EN

SANDWICH PANEL

INSULATED PANEL SYSTEMS FOR ARCHITECTURE CONSTRUCTION AND COLD STORAGE CHAMBERS

FELIZ
PAINEL

CONTENTS

THE COMPANY AND THE GROUP

“We aim to be a global reference.”

Over several decades of activity, the Group O FELIZ has been nationally and internationally recognized as a quality reference concerning the Metal Construction Industry and coatings.

O FELIZ Painel is the newest company of the group and its sandwich panel was created to enrich and increase the range of products with the brand O FELIZ. The company occupies today a market leading position concerning the insulated panel. O FELIZ offers high-quality products and solutions which are tailored to customer and market needs.

Equipped with the most modern production line, employing highly qualified technical staff and using certified quality raw materials, O FELIZ Painel provides customers with an excellent product, based on the most demanding quality standards and ensuring the total satisfaction of their expectations.

Product

Construction and insulation materials have increasingly evolved to provide innovative, more efficient, and lower-cost solutions. The sandwich panel or polyurethane insulating panel is an example of this evolution.

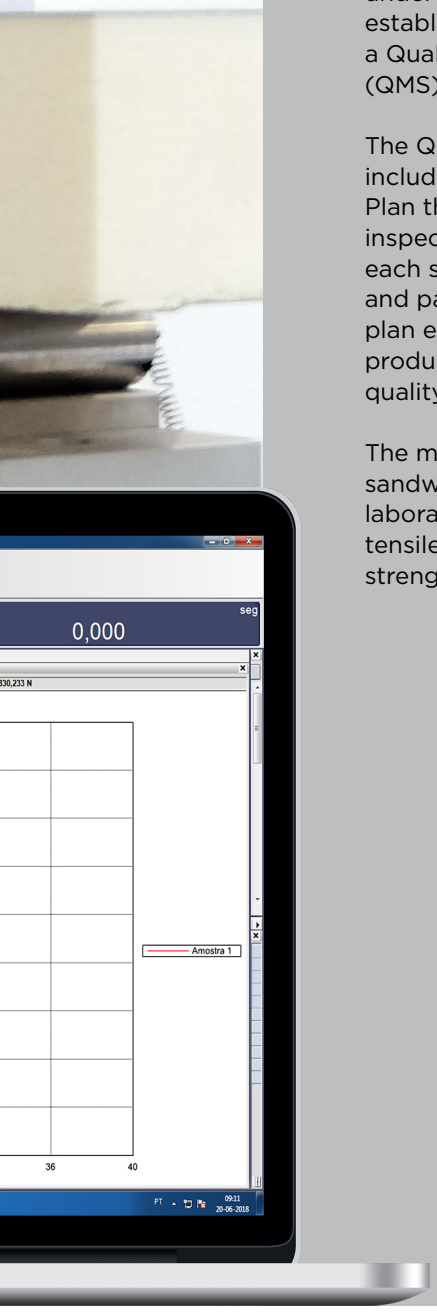
Composed of two profiled steel sheets connected by an insulating core of rigid polyurethane or polyisocyanurate foam, the O FELIZ insulating panel provides superior thermal insulation compared to other materials such as rock wool or polystyrene.

The production of self-supporting, insulating panels with double-sided metal is subject to CE marking, with the manufacturing requirements specified in Standard EN 14509. The CE marking indicates that the product complies with harmonized European legislation and standards and can circulate freely within the domestic market.

This is a construction element with good mechanical performance, good airtightness, and quick installation. Its high thermal efficiency and good fire resistance make this product the most suitable solution for meeting the requirements of current building regulations.

A highly applicable product used in civil construction on roofs and facades of industrial, commercial, or residential buildings. It is the main solution in the industrial cold storage industry and has important uses in modular and prefabricated construction.


TRAPEZIUM X - Ensaio_corte_08.06.2018_amostra1&90.2.xtas
Arquivo Editar Visualização Ensaio Ferramentas Hardware Janela Ajuda
Lista de método-rápido Novo Abrir Salvar Prévia Imprimir Analisar novamente... Ensaiar novamente... Iniciar Pausar Parar
Ensaios realizados.
Force N 0,00
Stroke mm 0,0000
Tempo
Parar
Velocidade do ensaio 10 mm/min
Escala: CP Force
10000 N
50 N
Ruptura
Ligar
Nova análise
Abrir ensaio
Salvar como PDF
Relatório
Salvar como ensaio
Salvar
Voltar para TRAPEZIUMX Home
Gráfico1 Gráfico2
X = 11,678 mm
Ensaio de Resistência ao Corte (Flexão)
MÁX
Force(N)
Disp.(mm)
0 400 800 1200 1600 2000 2400 2800 3200 3600
0 4 8 12 16 20 24 28 32



Quality

O FELIZ Painel is committed to the quality of its products and services. The company is certified under the ISO 9001 standard, which establishes the requirements for a Quality Management System (QMS).

The QMS of O FELIZ Painel includes an Inspection and Testing Plan that establishes the type of inspections to be performed at each stage of raw material receipt and panel production. This rigorous plan ensures that the company's products meet the established quality requirements.

The main strength characteristics of sandwich panels tested daily in our laboratory are polyurethane density, tensile strength, compressive strength, and shear strength.

Environment

At O FELIZ Painel, there is a constant concern for sustainability and environmental preservation.

Therefore, to minimize the environmental impacts arising from its activities, the company adopts practices that lead to the efficient and sustainable use of resources and the prevention of pollution and serious accidents involving the hazardous substances used.

certif Certificado

Certificado nº / Certificate no. SGQ-178/2022

EMPRESA CERTIFICADA certif ISO 9001

A CERTIF – Associação para a Certificação, certifica que o Sistema de Gestão da Qualidade de:
CERTIF – Associação para a Certificação certifies that the Quality Management System of:

O Feliz Painel, Lda.

Com sede em:
With head office at:
Av. de São Lourenço, n.º 41
4705-444 Celeirós BRG
Portugal

e com unidade de produção em:
and with production unit at:
Av. de São Pedro, n.º 22
4705-630 Tebosa BRG
Portugal

Cumpre com os requisitos da norma:
Fulfills with the requirements of standard:

NP EN ISO 9001:2015

Para o âmbito:
For the scope:

Design, desenvolvimento e produção de painel sandwich isolante de dupla face metálica e respetivos acessórios
Design, development and production of self-supporting double skin metal faced insulating panels and accessories

Este certificado é válido até:
This certificate is valid until:

2025-08-09

Data de emissão:
Issue date:

2022-08-10

Francisco Barroca
Diretor Geral
General Manager

IQNet IAF

Certif – Associação para a Certificação
Rua José Afonso, 9 E – 2810-237 Almada – Portugal – Tel.: 351. 21 258 69 40 – E-mail: mail@certif.pt

Quality Management System Certificate
CERTIF (SGQ-178/2022)

certif Certificado

CERTIFICADO DE REGULARIDADE DO DESEMPENHO
CERTIFICATE OF CONSTANCY OF PERFORMANCE

1328–CPR–0708

De acordo com o Regulamento (UE) n.º 305/2011 do Parlamento Europeu e do Conselho, de 9 de março de 2011 (o Regulamento dos Produtos de Construção ou RPC), este certificado aplica-se ao produto de construção

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product

PAINÉIS SANDWICH AUTOPORTANTES, ISOLANTES, COM DUPLA FACE METÁLICA
SELF-SUPPORTING DOUBLE SKIN METAL FACED INSULATING PANELS

colocado no mercado em nome ou com marca comercial de / *placed on the market under the name or trade mark of*

O Feliz Painel, Lda.
Av. de São Lourenço, n.º 41
4705-444 Celeirós BRG - Portugal

e fabricado na(s) unidade(s) fabril(is) / *and produced in the manufacturing plant(s)*

O Feliz Painel, Lda.
Av. de São Pedro, n.º 22
4705-630 Tebosa BRG - Portugal

Este certificado atesta que todas as disposições relativas à avaliação e verificação da regularidade do desempenho descritas no Anexo ZA da(s) norma(s)

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard(s)

EN 14509:2013

de acordo com o sistema 1, para o desempenho indicado neste certificado, são aplicadas e que o controlo da produção em fábrica efetuado pelo fabricante é avaliado para garantir **a regularidade do desempenho do produto de construção.**

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure ***the constancy of performance of the construction product.***

Este certificado foi emitido pela primeira vez em 2018-05-03 e manter-se-á válido desde que a norma harmonizada, o produto de construção, os métodos de avaliação e verificação da regularidade do desempenho e as condições de produção na unidade fabril não se alterem significativamente, a não ser que seja suspenso ou anulado pelo organismo de certificação de produtos notificado.

This certificate was first issued on 2018-05-03 and will remain valid as long as neither the harmonized standard, the construction product, the assessment and verification of constancy of performance methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

Almada, 2022-07-29

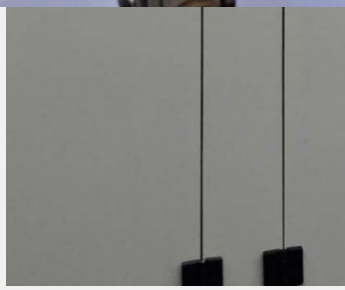
IPAC

Francisco Barroca
Diretor Geral / *General Manager*

Este Certificado é constituído por um Anexo com 3 (três) páginas
This Certificate includes one Annex with 3 (three) pages

Certif – Associação para a Certificação
Rua José Afonso, 9 E – 2810-237 Almada – Portugal – Tel.: 351 21 258 69 40 – E-mail: mail@certif.pt

Certificado de Regularidade do Desempenho
CERTIF (Marcação CE)



The assessment and verification of performance regularity is carried out in accordance with system 1 and proven by the Performance Regularity Certificate, issued by CERTIF: Certification Association.

The QMS of O FELIZ Painel includes an Inspection and Testing Plan that establishes the type of inspections to be performed at each stage of raw material receipt and panel production. This rigorous plan ensures that the company's products meet established quality requirements.

Ignitability test

Reaction to Fire

The way the materials used in the various building elements react to fire is extremely important for fire safety, as it determines the evolution of a possible firebreak, conditioning the time for the safe evacuation of the building, as well as for the control and the extinction of fire.

Reaction to Fire is the indicator that allows us to classify the fire behavior of a material, analyzing its contribution in the deflagration, in the initial propagation of the fire and in its development.

The classification of the reaction to fire is harmonized at European level by EN 13501-1. This classification is based on two standardized European tests:

- **EN ISO 11925-2 Test:**
  Ignitability test (application of direct flame on the insulation foam);

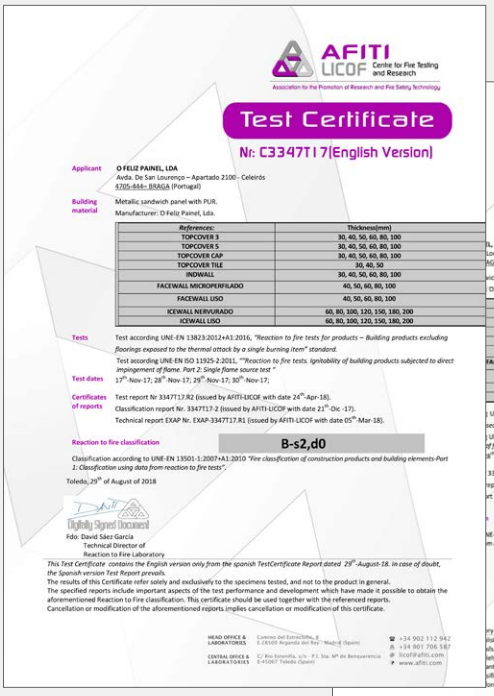
- **EN 13823 Test:**
  Isolated element in combustion test (SBI).

In order to meet the requirements of the Fire Safety in Buildings (SCIE) legal regime, DL 220/2008 and Ordinance nº 1532/2008, O FELIZ Panel presents a range of products tested in certified laboratory and provenly classified as the Fire Reaction.

O FELIZ Painel foam solutions		
PUR	**PIR**	**PIR-HI**
B-s2,d0	**B-s2,d0**	**B-s1,d0**

Combustibility			**Euroclasses of Reaction to Fire EN 13501**
A Non-combustible	**Smoke Production**		
B Very limited contribution to fire	**s1** Low smoke production	**Production of inflamed Particles/Droplets**	
C Limited contribution to fire	**s2** Average smoke production	**d0** Without particles/droplets production	
D Average limited contribution to fire	**s3** High smoke production	**d1** Production of particles without inflammation	
E High contribution to fire		**d1** Production of particles with inflammation	
F Without classification			

Isolated element in combustion test (SBI)



AFITI LICOF Centre for Fire Testing and Research

Association for the Promotion of Research and Fire Safety Technology

Test Certificate

Nr: C3347T17(English Version)

Applicant: O FELIZ PAINEL, LDA
Avda. Dr San Lourenço – Apartado 2100 - Celeirós
4705-444- BRAGA (Portugal)

Building material: Metallic sandwich panel with PUR.
Manufacturer: O Feliz Painel, Lda.

References:	Thickness(mm)
TOPCOVER 3	30, 40, 50, 60, 80, 100
TOPCOVER 5	30, 40, 50, 60, 80, 100
TOPCOVER CAP	30, 40, 50, 60, 80, 100
TOPCOVER TILE	30, 40, 50
INDWALL	30, 40, 50, 60, 80, 100
FACEWALL MICROPERFILADO	40, 50, 60, 80, 100
FACEWALL USO	40, 50, 60, 80, 100
ICEWALL NERVURADO	60, 80, 100, 120, 150, 180, 200
ICEWALL LISO	60, 80, 100, 120, 150, 180, 200

Tests: Test according UNE-EN 13823:2012+A1:2016, *"Reaction to fire tests for products – Building products excluding floorings exposed to the thermal attack by a single burning item" standard.*
Test according UNE-EN ISO 11925-2:2011, *""Reaction to fire tests. Ignitability of building products subjected to direct impingement of flame. Part 2: Single flame source test "*

Test dates: 17th-Nov-17; 28th-Nov-17; 29th-Nov-17; 30th-Nov-17;

Certificates of reports: Test report Nr 3347T17.R2 (issued by AFITI-LICOF with date 24th-Apr-18).
Classification report Nr. 3347T17-2 (issued by AFITI-LICOF with date 21th-Oic -17).
Technical report EXAP Nr. EXAP-3347T17.R1 (issued by AFITI-LICOF with date 05th-Mar-18).

Reaction to fire classification: **B-s2,d0**

Classification according to UNE-EN 13501-1:2007+A1:2010 *"Fire classification of construction products and building elements-Part 1: Classification using data from reaction to fire tests".*

Toledo, 29th of August of 2018

Digitally Signed Document
Fdo: David Sáez García
Technical Director of
Reaction to Fire Laboratory

This Test Certificate contains the English version only from the spanish TestCertificate Report dated 29th-August-18. In case of doubt, the Spanish version Test Report prevails.
The results of this Certificate refer solely and exclusively to the specimens tested, and not to the product in general.
The specified reports include important aspects of the test performance and development which have made it possible to obtain the aforementioned Reaction to Fire classification. This certificate should be used together with the referenced reports.
Cancellation or modification of the aforementioned reports implies cancellation or modification of this certificate.

HEAD OFFICE & LABORATORIES: Camino del Estrecillo, 8 E-28500 Arganda del Rey - Madrid (Spain)
CENTRAL OFFICE & LABORATORIES: C/ Río Estenilla, s/n - P.I. Sta. Mª de Benquerencia E-45007 Toledo (Spain)
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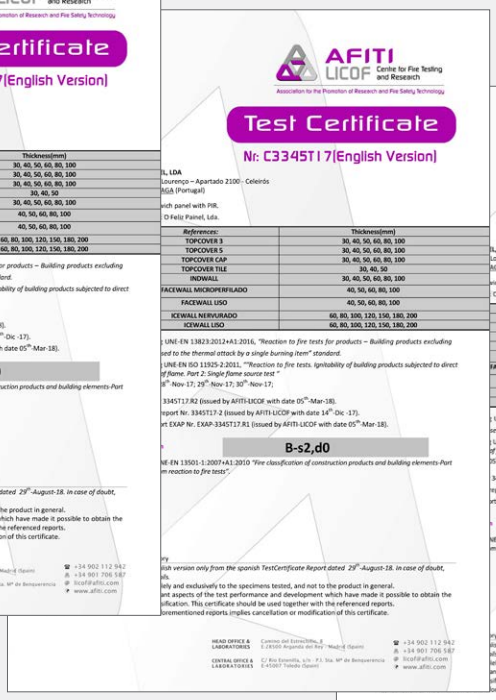
PUR — B-s2d0



AFITI LICOF Centre for Fire Testing and Research

Association for the Promotion of Research and Fire Safety Technology

Test Certificate

Nr: C3345T17(English Version)

L, LDA
Lourenço – Apartado 2100 - Celeirós
AGA (Portugal)
ich panel with PIR.
O Feliz Painel, Lda.

References:	Thickness(mm)
TOPCOVER 3	30, 40, 50, 60, 80, 100
TOPCOVER 5	30, 40, 50, 60, 80, 100
TOPCOVER CAP	30, 40, 50, 60, 80, 100
TOPCOVER TILE	30, 40, 50
INDWALL	30, 40, 50, 60, 80, 100
FACEWALL MICROPERFILADO	40, 50, 60, 80, 100
FACEWALL USO	40, 50, 60, 80, 100
ICEWALL NERVURADO	60, 80, 100, 120, 150, 180, 200
ICEWALL LISO	60, 80, 100, 120, 150, 180, 200

UNE-EN 13823:2012+A1:2016, *"Reaction to fire tests for products – Building products excluding sed to the thermal attack by a single burning item" standard.*
UNE-EN ISO 11925-2:2011, *""Reaction to fire tests. Ignitability of building products subjected to direct of flame. Part 2: Single flame source test "*
th-Nov-17; 29th-Nov-17; 30th-Nov-17;
3345T17.R2 (issued by AFITI-LICOF with date 05th-Mar-18).
eport Nr. 3345T17-2 (issued by AFITI-LICOF with date 14th-Oic -17).
t EXAP Nr. EXAP-3345T17.R1 (issued by AFITI-LICOF with date 05th-Mar-18).

B-s2,d0

NE-EN 13501-1:2007+A1:2010 *"Fire classification of construction products and building elements-Part m reaction to fire tests".*

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foremontioned reports implies cancellation or modification of this certificate.

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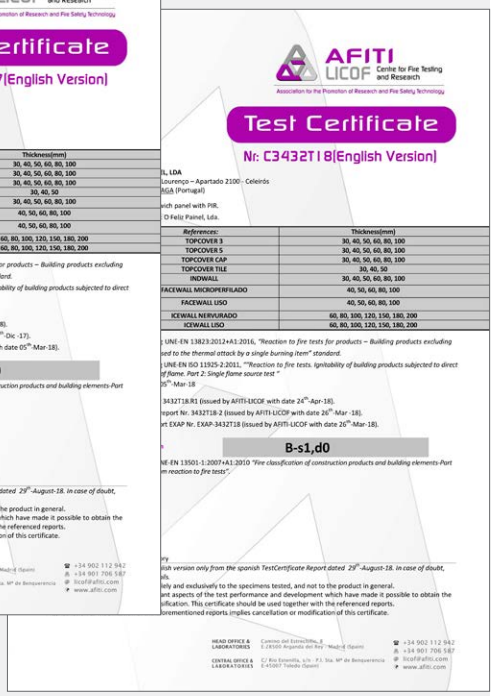
PIR — B-s2,d0



AFITI LICOF Centre for Fire Testing and Research

Association for the Promotion of Research and Fire Safety Technology

Test Certificate

Nr: C3432T18(English Version)

L, LDA
ourenço – Apartado 2100 - Celeirós
AGA (Portugal)
ich panel with PIR.
O Feliz Painel, Lda.

References:	Thickness(mm)
TOPCOVER 3	30, 40, 50, 60, 80, 100
TOPCOVER 5	30, 40, 50, 60, 80, 100
TOPCOVER CAP	30, 40, 50, 60, 80, 100
TOPCOVER TILE	30, 40, 50
INDWALL	30, 40, 50, 60, 80, 100
FACEWALL MICROPERFILADO	40, 50, 60, 80, 100
FACEWALL USO	40, 50, 60, 80, 100
ICEWALL NERVURADO	60, 80, 100, 120, 150, 180, 200
ICEWALL LISO	60, 80, 100, 120, 150, 180, 200

UNE-EN 13823:2012+A1:2016, *"Reaction to fire tests for products – Building products excluding sed to the thermal attack by a single burning item" standard.*
UNE-EN ISO 11925-2:2011, *""Reaction to fire tests. Ignitability of building products subjected to direct of flame. Part 2: Single flame source test "*
th-Nov-17; 29th-Nov-17; 30th-Nov-17;
3432T18.R1 (issued by AFITI-LICOF with date 24th-Apr-18).
eport Nr. 3432T18-2 (issued by AFITI-LICOF with date 26th-Mar-18).
t EXAP Nr. EXAP-3432T18 (issued by AFITI-LICOF with date 26th-Mar-18).

B-s1,d0

NE-EN 13501-1:2007+A1:2010 *"Fire classification of construction products and building elements-Part m reaction to fire tests".*

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PIR-HI — B-s1,d0

Test certificates of reaction to fire

Thermal and mechanical behavior

The thermal and mechanical behavior of the sandwich panels was determined based on analyses conducted by the Laboratory of Structures and Structural Mechanics of the Department of Civil Engineering at the University of Coimbra, Portugal.

The study of the mechanical characteristics was performed through laboratory tests and analytical calculations, based on the structural Eurocodes and the calculation procedures of the NP EN 14509 standard.

To determine the load capacity, direct calculation tables were developed, allowing the designer to perform the design using a simple methodology that ensures compliance with regulatory requirements.

The thermal behavior of the panels is quantified by Thermal Transmission, which indicates the thermal insulation capacity of the material.

Thermal transmission was determined according to the procedures described in the EN 14509 standard, using THERM software, which is based on the finite element method.

Direct design tables

The values indicated in these tables (in kN/m²) correspond to the maximum characteristic values of the loads that can be applied, in addition to the dead weight and the effect of differential temperature variations.

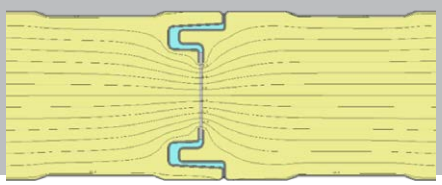
All calculations took into account safety checks and service conditions.
The ultimate limit state checks considered flexural failure modes, shear stress, and the application of concentrated loads at the supports.

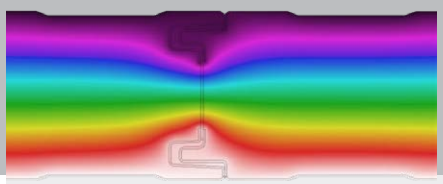
For service condition checks, stresses and deformations were verified to ensure a service deformation of less than L/200, where L is the span between supports.

The tables have two inputs: panel thickness (in millimeters) and the design span (in meters).

Tables were developed for isolated spans and multiple spans, considering upward and downward loads (roofing), external suction, and external pressure (walls).

The following is an example of how the calculation tables are applied to a panel.





Thermal analysis

Full panel bending test

Practical application example
It is intended to dimension a cover panel with multiple spans of 2,75 m using a Topcover 5 panel with faces 0,5/0,4 mm thick.

The acting actions are:
- Overload: 0.40 kN/m²
  (descending);
- Wind: 1,30 kN/m² (ascending).

The action of the own weight and the differential temperature variations of summer and winter are already considered automatically.

Multiple support condition

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	3,06	2,40	1,91	1,54	1,27	1,08	0,93	0,81	0,72	0,64	0,58	0,52	0,48	0,44	0,41
	▼	2,60	2,02	1,61	1,31	1,09	0,91	0,77	0,66	0,57	0,49	0,43	0,38	0,33		
40	▲	3,60	2,71	2,13	1,72	1,43	1,22	1,05	0,92	0,82	0,74	0,67	0,61	0,56	0,51	0,48
	▼	3,06	2,43	1,97	1,63	1,37	1,16	0,99	0,86	0,75	0,65	0,57	0,51	0,45	0,40	0,36
50	▲	3,97	3,00	2,36	1,92	1,61	1,37	1,19	1,05	0,93	0,84	0,76	0,70	0,64	0,60	0,55
	▼	3,55	2,86	2,36	1,98	1,68	1,44	1,24	1,08	0,94	0,83	0,73	0,65	0,58	0,52	0,47
60	▲	4,16	3,18	2,51	2,05	1,71	1,46	1,27	1,12	1,00	0,90	0,81	0,75	0,69	0,64	0,59
	▼	4,05	3,32	2,77	2,34	1,99	1,68	1,43	1,24	1,08	0,95	0,84	0,75	0,68	0,61	0,56
80	▲	4,99	3,71	2,90	2,37	2,00	1,72	1,51	1,35	1,22	1,12	1,03	0,95	0,89	0,84	0,79
	▼	5,10	4,26	3,51	2,82	2,32	1,98	1,71	1,50	1,33	1,19	1,07	0,97	0,89	0,81	0,75
100	▲	5,23	3,95	3,10	2,53	2,12	1,82	1,60	1,42	1,28	1,17	1,08	1,00	0,93	0,88	0,83
	▼	6,17	4,74	3,68	2,94	2,43	2,05	1,75	1,53	1,36	1,21	1,09	0,99	0,90	0,83	0,76

▲ Ascending load ▼ Descending load

In this case the most unfavorable situation of the working forces will be the wind action of 1,30 kN/m². Referring to the table values for a span of 2,75 m and for ascending loads, it is verified that to resist this load a **Topcover 5 panel with faces of 0.5/0.4 mm and thickness of 50 mm.**

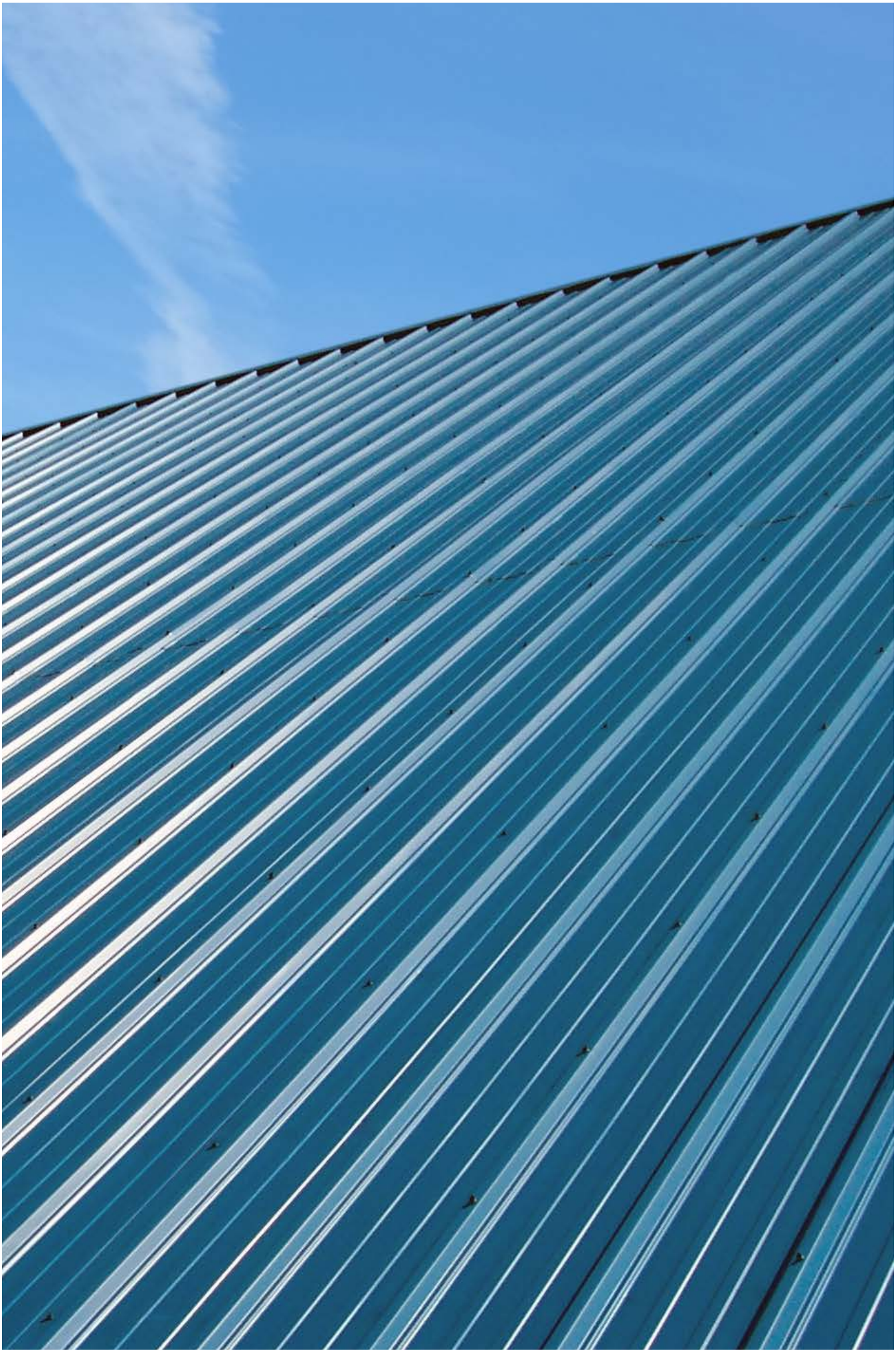
Additional guidelines
The technical information contained in this catalog is only indicative and developed in the situations mentioned. It is the responsibility of the designer to verify the adequacy of the information to the specificity of the project.

The designer must take into account that in addition to the structural calculation, the thickness of the panels must also be determined according to the functional requirements of the design, namely fire, thermal and acoustic behavior.

For dark colors this temperature can reach 80°C; in these cases the load capacity should be reduced, this reduction being able to reach maximum values around 30% in the smallest thicknesses, but only for ascending loads in roofs or suction in walls.

