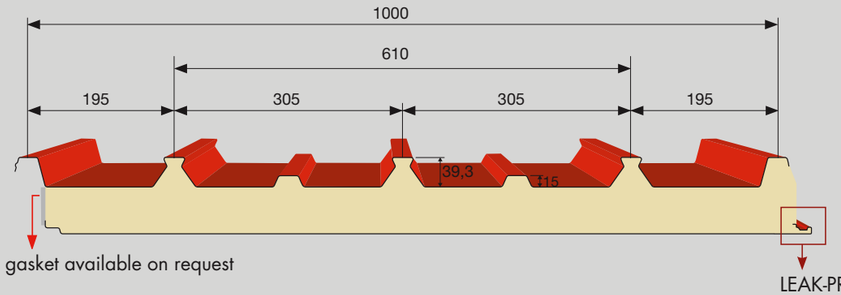
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

SOLARPAN® PLUS HOUSE

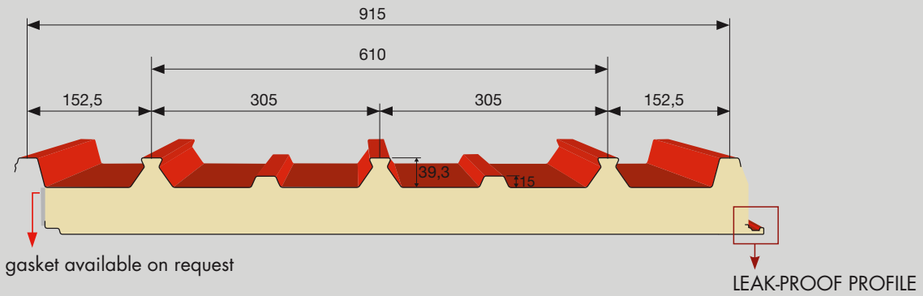
FIVE STAR SUPPORT FOR PHOTOVOLTAIC MODULES, EXCELLENT FOR INTEGRATED SYSTEMS

Developed on the basis of the experience acquired during production of the SOLARPAN® PLUS panel, this innovative solution makes it possible to achieve great savings on the installation of photovoltaic modules on the roofs of domestic buildings. Just remove the roof tiles in the area where the photovoltaic system is to be installed and apply SOLARPAN® HOUSE to the existing roof supports, leaving the insulation intact. This makes it possible to distribute the panels flush with the roof, resulting in better appearance.

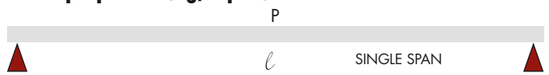
Furthermore, the installation of SOLARPAN® HOUSE offers a more secure way of fixing the photovoltaic modules into place, ensuring the complete absence of any infiltrations of water, the correct amount of ventilation between the panel and the surface on which it rests and reduced installation times.
In the case of new builds, SOLARPAN® PLUS HOUSE sandwich panels with expanded polyurethane insulation can be installed, which will reinforce all of the properties of the system and the roof itself; traditional tiles or pantiles can also be fitted on them, see detail shown above.



B ROOF (T2) B ROOF (T3)



Static properties (kg/sq.m.)



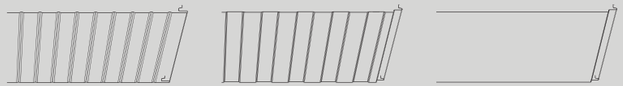
EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	330	245	175	105	65						**8.84**
40	420	315	225	145	90	60					**9.22**
50	510	380	280	190	125	85	60				**9.60**
60	605	450	335	240	160	110	80	55			**9.98**
80	785	585	450	340	240	170	125	90	70	50	**10.74**
100	965	720	570	435	335	240	180	135	100	80	**11.50**
120	1000	855	680	535	420	320	240	180	140	110	**12.26**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

U Transmittance	30	40	50	60	80	100	120
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16

Micro-veining of the LOWER SIDE of the panel (to be specified when ordering)



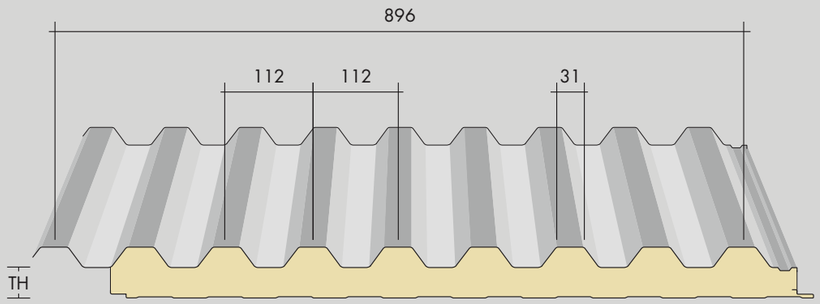
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

G9® PLUS

ARCHITECTURAL ROOF COVERING

G9® PLUS is a roof panel suitable for both residential and industrial buildings. It has 9 ribs and is composed of a layer of insulating polyurethane sandwiched between two sheet metal facings.

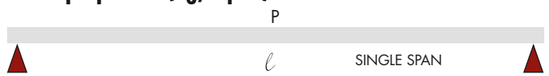
It has a distinctive appearance and good static resistance, resulting in excellent load performance.



Micro-veining of the LOWER SIDE Of the panel (to be specified when ordering)

Scored Staved Smooth

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
20	313	262	170	115	85	64	49	37			**10.50**
40	411	360	245	180	135	105	83	66			**11.30**
60	531	480	335	248	192	150	122	100			**12.10**
80	651	600	425	320	250	203	163	136			**12.90**
100	771	720	515	400	320	255	210	175			**13.70**
120	891	830	595	470	380	297	247	204			**14.50**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Aluminium 0.7 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
20	356	305	194	133	96	71	54	42			**7.50**
40	463	412	273	196	136	112	89	71			**8.30**
60	571	520	359	265	204	151	129	106			**9.10**
80	689	638	449	338	264	211	163	142			**9.90**
100	809	758	531	412	326	264	218	181			**10.70**
120	901	840	623	476	378	307	253	210			**11.50**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

U Transmittance	20	40	60	80	100	120
W/sq.m. K	0.79	0.46	0.33	0.25	0.21	0.18
Kcal/sq.m. h °C	0.68	0.39	0.28	0.21	0.18	0.15

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ENERGY ROOF® FV

PATENTED SYSTEM FOR THE INSTALLATION OF PHOTOVOLTAIC SYSTEMS

B ROOF (T3)

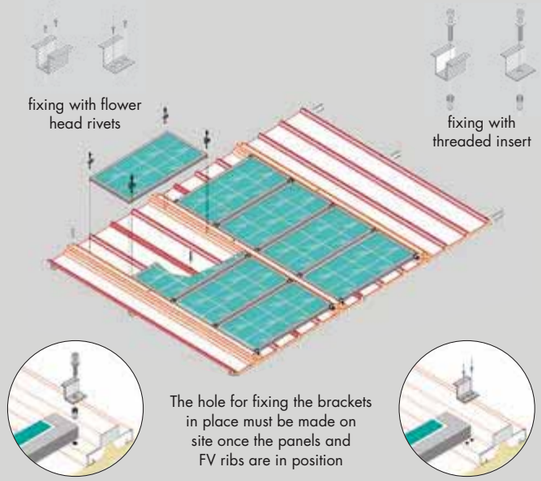
The ENERGY ROOF® FV system is composed of insulating panels suitable for the type of module to be installed and of profiles into which the photovoltaic modules are inserted.

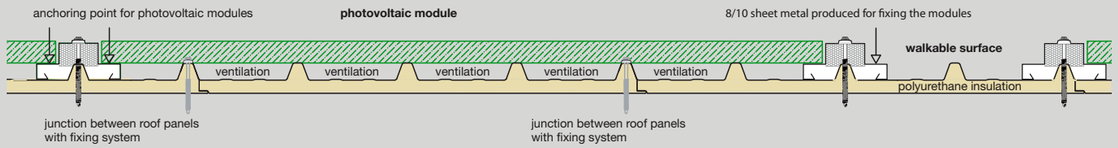
This solution offers many advantages, including:
- Absolute guarantee of water tightness of the roof fitted with a photovoltaic system;
- The system can be used with any standard photovoltaic module available on the market;
- Installation of photovoltaic modules is simple, quick and cost-effective, with a fixing system that is independent from that of the roof covering (modules can also be retrofitted to the roof);
- The system for anchoring the modules is integrated into the roof covering;
- Side closing profiles of the roof integrated with the support for the modules;
- Improved ventilation of the photovoltaic modules thanks to the height of the ribs, resulting in optimised energy production;
- The photovoltaic modules rest on multiple ribs, resulting in considerable improvement in the snow load carrying capacity;
- Increase in the thermal insulation of the panel thanks to the ventilated roof effect created from the combination of roof panels with recessed photovoltaic module; this ventilation considerably reduces the temperature of the panel's external facing, creating an effect that can noticeably improve the energy performance of buildings;
- Possibility to leave walkways to facilitate cleaning of the roof and modules and the performance of any maintenance work.

Roof coverings created with FV panels make it possible to create photovoltaic systems with:
- Modules covering the entire roof;
- Modules on part of the roof;
- Modules on part of the roof, prepared for future expansion of the system;
- Modules covering the entire roof with horizontal or vertical walkways allowing access to the roof and photovoltaic modules for maintenance and cleaning purposes.

The ENERGY ROOF® FV panel is insulated with a layer of expanded polyurethane, which can vary in thickness depending on the needs of the client.

No fixings (screws, brackets, etc) are supplied with the ENERGY ROOF® FV system. Such accessories must be expressly requested at the time of order.



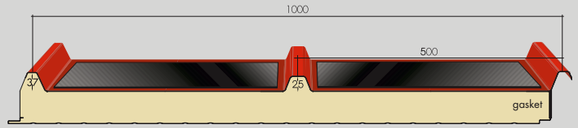


EURODUE ENERGY®

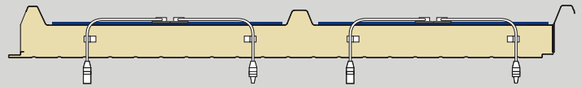
THE PERFECT PANEL FOR THIN FILM PHOTOVOLTAIC MODULES

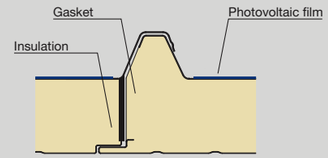
B ROOF (T3)

EURODUEENERGY® is a polyurethane sandwich panel designed to be used with thin film photovoltaic modules. In addition to its use as an aesthetically simple and cost-effective roof covering, which in terms of sturdiness is as reliable as all of the other roof panels made by Lattonedil, EURODUEENERGY® can also be completed with an amorphous silicon photovoltaic system, even at a later date if required.
To summarise, EURODUEENERGY® offers:
– A roof covering system for large surfaces that can be fully integrated with photovoltaic modules.
– Flexibility in terms of design and installation in relation to inclination and length.
– Ease of installation and reduced installation costs.
– Resistance to atmospheric agents.
– Less weight per square metre compared to traditional photovoltaic systems.
– Competitiveness in terms of cost per kWh of energy produced.
– Ease of maintenance, as it is possible to walk on it.
– The ideal solution for the disposal of asbestos roofs, without the need to disturb existing structures.
Can be used for roofs not subjected to severe operating conditions.

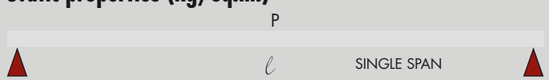


Upper support in natural ALUZINC® thickness 0.7 mm (minimum)
Lower support in prepainted zinc-plated STEEL thickness 0.5 mm





Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.7 mm
INTERNAL facing:
Steel 0.5 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	190	120	90	65							**7.26**
40	250	160	125	100							**7.64**
50	305	205	160	125	105						**8.02**
60	345	250	200	150	130	105					**8.40**
80	460	345	255	210	175	150	120				**9.16**
100	575	415	330	270	230	190	170				**9.92**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

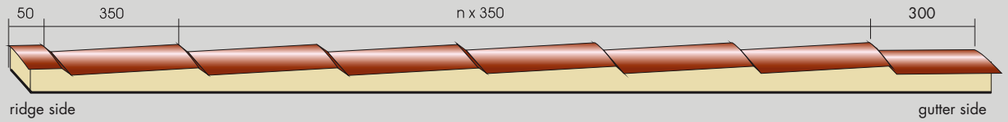
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

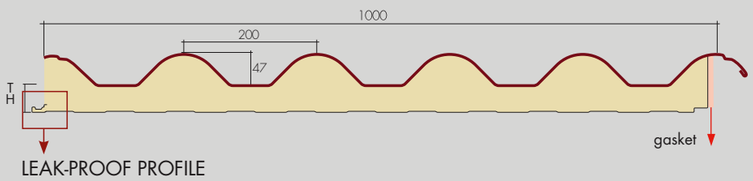
TTCOPPO®

THE ROOF WITH GOOD AESTHETICS

TTCOPPO® is an insulated panel suitable for use on residential buildings when appearance must be taken into account.
The finished roof has the appearance of a traditional tiled roof and is proposed as standard in the same colour as real tiles, although an aged finish is also available. TTCOPPO® meets the landscape planning regulations that also apply to old towns.
TTCOPPO® guarantees excellent thermal insulation thanks to the increased thickness of its distinctive section.

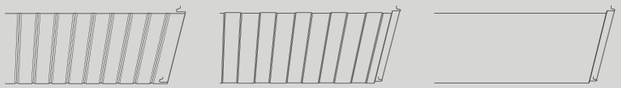
Technical characteristics
Metal sandwich panel with expanded polyurethane insulation.
Effective width: 1000 mm.
Upper facing: prepainted zinc-plated steel, aluminium or copper.
Lower facing: prepainted zinc-plated steel, other facings and colours available on request. Panel length depends on the module dictated by the design of the tile, see illustration below, with a constant dimension of 350 mm.





LEAK-PROOF PROFILE

Micro-veining of the LOWER SIDE Of the panel (to be specified when ordering)



Scored Staved Smooth

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	WEIGHT (Kg/sq.m.)	PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5
30	271	190	108	47	41	**8.78**	**30**	307	248	196	139	99
40	339	249	156	82	58	**9.16**	**40**	366	295	228	162	120
50	406	307	202	117	86	**9.54**	**50**	442	342	260	183	141
60	472	366	250	153	111	**9.92**	**60**	484	389	293	206	162
80	607	487	345	224	178	**10.68**	**80**	629	502	361	253	202
100	715	597	440	305	250	**11.44**	**100**	759	710	470	340	260
	p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ							p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ				

EXTERNAL facing:
Aluminium 0.7 mm
INTERNAL facing:
Steel 0.4 mm

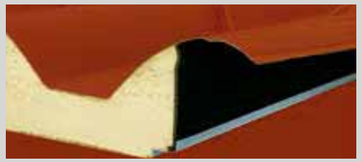
Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	WEIGHT (Kg/sq.m.)	PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5
30	231	162	82	36	31	**6.60**	**30**	249	185	146	105	74
40	253	186	117	64	44	**6.98**	**40**	275	219	171	122	90
50	305	231	152	87	64	**7.36**	**50**	318	256	196	136	106
60	353	275	187	115	83	**7.74**	**60**	276	293	220	155	121
80	455	366	258	168	120	**8.50**	**80**	471	382	276	190	151
100	545	446	328	228	170	**9.26**	**100**	570	426	303	235	185
	p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ							p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ				

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.44	0.37	0.29	0.27	0.18
Kcal/sq.m. h °C	0.61	0.38	0.32	0.25	0.24	0.16

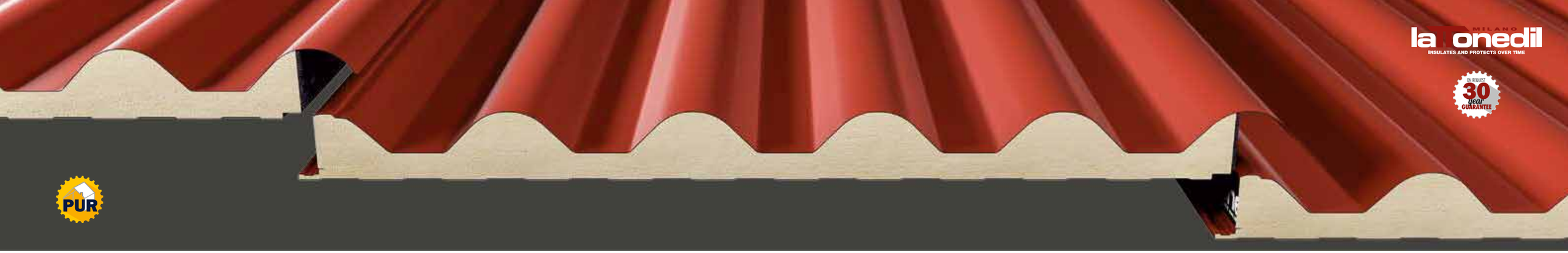
Shaped in the form of a pantile

Joint with gasket and drip element



Overlapping tile

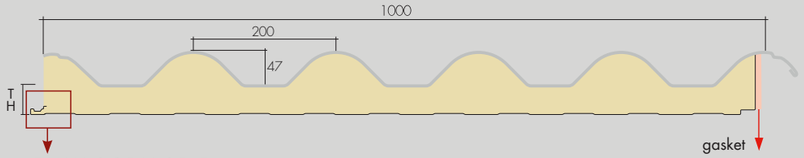
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.



TTONDA®
NEW DESIGN ROOF PANEL

TTONDA® is an insulated panel with a new corrugated design suitable for use as either a vertical or horizontal covering.
TTONDA® guarantees excellent thermal insulation thanks to the increased thickness of its distinctive section.

Technical characteristics
Effective width: 1000 mm
Upper facing: prepainted zinc-plated steel, prepainted aluminium and Aluzinc®.
Lower facing: prepainted zinc-plated steel.



LEAK-PROOF PROFILE

Micro-veining of the LOWER SIDE Of the panel (to be specified when ordering)

Scored | Staved | Smooth

The lower side also available in:

Bituminized felt | Natural centesimal aluminium | Fibreglass

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	WEIGHT (Kg/sq.m.)	PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5
30	271	190	108	47	41	**8.78**	**30**	307	248	196	139	99
40	339	249	156	82	58	**9.16**	**40**	366	295	228	162	120
50	406	307	202	117	86	**9.54**	**50**	442	342	260	183	141
60	472	366	250	153	111	**9.92**	**60**	484	389	293	206	162
80	607	487	345	224	178	**10.68**	**80**	629	502	361	253	202
100	715	597	440	305	250	**11.44**	**100**	759	710	470	340	260
	p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ							p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ				

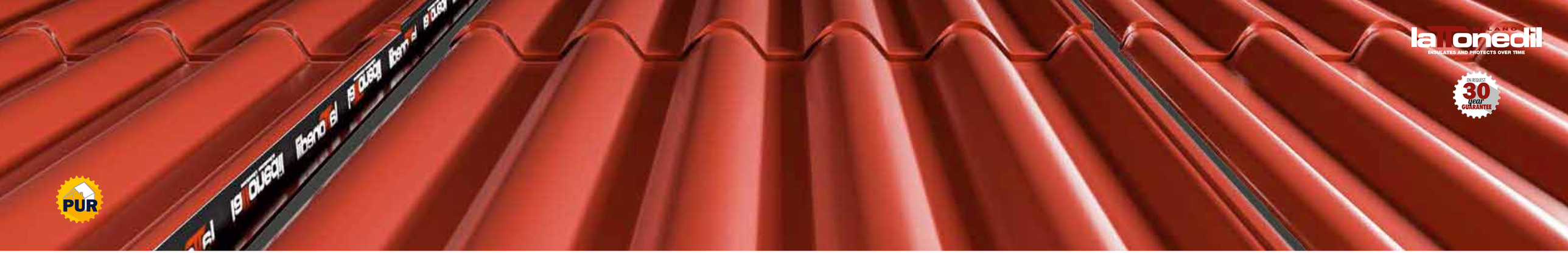
EXTERNAL facing:
Aluminium 0.6 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	WEIGHT (Kg/sq.m.)	PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5
30	231	162	82	36	31	**6.60**	**30**	249	185	146	105	74
40	253	186	117	64	44	**6.98**	**40**	275	219	171	122	90
50	305	231	152	87	64	**7.36**	**50**	318	256	196	136	106
60	353	275	187	115	83	**7.74**	**60**	276	293	220	155	121
80	455	366	258	168	120	**8.50**	**80**	471	382	276	190	151
100	545	446	328	228	170	**9.26**	**100**	570	426	303	235	185
	p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ							p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ				

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.44	0.37	0.29	0.27	0.18
Kcal/sq.m. h °C	0.61	0.38	0.32	0.25	0.24	0.16

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

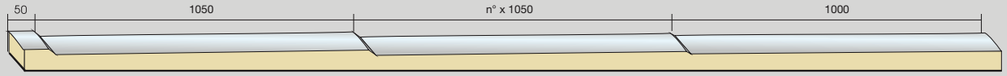


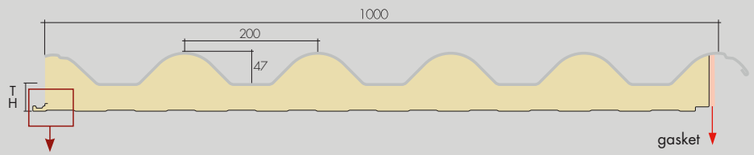
TTONDAFIBRO®

ROOFING WITH A RETRO DESIGN

TTONDAFIBRO® is a metal sandwich panel filled with expanded polyurethane insulation with a retro design. It is used in residential construction as it enables designers to restore old roofs whilst meeting the requirements imposed by landscaping constraints applicable to the area.
TTONDAFIBRO® guarantees excellent thermal insulation thanks to the increased thickness of its distinctive section.

Technical characteristics
Effective width: 1000 mm
Upper facing: prepainted zinc-plated steel, prepainted aluminium and Aluzinc®.
Lower facing: prepainted zinc-plated steel.
Panel length depends on the module dictated by the design of the TTONDAFIBRO®, see illustration, in multiples of 1050 mm.





LEAK-PROOF PROFILE

Micro-veining of the LOWER SIDE Of the panel (to be specified when ordering)

Scored Staved Smooth

The lower side also available in:

Bituminized felt | Natural centesimal aluminium | Fibreglass

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	WEIGHT (Kg/sq.m.)	PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5
30	271	190	108	47	41	**8.78**	**30**	307	248	196	139	99
40	339	249	156	82	58	**9.16**	**40**	366	295	228	162	120
50	406	307	202	117	86	**9.54**	**50**	442	342	260	183	141
60	472	366	250	153	111	**9.92**	**60**	484	389	293	206	162
80	607	487	345	224	178	**10.68**	**80**	629	502	361	253	202
100	715	597	440	305	250	**11.44**	**100**	759	710	470	340	260
	p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ							p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ				

EXTERNAL facing:
Aluminium 0.6 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	WEIGHT (Kg/sq.m.)	PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5
30	231	162	82	36	31	**6.60**	**30**	249	185	146	105	74
40	253	186	117	64	44	**6.98**	**40**	275	219	171	122	90
50	305	231	152	87	64	**7.36**	**50**	318	256	196	136	106
60	353	275	187	115	83	**7.74**	**60**	276	293	220	155	121
80	455	366	258	168	120	**8.50**	**80**	471	382	276	190	151
100	545	446	328	228	170	**9.26**	**100**	570	426	303	235	185
	p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ							p = Kg/sq.m. evenly distributed Operating limit: deflection 1/200 ℓ				

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.44	0.37	0.29	0.27	0.18
Kcal/sq.m. h °C	0.61	0.38	0.32	0.25	0.24	0.16

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOCURVO®

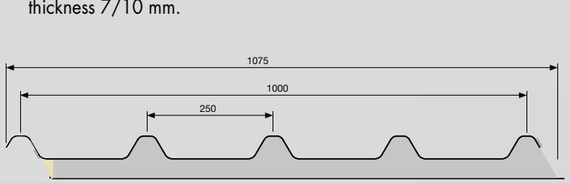
WITH A FIXED BEND RADIUS: 3.3 - 6 M.

ISOCURVO® is an insulating and self-supporting panel with five ribs, curved in shape with a bend radius of 3.3 or 6 metres and designed for roofs installed on prefabricated wing beams or "Y" beams. ISOCURVO® is lightweight and offers good mechanical performance, making it possible to maximize spacing between the prefabricated beams.

Extrados
Made with:
– metal, ribbed, curved, steel sheet protected with aluminium-zinc-silicon alloy (aluzinc), thickness 5/10 mm.
– metal, ribbed, curved sheet in natural or pre-painted aluminium, thickness 7/10 mm.
– metal, ribbed, curved sheet in pre-painted galvanized sheet, thickness 5/10 mm

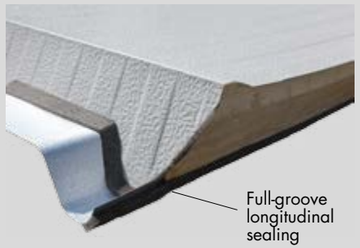
Central body
Made of rigid expanded polyurethane foam with closed cell, density ≥ 35 Kg / m^3, thickness 40-60-80-100 mm.
Polyurethane composition:
a) high molecular WEIGHT polyols, more stabilizing, expanding agent and catalyst.
b) diphenylmethane diisocyanate and its polymeric derivatives.

Intrados:
Made with:
– Pre-painted galvanized sheet, thickness 4/10 mm (standard).

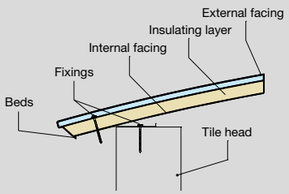


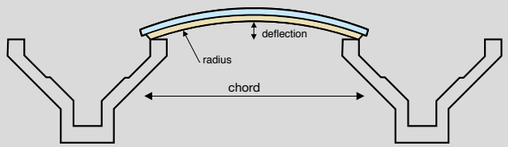
Maximum panel length: 3.3 m radius 4300 mm – 6.0 m radius 5200 mm

B ROOF (T3)

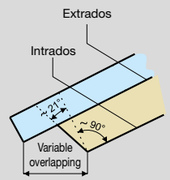


ASSEMBLY DIAGRAM





OVERLAPPING DETAIL



ISOCURVO®
STATIC CHARACTERISTICS
Bend radius 3,30 m

TYPE - Aluzinc 5/10 - Prepainted sheet 5/10 (Kg/sq.m.)

L Free span (cm)	Thickness (mm) 40	60	80	100
150	355	426	511	613
200	281	337	404	485
250	243	292	349	419
300	206	247	296	354
350	168	201	241	289
	Uniformly distributed load Kg/sq.m. SAFETY COEFFICIENT 3			

TYPE - Aluminium 6/10 (Kg/sq.m.)

L Free span (cm)	Thickness (mm) 40	60	80	100
150	243	292	349	419
200	206	247	296	354
250	178	213	255	306
300	150	179	215	258
350	122	145	174	209
	Uniformly distributed load Kg/sq.m. SAFETY COEFFICIENT 3			

ISOCURVO®
STATIC CHARACTERISTICS
Bend radius 6,00 m

TYPE - Aluzinc 5/10 - Prepainted sheet 5/10 (Kg/sq.m.)

L Free span (cm)	Thickness (mm) 40	60	80	100
150	275	329	394	473
200	217	255	306	367
250	188	225	270	324
300	159	190	228	273
350	130	156	186	223
400	102	122	146	175
450	77	92	110	131
	Uniformly distributed load Kg/sq.m. SAFETY COEFFICIENT 3			

TYPE - Aluminium 6/10 (Kg/sq.m.)

L Free span (cm)	Thickness (mm) 40	60	80	100
150	194	273	327	393
200	168	228	273	327
250	146	190	228	273
300	128	159	190	228
350	111	133	159	190
400	94	105	126	150
450	71	84	100	120
	Uniformly distributed load Kg/sq.m. SAFETY COEFFICIENT 3			

Note
– The information contained in this table is based on an internal method and is the result of load tests carried out on a single sheet. For more information refer to the Product Technical Sheet.
– The choice of material for the roofing must comply with the provisions of the Law (NTC) relating to loads and overloads.
– During the assembly phases, provide safety devices (e.g. life lines) as required by legislation relating to work at a height.

FEATURES	U.M.	VALUES			
Reaction to fire: (ministerial decree 26/06/1984 and ministerial decree 03/09/01)	**Class 0-2**	0 → Metal extrados/intrados 2 → rigid expanded polyurethane Certification MI380A60DO-200005 dated 22/04/03 (Interior ministry)			
Thermal conductivity λ_i (UNI EN 12667):	W/mk	$\lambda_i \geq 0.0225$ (t_m10°C)			
Thermal transmittance U_i (±5%): (λ_i/d):d → average insulation thickness in meters	W/sq.m. K	40 mm	60 mm	80 mm	100 mm
		0.42	0.29	0.23	0.19
Thermal resistance R_i (±5%): (d/λ_i)d → average insulation thickness in meters	sq.m. K/W	40 mm	60 mm	80 mm	100 mm
		2.38	3.45	4.35	5.26
The transmittance and thermal resistance values have been calculated considering the real thickness of the panel and the contribution, in terms of insulation, given by the polyurethane foam inside the ribs.					

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

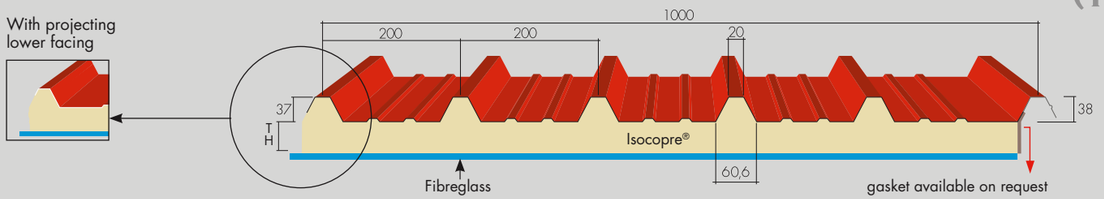
ISOFACTOR® ISOCOPRE

ROOFING FOR LIVESTOCK AREAS

PUR

The ISOFACTOR® range of roof panels has been designed for use in the agricultural and livestock industry, which has specific and distinctive requirements in terms of performance. ISOFACTOR® not only offers a high degree of thermal insulation, it is also hygienic and offers good resistance to mechanical stress, mould, acids, rust and any other type of corrosion. ISOFACTOR® insulated roof panels have a sheet of fibreglass applied to the internal side, meaning they can be cleaned and washed, thus preventing deterioration issues. This feature makes it an innovative roof panel that will last well over time and protects your investment. ISOFACTOR® ISOCOPRE is a self-supporting sandwich panel composed of a high-density expanded polyurethane insulating layer, CFC-free and therefore environmentally friendly, faced with a rigid external layer of prepainted steel or aluminium with six ribs and excellent static resistance and a fibreglass facing, which may be subject to colour alterations.
Maximum manufacturing thickness 100 mm.

B ROOF (T2)



Static properties (kg/sq.m.)

EXTERNAL facing: Prepainted zinc-plated steel
INTERNAL facing: Fibreglass

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2,5	2.75	3	3.25	3.5
0.4	364	241	167	123	95	75					
0.5	519	338	235	173	133	98	72				
0.6	625	400	278	205	155	117	85	64			
0.8	835	533	371	272	208	156	113	85	66	51	
1	1045	677	463	340	260	196	142	106	82	65	53

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing: Prepainted zinc-plated steel
INTERNAL facing: Fibreglass

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2,5	2.75	3	3.25	3.5
0.4	474	311	209	153	118	94	76				
0.5	676	437	293	215	166	132	107	87	69	55	
0.6	781	500	347	255	195	154	125	102	82	65	49
0.8	1044	668	463	339	260	205	167	137	110	86	69
1	1303	834	579	425	326	257	207	172	137	107	87

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

WEIGHT table (Kg/sq.m)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100
0.4	3.90	5.42	6.16	6.54	6.60	7.36
0.5	5.68	6.06	6.44	6.82	7.58	8.34
0.6	6.66	7.04	7.42	7.80	8.56	9.32
0.8	8.62	9.00	9.38	9.76	10.52	11.28
1	10.58	10.96	11.34	11.72	12.48	13.24

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

ISOFACTOR® EUROCINQUE

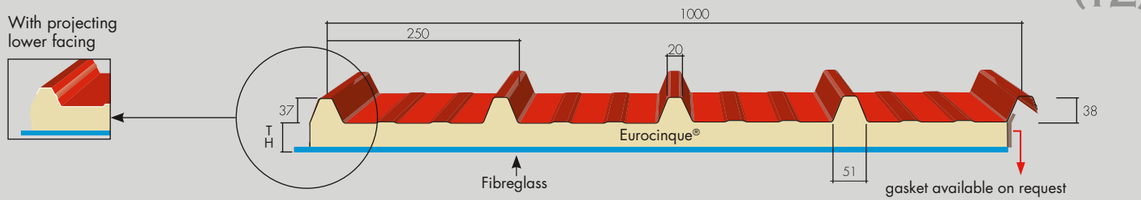
ROOFING FOR LIVESTOCK AREAS

PUR

ISOFACTOR® is a range of Lattonedil panels designed for use in the agricultural and livestock industry thanks to the addition of a fibreglass facing that gives the panel high resistance to chemical and bacterial agents (in particular urea and ammonia) and good scratch resistance. ISOFACTOR® insulated roof panels can therefore be cleaned and washed internally, preventing issues with hygiene and corrosion, meaning they will last well over time and protect your investment.

ISOFACTOR® EUROCINQUE is a self-supporting sandwich panel composed of an environmentally friendly, high-density expanded polyurethane insulating core, faced with a rigid external layer of prepainted steel or aluminium with five ribs and good static resistance and a fibreglass facing, which may be subject to colour alterations.
Maximum manufacturing thickness 100 mm.

B ROOF (T2)



Static properties (kg/sq.m.)

EXTERNAL facing: Prepainted zinc-plated steel
INTERNAL facing: Fibreglass

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.4	340	225	156	114	88	65					
0.5	495	322	224	164	126	93	68				
0.6	595	381	265	195	148	111	81	61			
0.8	795	508	353	259	198	149	108	81	63	49	
1	995	645	441	324	248	187	135	101	78	62	50

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing: Prepainted zinc-plated steel
INTERNAL facing: Fibreglass

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.4	450	291	195	143	110	88	70				
0.5	644	417	279	205	158	126	101	83	66	52	
0.6	744	476	330	243	186	147	119	97	78	62	49
0.8	994	636	441	323	248	195	159	130	105	82	66
1	1241	794	551	405	310	245	197	164	130	102	83

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

WEIGHT table (Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100	120
0.4	4.69	4.87	5.25	5.63	6.39	7.15	7.73
0.5	5.45	5.83	6.21	6.59	7.35	8.11	8.49
0.6	6.41	6.79	7.17	7.55	8.31	9.07	9.45
0.8	8.32	8.70	9.08	9.46	10.22	10.98	11.36
1	10.24	10.62	11.00	11.38	12.14	12.90	13.28

U Transmittance	30	40	50	60	80	100	120
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16

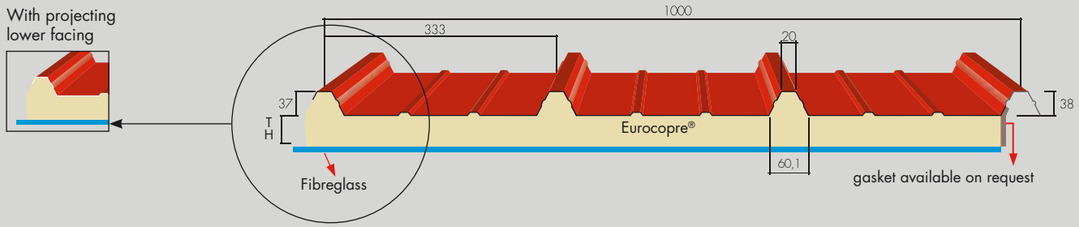
ISOFACTOR® EUROCOPRE

ROOFING FOR LIVESTOCK AREAS

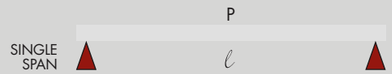
PUR

Cost effective, good load-bearing performance, good resistance to aggressive agents and good hygiene and safety are just some of the benefits offered by ISOFACTOR®, roof panels specifically designed for livestock buildings.
ISOFACTOR® panels have a lower facing in fibreglass, making them particularly good for use in the agricultural and livestock industry as they are resistant to acids and the chemical products commonly used for cleaning and hygiene purposes in livestock areas. ISOFACTOR® EUROCOPRE is a self-supporting sandwich panel composed of a high-density expanded polyurethane insulating core, faced with a rigid external layer of prepainted steel or aluminium with four ribs and a fibreglass facing, which may be subject to colour alterations.
Maximum manufacturing thickness 100 mm.

B ROOF



Static properties (kg/sq.m.)



EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Fibreglass

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	445	290	202	148	113	83	61				
0.6	536	343	239	176	133	100	73	54			
0.8	716	457	318	233	178	134	97	73	57	44	
1	896	581	397	292	223	168	122	91	70	56	

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Fibreglass

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	580	376	251	185	143	113	90	74	59	47	
0.6	670	428	297	219	167	132	107	87	70	56	
0.8	895	572	397	291	223	176	143	117	95	74	
1	1117	715	496	365	279	221	177	148	117	92	

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

WEIGHT table
(Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100
0.5	5.45	5.83	6.21	6.54	7.35	8.11
0.6	6.37	6.75	7.13	7.51	8.27	9.03
0.8	8.21	8.59	8.97	9.35	10.11	10.87
1	10.05	10.43	10.81	11.19	11.95	12.71

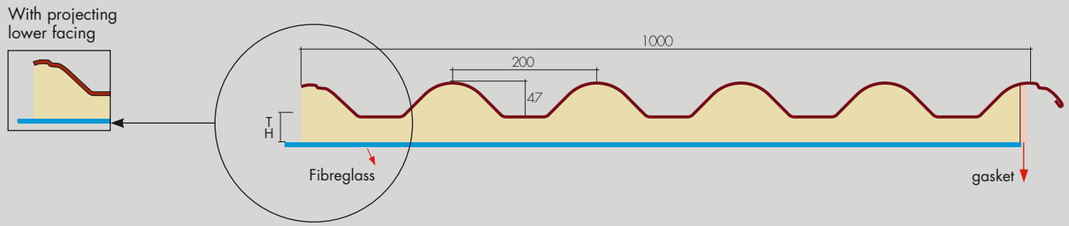
U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

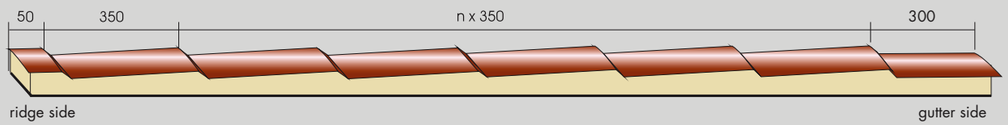
TTFACTOR®

ROOFING FOR LIVESTOCK AREAS

PUR

The TTFACTOR® panel is the utmost evolution in aesthetics for an insulated roof panel designed for rural areas.
The tile style design makes it possible to create aesthetically pleasing roofs that are also practical, light, waterproof and above all suitable for the agricultural and livestock environments where they will be used. TTFACTOR® is a self-supporting sandwich panel composed of a high-density expanded polyurethane insulating core, providing high thermal insulation values, with a rigid external facing shaped in the form of tiles in prepainted steel or aluminium and an internal facing in fibreglass, which is easy to clean.
The fibreglass facing may be subject to colour alterations.
Maximum manufacturing thickness 100 mm.





WEIGHT table
(Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100
0.5	6.04	6.42	6.80	7.18	7.94	8.70
0.6	7.00	7.38	7.76	8.14	8.30	9.66
0.8	8.91	9.29	9.67	10.05	10.81	11.57

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.44	0.37	0.29	0.27	0.18
Kcal/sq.m. h °C	0.81	0.38	0.32	0.25	0.24	0.16

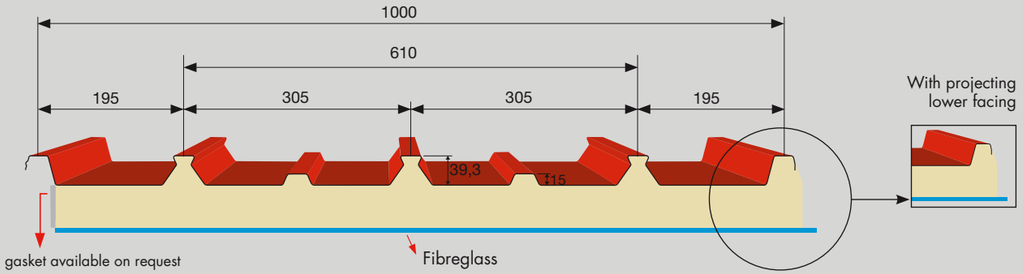
SOLARPAN® FACTOR

AN ENERGY ROOF FOR YOUR AGRICULTURAL/LIVESTOCK FARM

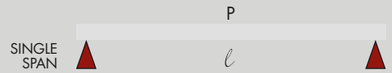
PUR

Lattonedil has designed an insulating and insulated roof panel suitable for agricultural and livestock areas that can be transformed, even at a later stage, into a roof in line with energy redevelopment requirements, a subject that has now assumed considerable importance. SOLARPAN FACTOR® revolutionises the installation of photovoltaic modules in the livestock industry thanks to a kit of compatible accessories that make it possible to fit the modules quickly without the need to adapt or drill holes into the zinc-plated roof covering, thus preventing issues associated with infiltrations. SOLARPAN FACTOR® also complies with the rules related to hygiene, inalterability and resistance that apply to livestock farms thanks to its inner layer of fibreglass. The fibreglass layer may be subject to colour alteration. Maximum manufacturing thickness 120 mm.

B ROOF (T2)



Static properties (kg/sq.m.)



EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Fibreglass

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	480	311	220	159	121	90	66				
0.6	577	370	257	189	144	108	79	58			
0.8	771	493	342	251	192	145	105	79	61	47	
1	965	626	428	314	241	181	131	98	76	60	

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Fibreglass

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	623	404	270	198	153	122	97	80	63	50	
0.6	722	462	320	236	180	143	115	94	76	60	
0.8	964	617	428	313	241	189	154	126	102	80	
1	1204	770	534	393	301	238	191	159	126	99	

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

WEIGHT table
(Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100	120
0.5	6.11	6.49	6.87	7.25	8.01	8.77	8.95
0.6	7.15	7.53	7.91	8.29	9.05	9.81	9.99
0.8	9.22	9.6	9.98	10.36	11.12	11.88	12.06
1	11.30	11.68	12.06	12.44	13.20	13.96	14.14

U Transmittance	30	40	50	60	80	100	120
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16

ISOFACTOR 15 ISOCOPRE®

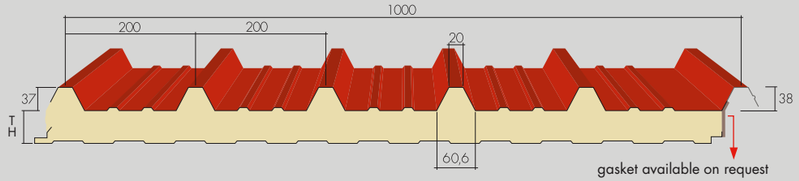
ROOFING FOR THE LIVESTOCK INDUSTRY WITH HIGH STATIC PERFORMANCE

PUR PUR B2 ON REQUEST 30 year GUARANTEE EXTERNAL SIDE 15 year GUARANTEE INTERNAL SIDE

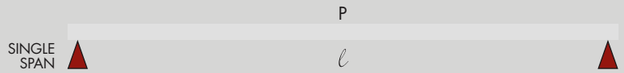
ISOFACTOR 15® is a range of panels manufactured by Lattonedil with an intrados in COLORFARM® 15, sheet metal with a 15-year warranty, which are suitable for installation inside agricultural buildings thanks to the excellent degree of resistance offered against many chemical agents commonly found in agricultural environments. COLORFARM® 15 is the result of a carefully monitored and tested production process, which guarantees consistent and long-lasting quality (it offers a 15-year anti-perforation warranty, dependant on the correct design and proper ventilation of the buildings).

Proper maintenance will considerably extend the working life of this product. ISOFACTOR 15 ISOCOPRE®, is a self-supporting sandwich panel composed of a high-density expanded polyurethane insulating core, CFC-free and therefore environmentally friendly, faced with a rigid external layer of prepainted steel or aluminium with six ribs offering excellent static resistance and an internal facing in COLORFARM® 15.
Maximum manufacturing thickness 100 mm.

B ROOF (T2) B ROOF (T3)



Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

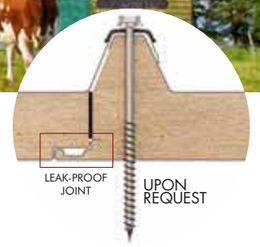
Effective span width: 120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	260	205	120	85	55						**7.62**
40	315	225	150	110	80	50					**8.00**
50	380	270	190	135	100	75	50				**8.38**
60	450	320	225	165	125	95	65	50			**8.76**
80	580	425	305	225	175	135	105	80	60		**9.52**
100	710	530	390	290	225	175	140	115	85	65	**10.28**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

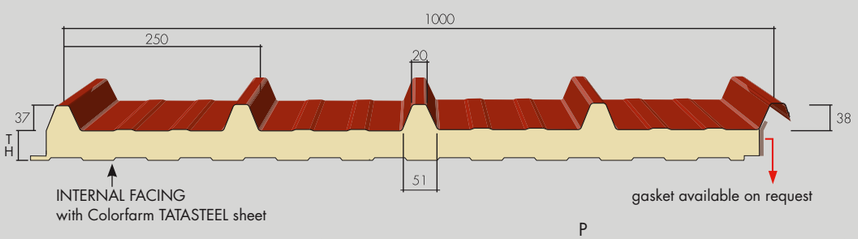
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.



ISOFACTOR 15 EUROCINQUE®

PREPAINTED SHEET METAL FINALLY AVAILABLE FOR THE LIVESTOCK INDUSTRY

ISOFACTOR 15® is a range of panels manufactured by Lattonedil with an intrados in COLORFARM® 15, sheet metal with a 15-year warranty, which are suitable for installation inside agricultural buildings thanks to the excellent degree of resistance offered against many chemical agents commonly found in agricultural environments. COLORFARM® 15 is the result of a carefully monitored and tested production process, which guarantees consistent and long-lasting quality (it offers a 15-year anti-perforation warranty, dependant on the correct design and proper ventilation of the buildings). Proper maintenance will considerably extend the working life of this product.
ISOFACTOR 15 EUROCINQUE® Is a self-supporting sandwich panel composed of an environmentally friendly, high-density expanded polyurethane insulating core, a highly versatile, rigid external facing in prepainted steel or aluminium with five ribs and an inner facing in COLORFARM® 15 guaranteed for 15 years. Maximum manufacturing thickness 200 mm.



B ROOF (T2) **B ROOF (T3)**

P

SINGLE SPAN ℓ

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	250	195	105	70							**7.42**
40	290	200	135	90	65						**7.80**
50	315	230	160	115	85	65					**8.18**
60	370	275	195	145	110	85	60				**8.56**
80	485	360	265	200	155	120	95	70	50		**9.32**
100	595	445	340	260	200	160	125	105	80	60	**10.08**
120	710	530	420	320	250	195	160	130	105	85	**10.84**
150	880	655	520	410	325	260	210	170	145	120	**12.15**
160	935	700	555	445	350	280	225	185	155	130	**12.36**
180	975	725	580	480	400	320	260	215	180	150	**13.12**
200	1000	745	595	495	420	360	295	245	205	170	**13.88**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

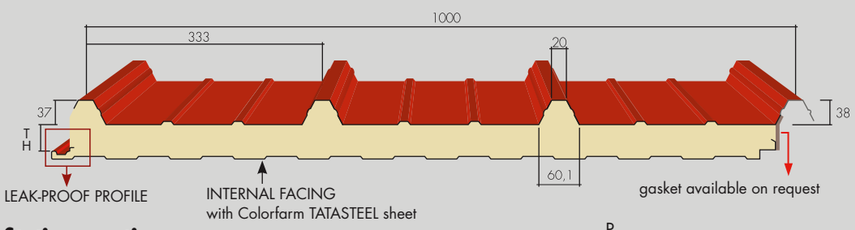
Effective span width:
120 mm

U Transmittance	30	40	50	60	80	100	120	150	160	180	200
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19	0.15	0.14	0.12	0.11
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16	0.13	0.12	0.11	0.10

ISOFACTOR 15 EUROCOPRE®

PANEL WITH FOUR RIBS FOR THE LIVESTOCK INDUSTRY

ISOFACTOR 15® is a range of panels manufactured by Lattonedil with an intrados in COLORFARM® 15, sheet metal with a 15-year warranty, which are suitable for installation inside agricultural buildings thanks to the excellent degree of resistance offered against many chemical agents commonly found in agricultural environments. COLORFARM® 15 is the result of a carefully monitored and tested production process, which guarantees consistent and long-lasting quality (it offers a 15-year anti-perforation warranty, dependant on the correct design and proper ventilation of the buildings). Proper maintenance will considerably extend the working life of this product.
ISOFACTOR 15 EUROCOPRE® is a self-supporting sandwich panel composed of a high-density expanded polyurethane insulating core, a rigid external facing in prepainted steel or aluminium with four ribs, successfully combining function with value for money, and an inner facing in COLORFARM® 15 guaranteed for 15 years.
Maximum manufacturing thickness 100 mm.



B ROOF

Static properties (kg/sq.m.)

P

SINGLE SPAN ℓ

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	205	135	90	60							**7.26**
40	265	175	120	85	60						**7.64**
50	315	220	155	110	80	60					**8.02**
60	360	265	190	140	105	80	55				**8.40**
80	475	355	255	195	150	115	90	70	50		**9.16**
100	585	435	335	255	200	155	125	100	80	60	**9.92**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

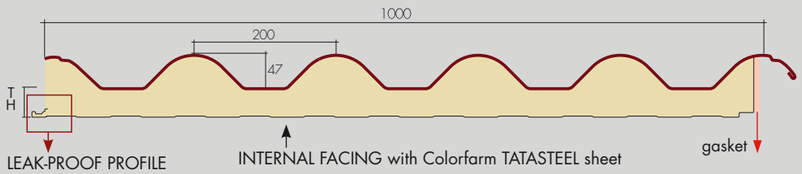
U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOFACTOR 15 TTCOPPO®

ROOFING FOR THE LIVESTOCK INDUSTRY

ISOFACTOR 15® is a range of panels manufactured by Lattonedil in collaboration with Tatasteel, the producer of COLORFARM® 15, sheet metal with a 15-year warranty, which are suitable for installation inside agricultural buildings thanks to the excellent degree of resistance offered against many chemical agents commonly found in agricultural environments. COLORFARM® 15 is the result of a carefully monitored and tested production process, which guarantees consistent and long-lasting quality (it offers a 15-year anti-perforation warranty, dependent on the correct design and proper ventilation of the buildings). Proper maintenance will considerably extend the working life of this product. ISOFACTOR 15 TTCOPPO® is a self-supporting sandwich panel composed of a high-density expanded polyurethane insulating core, providing high thermal insulation values, with a rigid external facing shaped in the form of tiles in prepainted steel and an internal facing in COLORFARM® 15 guaranteed for 15 years. Maximum manufactured thickness 100 mm.



Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	WEIGHT (Kg/sq.m.)
30	271	190	108	47	41	**8.78**
40	339	249	156	82	58	**9.16**
50	406	307	202	117	86	**9.54**
60	472	366	250	153	111	**9.92**
80	607	487	345	224	178	**10.68**
100	715	597	440	305	250	**11.44**
	p = (kg/sq.m.) uniformly distributed load Deflection limit: 1/200 ℓ					

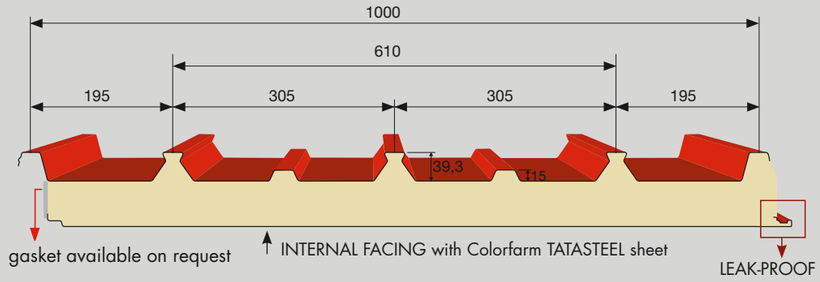
PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5
30	307	248	196	139	99
40	366	295	228	162	120
50	442	342	260	183	141
60	484	389	293	206	162
80	629	502	361	253	202
100	759	710	470	340	260
	p = (kg/sq.m.) uniformly distributed load Deflection limit: 1/200 ℓ				

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.44	0.37	0.29	0.27	0.18
Kcal/sq.m. h °C	0.61	0.38	0.32	0.25	0.24	0.13

ISOFACTOR 15 SOLARPAN®

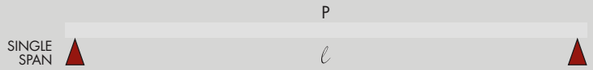
A GUARANTEED ENERGY ROOF FOR YOUR FARM

ISOFACTOR 15® is a range of panels manufactured by Lattonedil in collaboration with Tatasteel, the producer of COLORFARM® 15, sheet metal with a 15-year warranty, which are suitable for installation inside agricultural buildings thanks to the excellent degree of resistance offered against many chemical agents commonly found in agricultural environments. COLORFARM® 15 is the result of a carefully monitored and tested production process, which guarantees consistent and long-lasting quality (it offers a 15-year anti-perforation warranty, dependent on the correct design and proper ventilation of the buildings). Proper maintenance will considerably extend the working life of this product. ISOFACTOR 15 SOLARPAN® revolutionizes the installation of photovoltaic modules in the livestock industry thanks to a kit of compatible accessories that make it possible to fit the modules quickly without the need to adapt or drill holes into the zinc-plated roof covering, thus preventing issues associated with infiltrations. ISOFACTOR 15 SOLARPAN® is also supplied with a 15-year warranty thanks to the internal facing in COLORFARM® 15. Maximum manufactured thickness 150 mm.



B ROOF (T2)
B ROOF (T3)

Static properties (kg/sq.m.)



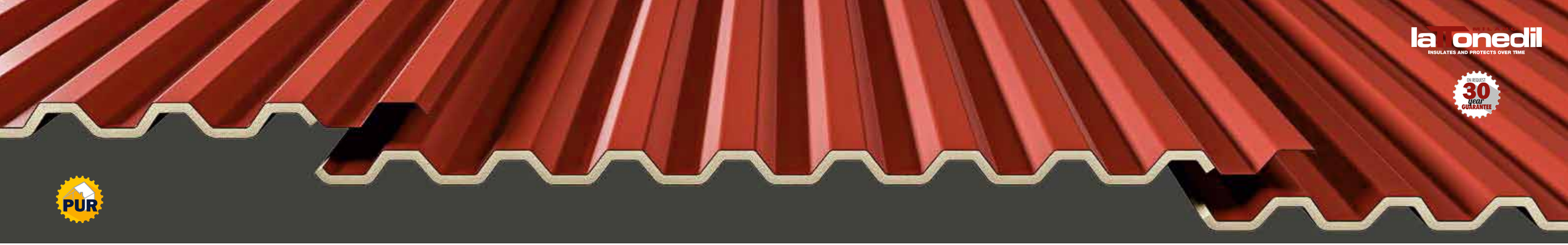
EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	330	245	175	105	65						**8.84**
40	420	315	225	145	90	60					**9.22**
50	510	380	280	190	125	85	60				**9.60**
60	605	450	335	240	160	110	80	55			**9.98**
80	785	585	450	340	240	170	125	90	70	50	**10.74**
100	965	720	570	435	335	240	180	135	100	80	**11.50**
120	1000	855	680	535	420	320	240	180	140	110	**12.26**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

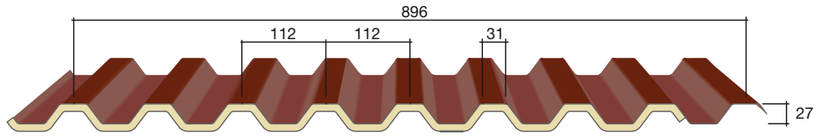
U Transmittance	30	40	50	60	80	100	120
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.



G9®

CORRUGATED MONOSHEET



G9® can be supplied with a maxi notch to meet your needs or can be notched to create the required radius.

Finishing on request for the internal facing

White centesimal aluminium

G9® is a sandwich roof panel available in prepainted steel or aluminium or in copper and any of the RAL colours.
This product guarantees noise reduction, the elimination of condensation and greater resistance to hail compared to traditional corrugated sheet metal thanks to the addition of a layer of expanded polyurethane. G9® is ideal for installation in new buildings and for use in the redevelopment of buildings, in particular for rooms not requiring a high degree of insulation.

U Transmittance	
W/sq.m. K	1.44
Kcal/sq.m. h °C	1.24

Static properties (kg/sq.m.)

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Exposed polyurethane

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	WEIGHT (kg/sq.m.)	J_y (cm⁴/m)	$W_{e,inf}$ (cm³/m)	$W_{e,sup}$ (cm³/m)	W_p (cm³/m)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.50
0.4	4.11	5.36	3.83	3.83	4.50	350	180	100	60							
0.5	4.89	7.14	5.10	5.10	5.89	495	250	140	140	85	55					
0.6	5.99	8.63	6.16	6.16	7.16	615	310	175	175	105	70					
0.8	8.09	11.35	8.11	8.11	9.53	860	435	245	245	150	95	65				

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ - Sliding deflection limit: 1/200 ℓ

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Exposed polyurethane

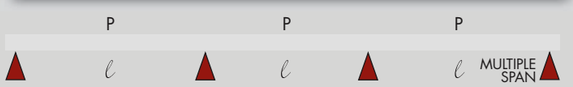
Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	WEIGHT (kg/sq.m.)	J_y (cm⁴/m)	$W_{e,inf}$ (cm³/m)	$W_{e,sup}$ (cm³/m)	W_p (cm³/m)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.50
0.4	4.11	5.36	3.83	3.83	4.50	215	150	115	90	70	55					
0.5	4.89	7.14	5.10	5.10	5.89	450	305	220	170	125	100	75	55			
0.6	5.99	8.63	6.16	6.16	7.16	595	405	290	225	170	130	90	65	50		
0.8	8.09	11.35	8.11	8.11	9.53	895	605	430	335	255	175	125	90	70	50	

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ - Sliding deflection limit: 1/200 ℓ

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Exposed polyurethane

Effective span width: 120 mm



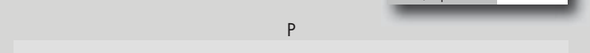
SHEET METAL THICKNESS (mm)	WEIGHT (kg/sq.m.)	J_y (cm⁴/m)	$W_{e,inf}$ (cm³/m)	$W_{e,sup}$ (cm³/m)	W_p (cm³/m)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.50
0.4	4.11	5.36	3.83	3.83	4.50	255	180	135	110	85	55					
0.5	4.89	7.14	5.10	5.10	5.89	550	380	275	175	115	80	55				
0.6	5.99	8.63	6.16	6.16	7.16	725	500	350	215	140	95	70	50			
0.8	8.09	11.35	8.11	8.11	9.53	1095	750	480	300	195	135	95	70	50		

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ - Sliding deflection limit: 1/200 ℓ

Static properties (kg/sq.m.)

EXTERNAL facing:
Prepainted aluminium
INTERNAL facing:
Exposed polyurethane

Effective span width: 120 mm



SHEET METAL THICKNESS (mm)	WEIGHT (kg/sq.m.)	J_y (cm⁴/m)	$W_{e,inf}$ (cm³/m)	$W_{e,sup}$ (cm³/m)	W_p (cm³/m)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.50
0.6	1.88	9.06	6.47	6.47	7.53	225	115	65								
0.8	2.58	11.77	8.40	8.40	9.89	300	150	85	50							

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ - Sliding deflection limit: 1/200 ℓ

EXTERNAL facing:
Prepainted aluminium
INTERNAL facing:
Exposed polyurethane

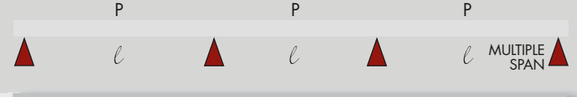
Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	WEIGHT (kg/sq.m.)	J_y (cm⁴/m)	$W_{e,inf}$ (cm³/m)	$W_{e,sup}$ (cm³/m)	W_p (cm³/m)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.50
0.6	1.88	9.06	6.47	6.47	7.53	420	280	160	100	65						
0.8	2.58	11.77	8.40	8.40	9.89	605	370	210	130	85	60					

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ - Sliding deflection limit: 1/200 ℓ

EXTERNAL facing:
Prepainted aluminium
INTERNAL facing:
Exposed polyurethane

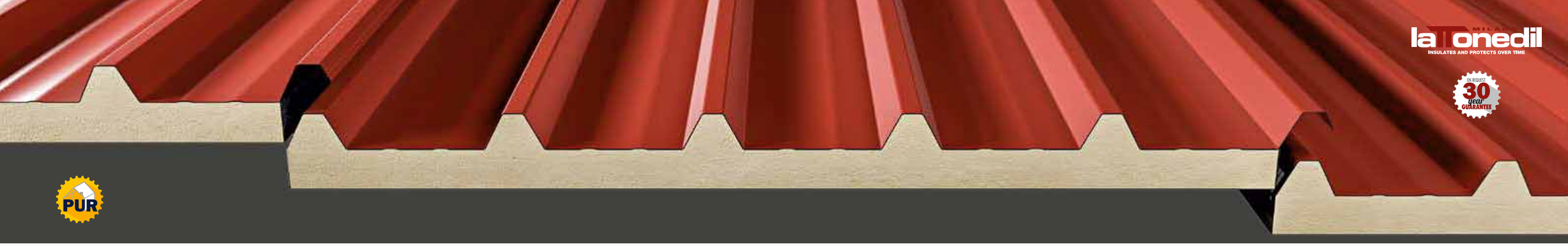
Effective span width: 120 mm

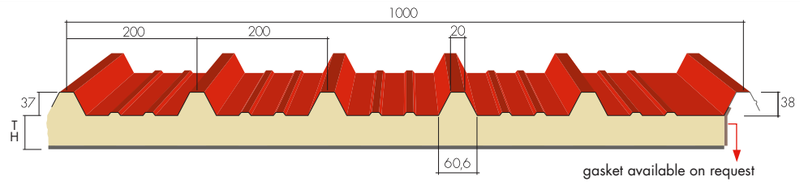


SHEET METAL THICKNESS (mm)	WEIGHT (kg/sq.m.)	J_y (cm⁴/m)	$W_{e,inf}$ (cm³/m)	$W_{e,sup}$ (cm³/m)	W_p (cm³/m)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.50
0.6	1.88	9.06	6.47	6.47	7.53	430	220	125	80	60						
0.8	2.58	11.77	8.40	8.40	9.89	565	290	165	105	65						

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ - Sliding deflection limit: 1/200 ℓ

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.





MONOLAMIERA ISOCOPRE®

THE LIGHTWEIGHT ROOF PANEL

B ROOF (T2)

The main characteristic of monosheet panels is the lightweight internal finish that consists of a flexible facing made of bituminized felt, centesimal aluminium or a fibreglass membrane.
– Bituminized felt is a black, semi-breathable, bituminized sheet.
– Centesimal aluminium has a natural glossy colour, is lacquered and embossed and non-breathable.
– The fibreglass membrane, made of a white non-woven fabric, is capable of trapping any condensation that may form.

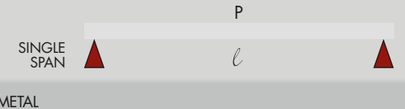
Monosheet panels require structural supports positioned no more than one metre apart. In addition, given the characteristics of the flexible facings, the joint between panels has no patterned tooth.

This product is suitable for installation over eternit roofs, on roof pitches with a concrete and masonry flooring system or to cover prefabricated tiles. Monosheet panels are not recommended for use on roofs that do not leave the internal part exposed.

The upper metal facing of these monosheet panels is available in the same profiles, materials and range of colours as Lattonedil's conventional sandwich panels; MONOLAMIERA ISOCOPRE®, with six ribs, is available in thicknesses from 30 to 100 mm. The internal side may not have a perfect appearance.

Static properties (kg/sq.m.)

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Bituminized felt



SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2,25	2,5	2,75	3	3,25	3,5
0.4	364	241	167	123	95	75					
0.5	519	338	235	173	133	98	72				
0.6	625	400	278	205	155	117	85	64			
0.8	835	533	371	272	208	156	113	85	66	51	
1	1045	677	463	340	260	196	142	106	82	65	53

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

Effective span width: 120 mm

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Bituminized felt

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2,25	2,5	2,75	3	3,25	3,5
0.4	474	311	209	153	118	94	76				
0.5	676	437	293	215	166	132	107	87	69	55	
0.6	781	500	347	255	195	154	125	102	82	65	49
0.8	1044	668	463	339	260	205	167	137	110	86	69
1	1303	834	579	425	326	257	207	172	137	107	87

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

Effective span width: 120 mm

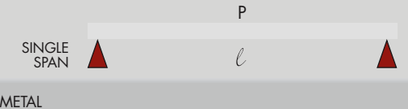
WEIGHT table
(Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100
0.4	3.90	5.42	6.16	6.54	6.60	7.36
0.5	5.68	6.06	6.44	6.82	7.58	8.34
0.6	6.66	7.04	7.42	7.80	8.56	9.32
0.8	8.62	9.00	9.38	9.76	10.52	11.28
1	10.58	10.96	11.34	11.72	12.48	13.24

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

Static properties (kg/sq.m.)

EXTERNAL facing:
Aluminium
INTERNAL facing:
Bituminized felt



SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	195	126	95	64	39						
0.6	296	189	127	80	54	36	29				
0.8	395	252	169	106	72	51	37				
1	492	315	212	133	90	63	46				

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

Effective span width: 120 mm

EXTERNAL facing:
Aluminium
INTERNAL facing:
Bituminized felt

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	269	173	123	95	66						
0.6	370	236	165	121	91	60	45				
0.8	494	315	219	162	120	84	61				
1	616	395	274	202	150	105	77				

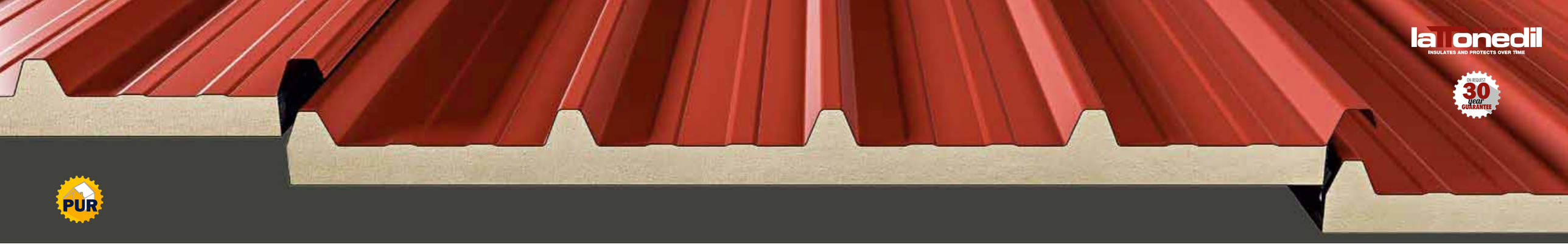
p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

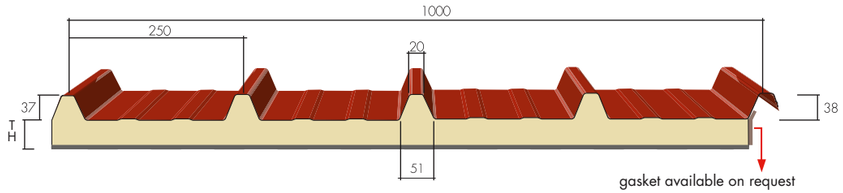
Effective span width: 120 mm

WEIGHT table
(Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100
0.5	2.78	3.16	3.54	3.92	4.68	5.44
0.6	3.12	3.50	3.88	4.26	5.02	5.78
0.8	3.79	4.17	3.95	4.93	5.69	6.45
1	4.47	4.86	5.24	5.62	6.38	7.14

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.





MONOLAMIERA EUROCINQUE®

THE LIGHTWEIGHT ROOF PANEL

B ROOF (T2)

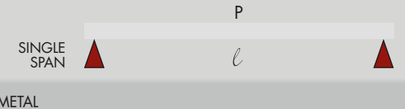
The main characteristic of monosheet panels is the lightweight internal finish that consists of a flexible facing made of bituminized felt, centesimal aluminium or a fibreglass membrane.
– Bituminized felt is a black, semi-breathable, bituminized sheet.
– Centesimal aluminium has a natural glossy colour, is lacquered and embossed and non-breathable.
– The fibreglass membrane, made of a white non-woven fabric, is capable of trapping any condensation that may form.

Monosheet panels require structural supports positioned no more than one metre apart. In addition, given the characteristics of the flexible facings, the joint between panels has no patterned tooth.

This product is suitable for installation on eternit roofs, on roof pitches with a concrete and masonry flooring system or to cover prefabricated tiles. Monosheet panels are not recommended for use on roofs that do not leave the internal part exposed.
The upper facing for the MONOLAMIERA EUROCINQUE® panel, with five ribs, is made using the same external coating materials and in the same range of colours as the EUROCINQUE® panels. In terms of thickness, however, the panel is available in thicknesses from 30 to 100 mm.
The internal side may not have a perfect appearance.

Static properties (kg/sq.m.)

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Bituminized felt



Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.4	340	225	156	114	88	65					
0.5	495	322	224	164	126	93	68				
0.6	595	381	265	195	148	111	81	61			
0.8	795	508	353	259	198	149	108	81	63	49	
1	995	645	441	324	248	187	135	101	78	62	50
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Bituminized felt

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.4	450	291	195	143	110	88	70				
0.5	644	417	279	205	158	126	101	83	66	52	
0.6	744	476	330	243	186	147	119	97	78	62	49
0.8	994	636	441	323	248	195	159	130	105	82	66
1	1241	794	551	405	310	245	197	164	130	102	83
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

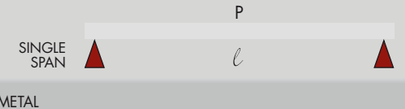
WEIGHT table
(Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100	120
0.4	4.69	4.87	5.25	5.63	6.39	7.15	7.73
0.5	5.45	5.83	6.21	6.59	7.35	8.11	8.49
0.6	6.41	6.79	7.17	7.55	8.31	9.07	9.45
0.8	8.32	8.70	9.08	9.46	10.22	10.98	11.36
1	10.24	10.62	11.00	11.38	12.14	12.90	13.28

U Transmittance	30	40	50	60	80	100	120
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16

Static properties (kg/sq.m.)

EXTERNAL facing:
Aluminium
INTERNAL facing:
Bituminized felt



Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	188	120	90	60	29						
0.6	282	180	121	76	51	34	27				
0.8	376	240	161	101	69	49	35				
1	469	300	202	127	86	60	44				
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Aluminium
INTERNAL facing:
Bituminized felt

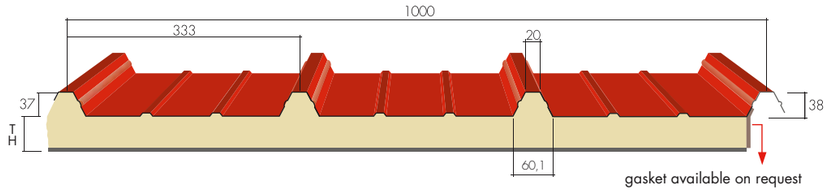
Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	258	165	120	90	60						
0.6	352	225	157	115	86	57	43				
0.8	470	300	209	154	114	80	58				
1	587	376	261	192	143	100	73				
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

WEIGHT table
(Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100	120
0.5	2.82	3.20	3.58	3.96	4.72	5.48	5.86
0.6	3.15	3.53	3.91	4.29	5.05	5.81	6.19
0.8	3.81	4.19	4.57	4.95	5.71	6.47	6.85
1	4.47	1.85	5.23	5.61	6.37	7.13	7.51

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.



MONOLAMIERA EUROCOPRE®

THE LIGHTWEIGHT ROOF PANEL

The main characteristic of monosheet panels is the lightweight internal finish that consists of a flexible facing made of bituminized felt, centesimal aluminium or a fibreglass membrane.
– Bituminized felt is a black, semi-breathable, bituminized sheet.
– Centesimal aluminium has a natural glossy colour, is lacquered and embossed and non-breathable.
– The fibreglass membrane, made of a white non-woven fabric, is capable of trapping any condensation that may form.

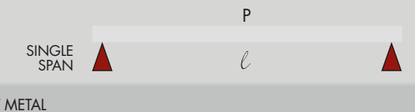
Monosheet panels require structural supports positioned no more than one metre apart. In addition, given the characteristics of the flexible facings, the joint between panels has no patterned tooth.

This product is suitable for installation on eternit roofs, on roof pitches with a concrete and masonry flooring system or to cover prefabricated tiles. Monosheet panels are not recommended for use on roofs that do not leave the internal part exposed.

MONOLAMIERA EUROCOPRE®, with four ribs, is made using the same external coating materials and in the same range of colours as the EUROCOPRE® panels. In terms of thickness, however, the panel is available in thicknesses from 30 to 100 mm. The internal side may not have a perfect appearance.

Static properties (kg/sq.m.)

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Bituminized felt



SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	445	290	202	148	113	83	61				
0.6	536	343	239	176	133	100	73	54			
0.8	716	457	318	233	178	134	97	73	57	44	
1	896	581	397	292	223	168	122	91	70	56	
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Bituminized felt

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	580	376	251	185	143	113	90	74	59	47	
0.6	670	428	297	219	167	132	107	87	70	56	
0.8	895	572	397	291	223	176	143	117	95	74	
1	1117	715	496	365	279	221	177	148	117	92	
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

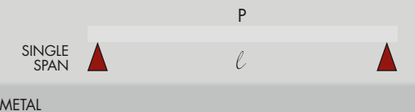
WEIGHT table (Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100
0.5	5.25	5.63	6.01	6.34	7.15	7.91
0.6	6.17	6.55	6.93	7.31	8.07	8.93
0.8	8.01	8.39	8.77	9.15	9.91	10.67
1	9.85	10.23	10.61	10.99	11.75	12.51

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

Static properties (kg/sq.m.)

EXTERNAL facing:
Aluminium
INTERNAL facing:
Bituminized felt



SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	174	111	84	57	26						
0.6	268	171	115	73	48	32	26				
0.8	357	228	153	96	66	47	33				
1	446	285	192	121	82	57	42				
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

EXTERNAL facing:
Aluminium
INTERNAL facing:
Bituminized felt

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	240	153	113	84	56						
0.6	334	213	150	109	82	55	41				
0.8	447	285	199	146	108	76	55				
1	558	357	248	182	136	95	69				
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

WEIGHT table (Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100
0.5	2.54	2.92	3.30	3.68	4.44	5.20
0.6	2.86	3.24	3.62	4.00	4.76	5.52
0.8	3.49	3.87	4.25	4.63	5.79	6.15
1	4.12	4.50	4.88	5.26	6.02	6.78

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

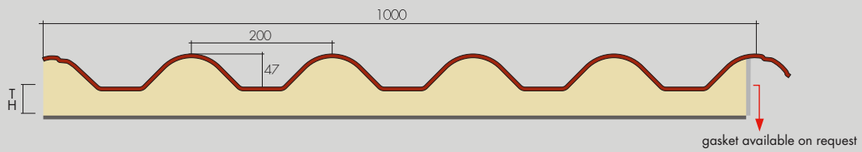
MONOLAMIERA TTCOPPO®

THE LIGHTWEIGHT PANEL WITH AN AESTHETIC DESIGN

The main characteristic of monosheet panels is the lightweight internal finish that consists of a flexible facing made of bituminized felt, centesimal aluminium or a fibreglass membrane.
– Bituminized felt is a black, semi-breathable, bituminized sheet.
– Centesimal aluminium has a natural glossy colour, is lacquered and embossed and non-breathable.
– The fibreglass membrane, made of a white non-woven fabric, is capable of trapping any condensation that may form.

Monosheet panels require structural supports positioned no more than one metre apart. In addition, given the characteristics of the flexible facings, the joint between panels has no patterned tooth. This product is suitable for installation on eternit roofs, on roof pitches with a concrete and masonry flooring system or to cover prefabricated tiles. Monosheet panels are not recommended for use on roofs that do not leave the internal part exposed.

MONOLAMIERA TTCOPPO® is made using the same external coating materials and in the same range of colours as the TTCOPPO® panels. In terms of thickness, however, the panel is available in thicknesses from 30 to 100 mm. It finds application in the specific case of residential buildings with roofs that have a cement floor slab and, therefore, do not require a high standard of internal finish, but do need to preserve an external appearance that is consistent with the surrounding landscape.

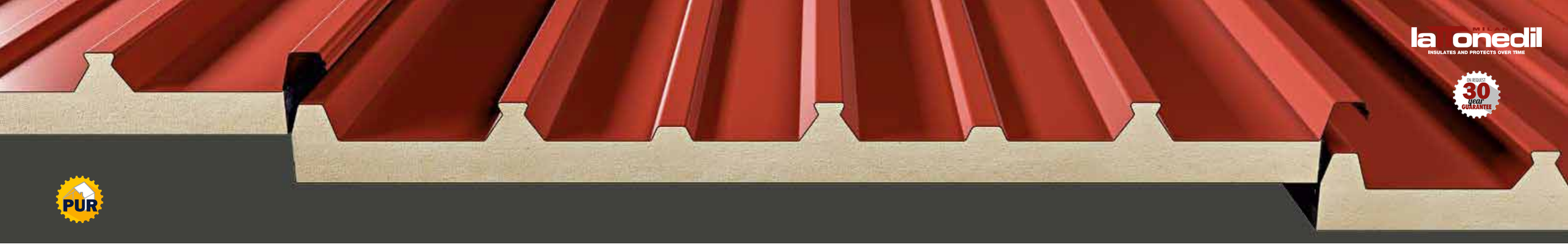


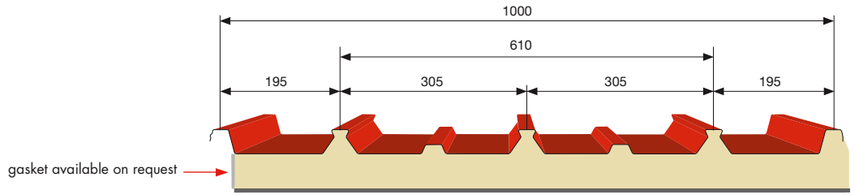
WEIGHT table
(Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm)					
	30	**40**	**50**	**60**	**80**	**100**
0.8	3.92	4.30	4.68	4.96	5.82	6.58
1	4.63	5.01	5.39	5.77	6.53	7.29

U Transmittance	**30**	**40**	**50**	**60**	**80**	**100**
W/sq.m. K	0.71	0.44	0.37	0.29	0.27	0.18
Kcal/sq.m. h °C	0.61	0.38	0.32	0.25	0.24	0.16

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.





MONOLAMIERA SOLARPAN®

LIGHTWEIGHT PANELS FOR PHOTOVOLTAIC MODULES

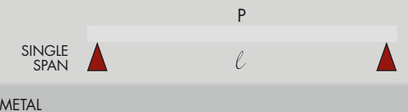
B ROOF (T2)

The main characteristic of monosheet panels is the lightweight internal finish that consists of a flexible facing made of bituminized felt, centesimal aluminium or a fibreglass membrane.
– Bituminized felt is a black, semi-breathable, bituminized sheet.
– Centesimal aluminium has a natural glossy colour, is lacquered and embossed and non-breathable.
– The fibreglass membrane, made of a white non-woven fabric, is capable of trapping any condensation that may form.

Monosheet panels require structural supports positioned no more than one metre apart. In addition, given the characteristics of the flexible facings, the joint between panels has no patterned tooth.

This product is suitable for installation on eternit roofs, on roof pitches with a concrete and masonry flooring system or to cover prefabricated tiles. Monosheet panels are not recommended for use on roofs that do not leave the internal part exposed.
MONOLAMIERA SOLARPAN® revolutionises the installation of photovoltaic modules in situations where an exposed internal finish is not required; thanks to the kit of compatible accessories, the modules can be fitted quickly, without the need to adapt or drill holes into the zinc-plated steel, thus preventing issues associated with infiltrations.
It is available in thicknesses from 30 to 100 mm.

Static properties (kg/sq.m.)



EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Bituminized felt

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	480	311	220	159	121	90	66				
0.6	577	370	257	189	144	108	79	58			
0.8	771	493	342	251	192	145	105	79	61	47	
1	965	626	428	314	241	181	131	98	76	60	

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing:
Prepainted zinc-plated steel
INTERNAL facing:
Fibreglass

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	623	404	270	198	153	122	97	80	63	50	
0.6	722	462	320	236	180	143	115	94	76	60	
0.8	964	617	428	313	241	189	154	126	102	80	
1	1204	770	534	393	301	238	191	159	126	99	

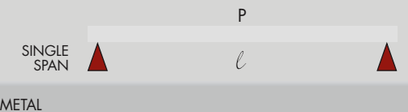
p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

WEIGHT table (Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100	120
0.5	5.91	6.29	6.67	7.05	7.81	8.57	8.95
0.6	6.95	7.33	7.71	8.09	8.85	9.61	9.99
0.8	9.02	9.40	9.78	10.16	10.92	11.68	12.06
1	11.10	11.48	11.86	12.24	13.00	13.76	14.14

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

Static properties (kg/sq.m.)



EXTERNAL facing:
Aluminium
INTERNAL facing:
Bituminized felt

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.8	365	233	156	98	67	48	34				
1	455	291	196	123	83	58	43				

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing:
Aluminium
INTERNAL facing:
Fibreglass

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.8	456	291	203	149	111	78	56				
1	569	365	253	186	139	97	71				

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

WEIGHT table (Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100	120
0.8	3.92	4.30	4.68	5.06	5.82	6.58	6.96
1	4.63	5.01	5.39	5.77	6.53	7.29	7.67

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

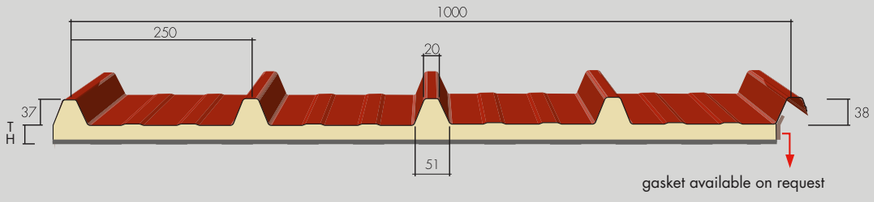
G5 MONOLAMIERA®

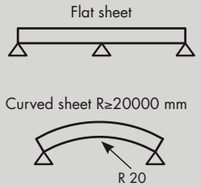
SELF-CENTRING PANEL

PUR

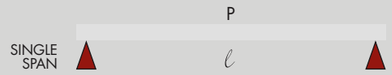
ON REQUEST 30 year GUARANTEE

The main feature of the G5 monosheet panel is that it is self-cambering, starting from a minimum bend radius of 15 metres; this is made possible thanks to the thickness of the panel that has been reduced to 2 cm and a lightweight lower finish consisting of a flexible facing in bituminized felt, centesimal aluminium or Alutex.





Static properties (kg/sq.m.)



EXTERNAL facing: Prepainted zinc-plated steel
INTERNAL facing: Bituminized felt

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	495	322	224	164	126	93	68				

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing: Prepainted zinc-plated steel
INTERNAL facing: Bituminized felt

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	644	417	279	205	158	126	101	83	66	52	

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

WEIGHT table (Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 20
0.5	5.30

U Transmittance	20
W/sq.m. K	1.03
Kcal/sq.m. h °C	0.89

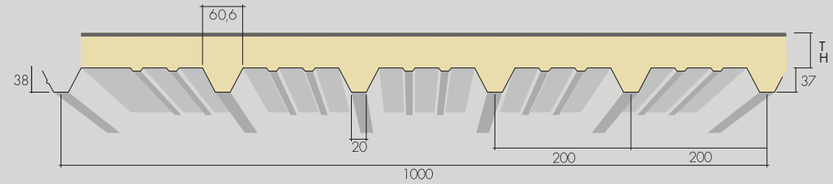
DECK®

FOR SELF-CONTAINED PLAIN ROOFS

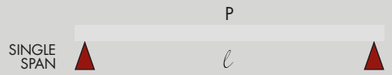
PUR

DECK® is a special panel with a lower backing in fretted sheet and a plain upper surface in tarred felt. It is used to make self-contained plain roofs, usually designed to accommodate a waterproofing layer (polymer-modified bitumen, PVC or elastomer), which is cast in situ.

The narrow pitch of the ribbing (200 mm) and the range of sheet metal thicknesses in the plate can suit the most diverse designs. The choice of the method for the structural connection to the carpentry and the sealing of the tarred-felt free edge are also crucially important.



Static properties (kg/sq.m.)



INTERNAL facing: Prepainted zinc-plated steel
EXTERNAL facing: Bituminized felt

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	519	338	235	173	133	98	72				
0.6	625	400	278	205	155	117	85	64			
0.8	835	533	371	272	208	156	113	85	66	51	
1	1045	677	463	340	260	196	142	106	82	65	53

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

INTERNAL facing: Prepainted zinc-plated steel
EXTERNAL facing: Bituminized felt

Effective span width: 120 mm

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	676	437	293	215	166	132	107	87	69	55	
0.6	781	500	347	255	195	154	125	102	82	65	49
0.8	1044	668	463	339	260	205	167	137	110	86	69
1	1303	834	579	425	326	257	207	172	137	107	87

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

WEIGHT table (Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100
0.4	4.69	5.07	5.45	5.83	6.59	7.35
0.5	5.68	6.06	6.44	6.82	7.58	8.34
0.6	6.66	7.04	7.42	7.80	8.56	9.32
0.8	8.62	9.00	9.38	9.76	10.52	11.28
1	10.58	10.96	11.34	11.72	12.48	13.24

U Transmittance	30	40	50	60	80	100
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19

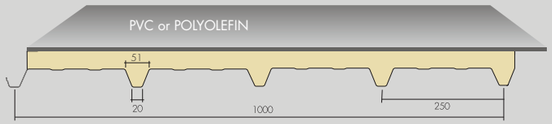
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

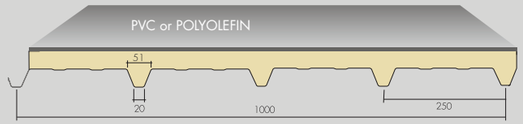
PUR

MONO DECK®

FOR FLAT ROOFS

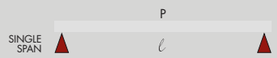
The MONO DECK® panel has a 1.2 o 1.5 mm upper backing made of PVC or POLYOLEFIN (to be specified when ordering), which is resistant to weather and UV rays. These membranes coupled with non-woven polyester geotextile compose the upper side of the MONO DECK® panel. The surface is certified with a BBA Agreement Certificate (durability of the coating of 30 years). This product offers credits for LEED certification purposes. The panel is supplied with a lateral selvedge of about 60 mm to be welded in place.





(WITH SELVEDGE or WITHOUT SELVEDGE, to be specified when ordering)

Static properties (kg/sq.m.)



INTERNAL facing:
Prepainted zinc-plated steel
EXTERNAL facing:
PVC-P

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	495	322	224	164	126	93	68				
0.6	595	381	265	195	148	111	81	61			
0.8	795	508	353	259	198	149	108	81	63	49	
1	995	645	441	324	248	187	135	101	78	62	50
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

INTERNAL facing:
Prepainted zinc-plated steel
EXTERNAL facing:
PVC-P

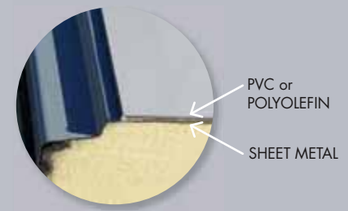
SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	644	417	279	205	158	126	101	83	66	52	
0.6	744	476	330	243	186	147	119	97	78	62	49
0.8	994	636	441	323	248	195	159	130	105	82	66
1	1241	794	551	405	310	245	197	164	130	102	83
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

WEIGHT table
(Kg/sq.m.)

SHEET METAL THICKNESS (mm)	Thickness (mm) 30	40	50	60	80	100	120
0.5	5.45	5.83	6.21	6.59	7.35	8.11	8.49
0.6	6.41	6.79	7.17	7.55	8.31	9.07	9.45
0.8	8.32	8.70	9.08	9.46	10.22	10.98	11.36
1	10.24	10.62	11.00	11.38	12.14	12.90	13.28

U Transmittance	30	40	50	60	80	100	120
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16



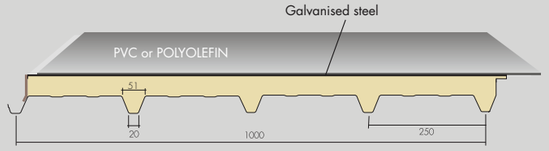
laTTonedil MILANO
INSULATES AND PROTECTS OVER TIME

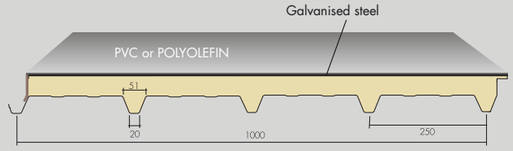
PUR

ULTRA DECK®

FOR SELF-SUPPORTING FLAT ROOFS

The ULTRA DECK® panel has a 1.2 o 1.5 mm upper backing made of PVC or POLYOLEFIN (to be specified when ordering), which is resistant to weather and UV rays. These membranes coupled with non-woven polyester geotextile compose the upper side of the ULTRA DECK® panel. The surface is certified with a BBA Agreement Certificate (durability of the coating of 30 years). This product offers credits for LEED certification purposes. The panel is supplied with a lateral selvedge of about 60 mm to be welded in place.





(WITH SELVEDGE or WITHOUT SELVEDGE, to be specified when ordering)

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	250	195	105	70							7.42
40	290	200	135	90	65						7.80
50	315	230	160	115	85	65					8.18
60	370	275	195	145	110	85	60				8.56
80	485	360	265	200	155	120	95	70	50		9.32
100	595	445	340	260	200	160	125	105	80	60	10.08
120	710	530	420	320	250	195	160	130	105	85	10.84
150	880	655	520	410	325	260	210	170	145	120	11.98
160	935	700	555	445	350	280	225	185	155	130	12.36
180	975	725	580	480	400	320	260	215	180	150	13.12
200	1000	745	595	495	420	360	295	245	205	170	13.88
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

U Transmittance	30	40	50	60	80	100	120	150	160	180	200
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19	0.15	0.14	0.12	0.11
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16	0.13	0.12	0.11	0.10

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPAR®

INSULATING WALL PANEL

In the building industry, energy savings are an increasingly important issue. Therefore, the industry is focussing on building materials that include highly-insulating components. ISOPAR® is a self-supporting flat panel specially designed for mobile walls, prefabricated boxes, cooling chambers, exhibition stands, sliding doors, false ceilings and is an ideal component for those projects that require light, strong, insulating products. In the “staved”, “scored”, “smooth” and ”diamond” versions, ISOPAR® improves the design of any new architecture: sleek, simple and even.

Available profiles (please state when ordering)

U Transmittance	25	30	35	40	50	60	80	100	120	150	180	200	220	240
W/sq.m. K	0.84	0.71	0.62	0.55	0.44	0.37	0.28	0.22	0.19	0.15	0.12	0.11	0.10	0.09
Kcal/sq.m. h °C	0.73	0.61	0.53	0.47	0.38	0.32	0.24	0.19	0.16	0.13	0.11	0.10	0.09	0.08

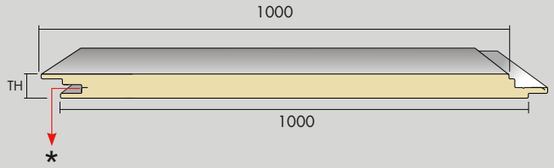
ISOPAR® ÉLITE

INSULATING WALL PANELS WITH HIDDEN FASTENERS

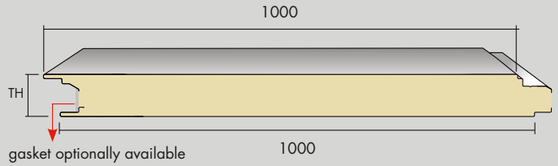
More often than not, the look of a wall is important.
After extensive research, now ISOPAR® is available with hidden fasteners. The panels are secured by special joints, as shown in the drawing.

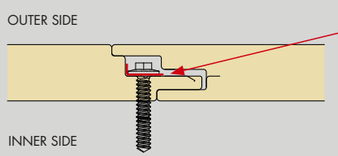
Now, ISOPAR® is not just practical and high quality, it offers the beauty of a wall with hidden fasteners. ISOPAR® ÉLITE is available with Scored, Smooth, Staved and Diamond finishes.
Available for the thinnest thicknesses:
25-30-35-40-50-60-80-100-120 mm.

THICKNESS FROM 25 TO 35 MM

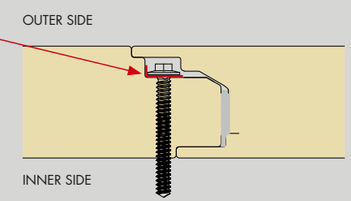


THICKNESS FROM 40 TO 120 MM





During the assembly phase, use the steel fastening plate. The plate is intended to distribute the efforts arising from fixing and to increase the resistance to compressive and depression stresses acting on the wall panels. The position and the number of fixing points must be defined by the designer depending on the stresses on the structure.



Available profiles (please state when ordering)

U Transmittance	25	30	35	40	50	60	80	100	120
W/sq.m. K	0.84	0.71	0.62	0.55	0.44	0.37	0.28	0.22	0.19
Kcal/sq.m. h °C	0.73	0.61	0.53	0.47	0.38	0.32	0.24	0.19	0.16

Hex head screw with 8 mm key.

*The side gasket is not supplied as standard with the 25mm and 30mm thick ISOPAR ÉLITE panels. A single-sided adhesive gasket can be supplied on request for application on site before installation (to be specified on the order).

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

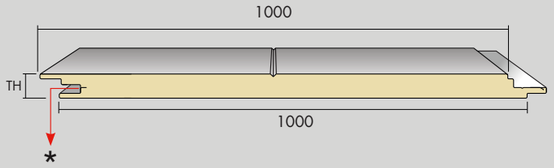
ISOPAR® ÉLITE 500

INSULATING WALL PANEL WITH HIDDEN FASTENERS WITH STAVE EFFECT

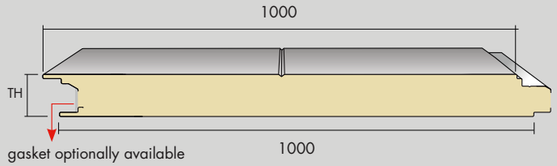
More often than not, the look of a wall is essential.
After extensive research, now ISOPAR® is available with hidden fasteners. The panels are secured by special joints, as shown in the drawing.

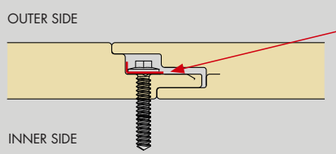
Now, ISOPAR® is not just practical and high quality, but it also offers the beauty of a wall with hidden fasteners.
ISOPAR® ÉLITE 500 is available with thinner thickness:
25-30-35-40-50-60-80-100-120 mm.
We recommend using 0.6 mm thickness steel for the external side.

THICKNESS FROM 25 TO 35 MM

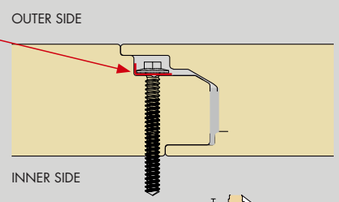


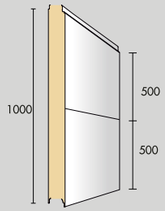
THICKNESS FROM 40 TO 120 MM





During the assembly phase, use the steel fastening plate. The plate is intended to distribute the efforts arising from fixing and to increase the resistance to compressive and depression stresses acting on the wall panels. The position and the number of fixing points must be defined by the designer depending on the stresses on the structure.





Available profiles internal facing (please state when ordering)

Scored | Staved | Smooth

U Transmittance	25	30	35	40	50	60	80	100	120
W/sq.m. K	0.84	0.71	0.62	0.55	0.44	0.37	0.28	0.22	0.19
Kcal/sq.m. h °C	0.73	0.61	0.53	0.47	0.38	0.32	0.24	0.19	0.16

Hex head screw with 8 mm key.

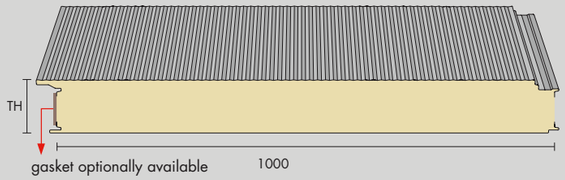
*The side gasket is not supplied as standard with the 25mm and 30mm thick ISOPAR ÉLITE 500 panels. A single-sided adhesive gasket can be supplied on request for application on site before installation (to be specified on the order).

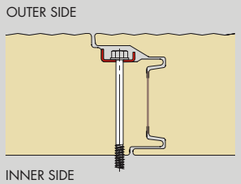
ISOPAR® ELEGANT

INSULATING PANEL WITH HIDDEN FASTENERS

The look of a wall is important. Lattonedil® combines the beauty of an architectural wall with hidden fasteners and the practicality of a modular design. The maze-like design and the hot-cut joint with a special housing for the fasteners offers an excellent aesthetic result, with the fasteners completely hidden from view, keeping airflows and cold bridges away. Ideal for false ceilings and insulated walls. For panel with a smooth finish, we recommend using a 0.6 mm thickness steel support.

THICKNESS FROM 50 TO 240 MM





Horizontally panel assembly

Vertically panel assembly

During the assembly phase, use the steel fastening plate. The plate is intended to distribute the efforts arising from fixing and to increase the resistance to compressive and depression stresses acting on the wall panels. The position and the number of fixing points must be defined by the designer depending on the stresses on the structure.

Available profiles (please state when ordering)

Scored | Staved | Smooth | Diamond

U Transmittance	50	60	80	100	120	150	180	200	220	240
W/sq.m. K	0.44	0.37	0.28	0.22	0.19	0.15	0.12	0.11	0.10	0.09
Kcal/sq.m. h °C	0.38	0.32	0.24	0.19	0.16	0.13	0.11	0.10	0.09	0.08

Hex head screw with 8mm key.

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

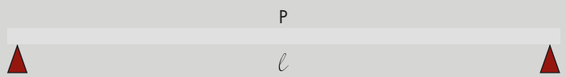
ISOPAR® / ISOPAR® ÉLITE / ISOPAR® ÉLITE 5 00 / ISOPAR® ELEGANT

STATIC PROPERTIES

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

SINGLE SPAN

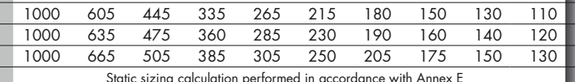


PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
25	165	90	70								**6.68**
30	190	110	85	65							**6.86**
35	215	125	100	80	55						**7.04**
40	236	145	115	90	65	50					**7.22**
50	297	185	150	115	85	65	50				**7.61**
60	357	225	180	140	105	80	60	50			**8.00**
80	460	305	245	190	140	105	85	65			**8.78**
100	515	385	305	240	175	135	105	85			**9.56**
120	620	465	370	290	215	165	130	105			**10.34**
150	775	580	465	365	270	205	160	130			**11.51**
180	935	700	560	440	325	245	195	155			**12.68**
200	1000	780	625	490	360	275	215	175			**13.46**
220	1000	860	685	540	395	305	240	195			**14.22**
240	1000	940	750	590	435	330	260	210			**14.98**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

Effective span width:
120 mm

DOUBLE SPAN



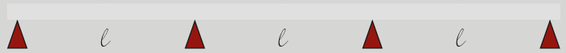
EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
25	125	75	55								**6.68**
30	151	90	70	60	50						**6.86**
35	170	105	85	70	60						**7.04**
40	195	125	95	80	65	50					**7.22**
50	245	160	130	100	80	65	50				**7.61**
60	295	195	155	125	95	75	65	50			**8.00**
80	395	270	210	165	120	95	75	65	50		**8.78**
100	495	340	265	195	145	115	95	75	65	55	**9.56**
120	600	415	310	225	170	135	110	90	75	65	**10.34**
150	735	515	365	270	205	160	130	110	90	80	**11.51**
180	770	560	415	310	240	190	155	125	105	90	**12.68**
200	1000	590	450	335	260	205	170	140	115	100	**13.46**
220	1000	620	485	365	280	225	180	150	130	110	**14.22**
240	1000	650	510	390	305	240	195	165	140	120	**14.98**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

Effective span width:
120 mm

MULTIPLE SPAN



EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
25	125	75	60	50							**6.68**
30	151	90	70	60	50						**6.86**
35	170	110	85	70	60	50					**7.04**
40	195	125	100	80	70	60	50				**7.22**
50	245	160	125	105	90	75	60	50			**7.61**
60	295	195	155	125	110	85	70	55	50		**8.00**
80	395	265	210	170	135	105	85	70	60	50	**8.78**
100	495	335	265	205	160	125	105	85	75	65	**9.56**
120	600	410	310	235	180	145	120	100	85	75	**10.34**
150	735	505	360	275	215	170	140	120	100	90	**11.51**
180	770	570	410	310	245	200	165	140	120	100	**12.68**
200	1000	605	445	335	265	215	180	150	130	110	**13.46**
220	1000	635	475	360	285	230	190	160	140	120	**14.22**
240	1000	665	505	385	305	250	205	175	150	130	**14.98**

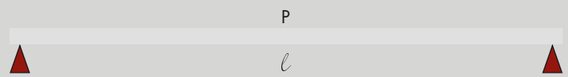
Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

Effective span width:
120 mm

Static properties (kg/sq.m.)

EXTERNAL facing:
Aluminium 0.6 mm
INTERNAL facing:
Steel 0.4 mm

SINGLE SPAN

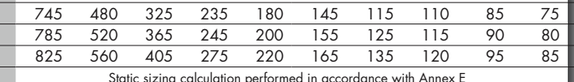


PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
25	130	185	70								**5.53**
30	160	120	100	75							**5.71**
35	185	140	115	85	65						**5.89**
40	210	160	130	95	75						**6.07**
50	265	200	165	115	90	70	50				**6.46**
60	315	240	195	140	105	85	70	50			**6.85**
80	420	320	260	185	140	110	90	75			**7.63**
100	530	400	320	225	170	135	110	90			**8.41**
120	635	480	385	270	205	160	115	105			**9.19**
150	790	595	480	335	250	195	155	130			**10.36**
180	950	715	575	405	300	230	185	155			**11.53**
200	1000	780	625	430	315	245	200	170			**12.31**
220	1000	860	690	455	345	280	220	195			**13.10**
240	1000	940	755	480	375	315	240	220			**13.87**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

Effective span width:
120 mm

DOUBLE SPAN



EXTERNAL facing:
Aluminium 0.6 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
25	115	85	65								**5.53**
30	135	105	75	60	50						**5.71**
35	160	120	85	65	60						**5.89**
40	185	135	95	70	65	50					**6.07**
50	230	165	110	80	65	65	50				**6.46**
60	280	190	125	95	75	75	65	50			**6.85**
80	380	235	160	115	90	70	75	65	50		**7.63**
100	465	280	185	135	105	85	70	75	65	55	**8.41**
120	530	320	215	155	120	95	80	70	75	65	**9.19**
150	620	380	255	185	140	115	95	80	70	68	**10.36**
180	705	440	300	215	165	130	110	90	80	70	**11.53**
200	745	480	325	235	180	145	115	110	85	75	**12.31**
220	785	520	365	245	200	155	125	115	90	80	**13.10**
240	825	560	405	275	220	165	135	120	95	85	**13.87**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

Effective span width:
120 mm

MULTIPLE SPAN

EXTERNAL facing:
Aluminium 0.6 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
25	115	85	65	50							**5.53**
30	135	105	75	60	50						**5.71**
35	160	120	85	65	60	50					**5.89**
40	185	135	95	70	70	60	50				**6.07**
50	230	165	110	80	65	75	60	50			**6.46**
60	280	190	125	95	75	85	70	55	50		**6.85**
80	380	235	160	115	90	70	85	70	60	50	**7.63**
100	465	280	185	135	105	85	70	85	75	65	**8.41**
120	530	320	215	155	120	95	80	70	85	75	**9.19**
150	620	380	255	185	140	115	95	80	70	90	**10.36**
180	705	440	300	215	165	130	110	90	80	70	**11.53**
200	745	480	325	235	180	145	115	110	85	75	**12.31**
220	785	520	365	245	200	155	125	115	90	80	**13.10**
240	825	560	405	275	220	165	135	120	95	85	**13.87**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

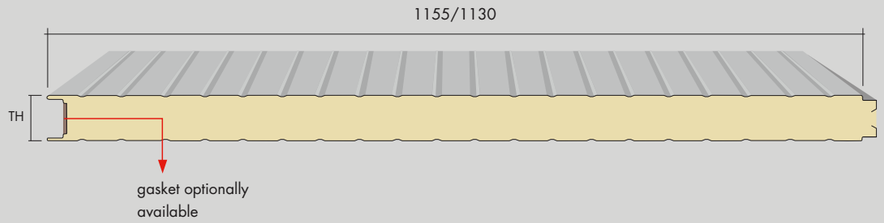
Effective span width:
120 mm

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

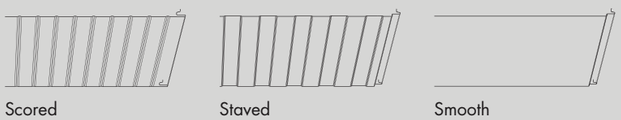
ISOPAR® 1155/1130

THE EXTRALARGE WALL PANEL

ISOPAR® 1155/1130 is the extra-large or outsized flat panel, specially designed for mobile walls, prefabricated boxes, exhibition stands, sliding doors or false ceilings: it is the ideal component for projects that require a light, strong and insulating product. In its "staved", "scored" and "smooth" versions, with its oversize proportions ISOPAR® 1155/1130 makes installation quicker and cheaper. Available in a 1155 mm or 1130 mm width, to be specified when ordering.



Available profiles (please state when ordering)

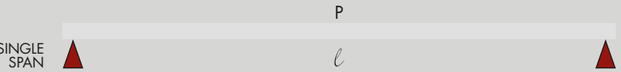


ON REQUEST 30 year GUARANTEE

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

SINGLE SPAN



PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	236	145	115	90	65	50	50				**8.30**
50	297	185	150	115	85	65	50	50			**8.75**
60	357	225	180	140	105	80	60	50			**9.20**
80	460	305	245	190	140	105	85	65			**10.10**
100	515	385	305	240	175	135	105	85			**11.00**
120	620	465	370	290	215	165	130	105			**11.90**
150	775	580	465	365	270	205	160	130			**13.25**
180	935	700	560	440	325	245	195	155			**14.60**
200	1000	780	625	490	360	275	215	175			**15.50**
220	1000	860	685	540	395	305	240	195			**14.22**
240	1000	940	750	590	435	330	260	210			**14.98**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

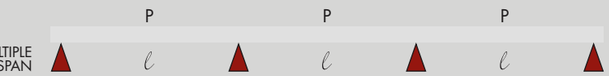
DOUBLE SPAN

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	195	125	95	75	65	50	50				**8.30**
50	245	160	130	100	80	65	50	50			**8.75**
60	295	195	155	125	95	75	65	50			**9.20**
80	395	270	210	165	120	95	75	65	50		**10.10**
100	495	340	265	195	145	115	95	75	65	55	**11.00**
120	600	415	310	225	170	135	110	90	75	65	**11.90**
150	735	515	365	270	205	160	130	110	90	80	**13.25**
180	770	560	415	310	240	190	155	125	105	90	**14.60**
200	1000	590	450	335	260	205	170	140	115	100	**15.50**
220	1000	620	485	365	280	225	180	150	130	110	**14.22**
240	1000	650	510	390	305	240	195	165	140	120	**14.98**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

MULTIPLE SPAN



EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	195	125	100	80	70	60	50				**8.30**
50	245	160	125	105	90	75	60	50			**8.75**
60	295	195	155	125	110	85	70	55	50		**9.20**
80	395	265	210	170	135	105	85	70	60	50	**10.10**
100	495	335	265	205	160	125	105	85	75	65	**11.00**
120	600	410	310	235	180	145	120	100	85	75	**11.90**
150	735	505	360	275	215	170	140	120	100	90	**13.25**
180	770	570	410	310	245	200	165	140	120	100	**14.60**
200	1000	605	445	335	265	215	180	150	130	110	**15.50**
220	1000	635	475	360	285	230	190	160	140	120	**14.22**
240	1000	665	505	385	305	250	205	175	150	130	**14.98**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

U Transmittance	40	50	60	80	100	120	150	180	200	220	240
W/sq.m. K	0.55	0.44	0.37	0.28	0.22	0.19	0.15	0.12	0.11	0.10	0.09
Kcal/sq.m. h °C	0.47	0.38	0.32	0.24	0.19	0.16	0.13	0.11	0.10	0.09	0.08

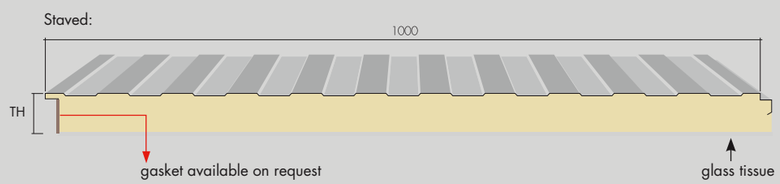
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPAR® MONOLAMIERA

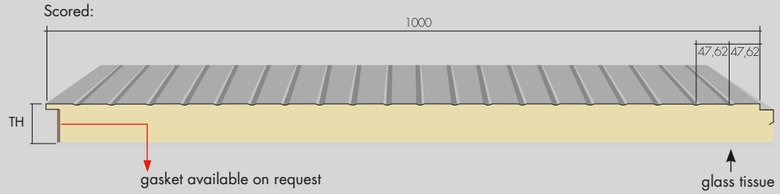
INSULATING WALL PANEL

Ideal for false ceilings and insulated walls. ISOPAR® MONOLAMIERA is a sandwich panel composed of a stiff sheet backing made in the same profiles and colours as the ISOPAR® panel, for an excellent visual effect, and an inner backing which may be glass tissue, tarred felt or aluminium foil. The max length of the ISOPAR® MONOLAMIERA panels is 4 m.

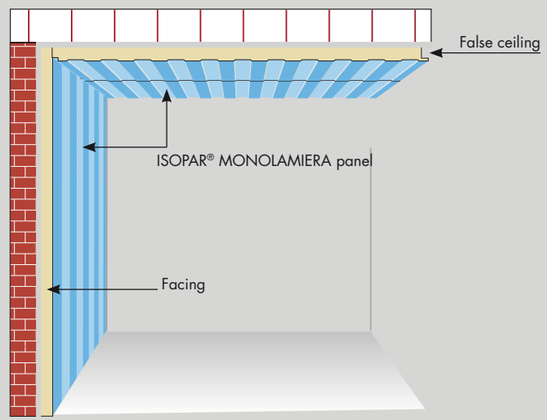
Staved:



Scored:



example:



U Transmittance	25	30	35	40	50	60	80	100
W/sq.m. K	0.84	0.71	0.62	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.73	0.61	0.53	0.47	0.38	0.32	0.24	0.19

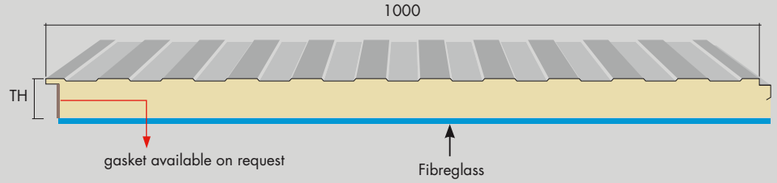
ISOPARFACTOR®

INSULATING WALL PANEL FOR AGRICULTURAL FARMS

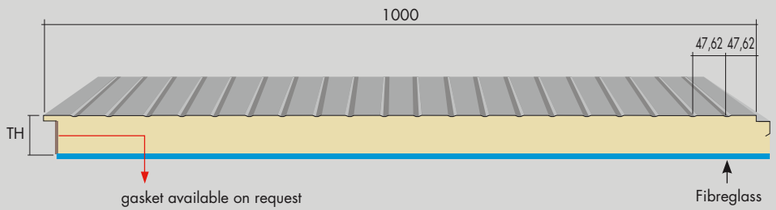
Cost effective, good resistance to aggressive agents and good hygiene and safety are just some of the benefits offered by ISOFACTOR®, roof panels, specifically designed for livestock buildings. With a fibreglass internal side, the panel is resistant to acids and the chemical products commonly used for cleaning and hygiene purposes in livestock areas. ISOPARFACTOR® is a sandwich panel composed of a high-density expanded polyurethane insulating core, faced with a rigid external layer of prepainted steel or aluminium with four ribs and a fibreglass facing. Maximum manufacturing thickness 100 mm.

FIBREGLASS ON FEMALE SIDE

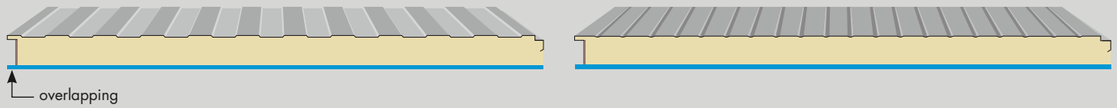
Staved:



Scored:



FIBERGLASS WITH OVERLAPPING



U Transmittance	25	30	35	40	50	60	80	100
W/sq.m. K	0.84	0.71	0.62	0.55	0.44	0.37	0.28	0.22
Kcal/sq.m. h °C	0.73	0.61	0.53	0.47	0.38	0.32	0.24	0.19

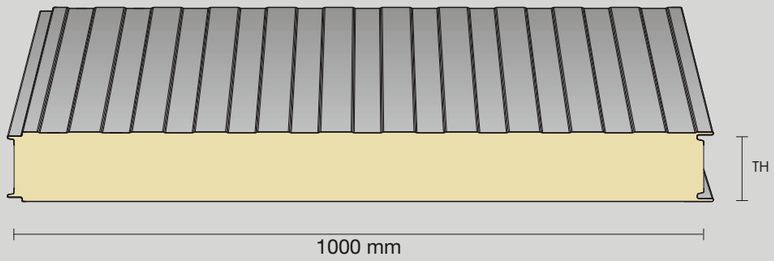
Isoparfactor® can be requested with fibreglass trimmed to fit the panel or with overlapping (to be specified when ordering).

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPAR® FRIGO / GIUNTO A LABIRINTO

INSULATING WALL PANEL FOR REFRIGERATED AREAS

The very high thermal insulation performance and the quality of the joining system make it particularly suitable for the construction of areas where a controlled temperature is required, such as cold rooms and working chambers.



Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

P

SINGLE SPAN ℓ

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	297	185	150	115	85	65	50				**7.61**
60	357	225	180	140	105	80	60	50			**8.00**
80	460	305	245	190	140	105	85	65			**8.78**
100	515	385	305	240	175	135	105	85			**9.56**
120	620	465	370	290	215	165	130	105			**10.34**
150	775	580	465	365	270	205	160	130			**11.51**
180	935	700	560	440	325	245	195	155			**12.68**
200	1000	780	625	490	360	275	215	175			**13.46**
220	1000	860	685	540	395	305	240	195			**14.22**
240	1000	940	750	590	435	330	260	210			**14.98**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

DRY JOINT

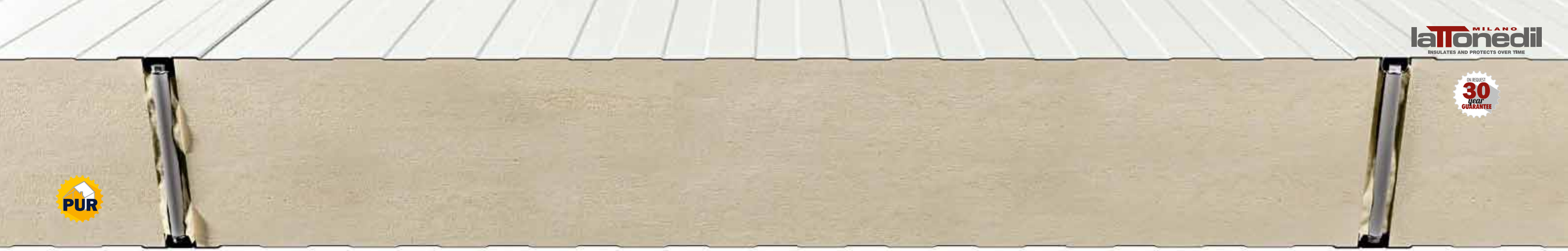
Suitable for areas with above-zero temperatures and not lower than 4°C (in the case of areas with temperatures lower than 4°C, a thermohygrometric test of the joint is needed, as it may generate condensation and/or ice formation). The joint geometry is interlocking male/female and is provided with standard PVC gasket inserted during production.

JOINT WITH THERMO-EXPANDENT TAPE

Suitable for areas with temperatures not lower than -1°C (in the case of environments with temperatures lower than -1°C, a thermohygrometric test of the joint is needed, as it could generate condensation and/or ice formation). The joint consists of the standard PVC gasket to which two thermo-expanding tapes are added during assembly in the two cavities of the female side, along the entire length of the panel. This allows good sealing for the passage of air.

JOINT WITH THIXOTROPIC SEALANT

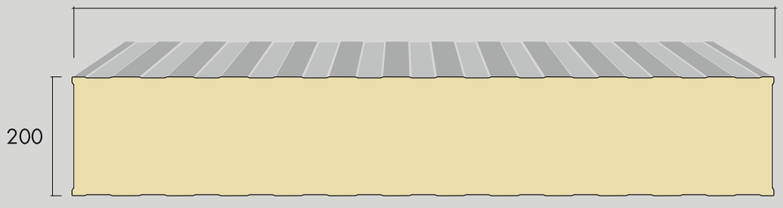
Suitable for environments with below-zero temperatures. The sealant is inserted into the two cavities of the female side over the entire length of the panel. This sealant provides excellent air tightness.

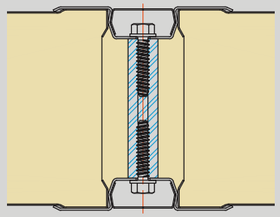


ISOPAR® FRIGO / GIUNTO INIETTATO

INSULATING WALL PANEL FOR REFRIGERATED AREAS

Insulating panel with double metal coating, with polyurethane core, highly versatile and easy to assemble. The very high thermal insulation performance and the quality of the joining system make it particularly suitable for the construction of areas where a controlled temperature is required, such as cold rooms and working chambers. The lack of cracks and the continuity of the insulating material, foamed directly on site within the joints, ensures excellent air tightness and minimization of thermal bridges.





Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

P

SINGLE SPAN ℓ

PANEL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	297	185	150	115	85	65	50				**7.61**
60	357	225	180	140	105	80	60	50			**8.00**
80	460	305	245	190	140	105	85	65			**8.78**
100	515	385	305	240	175	135	105	85			**9.56**
120	620	465	370	290	215	165	130	105			**10.34**
150	775	580	465	365	270	205	160	130			**11.51**
180	935	700	560	440	325	245	195	155			**12.68**
200	1000	780	625	490	360	275	215	175			**13.46**
220	1000	860	685	540	395	305	240	195			**14.22**
240	1000	940	750	590	435	330	260	210			**14.98**

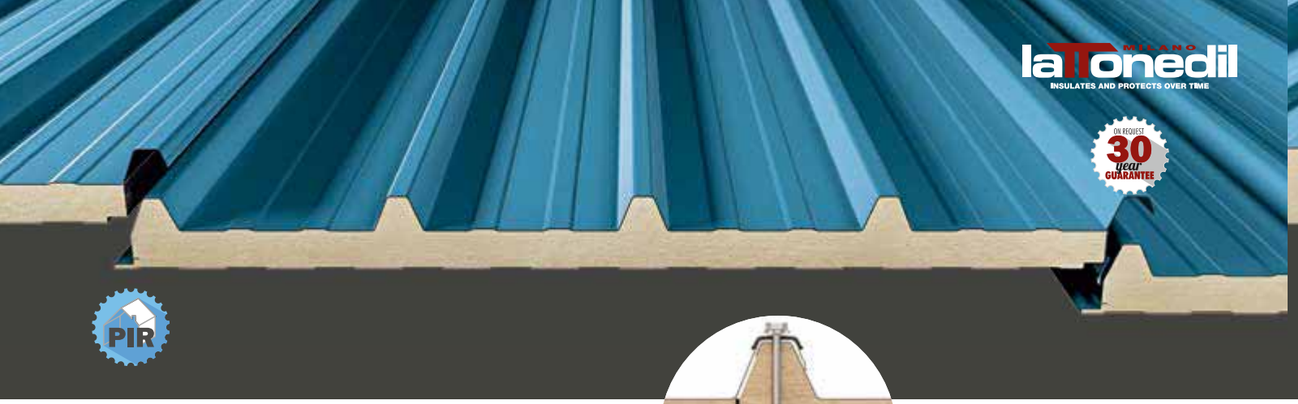
Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

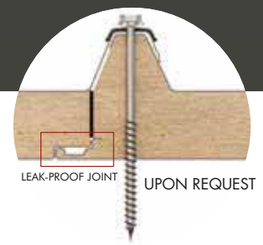
INJECTED JOINT

Suitable for areas with very low below-zero temperatures that impose very restrictive requirements from the point of view of thermal bridges and air permeability.

GREAT INSULATION WITH
MAXIMUM FIRE INSULATION

CHAPTER 2
POLYISOCYANURATE SANDWICH PANELS





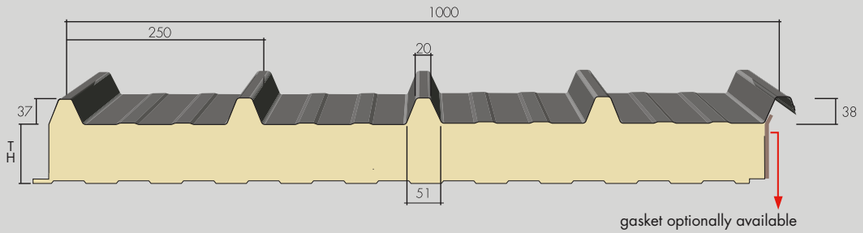
EUROCINQUE® HP

POLYISOCYANURATE ROOF

B-s1,d0

EUROCINQUE® HP is a self-supporting insulated roof panel made of polyisocyanurate, a chemically and thermically very stable material: the breaking of the isocyanurate bond occurs above 200°C.

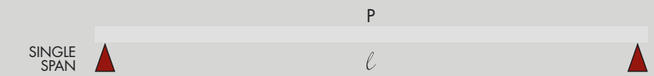
It can be defined as fireproof or fire retardant. EUROCINQUE® HP proposes a 5- ribs industrial or residential roof for a good static resistance, with great aesthetic value.



B ROOF (T2)

B ROOF (T3)

Static properties (kg/sq.m.)



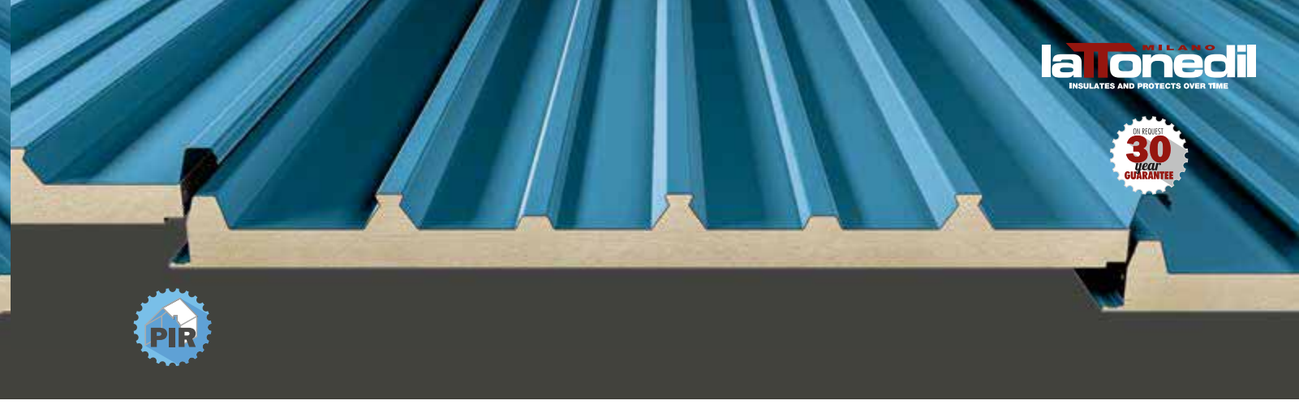
EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	250	195	105	70							**7.42**
40	290	200	135	90	65						**7.80**
50	315	230	160	115	85	65					**8.18**
60	370	275	195	145	110	85	60				**8.56**
80	485	360	265	200	155	120	95	70	50		**9.32**
100	595	445	340	260	200	160	125	105	80	60	**10.08**
120	710	530	420	320	250	195	160	130	105	85	**10.84**
150	880	655	520	410	325	260	210	170	145	120	**11.98**
160	935	700	555	445	350	280	225	185	155	130	**12.36**
180	975	725	580	480	400	320	260	215	180	150	**13.12**
200	1000	745	595	495	420	360	295	245	205	170	**13.88**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

Effective span width: 120 mm

U Transmittance	30	40	50	60	80	100	120	150	160	180	200
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19	0.15	0.14	0.12	0.11
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16	0.13	0.12	0.11	0.10

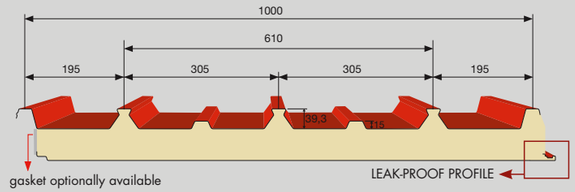


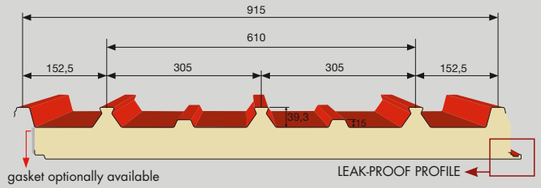
SOLARPAN® PLUS HP

5-STAR ACCOMMODATION FOR POLYISOCYANURATE PHOTOVOLTAIC MODULES

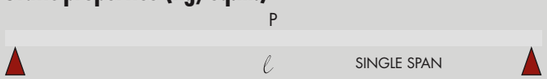
B-s2,d0

Lattonedil presents the SOLARPAN® PLUS HP panel, now manufactured in PIR (Polyisocyanurate): with the same features and accessories as the SOLARPAN® PLUS panel with the addition of fire reaction in B-s2, d0.
For more information see page 40 of this catalogue.





Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.4 mm

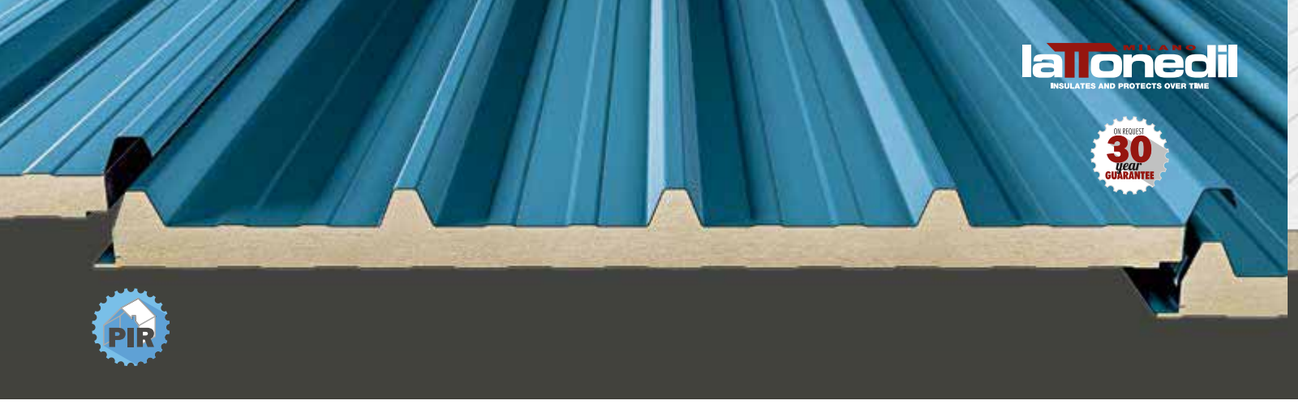
SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	330	245	175	105	65						**8.84**
40	420	315	225	145	90	60					**9.22**
50	510	380	280	190	125	85	60				**9.60**
60	605	450	335	240	160	110	80	55			**9.98**
80	785	585	450	340	240	170	125	90	70	50	**10.74**
100	965	720	570	435	335	240	180	135	100	80	**11.50**
120	1000	855	680	535	420	320	240	180	140	110	**12.26**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

Effective span width: 120 mm

U Transmittance	30	40	50	60	80	100	120
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

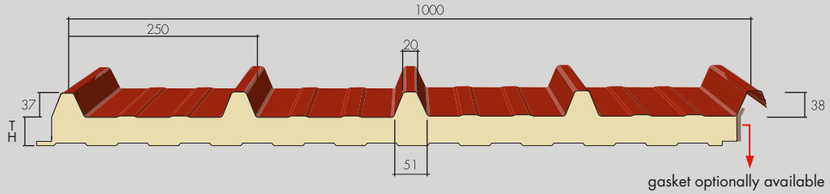


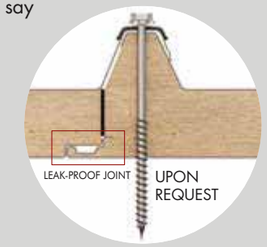
ISOFACTOR 15 EUROCINQUE® HP

INDUSTRIAL OR RESIDENTIAL POLYISOCYANURATE ROOF

B-s1,d0

ISOFACTOR 15 EUROCINQUE® HP is a roof panel suitable for both residential and industrial buildings. It has five ribs and is composed of a layer of insulating polyurethane sandwiched between two sheet metal facings. It has a distinctive appearance and good static resistance, resulting in excellent load performance. We are proud to say that its versatility of use and great aesthetic value has made it the best-selling and most sought after panel on the market.





B ROOF (T2) B ROOF (T3)

Micro-veining of the LOWER SIDE of the panel (to be specified when ordering)

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	250	195	105	70							**7.42**
40	290	200	135	90	65						**7.80**
50	315	230	160	115	85	65					**8.18**
60	370	275	195	145	110	85	60				**8.56**
80	485	360	265	200	155	120	95	70	50		**9.32**
100	595	445	340	260	200	160	125	105	80	60	**10.08**
120	710	530	420	320	250	195	160	130	105	85	**10.84**
150	880	655	520	410	325	260	210	170	145	120	**11.98**
160	935	700	555	445	350	280	225	185	155	130	**12.36**
180	975	725	580	480	400	320	260	215	180	150	**13.12**
200	1000	745	595	495	420	360	295	245	205	170	**13.88**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

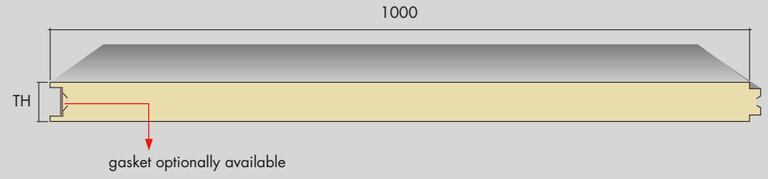
U Transmittance	30	40	50	60	80	100	120	150	160	180	200
W/sq.m. K	0.71	0.55	0.44	0.37	0.28	0.22	0.19	0.15	0.14	0.12	0.11
Kcal/sq.m. h °C	0.61	0.47	0.38	0.32	0.24	0.19	0.16	0.13	0.12	0.11	0.10

ISOPAR® HP

POLYISOCYANURATE INSULATING WALL PANEL

B-s1,d0

ISOPAR® HP is an insulating wall panel made of polyisocyanurate, a chemically and thermically stable material: the breaking of the isocyanurate bond occurs above 200°C.It can be defined as fireproof or fire retardant. ISOPAR® HP is available with 4 different external finishing profiles.



Available profiles (please state when ordering)

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
30	190	110	85	65							**6.86**
35	215	125	100	80	55						**7.04**
40	236	145	115	90	65	50					**7.22**
50	297	185	150	115	85	65	50				**7.61**
60	357	225	180	140	105	80	60	50			**8.00**
80	460	305	245	190	140	105	85	65			**8.78**
100	515	385	305	240	175	135	105	85			**9.56**
120	620	465	370	290	215	165	130	105			**10.34**
150	775	580	465	365	270	205	160	130			**11.51**
180	935	700	560	440	325	245	195	155			**12.68**
200	1000	780	625	490	360	275	215	175			**13.46**
220	1000	860	685	540	395	305	240	195			**14.22**
240	1000	940	750	590	435	330	260	210			**14.98**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

U Transmittance	30	35	40	50	60	80	100	120	150	180	200	220	240
W/sq.m. K	0.71	0.62	0.55	0.44	0.37	0.28	0.22	0.19	0.15	0.12	0.11	0.10	0.09
Kcal/sq.m. h °C	0.61	0.53	0.47	0.38	0.32	0.24	0.19	0.16	0.13	0.11	0.10	0.09	0.08

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPAR® ELEGANT HP

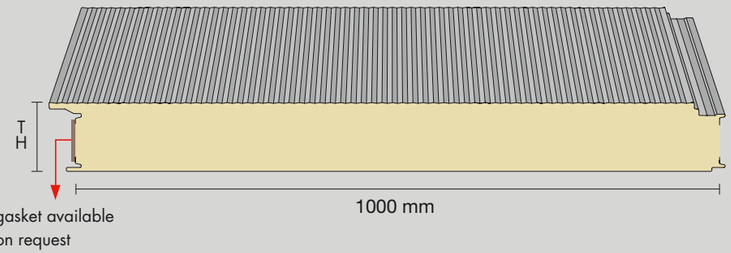
POLYISOCYANURATE INSULATING WALL PANEL WITH HIDDEN FASTENING

B-s2,d0

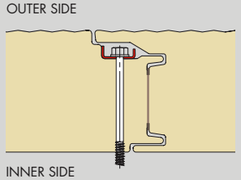
ISOPAR® Elegant HP is an insulating sandwich panel suitable for walls that require a high degree of reaction to fire.

ISOPAR® Elegant HP is the polyisocyanurate flat panel realized in its Staved, Scored, Smooth and Diamond versions.

THICKNESS FROM 50 TO 240 MM



gasket available on request



Horizontally panel assembly

Vertically panel assembly

During the assembly phase, use the steel fastening plate. The plate is intended to distribute the efforts arising from fixing and to increase the resistance to compressive and depression stresses acting on the wall panels. The position and the number of fixing points must be defined by the designer depending on the stresses on the structure.

Available profiles (please state when ordering)

Scored — Staved — Smooth — Diamond

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	297	185	150	115	85	65	50				**7.61**
60	357	225	180	140	105	80	60	50			**8.00**
80	460	305	245	190	140	105	85	65			**8.78**
100	515	385	305	240	175	135	105	85			**9.56**
120	620	465	370	290	215	165	130	105			**10.34**
150	775	580	465	365	270	205	160	130			**11.51**
180	935	700	560	440	325	245	195	155			**12.68**
200	1000	780	625	490	360	275	215	175			**13.46**
220	1000	860	685	540	395	305	240	195			**14.22**
240	1000	940	750	590	435	330	260	210			**14.98**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

U Transmittance	50	60	80	100	120	150	180	200	220	240
W/sq.m. K	0.44	0.37	0.28	0.22	0.19	0.15	0.12	0.11	0.10	0.09
Kcal/sq.m. h °C	0.38	0.32	0.24	0.19	0.16	0.13	0.11	0.10	0.09	0.08

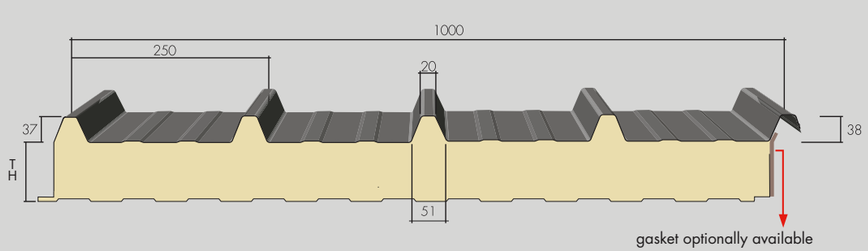
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

EUROCINQUE® REI

THE FIRE-RESISTANT ROOF - POLYISOCYANURATE

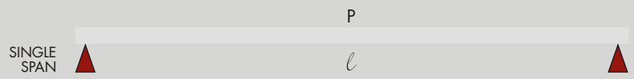
B-s1,d0 | REI 15 30

EUROCINQUE® REI is a self-supporting insulated roof panel made of polyisocyanurate, a chemically and thermically very stable material. The breaking of the isocyanurate bond occurs above 200°C. It can be defined as fireproof or fire retardant.
EUROCINQUE® REI offers a 5- ribs industrial or residential roof for a good static resistance, with great aesthetic value.
Class B-s1,d0. Fire resistance depends on the thickness:
REI 15 for 50 mm thick panels
REI 30 for 100 mm thick panels



B ROOF (T2) B ROOF (T3)

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.4 mm
INTERNAL facing:
Steel 0.4 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	315	230	160	115	85	65					**8.18**
100	595	445	340	260	200	160	125	105	80	60	**10.08**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

U Transmittance	**50**	**100**
W/sq.m. K	0.44	0.22
Kcal/sq.m. h °C	0.38	0.19

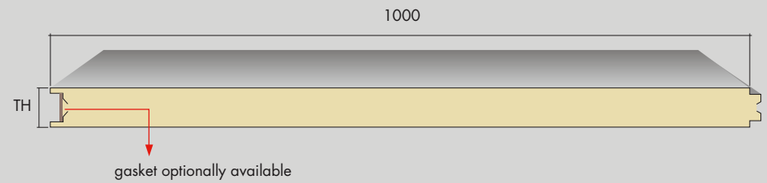
ISOPAR® EI

FIRE-RESISTANT INSULATING WALL PANEL POLYISOCYANURATE

B-s1,d0 | EI 15 30

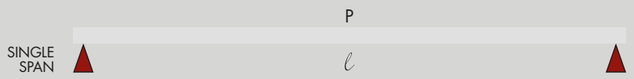
ISOPAR® EI is an insulating sandwich panel suitable for walls that require a high degree of reaction to fire.

Class B-s1,d0. Fire resistance depends on the thickness:
EI 15 for 60 mm thick panels
EI 30 for 100 mm thick panels



Available profiles (please state when ordering)

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
60	357	225	180	140	105	80	60	50			**9.56**
100	515	385	305	240	175	135	105	85			**8.00**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

U Transmittance	**60**	**100**
W/sq.m. K	0.37	0.22
Kcal/sq.m. h °C	0.32	0.19

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

MINERAL FIBRE IS AN INORGANIC MATERIAL THAT MELTS WHEN THE TEMPERATURE EXCEEDS 1000° C.
THIS NATURAL INSULATING MATERIAL DOES NOT CONTRIBUTE TO THE DEVELOPMENT AND SPREADING OF FIRES NOR TO TOXIC EMISSIONS.

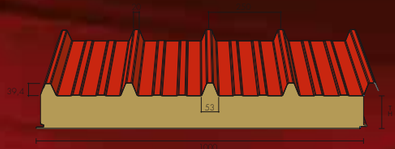
CHAPTER 3
MINERAL FIBRE SANDWICH PANELS

MW

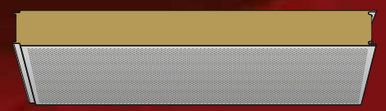
PANEL DENSITY FIBRE
MORE LIGHT DENSITY 75 KG/M³

TO SEE HOW A MATERIAL RESPONDS TO FIRE, ONE MUST CONSIDER AND TEST ITS REACTION AND RESISTANCE. DESPITE BEING EXTREMELY IMPORTANT FOR THE PROTECTION OF HUMAN LIFE IN THE EVENT OF A FIRE, FIRE RESPONSE IS OFTEN UNDERESTIMATED, WITH MORE ATTENTION PAID TO FIRE RESISTANCE.
FIRE RESISTANCE IS MEASURED IN TERMS OF SMOKE EMISSIONS AND DROPPING; THE NEW EU RATINGS BASED ON EN 13501-1 LISTS THE LETTERS A1, A2, B, C, D ETC. PLUS THE SUFFIXES: S=SMOKE, D=DROPPING.
UNDER MD 16/02/2007, LATTONEDIL RUNS FIRE LAB TESTS, ACCORDING TO EU TEST PROCEDURES.
NOTE THAT, FOR CURTAIN WALLS, THE TEST STANDARD IS UNI EN 1364-1, AS WELL AS THE GENERAL UNI EN 1363-1. FIRE REACTION IS INSTEAD MEASURED IN TERMS OF STABILITY (R), PROOFING (E) AND INSULATION (I), WHICH IS WHAT REI STANDS FOR. SPECIFICALLY, STABILITY IS A BUILDING COMPONENT'S TENDENCY TO RETAIN ITS MECHANICAL STRENGTH UNDER THE EFFECT OF A FIRE; PROOFING IS A BUILDING COMPONENT'S ABILITY TO BLOCK – AND OBVIOUSLY NOT PRODUCE – FLAMES, STEAM OR HOT GAS FROM THE OPPOSITE SIDE TO THE EXPOSED ONE; INSULATION IS A BUILDING COMPONENT'S TENDENCY TO REDUCE HEAT EXCHANGE, UP TO A CERTAIN POINT.
TESTS BASED ON EU TEST RULES ARE THE ONLY ONES THAT MAY BE USED FOR FIRE-PREVENTION APPLICATIONS.
THE REI SEAL APPLIES ONLY TO LOADBEARING BUILDING COMPONENTS; ANY NON-LOADBEARING, PARTITIONING BUILDING COMPONENT, SUCH AS WALLS OR DOORS, BEARS THE EI 30. EI 60. EI 90 RATING, DEPENDING ON HOW THICK THE SANDWICH PANEL IS. AS TO THE AREA OF APPLICATION, NOTE THAT, WITH THE OLD TESTS (THOSE THAT DO NOT COMPLY WITH EU REGULATIONS), PROFESSIONALS WHO CERTIFY A BUILDING COMPONENT AS FIRE RESISTANT (SEE MD 04/05/1998 IN ANNEX II) ARE RESPONSIBLE FOR ANY DEVIATION FROM THE TESTED SAMPLE, WHILE, PURSUANT TO EU RULES, THEY ARE SUPPORTED BY THE MANUFACTURER'S TECHNICAL DOCUMENTS. THE NEW TESTING CONDITIONS ARE MUCH STRICTER, SO THE PERFORMANCE, AS WE KNEW IT, IS NOW MUCH POORER.

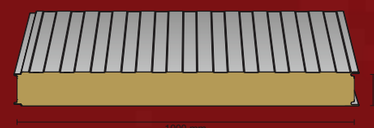
EUROFIRE® LIGHT



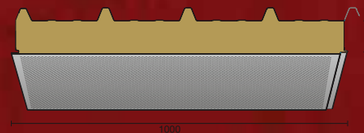
ISOPARFIRE® SOUND LIGHT



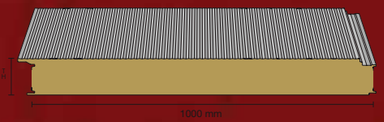
ISOPARFIRE® LIGHT



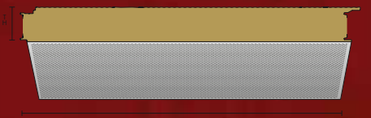
EUROFIRE® SOUND LIGHT



ISOPARFIRE® ELEGANT LIGHT



ISOPARFIRE® ELEGANT SOUND LIGHT



EUROFIRE®

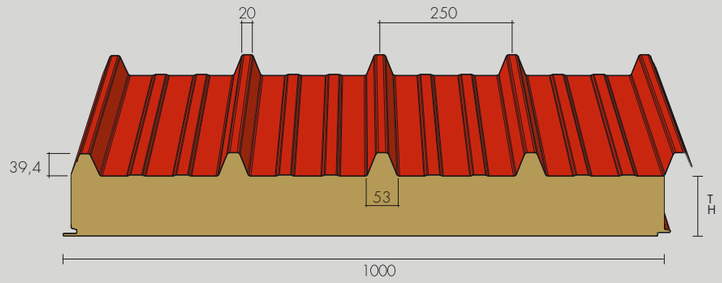
MINERAL FIBRE ROOF PANELS

UPON REQUEST WITH DENSITY FROM 120 TO 180 KG/M³

EUROFIRE® is a fire-resistant sandwich panel, class A2-s1,d0. with an insulating layer made of bio-soluble mineral fibre strips, which are staggered lengthwise so that the fibres are at right angles with the plane of the two 0.5mm backings, in pre-painted galvanised steel, stainless steel, embossed or pre-painted natural aluminium or copper.
The frets on the outer plate are also filled with mineral fibre shaped strips.

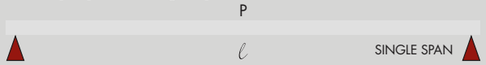
Density of insulation
Density: 100 Kg/m³ ±10%.
Other densities optionally available.

Note: manufacturing-wise it is impossible to fill the lower lip.
This is due to the characteristics of the type of insulation.



A2-s1,d0

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	270	210	150	105							**13.72**
60	310	250	170	125	80						**14.72**
80	350	290	220	165	125	90					**16.72**
100	390	330	260	205	160	125	80				**18.72**
120	430	370	300	245	185	140	110	85			**20.72**
150	451	390	315	260	195	150	115	90	80		**23.72**
170	460	400	320	270	200	152	117	92	82		**25.72**
180	470	405	330	275	205	155	120	95	85	70	**16.72**
200	485	420	340	285	210	160	125	100	90	75	**28.72**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

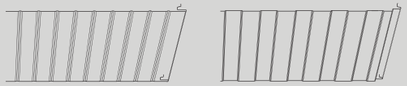
λ = 0.039 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200
W/sq.m. K	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19
Kcal/sq.m. h °C	0.62	0.52	0.40	0.32	0.17	0.22	0.19	0.18	0.16

λ = 0.041 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200
W/sq.m. K	0.76	0.64	0.49	0.39	0.33	0.27	0.24	0.22	0.20
Kcal/sq.m. h °C	0.65	0.55	0.42	0.33	0.28	0.23	0.20	0.19	0.17

Available profiles (please state when ordering)



Scored Staved

EUROFIRE® REI

FIRE-RESISTANT ROOF PANELS IN MINERAL FIBRE

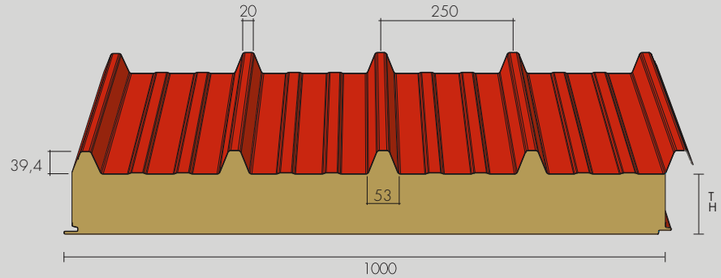
UPON REQUEST WITH DENSITY FROM 120 TO 180 KG/M³

Reliability, safety and peace of mind. In a word:
EUROFIRE® REI, the top of the range roof panels with outstanding fire response.
This panel's fire response can actually be summed up as Class A2-s1,d0; its fire resistance depends instead on thickness, namely:
REI 30 for a 50mm thick panel
REI 90 for a 80mm thick panel
REI 120 for a 120mm thick panel
REI 240 for a 180mm thick panel

Mineral fibres are placed at right angles with the two 5-fret steel backings, for good static resistance.

Density of insulation
Density: 100 Kg/m³ ±10%.
Other densities optionally available.

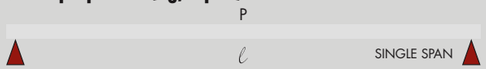
Note: manufacturing-wise it is impossible to fill the lower lip.
This is due to the characteristics of the type of insulation.



A2-s1,d0

REI 30 90 120 240

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	270	210	150	105							**13.72**
80	350	290	220	165	125	90					**16.72**
100	390	330	265	205	160	125	80				**18.72**
180	470	405	330	275	205	155	120	95	85	70	**26.72**

Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ

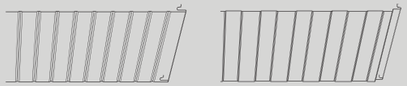
λ = 0.039 Watt/mK

U Transmittance	50	80	100	180
W/sq.m. K	0.72	0.47	0.38	0.21
Kcal/sq.m. h °C	0.62	0.40	0.32	0.18

λ = 0.041 Watt/mK

U Transmittance	50	80	100	180
W/sq.m. K	0.76	0.49	0.39	0.22
Kcal/sq.m. h °C	0.65	0.42	0.33	0.19

Available profiles (please state when ordering)



Scored Staved

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

EUROFIRE® SOUND REI

SOUND-ABSORBING AND SOUND-INSULATING ROOF PANELS IN MINERAL FIBRE

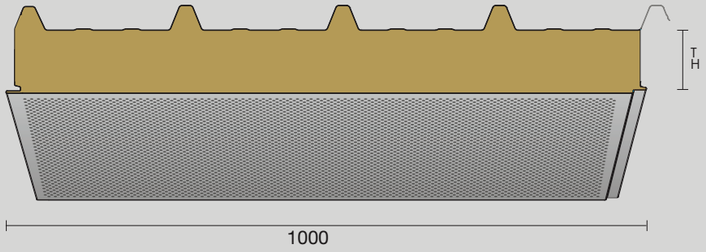
For those buildings that need not just to be fireproofed and thermally insulated but need soundproofing and sound-absorption as well, Lattonedil has come up with EUROFIRE® SOUND, with micro-holes on the inner plate, which is extremely efficient in reducing the outward transmission of sound as well as reducing echoing effects and inward reverberation, which means improving acoustic performance and ensuring good acoustic comfort.
EUROFIRE® SOUND is a fire-resistant sandwich panel, class A2-s1,d0. It is made with a mineral fibre insulating layer coupled with two 0.5mm backings, in pre-painted or plastic-coated galvanised steel, in stainless steel, in embossed or pre-painted natural aluminium or in copper, with a 5-fret outer layer offering good static resistance and a micro-holed inner one.

Density of insulation
Density: 100 Kg/m^3 ±10%.
Other densities optionally available.

Sound-absorption
Thickness mm 100: AW = 0.95

Soundproofing
Thickness mm 100: RW = 35 dB

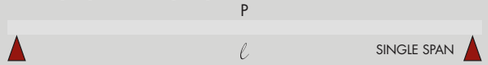
Note: manufacturing-wise it is impossible to fill the lower lip.
This is due to the characteristics of the type of insulation.



A2-s1,d0

REI 90

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
100	370	290	210	150	100	80					**17.90**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

λ = 0.039 Watt/mK

U Transmittance	100
W/sq.m. K	0.38
Kcal/sq.m. h °C	0.32

λ = 0.041 Watt/mK

U Transmittance	100
W/sq.m. K	0.39
Kcal/sq.m. h °C	0.33

Available profiles (please state when ordering)

Scored Staved Smooth

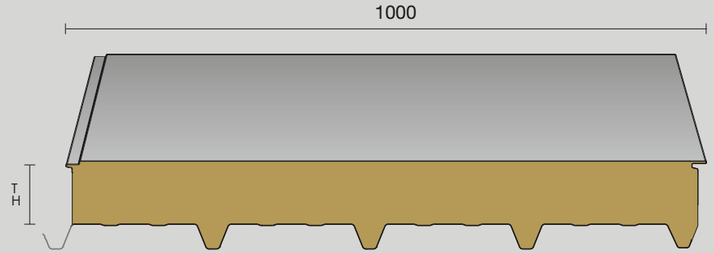
EUROFIRE® DECK REI

FIRE-RESISTANT ROOF PANELS IN MINERAL FIBRE

EUROFIRE® DECK REI is used to build self-bearing flat roofs, generally intended to house an upper coat of waterproof membrane (bitumen-polymer, PVC or elastomer) to apply on-site. The ribbing pitch (250 mm) and the range of sheet thicknesses allow satisfying the needs of design solutions. The choice of the structuring anchoring method to the framework is particularly important.