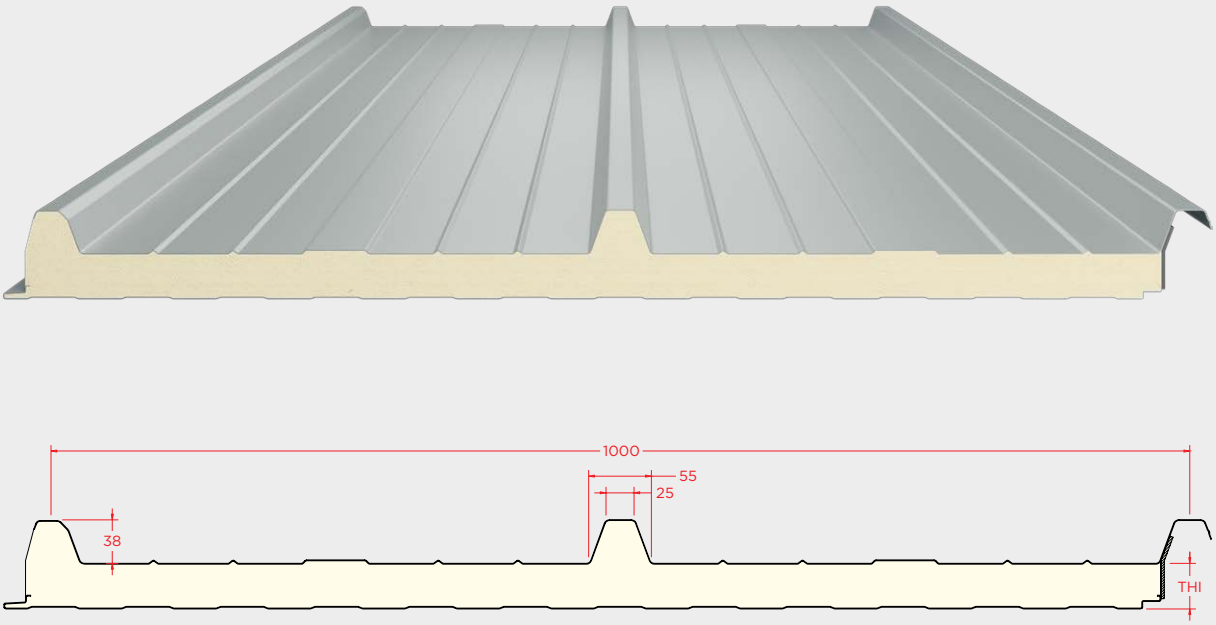
ROOF PANELS

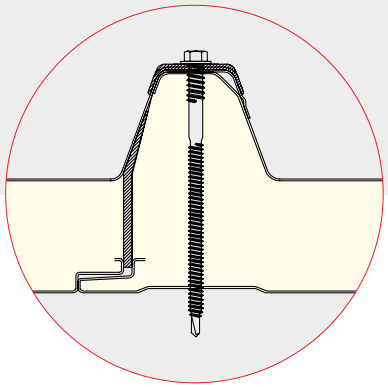
Topcover 3
Topcover 5
Topcover Cap
Topcover Tile
Topcover Deck



Topcover 3

CE
EN 14509





Description/Application
Insulation panel consisting of two profiled metal sheets joined by a rigid polyurethane (PUR) or polyisocyanurate (PIR) foam core.
Economical and efficient 3 wave panel solution for roofs with a minimum slope of 5%.
Product manufactured according to EN 14509 and subject to performance assessment and verification according to system 1.

Characteristics
Dimensions*
Thicknesses: 30–40–50–60–80–100 mm ±2 mm
Thicknesses: 120–150 mm ±2%
Width: 1000 mm ±2 mm
Length: 4,00 — 20,00 m ±10 mm
Maximum recommended length: 13,00 m

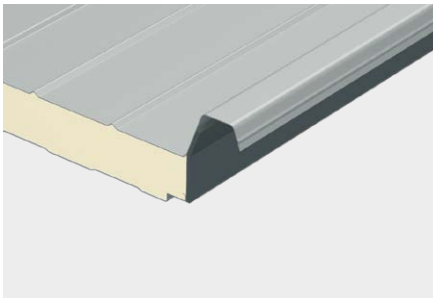
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,4–0,5–0,6 mm

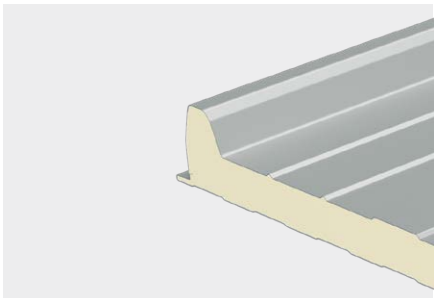
Insulated core
Polyurethane (PUR) | Polysocyanurate (PIR)
Thermal conductivity:
PUR 0,0207 W/m °C
PIR 0,0207 W/m °C
Density: 40 kg/m³
Reaction to fire: EN 13501-1
PUR B-s2,d0
PIR B-s2,d0
PIR-HI B-s1,d0

Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVDF 35 µm

**Tolerances according to EN 14509 standard*
W/m K = W/m °C | W/m² K = W/m² °C

Details





Color range

The colors displayed in the catalog meet our standards as accurately as possible. However, minor variations are inevitable, which is why we recommend that you always perform a color test using an actual sample.

RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

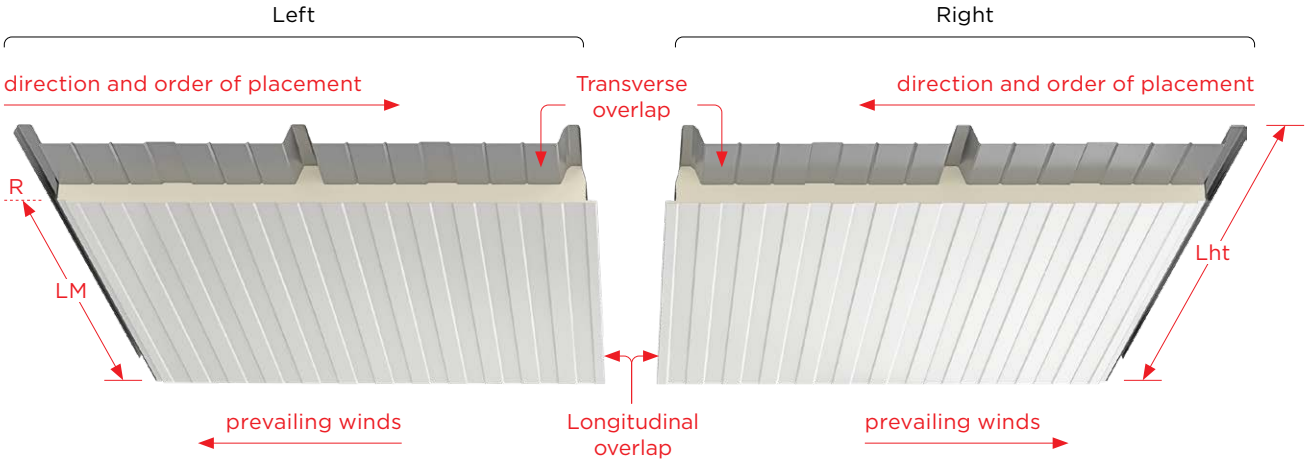
RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Overlap panel

Solution for lengths greater than 18.00 m.



R = 50 mm (eaves cutout) | 100–200–300 mm (overlap cutout)

Thermal behavior and weights

W/m K = W/m °C | W/m² K = W/m² °C

Thickness	mm	30	40	50	60	80	100	120	150
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,62	0,47	0,38	0,32	0,24	0,20	0,17	0,13
Weight (Steel sheet | Thickness 0,4/0,4)	Kg/m²	7,7	8,1	8,5	8,9	9,7	10,5	11,3	12,6
Weight (Steel sheet | Thickness 0,5/0,4)	Kg/m²	8,3	8,7	9,1	9,5	10,3	11,1	12,4	13,6

Direct design tables

Steel sheet | Thicknesses 0,4/0,4

Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	1,84	1,46	1,20	1,00	0,85	0,73	0,63	0,56	0,47	0,39	0,31				
	▼	1,44	1,11	0,89	0,72	0,59	0,49	0,32								
40	▲	2,31	1,87	1,56	1,31	1,13	0,97	0,85	0,75	0,67	0,58	0,49	0,42	0,36	0,30	
	▼	1,80	1,44	1,17	0,96	0,80	0,67	0,57	0,39							
50	▲	2,80	2,31	1,95	1,66	1,43	1,25	1,10	0,97	0,87	0,78	0,68	0,58	0,50	0,44	0,38
	▼	2,20	1,78	1,47	1,23	1,04	0,88	0,76	0,65	0,46	0,31					
60	▲	3,32	2,78	2,36	2,03	1,76	1,54	1,36	1,21	1,06	0,93	0,82	0,73	0,66	0,58	0,51
	▼	2,60	2,15	1,79	1,51	1,29	1,11	0,96	0,83	0,71	0,52	0,37				
80	▲	4,40	3,75	3,23	2,81	2,46	2,13	1,79	1,52	1,32	1,15	1,02	0,91	0,81	0,73	0,67
	▼	3,45	2,90	2,47	2,12	1,83	1,59	1,39	1,22	1,08	0,95	0,81	0,62	0,48	0,35	
100	▲	5,50	4,75	4,14	3,62	3,09	2,55	2,14	1,83	1,58	1,38	1,22	1,09	0,97	0,88	0,80
	▼	4,32	3,69	3,17	2,75	2,40	2,10	1,84	1,63	1,45	1,29	1,15	1,03	0,87	0,69	0,55
120	▲	6,63	5,67	4,93	4,36	3,62	2,98	2,51	2,14	1,85	1,62	1,43	1,27	1,14	1,03	0,94
	▼	5,19	4,48	3,89	3,39	2,97	2,62	2,31	2,05	1,83	1,63	1,47	1,32	1,19	1,08	0,88
150	▲	7,31	6,23	5,42	4,79	4,28	3,63	3,05	2,61	2,25	1,97	1,74	1,55	1,39	1,25	1,14
	▼	6,53	5,70	4,99	4,39	3,87	3,43	3,04	2,71	2,43	2,18	1,96	1,77	1,60	1,46	1,33

▲ Ascending load ▼ Descending load

Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	1,60	1,21	0,95	0,78	0,65	0,56	0,49	0,43	0,39	0,35	0,32				
	▼	1,44	1,11	0,89	0,72	0,59	0,49	0,41	0,34							
40	▲	1,77	1,34	1,07	0,88	0,74	0,64	0,56	0,50	0,45	0,41	0,37	0,34	0,32		
	▼	1,80	1,44	1,17	0,96	0,80	0,67	0,57	0,49	0,42	0,36					
50	▲	1,94	1,49	1,19	0,98	0,83	0,72	0,64	0,57	0,51	0,47	0,43	0,40	0,37	0,35	0,33
	▼	2,20	1,78	1,46	1,16	0,95	0,79	0,67	0,58	0,50	0,43	0,38	0,34	0,30		
60	▲	2,05	1,58	1,26	1,04	0,88	0,77	0,67	0,60	0,54	0,50	0,46	0,42	0,39	0,37	0,35
	▼	2,60	1,96	1,53	1,23	1,01	0,85	0,72	0,62	0,54	0,47	0,42	0,37	0,33	0,30	
80	▲	2,41	1,82	1,46	1,21	1,04	0,91	0,82	0,74	0,68	0,63	0,59	0,55	0,52	0,50	0,47
	▼	3,07	2,28	1,77	1,43	1,18	1,01	0,87	0,77	0,68	0,61	0,54	0,49	0,44	0,40	0,37
100	▲	2,68	2,04	1,63	1,35	1,16	1,01	0,90	0,82	0,75	0,70	0,65	0,61	0,58	0,55	0,53
	▼	3,32	2,48	1,92	1,55	1,28	1,08	0,94	0,82	0,73	0,65	0,58	0,53	0,48	0,44	0,40
120	▲	2,90	2,23	1,79	1,49	1,28	1,13	1,01	0,92	0,84	0,78	0,73	0,69	0,66	0,63	0,61
	▼	3,55	2,66	2,08	1,67	1,39	1,18	1,02	0,89	0,79	0,71	0,64	0,57	0,52	0,47	0,43
150	▲	3,15	2,44	1,98	1,66	1,43	1,26	1,13	1,03	0,95	0,89	0,84	0,79	0,76	0,73	0,71
	▼	3,79	2,86	2,24	1,81	1,50	1,28	1,10	0,97	0,86	0,77	0,69	0,62	0,56	0,51	0,46

Steel sheet | Thicknesses 0,5/0,4

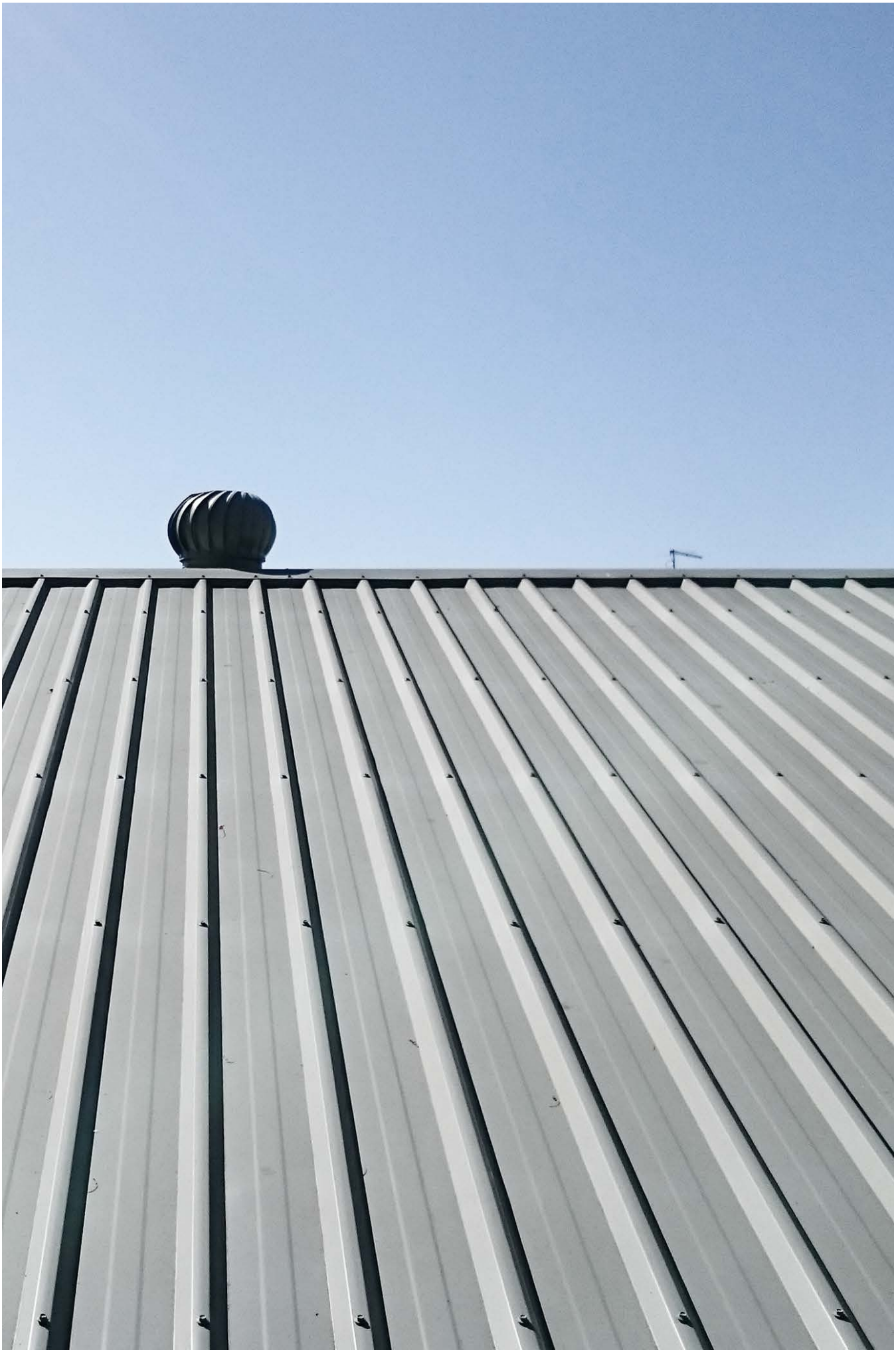
Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	2,07	1,64	1,34	1,12	0,95	0,82	0,71	0,62	0,51	0,42	0,34				
	▼	1,63	1,27	1,01	0,82	0,68	0,56	0,38								
40	▲	2,56	2,08	1,73	1,46	1,25	1,08	0,95	0,84	0,74	0,62	0,52	0,44	0,38	0,32	
	▼	2,02	1,61	1,31	1,08	0,91	0,77	0,65	0,45	0,30						
50	▲	3,08	2,54	2,14	1,83	1,58	1,38	1,22	1,08	0,96	0,84	0,73	0,62	0,53	0,46	0,41
	▼	2,43	1,98	1,64	1,37	1,16	1,00	0,86	0,73	0,52	0,37					
60	▲	3,62	3,03	2,58	2,23	1,94	1,70	1,47	1,25	1,08	0,94	0,83	0,74	0,67	0,60	0,54
	▼	2,86	2,36	1,98	1,68	1,44	1,24	1,08	0,94	0,79	0,59	0,43	0,30			
80	▲	4,75	4,06	3,51	3,06	2,63	2,16	1,81	1,54	1,33	1,16	1,03	0,91	0,82	0,74	0,67
	▼	3,75	3,16	2,70	2,33	2,02	1,77	1,55	1,37	1,21	1,08	0,88	0,69	0,53	0,40	
100	▲	5,90	5,12	4,47	3,90	3,13	2,58	2,16	1,84	1,59	1,39	1,23	1,09	0,98	0,89	0,80
	▼	4,66	3,99	3,46	3,01	2,64	2,32	2,05	1,82	1,62	1,45	1,30	1,16	0,94	0,76	0,60
120	▲	6,82	5,83	5,09	4,51	3,65	3,01	2,53	2,16	1,86	1,63	1,44	1,28	1,15	1,04	0,94
	▼	5,56	4,82	4,20	3,69	3,25	2,87	2,55	2,27	2,03	1,82	1,64	1,48	1,34	1,12	0,92
150	▲	7,45	6,37	5,56	4,92	4,42	3,66	3,08	2,63	2,27	1,98	1,75	1,56	1,40	1,26	1,15
	▼	6,96	6,10	5,38	4,76	4,22	3,76	3,35	3,00	2,70	2,43	2,19	1,99	1,81	1,65	1,50

▲ Ascending load ▼ Descending load

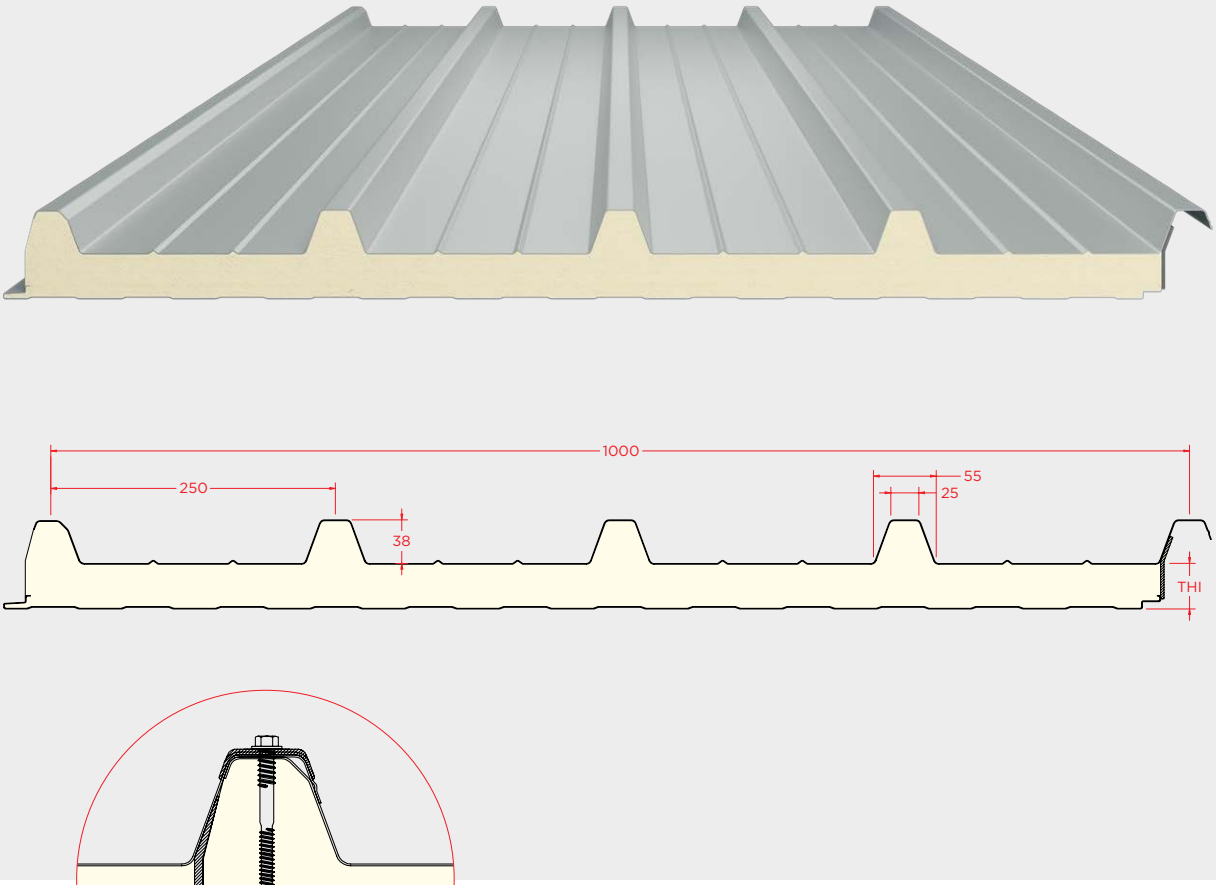
Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	1,88	1,42	1,11	0,91	0,76	0,65	0,56	0,50	0,45	0,40	0,37	0,34	0,31		
	▼	1,63	1,27	1,01	0,82	0,68	0,56	0,47	0,40	0,34						
40	▲	2,07	1,57	1,25	1,02	0,86	0,74	0,65	0,57	0,51	0,46	0,42	0,39	0,36	0,34	0,32
	▼	2,02	1,61	1,31	1,08	0,91	0,77	0,65	0,56	0,49	0,42	0,37	0,32			
50	▲	2,28	1,74	1,39	1,14	0,97	0,83	0,73	0,65	0,59	0,53	0,49	0,45	0,42	0,39	0,37
	▼	2,43	1,98	1,64	1,37	1,14	0,95	0,81	0,69	0,60	0,53	0,46	0,41	0,37	0,33	
60	▲	2,41	1,84	1,47	1,21	1,02	0,88	0,77	0,69	0,62	0,56	0,52	0,48	0,45	0,42	0,39
	▼	2,86	2,33	1,82	1,46	1,20	1,01	0,86	0,75	0,65	0,57	0,51	0,45	0,40	0,36	0,33
80	▲	2,84	2,13	1,69	1,40	1,20	1,05	0,93	0,84	0,77	0,71	0,66	0,62	0,59	0,56	0,53
	▼	3,66	2,71	2,10	1,70	1,40	1,20	1,04	0,91	0,81	0,72	0,65	0,59	0,54	0,49	0,45
100	▲	3,14	2,38	1,89	1,57	1,33	1,16	1,03	0,93	0,85	0,79	0,73	0,69	0,65	0,62	0,59
	▼	3,94	2,95	2,29	1,84	1,53	1,29	1,11	0,98	0,87	0,78	0,70	0,63	0,58	0,53	0,49
120	▲	3,40	2,61	2,09	1,73	1,48	1,30	1,16	1,05	0,96	0,89	0,83	0,79	0,75	0,71	0,68
	▼	4,19	3,16	2,46	1,98	1,64	1,39	1,20	1,05	0,93	0,84	0,75	0,68	0,62	0,57	0,52
150	▲	3,68	2,85	2,30	1,92	1,65	1,45	1,29	1,18	1,08	1,01	0,95	0,90	0,85	0,82	0,79
	▼	4,47	3,39	2,66	2,15	1,78	1,51	1,30	1,15	1,02	0,91	0,82	0,74	0,68	0,62	0,56



Topcover 5

CE
EN 14509



Description/Application
Insulating panel made of two profiled metal sheets, joined by a rigid polyurethane (PUR) or polycyanurate (PIR) foam core.
The most resistant and efficient solution in a 5 wave panel for minimum coverage of 5%.
Product manufactured in accordance with the EN 14509 standard and subject to validation and verification of regularity of performance in accordance with system 1.

Characteristics
Dimensions*
Thicknesses: 30–40–50–60–80–100 mm ±2 mm
Thicknesses: 120–150 mm ±2%
Width: 1000 mm ±2 mm
Length: 4,00 — 20,00 m ±10 mm
Maximum recommended length: 13,00 m

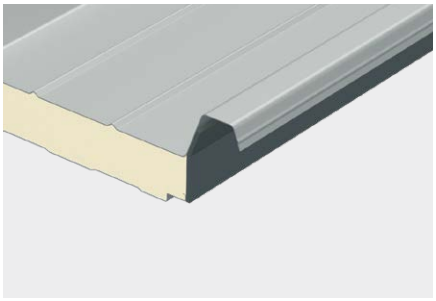
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,4–0,5–0,6 mm

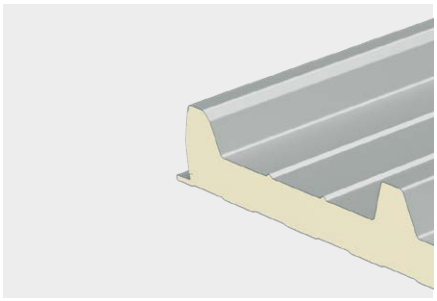
Insulated core
Polyurethane (PUR) | Polysocyanurate (PIR)
Thermal conductivity:
PUR 0,0207 W/m °C
PIR 0,0207 W/m °C
Density: 40 kg/m³
Reaction to fire: EN 13501-1
PUR B-s2,d0
PIR B-s2,d0
PIR-HI B-s1,d0

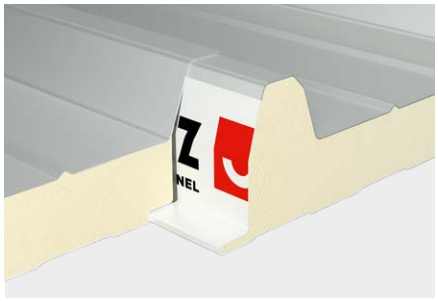
Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVDF 35 µm

**Tolerances according to EN 14509 standard*
W/m K = W/m °C | W/m² K = W/m² °C

Details







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The colors displayed in the catalog meet our standards as accurately as possible. However, minor variations are inevitable, which is why we recommend that you always perform a color test using an actual sample.

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RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

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RAL 7012 Basalt grey

RAL 6005 Moss green

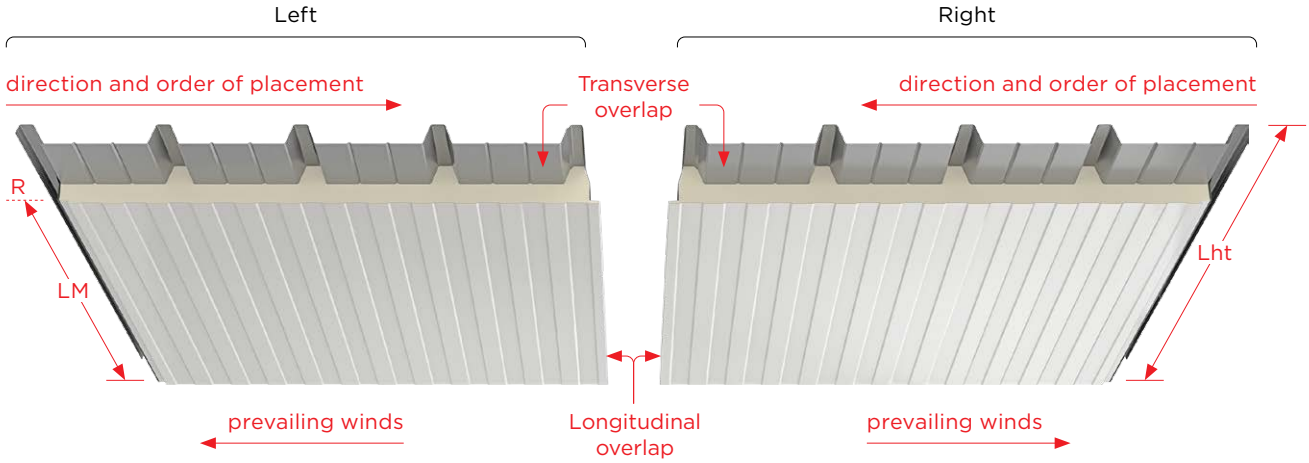
RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Overlap panel

Solution for lengths greater than 18.00 m.



R = 50 mm (eaves cutout) | 100–200–300 mm (overlap cutout)

Thermal behavior and weights

W/m K = W/m °C | W/m² K = W/m² °C

Thickness	mm	30	40	50	60	80	100	120	150
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,59	0,46	0,37	0,31	0,24	0,19	0,16	0,13
Weight (Steel sheet | Thickness 0,4/0,4)	Kg/m²	8,0	8,4	8,8	9,2	10,0	10,8	11,6	12,9
Weight (Steel sheet | Thickness 0,5/0,4)	Kg/m²	8,7	9,1	9,5	9,9	10,7	11,5	12,8	14,0

Direct design tables

Steel sheet | Thicknesses 0,4/0,4

Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	2,70	2,12	1,72	1,43	1,21	1,04	0,90	0,75	0,62	0,51	0,43	0,37	0,32		
	▼	2,28	1,77	1,41	1,15	0,95	0,77	0,52	0,34							
40	▲	3,21	2,58	2,12	1,78	1,52	1,31	1,15	1,01	0,85	0,71	0,60	0,51	0,44	0,39	0,34
	▼	2,72	2,15	1,75	1,44	1,21	1,02	0,81	0,57	0,39						
50	▲	3,76	3,07	2,56	2,17	1,86	1,62	1,42	1,25	1,11	0,95	0,81	0,69	0,60	0,52	0,46
	▼	3,18	2,56	2,11	1,76	1,49	1,27	1,10	0,85	0,62	0,45	0,31				
60	▲	4,33	3,58	3,02	2,58	2,23	1,94	1,71	1,51	1,35	1,21	1,05	0,90	0,78	0,68	0,60
	▼	3,66	2,99	2,49	2,10	1,79	1,54	1,33	1,16	0,89	0,67	0,50	0,36			
80	▲	5,51	4,65	3,97	3,44	3,00	2,63	2,31	1,97	1,69	1,48	1,30	1,16	1,03	0,93	0,85
	▼	4,66	3,89	3,29	2,82	2,43	2,11	1,84	1,62	1,43	1,20	0,95	0,74	0,58	0,44	0,33
100	▲	6,47	5,53	4,83	4,28	3,80	3,27	2,74	2,33	2,01	1,75	1,54	1,37	1,23	1,11	1,00
	▼	5,69	4,82	4,13	3,56	3,10	2,71	2,38	2,11	1,87	1,67	1,49	1,21	0,98	0,79	0,63
120	▲	6,89	5,89	5,14	4,56	4,09	3,71	3,17	2,70	2,33	2,03	1,79	1,59	1,42	1,28	1,16
	▼	6,73	5,75	4,97	4,32	3,78	3,33	2,94	2,61	2,32	2,08	1,86	1,68	1,44	1,19	0,98
150	▲	7,52	6,43	5,61	4,97	4,46	4,05	3,70	3,26	2,82	2,46	2,16	1,92	1,72	1,55	1,41
	▼	7,52	6,43	5,61	4,97	4,46	4,05	3,70	3,38	3,02	2,71	2,44	2,21	2,00	1,82	1,61

▲ Ascending load ▼ Descending load

Multiple support conditions

Espessura	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	2,70	2,09	1,63	1,31	1,09	0,92	0,80	0,70	0,62	0,55	0,50	0,46	0,42	0,39	0,36
	▼	2,28	1,77	1,41	1,15	0,95	0,79	0,67	0,57	0,49	0,42	0,37	0,32			
40	▲	3,06	2,30	1,81	1,47	1,23	1,05	0,91	0,80	0,71	0,64	0,58	0,53	0,49	0,45	0,42
	▼	2,72	2,15	1,75	1,44	1,21	1,02	0,87	0,75	0,65	0,57	0,50	0,44	0,39	0,34	0,30
50	▲	3,37	2,55	2,01	1,64	1,38	1,18	1,02	0,90	0,81	0,73	0,66	0,61	0,56	0,52	0,49
	▼	3,18	2,56	2,11	1,76	1,49	1,27	1,10	0,95	0,83	0,73	0,64	0,57	0,50	0,45	0,40
60	▲	3,55	2,71	2,14	1,75	1,47	1,26	1,09	0,96	0,86	0,78	0,71	0,65	0,60	0,56	0,52
	▼	3,66	2,99	2,49	2,04	1,68	1,41	1,20	1,04	0,91	0,80	0,71	0,63	0,56	0,51	0,46
80	▲	4,22	3,15	2,48	2,03	1,72	1,49	1,31	1,17	1,06	0,97	0,90	0,84	0,78	0,74	0,70
	▼	4,66	3,82	2,96	2,38	1,96	1,67	1,45	1,27	1,12	1,00	0,90	0,82	0,75	0,68	0,63
100	▲	4,63	3,51	2,77	2,27	1,92	1,66	1,46	1,31	1,19	1,09	1,01	0,94	0,88	0,83	0,79
	▼	5,57	4,17	3,24	2,61	2,16	1,83	1,57	1,38	1,23	1,10	0,99	0,90	0,82	0,75	0,70
120	▲	4,96	3,79	3,01	2,48	2,10	1,82	1,61	1,44	1,31	1,21	1,12	1,05	0,99	0,93	0,89
	▼	5,90	4,45	3,48	2,81	2,33	1,98	1,70	1,50	1,33	1,19	1,08	0,98	0,90	0,83	0,76
150	▲	5,31	4,10	3,28	2,71	2,31	2,01	1,78	1,60	1,46	1,35	1,25	1,18	1,11	1,06	1,01
	▼	6,26	4,76	3,74	3,02	2,51	2,14	1,80	1,59	1,42	1,28	1,17	1,07	0,98	0,91	0,84

Steel sheet | Thicknesses 0,5/0,4

Simple support conditions

Espessura	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	3,06	2,40	1,95	1,62	1,36	1,17	1,01	0,82	0,67	0,56	0,47	0,40	0,35	0,30	
	▼	2,60	2,02	1,61	1,31	1,09	0,89	0,62	0,42							
40	▲	3,60	2,88	2,37	2,00	1,70	1,47	1,28	1,12	0,92	0,77	0,65	0,55	0,48	0,42	0,37
	▼	3,06	2,43	1,97	1,63	1,37	1,16	0,91	0,66	0,47	0,32					
50	▲	4,17	3,40	2,84	2,41	2,07	1,80	1,58	1,40	1,22	1,02	0,87	0,74	0,64	0,56	0,49
	▼	3,55	2,86	2,36	1,98	1,68	1,44	1,24	0,95	0,71	0,52	0,37				
60	▲	4,77	3,94	3,32	2,85	2,47	2,15	1,90	1,66	1,42	1,24	1,09	0,96	0,83	0,72	0,63
	▼	4,05	3,32	2,77	2,34	2,00	1,73	1,50	1,28	0,98	0,75	0,56	0,42			
80	▲	6,00	5,06	4,34	3,77	3,30	2,82	2,36	2,00	1,72	1,50	1,32	1,17	1,05	0,94	0,86
	▼	5,10	4,26	3,62	3,11	2,70	2,35	2,06	1,82	1,61	1,30	1,04	0,82	0,64	0,49	0,38
100	▲	6,47	5,53	4,83	4,28	3,84	3,32	2,78	2,36	2,03	1,77	1,56	1,38	1,24	1,12	1,01
	▼	6,17	5,24	4,51	3,91	3,42	3,00	2,65	2,35	2,10	1,88	1,60	1,31	1,07	0,86	0,70
120	▲	6,88	5,88	5,13	4,55	4,08	3,70	3,21	2,73	2,35	2,05	1,81	1,61	1,44	1,30	1,18
	▼	6,88	5,88	5,13	4,55	4,08	3,66	3,25	2,89	2,59	2,32	2,09	1,81	1,50	1,24	1,02
150	▲	7,51	6,42	5,60	4,97	4,46	4,04	3,69	3,29	2,84	2,48	2,18	1,94	1,74	1,56	1,42
	▼	7,51	6,42	5,60	4,97	4,46	4,04	3,69	3,40	3,15	2,93	2,74	2,48	2,26	1,97	1,67

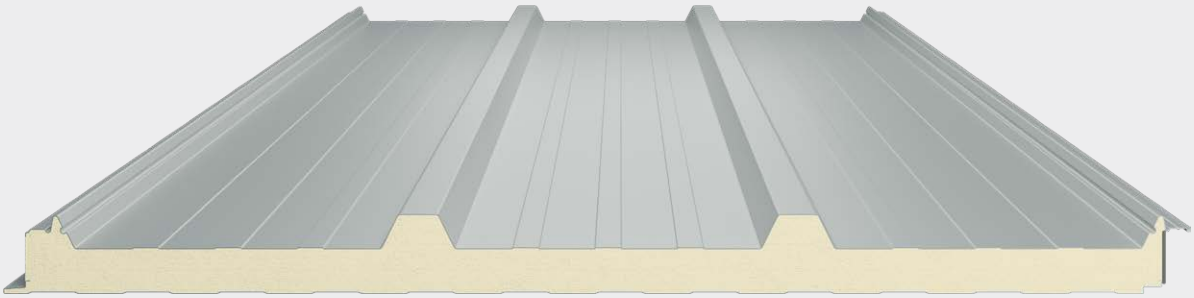
▲ Ascending load ▼ Descending load

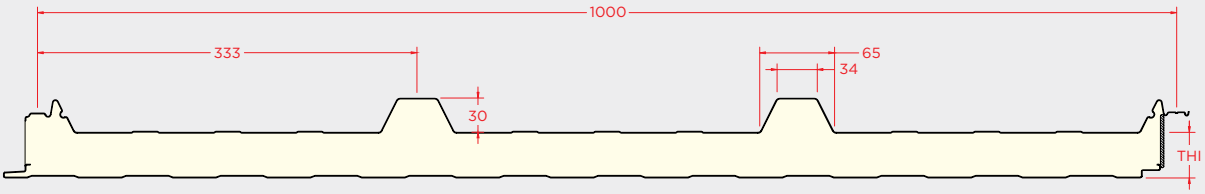
Multiple support conditions

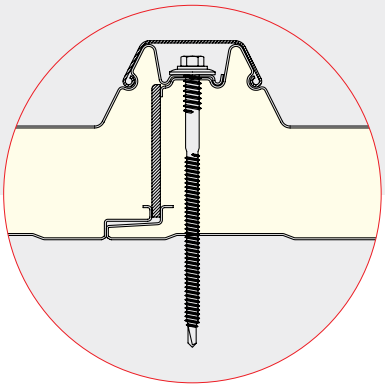
Espessura	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	3,06	2,40	1,91	1,54	1,27	1,08	0,93	0,81	0,72	0,64	0,58	0,52	0,48	0,44	0,41
	▼	2,60	2,02	1,61	1,31	1,09	0,91	0,77	0,66	0,57	0,49	0,43	0,38	0,33		
40	▲	3,60	2,71	2,13	1,72	1,43	1,22	1,05	0,92	0,82	0,74	0,67	0,61	0,56	0,51	0,48
	▼	3,06	2,43	1,97	1,63	1,37	1,16	0,99	0,86	0,75	0,65	0,57	0,51	0,45	0,40	0,36
50	▲	3,97	3,00	2,36	1,92	1,61	1,37	1,19	1,05	0,93	0,84	0,76	0,70	0,64	0,60	0,55
	▼	3,55	2,86	2,36	1,98	1,68	1,44	1,24	1,08	0,94	0,83	0,73	0,65	0,58	0,52	0,47
60	▲	4,16	3,18	2,51	2,05	1,71	1,46	1,27	1,12	1,00	0,90	0,81	0,75	0,69	0,64	0,59
	▼	4,05	3,32	2,77	2,34	1,99	1,68	1,43	1,24	1,08	0,95	0,84	0,75	0,68	0,61	0,56
80	▲	4,99	3,71	2,90	2,37	2,00	1,72	1,51	1,35	1,22	1,12	1,03	0,95	0,89	0,84	0,79
	▼	5,10	4,26	3,51	2,82	2,32	1,98	1,71	1,50	1,33	1,19	1,07	0,97	0,89	0,81	0,75
100	▲	5,44	4,12	3,24	2,65	2,23	1,92	1,69	1,51	1,36	1,24	1,15	1,07	1,00	0,94	0,89
	▼	6,17	4,95	3,85	3,09	2,56	2,17	1,86	1,63	1,45	1,30	1,18	1,07	0,98	0,90	0,83
120	▲	5,81	4,45	3,53	2,89	2,44	2,11	1,86	1,67	1,51	1,39	1,28	1,20	1,12	1,06	1,01
	▼	6,88	5,27	4,12	3,32	2,75	2,33	2,00	1,76	1,56	1,40	1,27	1,15	1,06	0,97	0,90
150	▲	6,21	4,80	3,83	3,16	2,68	2,33	2,06	1,85	1,68	1,54	1,43	1,34	1,26	1,20	1,14
	▼	7,37	5,62	4,42	3,57	2,97	2,52	2,16	1,91	1,70	1,53	1,38	1,26	1,16	1,07	0,99

Topcover Cap

CE
EN 14509







Description/Application
Panel with hidden fixing using joint covers for roofs with a minimum slope of 5%.
A durable and aesthetically pleasing solution with protection for fasteners.
Insulating panel composed of two profiled metal sheets, joined by a rigid polyurethane (PUR) or polyisocyanurate (PIR) foam core.
Product manufactured in accordance with EN 14509 and subject to evaluation and verification of performance regularity in accordance with system 1.

Characteristics
Dimensions*
Thicknesses: 30–40–50–60–80–100 mm ±2 mm
Width: 1000 mm ±2 mm
Length: 4,00 — 20,00 m ±10 mm
Maximum recommended length: 13,00 m

Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,4–0,5–0,6 mm

Insulated core
Polyurethane (PUR) | Polysocyanurate (PIR)
Thermal conductivity:

PUR	0,0207 W/m °C
PIR	0,0207 W/m °C

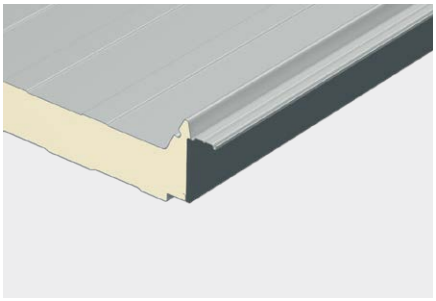
Density: 40 kg/m³
Reaction to fire: EN 13501-1

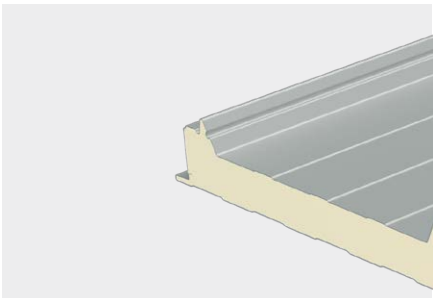
PUR	B-s2,d0
PIR	B-s2,d0
PIR-HI	B-s1,d0

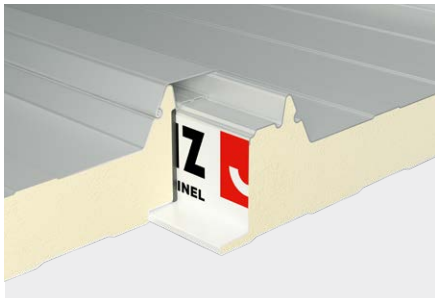
Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVDF 35 µm

**Tolerances according to EN 14509 standard*
W/m K = W/m °C | W/m² K = W/m² °C

Details







Color range

The colors displayed in the catalog meet our standards as accurately as possible. However, minor variations are inevitable, which is why we recommend that you always perform a color test using an actual sample.

RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

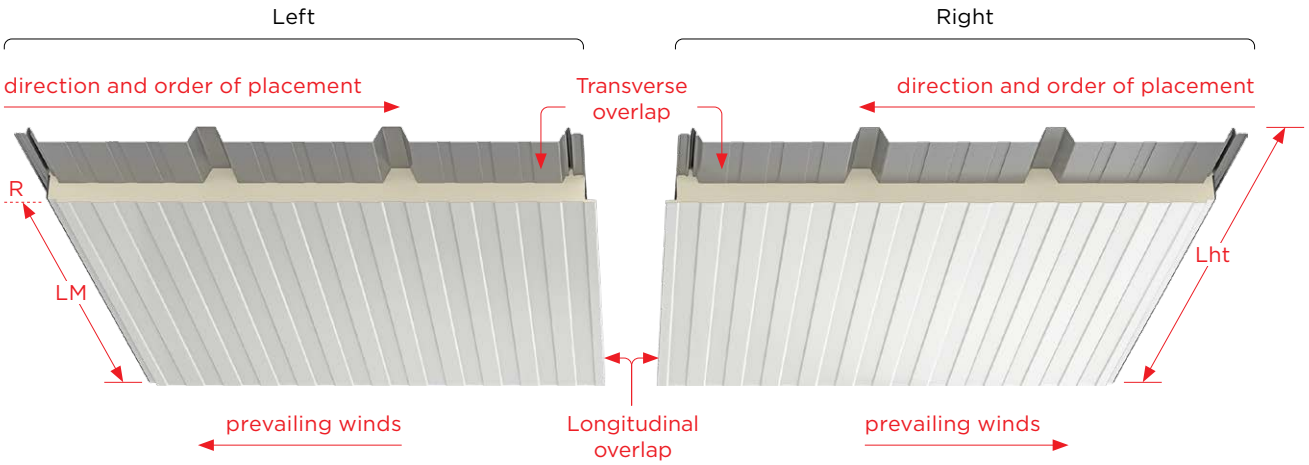
RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Overlap panel

Optional.



R = 50 mm (eaves cutout) | 100–200–300 mm (overlap cutout)

Thermal behavior and weights

Thickness	mm	30	40	50	60	80	100
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,61	0,46	0,38	0,32	0,24	0,19
Weight (Steel sheet | Thickness 0,4/0,4)	Kg/m²	7,7	8,1	8,5	8,9	9,7	10,5
Weight (Steel sheet | Thickness 0,5/0,4)	Kg/m²	8,4	8,8	9,2	9,6	10,4	11,2

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables

Steel sheet | Thicknesses 0,4/0,4

Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	2,09	1,68	1,30	1,15	0,98	0,81	0,64	0,52	0,41	0,33	0,43	0,37			
	▼	1,73	1,36	1,09	0,89	0,60	0,38									
40	▲	2,68	2,20	1,83	1,55	1,33	1,15	0,96	0,78	0,64	0,54	0,45	0,38	0,32		
	▼	2,23	1,79	1,47	1,22	1,02	0,70	0,47	0,30							
50	▲	3,31	2,75	2,32	1,98	1,70	1,48	1,30	1,10	0,91	0,76	0,65	0,55	0,48	0,42	0,37
	▼	2,76	2,26	1,87	1,57	1,33	1,10	0,79	0,56	0,39						
60	▲	3,97	3,33	2,83	2,43	2,10	1,83	1,61	1,43	1,22	1,03	0,87	0,75	0,65	0,57	0,50
	▼	3,30	2,74	2,29	1,94	1,66	1,43	1,16	0,87	0,64	0,46	0,32				
80	▲	5,31	4,53	3,89	3,37	2,93	2,54	2,14	1,82	1,58	1,38	1,22	1,08	0,97	0,88	0,80
	▼	4,43	3,73	3,18	2,72	2,35	2,03	1,78	1,56	1,24	0,97	0,76	0,58	0,44	0,32	
100	▲	6,40	5,47	4,78	4,24	3,73	3,08	2,59	2,21	1,91	1,67	1,47	1,31	1,17	1,06	0,96
	▼	5,58	4,76	4,09	3,53	3,06	2,68	2,34	2,07	1,83	1,58	1,28	1,03	0,83	0,66	0,52

▲ Ascending load ▼ Descending load

Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	1,73	1,32	1,04	0,86	0,72	0,62	0,54	0,48	0,43	0,39	0,36	0,33	0,31		
	▼	1,73	1,36	1,09	0,89	0,74	0,62	0,52	0,44	0,37	0,32					
40	▲	1,88	1,44	1,15	0,94	0,80	0,69	0,60	0,54	0,48	0,44	0,40	0,37	0,35	0,33	0,31
	▼	2,22	1,65	1,27	1,02	0,83	0,69	0,58	0,49	0,42	0,36	0,32				
50	▲	2,09	1,60	1,28	1,06	0,90	0,78	0,69	0,61	0,55	0,50	0,46	0,43	0,40	0,38	0,35
	▼	2,47	1,85	1,44	1,15	0,94	0,79	0,67	0,57	0,49	0,43	0,38	0,33			
60	▲	2,14	1,66	1,33	1,10	0,93	0,81	0,71	0,63	0,57	0,52	0,48	0,44	0,41	0,39	0,37
	▼	2,52	1,90	1,49	1,19	0,98	0,83	0,70	0,60	0,53	0,46	0,41	0,36	0,32		
80	▲	2,54	1,94	1,55	1,29	1,11	0,97	0,87	0,79	0,72	0,67	0,62	0,58	0,55	0,53	0,51
	▼	2,99	2,23	1,73	1,40	1,16	0,99	0,86	0,75	0,66	0,59	0,53	0,48	0,43	0,39	0,36
100	▲	2,62	2,01	1,60	1,33	1,13	0,99	0,88	0,79	0,73	0,67	0,62	0,59	0,55	0,53	0,50
	▼	3,01	2,25	1,75	1,40	1,16	0,98	0,84	0,73	0,64	0,57	0,51	0,46	0,41	0,37	0,34

Steel sheet | Thicknesses 0,5/0,4

Simple support conditions

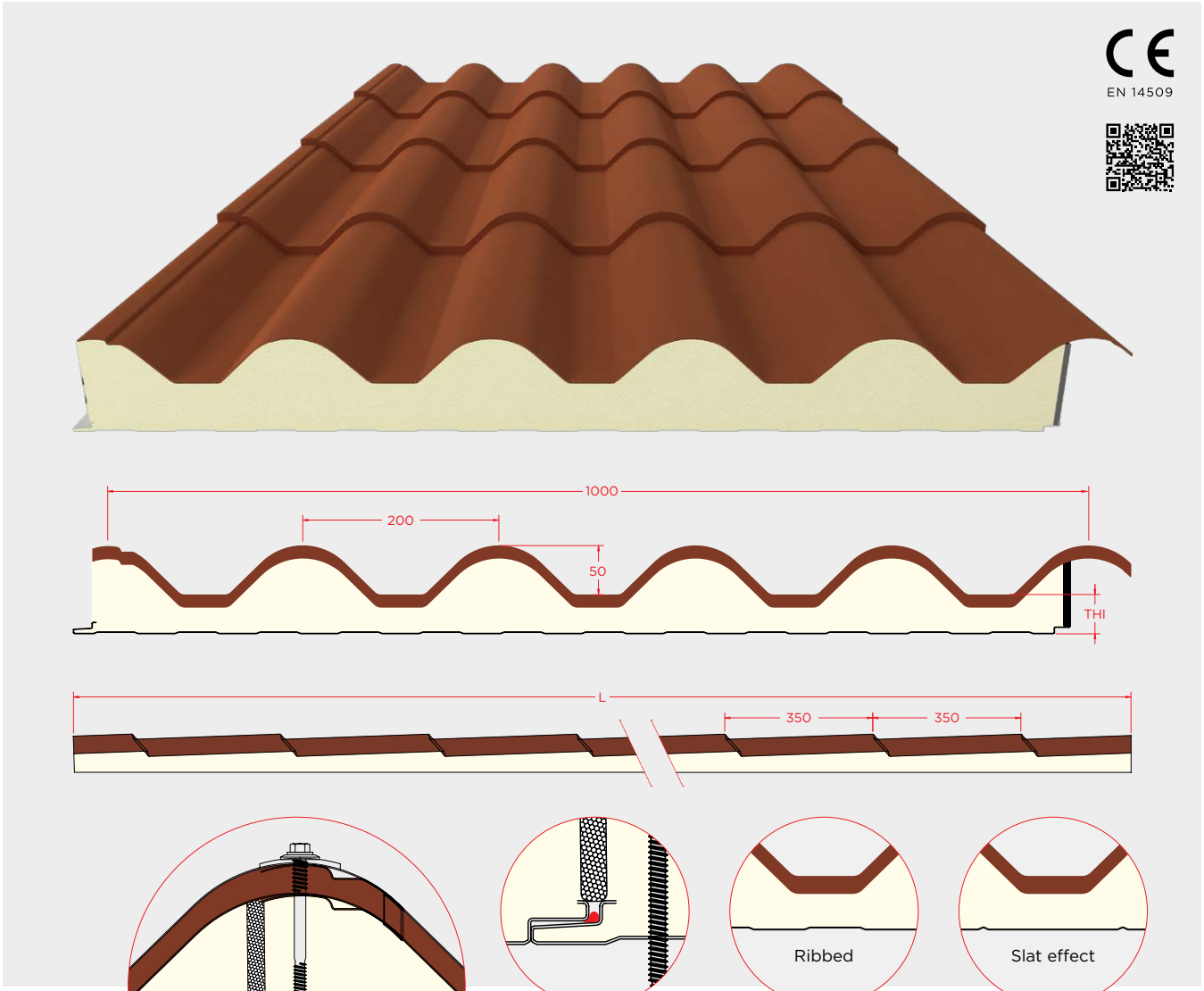
Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	2,33	1,87	1,54	1,29	1,10	0,87	0,69	0,56	0,45	0,35					
	▼	1,95	1,53	1,24	1,01	0,69	0,44									
40	▲	2,96	2,42	2,03	1,72	1,47	1,28	1,03	0,83	0,69	0,57	0,48	0,41	0,34		
	▼	2,48	2,00	1,64	1,37	1,12	0,79	0,54	0,36							
50	▲	3,62	3,02	2,55	2,18	1,89	1,64	1,42	1,17	0,97	0,81	0,69	0,59	0,51	0,44	0,39
	▼	3,03	2,49	2,08	1,75	1,49	1,20	0,87	0,63	0,44	0,30					
60	▲	4,31	3,63	3,10	2,67	2,32	2,03	1,72	1,46	1,27	1,09	0,92	0,79	0,69	0,60	0,53
	▼	3,61	3,01	2,53	2,16	1,85	1,60	1,25	0,95	0,71	0,52	0,37				
80	▲	5,73	4,91	4,24	3,69	3,12	2,57	2,16	1,84	1,59	1,39	1,22	1,09	0,98	0,88	0,80
	▼	4,80	4,07	3,48	3,00	2,60	2,27	1,99	1,69	1,33	1,05	0,82	0,64	0,49	0,36	
100	▲	6,40	5,47	4,78	4,24	3,76	3,10	2,60	2,22	1,92	1,68	1,48	1,32	1,18	1,06	0,97
	▼	6,02	5,16	4,46	3,88	3,39	2,98	2,62	2,32	2,06	1,68	1,37	1,11	0,90	0,71	0,57

▲ Ascending load ▼ Descending load

Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	▲	2,04	1,54	1,22	1,00	0,84	0,72	0,62	0,55	0,49	0,45	0,41	0,37	0,35	0,32	0,30
	▼	1,95	1,53	1,24	1,01	0,84	0,71	0,60	0,51	0,44	0,38	0,33				
40	▲	2,21	1,68	1,34	1,10	0,93	0,80	0,70	0,62	0,55	0,50	0,46	0,42	0,39	0,37	0,34
	▼	2,48	1,96	1,52	1,22	1,00	0,83	0,70	0,60	0,51	0,45	0,39	0,34	0,30		
50	▲	2,44	1,87	1,50	1,23	1,04	0,90	0,79	0,70	0,63	0,57	0,53	0,49	0,45	0,43	0,40
	▼	2,93	2,20	1,72	1,38	1,12	0,94	0,80	0,69	0,60	0,52	0,46	0,41	0,36	0,32	
60	▲	2,51	1,94	1,55	1,28	1,08	0,93	0,81	0,72	0,65	0,59	0,54	0,50	0,47	0,44	0,41
	▼	2,98	2,26	1,77	1,42	1,17	0,98	0,84	0,72	0,63	0,55	0,49	0,44	0,39	0,35	0,32
80	▲	2,99	2,27	1,81	1,50	1,28	1,12	0,99	0,90	0,82	0,75	0,70	0,66	0,62	0,59	0,56
	▼	3,55	2,65	2,06	1,67	1,38	1,17	1,02	0,89	0,79	0,71	0,64	0,58	0,53	0,48	0,44
100	▲	3,06	2,35	1,87	1,54	1,31	1,14	1,01	0,91	0,83	0,76	0,71	0,66	0,62	0,59	0,56
	▼	3,58	2,69	2,09	1,67	1,38	1,17	1,00	0,87	0,77	0,69	0,61	0,55	0,50	0,45	0,42

Topcover Tile



Description/Application
Panel with the shape of a traditional tile for roofs with a minimum slope of 10%.
Insulating product composed of two profiled metal sheets, joined by an insulating core made of rigid polyurethane (PUR) or polyisocyanurate (PIR) foam.
The exterior panel has a textured paint finish for a greater resemblance to traditional tiles.
In harsher environments, it is recommended to apply silicone to the panel joint to prevent condensation.

Characteristics
Dimensions*
Thicknesses: 40–60–80 mm ±2 mm
Width: 1000 mm ±2 mm
Length: 2,10 — 14,00 m, in multiples of 0,35 m
Maximum recommended length: 8,05 m

Metallic support
Steel grade S250GD, EN 10346
Thicknesses: 0,4–0,5–0,6 mm

Insulated core
Polyurethane (PUR) | Polysocyanurate (PIR)
Thermal conductivity:

PUR	0,0207 W/m °C
PIR	0,0207 W/m °C

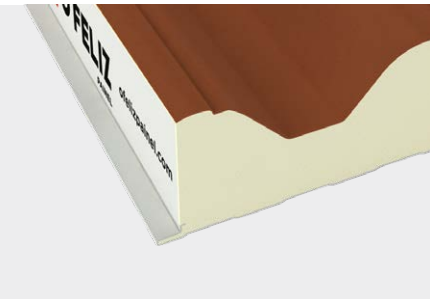
Density: 40 kg/m³
Reaction to fire:

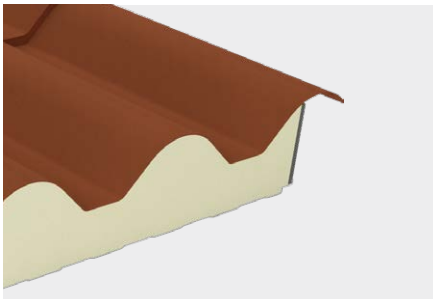
PUR	B-s2,d0
PIR	B-s2,d0
PIR-HI	B-s1,d0

Coating
Standard: Polyester paint texturada 25 µm.
Special: Granite HDX 55 µm | Naive Wood textured color for the interior.
Option for metallic coating in lacquered aluminum.