Density of insulation
Density: 100 Kg/m^3 ±10%.
Other densities optionally available.

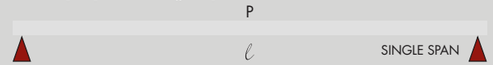
Note: manufacturing-wise it is impossible to fill the lower lip.
This is due to the characteristics of the type of insulation.



A2-s1,d0

REI 120

Static properties (kg/sq.m.)



EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
170	460	400	320	270	200	152	117	92	82		**25.72**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

λ = 0.039 Watt/mK

U Transmittance	170
W/sq.m. K	0.23
Kcal/sq.m. h °C	0.19

λ = 0.041 Watt/mK

U Transmittance	170
W/sq.m. K	0.24
Kcal/sq.m. h °C	0.20

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

EUROFIRE® SOUND

SOUND-ABSORBING AND SOUND-INSULATING ROOF PANELS IN MINERAL FIBRE

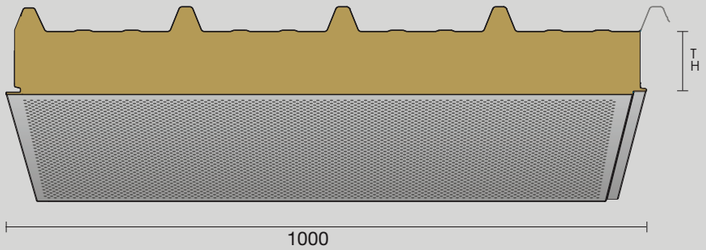
For those buildings that need not just to be fireproofed and thermally insulated but need soundproofing and sound-absorption as well, Lattonedil has come up with EUROFIRE® SOUND, with micro-holes on the inner plate, which is extremely efficient in reducing the outward transmission of sound as well as reducing echoing effects and inward reverberation, which means improving acoustic performance and ensuring good acoustic comfort.
EUROFIRE® SOUND is a fire-resistant sandwich panel, class A2-s1,d0. It is made with a mineral fibre insulating layer coupled with two 0.5mm backings, in pre-painted or plastic-coated galvanised steel, in stainless steel, in embossed or pre-painted natural aluminium or in copper, with a 5-fret outer layer offering good static resistance and a micro-holed inner one.

Density of insulation
Density: 100 Kg/m³ ±10%.
Other densities optionally available.

Sound-absorption
Thickness mm 50: AW = 0.90
Thickness mm 80: AW = 0.95
Thickness mm 100: AW = 0.95

Soundproofing
Thickness mm 50: RW = 31 dB
Thickness mm 80: RW = 34 dB
Thickness mm 100: RW = 35 dB

Note: manufacturing-wise it is impossible to fill the lower lip. This is due to the characteristics of the type of insulation.



A2-s1,d0

Static properties (kg/sq.m.)

P — ℓ — SINGLE SPAN

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	250	170	110	60							**12.90**
60	290	190	130	80							**13.70**
80	330	250	170	110	80						**15.80**
100	370	290	210	150	100	80					**17.90**
120	400	330	250	190	140	100	80				**19.80**
150	420	345	265	200	150	105	85	60			**22.60**
170	425	350	270	205	152	107	87	62			**23.30**
180	435	360	275	210	155	110	90	65			**23.90**
200	450	370	290	220	160	115	95	70	55		**24.80**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

λ = 0.041 Watt/mK

U Transmittance	50	80	100	180
W/sq.m. K	0.76	0.49	0.39	0.22
Kcal/sq.m. h °C	0.65	0.42	0.33	0.19

λ = 0.039 Watt/mK

U Transmittance	50	80	100	180
W/sq.m. K	0.72	0.47	0.38	0.21
Kcal/sq.m. h °C	0.62	0.40	0.32	0.18

Available profiles (please state when ordering)

Scored — Staved — Smooth

ULTRA DECK FIRE®

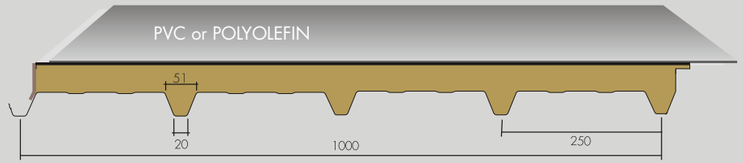
MINERAL FIBRE ROOF PANELS

UPON REQUEST WITH DENSITY FROM 120 TO 180 KG/M³

ULTRA DECK FIRE® is a sandwich panel with A2-s1,d0 fire resistance built with an insulating coat consisting of lists in biosoluble mineral fibre, off-set longitudinally, or with fibres arranged at 90° in relation to the plane of the two steel supports. A synthetic coat in PVC or POLYMERIZING OLEFINS is applied on the external side featuring thickness of 1.2 or 1.5 mm (to be specified when placing the order), resistant to atmospheric agents and UV rays. The surface is certified with a BBA Agreement Certificate (stating a coat durability of 30 years). This product offers credits to obtain the LEED certification.
The panel is supplied with lateral selvedge of about 60 mm to weld on-site. Note: you can purchase ULTRA DECK FIRE® also without selvedge.

Density of insulation
Density: 100 Kg/m³ ±10%.
Other densities optionally available.

Note: manufacturing-wise it is impossible to fill the lower lip. This is due to the characteristics of the type of insulation.



A2-s1,d0

Static properties (kg/sq.m.)

P — ℓ — SINGLE SPAN

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	270	210	150	105							**13.72**
60	310	250	170	125	80						**14.72**
80	350	290	220	165	125	90					**16.72**
100	390	330	260	205	160	125	80				**18.72**
120	430	370	300	245	185	140	110	85			**20.72**
150	451	390	315	260	195	150	115	90	80		**23.72**
170	460	400	320	270	200	152	117	92	82		**25.72**
180	470	405	330	275	205	155	120	95	85	70	**16.72**
200	485	420	340	285	210	160	125	100	90	75	**28.72**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ										

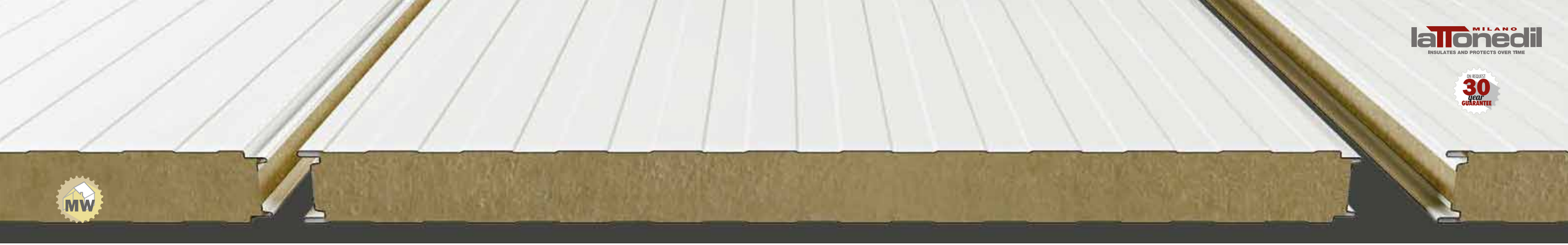
λ = 0.039 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200
W/sq.m. K	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19
Kcal/sq.m. h °C	0.62	0.52	0.40	0.32	0.17	0.22	0.19	0.18	0.16

λ = 0.041 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200
W/sq.m. K	0.76	0.64	0.49	0.39	0.33	0.27	0.24	0.22	0.20
Kcal/sq.m. h °C	0.65	0.55	0.42	0.33	0.28	0.23	0.20	0.19	0.17

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.



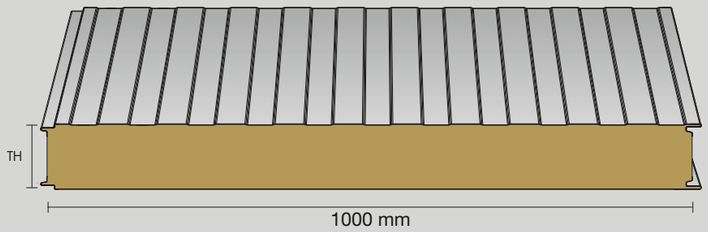
ISOPARFIRE® EI

FIRE-RESISTANT WALL PANELS IN MINERAL FIBRE

Lattonedil's lab tests proved that the ISOPARFIRE® EI panel, with its outstanding fire response, is the top of the range panel for self-contained insulating walls. ISOPARFIRE® EI's fire response may be summed up as Class A2-s1,d0; while its fire resistance depends on how thick it is as follows:
EI 30 for a 50 mm thick panel
EI 60 for a 80 mm thick panel
EI 120 for a 100 mm thick panel
EI 180 for a 150 mm thick panel

Density of insulation
Density: 100 Kg/m³ ±10%.
Other densities optionally available.

Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.



Available profiles (please state when ordering)

λ = 0.039 Watt/mK

U Transmittance	50	80	100	150
W/sq.m. K	0.72	0.47	0.38	0.25
Kcal/sq.m. h °C	0.62	0.40	0.32	0.22

λ = 0.041 Watt/mK

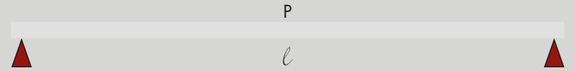
U Transmittance	50	80	100	150
W/sq.m. K	0.76	0.49	0.39	0.27
Kcal/sq.m. h °C	0.65	0.42	0.33	0.13

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SINGLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	185	130	110	81	73						**12.94**
80	266	187	158	116	105	85	65				**15.94**
100	319	224	190	140	126	102	78	61			**19.66**
150	422	296	251	185	166	135	103	81	56	45	**22.94**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

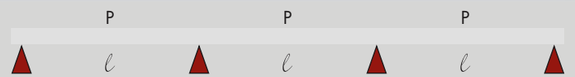
DOUBLE SPAN

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	190	135	115	86	78						**12.94**
80	273	194	165	124	112	91	70				**15.94**
100	328	233	198	148	135	110	84	66			**19.66**
150	433	308	262	196	178	145	111	87	62	50	**22.94**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

MULTIPLE SPAN



EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	195	140	120	92	83						**12.94**
80	280	201	173	132	119	98	75				**15.94**
100	336	242	207	159	143	117	90	71			**19.66**
150	445	319	274	210	189	155	119	94	66	55	**22.94**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

ISOPARFIRE® EI PLUS

FIRE-RESISTANT WALL PANELS IN MINERAL FIBRE

Lattonedil's laboratory tests proved that ISOPARFIRE® EI PLUS panel is the top-of-the-range for insulating and self-bearing walls with exceptional fire performance. ISOPARFIRE® EI PLUS fire reaction falls under Class A2-s1, d0.

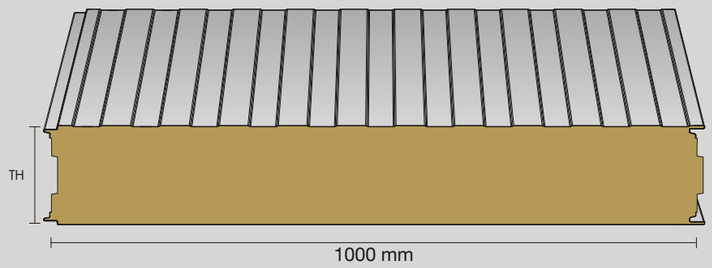
Fire resistance:

– EI 90 for 150 mm thick panels with assembly extension up to 12.00 metres.
– EI 120 for 150 mm thick panels with assembly extension up to 10.88 metres.

Density of insulation

Density: 100 Kg/m³ ±10%.
Other densities optionally available.

Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.



A2-s1,d0

EI 90 120

Available profiles (please state when ordering)

λ = 0.039 Watt/mK

U Transmittance	150
W/sq.m. K	0.25
Kcal/sq.m. h °C	0.22

λ = 0.041 Watt/mK

U Transmittance	150
W/sq.m. K	0.27
Kcal/sq.m. h °C	0.23

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SINGLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
150	422	296	251	185	166	135	103	81	56	45	**22.94**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
150	433	308	262	196	178	145	111	87	62	50	**22.94**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

MULTIPLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
150	445	319	274	210	189	155	119	94	66	55	**22.94**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

ISOPARFIRE® EI SOUND

FIRE-RESISTANT WALL PANELS IN MINERAL FIBRE

When the sector's professionals required walls with fireproof and thermal insulation characteristics as well as sound-absorption and sound-insulation properties, Lattonedil's answer was ISOPARFIRE® EI SOUND. Thanks to the micro-holes on the internal sheet, ISOPARFIRE® EI SOUND allows limiting the transmission of the sound signal towards the exterior, improve acoustics and obtain good internal sound comfort.

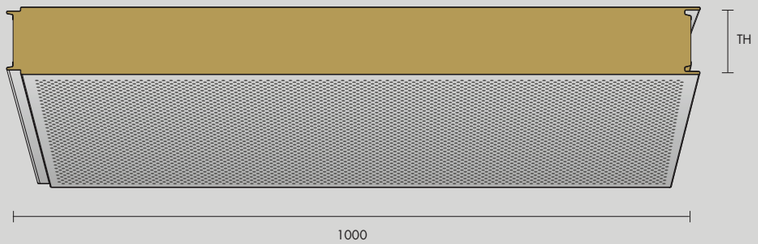
ISOPARFIRE® EI SOUND's fire performance falls under Class A2-s1,d0. Fire resistance instead is based on the following thicknesses:
EI 30 for 50 mm thick panels
EI 60 for 80 mm thick panels
EI 120 for 100 mm thick panels

Density of insulation
Density: 100 Kg/m^3 ±10%.
Other densities optionally available.

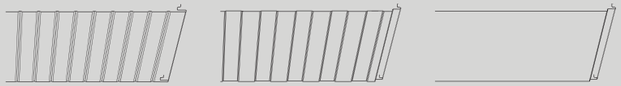
Sound-absorption
Thickness mm 50: AW = 0.90
Thickness mm 80: AW = 0.95
Thickness mm 100: AW = 0.95

Soundproofing
Thickness mm 50: RW = 31 dB
Thickness mm 80: RW = 34 dB
Thickness mm 100: RW = 35 dB

Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.



Available profiles (please state when ordering)



λ = 0.039 Watt/mK

U Transmittance	50	80	100
W/sq.m. K	0.72	0.47	0.38
Kcal/sq.m. h °C	0.62	0.40	0.32

λ = 0.041 Watt/mK

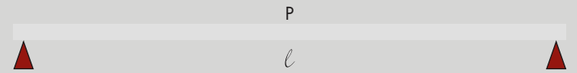
U Transmittance	50	80	100
W/sq K	0.76	0.49	0.39
Kcal/sq.m. h °C	0.65	0.42	0.33

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

Effective span width:
120 mm

SINGLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	165	110	100	76	68						**12.24**
80	237	158	144	109	98	79	60				**15.24**
100	285	190	173	131	117	95	72	56			**18.96**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

Effective span width:
120 mm

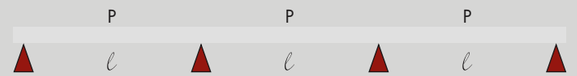
DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	170	115	105	77	70						**12.24**
80	244	165	151	111	101	81	62				**15.24**
100	293	198	181	133	121	98	74	58			**18.96**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

Effective span width:
120 mm

MULTIPLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	175	120	110	81	73						**12.24**
80	252	173	158	116	105	85	64				**15.24**
100	302	207	190	140	126	102	77	60			**18.96**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

ISOPARFIRE® EI ELEGANT

FIRE-RESISTANT WALL PANELS IN MINERAL FIBRE WITH HIDDEN FASTENING

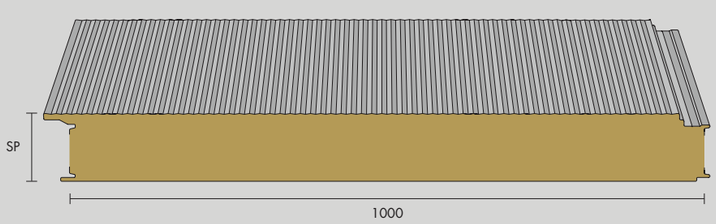
UPON REQUEST WITH DENSITY FROM 120 TO 180 KG/M³

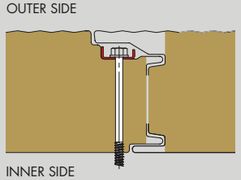
ISOPARFIRE® EI ELEGANT is a panel born to be used in walls that require safety and good aesthetic performance.
The peculiarity of ISOPARFIRE® EI ELEGANT consists in the hidden anchoring for the continuity of the wall panels. It is finished by two supports in pre-painted galvanised steel, stainless steel of standard thickness of 0.5 mm.
Different thicknesses of the double sheet are available upon request.
ISOPARFIRE® EI ELEGANT's fire performance falls under Class A2-s1, d0.

Fire resistance:
– EI 15 for panel of 80 mm thickness
– EI 120 for panel of 120 mm thickness

Density of insulation
Density: 100 Kg/m³ ±10%.
Other densities optionally available.

Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.



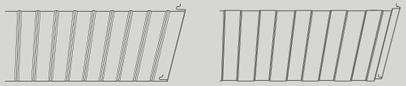


Horizontally panel assembly

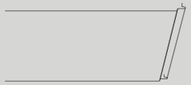
Vertically panel assembly

During the assembly phase, use the steel fastening plate. The plate is intended to distribute the efforts arising from fixing and to increase the resistance to compressive and depression stresses acting on the wall panels. The position and the number of fixing points must be defined by the designer depending on the stresses on the structure.

Micro-veining of the LOWER SIDE of the panel (to be specified when ordering)

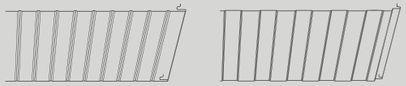


Scored — Staved

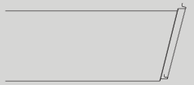


Smooth

Micro-veining of the UPPER SIDE of the panel (to be specified when ordering)



Scored — Staved



Smooth — Diamond

λ = 0.039 Watt/mK

U Transmittance	120
W/sq.m. K	0.32
Kcal/sq.m. h °C	0.17

λ = 0.041 Watt/mK

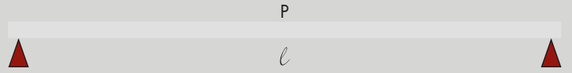
U Transmittance	120
W/sq.m. K	0.33
Kcal/sq.m. h °C	0.28

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width: 120 mm

SINGLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
80	266	187	158	116	105	85	65				15.94
120	377	265	224	165	149	120	92	72	50		21.66
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width: 120 mm

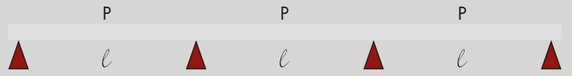
DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
80	273	194	165	124	112	91	70				15.94
120	387	275	234	175	159	129	99	78	55		21.66
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width: 120 mm

MULTIPLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
80	280	201	173	132	119	98	75				15.94
120	397	285	244	187	169	138	106	84	59		21.66
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

ISOPARFIRE®

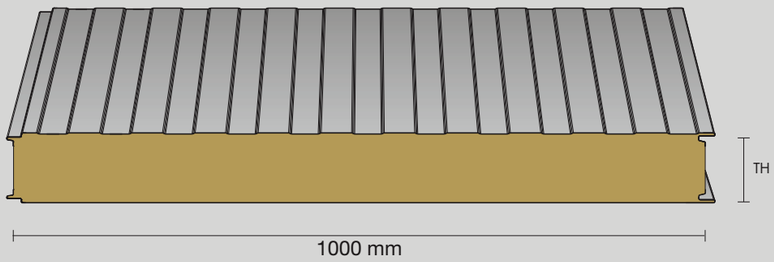
MINERAL FIBRE WALL PANEL

UPON REQUEST WITH DENSITY FROM 120 TO 180 KG/M³

ISOPARFIRE® is a fire-resistant sandwich panel for indoor and outdoor walls, class A2-s1,d0. It is made with a mineral fibre insulating layer coupled with two 0.5mm backings, in pre-painted or plastic-coated galvanised steel, in stainless steel, in embossed or pre-painted natural aluminium or in copper.

Density of insulation
Density: 100 Kg/m³ ±10%.
Other densities optionally available.

Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.



A2-s1,d0

Available profiles (please state when ordering)

Scored Staved Smooth

λ = 0.039 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200	220	240
W/sq.m. K	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19	0.17	0.16
Kcal/sq.m. h °C	0.62	0.52	0.40	0.32	0.17	0.22	0.19	0.18	0.16	0.14	0.13

λ = 0.041 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200	220	240
W/sq.m. K	0.76	0.64	0.49	0.39	0.33	0.27	0.24	0.22	0.20	0.18	0.17
Kcal/sq.m. h °C	0.65	0.55	0.42	0.33	0.28	0.23	0.20	0.19	0.17	0.15	0.14

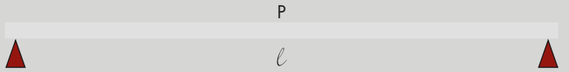
laTTonedil MILANO
INSULATES AND PROTECTS OVER TIME

ON REQUEST 30 year GUARANTEE

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

SINGLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	185	130	110	81	73						**12.94**
60	213	150	127	93	84	68					**13.94**
80	266	187	158	116	105	85	65				**15.94**
100	319	224	190	140	126	102	78	61			**19.66**
120	377	265	224	165	149	120	92	72	50		**21.66**
150	422	296	251	185	166	135	103	81	56	45	**22.94**
170	447	310	262	195	173	139	109	85	58	47	**24.94**
180	464	326	276	203	183	148	113	89	62	50	**25.94**
200	501	352	298	219	198	160	122	96	67	53	**27.94**
220	525	376	322	243	223	184	146	120	91	77	**29.94**
240	542	393	339	260	240	208	163	137	103	94	**31.94**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

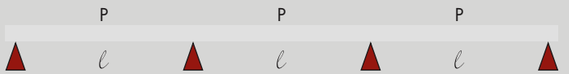
DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	190	135	115	86	78						**12.94**
60	219	155	132	99	90	73					**13.94**
80	273	194	165	124	112	91	70				**15.94**
100	328	233	198	148	135	110	84	66			**19.66**
120	387	275	234	175	159	129	99	78	55		**21.66**
150	433	308	262	196	178	145	111	87	62	50	**22.94**
170	457	315	272	206	187	149	118	89	65	52	**24.94**
180	476	339	288	216	196	159	122	96	68	55	**25.94**
200	515	366	311	233	211	172	132	104	73	59	**27.94**
220	539	390	335	257	235	196	156	128	97	83	**29.94**
240	556	407	352	274	252	213	173	145	114	100	**31.94**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

MULTIPLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	195	140	120	92	83						**12.94**
60	224	161	138	106	95	78					**13.94**
80	280	201	173	132	119	98	75				**15.94**
100	336	242	207	159	143	117	90	71			**19.66**
120	397	285	244	187	169	138	106	84	59		**21.66**
150	445	319	274	210	189	155	119	94	66	55	**22.94**
170	468	325	285	224	195	163	125	97	69	58	**24.94**
180	489	351	301	231	208	170	131	103	73	61	**25.94**
200	528	379	325	249	225	184	141	111	79	65	**27.94**
220	552	403	349	273	247	203	166	135	103	89	**29.94**
240	589	420	366	290	266	225	183	152	120	106	**31.94**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width:
120 mm

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPARFIRE® SOUND

SOUNDPROOFING, SOUND-ABSORBING MINERAL FIBRE WALL PANEL

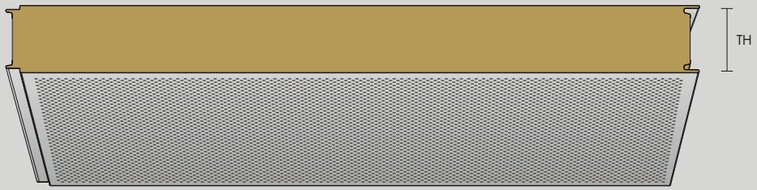
When industry professionals needed walls with excellent fireproofing, soundproofing and sound-absorbing standards, Lattonedil's answer was ISOPARFIRE® SOUND. Through the micro-holes on the inner plate, ISOPARFIRE® SOUND can reduce the outward transmission of sound as well as improve acoustic performance and offer good indoor acoustic comfort. ISOPARFIRE® SOUND is a fire-resistant sandwich panel for indoor and outdoor walls, class A2-s1,d0. It is made with a mineral fibre insulating layer coupled with two 0.5mm backings, in pre-painted or plastic-coated galvanised steel, in stainless steel, in embossed or pre-painted natural aluminium or in copper, the internal ones with micro-holes.

Density of insulation
Density: 100 Kg/m³ ±10%.
Other densities optionally available.

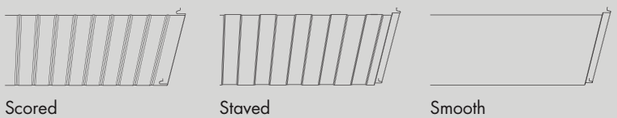
Sound-absorption
Thickness mm 50: AW = 0.90
Thickness mm 80: AW = 0.95
Thickness mm 100: AW = 0.95

Soundproofing
Thickness mm 50: RW = 31 dB
Thickness mm 80: RW = 34 dB
Thickness mm 100: RW = 35 dB

Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.



Available profiles (please state when ordering)



λ = 0.039 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200	220	240
W/sq.m. K	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19	0.17	0.16
Kcal/sq.m. h °C	0.62	0.52	0.40	0.32	0.17	0.22	0.19	0.18	0.16	0.14	0.13

λ = 0.041 Watt/mK

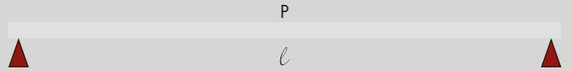
U Transmittance	50	60	80	100	120	150	170	180	200	220	240
W/sq.m. K	0.76	0.64	0.49	0.39	0.33	0.27	0.24	0.22	0.20	0.18	0.17
Kcal/sq.m. h °C	0.65	0.55	0.42	0.33	0.28	0.23	0.20	0.19	0.17	0.15	0.14

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SINGLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	165	110	100	76	68						**12.44**
60	190	127	115	87	78	63					**13.44**
80	237	158	144	109	98	79	60				**15.44**
100	285	190	173	131	117	95	72	56			**19.16**
120	336	224	204	155	138	112	85	66	45		**21.16**
150	376	251	228	173	155	125	95	74	50	40	**22.44**
170	389	259	236	178	161	128	99	78	53	42	**24.44**
180	414	276	251	191	171	137	105	81	55	44	**25.44**
200	447	298	271	206	184	148	113	88	60	48	**27.44**
220	471	322	295	230	208	172	137	112	84	72	**29.44**
240	488	339	312	247	225	189	154	129	101	88	**31.44**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

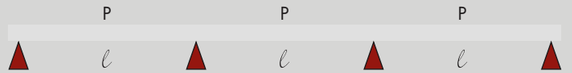
DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	170	115	105	77	70						**12.44**
60	196	132	121	89	81	65					**13.44**
80	244	165	151	111	101	81	62				**15.44**
100	293	198	181	133	121	98	74	58			**19.16**
120	346	234	214	157	142	115	88	68	47		**21.16**
150	388	262	239	176	160	129	98	77	53	42	**22.44**
170	400	271	247	181	165	133	104	81	55	44	**24.44**
180	426	288	263	193	176	142	108	84	58	46	**25.44**
200	460	311	284	209	190	153	117	91	63	50	**27.44**
220	484	335	303	233	214	177	141	115	87	74	**29.44**
240	501	352	325	250	231	194	158	132	104	91	**31.44**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

MULTIPLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	175	120	110	81	73						**12.44**
60	201	138	127	93	84	68					**13.44**
80	252	173	158	116	105	85	64				**15.44**
100	302	207	190	140	126	102	77	60			**19.16**
120	356	244	224	165	149	120	91	71	50		**21.16**
150	399	274	251	185	166	135	101	79	56	45	**22.44**
170	463	333	284	219	198	155	120	90	68	55	**24.44**
180	489	351	301	231	208	170	131	103	73	61	**25.44**
200	528	379	325	249	225	184	141	111	79	65	**27.44**
220	498	349	322	243	222	184	145	118	91	77	**29.44**
240	515	366	339	260	231	201	162	135	108	94	**31.44**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPARFIRE® ELEGANT

MINERAL FIBRE WALL PANELS WITH HIDDEN FASTENERS

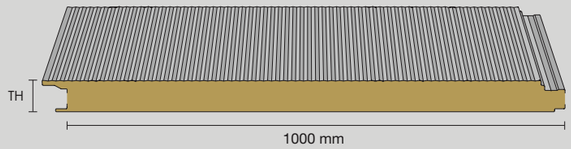
ISOPARFIRE® ELEGANT is a panel designed to be used on walls that need to be safe and look good. It features fire resistance class A2-s1,d0 as it is made of mineral fibre; in addition, it stands out for its hidden fasteners so that the panels on the walls look seamlessly applied. It is coated in two backings of pre-painted galvanised steel, or, optionally, stainless steel or pre-painted natural aluminium, with a standard thickness of 0.5 mm each. Double plates are optionally available in other thicknesses as well.

Density of insulation
Density: 100 Kg/m^3 ±10%.
Other densities optionally available.

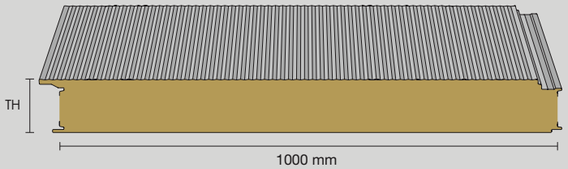
Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.

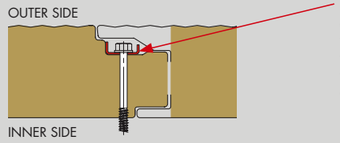
A2-s1,d0

THICKNESS 40 MM

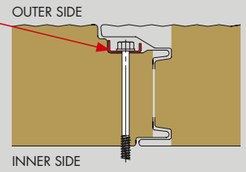


THICKNESS FROM 50 TO 240 MM

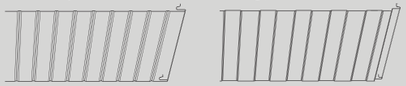




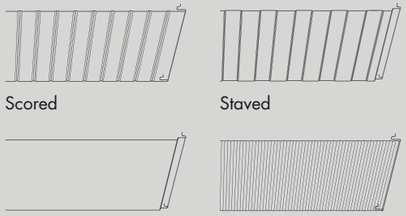
During the assembly phase, use the steel fastening plate. The plate is intended to distribute the efforts arising from fixing and to increase the resistance to compressive and depression stresses acting on the wall panels. The position and the number of fixing points must be defined by the designer depending on the stresses on the structure.



Micro-veining of the LOWER SIDE of the panel
(to be specified when ordering)



Micro-veining of the UPPER SIDE of the panel
(to be specified when ordering)



λ = 0.039 Watt/mK

U Transmittance	40	50	60	80	100	120	150	170	180	200	220	240
W/sq.m. K	0.89	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19	0.17	0.16
Kcal/sq.m. h °C	0.76	0.62	0.52	0.40	0.32	0.17	0.22	0.19	0.18	0.16	0.14	0.13

λ = 0.041 Watt/mK

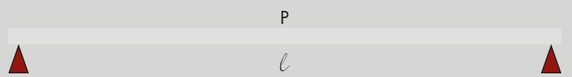
U Transmittance	40	50	60	80	100	120	150	170	180	200	220	240
W/sq.m. K	0.93	0.76	0.64	0.49	0.39	0.33	0.27	0.24	0.22	0.20	0.18	0.17
Kcal/sq.m. h °C	0.80	0.65	0.55	0.42	0.33	0.28	0.23	0.20	0.19	0.17	0.15	0.14

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SINGLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	167	115	98	73	68						11.94
50	185	130	110	81	73						12.94
60	213	150	127	93	84	68					13.94
80	266	187	158	116	105	85	65				15.94
100	319	224	190	140	126	102	78	61			19.66
120	377	265	224	165	149	120	92	72	50		21.66
150	422	296	251	185	166	135	103	81	56	45	22.94
170	447	310	262	195	173	139	109	85	58	47	24.94
180	464	326	276	203	183	148	113	89	62	50	25.94
200	501	352	298	219	198	160	122	96	67	53	27.94
220	525	376	322	243	223	184	146	120	91	77	29.94
240	542	393	339	260	240	208	163	137	103	94	31.94

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	172	120	103	78	73						11.94
50	190	135	115	86	78						12.94
60	219	155	132	99	90	73					13.94
80	273	194	165	124	112	91	70				15.94
100	328	233	198	148	135	110	84	66			19.66
120	387	275	234	175	159	129	99	78	55		21.66
150	433	308	262	196	178	145	111	87	62	50	22.94
170	457	315	272	206	187	149	118	89	65	52	24.94
180	476	339	288	216	196	159	122	96	68	55	25.94
200	515	366	311	233	211	172	132	104	73	59	27.94
220	539	390	335	257	235	196	156	128	97	83	29.94
240	556	407	352	274	252	213	173	145	114	100	31.94

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

MULTIPLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	177	125	108	84	78						11.94
50	195	140	120	92	83						12.94
60	224	161	138	106	95	78					13.94
80	280	201	173	132	119	98	75				15.94
100	336	242	207	159	143	117	90	71			19.66
120	397	285	244	187	169	138	106	84	59		21.66
150	445	319	274	210	189	155	119	94	66	55	22.94
170	468	325	285	224	195	163	125	97	69	58	24.94
180	489	351	301	231	208	170	131	103	73	61	25.94
200	528	379	325	249	225	184	141	111	79	65	27.94
220	552	403	349	273	247	203	166	135	103	89	29.94
240	589	420	366	290	266	225	183	152	120	106	31.94

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPARFIRE® ELEGANT SOUND

SOUNDPROOFING, SOUND-ABSORBING MINERAL FIBRE WALLS PANELS, WITH HIDDEN FASTENERS

ISOPARFIRE® ELEGANT SOUND is a sandwich panel used on walls that need to be fireproof, look good and have good acoustic standards in terms of sound absorption and soundproofing. Its fire resistance class is A2-s1,d0, as its insulating material is mineral fibre; in addition, it stands out for its hidden fasteners so that the panels on the walls look seamlessly applied; finally, acoustic comfort and soundproofing are provided by the micro-holes on the inner backing, which is available in pre-painted galvanised steel, stainless steel or pre-painted natural aluminium, in a standard thickness of 0.5 mm. Double plates are optionally available in other thicknesses as well.

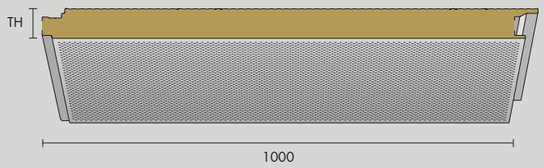
Density of insulation
Density: 100 Kg/m³ ±10%.
Other densities optionally available.

Sound-absorption
Thickness mm 50: AW = 0.90
Thickness mm 80: AW = 0.95
Thickness mm 100: AW = 0.95

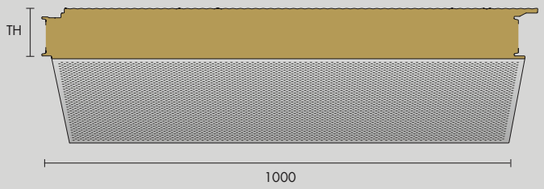
Soundproofing
Thickness mm 50: RW = 31 dB
Thickness mm 80: RW = 34 dB
Thickness mm 100: RW = 35 dB

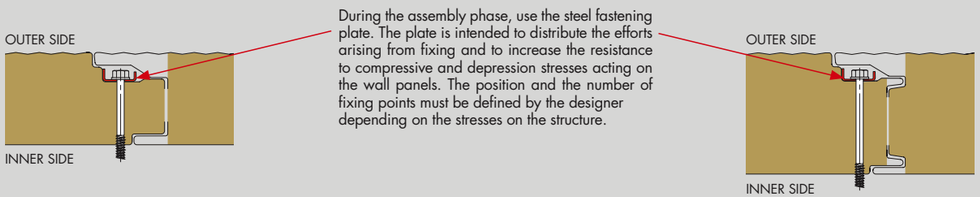
Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.

THICKNESS 40 MM



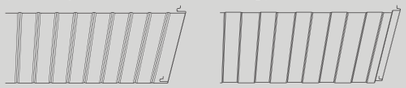
THICKNESS FROM 50 TO 240 MM





Micro-veining of the LOWER SIDE of the panel (to be specified when ordering)

Micro-veining of the UPPER SIDE of the panel (to be specified when ordering)



λ = 0.039 Watt/mK

U Transmittance	40	50	60	80	100	120	150	170	180	200	220	240
W/sq.m. K	0.89	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19	0.17	0.16
Kcal/sq.m. h °C	0.76	0.62	0.52	0.40	0.32	0.17	0.22	0.19	0.18	0.16	0.14	0.13

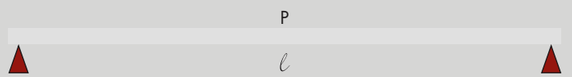
λ = 0.041 Watt/mK

U Transmittance	40	50	60	80	100	120	150	170	180	200	220	240
W/sq.m. K	0.93	0.76	0.64	0.49	0.39	0.33	0.27	0.24	0.22	0.20	0.18	0.17
Kcal/sq.m. h °C	0.80	0.65	0.55	0.42	0.33	0.28	0.23	0.20	0.19	0.17	0.15	0.14

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

SINGLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	147	95	88	68							11.44
50	165	110	100	76	68						12.44
60	190	127	115	87	78	63					13.44
80	237	158	144	109	98	79	60				15.44
100	285	190	173	131	117	95	72	56			19.16
120	336	224	204	155	138	112	85	66	45		21.16
150	376	251	228	173	155	125	95	74	50	40	22.44
170	389	259	236	178	161	128	99	78	53	42	24.44
180	414	276	251	191	171	137	105	81	55	44	25.44
200	447	298	271	206	184	148	113	88	60	48	27.44
220	471	322	295	230	208	172	137	112	84	72	29.44
240	488	339	312	247	225	189	154	129	101	88	31.44
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width: 120 mm

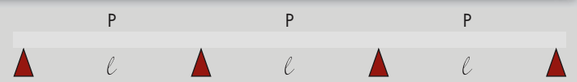
DOUBLE SPAN

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	152	100	93	69							11.44
50	170	115	105	77	70						12.44
60	196	132	121	89	81	65					13.44
80	244	165	151	111	101	81	62				15.44
100	293	198	181	133	121	98	74	58			19.16
120	346	234	214	157	142	115	88	68	47		21.16
150	388	262	239	176	160	129	98	77	53	42	22.44
170	400	271	247	181	165	133	104	81	55	44	24.44
180	426	288	263	193	176	142	108	84	58	46	25.44
200	460	311	284	209	190	153	117	91	63	50	27.44
220	484	335	303	233	214	177	141	115	87	74	29.44
240	501	352	325	250	231	194	158	132	104	91	31.44
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width: 120 mm

MULTIPLE SPAN



EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0,5 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	157	105	98	73							11.44
50	175	120	110	81	73						12.44
60	201	138	127	93	84	68					13.44
80	252	173	158	116	105	85	64				15.44
100	302	207	190	140	126	102	77	60			19.16
120	356	244	224	165	149	120	91	71	50		21.16
150	399	274	251	185	166	135	101	79	56	45	22.44
170	463	333	284	219	198	155	120	90	68	55	24.44
180	439	301	276	203	183	148	112	87	62	50	25.44
200	474	325	298	219	198	160	121	94	67	53	27.44
220	498	349	322	243	222	184	145	118	91	77	29.44
240	515	366	339	260	231	201	162	135	108	94	31.44
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

Effective span width: 120 mm

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

TYPICAL WEIGHT OF SANDWICH PANELS:
FIBREGLASS: 55 KG/M^3
STONE WOOL: 100 KG/M^3
MINERAL INSULATION SANDWICH PANELS ARE UP TO 30%
LIGHTER THAN STONE WOOL PANELS

CHAPTER 4
FIBREGLASS SANDWICH PANELS

FIBREGLASS ENSURES UTMOST LEVELS OF COMFORT AND WELLNESS INSIDE THE BUILDING.
PERFORMING, CERTIFIED AND INTEGRATED IN THE INSULATION SYSTEMS, THE MATERIALS PRODUCED WITH ROCK WOOL ENSURE OPTIMAL LIVING COMFORT AS THEY EFFECTIVELY INSULATE THERMICALLY AND ACOUSTICALLY, ENSURING OPTIMAL AIR QUALITY. THE FIBREGLASS USES A NEWLY CONCEIVED RESIN THAT COMBINES ORGANIC AND VEGETABLE COMPONENTS TO FURTHER REDUCE THE EMISSIONS OF FORMALDEHYDE AND VOC (ORGANIC VOLATILE COMPOUNDS), RESPECTING THE STRICTEST LIMITS SET FORTH BY EUROPEAN STANDARDS.

THE STRUCTURE OF THE FIBREGLASS INSULATOR ENSURES HIGH BREATHABILITY TO THE PRODUCT: THIS WAY, NO CONDENSATION IS CREATED INSIDE THE WALLS WITH CONSEQUENT RISK OF MOULD FORMATION. MOREOVER, THE FIBERGLASS, SINCE IT IS TREATED WITH SPECIAL THERMO-HARDENING RESIN BINDING AGENTS, IS HIGHLY WATER-REPELLENT AND WATER-RESISTANT, SUCH TO PASS THE DURABILITY TEST DUR2 SET FORTH BY UNI EN 14509:2007 STANDARD.

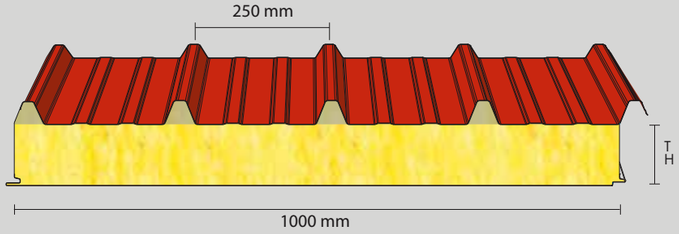
EUROFIRE® GLASS 2

ROOF PANELS WITH MINERAL FIBREGLASS INSULATION

In a nutshell: revolutionary. The reliability and experience of Lattonedil led to the creation of a feather-light, safe, fire-resistant panel under class A2-s1,d0. EUROFIRE® GLASS 2 is the roof panel made with an insulating layer of medium-density mineral fibreglass insulation, its fibres are placed at angles with the plane of the two backings are available galvanised steel, or, optionally, in stainless steel, copper or pre-painted natural aluminium, with a standard thickness of 0.5 mm each.

Density of insulation
Density: 55 Kg/m³ ±10%.
Other densities optionally available.
Thermal conductivity up to λ = 0.039 Watt/mK

Note: manufacturing-wise it is impossible to fill the lower lip. This is due to the characteristics of the type of insulation.



A2-s1,d0

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	243	189	135	95							**12.68**
60	279	225	153	113	72						**13.23**
80	315	261	198	149	113	81					**13.78**
100	351	297	234	185	144	113	72				**14.33**
120	387	333	270	221	167	126	99	77			**14.88**
150	423	369	306	257	230	171	135	108	72		**15.43**
170	459	405	342	293	253	191	155	128	92		**16.73**
180	495	449	378	329	276	211	175	148	112		**17.28**
200	531	477	414	365	312	231	195	168	132		**18.38**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

λ = 0.039 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200
W/sq.m. K	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19
Kcal/sq.m. h °C	0.62	0.52	0.40	0.32	0.27	0.22	0.19	0.18	0.16

Available profiles
(please state when ordering)

Scored Staved

EUROFIRE® GLASS SOUND 2

SOUNDPROOFING, SOUND-ABSORBING ROOF PANEL WITH MINERAL FIBREGLASS INSULATION

With the advancement of technology and the launch of ever-new building materials, needs change and take new directions, with buildings that need feather-light, insulating, fire-resistant roof panels that deliver high living comfort in terms of air quality and noise; then, the answer is EUROFIRE® GLASS SOUND 2. Fireproof fibreglass (fire resistance class A2-s1,d0), which, despite being so light, is extremely resistant to thermal gradients and is coupled with a micro-holed plate that is available in galvanised steel or stainless steel, or pre-painted aluminium, which increases soundproofing and sound absorption levels.

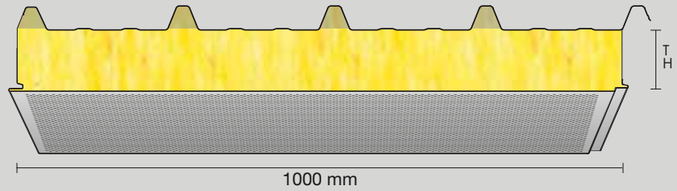
Note: manufacturing-wise it is impossible to fill the lower lip. This is due to the characteristics of the type of insulation.

Density of insulation
Density: 55 Kg/m³ ±10%.
Other densities optionally available.
Thermal conductivity up to λ = 0.039 Watt/mK

Sound absorption
Thickness mm 50: AW = 0.90
Thickness mm 80: AW = 0.95
Thickness mm 100: AW = 0.95

Soundproofing
Thickness mm 50: Rw = 31 dB
Thickness mm 80: Rw = 34 dB
Thickness mm 100: Rw = 35 dB

B ROOF (T2)



A2-s1,d0

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	225	153	99	54							**11.99**
60	261	171	117	72							**12.54**
80	297	225	153	99	72						**13.09**
100	315	261	189	135	90	72					**13.64**
120	360	297	225	171	126	90	72				**14.19**
150	378	310	238	180	135	94	76	54			**14.74**
170	393	375	251	183	144	98	90	53			**16.04**
180	408	340	264	198	153	102	94	62			**16.59**
200	423	355	277	207	161	108	98	66			**17.63**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

λ = 0.039 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200
W/sq.m. K	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19
Kcal/sq.m. h °C	0.62	0.52	0.40	0.32	0.27	0.22	0.19	0.18	0.16

Available profiles
(please state when ordering)

Scored Staved Smooth

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPARFIRE® GLASS 2

WALL PANELS WITH MINERAL FIBREGLASS INSULATION

Fibreglass as a thermal insulation material may also be applied to walls. Fire resistant ISOPARFIRE® GLASS 2, class A2-s1,d0 is the lightest sandwich panel in its class, coated with 2 plate backings, optionally available in pre-painted or plastic-coated galvanised steel, embossed or pre-painted natural aluminium or stainless steel.

Density of insulation
Density: 55 Kg/m³ ±10%.
Other densities optionally available.
Thermal conductivity up to λ = 0.039 Watt/mK

Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.

A2-s1,d0

Available profiles (please state when ordering)

Scored Staved Smooth

λ = 0.039 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200	240
W/sq.m. K	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19	0.16
Kcal/sq.m. h °C	0.62	0.52	0.40	0.32	0.27	0.22	0.19	0.18	0.16	0.13

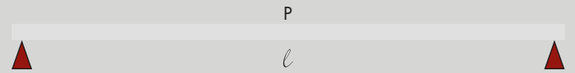
MILANO laTTonedil
INSULATES AND PROTECTS OVER TIME

ON REQUEST 30 year GUARANTEE

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

SINGLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	166	117	99	73	66						**11.58**
60	191	135	114	84	76	61					**12.13**
80	239	168	142	105	95	76	59				**12.68**
100	286	202	171	126	114	92	71	55			**13.23**
120	338	238	202	149	134	108	84	65	45		**13.78**
150	378	267	226	166	150	121	94	73	50	40	**14.33**
170	408	292	250	183	165	134	104	81	55	43	**15.43**
180	438	317	274	200	182	147	114	89	60	46	**15.98**
200	468	342	298	217	198	150	124	97	65	49	**17.08**
240	498	344	322	234	214	173	134	105	70	52	**19.28**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

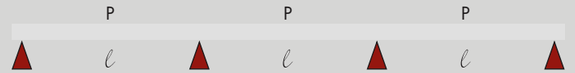
EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	171	122	104	77	70						**11.58**
60	197	140	120	89	81	66					**12.13**
80	246	175	150	111	101	83	62				**12.68**
100	295	210	179	133	121	99	74	59			**13.23**
120	348	248	212	157	142	117	88	70	49		**13.78**
150	390	278	237	176	160	131	98	78	55	45	**14.33**
170	430	313	267	195	179	146	109	85	60	45	**15.43**
180	470	348	297	216	198	161	120	92	65	53	**15.98**
200	510	383	327	236	217	176	131	99	70	57	**17.08**
240	550	418	357	256	236	191	142	105	75	61	**19.28**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

MULTIPLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	176	126	108	83	75						**11.58**
60	202	145	124	95	86	70					**12.13**
80	253	181	155	119	108	88	68				**12.68**
100	304	217	186	143	129	105	82	64			**13.23**
120	358	256	220	169	153	124	96	76	53		**13.78**
150	401	287	246	189	171	139	108	85	59	49	**14.33**
170	431	312	266	207	185	150	118	93	64	52	**15.43**
180	461	337	286	225	201	161	128	101	69	55	**15.98**
200	491	362	306	243	216	172	138	109	74	58	**17.08**
240	521	387	326	261	231	183	148	117	79	61	**19.28**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPARFIRE® GLASS SOUND 2

SOUNDPROOFING, SOUND-ABSORBING WALL PANELS WITH MINERAL FIBREGLASS INSULATION

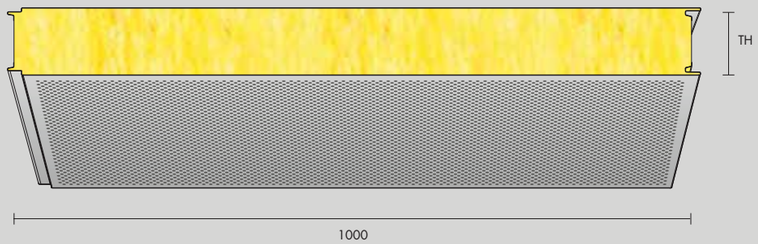
Fire-resistant ISOPARFIRE® GLASS SOUND 2, a class A2-s1,d0 material, is the lightest sandwich panel in the Lattonedil's range of products, coated with 2 plate backings, optionally available in pre-painted or plastic-coated galvanised steel, embossed or pre-painted natural aluminium or stainless steel, where the micro-holes on the inner backing improve its soundproofing and sound absorbing performance.

Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.

Density of insulation
Density: 55 Kg/m³ ±10%.
Other densities optionally available.
Thermal conductivity up to λ = 0.039 Watt/mK

Sound absorption
Thickness mm 50: AW = 0.90
Thickness mm 80: AW = 0.95
Thickness mm 100: AW = 0.95

Soundproofing
Thickness mm 50: Rw = 30 dB
Thickness mm 80: Rw = 33 dB
Thickness mm 100: Rw = 34 dB



A2-s1,d0

Available profiles (please state when ordering)

λ = 0.039 Watt/mK

U Transmittance	50	60	80	100	120	150	170	180	200	240
W/sq.m. K	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19	0.16
Kcal/sq.m. h °C	0.62	0.52	0.40	0.32	0.27	0.22	0.19	0.18	0.16	0.13

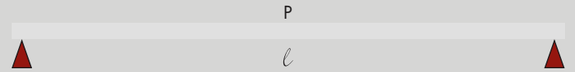
MILANO laTTonedil
INSULATES AND PROTECTS OVER TIME

ON REQUEST 30 year GUARANTEE

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

SINGLE SPAN



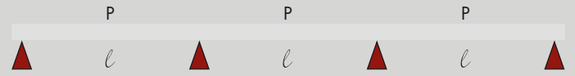
SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	149	99	90	68	61						**10.69**
60	171	114	104	78	70	57					**11.24**
80	214	142	129	98	88	71	54				**11.79**
100	257	171	155	117	105	86	65	50			**12.44**
120	303	202	183	138	124	101	76	59	41		**12.89**
150	340	226	205	155	139	113	86	66	46	36	**13.44**
170	375	251	228	172	155	125	96	73	51	40	**14.74**
180	412	276	251	183	171	137	106	80	56	44	**15.29**
200	449	301	274	206	187	149	116	87	61	48	**16.39**
240	484	325	297	223	203	161	126	94	66	52	**18.59**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

DOUBLE SPAN

EXTERNAL facing:
Steel 0,5 mm
INTERNAL facing:
Steel 0,6 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	153	104	95	69	63						**10.69**
60	176	120	109	79	72	59					**11.24**
80	220	150	137	99	91	74	56				**11.79**
100	264	179	164	119	109	89	67	52			**12.44**
120	311	212	193	140	128	104	79	61	42		**12.89**
150	349	237	217	157	144	117	89	69	47	38	**13.44**
170	385	262	240	174	160	129	99	76	52	42	**14.74**
180	421	287	263	191	176	141	109	83	57	46	**15.29**
200	457	312	285	208	192	153	119	90	62	50	**16.39**
240	493	337	309	225	208	165	129	97	67	54	**18.59**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

MULTIPLE SPAN



EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
50	158	108	99	73	67						**10.69**
60	182	124	114	84	77	61					**11.24**
80	227	155	142	105	96	76	58				**11.79**
100	273	186	171	126	116	92	70	54			**12.44**
120	322	220	202	149	136	108	82	64	45		**12.89**
150	360	246	226	166	153	121	92	71	50	40	**13.44**
170	366	271	249	183	169	133	102	78	55	44	**14.74**
180	432	296	272	200	185	145	112	85	60	48	**15.29**
200	458	321	295	217	201	157	122	92	65	52	**16.39**
240	504	346	318	234	217	169	132	99	70	56	**18.59**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPARFIRE® GLASS ELEGANT 2

WALL PANELS WITH MINERAL FIBREGLASS INSULATION AND HIDDEN FASTENERS

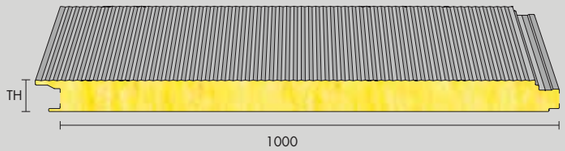
When aesthetics confer value to the building, ISOPARFIRE® GLASS ELEGANT 2 comes into play: the lightest sandwich panel of the category, with fire performance falling under class A2-s1,d0. It features, in order to ensure visual continuity and exalt aesthetic impact.
The two sheet supports can be either in pre-painted or plasticised galvanised steel, embossed natural or pre-painted aluminium or stainless steel.

Density of insulation
Density: 55 Kg/m³ ±10%.
Other densities optionally available.
Thermal conductivity up to λ = 0.039 Watt/mK

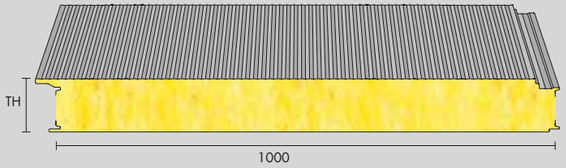
Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.

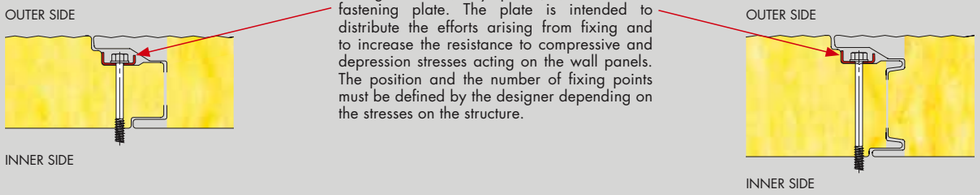
A2-s1,d0

THICKNESS 40 MM



THICKNESS FROM 50 TO 240 MM





Profiles available on the internal side
(to specify when placing the order)

Profiles available on the external side
(to specify when placing the order)

λ = 0.039 Watt/mK

U Transmittance	40	50	60	80	100	120	150	170	180	200	240
W/sq.m. K	0.89	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19	0.16
Kcal/sq.m. h °C	0.76	0.62	0.52	0.40	0.32	0.27	0.22	0.19	0.18	0.16	0.13

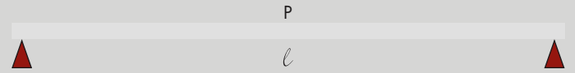
MILANO laTTonedil
INSULATES AND PROTECTS OVER TIME

ON REQUEST 30 year GUARANTEE

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

SINGLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	148	102	87	65	64						**10.90**
50	166	117	99	73	66						**11.38**
60	191	135	114	84	76	61					**11.93**
80	239	168	142	105	95	76	59				**12.48**
100	286	202	171	126	114	92	71	55			**13.03**
120	338	238	202	149	134	108	84	65	45		**13.58**
150	378	267	226	166	150	121	94	73	50	40	**14.13**
170	418	296	250	184	167	135	105	81	55	44	**15.43**
180	458	325	274	202	184	149	115	89	60	48	**15.98**
200	498	354	298	220	201	153	127	97	65	52	**17.08**
240	578	383	322	238	218	177	138	105	70	56	**19.28**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

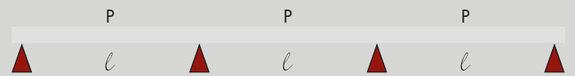
EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	153	107	92	69	65						**10.90**
50	171	122	104	77	70						**11.38**
60	197	140	120	89	81	66					**11.93**
80	246	175	150	111	101	83	62				**12.48**
100	295	210	179	133	121	99	74	59			**13.03**
120	348	248	212	157	142	117	88	70	49		**13.58**
150	390	278	237	176	160	131	98	78	55	45	**14.13**
170	430	307	261	104	177	145	109	86	60	49	**15.43**
180	470	336	285	212	194	159	120	94	65	53	**15.98**
200	510	365	309	230	211	173	131	102	70	57	**17.08**
240	550	394	333	248	228	187	142	110	75	61	**19.28**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

MULTIPLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	158	111	96	75	67						**10.90**
50	176	126	108	83	75						**11.38**
60	202	145	124	95	86	70					**11.93**
80	253	181	155	119	108	88	68				**12.48**
100	304	217	186	143	129	105	82	64			**13.03**
120	358	256	220	169	153	124	96	76	53		**13.58**
150	401	287	246	189	171	139	108	85	59	49	**14.13**
170	441	316	270	207	188	153	115	93	64	53	**15.43**
180	491	345	294	225	205	167	130	101	69	57	**15.98**
200	521	374	318	243	222	181	141	109	74	61	**17.08**
240	551	403	342	251	239	195	152	117	79	65	**19.28**
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ										

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOPARFIRE® GLASS ELEGANT SOUND 2

SOUNDPROOFING, SOUND-ABSORBING WALL PANELS WITH MINERAL FIBREGLASS INSULATION AND HIDDEN FASTENERS

ISOPARFIRE® GLASS ELEGANT SOUND is a full sandwich wall panel, with lots of special properties that is worth considering if you are looking for:
- excellent fire response (fire resistance, class A2-s1,d0)
- light-weight material and construction (due to wool fibreglass)
- excellent acoustic performance (due to a micro-holed inner backing that enhances its soundproofing and sound absorption levels)
- perfect aesthetic effect (hidden fasteners give it an even appearance).

Metal backings are optionally available in pre-painted or plastic-coated galvanised steel, embossed or pre-painted natural aluminium or stainless steel.

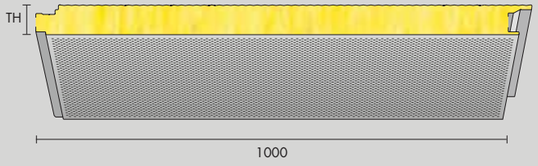
Density of insulation
Density: 55 Kg/m³ ±10%.
Other densities optionally available.
Thermal conductivity up to λ = 0.039 Watt/mK

Sound absorption
Thickness mm 50: AW = 0.90
Thickness mm 80: AW = 0.95
Thickness mm 100: AW = 0.95

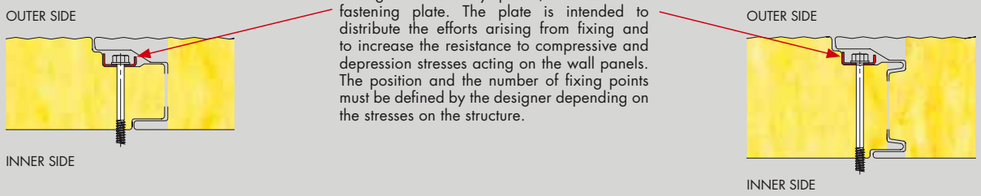
Soundproofing
Thickness mm 50: Rw = 30 dB
Thickness mm 80: Rw = 33 dB
Thickness mm 100: Rw = 34 dB

Note: manufacturing-wise it is impossible to fill the lip of the joint. This is due to the characteristics of the type of insulation.

THICKNESS 40 MM



THICKNESS FROM 50 TO 240 MM



Profiles available on the internal side (to specify when placing the order)

Profiles available on the external side (to specify when placing the order)

λ = 0.039 Watt/mK

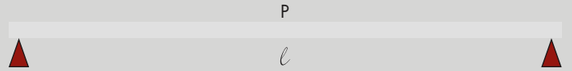
U Transmittance	40	50	60	80	100	120	150	170	180	200	240
W/sq.m. K	0.89	0.72	0.61	0.47	0.38	0.32	0.25	0.23	0.21	0.19	0.16
Kcal/sq.m. h °C	0.76	0.62	0.52	0.40	0.32	0.27	0.22	0.19	0.18	0.16	0.13

ON REQUEST 30 year GUARANTEE

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

SINGLE SPAN



SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	131	84	78	60							**10.14**
50	149	99	90	68	61						**10.69**
60	171	114	104	78	70	57					**11.24**
80	214	142	129	98	88	71	54				**11.79**
100	257	171	155	117	105	86	65	50			**12.34**
120	303	202	183	138	124	101	76	59	41		**12.89**
150	340	226	205	155	139	113	86	66	46	36	**13.44**
170	377	250	228	172	154	125	96	73	51	40	**14.74**
180	414	274	251	189	169	137	106	80	56	44	**15.29**
200	451	298	274	206	184	149	116	87	61	48	**16.39**
240	488	322	297	223	199	161	126	94	66	52	**18.59**

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

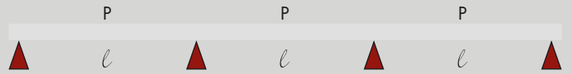
DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	135	89	82	59							**10.14**
50	153	104	95	69	63						**10.69**
60	176	120	109	79	72	59					**11.24**
80	220	150	137	99	91	74	56				**11.79**
100	264	179	164	119	109	89	67	52			**12.34**
120	311	212	193	140	128	104	79	61	42		**12.89**
150	349	237	217	157	144	117	89	69	47	38	**13.44**
170	385	251	240	174	159	129	99	76	52	42	**14.74**
180	423	285	263	191	174	141	109	83	57	46	**15.29**
200	450	309	286	208	189	153	119	90	62	50	**16.39**
240	497	333	309	225	204	165	129	97	67	54	**18.59**

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.6 mm

MULTIPLE SPAN



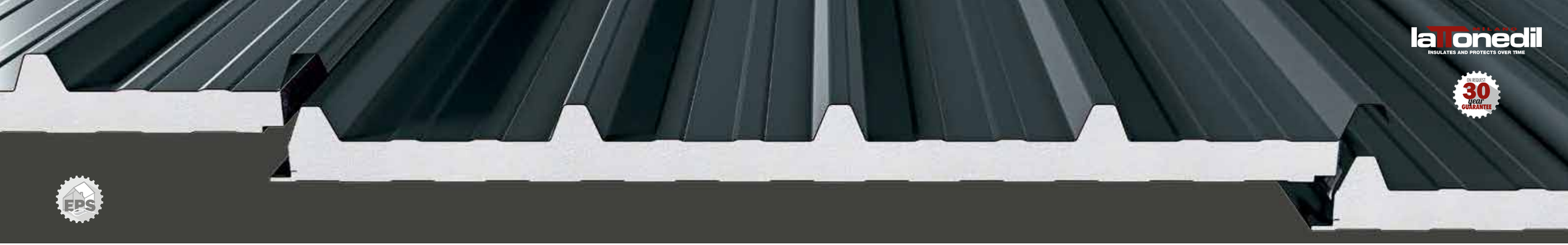
SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	WEIGHT (Kg/sq.m.)
40	140	93	87	65							**10.14**
50	158	108	99	73	67						**10.69**
60	182	124	114	84	77	61					**11.24**
80	227	155	142	105	96	76	58				**11.79**
100	273	186	171	126	116	92	70	54			**12.34**
120	322	220	202	149	136	108	82	64	45		**12.89**
150	360	246	226	166	153	121	92	71	50	40	**13.44**
170	397	270	249	183	168	133	102	78	55	44	**14.74**
180	434	294	272	200	183	145	112	85	60	48	**15.29**
200	471	318	295	217	198	157	122	92	65	52	**16.39**
240	559	342	318	234	213	169	132	99	70	56	**18.59**

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

GREAT INSULATION WITH MINIMUM WEIGHT

CHAPTER 5
POLYSTYRENE SANDWICH PANELS



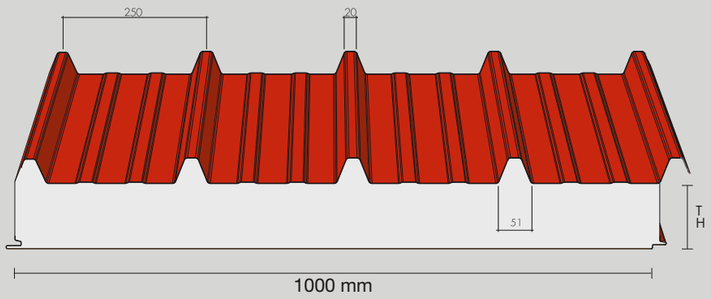
EUROCINQUE EPS®

POLYSTYRENE ROOF PANELS

EUROCINQUEEPS® is a feather-light roof panel in sintered polystyrene foam or closed-cell EPS (chips), designed to offer one of the best thermal insulation ever among all insulating materials; it is coated with two backings in pre-painted galvanised steel or, optionally, in stainless steel or pre-painted natural aluminium, with a standard thickness of 0.5 mm each. The double sheet is optionally available with a different thickness.

Note: manufacturing-wise it is impossible to fill the lower lip. This is due to the characteristics of the type of insulation.

Panel size:
Workable width: mm 1000
Thickness: 50, 60, 80, 100, 120, 150 mm



B ROOF (T3)

Available profiles (please state when ordering)

Scored

Staved

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

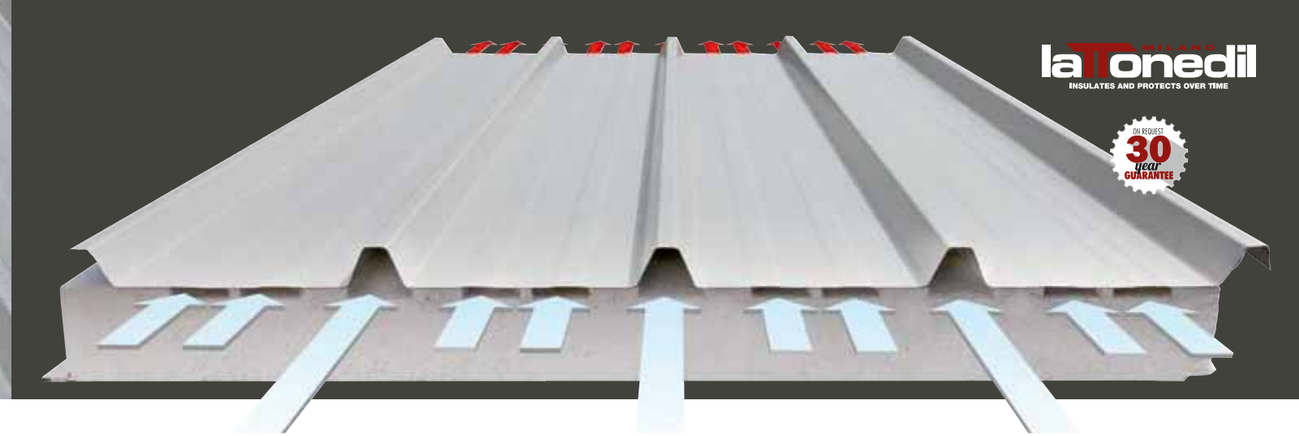
Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	WEIGHT (Kg/sq.m.)
50	320	240	230	200	**10.20**
60	325	270	240	205	**10.50**
80	380	330	265	220	**11.00**
100	410	335	290	215	**11.50**
120	440	360	305	250	**12.00**
150	470	390	330	270	**12.70**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ				

U Transmittance	EPS Traditional					
	50	**60**	**80**	**100**	**120**	**150**
W/sq.m. K	0.64	0.54	0.41	0.33	0.28	0.22
Kcal/sq.m. h °C	0.55	0.46	0.35	0.28	0.24	0.19

U Transmittance	EPS Black					
	50	**60**	**80**	**100**	**120**	**150**
W/sq.m. K	0.62	0.51	0.38	0.31	0.26	0.20
Kcal/sq.m. h °C	0.53	0.44	0.32	0.26	0.22	0.17

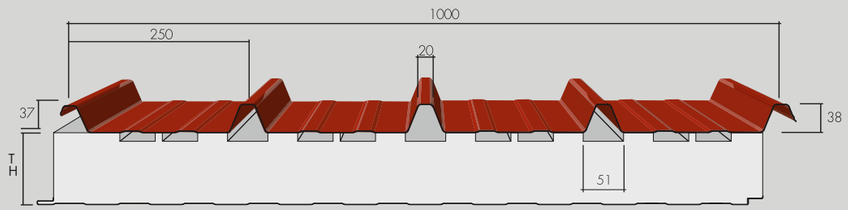
OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.



AIRPANEL®

POLYSTYRENE VENTILATED PANEL

What drives innovation and research in new products, except a feel for external challenges and needs? That's how the experience of Lattonedil® has created AIRPANEL®, the insulating panel in self-extinguishing sintered polystyrene foam that offers proper and steady airflow ventilation.
With AIRPANEL®, you can very easily and cost-effectively create make your own ventilated roof, providing your building with proper insulation and airflows, especially in the summer.
Note: manufacturing-wise it is impossible to fill the lower lip. This is due to the characteristics of the type of insulation.



B ROOF (T3)

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	1.5	2	2.5	3	WEIGHT (Kg/sq.m.)
50	320	240	230	200	**10.20**
60	325	270	240	205	**10.50**
80	380	330	265	220	**11.00**
100	410	335	290	215	**11.50**
120	440	360	305	250	**12.00**
150	470	390	330	270	**12.70**
	Static sizing calculation performed in accordance with Annex E of the UNI EN 14509 standard. Normal deflection limit: 1/200 ℓ				

U Transmittance	EPS Traditional					
	50	**60**	**80**	**100**	**120**	**150**
W/sq.m. K	0.64	0.54	0.41	0.33	0.28	0.22
Kcal/sq.m. h °C	0.55	0.46	0.35	0.28	0.24	0.19

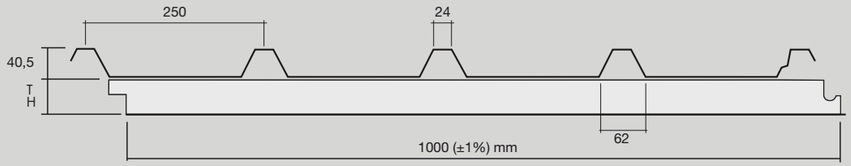
U Transmittance	EPS Black					
	50	**60**	**80**	**100**	**120**	**150**
W/sq.m. K	0.62	0.51	0.38	0.31	0.26	0.20
Kcal/sq.m. h °C	0.53	0.44	0.32	0.26	0.22	0.17

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

ISOCURVO® VARIABILE

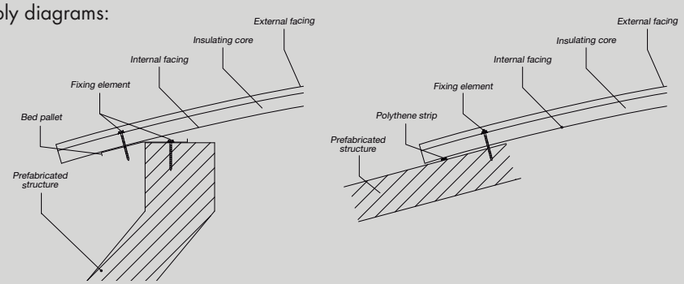
SINTERED POLYSTYRENE EPS

ISOCURVO® Variabile is an insulated sandwich panel in sintered polystyrene foam (EPS). ISOCURVO® Variabile is one of a kind: the radius is variable and, unlike the other panels, ISOCURVO® Variabile has a minimum radius of 3.3 metres.
ISOCURVO® variabile is made by coupling the inner and outer backings, in pre-painted plate, natural aluminium, pre-painted aluminium and aluzinc® in varying thickness, with a layer of insulating EPS press-glued in between.
With its wide range of materials and thicknesses, this product may be customised to suit any requirement.
Maximum panel length: 6000 mm overlap included.



B ROOF (T3)

Assembly diagrams:



STATIC CHARACTERISTICS ISOCURVO® VARIABILE
3.30 m radius of curvature

TYPE - Aluzinc® 5/10 - Prepainted sheet (Kg/sq.m.)

L Free span (cm)	Thickness (mm) 40	60	80	100	120
200	220	240	260	265	270
250	180	200	230	240	250
300	160	180	200	200	215
350	100	120	150	160	170
400	70	90	120	140	150
	Uniformly distributed load Kg/sq.m.				

TYPE - Aluzinc® 7/10 - Prepainted sheet (Kg/sq.m.)

L Free span (cm)	Thickness (mm) 40	60	80	100	120
200	210	230	240	245	250
250	180	200	210	215	220
300	160	180	190	190	200
350	110	130	150	160	170
400	80	100	105	110	120
	Uniformly distributed load Kg/sq.m.				

STATIC CHARACTERISTICS ISOCURVO® VARIABILE
6.00 m radius of curvature

TYPE - Aluzinc® 5/10 - Prepainted sheet (Kg/sq.m.)

L Free span (cm)	Thickness (mm) 40	60	80	100	120
300	140	160	190	190	200
350	80	100	160	160	170
400	65	85	120	130	140
450	40	60	80	90	110
	Uniformly distributed load Kg/sq.m.				

TYPE - Aluminium 7/10 (Kg/sq.m.)

L Free span (cm)	Thickness (mm) 40	60	80	100	120
200	130	150	170	180	190
350	100	120	140	150	160
400	70	90	100	120	130
450	45	65	80	90	100
	Uniformly distributed load Kg/sq.m.				

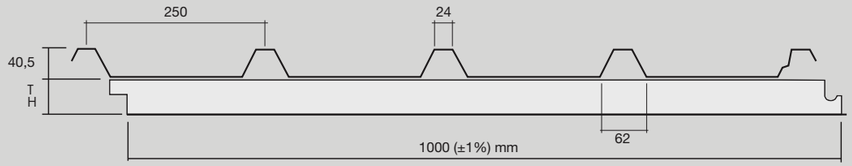
U Transmittance	EPS Traditional 40	60	80	100	120
W/sq.m. K	0.69	0.49	0.37	0.29	0.26
Kcal/sq.m. h °C	0.59	0.42	0.31	0.25	0.22

U Transmittance	EPS Black 40	60	80	100	120
W/sq.m. K	0.63	0.45	0.34	0.27	0.23
Kcal/sq.m. h °C	0.54	0.38	0.29	0.23	0.19

ISOCURVO® VARIABILE MONOLAMIERA

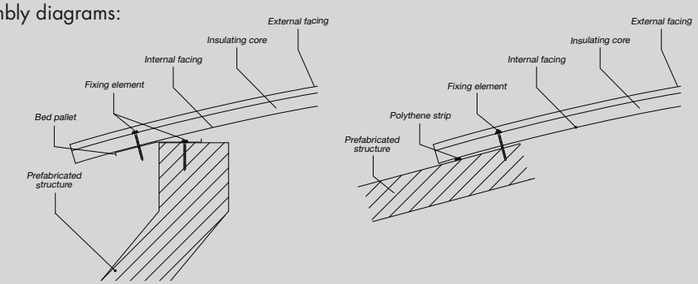
SINTERED POLYSTYRENE EPS

ISOCURVO® Variabile Monolamiera is an extremely light and very practical insulated panel in sintered polystyrene foam (EPS): the radius is variable, starting from a minimum of 3.3 metres.
ISOCURVO® Variabile Monolamiera is made by coupling the inner and outer backings, in pre-painted plate, natural aluminium, pre-painted aluminium and aluzinc® in varying thickness, to a layer of insulating EPS press-glued in between.
With its wide range of materials and thicknesses, this product may be customised to suit any roof that needs no exposed inner finish.
Maximum panel length: 6000 mm overlap included.



B ROOF (T3)

Assembly diagrams:



STATIC CHARACTERISTICS ISOCURVO® VARIABILE
3.30 m curvature radius

TYPE - Aluzinc® 5/10 - Prepainted sheet (Kg/sq.m.)

L Free span (cm)	Steel thickness (mm) 0.6	0.7	0.8
150	165	190	215
200	140	160	180
250	120	135	150
	Uniformly distributed load Kg/sq.m.		

TYPE - Aluminium (Kg/sq.m.)

L Free span (cm)	Aluminium thickness (mm) 0.6	0.7	0.8
150		155	165
200		130	140
250		110	120
	Uniformly distributed load Kg/sq.m.		

STATIC CHARACTERISTICS ISOCURVO® VARIABILE
6.00 m curvature radius

TYPE - Aluzinc® 5/10 - Prepainted sheet (Kg/sq.m.)

L Free span (cm)	Steel thickness (mm) 0.6	0.7	0.8
150	155	130	110
200	180	150	125
250	205	170	140
	Uniformly distributed load Kg/sq.m.		

TYPE - Aluminium (Kg/sq.m.)

L Free span (cm)	Steel thickness (mm) 0.6	0.7	0.8
150		145	155
200		120	130
250		100	110
	Uniformly distributed load Kg/sq.m.		

U Transmittance	EPS Traditional 40	60	80	100	120
W/sq.m. K	0.69	0.49	0.37	0.29	0.26
Kcal/sq.m. h °C	0.59	0.42	0.31	0.25	0.22

U Transmittance	EPS Black 40	60	80	100	120
W/sq.m. K	0.63	0.45	0.34	0.27	0.23
Kcal/sq.m. h °C	0.54	0.38	0.29	0.23	0.19

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

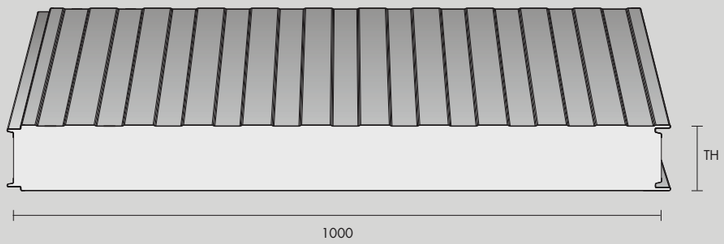
ISOPAREPS®

POLYSTYRENE WALL PANELS

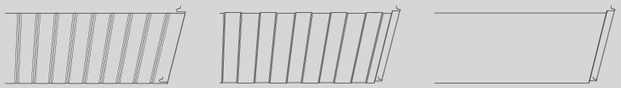
ISOPAREPS® is an extremely light wall panel which provides excellent thermal insulation as it is made of closed-cell sintered polystyrene foam EPS (chips); ISOPAREPS® is coated with two backings in pre-painted galvanised steel, or optionally in stainless steel or pre-painted natural aluminium, with a standard thickness of 0.5 mm each. The double plate is optionally available in different thicknesses.

Panel size:
Workable width: 1000 mm
Thickness: 50, 60, 80, 100, 120, 150 mm

Note: manufacturing-wise it is impossible to fill the lower lip. This is due to the characteristics of the type of insulation.



Available profiles (please state when ordering)

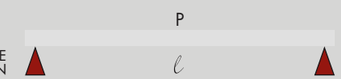


Scored Staved Smooth

Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm



SHEET METAL THICKNESS (mm)	100	120	150
50	270	245	220
60	295	270	240
80	340	310	280
100	380	350	310
120	420	380	340
150	470	430	380
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ		

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

Effective span width:
120 mm

SHEET METAL THICKNESS (mm)	100	120	150
50	330	300	260
60	360	330	300
80	415	380	350
100	465	430	390
120	510	470	430
150	570	525	480
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ		

SHEET METAL THICKNESS (mm)	100	120	150
50	330	300	260
60	360	330	300
80	415	380	350
100	465	430	390
120	510	470	430
150	570	525	480
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ		

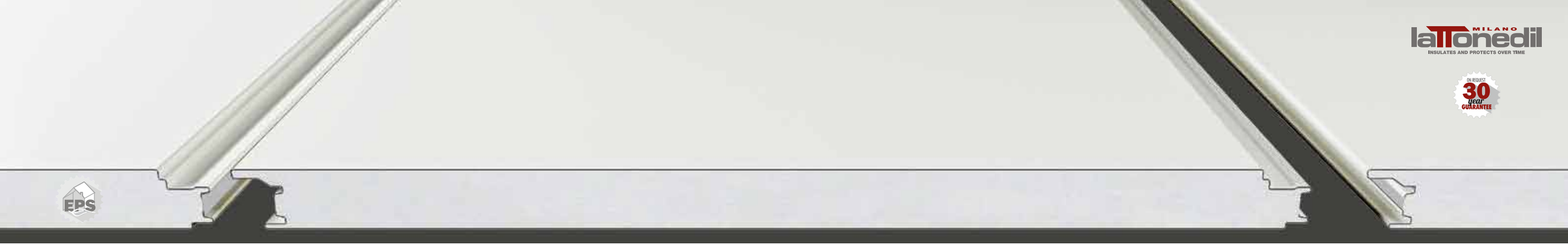
WEIGHT table

SHEET METAL THICKNESS (mm)	WEIGHT (kg/sq.m.)
50	9,60
60	9,90
80	10,40
100	10,90
120	11,40
150	12,10

U Transmittance	EPS Traditional					
	50	**60**	**80**	**100**	**120**	**150**
W/sq.m. K	0.64	0.54	0.41	0.33	0.28	0.22
Kcal/sq.m. h °C	0.55	0.46	0.35	0.28	0.24	0.19

U Transmittance	EPS Black					
	50	**60**	**80**	**100**	**120**	**150**
W/sq.m. K	0.62	0.51	0.38	0.31	0.26	0.20
Kcal/sq.m. h °C	0.53	0.44	0.32	0.26	0.22	0.17

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.



ISOPAREPS® ELEGANT

POLYSTYRENE WALL PANELS WITH HIDDEN FASTENERS

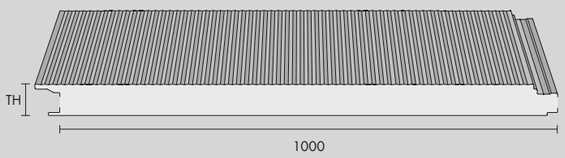
ISOPAREPS® ELEGANT is an extremely light wall panel which provides excellent thermal insulation as it is made of closed-cell sintered polystyrene foam EPS (chips); the outstanding feature of ISOPAREPS® ELEGANT is that it has hidden fasteners so the wall panels look seamlessly applied; it is coated with two backings in pre-painted galvanised steel, or, optionally, in stainless steel or pre-painted natural aluminium with a standard thickness of 0.5 mm each.

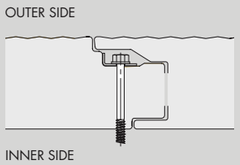
The double plate is optionally available in different thicknesses.

Panel size:
Workable width: mm 1000
Thickness: mm 40, 50, 60, 80, 100, 120, 150

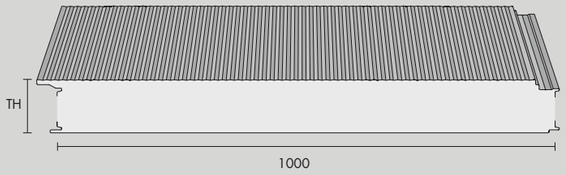
Note: manufacturing-wise it is impossible to fill the lower lip. This is due to the characteristics of the type of insulation.

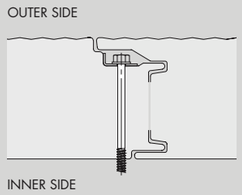
THICKNESS 40 MM



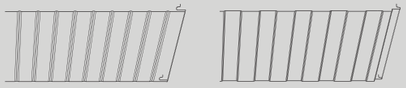


THICKNESS FROM 50 TO 150 MM

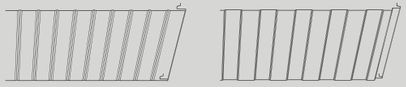




Micro-veining of the LOWER SIDE of the panel
(to be specified when ordering)

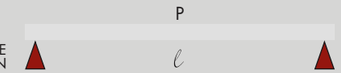


Micro-veining of the UPPER SIDE of the panel
(to be specified when ordering)



Static properties (kg/sq.m.)

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm



SHEET METAL THICKNESS (mm)	100	120	150
40	220	195	170
50	270	245	220
60	295	270	245
80	340	310	280
100	380	350	310
120	405	375	395
150	430	400	360

Effective span width: 120 mm

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

EXTERNAL facing:
Steel 0.5 mm
INTERNAL facing:
Steel 0.5 mm

SHEET METAL THICKNESS (mm)	100	120	150
40	280	250	210
50	330	300	260
60	355	325	285
80	415	385	350
100	465	430	390
120	490	455	415
150	515	480	440

Effective span width: 120 mm

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

SHEET METAL THICKNESS (mm)	100	120	150
40	280	250	210
50	330	300	260
60	355	325	285
80	415	385	350
100	465	430	390
120	490	455	415
150	515	480	440

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

WEIGHT table

SHEET METAL THICKNESS (mm)	WEIGHT (kg/sq.m.)
40	9.35
50	9.60
60	9.85
80	10.40
100	10.90
120	11.40
150	11.90

U Transmittance	EPS Traditional						
	40	**50**	**60**	**80**	**100**	**120**	**150**
W/sq.m. K	0.74	0.64	0.54	0.41	0.33	0.28	0.22
Kcal/sq.m. h °C	0.63	0.55	0.46	0.35	0.28	0.24	0.19

U Transmittance	EPS Black						
	40	**50**	**60**	**80**	**100**	**120**	**150**
W/sq.m. K	0.72	0.62	0.51	0.38	0.31	0.26	0.20
Kcal/sq.m. h °C	0.62	0.53	0.44	0.32	0.26	0.22	0.17

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

LIGHTWEIGHT, EASY TO CUT AND INSTALL
LATTONEDIL® RIBBED STEEL PANEL

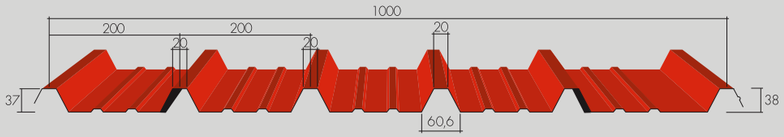
CHAPTER 6
RIBBED SHEETS

Ideal for pantiles installation.

LAMIERA ISOCOPRE®

ROOFS, FALSE CEILINGS AND ENCLOSURES

The main features of Lattonedil's fretted sheet may be summed up as follows: light weight, easy to cut and install, resistant and durable. Galvanised steel and aluminium, both pre-painted, make for practical and easy to manage roofs, which feature an excellent price/quality ratio. With such a wide range of hues and thicknesses, these fretted slabs can fulfil any designer's requirements. Ideal for roofs, false ceilings and enclosures, when the only requirements are water-, snow- and wind-proofing as well as hail resistance.
Lamiera Lattonedil is available in the usual forms: Lamiera ISOCOPRE® has 6 frets, for excellent static resistance.



A1

Static properties (kg/sq.m.)

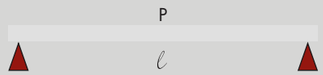
Material:
Prepainted zinc-plated steel

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	519	338	235	173	133	98	72				
0.6	625	400	278	205	155	117	85	64			
0.8	835	533	371	272	208	156	113	85	66	51	
1	1045	677	463	340	260	196	142	106	82	65	53

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

Effective span width: 120 mm

SINGLE SPAN



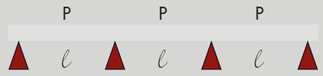
Material:
Prepainted zinc-plated steel

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	676	437	293	215	166	132	107	87	69	55	
0.6	781	500	347	255	195	154	125	102	82	65	49
0.8	1044	668	463	339	260	205	167	137	110	86	69
1	1303	834	579	425	326	257	207	172	137	107	87

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

Effective span width: 120 mm

MULTIPLE SPAN



WEIGHT table
(Kg/sq.m.)

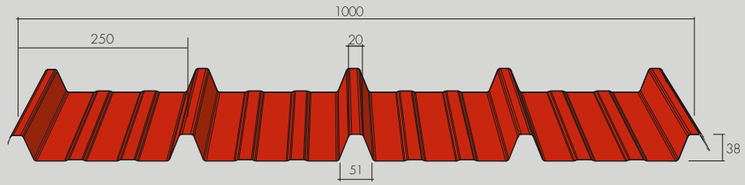
SHEET METAL THICKNESS (mm)	
0.5	4.22
0.6	5.20
0.8	7.16
1	9.12

Also available with anti-condensation felt on the internal side

LAMIERA EUROCINQUE®

ROOFS, FALSE CEILINGS AND ENCLOSURES

LAMIERA EUROCINQUE® is a 5-fret sheet, available in multiple colour finishes, thicknesses and materials, perfect for those roofs that need to be weather-and-impact-proofed (e.g. hail resistant). Light and strong, it is also available in a bent version, produced by sheeting or warping. If in aluminium, it can instead be bent in situ, depending on how thick the slab is.



A1

Static properties (kg/sq.m.)

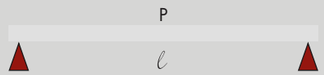
Material:
Prepainted zinc-plated steel

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	495	322	224	164	126	93	68				
0.6	595	381	265	195	148	111	81	61	61		
0.8	795	508	353	259	198	149	108	81	63	49	
1	995	645	441	324	248	187	135	101	78	62	50

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

Effective span width: 120 mm

SINGLE SPAN



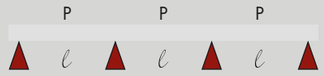
Material:
Prepainted zinc-plated steel

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
0.5	644	417	279	205	158	126	101	83	66	52	
0.6	744	476	330	243	186	147	119	97	78	62	49
0.8	994	636	441	323	248	195	159	130	105	82	66
1	1241	794	551	405	310	245	197	164	130	102	83

p = Kg/sq.m. evenly distributed
Normal deflection limit: 1/200 ℓ

Effective span width: 120 mm

MULTIPLE SPAN



WEIGHT table
(Kg/sq.m.)

SHEET METAL THICKNESS (mm)	
0.5	3.92
0.6	4.90
0.8	6.86
1	8.82

Also available with anti-condensation felt on the internal side

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

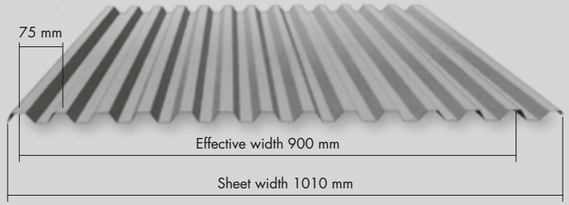
LASTRA T20 and T20XL®

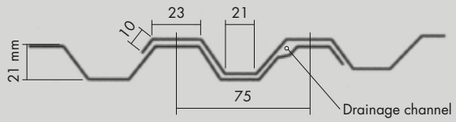
PREPAINTED STEEL, ALUZINC AND ALUMINIUM

Ribbed sheet suitable for the construction of new industrial and residential roofing with a minimum slope of 7%.
The pre-painted steel, aluzinc or aluminium sheet can be used in installation over old roofs.
The geometry of the H20 profile allows use on buildings with short pitches, vertical covering and/or cladding, on buildings located in places with low levels of precipitation or on roofs that require particular or frequent maintenance works.

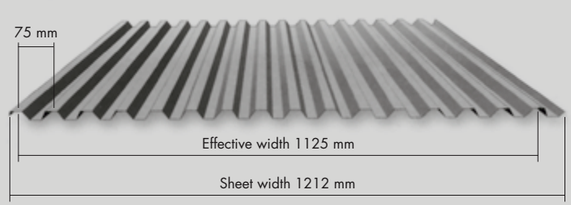
Note: The use of ribbed metal sheets is subject to the provisions of current regulations.

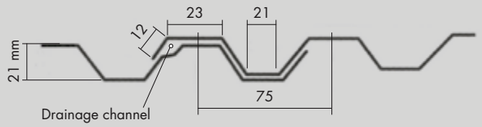
SLAB T20





SLAB T20XL





Overlapping rib:
On large surfaces, the use of sheets with a greater effective width and with a constant lateral overlap of about one and a half rib allows significant financial savings in terms of overlaps and, therefore, the installation of less sheets and fixings with significant time savings. A drainage channel on the top of the rib, near the sheet overlap, provides an additional guarantee of safety against possible water infiltrations.

Also available with anti-condensation felt on the internal side

LEGEND
S = sheet thickness
P = unit WEIGHT
J = moment of inertia
W = flexural strength module

Steel and Aluzinc

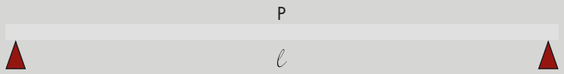
S (mm)	P (kg/sq.m.)	J (cm⁴/m)	W (cm³/m)
0.6	6.30	4.16	5.16
0.7	6.80	4.85	6.01
0.8	8.50	5.53	6.84
1	10.50	6.86	8.52

Aluminium

S (mm)	P (kg/sq.m.)	J (cm⁴/m)	W (cm³/m)
0.6	1.98	4.17	5.17
0.7	2.31	4.86	6.02
0.8	2.64	5.54	6.86
1	3.30	6.87	8.54

Static properties (kg/sq.m.)

SINGLE SPAN



Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5
0.6	325	165	92	56	–	–	–
0.7	365	193	108	65	42	–	–
0.8	439	220	124	75	47	–	–
1	543	274	154	93	59	–	–
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ						

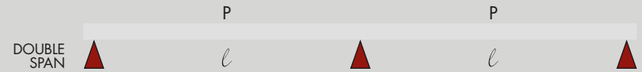
Effective span width: 50 mm

Aluminium

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5
0.6	96	–	–	–	–	–	–
0.7	114	52	–	–	–	–	–
0.8	133	61	–	–	–	–	–
1	169	79	–	–	–	–	–
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ						

Effective span width: 50 mm

DOUBLE SPAN



Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5
0.6	470	319	220	144	94	–	–
0.7	550	400	271	168	110	–	–
0.8	620	466	310	192	126	85	–
1	774	593	385	239	158	106	75
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ						

Effective span width: 50 mm

Aluminium

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5
0.6	248	121	65	–	–	–	–
0.7	293	144	77	–	–	–	–
0.8	338	167	90	–	–	–	–
1	428	212	116	67	–	–	–
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ						

Effective span width: 50 mm

MULTIPLE SPAN

Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5
0.6	570	317	181	111	73	–	–
0.7	680	372	212	131	85	57	–
0.8	780	424	241	149	97	65	–
1	970	527	300	185	121	81	56
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ						

Effective span width: 50 mm

Aluminium

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5
0.6	193	93	48	–	–	–	–
0.7	228	110	58	–	–	–	–
0.8	262	128	68	–	–	–	–
1	320	163	88	50	–	–	–
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ						

Effective span width: 50 mm

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

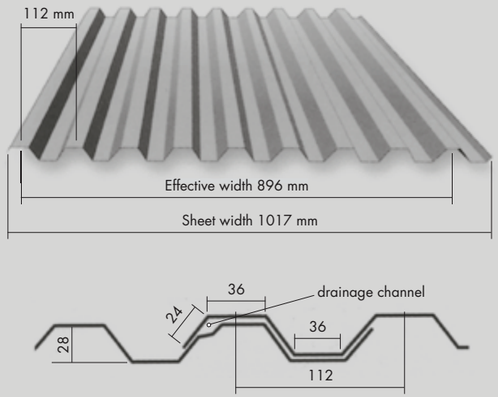
LASTRA T28 and T28XL®

PREPAINTED STEEL, ALUZINC AND ALUMINIUM

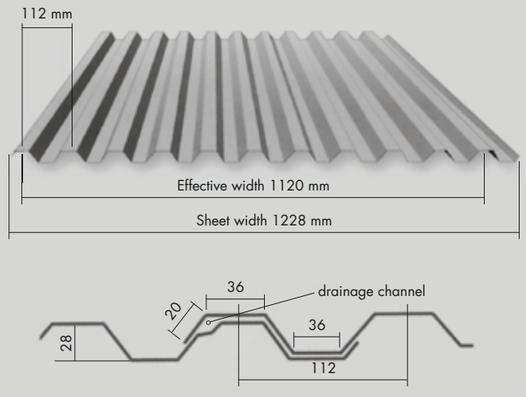
Ribbed sheet suitable for the construction of new industrial and residential roofing with a minimum slope of 7%. The pre-painted steel, aluzinc or aluminium sheet can be used in installation over old roofs.
The geometry of the H28 profile allows use on buildings with long pitches and with low slope, offering adequate ventilation.

Note: The use of ribbed metal sheets is subject to the provisions of current regulations.

SLAB T28



SLAB T28XL



Overlapping rib:
On large surfaces, the use of sheets with a greater effective width and with a constant lateral overlap of about one and a half rib allows a significant financial savings in terms of overlaps and, therefore, the installation of less sheets and fixings with significant time savings. A drainage channel on the top of the rib, near the sheet overlap, provides an additional guarantee of safety against possible water infiltrations.

Also available with anti-condensation felt on the internal side

LEGEND
S = sheet thickness
P = unit WEIGHT
J = moment of inertia
W = flexural strength module

Steel and Aluzinc

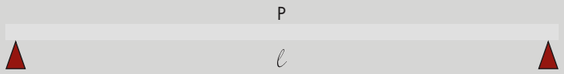
S (mm)	P (kg/sq.m.)	J (cm⁴/m)	W (cm³/m)
0.6	6.30	4.16	5.16
0.7	6.80	4.85	6.01
0.8	8.50	5.53	6.84
1	10.50	6.86	8.52

Aluminium

S (mm)	P (kg/sq.m.)	J (cm⁴/m)	W (cm³/m)
0.6	1.98	4.17	5.17
0.7	2.31	4.86	6.02
0.8	2.64	5.54	6.86
1	3.30	6.87	8.54

Static properties (kg/sq.m.)

SINGLE SPAN



Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3
0.6	610	310	177	109	71	–	–	–	–
0.7	730	372	212	131	85	–	–	–	–
0.8	860	435	248	153	101	68	–	–	–
1	1100	562	322	199	130	88	61	–	–
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ								

Effective span width: 50 mm

Aluminium

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5
0.6	201	97	51	–	–	–	–
0.7	238	116	62	–	–	–	–
0.8	274	135	72	–	–	–	–
1	345	173	94	54	–	–	–
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ						

Effective span width: 50 mm

DOUBLE SPAN

Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3
0.6	496	344	252	199	154	120	92	67	–
0.7	620	429	315	250	191	149	109	80	–
0.8	750	520	381	300	228	178	127	93	–
1	1000	700	500	420	328	227	162	119	90
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ								

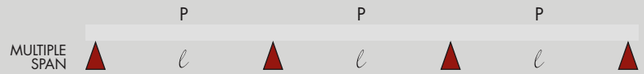
Effective span width: 50 mm

Aluminium

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5
0.6	315	211	140	84	–	–	–
0.7	390	263	166	110	63	–	–
0.8	477	319	193	117	74	–	–
1	650	430	245	149	96	–	–
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ						

Effective span width: 50 mm

MULTIPLE SPAN



Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3
0,6	604	420	309	213	141	97	69	–	–
0,7	752	525	387	256	169	116	83	–	–
0,8	915	635	464	300	198	136	97	71	–
1	1240	850	620	385	257	176	125	92	68
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ								

Effective span width: 50 mm

Aluminium

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5
0,6	387	195	108	63	–	–	–
0,7	458	230	128	76	–	–	–
0,8	528	266	149	89	55	–	–
1	671	338	190	115	72	–	–
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ						

Effective span width: 50 mm

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

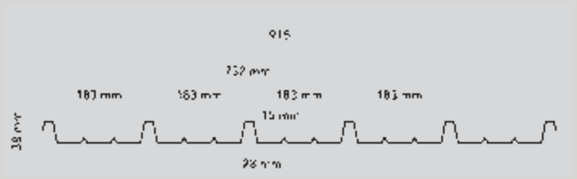
LAMIERA COMMERCIALE

PREPAINTED STEEL AND ALUZINC

Ribbed sheet suitable for the construction of new industrial and residential roofing with a minimum slope of 7%.
The pre-painted steel and aluzinc sheet can be used in installation over old roofs.

The geometry of the commercial sheet profile allows use for roofing of long pitches and with low slope, offering adequate ventilation.

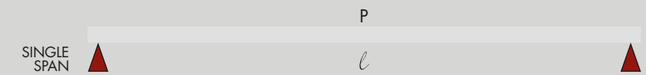
Note: The use of ribbed metal sheets is subject to the provisions of current regulations.



S (mm)	P (kg/sq.m.)	P 1000	P 1250
0.6	6.43	4.71	5.89
0.7	7.50	5.50	6.87
0.8	8.58	6.28	7.85
1	10.72	7.85	9.81

Also available with anti-condensation felt on the internal side

Static properties (kg/sq.m.)



Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4
0.6	480	305	210	153	116	90	72	59	48	40	34	29	25
0.7	576	366	252	184	139	108	087	70	58	49	41	35	30
0.8	672	428	295	214	162	127	101	82	68	57	48	41	35
1	865	550	379	276	209	163	130	106	88	73	62	53	45
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ												

Effective span width: 50 mm

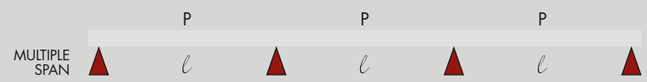
Static properties (kg/sq.m.)

Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4
0.6	726	466	323	237	180	141	114	93	77	65	55	47	41
0.7	830	533	370	270	206	161	130	106	88	74	63	54	47
0.8	934	600	416	304	232	182	146	119	99	83	71	61	52
1	1133	727	504	369	280	220	176	144	120	101	85	73	63
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ												

Effective span width: 50 mm

Static properties (kg/sq.m.)



Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4
0.6	753	480	332	242	184	144	116	95	79	66	56	48	42
0.7	904	576	398	291	221	173	139	114	95	80	68	58	50
0.8	1055	672	465	339	258	202	162	133	110	93	79	68	59
1	1312	844	586	429	327	257	206	169	141	118	101	87	75
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ												

Effective span width: 50 mm

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

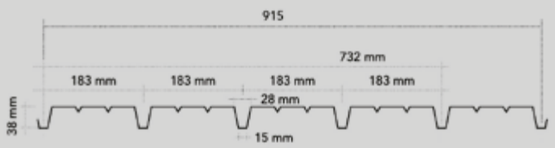
LAMIERA COMMERCIALE DECK

PREPAINTED STEEL AND ALUZINC

Ribbed sheet suitable for the construction of new industrial and residential roofing.
The pre-painted steel, aluzinc sheet can be used in installation over old roofs.

The geometry of the commercial sheet profile allows use for roofing of long pitches and with low slope, offering adequate ventilation.

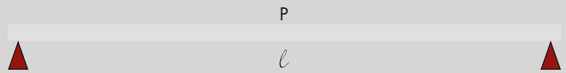
Note: The use of ribbed metal sheets is subject to the provisions of current regulations.



S (mm)	P (kg/sq.m.)	P 1000	P 1250
0.6	6.43	4.71	5.89
0.7	7.50	5.50	6.87
0.8	8.58	6.28	7.85
1	10.72	7.85	9.81

Static properties (kg/sq.m.)

SINGLE SPAN



Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4
0.6	742	473	327	239	181	142	114	93	77	65	55	47	41
0.7	848	540	373	272	207	162	130	106	88	074	63	54	47
0.8	954	608	420	306	233	182	146	120	99	83	71	61	52
1	1156	737	509	371	282	221	177	145	120	101	86	73	63
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ												

Effective span width: 50 mm

Static properties (kg/sq.m.)

DOUBLE SPAN

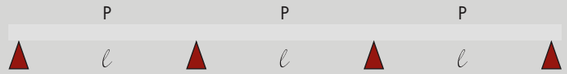
Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4
0.6	475	303	209	152	115	90	72	58	48	40	34	29	25
0.7	570	364	251	183	139	108	86	70	58	48	41	35	30
0.8	665	425	293	214	162	126	101	82	68	57	48	41	35
1	855	546	377	275	208	163	130	106	87	73	62	53	45
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ												

Effective span width: 50 mm

Static properties (kg/sq.m.)

MULTIPLE SPAN

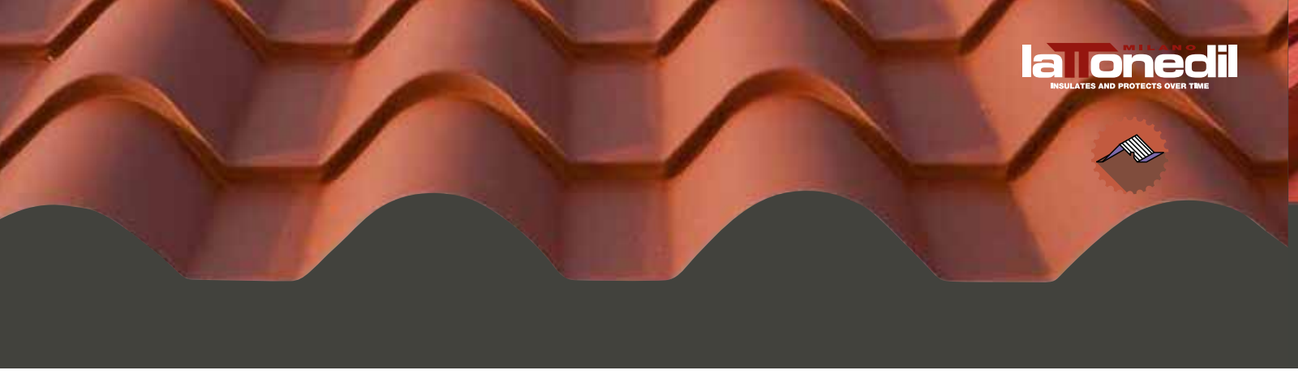


Steel and Aluzinc

SHEET METAL THICKNESS (mm)	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4
0.6	552	353	244	178	135	106	84	69	57	48	40	34	30
0.7	662	423	293	214	162	127	102	83	69	57	49	41	36
0.8	772	494	342	249	189	148	119	97	80	67	57	49	42
1	992	635	439	321	244	191	153	125	103	87	73	63	54
	p = Kg/sq.m. evenly distributed Normal deflection limit: 1/200 ℓ												

Effective span width: 50 mm

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.



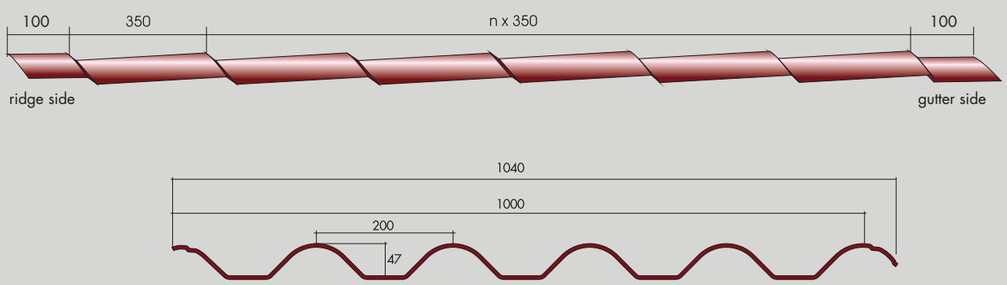
TTCOPPO® LASTRA

THE AESTHETIC ROOF

ALSO AVAILABLE WITH ANTI-CONDENSATION FELT ON THE INTERNAL SIDE

TTCOPPO® LASTRA is a rooftile-shaped sheet which may be used when appearance is all important, that is, mainly in residential buildings. When finished, they look like real terracotta tiles, of which they also imitate the finishes and colour hues. TTCOPPO® LASTRA complies with urban landscape regulations, and that's why it is used in old city centres as well.
Its strengths are its lightness, waterproofing and impact resistance.

Technical specifications
Effective width: 1000 mm
Upper backing: pre-painted galvanised steel, aluminium and copper.
The length of the sheet depends on the module in the design of the rooftile, see drawing, with 350 mm as a constant.

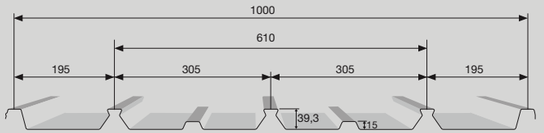


Also available with anti-condensation felt on the internal side

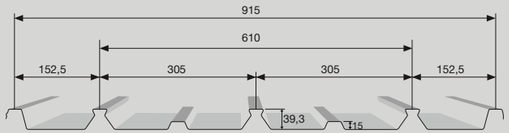
SOLARPAN®

METAL SHEET FOR THE INSTALLATION OF PHOTOVOLTAIC MODULES

SOLARPAN® is a ribbed sheet with the particular characteristic of the SOLARPAN® PLUS panel, which houses the photovoltaic modules by means of brackets: it is no longer necessary to drill the surface (see page 40).



The SOLARPAN® sheet is also suitable for roofing where the only requirement is impermeability to water, snow, wind, as well as resistance to hail impact.



Static properties (kg/sq.m.)

SINGLE SPAN

SHEET METAL THICKNESS (mm)	1.5	1.75	2.0	2.25	2.5	2.75	3.0	3.25	3.5	3.75	WEIGHT (Kg/sq.m.)
0.5	135	95	70	50							**5.05**
0.6	190	140	95	65							**6.14**
0.8	300	210	140	95	65						**8.22**
1	405	280	185	125	90	65					**10.39**

STEEL SHEET

SINGLE SPAN

SHEET METAL THICKNESS (mm)	1.5	1.75	2.0	2.25	2.5	2.75	WEIGHT (Kg/sq.m.)
0.6	90	55					**2.08**
0.8	120	75	50				**2.76**
1	150	95	60				**3.44**

ALUMINIUM SHEET

DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	1.75	2.0	2.25	2.5	2.75	3.0	3.25	3.5	3.75	WEIGHT (Kg/sq.m.)
0.5	125	95	75	60	50						**5.05**
0.6	165	125	100	80	65	55					**6.14**
0.8	255	200	160	130	110	90	75	65	55		**8.22**
1	375	295	240	195	165	140	120	100	75	60	**10.39**

STEEL SHEET

DOUBLE SPAN

SHEET METAL THICKNESS (mm)	1.5	1.75	2.0	2.25	2.5	2.75	WEIGHT (Kg/sq.m.)
0.6	110	85	65	55			**2.08**
0.8	155	120	95	75	60		**2.76**
1	200	155	120	95	75	55	**3.44**

ALUMINIUM SHEET

MULTIPLE SPAN

SHEET METAL THICKNESS (mm)	1.5	1.75	2.0	2.25	2.5	2.75	3.0	3.25	3.5	3.75	WEIGHT (Kg/sq.m.)
0.5	155	120	95	75	60	50					**5.05**
0.6	200	155	120	100	80	70	50				**6.14**
0.8	315	245	200	165	135	100	75	55			**8.22**
1	460	360	295	240	180	130	100	75	55		**10.39**

STEEL SHEET

MULTIPLE SPAN

SHEET METAL THICKNESS (mm)	1.5	1.75	2.0	2.25	2.5	2.75	WEIGHT (Kg/sq.m.)
0.6	130	100	70	50			**2.08**
0.8	190	145	95	65			**2.76**
1	245	180	120	80	60		**3.44**

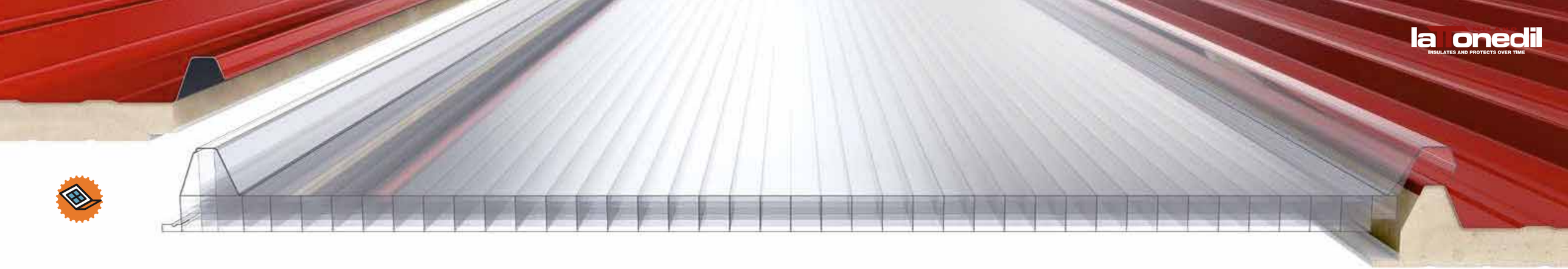
ALUMINIUM SHEET

OTHER METAL SUPPORTS AND DIFFERENT THICKNESSES ARE AVAILABLE UPON REQUEST.

CHAPTER 7
LIGHT-PASSAGE SYSTEMS

WHY USING POLYCARBONATE?

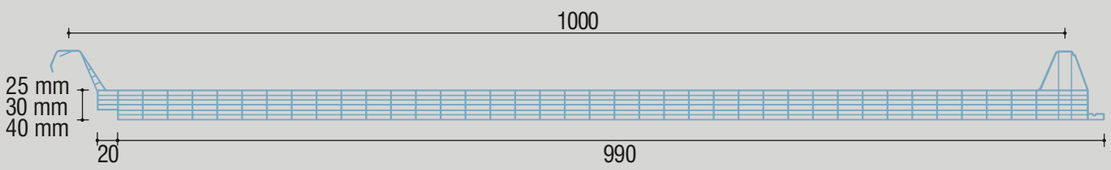
- BECAUSE IT IS A CLEAR MATERIAL LIKE GLASS, WHICH ALLOWS OBTAINING SLITS FOR THE LIGHT, CREATING PLEASANT CHROMATIC EFFECTS THANKS TO THE COLOUR OF THE SHEETS AND KEEPING UNALTERED ENVIRONMENTAL COMFORT AND THERMAL INSULATION.
- BECAUSE IT IS A STURDY MATERIAL, 250 TIMES MORE RESISTANT THAN GLASS. IT IS RESISTANT TO UV RAYS, ATMOSPHERIC AGENTS AND ACCIDENTAL SHOCKS ALSO AFTER BEING EXPOSED TO DIRECT SOLAR LIGHT FOR A LONG TIME.
- BECAUSE IT IS A LIGHTER MATERIAL THAN GLASS. USING POLYCARBONATE IN CIVIL AND INDUSTRIAL BUILDINGS MEANS REDUCING CONSTRUCTION COSTS AND KEEPING UNALTERED THE LOAD VALUES UNDER PRESSURE AND DEPRESSION.
- BECAUSE IT IS AN INSULATING MATERIAL THAT MINIMIZES THE TRANSFER OF THERMAL ENERGY (SO CALLED THERMAL INSULATION) AND SOUND ENERGY (SO CALLED ACOUSTIC INSULATION).
- BECAUSE IT IS A SAFE MATERIAL, DISTINGUISHED BY RESILIENCE, MEANING THE ABILITY TO ABSORB ELASTIC DEFORMATION ENERGY, IN COMPLIANCE WITH SAFETY STANDARDS CONCERNING PUBLIC AND WORK ENVIRONMENTS.
- BECAUSE IT IS A MATERIAL WITH VERY LOW ENVIRONMENTAL IMPACT, VERSATILE, THAT LEADS TO REMARKABLE ENERGY SAVINGS. AT THE END OF THE CYCLE, THE SHEETS ARE 100% RECYCLABLE.



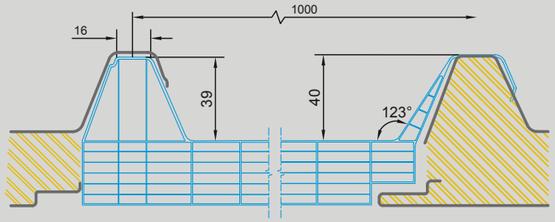
THERMO SPECIAL®

SMART POLYCARBONATE WITH HIGH INSULATION PERFORMANCE

Thermo special® is an alveolar polycarbonate that can be used on all Lattonedil cover panels.
It provides great savings at installation and full reliability.
Thermo Special polycarbonate by Lattonedil® is a system for the passage of light that ensures good thermal insulation in addition to excellent translucency.
It is available in 30 and 40 mm thicknesses.
Ideal for full-pitch rooflights.



POLIMER 30 mm + EUROCINQUE 30 mm



MM THICKNESS	30	40
Vertical cells pitch	24 mm	
Number of horizontal walls	7	
Panel width	1,000 mm	
Length	Custom	
Solar radiation	Neutral 60% Opaline 54%	Neutral 59% Opaline 58%
Light transmission	Neutral 59% Opaline 32%	Neutral 57% Opaline 30%
Thermal insulation	1.28 w/sq.m. / °K	1.14 w/sq.m. / °K
Acoustic insulation	23 dB	
Dilation	0.065 mm / 0 °C	
IV protection	External side coextrusion	
Fire classification	B-s1, d0 (UNE-EN 13501-1:2007)	
Operating temperature	-30° + 120°C	
10-year warranty	Resistant to hail, transmission loss	

	Values	Unit
MECHANICAL PROPERTIES		
Elastic limit	> 60	N/mm^2
Tensile strength	> 70	N/mm^2
Dilation ε_y	6	%
Tensile dilation ε_r	> 100	N/mm^2
Traction elastic module	2.300	N/mm^2
Impact resistance +23°	65	kJ/sq.m.
Impact resistance -40°	65	kJ/sq.m.
ακ resistance at +23°	35	kJ/sq.m.
PHYSICAL PROPERTIES		
Refraction index	1.58	n_0
Water absorption by immersion	0.36	%
Permeability to water vapour	15	g/sq.m.d
THERMAL PROPERTIES		
Linear thermal dilation α	6.5×10^{-5}	1/°C
Thermal conductivity λ	0.21	W/m°C
Operating temperature	-20° + 120°	°C
Melting temperature	245° - 250°	°C

A product manufactured in cooperation with Onduline

Onduline

THERMOLIGHT®

INSULATING PANEL IN POLYCARBONATE OR POLYESTER

It optimises light diffusion
ThermoLight® allows vast diffusion of natural light inside the building, with consequent improvement of the wellness of the occupants and energy savings.

It offers a flexible solution
Available in various thicknesses (30, 40, 50, 60, 80, 100, 120, 140 mm, and more upon request).

It ensures greater thermal insulation
The air flows of the sandwich panels act as a natural insulator.

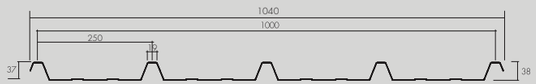
It ensures durable quality
It is a unique construction with reinforcements in extruded polycarbonate. These reinforcements remain rigid and retain their performance over time, while the reinforcements made with foam do not ensure perfect sealing as they tend to give way over time.

It allows a simple and quick installation
The reinforced of products is one of the finishing solutions that does not require the study of the purlins' layout and allows treating the panels as a unique independent component: a single installation direction, a single length, a single removal of mosses and lichens.

It offers the most suitable solution to your needs
ThermoLight offers a wide of solutions that allows you to find the most suitable system for your needs:
– ThermoLight® PC: system of sandwich-panels with upper layer in polycarbonate (10/10 thickness pursuant to EN-1013 standard), the bottom layer is in alveolar polycarbonate.
– ThermoLight PLR: system of sandwich-panels with upper layer in polycarbonate (1.2 or 1.6 mm thickness pursuant to EN-1013), the bottom layer is in alveolar polycarbonate.
– ThermoLight® PCT and PLR: an even more insulating range, for improved thermal comfort (thickness starting from 100 mm and, upon request, 60 and 80 mm)
– ThermoLight® PC R and PLR R: in polycarbonate, or with upper layer in polyester, featuring longitudinal reinforcements to increase rigidity and further simplify installation, in particular in restoration works. The system does not require to determine the wheelbase and also adapts to older structures, even if these are offset.
It can be secured to any ribbing height, regardless of the location of the purlin, thus making installation extremely flexible. This way, the capacity can be increased with greater resistance to loads.

EUROCOPRE®

EUROCINQUE®



BASIC MATERIALS
Thermolight® panels consist of sheets connected to each other through alveolar profiles in extruded polycarbonate.
They are assembled at the factory with high performance glues and reinforced through riveting.
ThermoLight® panels are available in two versions:
ThermoLight® PC: system of sandwich-panels with upper layer in polycarbonate (1 mm of thickness pursuant to EN-1013), the bottom layer is in alveolar polycarbonate.
The upper and lower layers are connected to each other by alveolar profiles in extruded polycarbonate.
ThermoLight® PLR: system of sandwich-panels with upper layer in polycarbonate (1.2 or 1.6 mm thickness pursuant to EN-1013 standard), the bottom layer is in alveolar polycarbonate.

The upper and lower layers are connected to each other by alveolar profiles in extruded polycarbonate. Two options are available that can also be combined to each other, according to the panel thickness:
ThermoLight® PC T and PLR T: Thermal comfort option for improved insulation.
ThermoLight® PC R and PLR R: Reinforced option for improved resistance to loads and easier installation, in the case of new construction or restored building.
ThermoLight® PC TR and PLR TR: a unique combination of our Thermal comfort and Reinforced options that allows combining thermal and mechanical performance with ease of installation.

laTTonedil MILANO
INSULATES AND PROTECTS OVER TIME

INTENDED OF USE
Thermolight® panels are used to make lighting parts of buildings insulated with metal sandwich panels (they can cover part or the entire roof or finish). They are applied to all buildings with low or medium humidity, at a maximum altitude of 900 m, regardless of their intended use, in conditions of use set forth by the Installation Specifications.
Over 900 m, local installation conditions must be kept in consideration.

RANGE, COMPATIBILITY CHARACTERISTICS
The following tables show the range of Thermolight® panels and their characteristics, according to chosen options to ensure improved insulation.

	Description	Thickness*	Light transmission**	Colour	Length***	Fire performance
ThermoLight® PC	Panels consisting of an upper sheet in polycarbonate and a lower sheet in alveolar polycarbonate of 4 mm, connected to each other by alveolar profiles in extruded polycarbonate.	30, 40, 50, 60, 80, 100, 120 and 140 mm	Crystal - From 30 mm to 80 mm: 75% From 100 mm to 140 mm : 60%	Upper Layer: Crystal or opaline 66% Lower layer: Crystal (colourless)	From 1 m to 6.50 m (caisson excluded, removal of mosses and lichens)	Upper and lower layer: B-s1,d0
Option						
ThermoLight® PC R Reinforced option	Panels consisting of an upper sheet in polycarbonate and a lower sheet in alveolar polycarbonate of 16 mm, connected to each other by alveolar profiles in extruded polycarbonate.	40, 50, 60, 80, 100, 120 e 140 mm	Crystal - From 40 mm to 80 mm: 40% From 100 mm to 140 mm: 35%			
ThermoLight® PC R Reinforced option	Panels consisting of an upper sheet in polycarbonate and a lower sheet in alveolar polycarbonate of 4 mm, connected to each other by alveolar profiles in extruded polycarbonate with longitudinal reinforcements in polycarbonate located under each ribbing.	30, 40, 50, 60 and 80 mm	Crystal - 75%			
ThermoLight® PC TR Comfort option Thermal and Reinforced	Panels consisting of an upper sheet in polycarbonate and a lower sheet in alveolar polycarbonate of 16 mm, connected to each other by alveolar profiles in extruded polycarbonate with longitudinal reinforcements in polycarbonate located under each ribbing.	40, 50, 60 and 80 mm	Crystal - From 40mm to 80 mm: 40%			

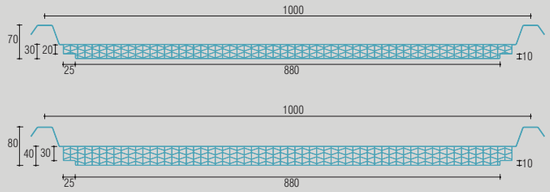
	Description	Thickness*	Light transmission**	Colour	Length***	Fire performance
ThermoLight® PLR	Panels consisting of an upper sheet in polyester and a lower sheet in alveolar polycarbonate of 4 mm, connected to each other by alveolar profiles in extruded polycarbonate.	30, 40, 50, 60, 80, 100, 120 and 140 mm	Colourless - From 30 mm to 80 mm: 65% From 100 mm to 140 mm : 50%	Upper layer: (colourless) Lower layer: crystal (colourless)	From 1 m to 6.50 m (caisson excluded, removal of mosses and lichens)	Upper layer: E – no dripping Lower layer: B-s1,d0
Option						
ThermoLight® PLR T Thermal comfort option	Panels consisting of an upper sheet in polyester and a lower sheet in alveolar polycarbonate of 16 mm, connected to each other by alveolar profiles in extruded polycarbonate.	40, 50, 60, 80, 100, 120 and 140 mm	Colourless - From 40 mm to 80 mm: 35% From 100 mm to 140 mm: 30%			
ThermoLight® PLR R Reinforced option	Panels consisting of an upper sheet in polyester and a lower sheet in alveolar polycarbonate of 4 mm, connected to each other by alveolar profiles in extruded polycarbonate with longitudinal reinforcements in polycarbonate located under each ribbing.	30, 40, 50, 60 and 80 mm	Colourless - 65%			
ThermoLight® PLR TR Comfort option Thermal and Reinforced	Panels consisting of an upper sheet in polyester and a lower sheet in alveolar polycarbonate of 16 mm, connected to each other by alveolar profiles in extruded polycarbonate with longitudinal reinforcements in polycarbonate located under each ribbing.	40, 50, 60 and 80 mm	Colourless - From 40 mm to 80 mm: 35%			

* Additional thicknesses upon request.
** Note: Total light transmission with new product. A light variation may occur over time (fading).
*** ThermoLight® panels can be assembled in order to increase the natural illumination surface: transversally, thanks to the ribbing that allows longitudinal recovery and the removal of mosses and lichens that allows transversal recovery (it is recommended to divide the requested illumination length in more ThermoLight® panels with caisson length less than 6.5 m, making sure the panel joint lies on a purlin).

THERMOCURVO® 30 e 40

ALVEOLAR POLYCARBONATE

In terms of translucency, it is possible to install alveolar polycarbonate in our ISOCURVO® 2 panels, which perfectly integrates with them, ensuring continuity with regards to bending radius and thicknesses.
The bending radii are: 3.3 m. or 6 m.
It is available in 2 thicknesses: 30 and 40 mm to ensure good thermal transmittance.



THERMO 30 Technical characteristics:

– Panel thickness:	30 mm
– Panel width:	~1000 ± 5 mm (sheet width)
– Number of alveolar walls:	6
– Panel length on demand:	Max. 13500 mm
– Standard lateral ribs dimensions:	25-25
– Lateral ribs dimensions on demand:	depending on the application
– Colour:	Neutral transparent - Opaline
– Weight:	~3,4 Kg/sq.m.
– U.V. protection:	co-extruding external side
– Close ends:	Taped
– Reaction to fire EN 13501-1:	B S2 D0 (Italy-Class 1)
– Light transmission:	Neutral ~59% - Opaline ~30%
– Thermal transmittance (U):	1.32 W/sq.m. K
– Thermal expansion:	0.065 mm/sq.m. K
– Temperature limits of use:	-40 / +120 °C

Curved sheet R~3300/6000

THERMO 40 Technical characteristics:

– Panel thickness:	40 mm
– Panel width:	~1000 ± 5 mm (sheet width)
– Number of alveolar walls:	6
– Panel length on demand:	Max. 13500 mm
– Standard lateral ribs dimensions:	25-25
– Lateral ribs dimensions on demand:	depending on the application
– Colour:	Neutral transparent - Opaline
– Weight:	~3.7 Kg/sq.m.
– U.V. protection:	co-extruding external side
– Close ends:	Taped
– Reaction to fire EN 13501-1:	B S2 D0 (Italy-Class 1)
– Light transmission:	Neutral ~54% - Opaline ~20%
– Thermal transmittance (U):	1.15 W/sq.m. K
– Thermal expansion:	0.065 mm/sq.m. K
– Temperature limits of use:	-40 / +120 °C

THERMO G5 / G6 / G9

ALVEOLAR POLYCARBONATE IDEAL TO MAKE HALF-PITCHED ROOF LIGHTS

Technical characteristics:

- Thickness:	2,5 mm
- Width:	1,000 ± 5 mm.
- Length:	Customisable
- Colours:	Neutral with satined or opaline finishing
- Side closing profiles:	Heat-welded
- External protection:	Anti UV on the external face. Anti UV possible on both sides (on demand)
- Reaction to fire:	Class 1 self-extinguishing
- Thermal transmittance:	U=4,71 W/sq.m. K
- Light transmission:	Neutral colour 84% ± 2 Opaline colour 76% ± 2
- Application notes:	

Plane flat sheet

Curved sheet R~3300/6000

Thermo G5

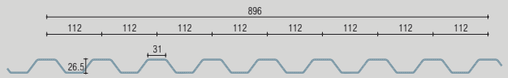
Eurocinque®

Thermo G6

Isocopre®

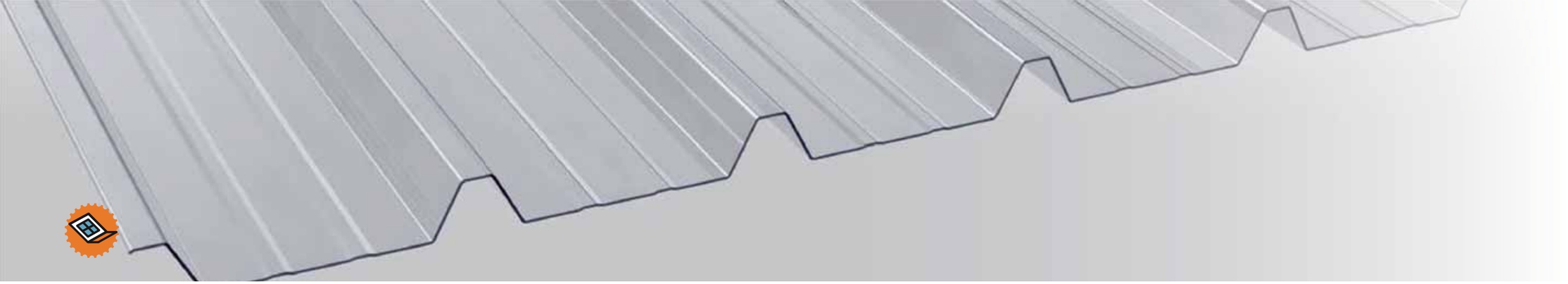
Thermo G9

G9®



TRANSVERSAL ROOFLIGHT

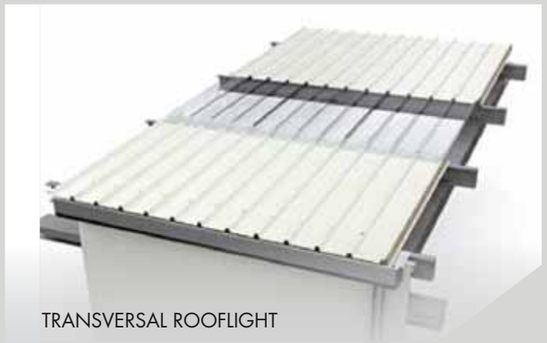
ROOF SLOPE GUTTER ROOFLIGHT



POLICARBONATO COMPATTO

THE LUMINOUS ROOF IN POLYCARBONATE WITH 1 MM THICKNESS

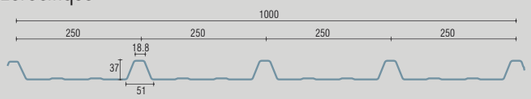
The sheets in POLYCARBONATE COMPACT allow the creation of fixed rooflights able to solve multiple installation problems, and they guarantee a light transmission similar to the glass (92%). Lattonedil® sheets in polycarbonate are of a neutral colour and protected against UV rays; this treatment eliminates the negative action of atmospheric agents.
Ideal to make half-pitched rooflights combined with ISOCOPRE®, EUROCINQUE® panels and G9.
On demand, profiled polycarbonate for ISOCOPRE®, thickness 2 mm, pitch 800 mm.



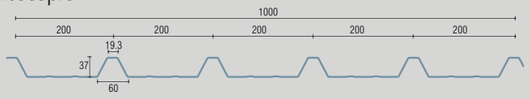
TRANSVERSAL ROOFLIGHT

ROOF SLOPE GUTTER ROOFLIGHT

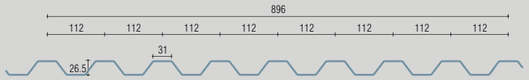
Eurocinque®



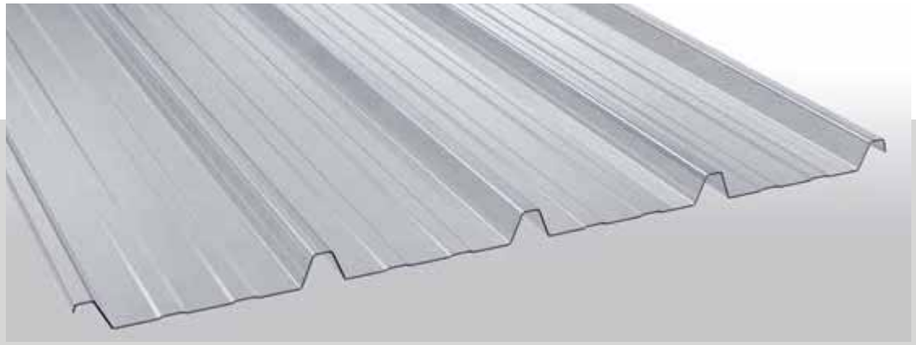
Isocopre®



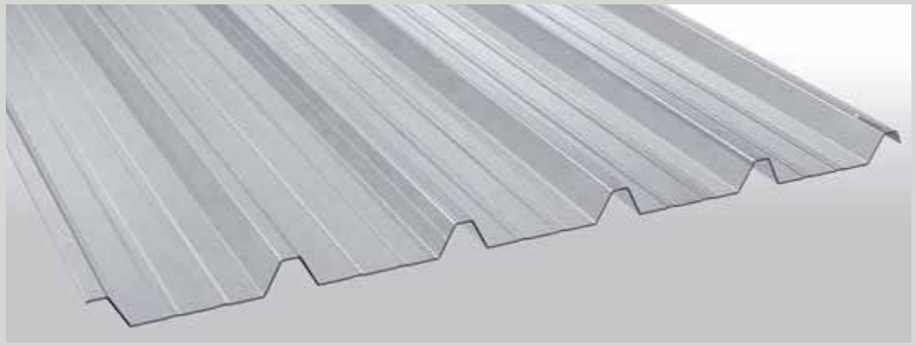
G9®



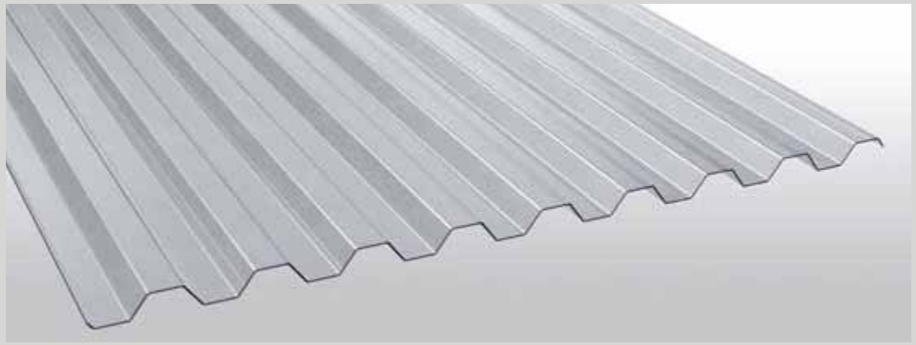
Polycarbonate EUROCINQUE®



Polycarbonate ISOCOPRE®



Polycarbonate G9®

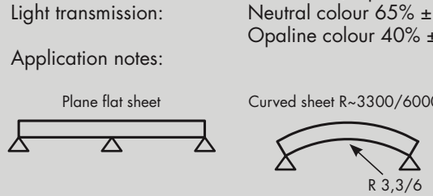


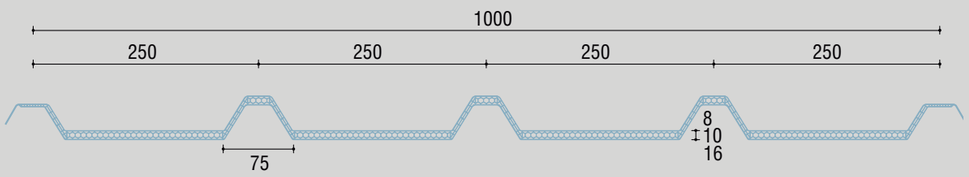
THERMO G5 8 / 10 / 16

LUMINOUS ROOF

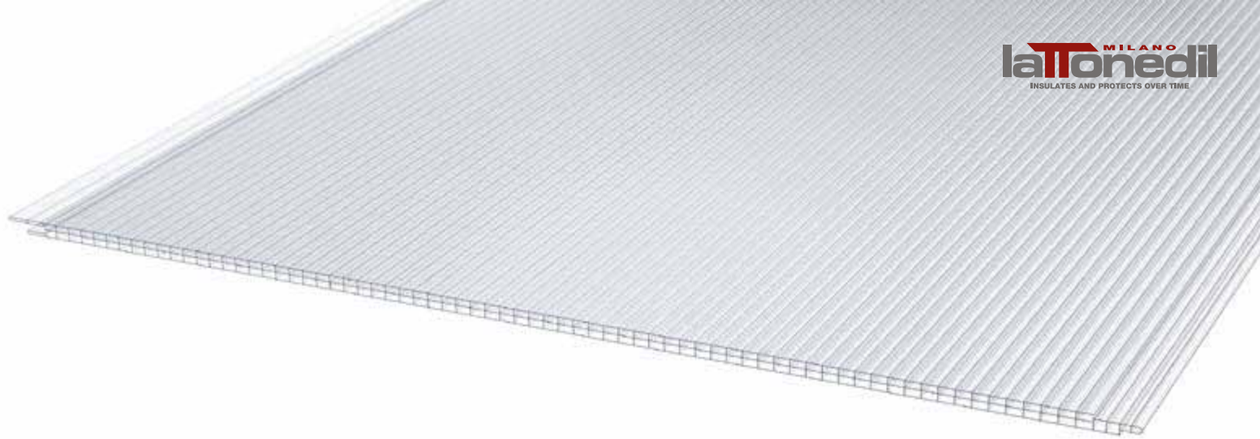
Technical characteristics:

- Thickness: 8/10/16 mm (honeycomb)
- Width: 1,000 ± 5 mm.
- Length: Custom lengths
- Colours: Neutral with satin finish and opaline
- Side closing profiles: Thermo-welded
- External protection: Anti UV on the external face
- Reaction to fire: Class 1 self-extinguishing
- Thermal transmittance: U=2.50 W/sq.m. K
- Light transmission: Neutral colour 65% ± 2, Opaline colour 40% ± 2
- Application notes:





ROOF SLOPE GUTTER ROOFLIGHT



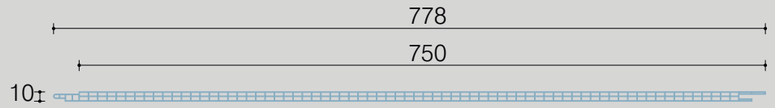
VELARIO

MALE-FEMALE GROOVED SYSTEM IN ALVEOLAR POLYCARBONATE FOR FALSE CEILINGS

VELARIO is suitable for the construction of false ceilings, canopies, internal partitions and all those solutions not exposed to direct sun light. Practicality and cost-efficiency make it a winning solution when seeking:

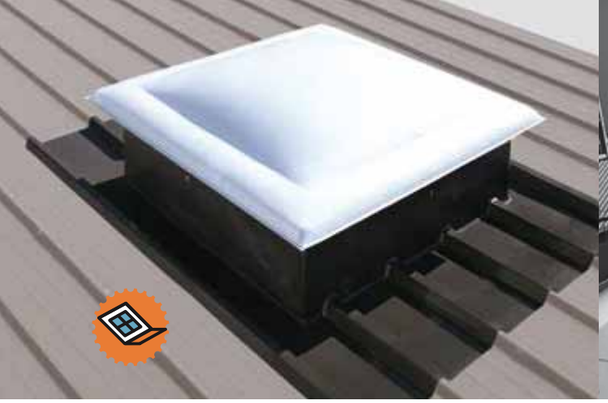
- extreme lightness
- high resistance to shocks
- high light transmittance
- good thermal insulation

The particular grooved joining system facilitates installation and allows building a solution with constant thickness of 10 mm without external joints.
The matte finish allows a more even light diffusion, hiding at the same time any dust deposits on the surface.



Max distance between tops: 1600mm

Thickness	10 mm
Width	750 mm
Length	Custom
Colour	Crystal / Opal
Light transmittance	Crystal 78% / Opal 60%
Thermal transmittance	3.1 W/sq.m. K
Linear dilation	0.065 mm/m °C
Fire certification EN 13501-1	B-s1,d0
Operating temperature	min -30 °C / max +120 °C



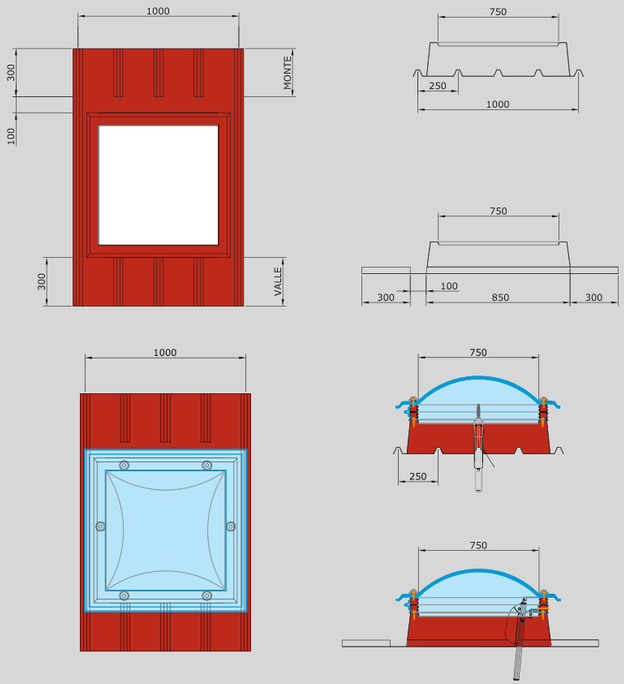
ROOFLIGHTS AND SMOKE EXHAUST VENTS

FOR ALL LATTONEDIL PANELS

Prefabricated bases

The rooflights can be applied on prefabricated bases manufactured by our company which offer high resistance against impacts, they do not expand and they are particularly suitable to ensure perfect watertightness to roofs in proximity of rooflights. The bases made of glass-reinforced-plastic have a flared shape to allow a better light transmission and their interior is smooth and white.
The metal bases can be made of galvanised sheet 12/10 or of anticorodal aluminium. All bases are generally insulated with a layer of self-extinguishing expanded polyurethane of 20 mm thickness and they are externally covered with a layer of glass-reinforced plastic with a coarse finish for a better grip of the watertight cover.
The bases are generally 20/30 cm high, but they can be manufactured at different heights, according to design needs.
The installation of both types is easy and quick since it is sufficient to fix the internal supportedge to the roof with the screws and plugs supplied.
For the roof of large sizes buildings, self-supporting monolithic bases can be produced by joining various single bases.
For more information on the availability of sizes and types, please contact our offices.

Examples of rooflights - smoke exhaust vents for Eurocinque®



TTCOPPO® FINESTRA is a real rooflight, with a core made of wood, coated with steel or prepainted aluminium and is available in the same finishing of the TTCOPPO®.
The special surface finish makes the window very resistant to wear, cancelling all the internal maintenance and withstanding high levels of humidity.
It has insulating glazing at low emissivity, which offers internal protection, energy saving and noise reduction.
the opening is manual or, on demand, electric.
The internal size of the window compartment is 590x810 mm, while the support of anchor to the panel is 1.650x1.000 mm.
On request you can also have electric opening.

CHAPTER 8
LATTONEDIL® SPECIAL PANEL

GIANO®

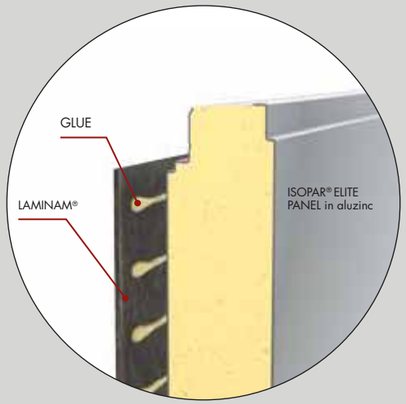
THE NEW LOOK FOR INSULATED FACADES

Lattonedil® created Giano®, the innovative panel to finish facades, combining a standard sandwich panel with porcelain gres. Giano® is produced in the standard size of 3000 x 1000 mm.
The sheet in porcelain gres is glued on Lattonedil® sandwich panel thanks to a special glue.

In Lattonedil® plant, the sheets in porcelain gres undergo surface works requested by the customer and are cut accordingly.
Giano® was born to finish and insulate any type of building facade.
The expansion stone anchoring technology ensures perfect adhesion to the structure's clamping devices.
With this solution, it is possible to build facades leaving also some gaps to expose the sandwich panel in porcelain gres below, creating pleasant architectural effects.

Benefits:

- High quality construction;
- Excellent mechanical resistance compared to traditional solutions that have to use greater thicknesses;
- Lightweight, Good Insulation, Integrated and definitive solution;
- Can also be used for internal wall coverings;
- Fast and easy to install;
- Maintenance free.



Giano® consists of an insulating panel with surface in aluzinc, available with:
– POLYURETHANE INSULATION;
– POLYISOCYANURATE INSULATION;
– GLASS WOOL INSULATION;
– MINERAL FIBRE INSULATION.

The insulating panel is joined by glue to a sheet in porcelain gres that can be chosen in various finishes.

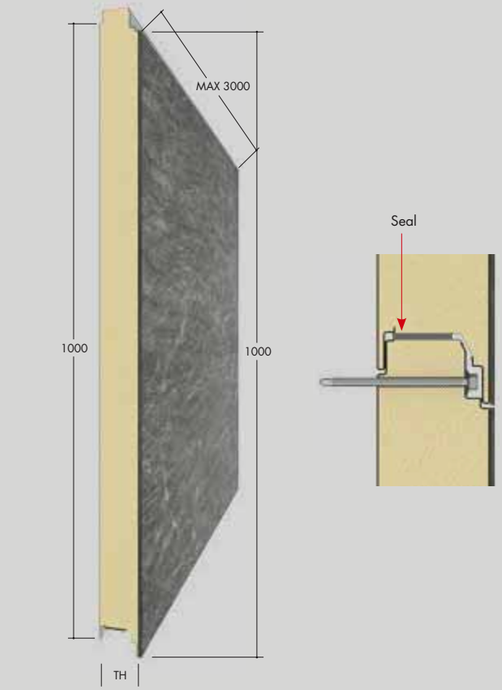
FINISHES
LAMINAM®

The complete range of finishes and colours can be found on www.laminam.it

MILANO laTTonedil
INSULATES AND PROTECTS OVER TIME

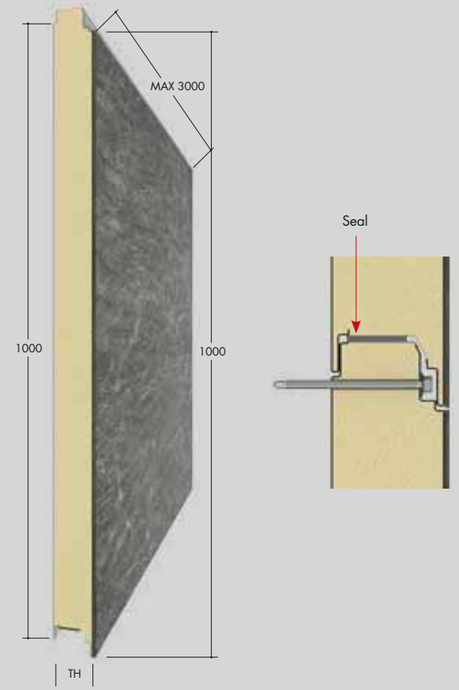
Giano® with Polyurethane insulation

THICKNESS from 43 to 203 mm



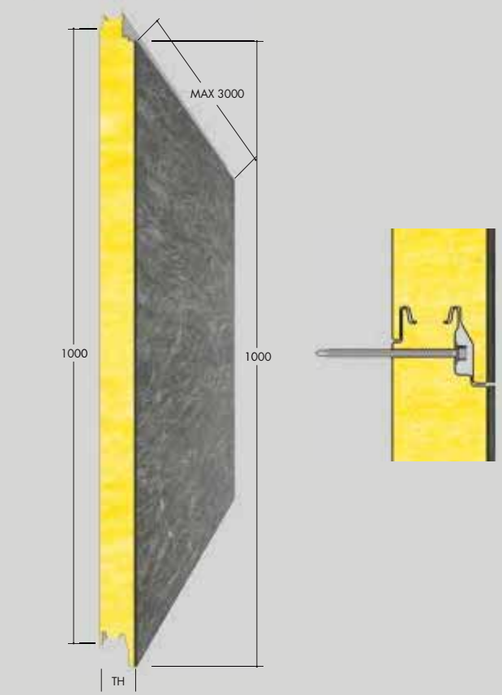
Giano® with Polyisocyanurate insulation

THICKNESS from 43 to 203 mm



Giano® with glass wool insulation

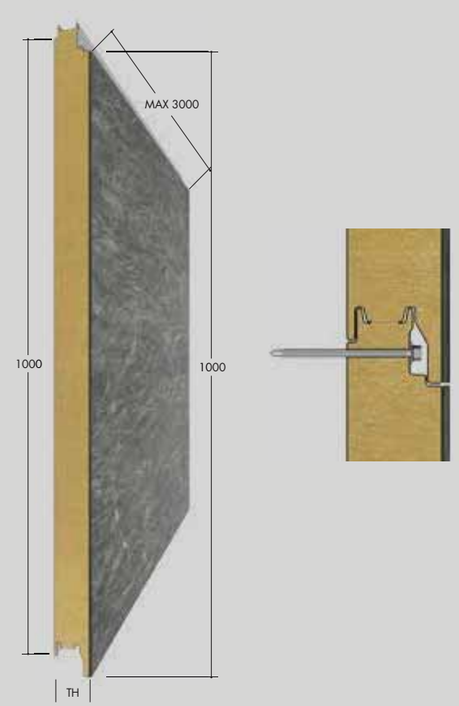
THICKNESS from 53 to 153 mm



Hexagonal head screw with 8 mm nut.

Giano® with mineral fibre insulation

THICKNESS from 53 to 203 mm



Hexagonal head screw with 8 mm nut.

GIANO®
THE NEW LOOK FOR INSULATED FACADES

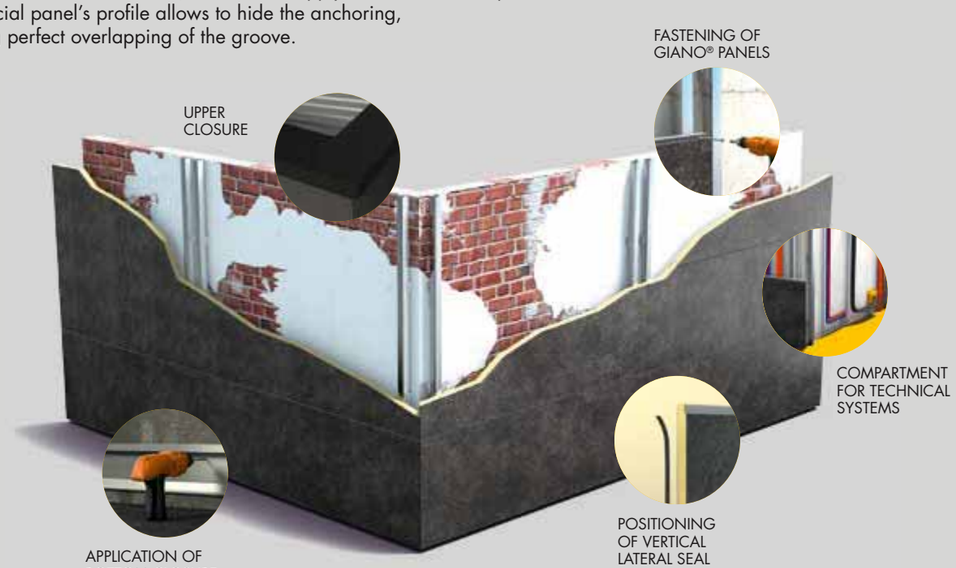
FINISHES
LAMINAM®

MILANO laTTonedil
INSULATES AND PROTECTS OVER TIME

Giano® finish on new or existing wall

Giano® is the durable solution, easy and quick to install with great aesthetic value for the creation of finishes on wall surfaces or in pre-fabricated panels or to restore existing buildings. The system calls for the installation of a metal structure anchored to the wall, on which to apply Giano®. The special panel's profile allows to hide the anchoring, ensuring perfect overlapping of the groove.