**Tolerances according to EN 14509 standard*
W/m K = W/m °C | W/m² K = W/m² °C

Details





Gama de colores

The colors shown in this catalog comply to our standards with the greatest possible precision. However, some disparities are inevitable; that is why we always recommend a color test with a real sample.

All RAL references presented here, referring to the product Topcover® Tile, have a textured finish.

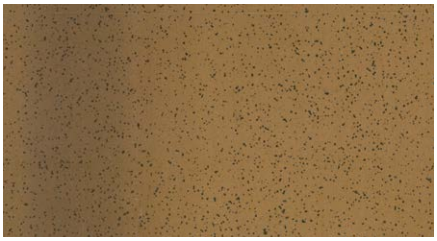
Exterior side

RAL 8004T Copper brown

RAL 8023T Orange brown

RAL 9005T Jet black

Alvero



Interior side

RAL 9010 Pure white

Naive Wood Textured lacquer

Patinao Spanish roof

Thermal behavior and weights

Thickness	mm	30	40	50
Thermal transmittance U	W/m² °C	0,45	0,37	0,31
Peso (0,5/0,4)	Kg/m²	10,8	11,2	11,6
Peso (0,5/0,5)	Kg/m²	11,7	12,1	12,5

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables

Steel sheet | Thicknesses 0,5/0,4

Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]							
mm	▲ ▼	1,05	1,40	1,75	2,10	2,45	2,80	3,15	3,50
30	▲	2,52	1,55	1,08	0,81	0,64	0,52	0,44	0,37
	▼	1,86	1,10	0,73	0,51	0,37			
40	▲	2,69	1,70	1,21	0,92	0,73	0,60	0,51	0,43
	▼	1,98	1,20	0,81	0,59	0,44	0,33		
50	▲	2,86	1,85	1,35	1,04	0,84	0,69	0,58	0,50
	▼	2,11	1,32	0,91	0,67	0,50	0,39	0,30	

▲ Ascending load ▼ Descending load

Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]							
mm	▲ ▼	1,05	1,40	1,75	2,10	2,45	2,80	3,15	3,50
30	▲	2,52	1,53	0,96	0,67	0,50	0,40	0,33	
	▼	1,86	1,10	0,73	0,51	0,37			
40	▲	2,69	1,68	1,07	0,73	0,54	0,43	0,35	
	▼	1,86	1,10	0,73	0,51	0,37			
50	▲	2,86	1,85	1,20	0,82	0,63	0,50	0,40	
	▼	1,86	1,10	0,73	0,51	0,37			

Steel sheet | Thicknesses 0,5/0,5

Simple support conditions

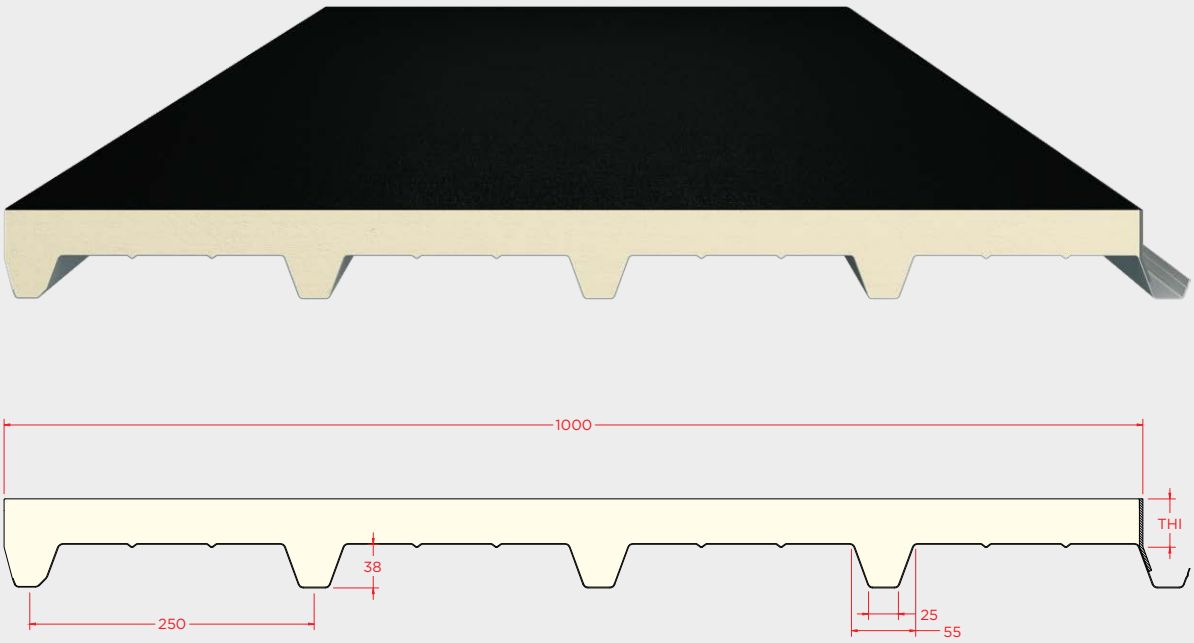
Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]							
mm	▲ ▼	1,05	1,40	1,75	2,10	2,45	2,80	3,15	3,50
30	▲	2,52	1,55	1,08	0,81	0,64	0,53	0,44	0,38
	▼	1,86	1,10	0,73	0,51	0,38			
40	▲	2,69	1,70	1,21	0,93	0,74	0,61	0,51	0,44
	▼	1,98	1,21	0,82	0,59	0,44	0,33		
50	▲	2,87	1,86	1,35	1,05	0,84	0,70	0,59	0,51
	▼	2,11	1,32	0,92	0,67	0,51	0,39	0,30	

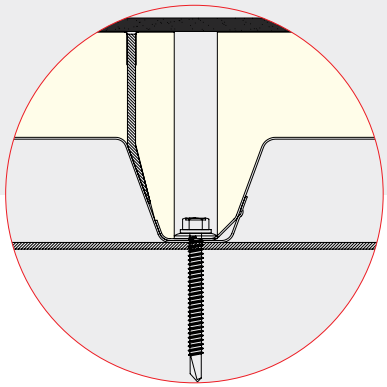
▲ Ascending load ▼ Descending load

Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]							
mm	▲ ▼	1,05	1,40	1,75	2,10	2,45	2,80	3,15	3,50
30	▲	2,52	1,54	0,97	0,68	0,50	0,40	0,33	
	▼	1,86	1,10	0,73	0,51	0,38			
40	▲	2,69	1,69	1,08	0,73	0,54	0,43	0,35	
	▼	1,98	1,21	0,82	0,59	0,44	0,33		
50	▲	2,87	1,86	1,21	0,82	0,63	0,50	0,40	0,30
	▼	2,11	1,32	0,92	0,67	0,51	0,39	0,30	

Topcover Deck





Description/Application
Deck panel for flat roofs with an outer surface made of felt cardboard.
The system must be waterproofed in situ with bituminous or PVC membrane.
Insulating product with an internal profiled metal sheet and an external flexible sheet joined by a rigid polyurethane foam core.

Characteristics
Dimensions*
Thicknesses: 30–40–50–60–80–100 mm ±2 mm
Width: 1000 mm ±2 mm
Length: 4,00 — 18,00 m ±10 mm

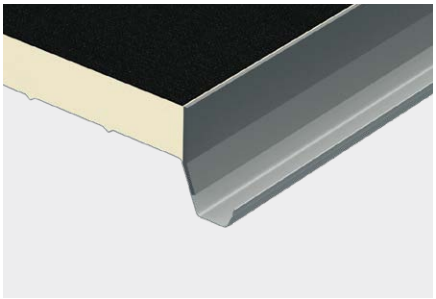
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,5–0,6–0,7 mm

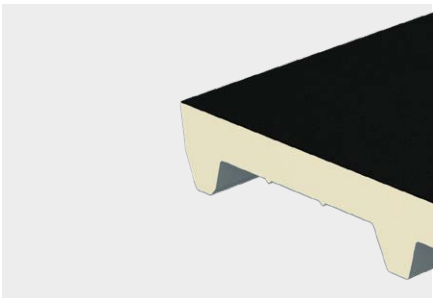
Insulated core
Polyurethane (PUR)
Thermal conductivity: 0,020 W/m °C
Density: 40 kg/m^3
Reaction to fire: F

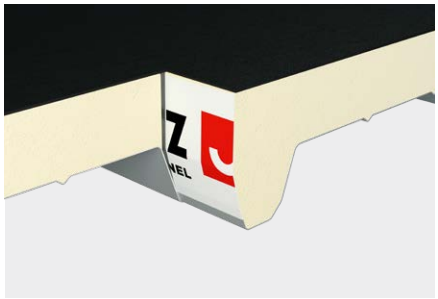
Coating
Felt paper on the external side.
Polyester paint 25 µm on the internal side.

**Tolerances according to EN 14509 standard*
W/m K = W/m °C | W/m² K = W/m² °C

Details







Color range

The colors displayed in the catalog meet our standards as accurately as possible. However, minor variations are inevitable, which is why we recommend that you always perform a color test using an actual sample.

RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Thermal behavior and weights

Thickness	mm	30	40	50	60	80	100
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,58	0,46	0,38	0,33	0,25	0,20
Weight (Steel sheet | Thickness 0,5)	Kg/m²	6,0	6,4	6,8	7,2	8,0	8,7
Weight (Steel sheet | Thickness 0,6)	Kg/m²	7,4	7,8	8,2	8,6	9,4	10,2
Weight (Steel sheet | Thickness 0,7)	Kg/m²	8,4	8,8	9,2	9,6	10,4	11,2

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables
Steel sheet | Thicknesses 0,5/0,6/0,7

Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,5	▲	2,64	2,10	1,48	1,08	0,75	0,39					
	▼	2,64	1,97	1,39	1,03	0,79	0,63	0,51	0,42	0,35		
0,6	▲	3,92	3,11	2,15	1,57	1,12	0,65	0,35				
	▼	3,92	2,61	1,85	1,38	1,07	0,85	0,69	0,57	0,48	0,41	0,35
0,7	▲	5,43	4,18	2,89	2,11	1,49	0,91	0,54				
	▼	4,98	3,31	2,35	1,76	1,37	1,09	0,89	0,74	0,62	0,53	0,46

▲ Ascending load ▼ Descending load

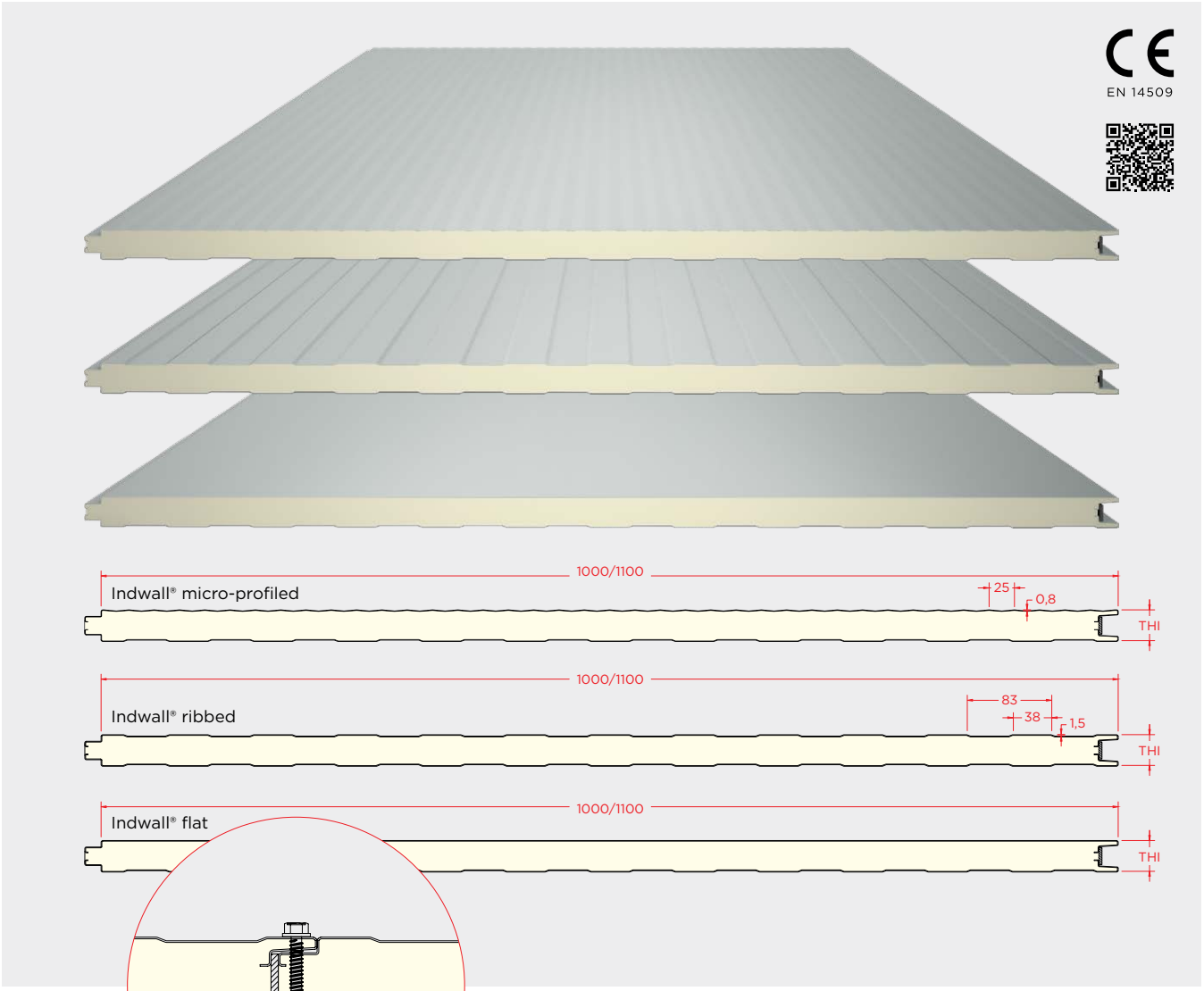
Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,5	▲	2,10	1,67	1,39	1,03	0,79	0,63	0,51	0,42	0,33		
	▼	2,10	1,67	1,39	1,08	0,81	0,64	0,51	0,41	0,34		
0,6	▲	3,13	2,49	1,85	1,38	1,07	0,85	0,69	0,57	0,48	0,33	
	▼	3,13	2,49	2,07	1,57	1,19	0,93	0,75	0,61	0,51	0,43	0,36
0,7	▲	4,34	3,31	2,35	1,76	1,37	1,09	0,89	0,74	0,62	0,51	0,32
	▼	4,34	3,46	2,88	2,11	1,61	1,26	1,01	0,83	0,69	0,58	0,50

FACADE AND WALL PANELS

Indwall®
Facewall®

Indwall®



Description/Application
Insulating panel composed of two profiled metal sheets, joined by a rigid polyurethane (PUR) or polyisocyanurate (PIR) foam core.
Self-supporting panel for walls or facades with exposed fastening. Industrial solution for prefabricated construction, available with micro-profiled, ribbed, or flat exterior surfaces.
A highly versatile and easy-to-assemble product, it is manufactured in accordance with EN 14509 and subject to performance regularity assessment and verification according to system 1.

Characteristics
Dimensions*
Thicknesses: 30–40–50–60–80–100 mm ±2 mm
Width: 1000 — 1100 mm ±2 mm
Length: 4,00 — 14,00 m ±10 mm
Maximum recommended length: 8,00 m

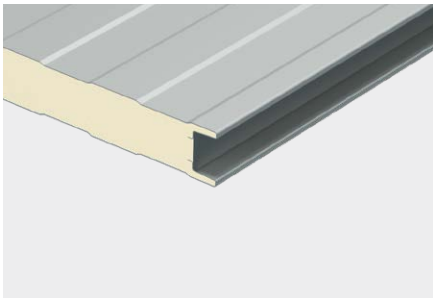
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,4–0,5 mm

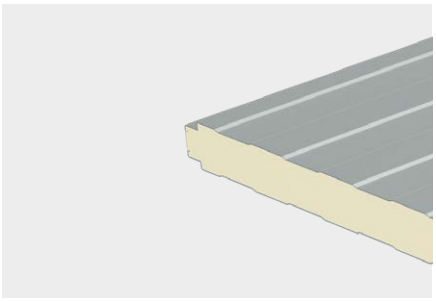
Insulated core
Polyurethane (PUR) | Polysocyanurate (PIR)
Thermal conductivity:
PUR 0,0207 W/m °C
PIR 0,0207 W/m °C
Density: 40 kg/m³
Reaction to fire: EN 13501-1
PUR B-s2,d0
PIR B-s2,d0
PIR-HI B-s1,d0

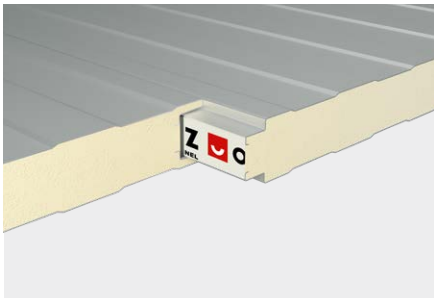
Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVDF 35 µm

**Tolerances according to EN 14509 standard*
W/m K = W/m °C | W/m² K = W/m² °C

Details







Color range

The colors displayed in the catalog meet our standards as accurately as possible. However, minor variations are inevitable, which is why we recommend that you always perform a color test using an actual sample.

RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Special color range

The following references have a textured finish.

Corten 256

Corten 522

Thermal behavior and weights

Thickness	mm	30	40	50	60	80	100
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,69	0,51	0,40	0,34	0,25	0,20
Weight (Steel sheet | Thickness 0,4/0,4)	Kg/m²	7,0	7,4	7,7	8,1		
Weight (Steel sheet | Thickness 0,5/0,5)	Kg/m²	8,6	9,0	9,4	9,8	10,2	10,6

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables

Steel sheet | Thicknesses 0,4/0,4

Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	◄	1,31	0,79	0,41												
	►	1,31	0,79	0,41												
40	◄	2,34	1,67	1,22	0,86	0,54	0,33									
	►	2,34	1,67	1,22	0,86	0,54	0,33									
50	◄	3,45	2,56	1,92	1,46	1,12	0,87	0,61	0,41							
	►	3,45	2,56	1,92	1,46	1,12	0,87	0,61	0,41							
60	◄	4,25	3,12	2,39	1,89	1,53	1,26	1,03	0,83	0,63	0,46	0,33				
	►	4,25	3,12	2,39	1,89	1,53	1,26	1,03	0,83	0,63	0,46	0,33				
80	◄	5,72	4,21	3,22	2,54	2,06	1,70	1,43	1,22	1,05	0,92	0,80	0,71	0,63	0,50	0,39
	►	5,72	4,21	3,22	2,54	2,06	1,70	1,43	1,22	1,05	0,92	0,80	0,71	0,63	0,50	0,39
100	◄	6,35	5,29	4,05	3,20	2,59	2,14	1,80	1,53	1,32	1,15	1,01	0,90	0,80	0,72	0,65
	►	6,35	5,29	4,05	3,20	2,59	2,14	1,80	1,53	1,32	1,15	1,01	0,90	0,80	0,72	0,65

◄ Exterior suction ► Exterior pressure

Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	◄	2,02	1,49	1,14	0,90	0,73	0,60	0,51	0,43	0,37	0,32					
	►	2,02	1,49	1,14	0,90	0,73	0,60	0,51	0,43	0,37	0,32					
40	◄	2,77	2,03	1,56	1,23	1,00	0,82	0,69	0,59	0,51	0,44	0,39	0,34	0,31		
	►	2,77	2,03	1,56	1,23	1,00	0,82	0,69	0,59	0,51	0,44	0,39	0,34	0,31		
50	◄	3,15	2,58	1,97	1,56	1,26	1,04	0,88	0,75	0,64	0,56	0,49	0,44	0,39	0,35	0,32
	►	3,15	2,58	1,97	1,56	1,26	1,04	0,88	0,75	0,64	0,56	0,49	0,44	0,39	0,35	0,32
60	◄	3,36	2,88	2,39	1,89	1,53	1,26	1,06	0,90	0,78	0,68	0,60	0,53	0,47	0,42	0,38
	►	3,36	2,88	2,39	1,89	1,53	1,26	1,06	0,90	0,78	0,68	0,60	0,53	0,47	0,42	0,38
80	◄	3,79	3,25	2,84	2,52	2,06	1,70	1,43	1,22	1,05	0,92	0,80	0,71	0,64	0,57	0,52
	►	3,79	3,25	2,84	2,52	2,06	1,70	1,43	1,22	1,05	0,92	0,80	0,71	0,64	0,57	0,52
100	◄	4,21	3,61	3,16	2,81	2,53	2,14	1,80	1,53	1,32	1,15	1,01	0,90	0,80	0,72	0,65
	►	4,21	3,61	3,16	2,81	2,53	2,14	1,80	1,53	1,32	1,15	1,01	0,90	0,80	0,72	0,65

Steel sheet | Thicknesses 0,5/0,5

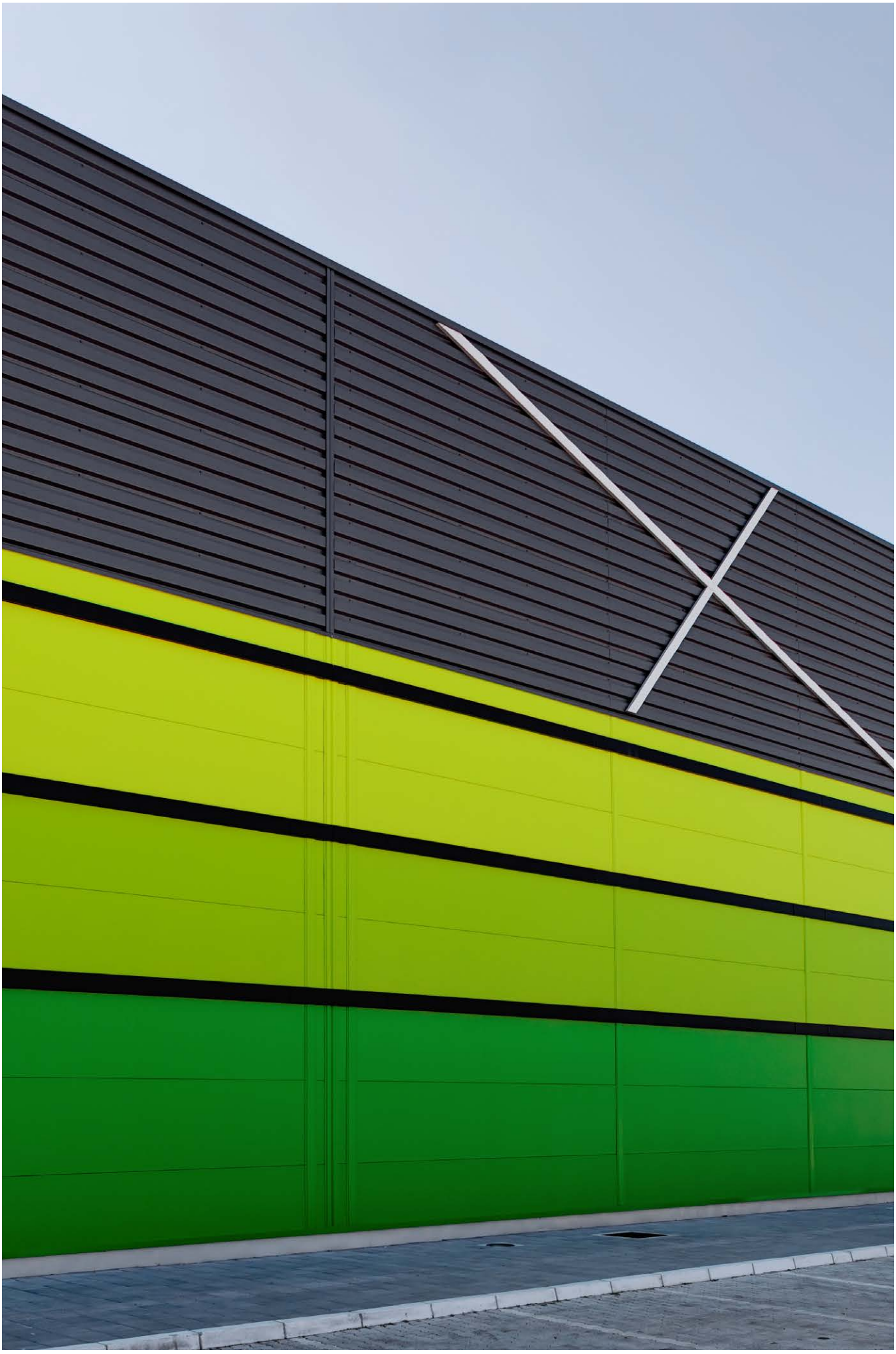
Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	◄	1,40	0,85	0,44												
	►	1,40	0,85	0,44												
40	◄	2,47	1,79	1,31	0,93	0,60	0,36									
	►	2,47	1,79	1,31	0,93	0,60	0,36									
50	◄	3,62	2,71	2,06	1,58	1,22	0,95	0,67	0,46	0,30						
	►	3,62	2,71	2,06	1,58	1,22	0,95	0,67	0,46	0,30						
60	◄	4,49	3,68	2,83	2,23	1,77	1,41	1,13	0,92	0,70	0,52	0,37				
	►	4,49	3,68	2,83	2,23	1,77	1,41	1,13	0,92	0,70	0,52	0,37				
80	◄	5,92	4,98	3,81	3,01	2,44	2,01	1,69	1,44	1,24	1,08	0,95	0,83	0,70	0,56	0,44
	►	5,92	4,98	3,81	3,01	2,44	2,01	1,69	1,44	1,24	1,08	0,95	0,83	0,70	0,56	0,44
100	◄	6,34	5,44	4,76	3,79	3,07	2,54	2,13	1,82	1,57	1,36	1,20	1,06	0,95	0,85	0,77
	►	6,34	5,44	4,76	3,79	3,07	2,54	2,13	1,82	1,57	1,36	1,20	1,06	0,95	0,85	0,77

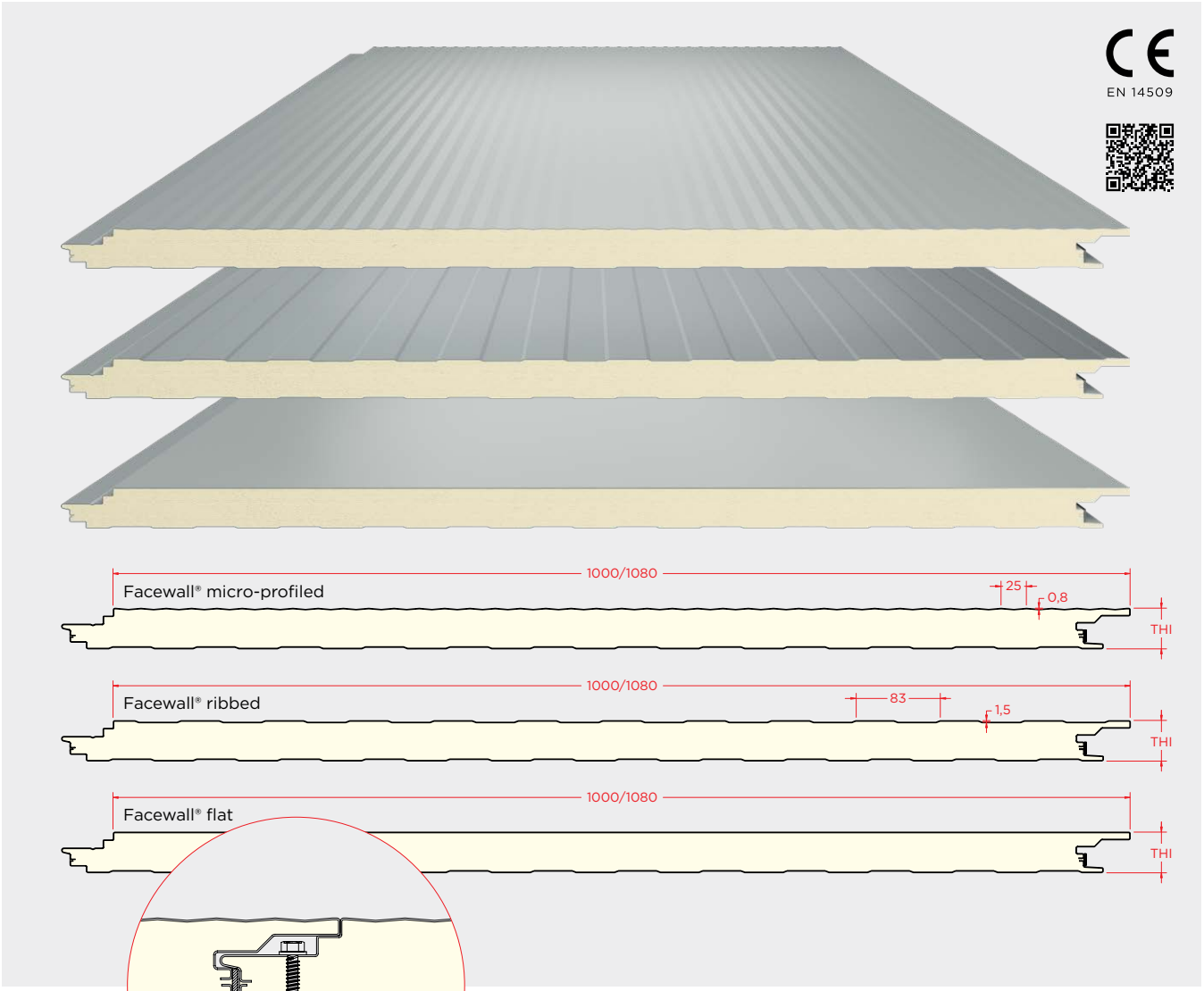
◄ Exterior suction ► Exterior pressure

Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
30	◄	2,08	1,63	1,31	1,06	0,86	0,71	0,60	0,50	0,43	0,36	0,31				
	►	2,08	1,63	1,31	1,06	0,86	0,71	0,60	0,50	0,43	0,36	0,31				
40	◄	2,93	2,40	1,84	1,45	1,18	0,97	0,82	0,70	0,60	0,52	0,46	0,41	0,36	0,33	
	►	2,93	2,40	1,84	1,45	1,18	0,97	0,82	0,70	0,60	0,52	0,46	0,41	0,36	0,33	
50	◄	3,14	2,70	2,33	1,84	1,49	1,23	1,04	0,88	0,76	0,66	0,58	0,52	0,46	0,41	0,37
	►	3,14	2,70	2,33	1,84	1,49	1,23	1,04	0,88	0,76	0,66	0,58	0,52	0,46	0,41	0,37
60	◄	3,36	2,88	2,52	2,23	1,81	1,49	1,26	1,07	0,92	0,80	0,71	0,63	0,56	0,50	0,45
	►	3,36	2,88	2,52	2,23	1,81	1,49	1,26	1,07	0,92	0,80	0,71	0,63	0,56	0,50	0,45
80	◄	3,78	3,24	2,84	2,52	2,27	2,01	1,69	1,44	1,24	1,08	0,95	0,84	0,75	0,68	0,61
	►	3,78	3,24	2,84	2,52	2,27	2,01	1,69	1,44	1,24	1,08	0,95	0,84	0,75	0,68	0,61
100	◄	4,21	3,61	3,16	2,81	2,53	2,30	2,11	1,82	1,57	1,36	1,20	1,06	0,95	0,85	0,77
	►	4,21	3,61	3,16	2,81	2,53	2,30	2,11	1,82	1,57	1,36	1,20	1,06	0,95	0,85	0,77



Facewall®



Description/Application
Insulating panel composed of two profiled metal sheets, joined by a rigid polyurethane (PUR) or polyisocyanurate (PIR) foam core.
Facade panel with hidden fastening, available with ribbed, micro-profiled, or flat surfaces.
Product manufactured in accordance with EN 14509 and subject to evaluation and verification of performance regularity in accordance with system 1.

Characteristics
Dimensions*
Thicknesses: 40–50–60–80–100 mm ±2 mm
Width: 1000 — 1080 mm ±2 mm
Length: 4,00 — 14,00 m ±10 mm
Maximum recommended length: 8,00 m

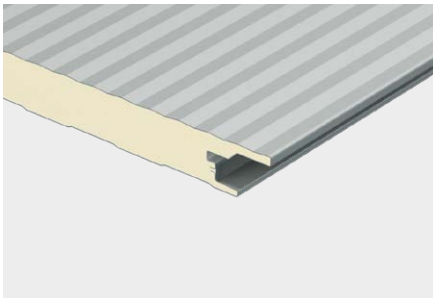
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,5–0,6 mm

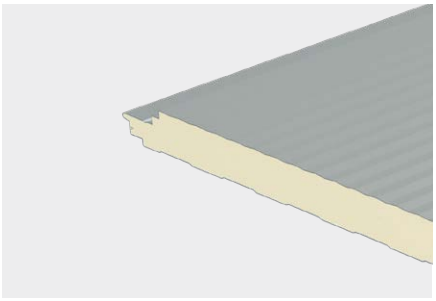
Insulated core
Polyurethane (PUR) | Polysocyanurate (PIR)
Thermal conductivity:
PUR 0,0207 W/m °C
PIR 0,0207 W/m °C
Density: 40 kg/m³
Reaction to fire: EN 13501-1
PUR B-s2,d0
PIR B-s2,d0
PIR-HI B-s1,d0

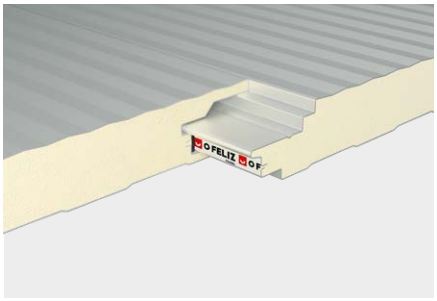
Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVDF 35 µm

**Tolerances according to EN 14509 standard*
W/m K = W/m °C | W/m² K = W/m² °C

Pormenores







Color range

The colors displayed in the catalog meet our standards as accurately as possible. However, minor variations are inevitable, which is why we recommend that you always perform a color test using an actual sample.

RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Special color range

The following references have a textured finish.

Corten 256

Corten 522

Thermal behavior and weights

Thickness	mm	40	50	60	80	100
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,56	0,42	0,34	0,25	0,20
Weight (Steel sheet | Thickness 0,5/0,4)	Kg/m²	8,5	8,9	9,3	9,7	10,1
Weight (Steel sheet | Thickness 0,6/0,4)	Kg/m²	9,9	10,3	10,7	11,1	11,5

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables

Steel sheet | Thicknesses 0,5/0,4

Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
40	◄	2,24	1,62	1,18	0,80	0,50										
	►	2,24	1,62	1,18	0,80	0,50										
50	◄	3,36	2,51	1,90	1,45	1,12	0,84	0,58	0,39							
	►	3,36	2,51	1,90	1,45	1,12	0,84	0,58	0,39							
60	◄	4,39	3,36	2,57	2,03	1,64	1,31	1,05	0,84	0,62	0,45	0,32				
	►	4,39	3,46	2,68	2,09	1,65	1,31	1,05	0,84	0,62	0,45	0,32				
80	◄	5,89	4,55	3,49	2,75	2,23	1,84	1,55	1,32	1,14	0,99	0,87	0,77	0,64	0,51	0,40
	►	5,89	5,05	4,36	3,50	2,84	2,32	1,91	1,58	1,32	1,10	0,92	0,78	0,64	0,51	0,40
100	◄	6,32	5,42	4,40	3,48	2,82	2,33	1,96	1,67	1,44	1,25	1,10	0,97	0,87	0,78	0,70
	►	6,32	5,42	4,74	4,21	3,78	3,12	2,62	2,24	1,93	1,68	1,48	1,28	1,10	0,95	0,82

◄ Exterior suction ► Exterior pressure

Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
40	◄	2,83	2,16	1,65	1,31	1,06	0,88	0,74	0,63	0,54	0,47	0,41	0,37	0,33		
	►		2,34	1,90	1,57	1,31	1,10	0,93	0,79	0,68	0,58	0,50	0,44	0,38	0,33	
50	◄	3,12	2,67	2,11	1,67	1,35	1,12	0,94	0,80	0,69	0,60	0,53	0,47	0,42	0,37	0,34
	►	3,12	2,67	2,34	2,08	1,81	1,50	1,26	1,07	0,93	0,81	0,71	0,63	0,55	0,48	0,43
60	◄	3,33	2,86	2,50	2,03	1,64	1,36	1,14	0,97	0,84	0,73	0,64	0,57	0,51	0,46	0,41
	►	3,33	2,86	2,50	2,22	2,00	1,82	1,53	1,31	1,13	0,98	0,86	0,76	0,68	0,61	0,54
80	◄	3,76	3,22	2,82	2,51	2,23	1,84	1,55	1,32	1,14	0,99	0,87	0,77	0,69	0,62	0,56
	►	3,76	3,22	2,82	2,51	2,25	2,05	1,88	1,73	1,53	1,33	1,17	1,04	0,92	0,83	0,75
100	◄	4,18	3,59	3,14	2,79	2,51	2,28	1,96	1,67	1,44	1,25	1,10	0,97	0,87	0,78	0,70
	►	4,18	3,59	3,14	2,79	2,51	2,28	2,09	1,93	1,79	1,67	1,48	1,31	1,17	1,05	0,94

Steel sheet | Thicknesses 0,6/0,4

Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
40	◄	2,30	1,67	1,23	0,83	0,52	0,30									
	►	2,30	1,67	1,23	0,83	0,52	0,30									
50	◄	3,44	2,58	1,96	1,51	1,17	0,88	0,61	0,41							
	►	3,44	2,58	1,96	1,51	1,17	0,88	0,61	0,41							
60	◄	4,39	3,35	2,57	2,03	1,64	1,36	1,10	0,89	0,66	0,48	0,34				
	►	4,39	3,55	2,76	2,17	1,72	1,37	1,10	0,89	0,66	0,48	0,34				
80	◄	5,89	4,55	3,48	2,75	2,23	1,84	1,55	1,32	1,14	0,99	0,87	0,77	0,68	0,54	0,43
	►	5,89	5,05	4,42	3,61	2,94	2,41	1,99	1,66	1,38	1,16	0,98	0,82	0,68	0,54	0,43
100	◄	6,32	5,41	4,40	3,48	2,82	2,33	1,96	1,67	1,44	1,25	1,10	0,97	0,87	0,78	0,70
	►	6,32	5,41	4,74	4,21	3,79	3,45	3,00	2,53	2,15	1,83	1,57	1,34	1,16	1,00	0,87

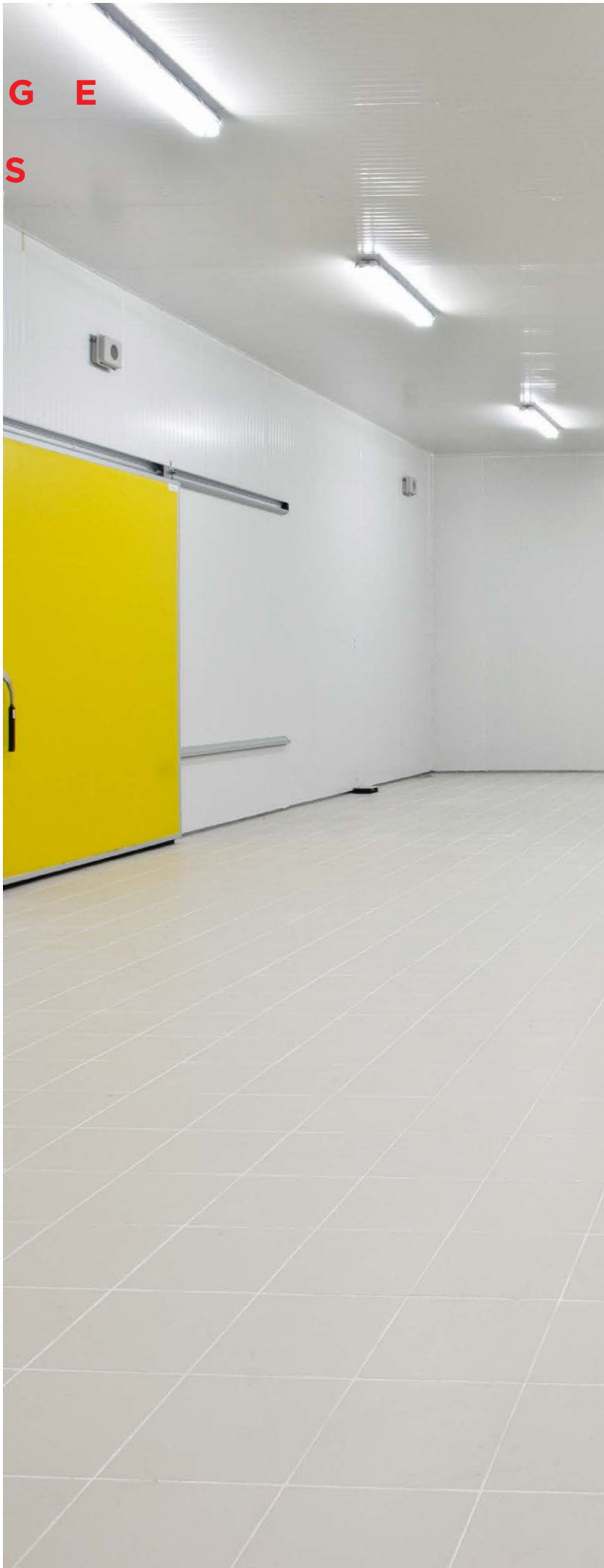
◄ Exterior suction ► Exterior pressure

Multiple support conditions

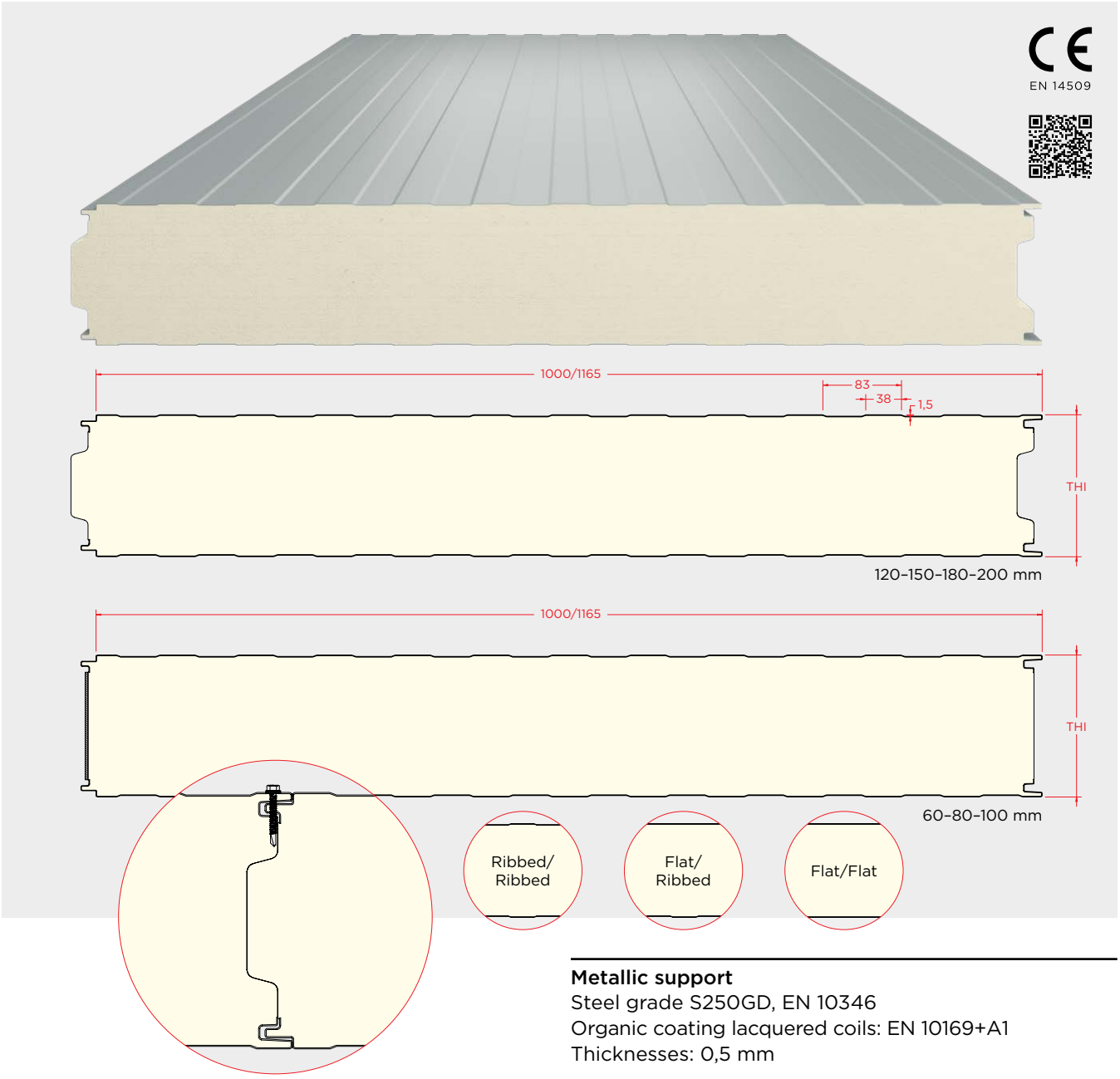
Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	▲ ▼	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
40	◄	2,82	2,16	1,65	1,31	1,06	0,87	0,73	0,63	0,54	0,47	0,41	0,37	0,33		
	►	2,82	2,37	1,93	1,60	1,34	1,13	0,96	0,82	0,67	0,55	0,47	0,40	0,35	0,30	
50	◄	3,12	2,67	2,11	1,67	1,35	1,12	0,94	0,80	0,69	0,60	0,53	0,47	0,42	0,37	0,34
	►	3,12	2,67	2,34	2,08	1,87	1,64	1,41	1,15	0,93	0,77	0,64	0,55	0,47	0,41	0,36
60	◄	3,33	2,85	2,50	2,03	1,64	1,36	1,14	0,97	0,84	0,73	0,64	0,57	0,51	0,46	0,41
	►	3,33	2,85	2,50	2,22	2,00	1,82	1,67	1,50	1,22	1,00	0,84	0,71	0,61	0,53	0,46
80	◄	3,76	3,22	2,82	2,50	2,23	1,84	1,55	1,32	1,14	0,99	0,87	0,77	0,69	0,62	0,56
	►	3,76	3,22	2,82	2,50	2,25	2,05	1,88	1,73	1,61	1,50	1,29	1,08	0,92	0,79	0,69
100	◄	4,18	3,59	3,14	2,79	2,51	2,28	1,96	1,67	1,44	1,25	1,10	0,97	0,87	0,78	0,70
	►	4,18	3,59	3,14	2,79	2,51	2,28	2,09	1,93	1,79	1,67	1,57	1,48	1,28	1,09	0,94

COLD STORAGE PANELS

Icewall®



Icewall®



Description/Application
Insulated panel composed of two profiled metal sheets joined by rigid polyurethane (PUR) or polyisocyanurate (PIR) foam.
High thickness self-supporting panel designed for application in cold storage chambers.
Versatile panel developed for an easy installation in temperature-controlled storage areas.
Panel produced according to EN 14509 and subject to evaluation and verification of regularity of performance according to system 1.

Characteristics
Dimensions*
Thicknesses: 60–80–100 mm ±2 mm
Thicknesses: 120–150–180–200 mm ±2%
Width: 1000 — 1165 mm ±2 mm
Length: 4,00 — 14,00 m ±10 mm
Maximum recommended length: 8,00 m

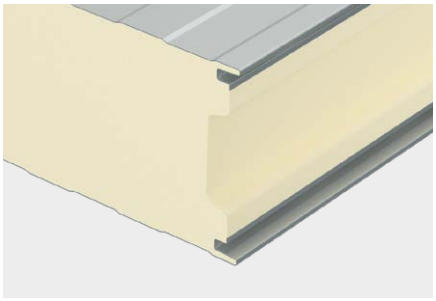
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,5 mm

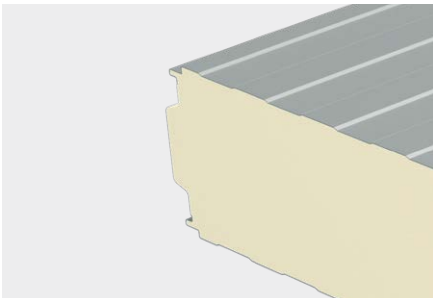
Insulated core
Polyurethane (PUR) | Polysocyanurate (PIR)
Thermal conductivity:
PUR 0,0207 W/m °C
PIR 0,0207 W/m °C
Density: 40 kg/m³
Reaction to fire: EN 13501-1
PUR B-s2,d0
PIR B-s2,d0
HPIR B-s1,d0

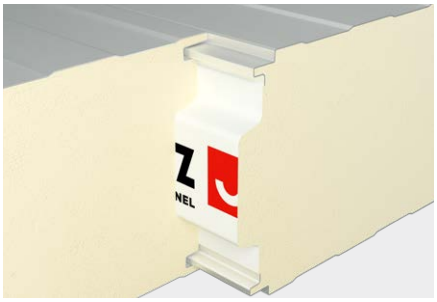
Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVC *food-safe*

**Tolerances according to EN 14509 standard*
W/m K = W/m °C | W/m² K = W/m² °C

Details







Color range

The colors displayed in the catalog meet our standards as accurately as possible. However, minor variations are inevitable, which is why we recommend that you always perform a color test using an actual sample.

RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Thermal behavior and weights

Thickness	mm	60	80	100	120	150	180	200
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,34	0,25	0,20	0,17	0,13	0,11	0,10
Weight (Steel sheet | Thickness 0,5/0,5)	Kg/m²	9,9	10,7	11,5	12,3	13,5	14,7	15,5

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables

Steel sheet | Thicknesses 0,5/0,5 | Application on walls

Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	◄ ►	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
60	◄	3,09	2,43	1,94	1,56	1,27	1,04	0,85	0,70	0,55	0,41	0,30				
	►	3,09	2,43	1,94	1,56	1,27	1,04	0,85	0,70	0,55	0,41	0,30				
80	◄	4,59	3,69	3,01	2,48	2,07	1,73	1,46	1,24	1,05	0,90	0,77	0,66	0,57	0,46	0,37
	►	4,59	3,69	3,01	2,48	2,07	1,73	1,46	1,24	1,05	0,90	0,77	0,66	0,57	0,46	0,37
100	◄	6,11	4,97	4,11	3,45	2,91	2,48	2,12	1,82	1,58	1,37	1,19	1,04	0,91	0,79	0,70
	►	6,11	4,97	4,11	3,45	2,91	2,48	2,12	1,82	1,58	1,37	1,19	1,04	0,91	0,79	0,70
120	◄	7,62	6,28	5,24	4,43	3,78	3,25	2,81	2,44	2,13	1,87	1,64	1,45	1,28	1,13	1,01
	►	7,62	6,28	5,24	4,43	3,78	3,25	2,81	2,44	2,13	1,87	1,64	1,45	1,28	1,13	1,01
150	◄	8,26	7,08	6,20	5,51	4,96	4,44	3,85	3,28	2,83	2,47	2,17	1,92	1,71	1,54	1,39
	►	8,26	7,08	6,20	5,51	4,96	4,44	3,85	3,28	2,83	2,47	2,17	1,92	1,71	1,54	1,39
180	◄	8,90	7,63	6,68	5,94	5,34	4,86	4,45	3,95	3,41	2,97	2,61	2,31	2,06	1,85	1,67
	►	8,90	7,63	6,68	5,94	5,34	4,86	4,45	3,95	3,41	2,97	2,61	2,31	2,06	1,85	1,67
200	◄	9,33	8,00	7,00	6,22	5,60	5,09	4,67	4,31	3,79	3,30	2,90	2,57	2,29	2,06	1,86
	►	9,33	8,00	7,00	6,22	5,60	5,09	4,67	4,31	3,79	3,30	2,90	2,57	2,29	2,06	1,86

◄ Exterior suction ► Exterior pressure

Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	◄ ►	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
60	◄	3,36	2,75	2,30	1,96	1,68	1,46	1,28	1,13	1,00	0,90	0,80	0,72	0,65	0,58	0,53
	►	3,36	2,75	2,30	1,96	1,68	1,46	1,28	1,13	1,00	0,90	0,80	0,72	0,65	0,58	0,53
80	◄	4,21	3,61	3,16	2,81	2,49	2,18	1,93	1,71	1,49	1,29	1,14	1,01	0,90	0,81	0,73
	►	4,21	3,61	3,16	2,81	2,49	2,18	1,93	1,71	1,49	1,29	1,14	1,01	0,90	0,81	0,73
100	◄	4,64	3,98	3,48	3,09	2,78	2,53	2,32	2,14	1,87	1,63	1,43	1,27	1,13	1,02	0,92
	►	4,64	3,98	3,48	3,09	2,78	2,53	2,32	2,14	1,87	1,63	1,43	1,27	1,13	1,02	0,92
120	◄	5,06	4,34	3,80	3,38	3,04	2,76	2,53	2,34	2,17	1,96	1,73	1,53	1,36	1,22	1,10
	►	5,06	4,34	3,80	3,38	3,04	2,76	2,53	2,34	2,17	1,96	1,73	1,53	1,36	1,22	1,10
150	◄	5,70	4,89	4,28	3,80	3,42	3,11	2,85	2,63	2,44	2,28	2,14	1,92	1,71	1,54	1,39
	►	5,70	4,89	4,28	3,80	3,42	3,11	2,85	2,63	2,44	2,28	2,14	1,92	1,71	1,54	1,39
180	◄	6,34	5,44	4,76	4,23	3,81	3,46	3,17	2,93	2,72	2,54	2,38	2,24	2,06	1,85	1,67
	►	6,34	5,44	4,76	4,23	3,81	3,46	3,17	2,93	2,72	2,54	2,38	2,24	2,06	1,85	1,67
200	◄	6,77	5,80	5,08	4,51	4,06	3,69	3,39	3,13	2,90	2,71	2,54	2,39	2,26	2,06	1,86
	►	6,77	5,80	5,08	4,51	4,06	3,69	3,39	3,13	2,90	2,71	2,54	2,39	2,26	2,06	1,86

Steel sheet | Thicknesses 0,5/0,5 | Application on roofs

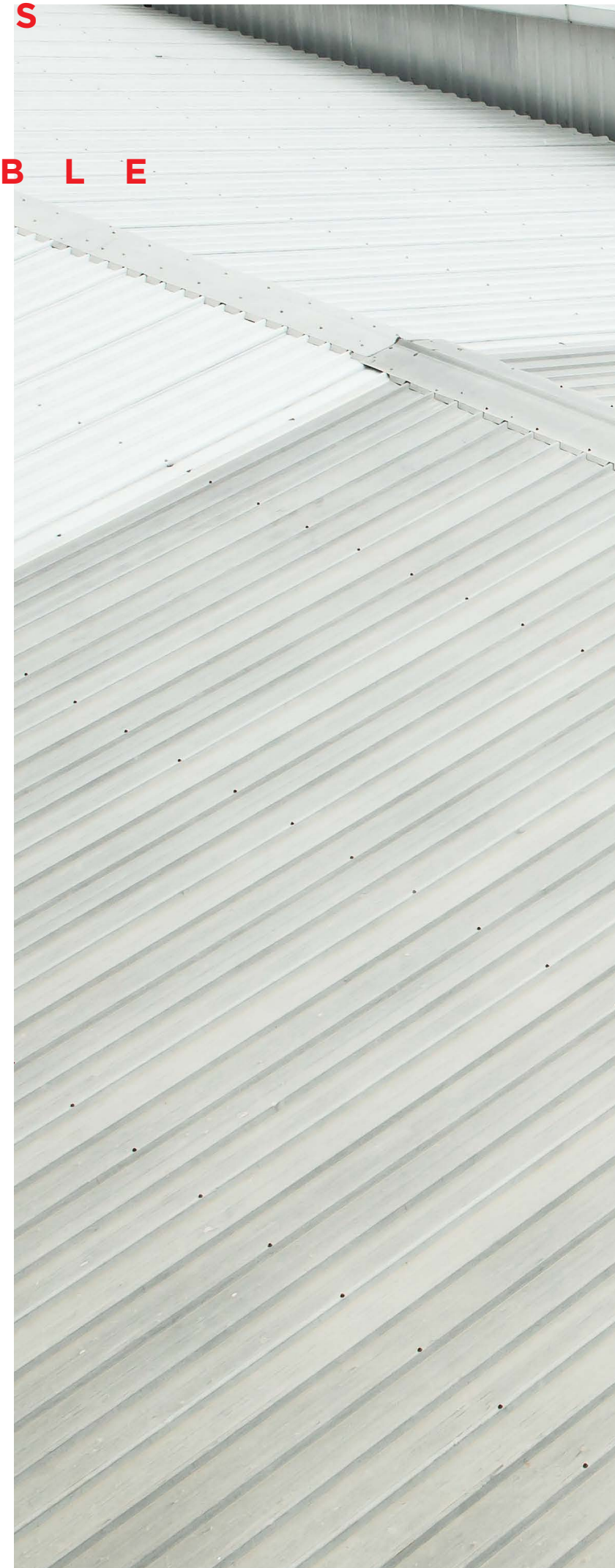
Simple support conditions

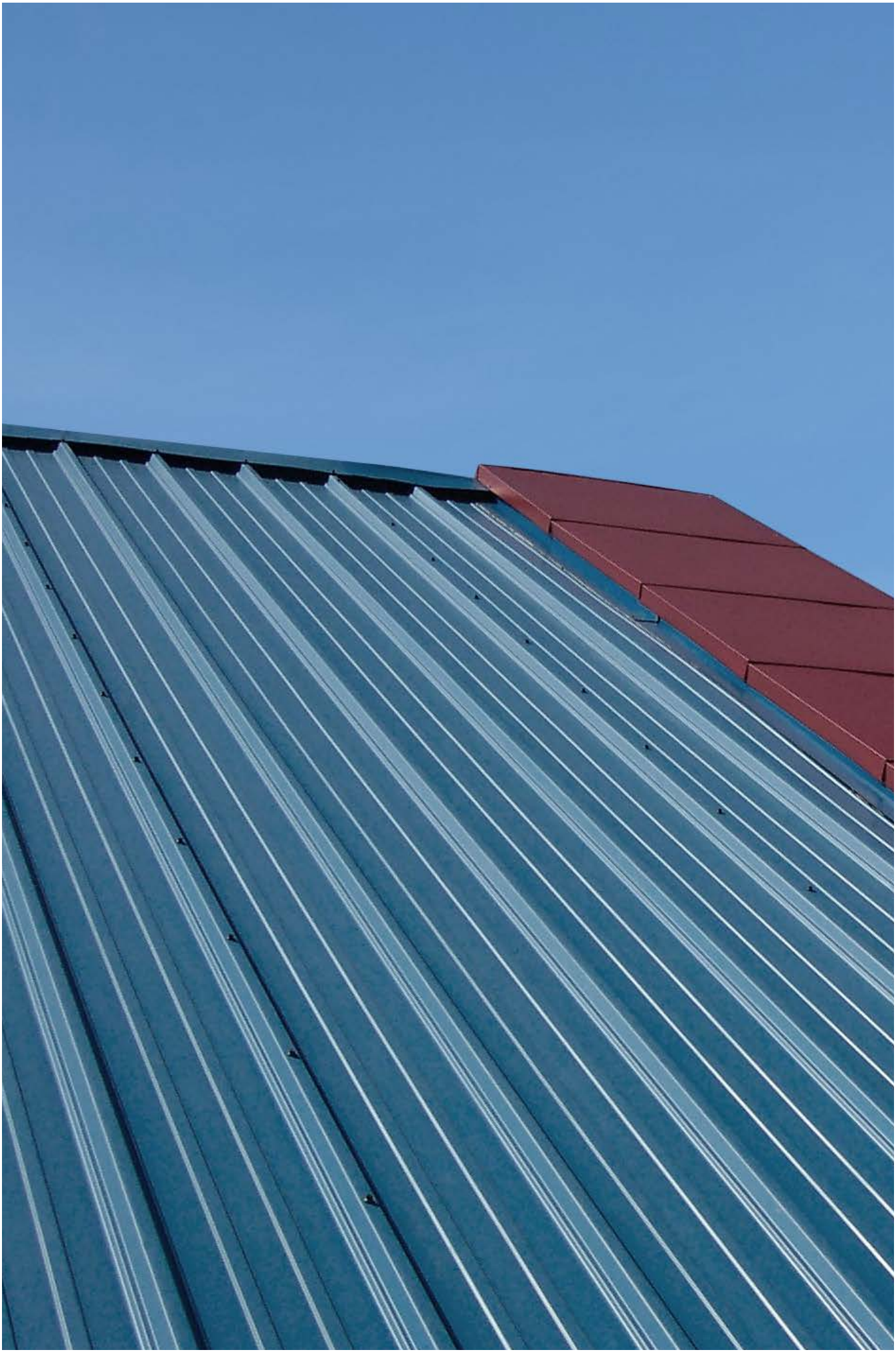
Thickness	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
60	3,29	2,61	2,11	1,71	1,41	1,16	0,96	0,80	0,67	0,56	0,47	0,39	0,33	0,27	0,22
80	4,79	3,88	3,19	2,65	2,22	1,88	1,59	1,36	1,16	1,00	0,86	0,74	0,63	0,55	0,47
100	6,13	4,99	4,13	3,46	2,92	2,48	2,12	1,82	1,57	1,35	1,17	1,01	0,88	0,77	0,67
120	7,53	6,29	5,25	4,44	3,79	3,25	2,81	2,44	2,12	1,86	1,63	1,43	1,25	1,11	0,98
150	8,16	6,98	6,10	5,41	4,68	4,02	3,47	3,01	2,62	2,28	2,00	1,75	1,54	1,35	1,19
180	8,79	7,52	6,57	5,83	5,23	4,75	4,34	3,84	3,30	2,86	2,50	2,20	1,95	1,74	1,56
200	9,18	7,85	6,85	6,07	5,45	4,94	4,52	4,16	3,64	3,15	2,75	2,42	2,14	1,91	1,71