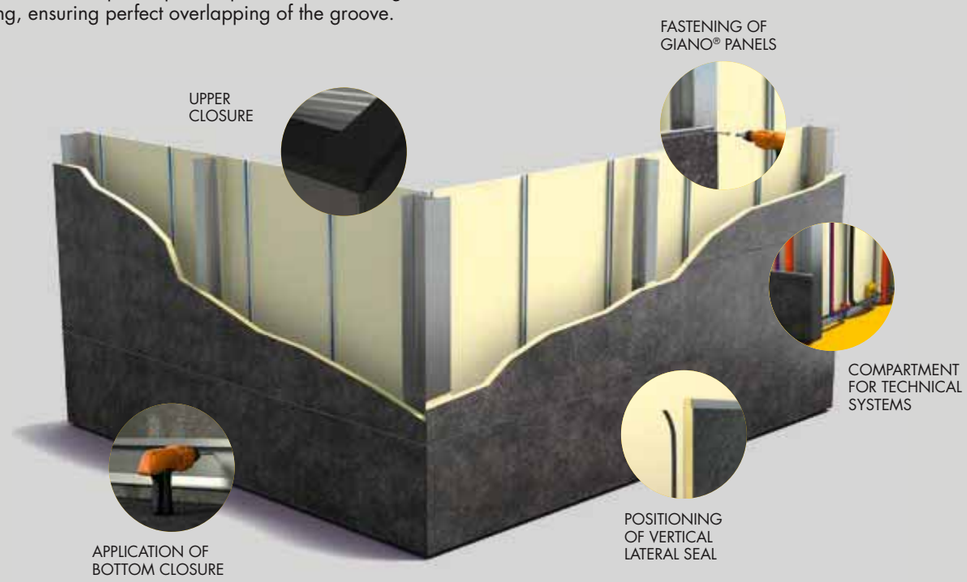
Fastening takes place at the top, with the same system. Only a small gap remains between a panel and the other. The same system is applied also laterally, a vertical seal ensures perfect thermal continuity and adherence between a panel and the other.



Giano® curtain walling on structure on steel structures

Giano® is the durable solution, easy and quick to install with great aesthetic value for the execution of finishes on steel structures. Giano® is applied directly to the building's metal structure. The special panel's profile allows hiding the anchoring, ensuring perfect overlapping of the groove.

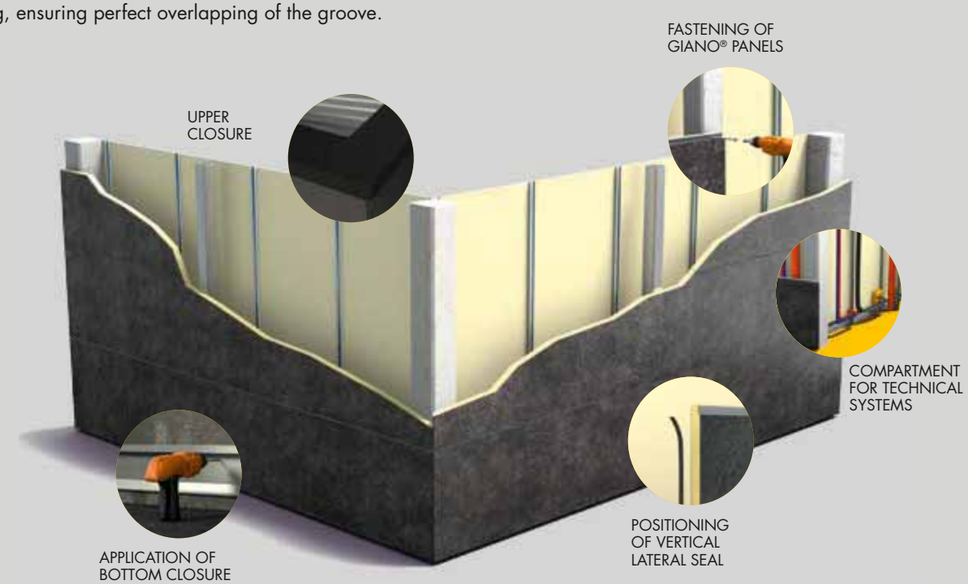
The gap between structure and panel rear can be used as technical compartment to duct installation networks. This solution finds its natural intended use in new buildings.



Giano® curtain walling on reinforced concrete structures

Giano® is the durable solution, easy and quick to install with great aesthetic value for the execution of finishes on reinforced concrete structures. Giano® is applied directly to the building's structure. The special panel's profile allows hiding the anchoring, ensuring perfect overlapping of the groove.

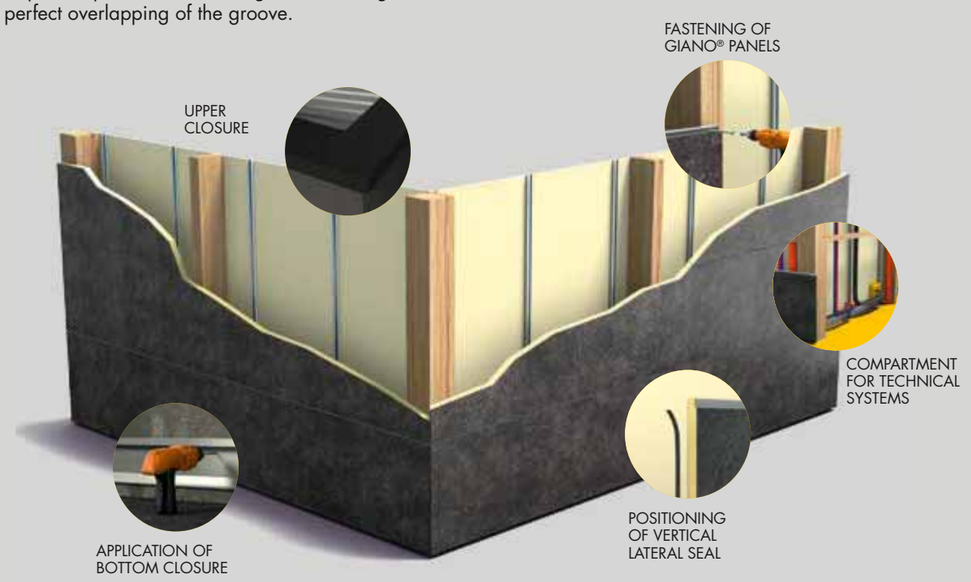
The gap between structure and panel rear can be used as technical compartment to duct installation networks. This solution finds its natural intended use in new buildings.



Giano® curtain walling on wood structure

Giano® is the durable solution, easy and quick to install with great aesthetic value for the execution of finishes on wood structures. Giano® is applied directly to the building's structure. The special panel's profile allows hiding the anchoring, ensuring perfect overlapping of the groove.

The gap between structure and panel rear can be used as technical compartment to duct installation networks. This solution finds its natural intended use in new buildings.



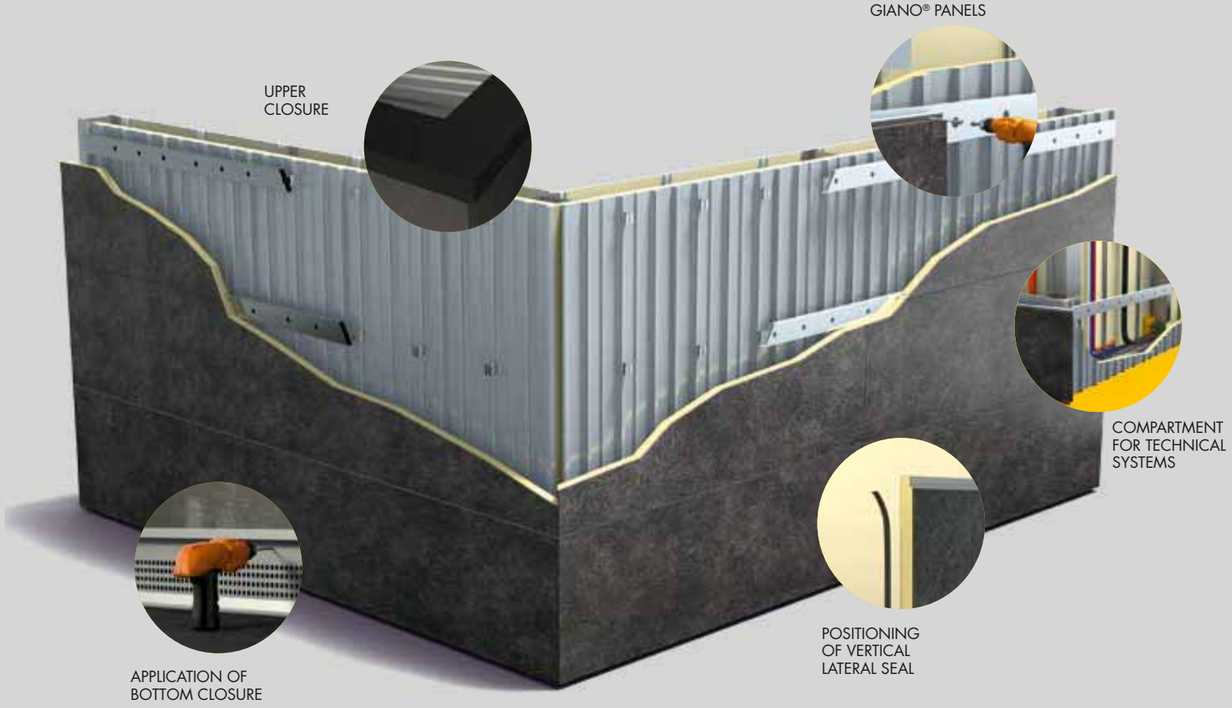
GIANO® AIR

THE NEW LOOK FOR INSULATED AND VENTILATED FACADES

Giano® Air

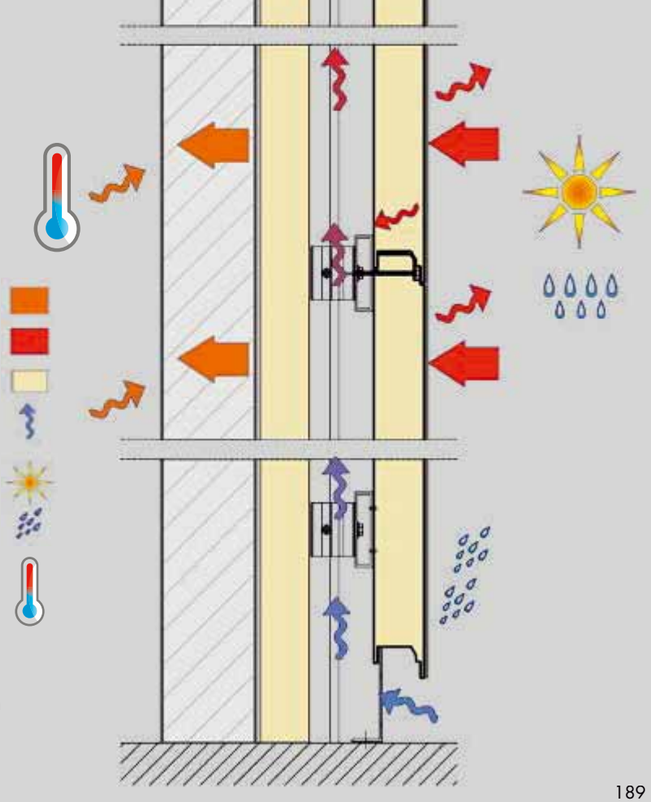
Giano® Air system is the ideal and effective solution to build a ventilated facade.
Giano® Air system consists of Solarpan® Plus insulated metal panel by Lattonedil, which ensures support of the external finish and thermal insulation.
Thanks to the particular shape of the “tail-grooving” frets allows using special of special brackets on which the horizontal metal structure is secured.

This structure constitutes a spaced base that creates a gap of over 90 mm on which the finish in Giano® panels is installed.
This system guarantees suitable and constant ventilation, ensuring air flow. With Giano® Air, you can build your ventilated facade which ensures excellent insulation against sun rays during the summer.
Giano® Air panel allows building roofs ensuring perfect continuity with the vertical wall.



Thermal-fluido dynamic system

During the summer, if well sized from an energy point of view, the ventilated facade creates an air flow between the external sheet and insulating panel which allows the warm air formed in the ventilation chamber to be ejected from the building roof.
This dynamic air “cushion” reduces thermal input from outside. Moreover, it performs a sun screening function, absorbing and reflecting a great amount of incident solar energy, significantly reducing the energy fraction transmitted to the building.
During the winter instead, the insulation acts as further barrier to the dispersion of the building’s endogenous thermal loads, given by the heating system and all other thermal sources such as computer, machinery, persons, improving the living comfort and reducing total energy consumptions. The ventilated facade also performs a significant role in reducing internal and external sound emissions, improving the living comport inside the building, significantly.



FINISHES

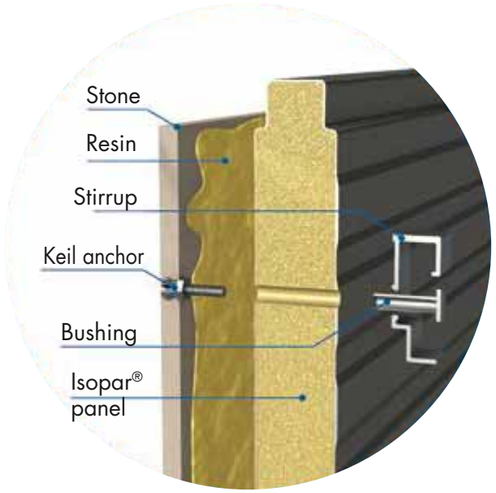
LAMINAM®

The complete range of finishes and colours can be found on www.laminam.it

ISOPARSTONE®

THE CREATION OF A PANEL COVERED IN NATURAL STONE

All stones are usable, reduced to the thickness of 8 to 10 mm and fixed to the insulating panels that may have a thickness from 25 to 200 mm according to insulation and structure requirements. The panels manufactured in our plant may have the following dimensions for a maximum width of 1 m for a length of 3 m. The stone, in addition to being pasted to the panel will be firmly welded by a mechanic nail that, inserted in the stone, makes it solidly anchored to the panel and to the wall anchor plate. The Lattonedil® plant is able to offer to the most demanding customers the best solution to achieve their final result. We are able to offer to the buyer the technical study of the project for the construction of any kind of façade application, then help the customer with the choice of materials, up to the installation of the product.



ISOPARSTONE®

THE CREATION OF A PANEL COVERED IN NATURAL STONE

The technology allows obtaining 8 to 10 mm thin slabs from the stone block that can be reduced to 10 mm, which are then processed with special epoxy resins and glass wool fabric.
This process makes the stone resistant to breakage.
The stone thickness is determined by the type of the used stone, by the type of application and by the fact that an anchor nail is inserted.
In the Lattonedil plant, the stone is superficially manufactured as required by the client and cut to size as specified.
The maximum feasible dimensions of the sheets are 3 x 1 with calibrated thickness of 8 to 10 mm. This panel was created to dress and isolate any kind of facade.
The stone's fastening technology with expansion nail guarantees the perfect adherence with the fastening systems of the structure, using different galvanised steel plates.

The best solution with thermal and sound insulation to dress facades:
- With thermal insulation wall cladding systems
- Micro-Ventilated
- Ventilated
- Continued

Advantages:
- Executive quality,
- Excellent mechanical resistance compared to traditional solutions that have to use higher thicknesses
- Lightness, insulation, integrated and resolving system
- Easy and quick installation
- Maintenance free

Disadvantages:
- Major project rigidity due to the modularity of the insulating panel.

Tensile strength between fixing element and stone pull-off

Mechanical characteristics of the sample	ABSOLUTE BLACK sample dimension 30 x 30 x 6.6-6.8 mm.		KASHMIR WHITE sample dimension 30 x 30 x 6.8-7 mm.		CARRARA WHITE sample dimension 30 x 30 x 7-8 mm.	
Volumetric weight Kg./m³	3.015		2.690		2.698	
Compressive strength Kg./cm²	2.485		2.075		1.303	
Bending strength Kg./cm²	253		135		198	
Imbibition % per weight	0.130		0.430		0.103	
Thermal expansion coefficient mm./m. °C	–		0.0067		0.00590	
	MIN. Value	**MAX. Value**	**MIN. Value**	**MAX. Value**	**MIN. Value**	**MAX. Value**
Load of tensile failure limit in Kg.	**120**	**151**	**83**	**95**	**86**	**95**
Diameter of the failure limit cone in mm.	**38**	**41**	**32**	**38**	**49**	**54**

U transmittance	**25**	**30**	**35**	**40**	**50**	**60**	**70**	**80**	**100**	**120**	**150**	**180**	**200**
W/sq.m. K	0.84	0.71	0.62	0.55	0.44	0.37	0.32	0.28	0.22	0.19	0.15	0.12	0.11
Kcal/sq.m. h °C	0.73	0.61	0.53	0.47	0.38	0.32	0.27	0.24	0.19	0.16	0.13	0.11	0.10

Traction Kg.

Fixing system:
keil-Undercut-Facade anchor insertion

Minimum distance of holes
from the edge: 85x100 mm

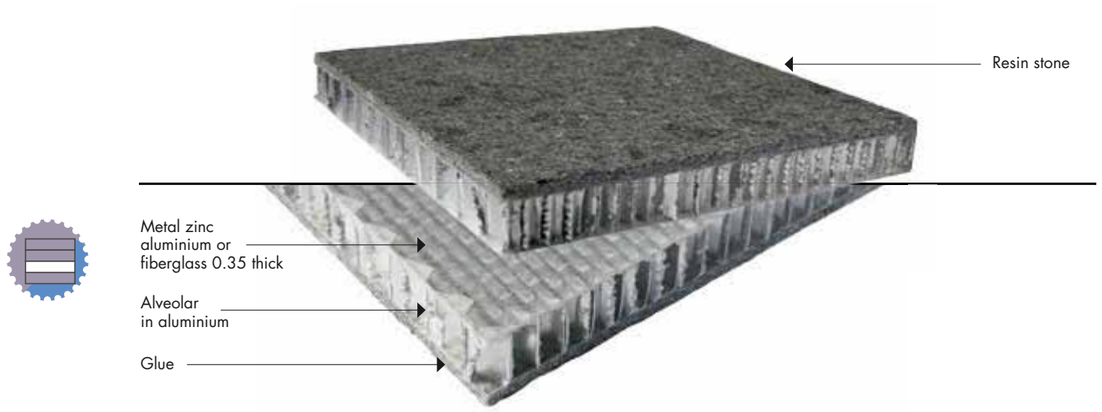
Drilling tool:
keil Diamond Facade Drill Bit 0.8 b7.515.010.022

Depth: hS=4 mm

Hole dimension: Cylindrical of ø 7 mm

Undercut: ø 9 mm

Type of traction for the test:
cylindrical central support of ø 105 mm



WAPSTONE®

PANEL COVERED IN NATURAL STONE

The technology allows obtaining 8 to 10 mm thin slabs from the stone block that can be reduced to 5 mm, which are then processed with special epoxy resins and glass wool fabric. This process makes the stone resistant to breakage.
The stone thickness is determined by the type of the used stone, by the type of application and by the fact that an anchor nail is inserted. in the stonedil plant, the stone is superficially manufactured as required by the client and cut to size as specified.
The maximum feasible dimensions of the sheets are 3 x 1 m with calibrated thickness of 8 to 10 mm. This panel is created especially for interior design, while for external use and for facade in particular, we suggest the use of the nail inserted in the stone, as weather conditions may determine the detachment of the stone from the support, using even if necessary different galvanised steel plates. In the Lattonedil plant, the anchor nails are inserted in the stone as required by the analysis of the application with the customer. the special fixing nail between the stone and the dedicated structure. The solution for special applications and interior.

Advantages:
- Executive quality
- Excellent mechanical resistance compared to traditional solutions that have to use higher thicknesses.
- Lightness
- Better mechanical resistance compared to Isoparstone
- Easy and quick installation
- Maintenance free
- Fire resistance

Disadvantages:
- Low thermal insulation for the facades
- Higher cost compared to Isoparstone

Tensile strength between fixing element and stone pull-off

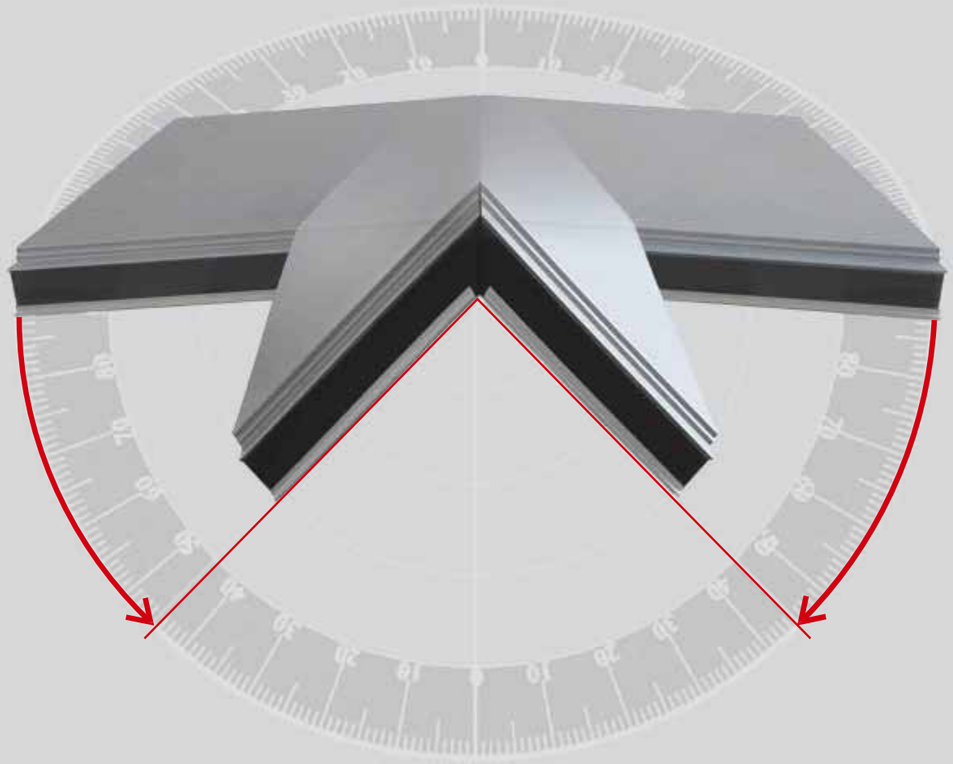
Mechanical characteristics of the sample	ABSOLUTE BLACK sample dimension 30 x 30 x 6.6-6.8 mm.		KASHMIR WHITE sample dimension 30 x 30 x 6.8-7 mm.		CARRARA WHITE sample dimension 30 x 30 x 7-8 mm.	
Volumetric weight Kg./m³	3.015		2.690		2.698	
Compressive strength Kg./cm²	2.485		2.075		1.303	
Bending strength Kg./cm²	253		135		198	
Imbibition % per weight	0.130		0.430		0.103	
Thermal expansion coefficient mm./m. °C	–		0.0067		0.00590	
	MIN. Value	**MAX. Value**	**MIN. Value**	**MAX. Value**	**MIN. Value**	**MAX. Value**
Load of tensile failure limit in Kg.	**120**	**151**	**83**	**95**	**86**	**95**
Diameter of the failure limit cone in mm.	**38**	**41**	**32**	**38**	**49**	**54**

ANGOLI HIGHTECH

CUSTOM CORNERS WITHOUT METAL INTERRUPTION

The custom-cut technology allows obtaining a perfect corner from the panel, as specifically requested in your drawing. This way, it is possible to obtain a building corner without anti-aesthetic finishing lists, exalting the architectural linearity of the structure and the selected Lattonedil® panel.

The work is performed by tinsmiths who follow a template and manufacture the single corners by emptying and bending the panel without affecting the surface.
The obtained special panel ranges from minimum 30° up to 170°. Some examples are shown below.



CHAPTER 9
GUARANTEED STEEL

Tata Steel + Lattonedil. A winning choice!

COLORCOAT HPS200 ULTRA®
OF TATA STEEL

COLORCOAT HPS200 ULTRA® BY TATA STEEL OFFERS PERFORMANCE SECOND TO NONE, AS THE LATTONEDIL ROOFS AND WALL CLADDING.
TESTS HAVE SHOWN THAT COLORCOAT HPS200 ULTRA® WITH FACING IN GALVALLOY™ SUBSTANTIALLY REDUCES THE RISK OF DAMAGE CAUSED BY CORROSION AND BY THE DETACHMENT OF THE COATING IN THE CUT PERIMETER AREAS, THUS OFFERING MAXIMUM RELIABILITY AND SAFETY.

- GALVALLOY™ metal facing optimised to resist to corrosion and to protect the cutting edges.
- Large colours range created in collaboration with architects and colour experts.
- CONFIDEX® warranty for industrial and commercial buildings with a surface over 500 sq.m. that is valid for 30 years without any need for maintenance or inspections.
- Residential warranty through the manufacturer of the system up to 25 years for the residential buildings.
- Completely recyclable and ecological to remove all elements that are harmful to the environment.
- Conservation of the colour and the gloss two times higher than the standard plastisol products, thanks to its very advanced coating technology.
- Supplied with the SCINTILLA® marking in relief that guarantees the authenticity.

For a complete reliability, it is recommended to use COLORCOAT HPS200 Ultra® of Tata Steel together with the GALVALLOY™ facing.

Product performance
The COLORCOAT HPS200 Ultra® resistance is determined by the particular metal facing, by the high-performance pre-treatment, by the primer and the surface coating, all insured by a complete testing process and real data that validate and confirm our statements on the product.

GALVALLOY™ facing
Most of the prepainted steel products use a metal coating with 99% of zinc that ensures good corrosion resistance, but leaves the cutting edges vulnerable to paint peeling and premature delamination.
COLORCOAT HPS200 Ultra®, like its predecessor COLORCOAT HPS200. Uses a particular metal facing, GALVALLOY™, made with a special alloy composed of 95% of zinc and 5% of aluminium. This alloy ensures an unbeatable protection, even in the cutting edges.

Some examples of the Colorcoat HPS200 Ultra® colours.

Pure grey | Anthracite RAL 7016 | Hamlet RAL 9002 | Burano RAL 3004 | Terracotta

COLORCOAT PRISMA® BY TATA STEEL
AESTHETIC THAT LASTS IN TIME. GUARANTEED

COLORCOAT PRISMA® IS THE PROOF OF CHANGE OF THOUGHT THAT USES A THREE-LAYER CUTTING-EDGE TECHNOLOGY TO CREATE AN OPTIMISED, STURDY AND CHROME-FREE PRE-PAINTED STEEL PRODUCT.
COLORCOAT PRISMA® DOES NOT ONLY OVERCOME THE RESTRICTIONS IMPOSED FOR UV PERFORMANCE, BUT ALSO GOES BEHIND THE STRICTEST EUROPEAN STANDARDS ON CORROSION RESISTANCE. THEREFORE IT IS AN OPTIMAL CHOICE FOR COMMERCIAL, RETAIL BUILDINGS, WAREHOUSES, FOR THE PUBLIC SECTOR AND FOR BUILDINGS WITH PARTICULAR AESTHETICS THAT MUST BE DURABLE OVER TIME.

- Revolutionary technology with 3-layer finish that improves the aesthetics, durability and long-term performance.
- Confidex® warranty up to 30 years for surfaces exposed to weather of industrial and commercial buildings, without any need of inspection or maintenance to retain the validity.
- Optimised Galvalloy™ metal finish with exceptional resistance to corrosion and protection of cutting edges.
- It was tested by independent bodies for the release of volatile organic compounds (VOC) in compliance with EN ISO 16000-9 standard and obtained the “A+” certification.
- Fully compliant with REACH requirements and free of chromates, including hexavalent chrome.
- Made in the United Kingdom. BES 6001 certification, Standard for responsible supplies.
- Fully compliant with BREEAM and LEED certifications.

Applications
Regardless of the type of building, whether warehouse, office building, school or recreational building, new construction or restored building, COLORCOAT PRISMA® offers a series of solutions that allow realising modern, durable and appealing roofs and walls.

GALVALLOY™ support
Most pre-painted steel products use a galvanized finish that ensures good resistance to corrosion but leaves the cutting edges vulnerable to scaling and premature paint peeling.
COLORCOAT PRISMA® uses an exclusive metal support of proven efficacy, GALVALLOY™ by Tata Steel, consisting of special alloy with 95% zinc and 5% aluminium, thus ensuring unparallel protection against corrosion, also in perimetric cutting areas.

Some examples of the Colorcoat Prisma® colours.

Silver metallic RAL 9006 | Grey Aluminium RAL 9007 | Oxide Red RAL 3009 | Anthracite RAL 7016 | Hamlet RAL 9002

CONFIDEX® GUARANTEES
BY TATA STEEL

IN EUROPE, CONFIDEX® BY TATA STEEL IS THE MOST COMPLETE WARRANTY FOR PREPAINTED STEEL PRODUCTS AND IS AVAILABLE FOR INDUSTRIAL AND COMMERCIAL BUILDINGS WITH A SURFACE OVER 500 SQ.M. TREATED WITH COLORCOAT HPS200 ULTRA® AND COLORCOAT PRISMA®.
THE TATA STEEL CONFIDEX® WARRANTY WAS INTRODUCED IN 1992 AND CONTINUES TODAY TO BE THE BEST IN THIS SECTOR.

Key features
The CONFIDEX® warranty is clear and simple and, in the case of defective coating, unlike many other warranties, offers a complete corrective action.
Its major characteristics are:
- No need of yearly inspection or maintenance to make the warranty effective.
- The sharp edges are covered for the entire warranty period.
- Based on years of product verifications, made all over the world.
- Provides a coverage of slopes until 1° without differences between the slopes above this level.
- Direct contractual relationship between tata steel and the building owner.
- Full transferability in case of building ownership transfer.
- Reduced risks of each ring of the supply chain.
- Quick and easy online registration form.

Benefits of the CONFIDEX® registration
As a rule, the CONFIDEX® Warranty can be offered to the building owner, to the facing supplier or to the covering system manufacturer.
In the improbable case of a defect on the coating, we can be directly contacted, regardless of the contract supply chain.
Without a direct contact with tata steel, it may occur, in the worst case, that some of the supply chain rings are no longer active, making it difficult, if not impossible, to file a claim.

CONFIDEX® Warranty

The CONFIDEX® Warranty is a tool to ensure direct contact between the building owner and Tata Steel.

OTHER WARRANTIES

VALIDITY OF THE CONFIDEX® WARRANTY FOR THE ZONES 1 AND 2

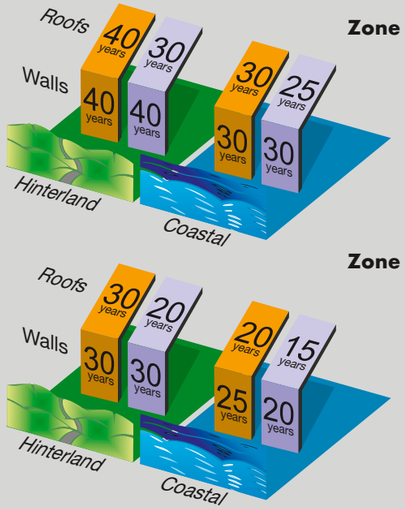
Note
1. The values relative to the "Coastal" area refer to the buildings included within a radius of 1 km from the coast.
2. For altitudes higher than 900 m there will be a 20% reduction of the duration of the warranty.
3. The complete terms and conditions of the CONFIDEX® warranty are available online on www.colorcoat-online.com.
4. To ensure its validity, the CONFIDEX® warranty must be registered within three months from the date of completion of the building.
5. The periods of validity of the CONFIDEX® warranty shown in the figure above refer to those in zones 1 and 2.
   For more information on other areas,
   please visit www.colorcoatonline. com/confidexmap.

Northern Europe - Zone 1

Southern Europe - Zone 2

For more information on areas not listed in the CONFIDEX® zones, please contact Tata Steel.

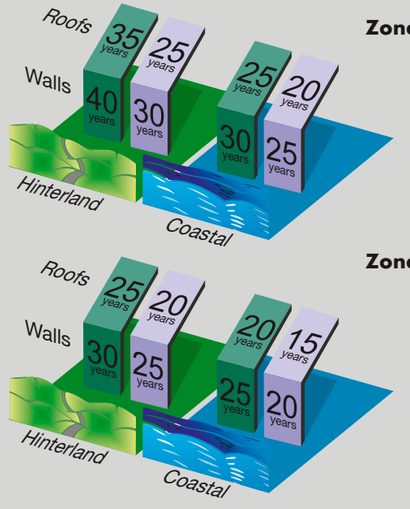
COLORCOAT HPS200 Ultra®



Signature colours

Classic and matte colours

COLORCOAT PRISMA®



Plain or metallic colours

Matte colours

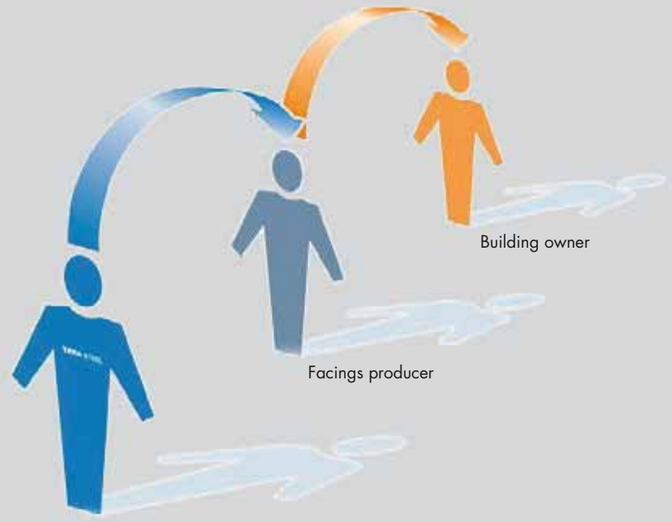
RESIDENTIAL WARRANTY COLORCOAT®

FOR APPLICATIONS ON INDIVIDUAL RESIDENTIAL BUILDINGS, TATA STEEL PROVIDES, THROUGH THE SYSTEM SUPPLIER, A WARRANTY THAT ENSURES THE ADHERENCE OF THE COATING TO THE STEEL FACING FOR THE ENTIRE PERIOD OF TIME ESTABLISHED BY THE WARRANTY.

COLORCOAT HPS200 Ultra®
The warranty period changes depending on the following factors: geographical location, environment where the building is constructed, the application and the colour.
In order to rely on a 25 years protection, please ask for a copy of the warranty when ordering.
In the improbable case of a complaint, a full traceability of the supply chain will be required.

COLORCOAT Prisma®
The warranty period changes depending on the following factors: geographical location, environment where the building is constructed, the application and the colour.
In order to rely on a 15 years protection, please ask a copy of the warranty when ordering.
In the improbable case of a complaint, a full traceability of the supply chain will be required.

COLORCOAT HPS200 Ultra®
COLORCOAT Prisma®

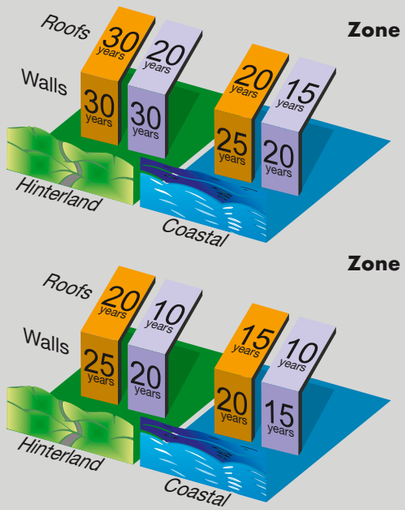


VALIDITY OF THE CONFIDEX® WARRANTY FOR THE ZONES 1 AND 2

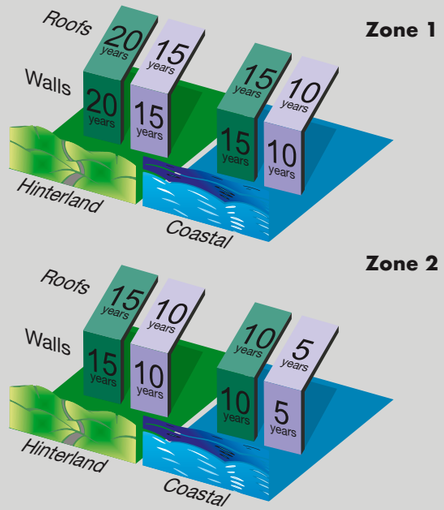
Note
1. The values related to “Coastal” areas refer to the buildings included within a radius of 1 km from the coast.
2. For altitudes higher than 900 m there will be a 20% reduction of the duration of the warranty.

Northern Europe - Zone 1
Southern Europe - Zone 2

COLORCOAT HPS200 Ultra®



COLORCOAT PRISMA®



Signature colours
Classic and matte colours
Plain or metallic colours
Matte colours

Three good reasons for using ArcelorMittal's prepainted steels on Lattonedil®'s products

The pre-painted steel of ArcelorMittal offers to architects, designers and planners a unique range of products able to meet the most stringent criteria required by the construction industry in terms of aesthetics, performance and respect of the environment.

AESTHETICS

the richest colours available in the market, with matt satin finish, smooth or grainy and impression, with surface textures of high aesthetic appeal can give a unique identity to each building.

PERFORMANCE

guaranteed pre-painted steel, able to withstand the most extreme conditions in terms of temperature and weathering. Suitable for marine environments and other corrosive environments, offer scratch-resistance and colour brilliance with a minimal amount of maintenance.

ENVIRONMENTAL PROTECTION

the Nature collection includes the full range of ArcelorMittal's pre-painted steel, free of heavy metals and already complies with present and future REACH regulations (Registration, Evaluation, Authorisation and Restriction of Chemical Substances) of the European Union. The REACH regulation on the registration, evaluation, authorisation and restriction of chemicals, aims to ensure greater protection of human health and the environment through a more timely and effective identification of properties of chemicals. Playing in advance, the Nature collection of ArcelorMittal is already at 100% free of hexavalent chromium and heavy metals.

SPECIFIC AUTOMATIC WARRANTY ON GRANITE® PRODUCTS

Specific Automatic Warranty on Granite® products. ArcelorMittal has many years of experience in delivering high quality coated products. Thanks to our know-how and skills acquired, we are able to offer long-term warranties on our steels for external applications with a validity of up to 30 years.

Our steels are subjected to comprehensive tests by our expert team of R&D under extreme conditions of corrosion and weathering, both in the laboratory and on external sites.

After running our internal testing, we turn to independent institutes and laboratories that process a wide variety of tests, in order to obtain external certification by bodies such as CSTB in France, BBA in the United Kingdom and many more. So our products can be chosen safely.

DEFINITION OF "ENVIRONMENT"

Rural: external environment for buildings located in the countryside, in the absence of specific sources of pollution, such as leakage of fumes containing sulphur vapour (e.g. heating oil).

Urban/industrial: external environment for buildings in urban areas and/or industrial environments consisting of one or more factories that produce gas or fumes such as to result in a significant increase in air pollution without being a source of corrosion due to the high concentration of chemical compounds.

Maritime: divided into three areas
- buildings situated between 3 km and 20 km from the coast.
- buildings located between 1 km and 3 km from the coast.
- buildings located less than 1 km from the coast, with the exception of direct exposure to sea water (300 m from seafront)

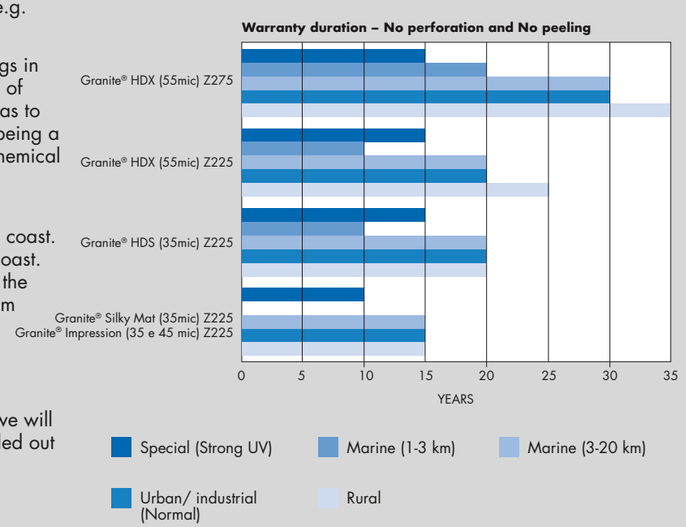
Intense UV radiation: buildings located at altitudes above 900 m.

For other environments and/or special requirements, we will grant a customized warranty after the customer has filled out an environmental questionnaire.

THE MAIN FEATURES OF THE AUTOMATIC GRANITE® WARRANTY

Granite® products warranty products is granted automatically:
- for the whole product range (from standard products to high-end ones) to answer every requirement
- against perforation of metal support
- against paint detachment
- against the proliferation of corrosion and peeling of the paint film over the cut edges 10 mm
- for aesthetic appearance: against the "chalking" of the paint

Concerning the aesthetics, our Automatic Warranty guarantees excellent colour stability and a high gloss retention (> 80%) in all kinds of environment, even in the case of intense an intense UV radiation such as in southern Europe and at high altitudes (> 900 m). The period of validity of the warranty depends on the specific painting system. Details are available on the website: industry.arcelormittal.com.



GRANITE® HDS

Granite® HDS
Nspired by Nature
guarantee 20 years
free of chromates and heavy metals

Sandwich panel

Profiled sheet

Roof panels

APPLICATIONS
Granite® HDS is ideal for roof coverings and exterior facades and can be subjected to profiling to create sandwich panels and profiled sheets.

AESTHETICS
Granite® HDS is available in a rich colour chart that includes metallic hues: this is one of the great advantages of pre-painted steel. Customized colours are available upon request.
All Granite® HDS colours have a smooth satin finish with 30GU (Gloss unit Gardner 60°).

PERFORMANCE
Good UV and corrosion resistance, very good colour stability, suitable for buildings exposed to normal and severe environments.
Sunny regions with intense UV radiation.
Industrial and urban areas normal and severe.

THE MAIN CHARACTERISTICS OF GRANITE® HDS

SUPERIOR LIFE THANKS TO A 20-YEAR WARRANTY

IMPROVED PERFORMANCE (EN 10169)
UV RESISTANCE CLASS RUV 4
CORROSION RESISTANCE CLASS RC4

PAINTING SYSTEM WITH THICKNESS OF 35µM ON METALLIC SUPPORT Z225g/sq.m.

GRANITE® HDX

Granite® HDX
Nspired by Nature
guarantee 35 years
free of chromates and heavy metals

APPLICATIONS
Granite® HDX is ideal for roof coverings and exterior facades and can be subjected to profiling to create sandwich panels, boxes, plates profiled sheets, elements of solar shields, blades, fins and other narrow profiles.

AESTHETICS
Granite® HDX is available in a rich colour chart that includes metallic hues: this is one of the great advantages of pre-painted steel. Customized colours are available upon request.
All colours Granite® HDX have a granulated satin finish with 30GU (Gloss unit Gardner 60°) but are also available with a mat finish.

PERFORMANCE
High UV and corrosion resistance, excellent colour stability, solid surface coating, suitable for buildings exposed to challenging climatic and environmental conditions.
- Cold and humid environments
- Coastal areas (up to 300 m from the sea)
- Sunny regions with intense UV radiation, such as Africa, the Middle East and Caribbean
- Industrial and polluted areas

THE MAIN CHARACTERISTICS OF GRANITE® HDX

SUPERIOR LIFE THANKS TO A 35-YEAR WARRANTY

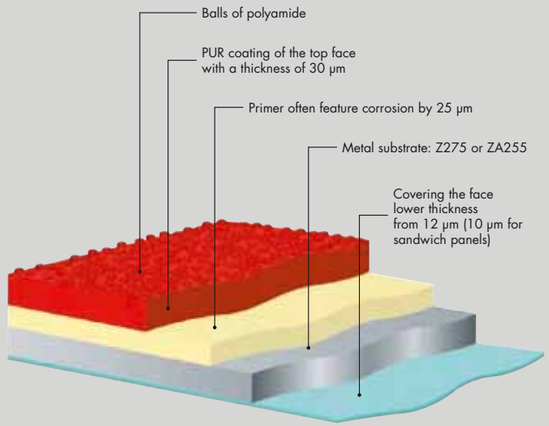
IMPROVED PERFORMANCE (EN 10169)
UV RESISTANCE CLASS RUV 4
CORROSION RESISTANCE CLASS RC5

PAINTING SYSTEM WITH THICKNESS OF 55µM ON METALLIC SUPPORT (FROM Z225 TO Z275G/sq.m.)

Sandwich panel

Profiled sheet

Roof panels



GRANITE® SILKY MAT

Granite® Silky Mat 35 microns
Nspired by Nature
guarantee 15 years free of chromates and heavy metals

APPLICATIONS
Granite® Silky Mat is designed for architectural facades, but can be used for different applications in construction projects. Granite® Silky Mat is suitable for any kind of profiling used for facade systems and lends itself perfectly to the production of sandwich panels. For Granite® Silky Mat a dedicated offer is introduced in terms of logistics and production, which allows creating small coils for specific design requirements.

AESTHETICS
Two different finishes are available:
Smooth finish: lightly grained. Available in 5 colours.
Wrinkled finish: slightly shiny. With 6 natural colours

PERFORMANCE
Granite® Silky Mat boasts excellent mechanical properties thanks to the steel support, as well as a particularly thick but flexible paint system which makes it scratch-resistant, formable and able to resist over time.
The product is covered by the ArcelorMittal's automatic warranty up to 15 years.
For specific projects higher lifetime warranties can be granted.

THE MAIN CHARACTERISTICS OF GRANITE® SILKY MAT

WIDE RANGE WITH 2 AESTHETIC FINISHES AND 11 COLOURS

UNIQUE AESTHETIC PROTECTED BY AN EXTERNAL BODY (OHMI)

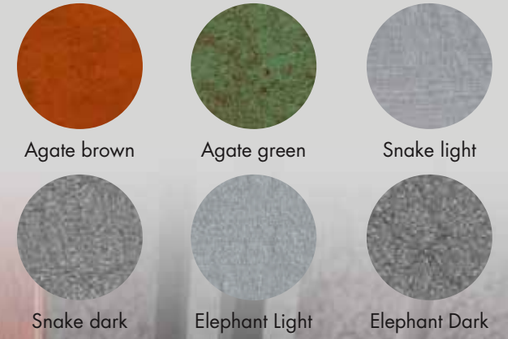
PAINTING SYSTEM WITH THICKNESS OF 35µM ON METALLIC SUPPORT (from Z225 to Z275g/sq.m.)

GRANITE® IMPRESSION

Granite® Impression
Nspired by Nature
guarantee 15 years free of chromates and heavy metals

APPLICATIONS
Granite® Impression is designed specifically for prestigious architectural facades, but can be used for many other applications. It can be subjected to profiling to create sandwich panels, boxes, solar screens, blades, fins and other narrow sections.
For Granite® Impression a dedicated offer is introduced in terms of logistics and production, which allows creating small coils for specific design requirements.

AESTHETICS
Surface textures and motifs inspired by nature, which make your building unique.
- Snake: similar to snake skin, this motif develops according to a random arrangement of scales with different shades and longitudinal variables forms, all clearly visible. The slightly textured surface gives to every building an extraordinary surface look.
- Elephant: similar to the elephant's skin, the wrinkled appearance and very solid air creates a structural surface with a strong visual impact on each building.
- Green & Brown Agate: our Green & Brown Agate finishes, with their half-glossy motifs, seem to be covered by iron oxide inlays. The unusual mineral beauty of these two shades offers a rich aesthetic appeal and prestige to the facades.



PERFORMANCE
Aesthetics does not exclude the performance of Granite® Impression, which boasts a solid, but flexible, painting system able to guarantee resistance to scratches, formability and durability. The product is covered by ArcelorMittal's automatic warranty up to 15 years ArcelorMittal.
For specific projects higher lifetime warranties can be granted.

THE MAIN CHARACTERISTICS OF GRANITE® IMPRESSION

STURDY AND DETECTABLE FINISHES

UNIQUE AESTHETIC PROTECTED BY AN EXTERNAL BODY (OHMI)

FLEXIBLE PAINTING SYSTEM WITH THICKNESS OF 35µM (AGATE GREEN & BROWN) AND 45µM (SNAKE ED ELEPHANT) ON METALLIC SUPPORT (from Z225 to Z275g/sq.m.)

COLOURS

STANDARD COLOURS EXTERNAL SIDE


White-grey


Siena red


Testa di Moro

SPECIAL COLOURS EXTERNAL SIDE


RAL 9010


RAL 1015


RAL 1019

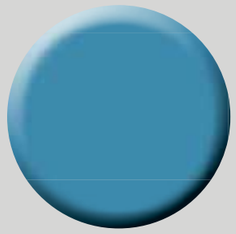

RAL 7006


RAL 7015


RAL 7016


RAL 7022


RAL 8011


RAL 5024

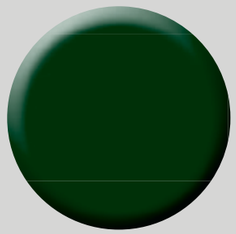

RAL 5010

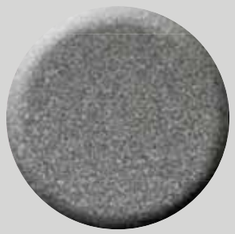

RAL 5008


RAL 9006


RAL 6021


RAL 6011

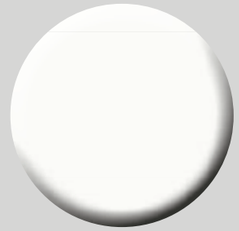

RAL 6005


RAL 9007

STANDARD COLOURS INTERNAL SIDE


White-grey

SPECIAL COLOURS INTERNAL SIDE


RAL 9010


Wood colour

WOOD COLOURS FOR THE INTERNAL SIDE OF THE SUPPORT


Teak


Birch


Cherry panelling


Walnut Cream


Wood Brown Oak


Oak indoor


Walnut

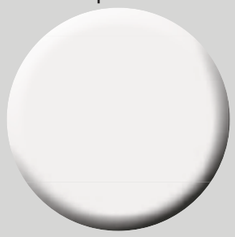
SPECIAL FINISHES FOR THE INTERNAL SIDE OF THE SUPPORT


Paper-felt


Natural centesimal aluminium


White centesimal aluminium


Wood colour fibreglass


Fibreglass

COLOURS

COLOURS TTCOPPO®

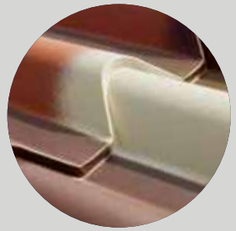
STANDARD COLOURS

Pantile red

SPECIAL COLOURS (UPON REQUEST)

Aged tile red

Aged copper red



Aged cream red

Aged beige

Aged yellow

Copper

COPPER

EUROCINQUE® AND ISOCOPRE® ARE ALSO AVAILABLE WITH THE EXTERNAL FACING IN REAL COPPER.