Thickness	Uniformly distributed loads [kN/m²] | Span L [m]														
mm	5,25	5,5	5,75	6	6,25	6,5	6,75	7	7,25	7,5	7,75	8	8,25	8,5	8,75	9
60																
80	0,41	0,35	0,30	0,26	0,22											
100	0,58	0,50	0,44	0,38	0,33	0,29	0,25	0,20								
120	0,86	0,76	0,67	0,60	0,53	0,47	0,41	0,36	0,32	0,28	0,25	0,22				
150	1,04	0,92	0,78	0,64	0,52	0,42	0,33	0,25								
180	1,40	1,27	1,15	1,05	0,96	0,86	0,77	0,65	0,55	0,46	0,38	0,31	0,24			
200	1,53	1,38	1,25	1,14	1,04	0,95	0,87	0,80	0,73	0,67	0,58	0,49	0,41	0,34	0,28	0,22

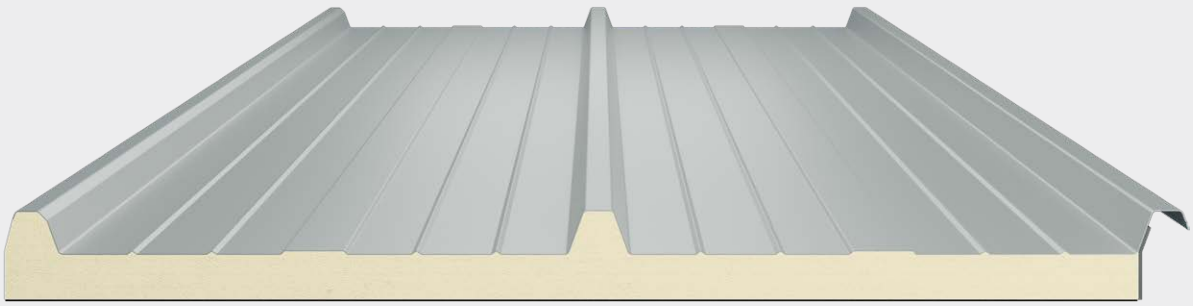
PANELS WITH FLEXIBLE SHEET

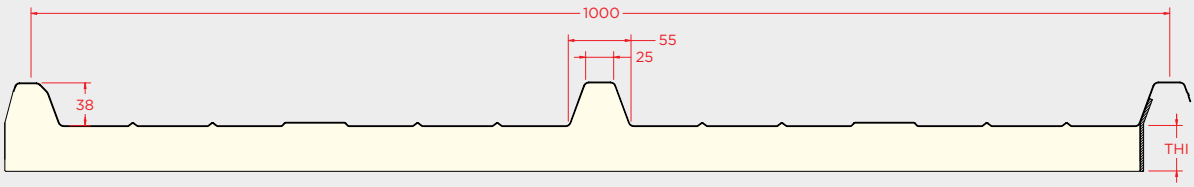
Monotop 3
Monotop 5

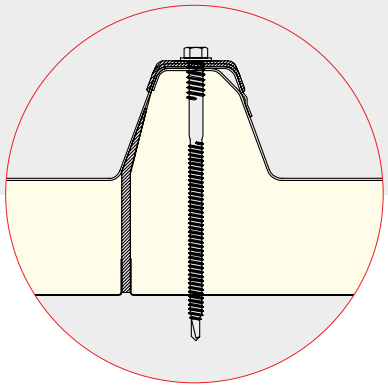




Monotop 3







Description/Application
Insulated panel composed of an external profiled metal sheet and an internal flexible metal sheet joined by a rigid polyurethane foam core.
3 wave roof panel, with external face in profiled sheet and internal face in embossed centesimal aluminum or felt board.

Characteristics
Dimensions*
Thicknesses 30–40–50–60–80–100 mm ±2 mm
Width: 1000 mm ±2 mm
Length: 4,00 — 18,00 m ±2 mm
Maximum recommended length: 13,00 m

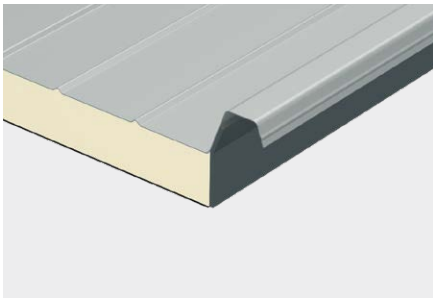
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,4–0,5–0,6–0,7 mm

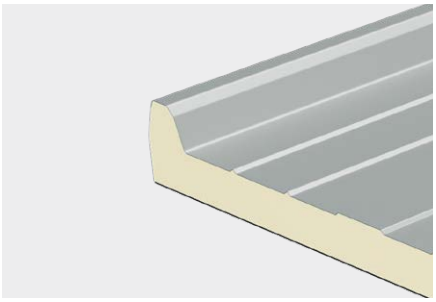
Insulated core
Polyurethane (PUR)
Thermal conductivity: 0,0207 W/m °C
Density: 40 kg/m^3

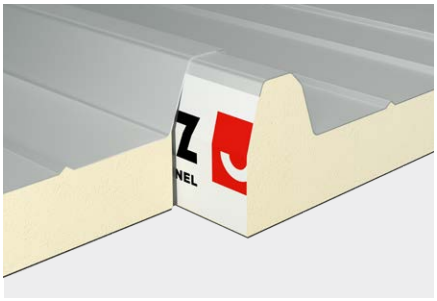
Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVDF 35 µm

**Tolerances according to EN 14509 standard*
Panel with undeclared performance: F rating
W/m K = W/m °C | W/m² K = W/m² °C

Details







Color range

The colors displayed in the catalog meet our standards as accurately as possible. However, minor variations are inevitable, which is why we recommend that you always perform a color test using an actual sample.

RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Thermal behavior and weights

Thickness	mm	30	40	50	60	80	100
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,60	0,47	0,38	0,32	0,24	0,20
Weight (Steel sheet | Thickness 0,5)	Kg/m²	5,6	6,0	6,4	6,8	7,6	8,4

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables

Steel sheet | Thicknesses 0,4/0,5/0,6

Simple support conditions

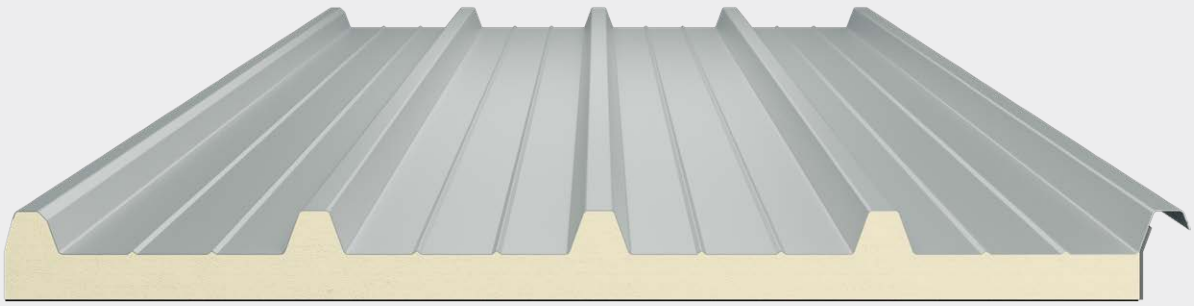
Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,4	▲	0,92	0,72	0,50	0,37							
	▼	0,92	0,73	0,51	0,36							
0,5	▲	1,30	0,91	0,64	0,47	0,36						
	▼	1,30	1,03	0,71	0,51	0,38						
0,6	▲	1,83	1,21	0,85	0,63	0,49	0,38	0,31				
	▼	1,94	1,51	1,04	0,75	0,56	0,40					

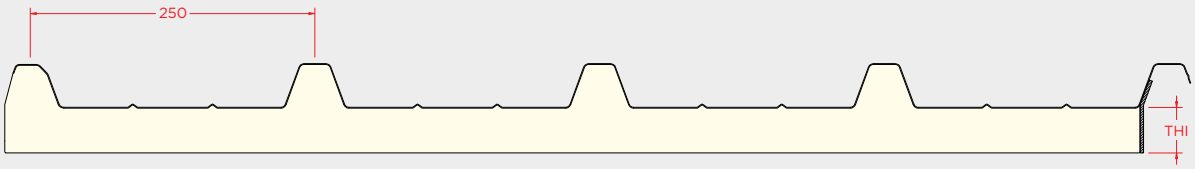
▲ Ascending load ▼ Descending load

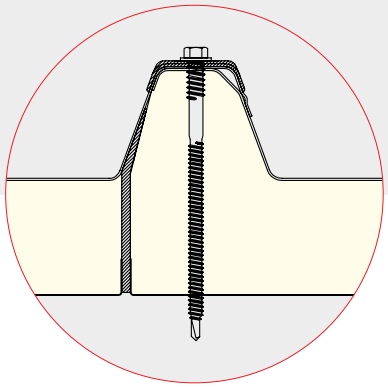
Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,4	▲	0,73	0,57	0,47	0,36							
	▼	0,73	0,57	0,47	0,37							
0,5	▲	1,03	0,82	0,67	0,51	0,38						
	▼	1,03	0,82	0,64	0,47	0,36						
0,6	▲	1,54	1,23	1,02	0,75	0,56	0,44	0,35				
	▼	1,54	1,21	0,85	0,63	0,49	0,38	0,31				

Monotop 5







Description/Application
Insulated panel composed of an external profiled metal sheet and an internal flexible metal sheet joined by a rigid polyurethane foam core.
5 wave roof panel, with external face in profiled sheet and internal face in embossed centesimal aluminum or felt board.

Characteristics
Dimensions*
Thicknesses 30–40–50–60–80–100 mm ±2 mm
Width: 1000 mm ±2 mm
Length: 4,00 — 18,00 m ±2 mm
Maximum recommended length: 13,00 m

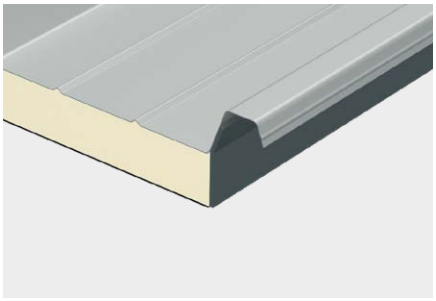
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,4–0,5–0,6–0,7 mm

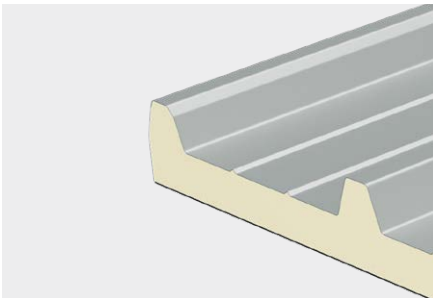
Insulated core
Polyurethane (PUR)
Thermal conductivity: 0,0207 W/m °C
Density: 40 kg/m^3

Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVDF 35 µm

**Tolerances according to EN 14509 standard*
Panel with undeclared performance: F rating
W/m K = W/m °C | W/m² K = W/m² °C

Details





Color range

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RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Thermal behavior and weights

Thickness	mm	30	40	50	60	80	100
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,62	0,47	0,38	0,32	0,24	0,20
Weight (Steel sheet | Thickness 0,5)	Kg/m²	6,0	6,4	6,8	7,2	8,0	8,7

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables

Steel sheet | Thicknesses 0,4/0,5/0,6/0,7

Simple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,4	▲	1,88	1,49	1,10	0,81	0,62	0,49	0,39	0,32			
	▼	1,88	1,49	1,07	0,78	0,51						
0,5	▲	2,64	1,97	1,39	1,03	0,79	0,63	0,51	0,42	0,35		
	▼	2,64	2,10	1,48	1,08	0,75	0,39					
0,6	▲	3,92	2,61	1,85	1,38	1,07	0,85	0,69	0,57	0,48	0,41	0,35
	▼	3,92	3,11	2,15	1,57	1,12	0,65	0,35				
0,7	▲	4,98	3,31	2,35	1,76	1,37	1,09	0,89	0,74	0,62	0,53	0,46
	▼	5,43	4,18	2,89	2,11	1,49	0,91	0,54				

▲ Ascending load ▼ Descending load

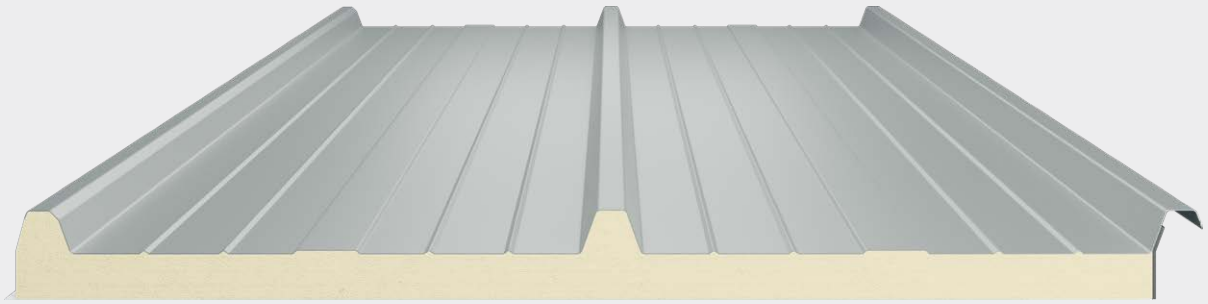
Multiple support conditions

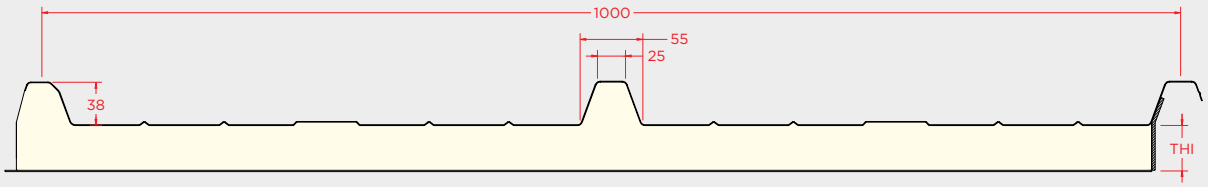
Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,4	▲	1,49	1,19	0,98	0,78	0,59	0,45	0,36				
	▼	1,49	1,19	0,98	0,81	0,62	0,49	0,39	0,32			
0,5	▲	2,10	1,67	1,39	1,08	0,81	0,64	0,51	0,41	0,34		
	▼	2,10	1,67	1,39	1,03	0,79	0,63	0,51	0,42	0,33		
0,6	▲	3,13	2,49	2,07	1,57	1,19	0,93	0,75	0,61	0,51	0,43	0,36
	▼	3,13	2,49	1,85	1,38	1,07	0,85	0,69	0,57	0,48	0,33	
0,7	▲	4,34	3,46	2,88	2,11	1,61	1,26	1,01	0,83	0,69	0,58	0,50
	▼	4,34	3,31	2,35	1,76	1,37	1,09	0,89	0,74	0,62	0,51	0,32

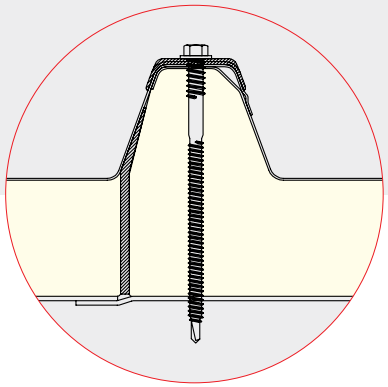
PANELS FOR AGRICULTURAL BUILDINGS

Agrotop® 3
Agrotop® 5
Agrotop® Cap

Agrotop® 3







Description/Application
Insulated panel composed of an external profiled metal sheet and an internal flexible metal sheet, joined by a rigid polyurethane foam core.
3 wave roof panel, or hidden fastening with joint covers for agricultural facilities, with external face in profiled sheet and internal face in polyester sheet, reinforced with fiberglass resistant to biochemical corrosion.

Characteristics
Dimensions*
Thicknesses: 30–40–50–60–80–100 mm ±2 mm
Width: 1000 mm ±2 mm
Length: 4,00 — 14,00 m ±10 mm
Maximum recommended length: 12,00 m

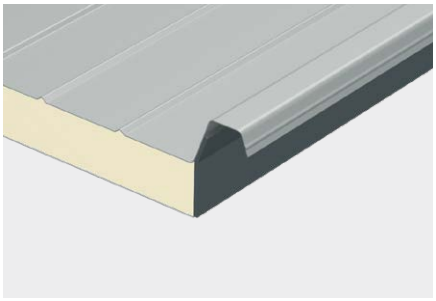
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,4–0,5–0,6–0,7 mm

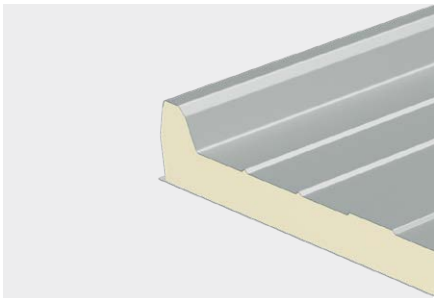
Insulated core
Polyurethane (PUR)
Thermal conductivity: 0,0207 W/m °C
Density: 40 kg/m^3

Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVDF 35 µm
Polyester sheet with fiberglass on the inside.

**Tolerances according to EN 14509 standard*
Panel with undeclared performance: F rating
W/m K = W/m °C | W/m² K = W/m² °C

Details





Color range

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RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Thermal behavior and weights

Thickness	mm	30	40	50	60	80	100
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,61	0,47	0,38	0,32	0,24	0,20
Weight (Steel sheet | Thickness 0,5)	Kg/m²	5,6	6,0	6,4	6,8	7,6	8,4

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables

Steel sheet | Thicknesses 0,4/0,5/0,6

Simple support conditions

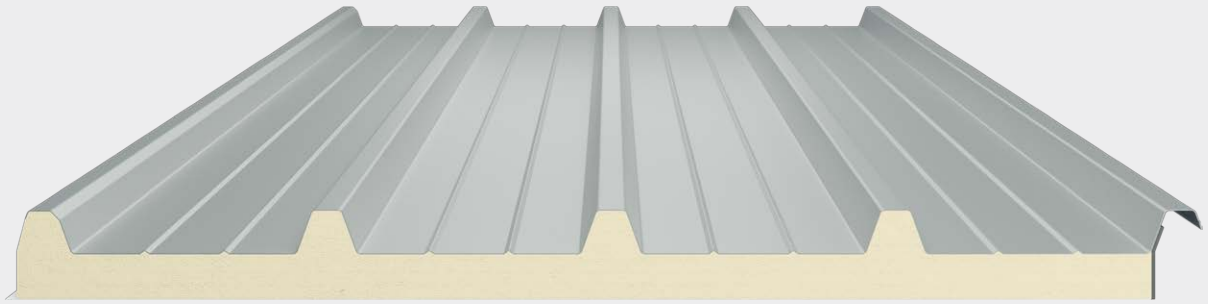
Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,4	▲	0,92	0,72	0,50	0,37							
	▼	0,92	0,73	0,51	0,36							
0,5	▲	1,30	0,91	0,64	0,47	0,36						
	▼	1,30	1,03	0,71	0,51	0,38						
0,6	▲	1,83	1,21	0,85	0,63	0,49	0,38	0,31				
	▼	1,94	1,51	1,04	0,75	0,56	0,40					

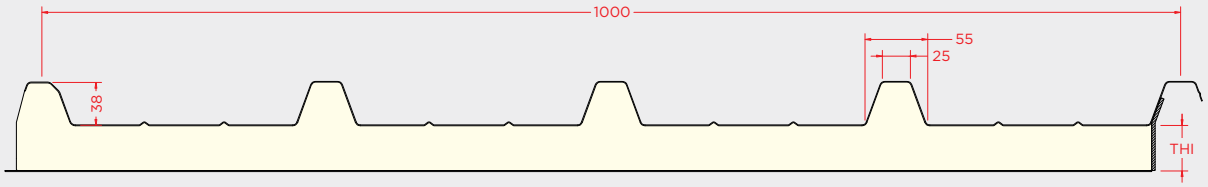
▲ Ascending load ▼ Descending load

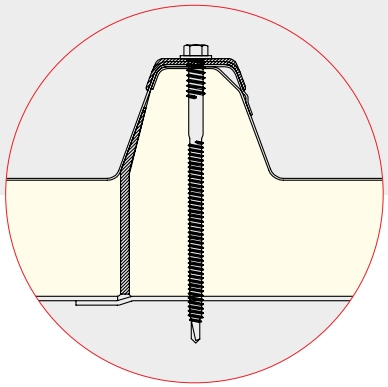
Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,4	▲	0,73	0,57	0,47	0,36							
	▼	0,73	0,57	0,47	0,37							
0,5	▲	1,03	0,82	0,67	0,51	0,38						
	▼	1,03	0,82	0,64	0,47	0,36						
0,6	▲	1,54	1,23	1,02	0,75	0,56	0,44	0,35				
	▼	1,54	1,21	0,85	0,63	0,49	0,38	0,31				

Agrotop® 5







Description/Application
Insulated panel composed of an external profiled metal sheet and an internal flexible metal sheet, joined by a rigid polyurethane foam core.
5 wave roof panel, or hidden fastening with joint covers for agricultural facilities, with external face in profiled sheet and internal face in polyester sheet, reinforced with fiberglass resistant to biochemical corrosion.

Characteristics
Dimensions*
Thicknesses: 30–40–50–60–80–100 mm ±2 mm
Width: 1000 mm ±2 mm
Length: 4,00 — 14,00 m ±10 mm
Maximum recommended length: 12,00 m

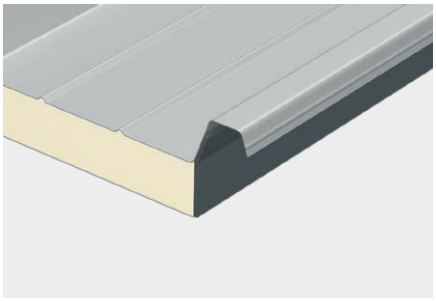
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,4–0,5–0,6–0,7 mm

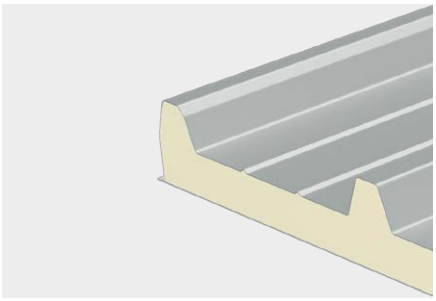
Insulated core
Polyurethane (PUR)
Thermal conductivity: 0,0207 W/m °C
Density: 40 kg/m^3

Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVDF 35 µm
Polyester sheet with fiberglass on the inside.

**Tolerances according to EN 14509 standard*
Panel with undeclared performance: F rating
W/m K = W/m °C | W/m² K = W/m² °C

Details





Color range

The colors displayed in the catalog meet our standards as accurately as possible. However, minor variations are inevitable, which is why we recommend that you always perform a color test using an actual sample.

RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Thermal behavior and weights

Thickness	mm	30	40	50	60	80	100
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,61	0,47	0,38	0,32	0,24	0,20
Weight (Steel sheet | Thickness 0,5)	Kg/m²	6,0	6,4	6,8	7,2	8,0	8,7

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables

Steel sheet | Thicknesses 0,4/0,5/0,6/0,7

Simple support conditions

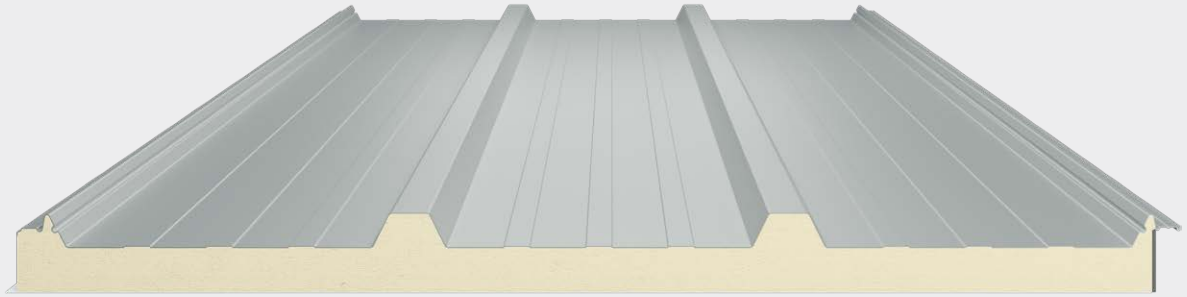
Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,4	▲	1,88	1,49	1,10	0,81	0,62	0,49	0,39	0,32			
	▼	1,88	1,49	1,07	0,78	0,51						
0,5	▲	2,64	1,97	1,39	1,03	0,79	0,63	0,51	0,42	0,35		
	▼	2,64	2,10	1,48	1,08	0,75	0,39					
0,6	▲	3,92	2,61	1,85	1,38	1,07	0,85	0,69	0,57	0,48	0,41	0,35
	▼	3,92	3,11	2,15	1,57	1,12	0,65	0,35				
0,7	▲	4,98	3,31	2,35	1,76	1,37	1,09	0,89	0,74	0,62	0,53	0,46
	▼	5,43	4,18	2,89	2,11	1,49	0,91	0,54				

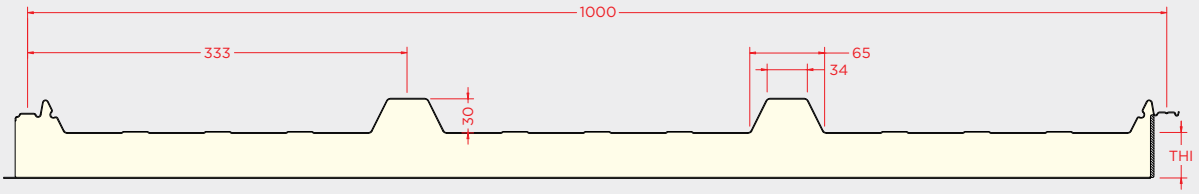
▲ Ascending load ▼ Descending load

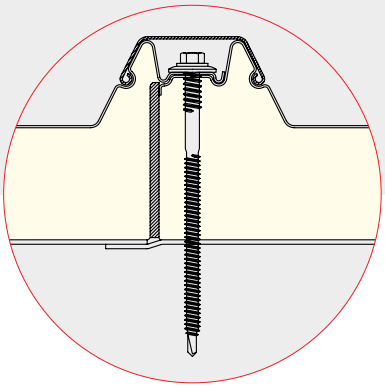
Multiple support conditions

Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,4	▲	1,49	1,19	0,98	0,78	0,59	0,45	0,36				
	▼	1,49	1,19	0,98	0,81	0,62	0,49	0,39	0,32			
0,5	▲	2,10	1,67	1,39	1,08	0,81	0,64	0,51	0,41	0,34		
	▼	2,10	1,67	1,39	1,03	0,79	0,63	0,51	0,42	0,33		
0,6	▲	3,13	2,49	2,07	1,57	1,19	0,93	0,75	0,61	0,51	0,43	0,36
	▼	3,13	2,49	1,85	1,38	1,07	0,85	0,69	0,57	0,48	0,33	
0,7	▲	4,34	3,46	2,88	2,11	1,61	1,26	1,01	0,83	0,69	0,58	0,50
	▼	4,34	3,31	2,35	1,76	1,37	1,09	0,89	0,74	0,62	0,51	0,32

Agrotop® Cap







Description/Application
Insulated panel composed of an external profiled metal sheet and an internal flexible metal sheet, joined by a rigid polyurethane foam core.
Hidden fastening roof panel with joint covers for agricultural facilities, with external face in profiled sheet and internal face in polyester sheet, reinforced with fiberglass resistant to biochemical corrosion.