THE COMPLETE RAL COLOUR PALETTE IS AVAILABLE UPON REQUEST

You can build Eurocinque® panel in any RAL colour, request information at our offices.

CHAPTER 10
TECHNICAL DATA

FIXING INSTRUCTIONS
FOR RIBBED ROOF AND WALL PANELS

In order to correctly use the insulated panels, it is necessary to identify the most suitable fixing system.
The system must be chosen on the basis of the type of support structure, and is essential for guaranteeing safety, stability and waterthightness. The fixing system is generally subdivided into two categories: structural fixing and nonstructural fixing.
The first, fixes the roof or wall panel to the supporting structure of the building and must guarantee the capacity to support the applied loads.

The second, on the other hand, only fixes the tinsmithery systems or the panel sheets together.
The place and number of the roof structural fixing elements is established on the basis of the number of supports, the slope of the pitch and the windiness, but must not, however, be less than 3 for every sq.m.. On the ridge on the roof, the eaves and any front overlapping, the fixing groups must be applied on all the panel ribs.

STRUCTURAL FIXING OF LATTONEDIL ROOF PANELS ON STEEL SUPPORT STRUCTURE

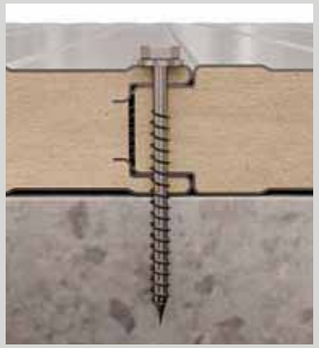
Fixing groups with self-tapping screws for steel, with a coloured nylon head, 6.3 mm diameter and variable length, depending on the thickness of the panel. Prepainted metal or aluminium capping with preassembled expanded element underneath, and sealing washer in PVC.

PANEL THICKNESS (mm)	SCREW LENGTH (RECOMMENDED)
30	Ø 6,3 x 100 mm.
40	Ø 6,3 x 110 mm.
50	Ø 6,3 x 120 mm.
60	Ø 6,3 x 130 mm.
80	Ø 6,3 x 140 mm.
100	Ø 6,3 x 160 mm.
120	Ø 6,3 x 180 mm.
150	Ø 6,3 x 210 mm.
160	Ø 6,3 x 220 mm.
180	Ø 6,3 x 240 mm.
200	Ø 6,3 x 260 mm.

STRUCTURAL FIXING OF LATTONEDIL ROOF PANELS ON WOOD SUPPORT STRUCTURE

Fixing groups with self-tapping screws for wood, with a coloured nylon head, 6.35 mm diameter and variable length, depending on the thickness of the panel. Prepainted metal or aluminium capping with preassembled expanded element underneath.

PANEL THICKNESS (mm)	SCREW LENGTH (RECOMMENDED)
30	Ø 6,5 x 110 mm.
40	Ø 6,5 x 120 mm.
50	Ø 6,5 x 130 mm.
60	Ø 6,5 x 140 mm.
80	Ø 6,5 x 160 mm.
100	Ø 6,5 x 180 mm.
120	Ø 6,5 x 200 mm.
150	Ø 6,5 x 230 mm.
160	Ø 6,5 x 240 mm.
180	Ø 6,5 x 260 mm.
200	Ø 6,5 x 280 mm.



STRUCTURAL FIXING FOR ISOPAR® PANELS ON STEEL STRUCTURE

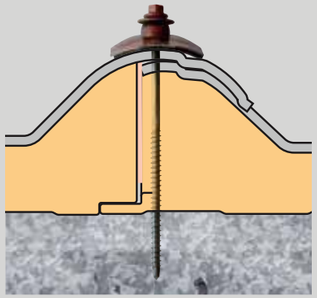
Fixing groups with self-tapping screws for steel, with a white/grey nylon head, 6.3 mm diameter and variable length, depending on the thickness of the panel.

PANEL THICKNESS (mm)	SCREW LENGTH (RECOMMENDED)
30	Ø 6,3 x 60 mm.
40	Ø 6,3 x 70 mm.
50	Ø 6,3 x 80 mm.
60	Ø 6,3 x 90 mm.
80	Ø 6,3 x 110 mm.
100	Ø 6,3 x 130 mm.
120	Ø 6,3 x 150 mm.
150	Ø 6,3 x 180 mm.
160	Ø 6,3 x 190 mm.
180	Ø 6,3 x 210 mm.
200	Ø 6,3 x 230 mm.
220	Ø 6,3 x 250 mm.
240	Ø 6,3 x 270 mm.

FIXING INSTRUCTIONS
FOR TTCOPPO®, TTONDA® E TTONDAFIBRO® PANELS

In order to correctly use the insulated panels, it is necessary to identify the most suitable fixing system.
The system must be chosen on the basis of the type of support structure, and is essential for guaranteeing safety, stability and waterthightness. the fixing system is generally subdivided into two categories: structural fixing and nonstructural fixing.
The first, fixes the roof or wall panel to the supporting structure of the building and must guarantee the capacity to support the applied loads.

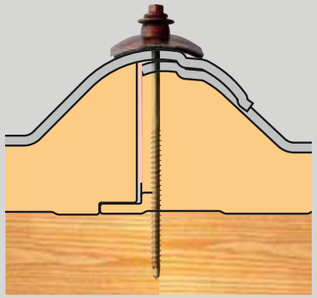
The second, on the other hand, only fixes the tinsmithery systems or the panel sheets together. The place and number of the roof structural fixing elements is established on the basis of the number of supports, the slope of the pitch and the windiness, but must not, however, be less than 3 for every sq.m. On the ridge on the roof, the eaves and any front overlapping, the fixing groups must be applied on all the panel ribs.



STRUCTURAL FIXING OF TTCOPPO®, TTONDA® ET TTONDAFIBRO® LATTONEDIL PANELS ON STEEL SUPPORT STRUCTURE

Fixing groups with self-tapping screws for steel, with a coloured nylon head or coloured steel hexagonal head, 6.3 mm diameter and variable length, depending on the thickness of the panel. Prepainted metal or aluminium capping with preassembled expanded element underneath, and sealing washer in PVC.

PANEL THICKNESS (mm)	SCREW LENGTH (RECOMMENDED)
30	Ø 6,3 x 110 mm.
40	Ø 6,3 x 120 mm.
50	Ø 6,3 x 130 mm.
60	Ø 6,3 x 140 mm.
80	Ø 6,3 x 160 mm.
100	Ø 6,3 x 180 mm.



STRUCTURAL FIXING OF TTCOPPO®, TTONDA® ET TTONDAFIBRO® LATTONEDIL PANELS ON A WOOD SUPPORT STRUCTURE

Fixing groups with self-tapping screws for wood, with a coloured nylon head or coloured steel hexagonal head, 6.5 mm diameter and variable length, depending on the thickness of the panel. Prepainted metal or aluminium capping with preassembled expanded element underneath, and sealing washer in PVC.

PANEL THICKNESS (mm)	SCREW LENGTH (RECOMMENDED)
30	Ø 6,5 x 120 mm.
40	Ø 6,5 x 130 mm.
50	Ø 6,5 x 140 mm.
60	Ø 6,5 x 150 mm.
80	Ø 6,5 x 170 mm.
100	Ø 6,5 x 190 mm.

ACCESSORIES
FOR FIXING ROOFING PANELS AND WALLS

CAP NUT
Available in different colours and materials, depending on the client's requirements.

FIXING SYSTEM
Self-drilling screws, EPDM washer, cap nut.

SCREW FOR ROOF PANEL
Self-tapping screw for wood and steel in standard colours.

SCREW FOR WALL PANEL
Self-tapping screw for wood and steel in standard colours.

METHACRYLATE SCREW
Self-tapping and self-drilling screw with a completely covered head in plastic material - methacrylate.

SCREW
Self-tapping screw for wood and steel, colours on request.
(for minimum quantities, please contact our offices).

STAINLESS WASHER WITH EDPM GASKET
Stainless washer with gasket for the perfect watertightness of the fixing.

WASHER AND COLOURED EDPM GASKET
Washer and edpm gasket with colour matching the roof colour.
(for minimum quantities, please contact our offices).

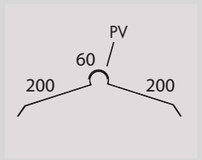
CAP NUT FOR TTCOPPO®, TTONDA® AND TTONDAFIBRO®
Available in different colours and materials, depending on the client's requirements.

SCREW FOR TTCOPPO®, TTONDA® E TTONDAFIBRO®
Self-tapping screw for wood or steel with edpm gasket and cap nut.

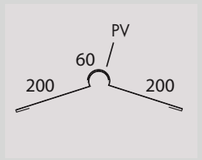
SCREW WITH EDPM GASKET FOR TTCOPPO®, TTONDA® AND TTONDAFIBRO®
Self-tapping screw for wood or steel with edpm gasket.

THREATED INSERT WITH METRIC SCREW
Special fixing element in steel than allows putting a thread on the particular elements with low thickness.
Really fast and easy to apply, it has also high resistance.

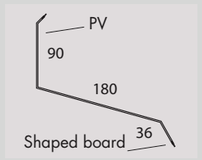
FLOWER RIVET
This rivet is adapted for fixing of any stuffs, the bushing of the fastener opens in more parts during assembling thereby ensuring an excellent fixing.



SHAPED RIDGE FOR G9
Double hinged ridge, shaped as the external panel profile.



SMOOTH RIDGE FOR G9
Double hinged element



FRONT FLASHING FOR G9
Front flashing for G9 to be used in case of joint between the roof made of panels and an existing wall, placed in frontal position.

ACCESSORIES

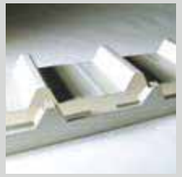
FINISHING COMPONENTS FOR RIBBED ROOF AND WALL PANELS

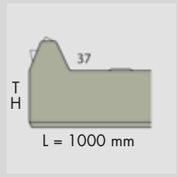
Serie of finishing elements for lattonedil roof panel, able to satisfy all design requirements.

Material: 0.5 mm thick prepainted steel or on demand
0.6 mm prepainted aluminium or on demand
0.6 mm natural copper.

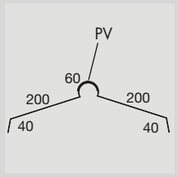
Colour: White grey, chocolate brown, siena red, other colours on demand

Dimensions: Standard length 3 m

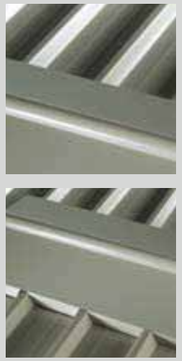


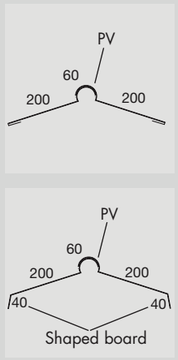


SILUETTE
Closing element for the head of roof panels up to 50 mm thick, which ensures excellent aesthetic appearance and better protection.
Available in prepainted steel.



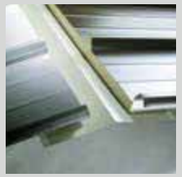
RIDGE CAP TO BE SHAPED
Hinged cap to be shaped during installation, designed for the external joint of pitched roofs.

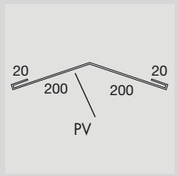




SMOOTH RIDGE CAP
Double hinged element.

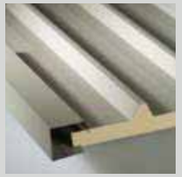
SHAPED RIDGE CAP
Double hinged element.

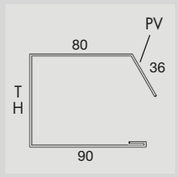




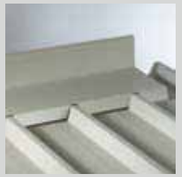
SUBRIDGE
Essential element designed for the internal joint of the pitches on steel constructions.

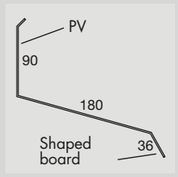
SUBRIDGE CAP LINING
This is a spongy lining to be applied under the metal ridge cap; it is primarily recommended for slightly sloping pitches, in order to prevent infiltration caused by strong wind.



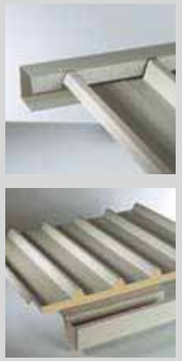


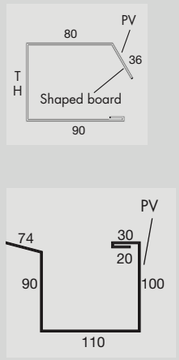
SIDE FLASHING
To cover the side edge of the panel, can be used for both the full rib and the overlapping rib.





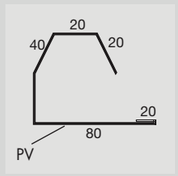
FRONT FLASHING
O be used in case of joint between the roof made of panels and an existing wall, placed in frontal position.



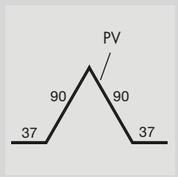


TAIL FLASHING
To cover the upper edge of the panels, to be used in single protruding single pitch roofs.

EAVES
Useful complementary element for roofs and porches with short pitches; side heads and fastening rods can be supplied on request.



SIDE SUPPORT PROFILE
To be used as a support under the empty overlapping rib, in combination with fixed rooflights. We recommend to fit a spongy lining in the cavity in order to prevent any condensation.

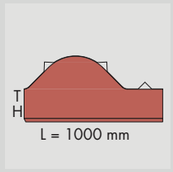


SNOW STOPPER
Necessary for a complete and safe roof.

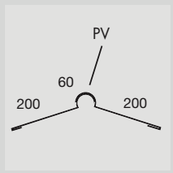
TOUCH UP PAINT
This is a special spray paint for touching up the panels in the case of surface scratches or accidental dents. The available colours are white grey, siena red, dark brown and red tile, other colours are available on demand.

ACCESSORIES
FINISHING COMPONENTS FOR TTCOPPO®

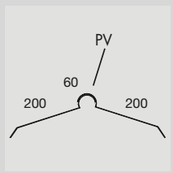
Accessories finishing components for TTcoppo® serie of finishing elements for TTCOPPO® roof panel, able to satisfy all design requirements.
MATERIAL: 0.5 mm thick prepainted steel or on demand
0.6 mm thick prepainted aluminium or on demand
0.6 mm thick natural copper.
COLOUR: Standard tile red, other colours on demand
DIMENSIONS: Standard length 3 m.



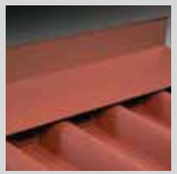
SILUETTE
Closing element for the head of TTCOPPO® panels up to 50 mm thick, which ensures excellent aesthetic appearance and better protection. Available in prepainted steel for 30, 40 and 50 mm thick panels.
Different thicknesses on demand.

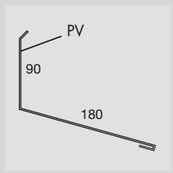


SMOOTH RIDGE CAP
Double hinged element, without shaped fin.

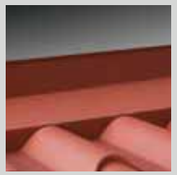


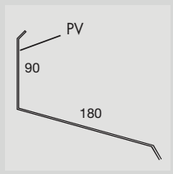
SHAPED RIDGE
Double hinged ridge, shaped as the external panel profile.



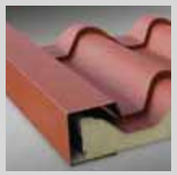


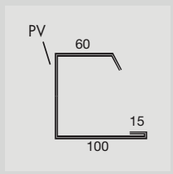
FRONT FLASHING
To be used in case of joint between the roof made of panels and an existing wall, placed in frontal position.



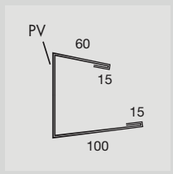


FRONT SHAPED FLASHING
Shaped element, shaped as the external panel profile. to be used in case of joint between the roof made of panels and an existing wall, placed in frontal position.





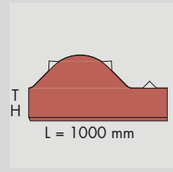
SIDE FLASHING
To cover the side edge of the panel, can be used for both the full rib and the overlapping rib.



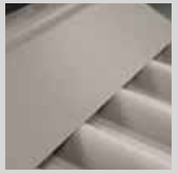
TAIL FLASHING
To cover the upper edge of the panels.

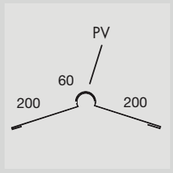
ACCESSORIES
FINISHING COMPONENTS FOR TTONDA®, TTONDAFIBRO®

Serie of finishing elements for TTONDA® and TTONDAFIBRO® roof panel, able to satisfy all design requirements.
MATERIAL: 0.5 mm thick prepainted steel or on demand
0.6 mm thick prepainted aluminium or on demand
0.6 mm thick natural copper.
COLOUR: Standard white grey, other colours on demand.
DIMENSIONS: Standard length 3 m.

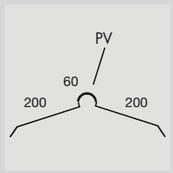


SILUETTE
closing element for the head of TTONDA® and TTONDAFIBRO® panels up to 50 mm thick, which ensures excellent aesthetic appearance and better protection. Available in prepainted steel for 30, 40 and 50 mm thick panels.
Different thicknesses on demand.

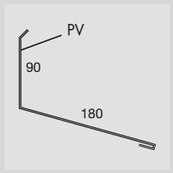




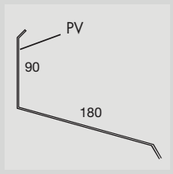
SMOOTH RIDGE CAP
Double hinged element, without shaped fin.



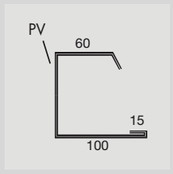
SHAPED RIDGE
Double hinged ridge, shaped as the external panel profile.



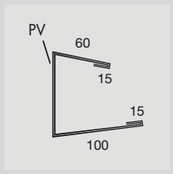
FRONT FLASHING
To be used in case of joint between the roof made of panels and an existing wall, placed in frontal position.



FRONT SHAPED FLASHING
Shaped element, shaped as the external panel profile. To be used in case of joint between the roof made of panels and an existing wall, placed in frontal position.



SIDE FLASHING
To cover the side edge of the panel, can be used for both the full rib and the overlapping rib.

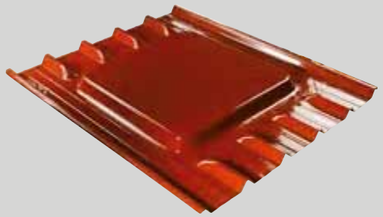


TAIL FLASHING
To cover the upper edge of the panels.

ACCESSORIES
TECHNICAL COMPONENTS

Serie of finishing elements for lattonedil® roof panel, able to satisfy all design requirements.
Material: 0.5 mm thick prepainted steel or on demand
0.6 mm prepainted aluminium or on demand
0.6 mm natural copper.
Colour: White grey, chocolate brown, siena red, other colours on demand
Dimensions: Standard length 3 m

OPENABLE ROOFLIGHT
It is a practical and solid model of window, useful for roofs with a attic and for exits on the roof, and it guarantees luminosity to the room below.
the rooflight is made by a base with a 10/10 thick prepainted steel border that perfectly adapts to the six ribs of ISOCOPRE® panel, and by a small dome in unbreakable transparent polycarbonate regulated by a gas operated system.
The opening of the rooflight is of manual type and the standard sizes of the outlet is 600x600 mm.
It is available in white-grey, siena red and dark brown colours.



GUTTER
It was designed to connect other technical elements with the ISOCOPRE® panels roof.
It consists of a 10/10 thick prepainted steel base, made by a shaped border to be applied to the panel and by a flat part (standard sizes 600x600 mm) to cut according to the external sizes of the element to join.
It is advised to provide a suitable border and seal the edges.
It is available in white-grey, siena red and dark brown colours.

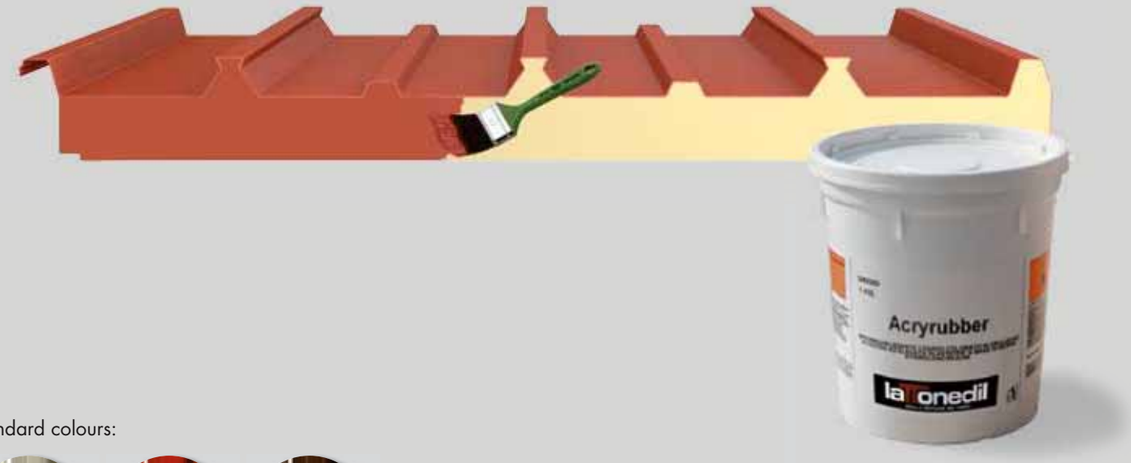
TURRET
It is an accessory conceived to cover exhaust vents on the roof, guaranteeing the connection with the six ribs ISOCOPRE® panels.
The maximum diameter of the exhaust vent must be 120 mm and it can be adapted to the various roof slopes.
It is available in prepainted aluminium in white-grey, siena red and dark brown colours.

PORTHOLE
The industrial building sector requires integrated systems and innovative products. The pre-installed porthole in ISOPAR® insulated panels, with sizes on demand and with the use of materials like unbreakable tempered crystal, double glass and polycarbonate is able to considerably optimize the design times and the installation costs.
It is available for 30 to 60 mm thick panels.

SIGILLANTE®
PROTECTIVE AND DECORATIVE SEALANT FOR INSULATING PANELS

It is a product ready to apply through brush, roll and spray to seal, protect, waterproof and quickly decorate the insulating panels. It is a synthetic, ready to use product, free of solvents, extremely elastic, fully waterproof, resistant to low temperatures and atmospheric agents, to be used outdoors and indoors and on all geometric surfaces, even the most complex ones.
Thanks to its self-levelling and filling power, it is able to level and saturate the micro-pores of the insulating material.
Thanks to the extremely strong adherence and elasticity that develops once dry, it is able to:
- Protect the polyurethane resins of the insulating panels from UV degradation;
- Quickly waterproof the metal panels joined with different insulating cores (polyurethane resins, mineral fibres) along the cutting surface, thus preventing harmful cracks and water infiltrations;
- Quickly seal the cutting and contact surface between metal-insulating cores with an elastic film;
- Seal small holes, interstices, and cracks in the insulating core or along the insulating core-metal connection;
- Absorb dimensional variations of composite materials;
- Quickly decorate the cutting surface, harmonising it to the same colour of the metal;
- Act as decorative finish thanks to a coloured film with high covering properties, resistant to atmospheric agents and available in different hues;
- Act as decorative-protective finish with very high covering properties, to apply on the insulating core or metal surface, even inside;
- Available in packs of 1 kg;
- kg = 1 sq.m. = approximately 10 linear meters of edge, for a 40 mm thick panel;

Decorative sealant along the cutting surface



Standard colours:

White grey | Siena red | Chocolate brown

LINEA VITA

ANTI-FALL SYSTEMS FOR LATTONEDIL® PRODUCTS

Lattonedil® offers a complete range of lifeline systems that can be adapted to the coating products available in this catalogue. Our lifeline systems are produced to avoid perforating the panel, thus ensuring greater water resistance in the hooking points of the anti-fall system.

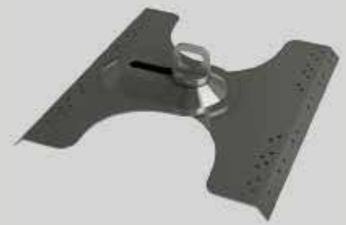
We offer a complete range for any type of coating and need. Our technical office is available to formulate a detailed project according to your requests.

Example of LINEA VITA hooking system for SOLARPAN® PLUS panels

Plate suitable for TTCOPPO®

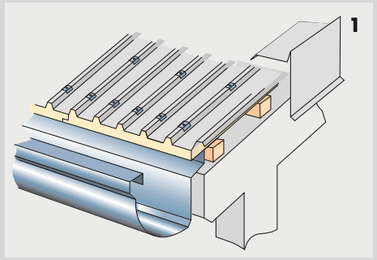
Plate for SOLARPAN® PLUS

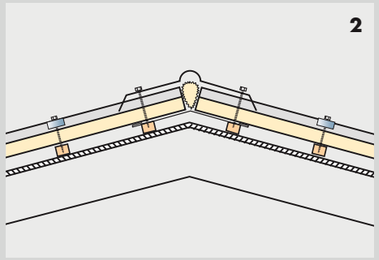
Plates that adapt to all Lattonedil® panels



Absorber

APPLICATIONS


1


2


3


4


5

CIVIL ROOFS

1) TWO REGULAR PITCHES

For this type of common roofs, the lattonedil roof panels are supplied in the length of the pitch. The length is established considering the front position compared to the eaves gutter model used (drawing 1). The panel is generally installed on a frame consisting of horizontally positioned wood strips. The position of the first strip (where the eaves gutter fin will be hooked to) and of the last strip (positioned at least 20 cm from the ridge cap line, is very important, so as to allow the simultaneous fixing of the shaped ridge cap-panel-strip) (drawing 2). General rules advise to fit fixing groups on all the panel ribs on the two supports. The use of silhouette profiles is also recommended to protect the panel heads from atmospheric agents and guarantee roof durability.

2) FOUR REGULAR PITCHES

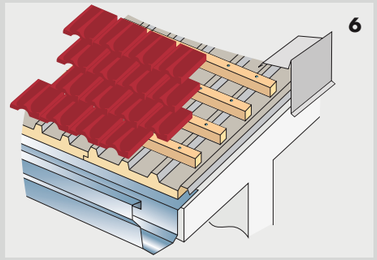
This type of roof fastening is the same as for two-pitches roofs but requires panels with a slanted cut (that can be obtained using a suitable cutting tool). All panels are supplied in the measure corresponding to the maximum height of the pitch (drawing 3). Each panel will then be cut diagonally following the ridge cap line and the excess piece will be used for the opposite side of the next pitch (drawing 4). By using this method the production of waste is reduced to the minimum. We recommend to carry out the diagonal cuts on the ground rather than on the roof, in order to avoid damaging the panels that have already been installed. The ridge cap lines will then be covered with a specific metal ridge cap, not shaped or to be shaped during installation, since the shaping varies depending on the slope of the pitches.

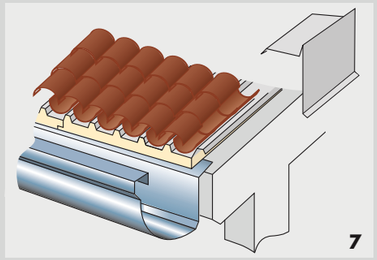
3) IRREGULAR PITCHES

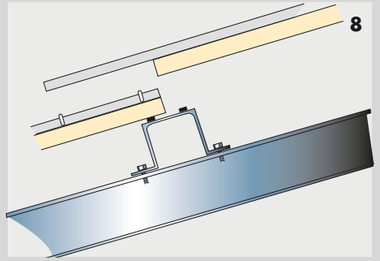
Follow the indications described for the two cases above. The difference consists in the size and method of installing the panels: in case of irregular triangular pitches, a range of progressive dimensions will be established for the panels, to be cut diagonally (drawing 5). With this method the excess piece will unlikely be used for other pitches and will therefore be discarded. Also in this case the metal joint ridge cap must be specifically prepared. It is generally advisable to order at least one or two additional sheets of the maximum length, in order to be sure to complete the roof also in case of a cutting error during installation.

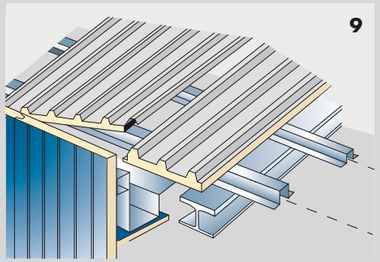
4) SUB TILE

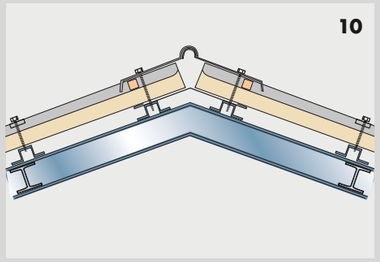
Thanks to its thermal insulation properties, the roof panel can also be used in brick roof systems, particularly as a sub-tile element. As regards the model, we recommend the use of a panel with the external ribbed metal facing and the internal facing made of roofing felt, to be applied directly to the slab.
There are two recommended installation methods:
either install the lattonedil roof panel on which a frame of wood strips must be fitted in orthogonal direction to fix the standard tiles (drawing 6), or exploit the pitch of the ISOCOPRE® panel ribs to fit the traditional tiles directly to this, following the concave-convex system (drawing 7). In this case it is necessary to add a metal tile stop profile on the starting side, or in any case guarantee suitable fastening.
The silhouette profile must be used also in this case.

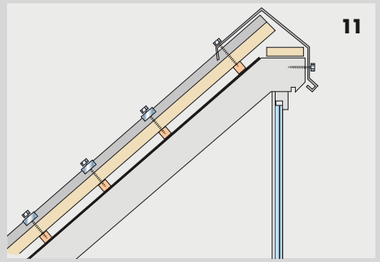

6


7


8


9


10


11

INDUSTRIAL ROOF

1) TWO PITCHES- STEEL STRUCTURE

For this type of architectural structure it is advisable to use roof panels with external and internal steel facings. It is a good rule to select aluminium for the external facing only if the length of the pitches does not exceed 10 metres, in order to prevent any complications due to metal thermal expansion. For all pitches longer than 13 metres, it is advisable to provide an overlapping element on a central support (drawing 8). Here are the main instructions for this type of work: apply a suitable linear seal lining on the panel joints or ask to lattonedil to apply it in order to prevent any condensation (drawing 9); when installing the ridge cap, apply the ribbed sponge seal lining, available on request and bend the flat end part of the panel with a pair of pliers where it meets the ridge cap, in order to prevent infiltration caused by strong wind; apply a metal sub ridge cap, so as to close the ridge cap line between the two pitches and inject polyurethane foam between the panels (drawing 10).

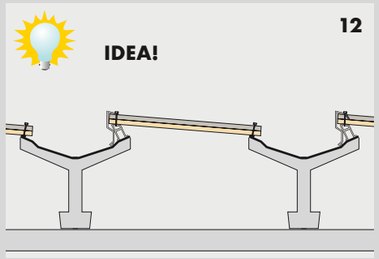
2) SHED ROOF

This kind of roof does not require particular techniques, since in general the very steep pitch guarantees a good water flow. In order to find a good joining solution between the sloping pitch made of panels and the vertical glazed structure, we recommend the creation of a special closure flashing (which can be directly requested to lattonedil with the panels supply), according to the customer's design, and shaped to be combined with the ribbed panel (drawing 11).

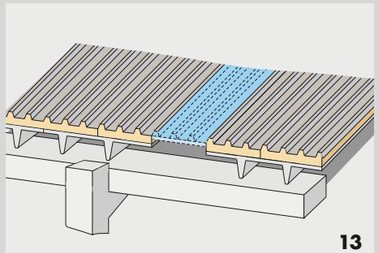
3) ROOF FOR PREFABRICATED STRUCTURE

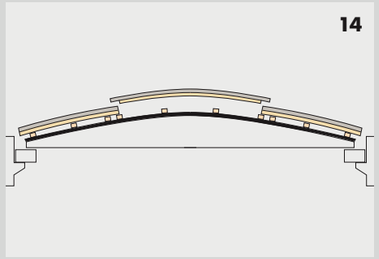
In the field of concrete prefabricated building construction the insulating panel can be used as an alternative to curved connection panels between "y" beams, with considerable savings (drawing 12) or to cover the whole roof, often in combination with fixed polycarbonate or glass-reinforced plastic rooflights. In the latter case, it may be necessary to bend the panel slightly to adapt them to the structure of the prefabricated building tiled roof. Therefore, it is possible to exploit the elastic characteristics of the panel components and adapt them to the slight bend of the tiled roof, remembering that the polyurethane foam should not have a thickness of over 40 mm. If the panel has to be fixed directly to the tiled roof, its lower support must be made of centesimal aluminium or roofing felt (drawing 13), while if it has to be fixed to a metal structure or combined with fixed rooflights, its lower support must be made of steel. In these two cases the number of fixing groups must be increased and the rules for the length of the panels must be complied with as well. If overlapping operations have to be carried out, as it frequently occurs in these cases, it is a good rule to subdivide the total length into three, in order not to have any overlapping at the highest point (drawing 14). On the other hand, it is not advisable to use the panel with narrower bending radius, since the external and internal metal facing could be scratched and the polyurethane foam would loose continuity.

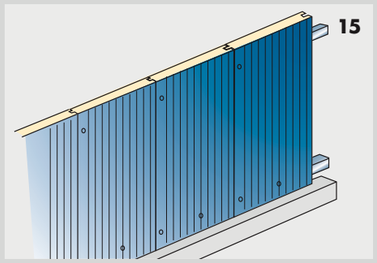
APPLICATIONS

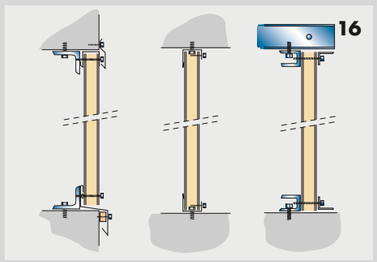


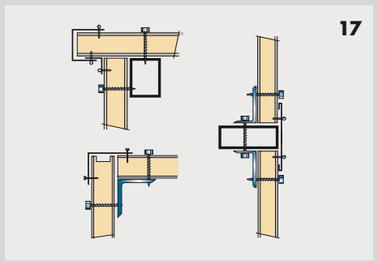
12


13


14


15


16


17

EXTERNAL CLADDING

1) ASSEMBLY INSTRUCTIONS

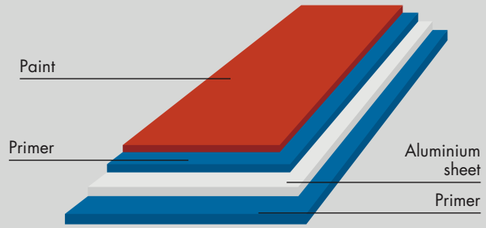
The assembly of a wall made with ISOPAR® panels calls for the application of self-tapping screws applied from the exterior towards the interior. In general, the screw must join the two fins of the female screw and the male screw of two contiguous panels, and moreover, in proximity of end (external and internal) supports, it is suggested to apply a safety screw at the centre (drawing 15). Particular attention must be paid to the power of the electric screwer, because an excessive force towards the interior could scratch the panel external surface. Regardless of the panel thickness, the support structure must anyhow take into account horizontal currents located at a maximum distance of 3.5 m in case of possible cuts to perform during the installation, the edges must be properly cleaned from off-cuts in order to avoid following degradation phenomena. These operations are often foreseen when a connection at an orthogonal angle must be made between the walls.

2) FINISHING

The use of the wall panel calls for a series of finishes that must be carried out in order to render the covering work functional and aesthetic. These finishes, made with prepainted steel or aluminium profiles (not necessarily of the same colour of the panel) are of two types. The first one includes support structural profiles, such as horizontal elements on the ground and on the top (with “U”, “L”, or “Z” shape according to the design) or internal vertical elements (in general with “U” or “L” shape); these profiles are generally of high thickness, of 8/10 or 10/10 according to the selected material, and they call for an anchoring to the panel or to the building structure through self-tapping screws (drawing 16).
The second type includes profiles with no structural function, but they are needed to cover the joints between the angular walls or special joints, and they are generally 5/10 thick and they are only anchored to the panel with steel rivets (drawing 17).

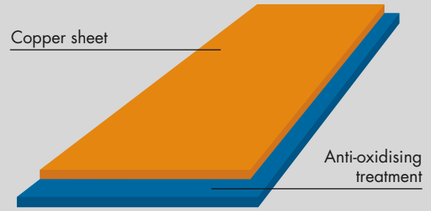
SHEETS COMPOSITION

METAL FACINGS



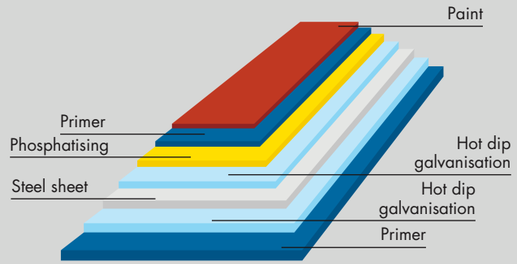
ALUMINIUM

1) Aluminium alloy sheet.
2) painting constituted by a layer of primer and by a film of acrylic paint (or PVDF) on the external surface and a layer of primer that favours the adherence of the polyurethane on the internal surface.



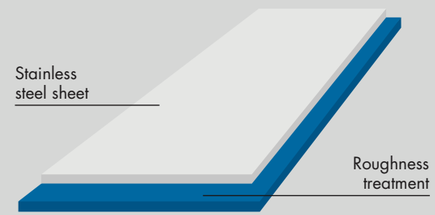
COPPER

1) Copper sheet.
2) Anti-oxidising treatment mechanically performed on the internal surface to increase the adherence of the polyurethane.



STEEL

1) Hot dip galvanised steel sheet.
2) Phosphation treatment for a better protection against oxidation.
3) Painting constituted by a layer of primer and by a film of acrylic paint (or PVDF) on the external surface and a layer of primer that favours the adherence of the polyurethane on the internal surface.



STAINLESS STEEL

1) AISI 304 OR 316 stainless steel sheet.
2) Treatment of the internal surface with a special mechanical procedure which favours the adherence of the polyurethane.

PREPAINTED STAINLESS STEEL

1) Stainless steel sheet.
2) painting constituted by a layer of primer and by a film of acrylic paint (or PVDF) on the external surface and a layer of primer that favours the adherence of the polyurethane on the internal surface.

EXPANDED POLYURETHANE FOAM (PUR)

The term polyurethane covers a wide family of thermosetting polymers in which the polymer chain is made of urethane linkages. Polyurethanes are basically obtained by the reaction of a diisocyanate (aromatic or aliphatic) and a polyol (typically a polyester or polyethylene glycol), to which is added a catalyst to improve the reaction yield and other additives conferring specific characteristics to the material to obtain, in particular: "surfactants" to change the surface aspect, flame retardants, and/or blowing agents (to produce foams).
The rigid polyurethane foam is a thermosetting cross-linked polymer produced by the reaction of two main components - polyols and polyisocyanates - in the presence of a blowing agent(typically hydrocarbons, CO2 or other mixtures) and other additives such as catalysts, silicones, flame retardants, etc. The reaction is exothermal and the heat that is generated leads to the boiling of the blowing agent that remains encapsulated in the resulting cell structure. During the reaction leading the raw materials from the liquid to the solid state of the final polymer, the foam shows high adherence properties to almost any kind of supports, a feature that is essential precisely for the development and industrialisation of insulating panels with flexible coatings.

- Polyurethane foam (PUR) applied continuously.
- Density "with skin": 40 kg/m^3.
- Density "skinless": 36-38 kg/m^3.
- Working thermal-conductivity: 0.023 W/mK.
- Compressive strength at 10% deformation: 1.2 kg/cm^2.
- Values of adherence to the facings: 1 kg/cm^2.

POLYISOCYANURATE (PIR)

The polyisocyanurate foams have a higher concentration of methylene diphenyl diisocyanate compared to polyurethane and and, thus, they have better have a better resistance and good physical properties at higher densities, providing thermal insulation, mechanical strength and the total monolithicy of the panel.

ROCK WOOL

Rock wool, also known as mineral wool, is an amorphous silicate obtained by fusion of its mineral component (basalt, a volcanic rock composed of plagioclase, pyroxene and olivine) and their re-solidification into fibres that are often maintained together by an associated binder of thermosetting resins.
Rock wool acts as an insulating core and is made of mineral wool strips being set at 90 degrees respect to the plane of the supports.

- Reaction to fire: incombustibility, rock wool provides an effective protection against fire, with a melting point greater than 1,000 °C.
- Sound insulation properties: rock wool has the ability to absorb and reduce high noise levels.
- Thermal insulation properties: up to λ: 0.041 W/mK
- Permeability to water vapour: thanks to its fibre structure, rock wool is permeable to water vapour
- Watertightness: fibres have a permanent waterthightness
- Non harmful to human health and the environment
- Resistance to microorganisms

THERMAL INSULATION

It reduces the thermal flux exchanged between two environments with different temperatures. Speaking of thermal insulation means to study the thermal conductivity of a material, given by λ or U and given as the ratio, in stationary conditions, between the observed thermal flux and the temperature gradient that causes the passage of heat. In other words, thermal conductivity is a measure of the attitude of a substance to transmit heat and it depends only on the nature of the material, rather than its form.

SOUND INSULATION

The sound insulation of a material is given by its ability to reduce the passage of sound energy between two environments. In the field of sound insulation in construction, we apply the law of mass expressed by the fact that the coefficient of transmission of sound power increases with the decreasing of the mass of the wall per area unit and the sound frequency.
Sound absorption, that is to say the material ability to absorb the sound energy, assumes different mechanisms that depend on the porosity, the resistance of the flow and of the material ability to absorb the air vibration (acoustic transparency). A sound absorbing material should have both a high acoustic transparency (i.e. low flow resistance) and a good energy dissipation penetrated (i.e. a high resistance to flow): contrasting properties. A good acoustic panel, therefore, is typically formed of a surface at high acoustic transparency and filled with pores arranged in a different direction from the flux.

STATIC PROPERTIES

The static properties in this catalogue are only indicative for the client.
To verify the static properties of each individual project, the applicable legislation provides that you contact a qualified technician.

FIRE CHARACTERISTICS

Reaction to fire is the degree of participation of a material to combustion. Compared with this attitude, at the materials it assigns an euroclass (from A to F), which increases with the degree of participation in the combustion.
Fire resistance is the attitude of a building element to maintain its mechanical stability, not to spread the flame and keep the thermal insulation for a while.
Fire resistance is expressed in minutes, starting from the heating period until the test component ceases to meet the criteria it must comply with.

TYPICAL PARAMETERS FOR FIRE REACTION

The reaction to fire of a material is a very complex phenomenon that depends on various parameters, the main are:

- Flammability: understood as the ability of a material to enter and remain in a state of combustion, with emission of flame and / or during exposure to heat.
- Speed of propagation of the flame: understood as speed with which the flame front propagates in a material
- Drip: understood as the capacity of a material to emit droplets of molten material from and / or during exposure to heat
- Post-incandescent: presence of incandescent areas after the extinction of the flame (coals) that could start a fire again with development of heat after some time: understood as the amount of heat emitted per unit of time by a material capable of burning
- Production of smoke: understood as the ability of a material to emit a set of solid particles visible and / or liquid suspended in the air, resulting from incomplete combustion under defined conditions and production of harmful substances: understood as the ability to emit gases and / or fumes under defined combustion conditions.

REFERENCE STANDARD: UNI EN 13501-1:2009
The European standard uni en 13501-1 regulates the fire classification of building products and building components. Even with the European classification, in Italy national registration is required, except for products for which there is a European standard, so with the requirement of EC marking.
In this case, materials are classified according to the euroclasses A1, A2, B,..., F. The materials classified a1 and A2 are incombustible and those certified by B to F burn in ascending order. However, the ministerial decree dated 15 March 2005 introduced a chart that compares the Italian classes with those in Europe, in order to enforce laws requiring specific reaction to fire.
The European classification also provides for the classification of smokes and dripping. example: B-s1, d0, where "S" indicates "smoke" and "D" indicates "drops".
The classification ranges from 0 (absent) to 3 (high).

CHARACTERISTICS PARAMETERS OF FIRE RESISTANCE

Fire resistance is the ability of a building, part of it or part of the construction to keep for a preset time:

- the resistance R: attitude to maintain the mechanical strength under the action of fire;
- the tightness E: attitude not to let pass, or produce, if subjected to the action of fire on one side, flames, steam or hot gases on the unexposed side;
- the thermal insulation I: attitude to reduce the transmission of heat.

Given the above:
by the symbol REI (followed by a "N" number) we identify a structural element that must maintain for a specified period "N" mechanical strength, to flames and hot gases, and thermal insulation. The number "N" indicates the class of fire resistance. For the classification of non-supporting elements, the criterion R is automatically satisfied when the and i criteria are met. For supporting elements, the verification of fire is conducted by controlling that the mechanical strength is maintained during the period corresponding to the class of fire resistance of the structure with reference to the nominal curve of fire. The certificates obtained according to the old rules are valid if obtained 5 years after 1995 and they remain valid only in Italy, currently, under the ministerial decree of 16 February 2007. The new products and building elements must be certified under the new rules that refer to uni en 13501.
The new European classification, which applies to non-load bearing elements of closure, provides for the elimination of the letter r and the addition of a new parameter: W on the issue of energy. A fire-resistant element can be classified: E - EW - EI

REFERENCE REGULATIONS
Obsolete Regulations
Circular No. 91 of 14.09.1961
D.M. of 30.11.1983
D.P.R. n. 577 of 29.07.1982

NEW STANDARDS
UNI EN 13501
implemented in Italy by the D.M.16-02- 07
UNI EN 1634-1 and (only until the entry into force of the EC marking) UNI 9723.

QUALITY
LATTONEDIL® QUALITY CERTIFICATES

Certificated company:
UNI EN ISO 9001:2008
certificate n° 4674

Certified quality system
ISO 9001:2008

Certified quality system
UNI EN ISO 9001:2008
certificate No. 4674

Certificate of manufacturing conformity to EC quality standards.

Product certificate
German standard

Product certificate
German standard

QUALITY
FIRE RESISTANCE CERTIFICATES


ZAG

TEST REPORT

No. P 8334/16-530-4

FIRE RESISTANCE TEST
of roof made of sandwich panels
Adriaroof rock or Eurofire RE1 , 80 mm thick


ZAG

TEST REPORT

No. P 8334/16-530-3

FIRE RESISTANCE TEST
of roof made of sandwich panels
Adriaroof rock or Eurofire RE1 , 60 mm thick


ZAG

TEST REPORT

No. P 8334/16-530-2

FIRE RESISTANCE TEST
of roof made of sandwich panels
Adriaroof rock or Eurofire RE1 , 120 mm thick


CSI

RAPPORTO DI CLASSIFICAZIONE
N° CSI1905FR
CLASSIFICATION REPORT
N° CSI1905FR


CSI

RAPPORTO DI CLASSIFICAZIONE
N° CSI1906FR
CLASSIFICATION REPORT
N° CSI1906FR


CSI

RAPPORTO DI CLASSIFICAZIONE
N° CSI1893FR
CLASSIFICATION REPORT
N° CSI1893FR


ZAG

CLASSIFICATION REPORT

No. P 8276/15-530-2

CLASSIFICATION OF FIRE RESISTANCE PERFORMANCE
IN ACCORDANCE WITH SIST EN 13501-2:2009+A1:2009 of
roof made of rock wool sandwich panels
ADRIAROOF SOUND or EUROFIRE SOUND
(100 kg/m³)


ZAG

CLASSIFICATION REPORT

No. P 0000/15-530-2

CLASSIFICATION OF FIRE RESISTANCE PERFORMANCE
IN ACCORDANCE WITH SIST EN 13501-2:2009+A1:2009 of
roof made of rock wool sandwich panels
Adriaroof rock or Eurofire RE1, 100 mm thick


ZAG

CLASSIFICATION REPORT

No. P 0838/16-530-2

CLASSIFICATION OF FIRE RESISTANCE PERFORMANCE IN
ACCORDANCE WITH SIST EN 13501-2:2016
of roof made of PIR sandwich panels
ADRIAROOF HP or EUROCINQUE RE1 (80 mm thick)


CSI

RAPPORTO DI CLASSIFICAZIONE
N° CSI1896FR
CLASSIFICATION REPORT
N° CSI1896FR


CSI

RAPPORTO DI CLASSIFICAZIONE
N° CSI2027FR
CLASSIFICATION REPORT
N° CSI2027FR


CSI

RAPPORTO DI CLASSIFICAZIONE
N° CSI2017FR
CLASSIFICATION REPORT
N° CSI2017FR


ZAG

CLASSIFICATION REPORT

No. P 9543/13-530-2

CLASSIFICATION OF FIRE RESISTANCE PERFORMANCE
IN ACCORDANCE WITH SIST EN 13501-2:2009
Roof PIR sandwich panels
ADRIAROOF HP or EUROCINQUE RE1
(100 mm thick)


ZAG

CLASSIFICATION REPORT

No. P 8543/13-530-4

CLASSIFICATION OF FIRE RESISTANCE PERFORMANCE
IN ACCORDANCE WITH SIST EN 13501-2:2008
Non-loadbearing wall PIR sandwich panels
ADRIAWALL HP or ISOPAR EI (160 mm thick)


FIRES

CLASSIFICATION OF FIRE RESISTANCE
FIRES-CR-063-17-AURE

Non-loadbearing wall made of sandwich panels Adriawall HP (Isopar EI),
80 mm thick with PIR core

www.fires.eu

QUALITY

FIRE PERFORMANCE CERTIFICATES FROM OUTSIDE "BROOF"










Certified company:
UNI EN ISO 9001:2008
certificate no. 4674

0497

10 MANUFACTURING PLANTS
LATTONEDIL GROWS EVERY DAY WITH YOU

/lattonedil

Lattonedil General Catalogue GB - REV. 01 - 2018

Lattonedil s.p.a. Milano
Manufacturing of insulated metal panels for roofs and walls
Via degli Artigiani, 14 - 22060 Carimate | Co | Italy
Phone +39 031 791377 - Fax +39 031 791690
www.lattonedil.it - info@lattonedil.it

MILANO
laTTonedil
INSULATES AND PROTECTS OVER TIME

ITALY	GERMANY	SPAIN	BOSNIA-HERZEGOVINA	FRANCE
CARIMATE CANTÙ VENZONE CROTONE FROSINONE BATTIPAGLIA	DINKELSBÜHL	HUERTA SALAMANCA	NOVA TOPOLA	LA ROCHE-SUR-YON