Characteristics
Dimensions*
Thicknesses: 30–40–50–60–80–100 mm ±2 mm
Width: 1000 mm ±2 mm
Length: 4,00 — 14,00 m ±10 mm
Maximum recommended length: 12,00 m

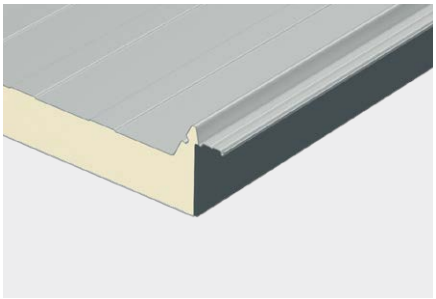
Metallic support
Steel grade S250GD, EN 10346
Organic coating lacquered coils: EN 10169+A1
Thicknesses: 0,4–0,5–0,6–0,7 mm

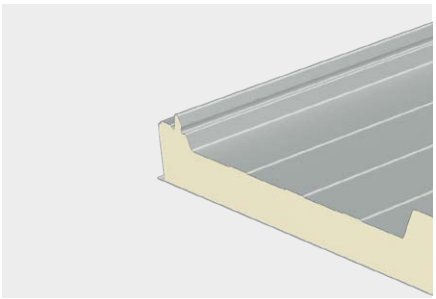
Insulated core
Polyurethane (PUR)
Thermal conductivity: 0,0207 W/m °C
Density: 40 kg/m³

Coating
Standard: Polyester paint 25 µm
Specials: Granite HDX 55 µm | PVDF 35 µm
Polyester sheet with fiberglass on the inside.

**Tolerances according to EN 14509 standard*
Panel with undeclared performance: F rating
W/m K = W/m °C | W/m² K = W/m² °C

Details





Color range

The colors displayed in the catalog meet our standards as accurately as possible. However, minor variations are inevitable, which is why we recommend that you always perform a color test using an actual sample.

RAL 9010 Pure white

RAL 9006 White aluminium

RAL 9004 Signal black

RAL 7022 Umbra grey

RAL 7016 Anthracite grey

RAL 7012 Basalt grey

RAL 6005 Moss green

RAL 5010 Gentian blue

RAL 3009 Oxide red

RAL 1015 Light ivory

Thermal behavior and weights

Thickness	mm	30	40	50	60	80	100
Thermal transmittance, U (EN 14509 A.10)	W/m² °C	0,63	0,48	0,39	0,33	0,25	0,20
Weight (Steel sheet | Thickness 0,5)	Kg/m²	5,9	6,3	6,7	7,1	7,9	8,7

W/m K = W/m °C | W/m² K = W/m² °C

Direct design tables

Steel sheet | Thicknesses 0,4/0,5/0,6

Simple support conditions

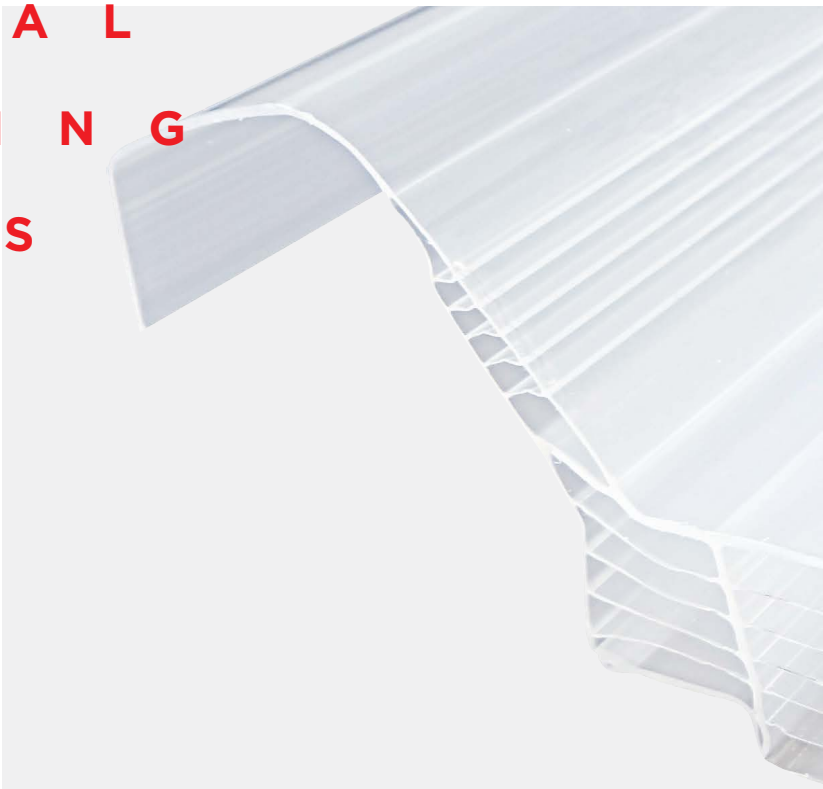
Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,4	▲	1,31	0,85	0,60	0,44	0,33						
	▼	1,34	0,92	0,63	0,40							
0,5	▲	1,65	1,08	0,76	0,56	0,43	0,34					
	▼	1,89	1,28	0,88	0,58							
0,6	▲	2,19	1,44	1,02	0,76	0,59	0,46	0,37	0,31			
	▼	2,81	1,89	1,30	0,87	0,47						

▲ Ascending load ▼ Descending load

Multiple support conditions

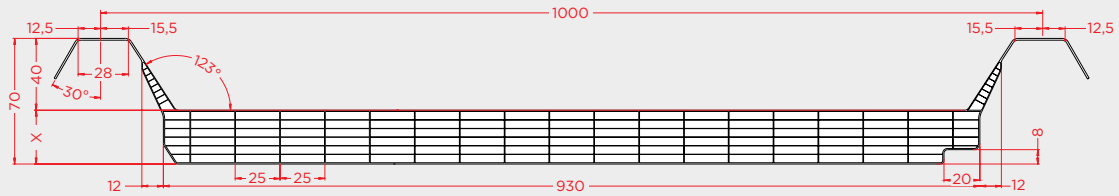
Thickness	Load	Uniformly distributed loads [kN/m²] | Span L [m]										
mm	▲ ▼	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50
0,4	▲	1,06	0,84	0,63	0,45	0,34						
	▼	1,06	0,84	0,60	0,44	0,33						
0,5	▲	1,50	1,19	0,88	0,64	0,48	0,37					
	▼	1,50	1,08	0,76	0,56	0,43	0,34					
0,6	▲	2,24	1,78	1,30	0,95	0,71	0,56	0,44	0,36			
	▼	2,19	1,44	1,02	0,76	0,59	0,46	0,37	0,31			

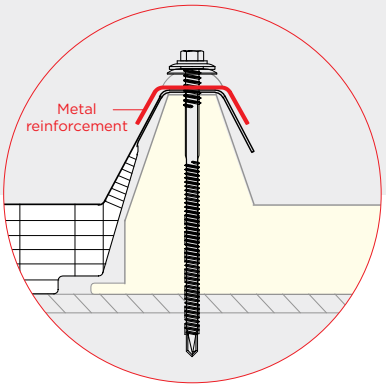
NATURAL LIGHTING PANELS



Toplight Basic
Toplight Plus
Toplight Cap

Toplight Basic





Accessories
We recommend using a 6.3 mm diameter, 130 mm long, self-tapping steel screw with a gasket.
A 10 mm thick, 20 mm wide PE (sponge) adhesive gasket is required.
Accessories are required to compensate for the difference in thickness between the sandwich panel and the polycarbonate panel.
Drill holes 50% larger than planned to protect against thermal expansion.
Cut with a fine-tooth saw.
Apply protective tape to the panel edges.

Important:
During the installation of the Toplight 30/40 mm product line, we recommend using a metal reinforcement as shown in the diagram to ensure optimal attachment to the sandwich panel.

The use of this accessory is essential, as failure to do so will reduce the quality of the honeycomb panel installation and may result in damage to the tabs used for attachment to the sandwich panel.

Since polycarbonate is subject to contraction and expansion caused by external temperatures, the holes drilled in it for the respective fixing screws must have a diameter 50% larger than the screw thickness.

Before installation, the upper parts of the polycarbonate honeycomb panels must be insulated as follows:
1. On the upper hanger, with smooth aluminum tape.
2. On the lower hanger, with perforated aluminum tape.

Note: We suggest that the above mentioned tapes be inspected periodically, as their mechanical strength is lower than that of polycarbonate.

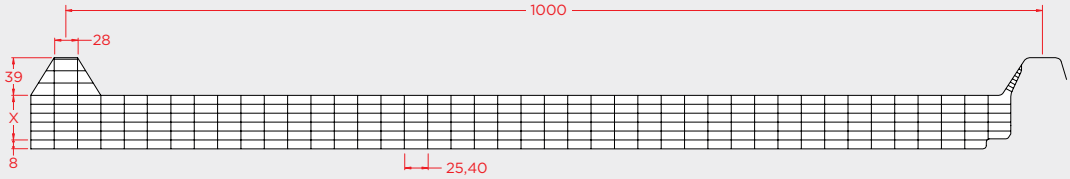
Installation
Important information at www.ofelizpainel.com

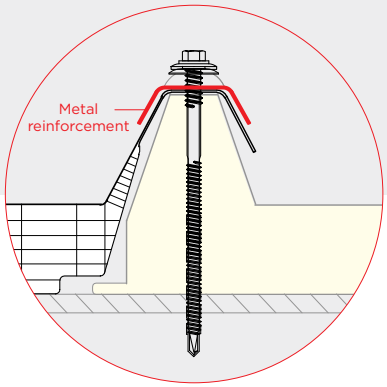
Description/Application
Opal white panel, designed to facilitate the insertion of skylights into coating systems.
A solution with good thermal insulation and light transmission, adaptable to most coating panels.
It allows the construction of various types of skylights and offers good mechanical and weather resistance.
Ideal for industrial roofs.

Characteristics
Dimensions
Thicknesses: 30–40 mm
Waves interval: ~1000 mm
Width modular: 1000 mm ±5 mm
Length: 13500 mm (max.)

Performance
Thermal transmittance: 1.2–1.1 W/m² °C
Light transmittance: ~38–~35%
Temperature variation: -40/+120 °C
Reaction to fire: B-s1,d0 EN 13501-1
UV protection: yes

Toplight Plus





Accessories
We recommend using a 6.3 mm diameter, 130 mm long, self-tapping steel screw with a gasket.
A 10 mm thick, 20 mm wide PE (sponge) adhesive gasket is required.
Accessories are required to compensate for the difference in thickness between the sandwich panel and the polycarbonate panel.
Drill holes 50% larger than planned to protect against thermal expansion.
Cut with a fine-tooth saw.
Apply protective tape to the panel edges.

Important:
During the installation of the Toplight 30/40 mm product line, we recommend using a metal reinforcement as shown in the diagram to ensure optimal attachment to the sandwich panel.

The use of this accessory is essential, as failure to do so will reduce the quality of the honeycomb panel installation and may result in damage to the tabs used for attachment to the sandwich panel.

Since polycarbonate is subject to contraction and expansion caused by external temperatures, the holes drilled in it for the respective fixing screws must have a diameter 50% larger than the screw thickness.

Before installation, the upper parts of the polycarbonate honeycomb panels must be insulated as follows:
1. On the upper hanger, with smooth aluminum tape.
2. On the lower hanger, with perforated aluminum tape.

Note: We suggest that the above mentioned tapes be inspected periodically, as their mechanical strength is lower than that of polycarbonate.

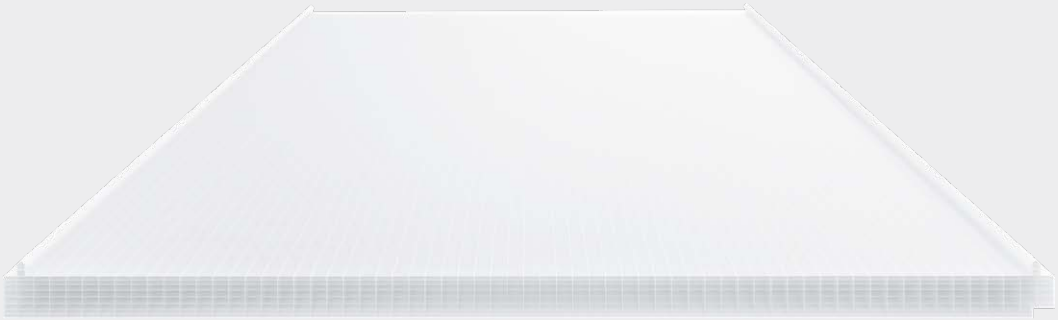
Description/Application
Opal white panel, designed to facilitate the insertion of skylights into cladding systems.
A solution with good thermal insulation and light transmission, adaptable to most coating panels.
It allows the construction of various types of skylights and offers good mechanical and weather resistance.
Ideal for industrial roofs.

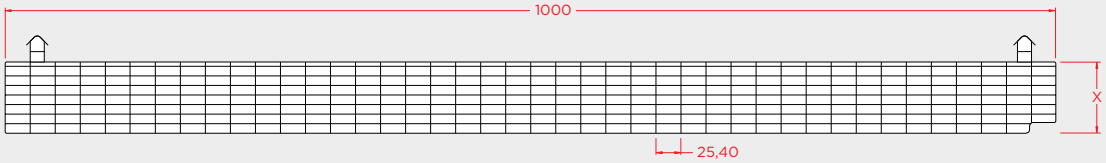
Characteristics
Dimensions
Thicknesses: 30–40 mm
Waves interval: ~1000 mm
Width modular: 1000 mm ±5 mm
Length: 13500 mm (max.)

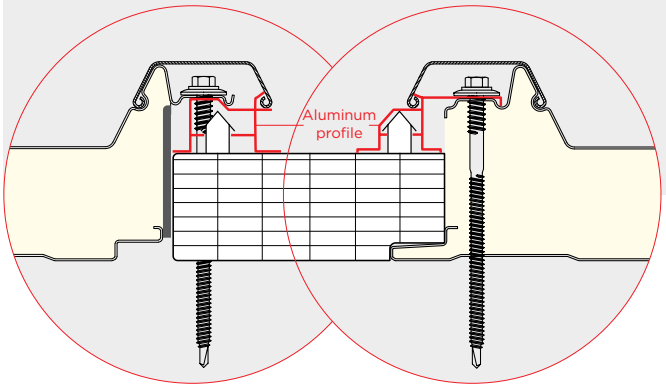
Performance
Thermal transmittance: 1.2–1.1 W/m² °C
Light transmittance: ~38–~35%
Temperature variation: -40/+120 °C
Reaction to fire: B-s1,d0 EN 13501-1
UV protection: yes

Installation
Important information at www.ofelizpainel.com

Toplight Cap







Notes
Aluminum profiles are supplied in 6000 mm lengths.
Accessories are required to compensate for the difference in thickness between the sandwich panel and the polycarbonate panel.

Description/Application

Glass honeycomb flashing panel, designed for roofing systems.
Transparent solution with good light transmission, adaptable to coating panels.
Allows the construction of different types of skylights and is highly resistant to atmospheric agents. 100% watertight, UV and impact resistant, and easy to install. Ideal for roofs and industrial skylights.

Characteristics

Dimensions

Thicknesses: 40 mm
Waves interval: ~1000 mm
Width modular: 1000 mm ±5 mm
Length: 13500 mm (max.)

Performance

Thermal transmittance: 1.1 W/m² °C
Light transmittance: ~35%
Temperature variation: -40/+120 °C
Reaction to fire: B-s1,d0 EN 13501-1
UV protection: yes

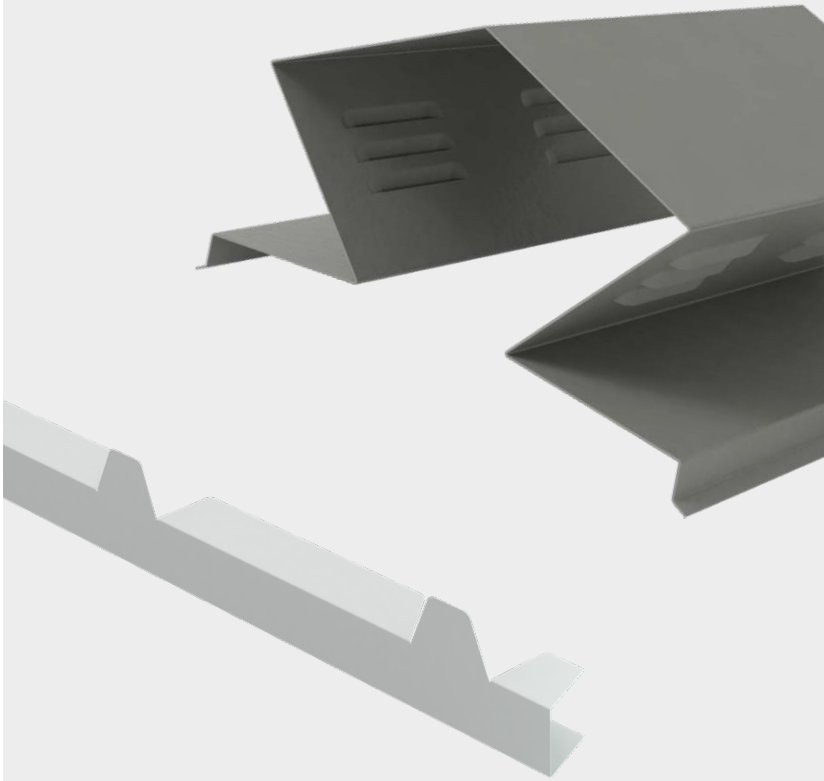
Installation

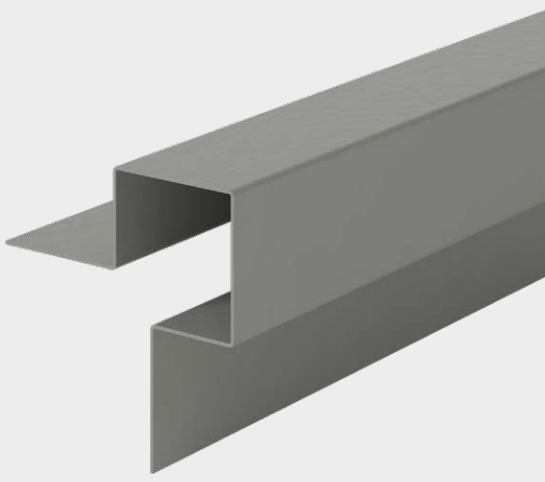
Important information at www.ofelizpainel.com

A C C E S S O R I E S

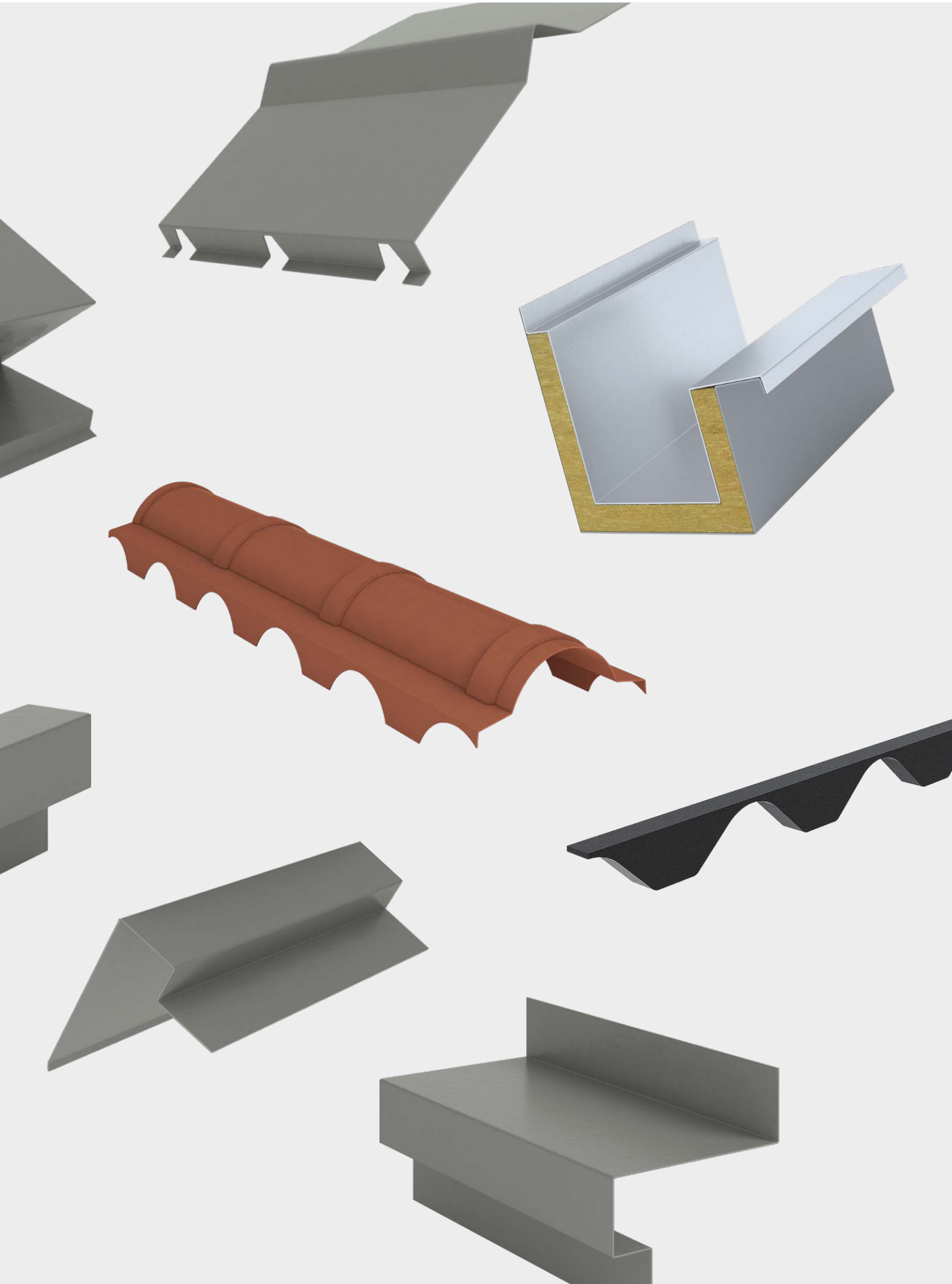
All accessories are made by cutting and forming sheet metal. Their dimensions can be adjusted according to the specifics of the project, with the exception of standardized accessories.

Maximum width: 1250 mm
Maximum length: 6000 mm
Other dimensions: upon request

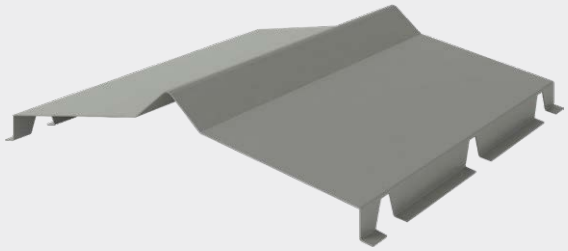


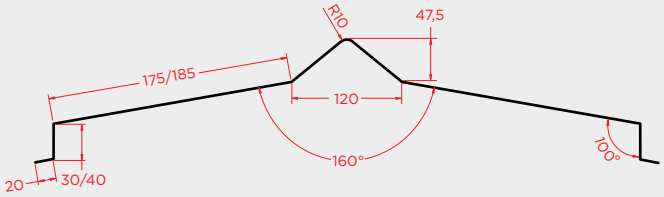


- Ridge caps
- Half-ridges
- Top side ridges
- Trimmed gables
- Sideline shots
- Trimmed eaves
- Sponge sealants
- Saddle washers
- Internal ridges
- Coping flashings
- Gutters
- Apron flashings
- Window top flashings
- Sill flashings
- Window side flashings
- Corner flashings
- Eaves flashings



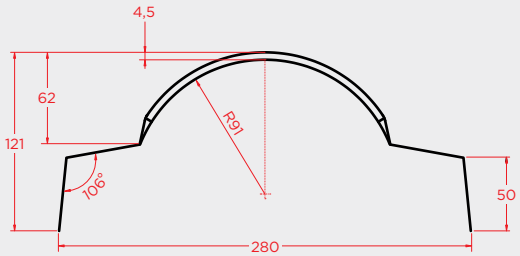
Plain ridge cap Topcover 3/5/Cap





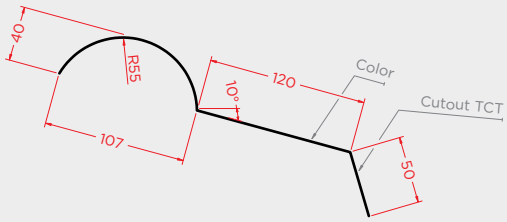
Article	Description	Standard product
CUM.TC3	Plain ridge cap 3,15 m with cutout for Topcover 3	Development: 625 mm Total/useful length: 3150/3000 mm
CUM.TC5	Plain ridge cap 3,15 m with cutout for Topcover 5	
CUM.TCC	Plain ridge cap 3,15 m with cutout for Topcover 3	
CUM.LISA	Plain ridge cap 3,15 m flat for Topcover 3/5/Cap	

Ridge cap Topcover Tile



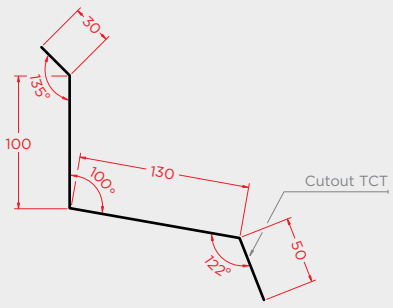
Article	Description	Standard product
CUM.TCT	Ridge cap 1,075 m with cutout for Topcover Tile	Development: 416 mm Total/useful length: 1070/1000 mm
CUM.TCTL	Ridge cap 1,075 m without cutout for Topcover Tile	

Half-ridge Topcover Tile



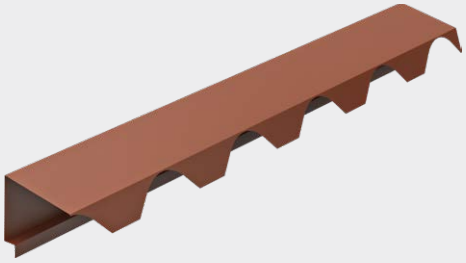
Article	Description	
CUM2.TCT.312	Half-ridge for Topcover Tile. Available in various colors.	D = 312 mm / T = 0,50 mm / L = 2200 mm

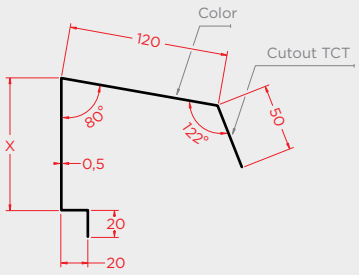
Top side ridge Topcover Tile



Article	Description	
RMT.TCT.01	Top side ridge for Topcover Tile. Available in various colors.	D = 310 mm / T = 0,50 mm / L = 2200 mm

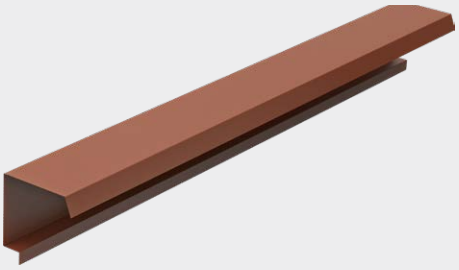
Trimmed gable end Topcover Tile

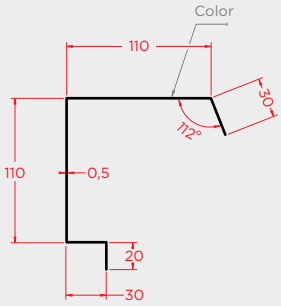




Article	Description	
RMT.TCT.02	Trimmed gable end for Topcover Tile. Available in various colors.	X = Variable / D = 310 mm / T = 0,50 mm / L = 2200 mm

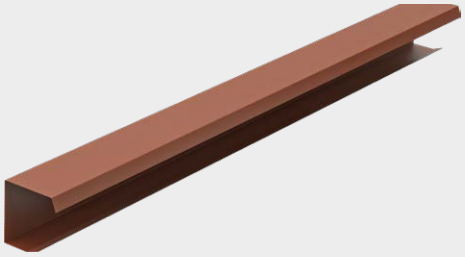
Sideline shot Topcover Tile

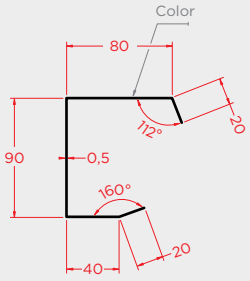




Article	Description	
RMT.TCT.03	Sideline shot for Topcover Tile. Available in various colors.	D = 300 mm / T = 0,50 mm / L = 2500 mm

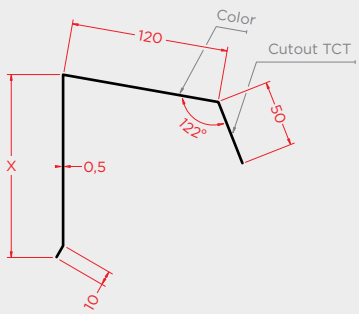
Sideline shot Topcover Tile





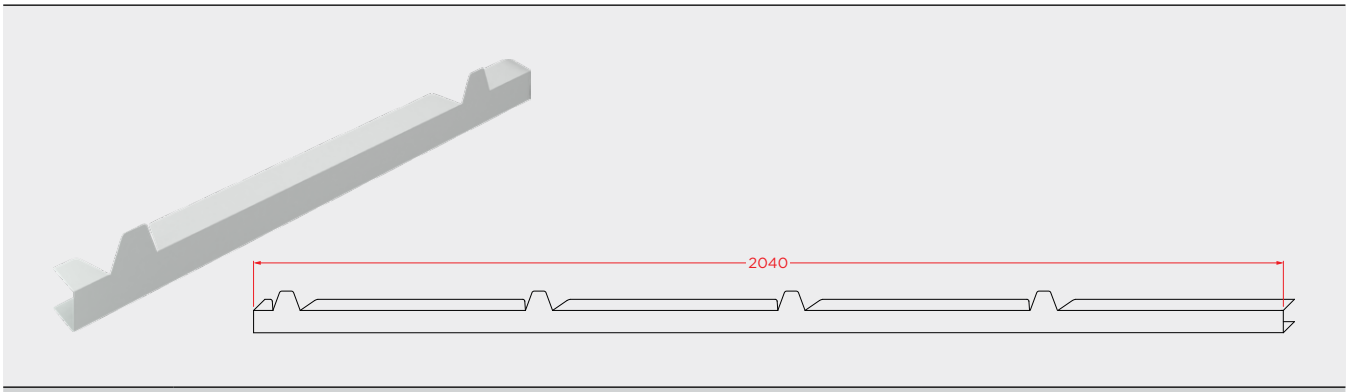
Article	Description	
RMT.TCT.04	Sideline shot for Topcover Tile. Available in various colors.	D = 250 mm / T = 0,50 mm / L = 2500 mm

Trimmed gable Topcover Tile



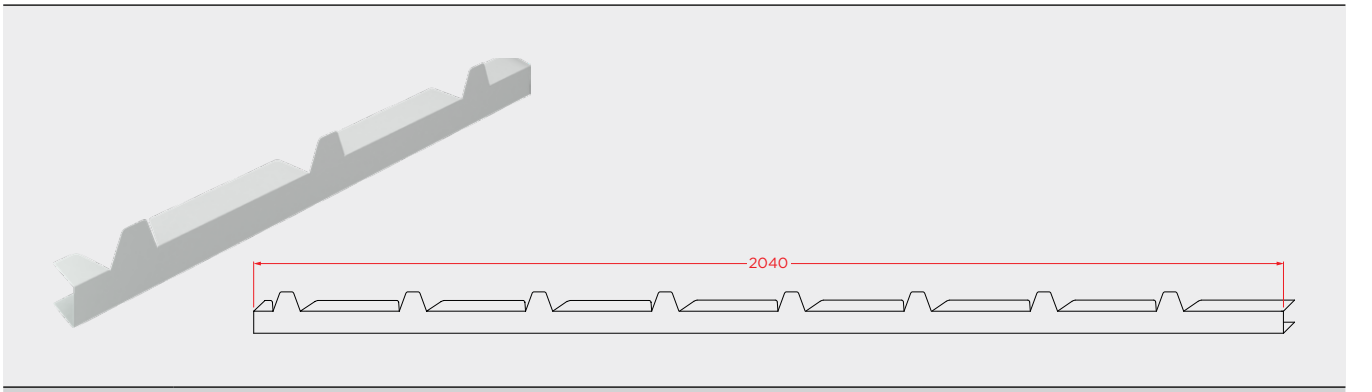
Article	Description	
RMT.TCT.05	Trimmed gable for Topcover Tile. Available in various colors.	X = Variable / D = 310 mm / T = 0,50 mm / L = 2200 mm

Trimmed eave Topcover 3



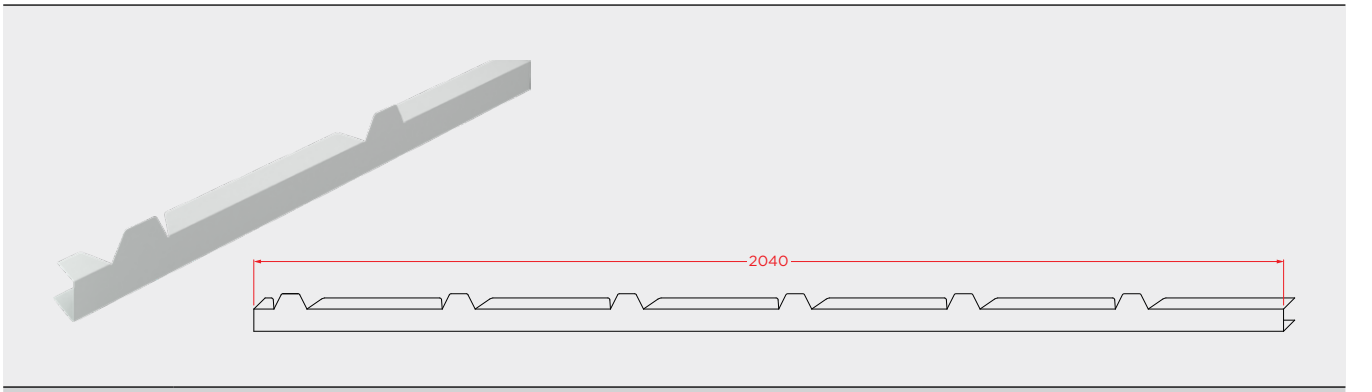
Article	Description	Thicknesses
TOP.TC3	Trimmed eave for Topcover 3	30-40-50-60-80-100-120-150 mm

Trimmed eave Topcover 5



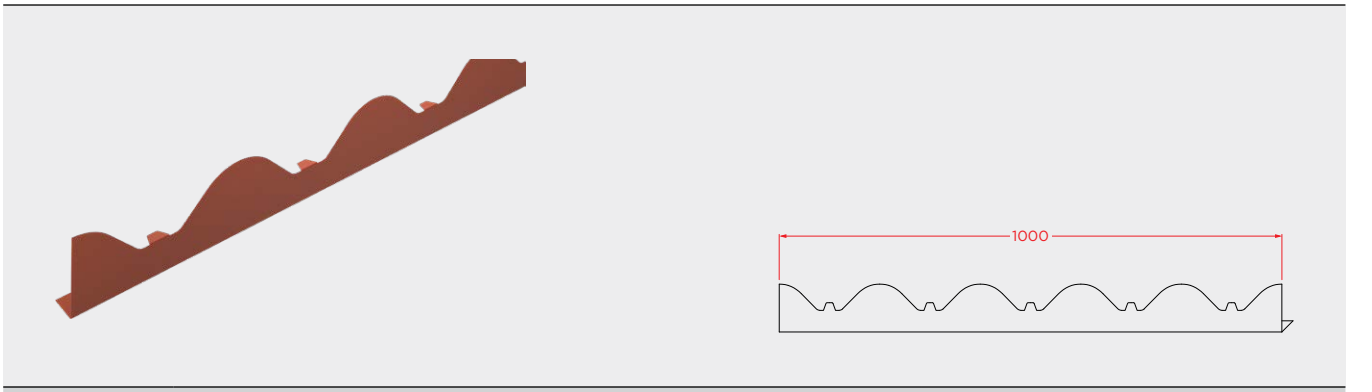
Article	Description	Thicknesses
TOP.TC3	Trimmed eave for Topcover 3	30-40-50-60-80-100-120-150 mm

Trimmed eave Topcover Cap



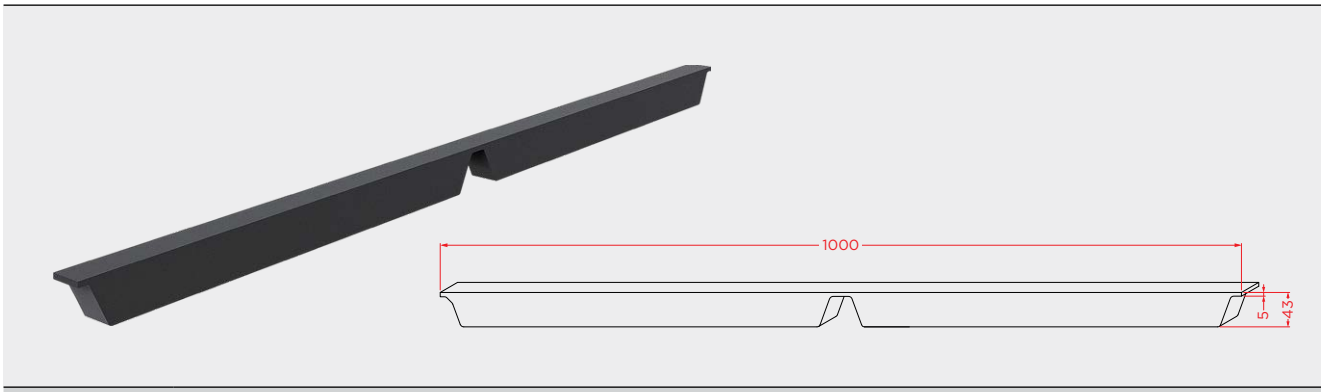
Article	Description	Thicknesses
TOP.TCC	Trimmed eave for Topcover Cap	30-40-50-60-80-100 mm

Trimmed Eeave Topcover Tile



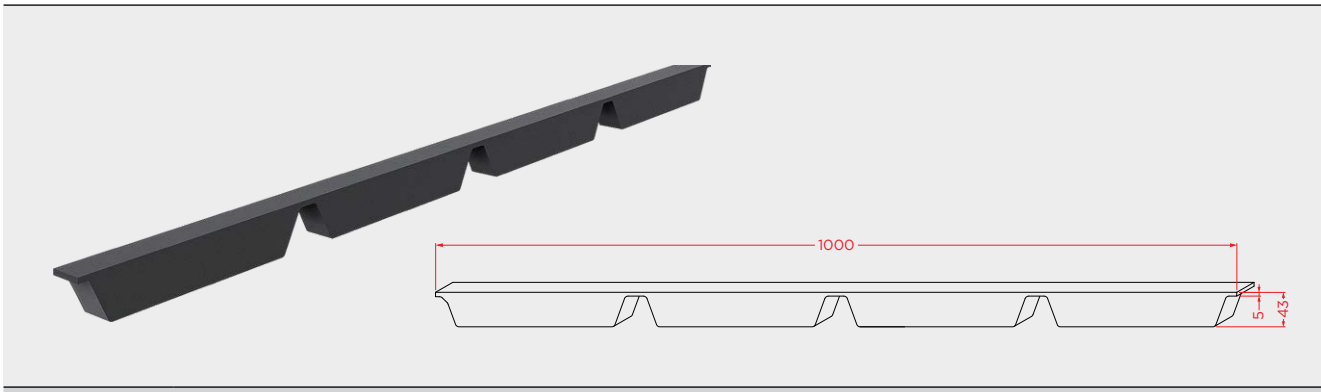
Article	Description	Thicknesses
TOP.TCT	Trimmed eave for Topcover Tile	40-60-80 mm

Sponge sealant Plain ridge cap Topcover 3



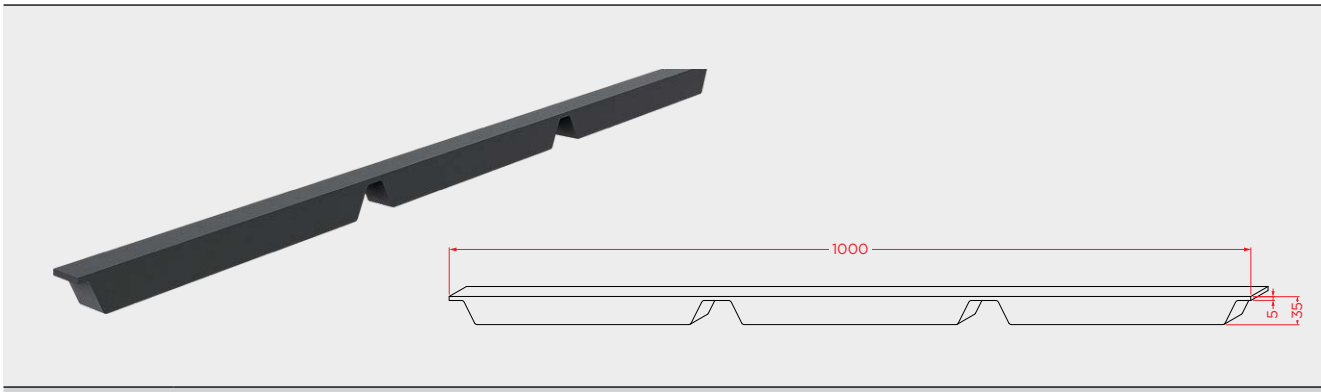
Article	Description
VED.TC3	Sponge sealant for plain ridge cap Topcover 3

Sponge sealant Ridge Cap Topcover 5



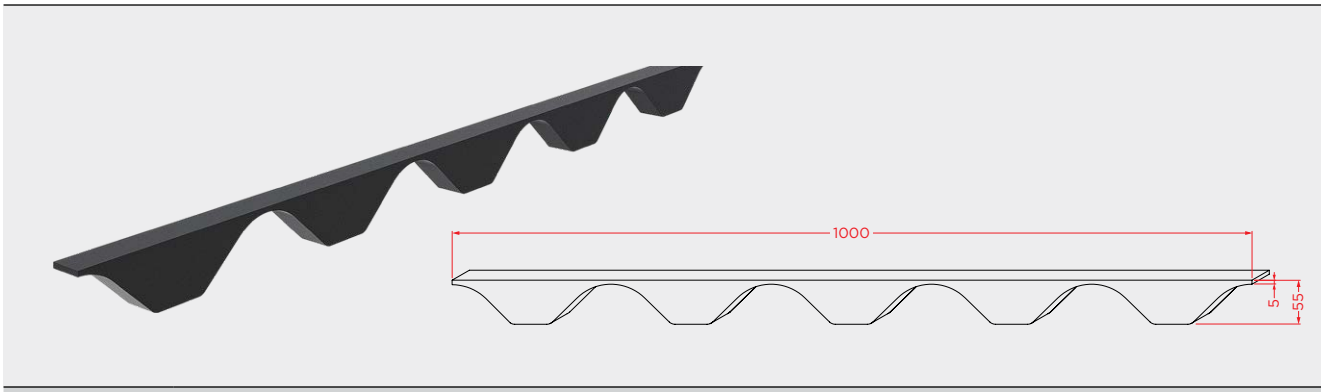
Article	Description
VED.TC5	Sponge sealant for plain ridge cap Topcover 5

Sponge sealant Plain ridge cap Topcover Cap



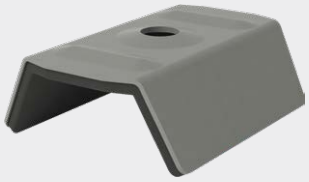
Article	Description
VED.TCC	Sponge sealant for plain ridge cap Topcover Cap

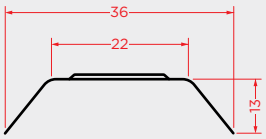
Sponge sealant Ridge cap Topcover Tile



Article	Description
VED.TCT	Sponge sealant for ridge cap Topcover Tile

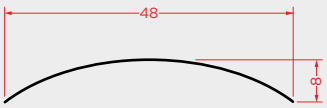
Saddle washer Topcover 3/5





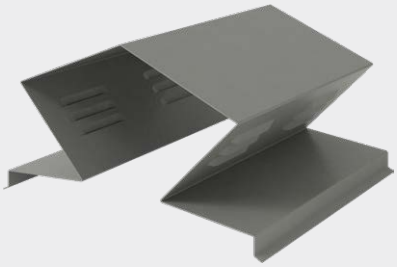
Article	Description
ANL.TC5	Saddle washer for Topcover 3 and Topcover 5. Available in various colors.

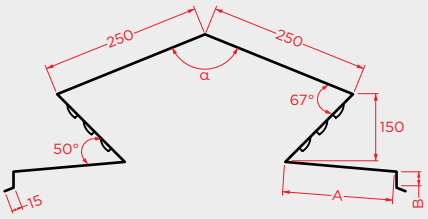
Saddle washer Topcover Tile



Article	Description
ANL.TCT	Saddle washer for Topcover Tile. Available in various colors.

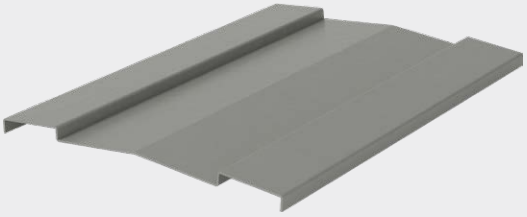
Ridge cap Ventilated

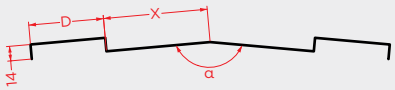




B – Panel thickness

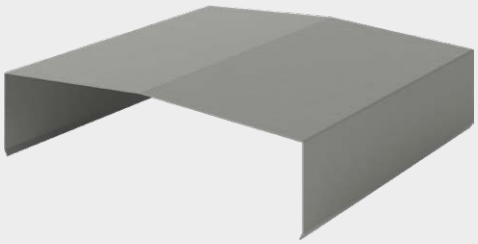
Internal ridge A-02A

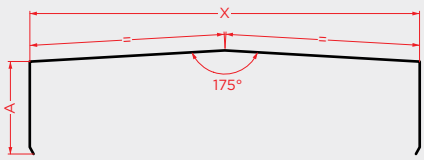




α – Variable angle X – Variable dimension

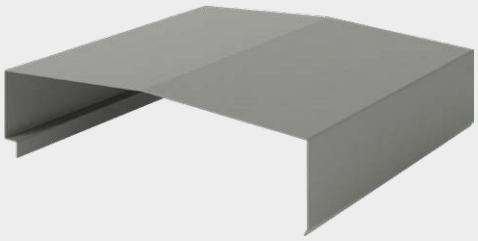
Coping flashing A–03A

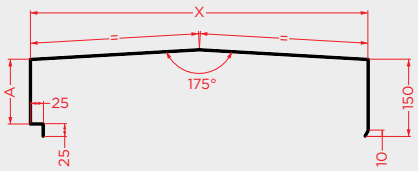




A≥ 80 mm X – Variable dimension

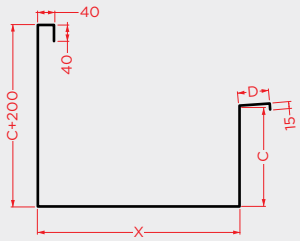
Coping flashing A–03C





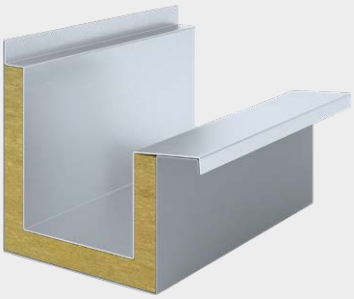
A≥ 80 mm X – Variable dimension

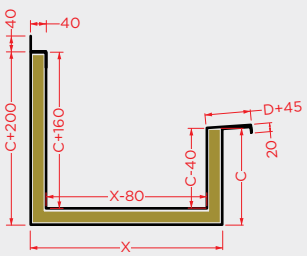
Gutter Simple



X – Variable dimension

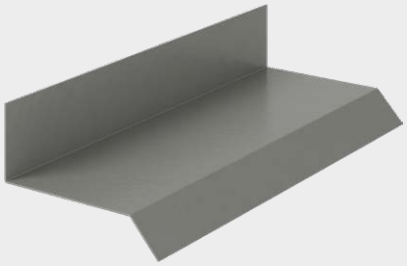
Gutter Double

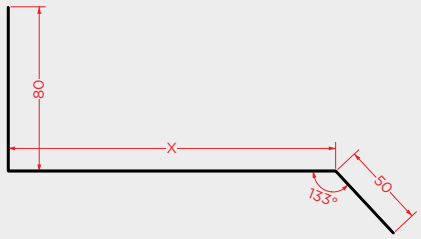




X – Variable dimension ■ Mineral wool (not included)

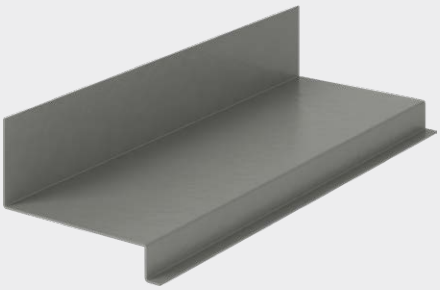
Apron flashing A–05A

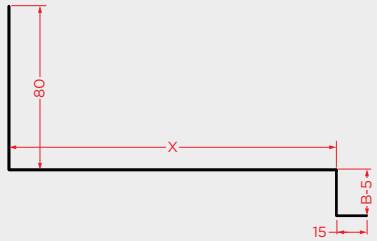




X – Variable dimension

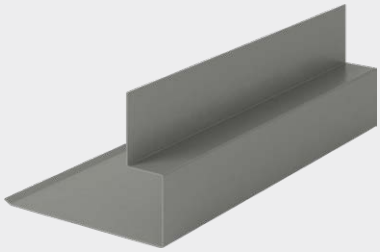
Apron flashing A–05B

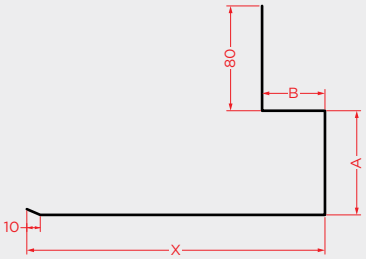




B – Panel thickness X – Variable dimension

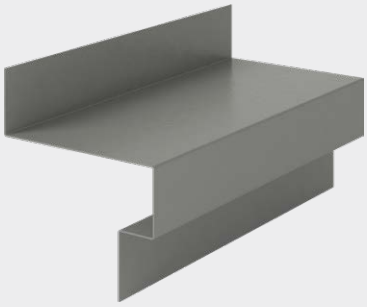
Window top flashing A–06A

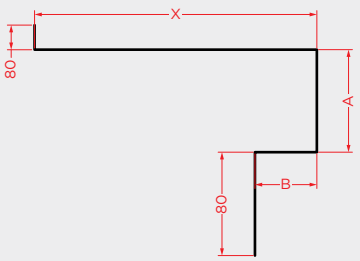




A≥ 80 mm B – Panel thickness + 30 mm X – Variable dimension

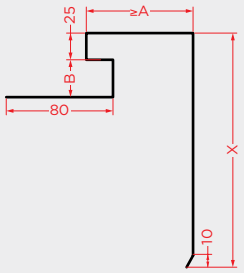
Sill flashing A–07A





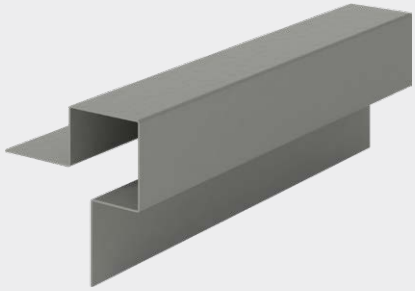
A≥ 80 mm B – Panel thickness + 30 mm X – Variable dimension

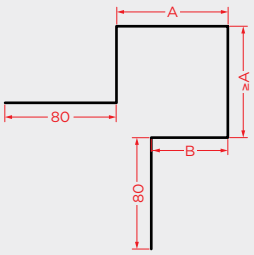
Window side flashing A–08A



A≥ 80 mm B – Panel thickness + 5 mm X – Variable dimension

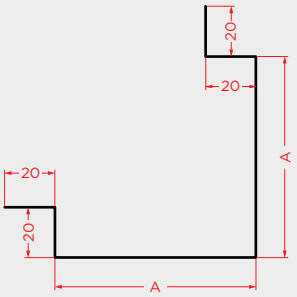
Corner flashing A–09C





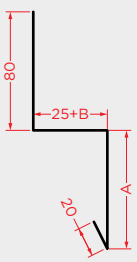
A≥ 80 mm B – Panel thickness + 25 mm

Corner flashing A–09D



A≥ 80 mm

Eaves flashing A–11A



A≥ 80 mm B – Panel thickness + 30 mm

EXCLUSIVE FINISHES

As a result of alliances with world-renowned companies, these are the exclusive finishes we offer for application on our products.

Granite® HDX
Colorcoat HPS200 Ultra®
Colorcoat Prisma®

Granite® HDX 55 µm
ArcelorMittal

Properties
- Nominal organic thickness: 55 µm;
- Very good UV resistance;
- Excellent corrosion resistance;
- Very good formability;
- Robust coating;
- Thermosetting paint;
- Surface treatment and painting: free of hexavalent chromium and heavy metals;
- Corrosion resistance category: RC5 (EN 10169);
- Automatic manufacturer's warranty of up to 35 years.

Applications
Outdoor use in harsh environments: profiled sheet metal, sandwich panels for industrial use with a high level of aggressive/corrosive agents, and construction materials.

ArcelorMittal

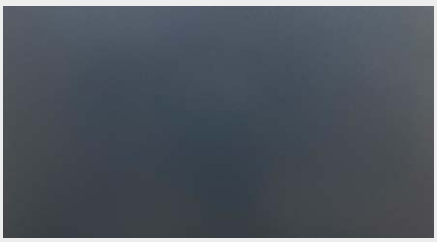
RAL 3009 Oxide red

RAL 7022 Umbra grey

RAL 7012 Basalt grey

RAL 9006 White aluminium

RAL 7016 Anthracite grey



RAL 9010 Pure white

Colorcoat HPS200 Ultra®
Tata Steel

Properties
- Org. nominal thickness: 200 µm;
- Exceptional performance;
- Certified for excellent color and gloss retention;
- Durability certificate valid for up to 40 years;
- Impact resistance: ≥ 18 J;
- Corrosion resistance category: RC5 (EN 10169);
- UV resistance: Ruv4 (EN 10169);
- Prepared for application on photovoltaic panel structures;
- Manufactured in the United Kingdom.

Applications
For outdoor use in harsh environments, such as marine environments, with a high corrosive component. Ideal for warehouses, homes, commercial stores, and factories.

TATA STEEL

HPS200 Ultra® 200 µm White

Prisma® 65 µm Aquarius

In all finishes, other colors are available upon prior consultation.

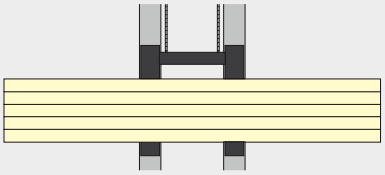
PROCEDURES

This section presents useful instructions for moving, storing, cleaning and maintaining sandwich panels.

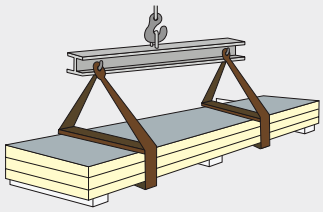
Moving and storing
Cleaning and maintenance

Moving and storing sandwich panels

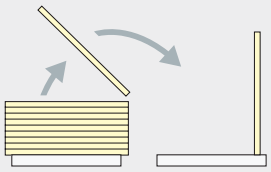
Moving



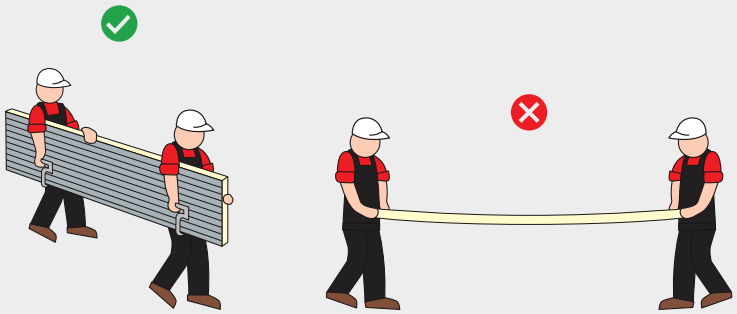
Lifting machine
(up to 6m)



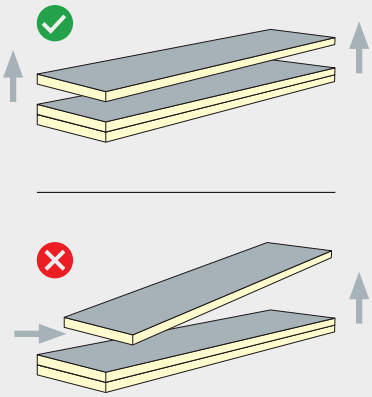
Crane with ladder
(more than 6m)



Place the panels vertically and
on top of the polystyrene foam

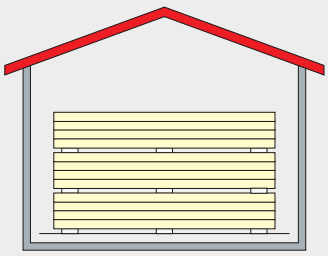


Appropriate and inappropriate
manual transport



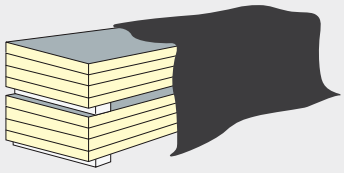
Correct and incorrect
lifting

Indoor storage

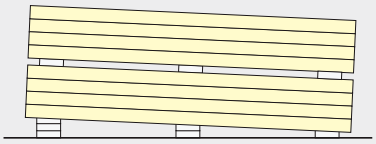


Store in a covered place

Outdoor storage



Cover the panels



Pile up with a slope

PROCEDURES

This section presents useful instructions for moving, storing, cleaning and maintaining sandwich panels.

Moving and storing
Cleaning and maintenance

PANEL MAINTENANCE INSTRUCTIONS

1. General Recommendations
1.1 To ensure the durability of the roof, it must have an access system that allows entry for maintenance and cleaning operations. These operations must be performed by specialized personnel, so that access to the roof prevents accidental perforations, scratches, and damage to the sheet metal roof.

1.2 After application, the panel must be completely clean, with no metal shavings in contact with its surface, to prevent rust and subsequent corrosion of the metallic coating. This cleaning should preferably be done with air to avoid scratching the surface of the organic coating. The cut edges of the panel and the molding must also be protected from rust.

1.3 It is important to keep in mind that the type of coating for the panel must be chosen according to the type of corrosion environment at the application site; only then can the expected product durability be ensured.

2. Cleaning
2.1 During the panel's useful life, at least one cleaning must be performed annually.

2.2 Cleaning should be done with clean water, in a descending order. If necessary, depending on the level of soiling, you can use pH-neutral soap and water, in a ratio of 10% detergent to water. The water temperature should be at most 30°C. If a pressure washer is used, it should be set to a pressure of no more than 20 bar.

2.3 If there are localized stains, rub the stain with a damp cloth and then proceed with the general cleaning indicated in 2.2.

2.4 If the existing stains are caused by sealants and mastics adhered to the surface, the stain can be rubbed with a damp cloth and a 15% alcohol solution, taking care to wash the surface immediately with clean water. The solution should never be placed directly on the surface, but rather soaked in a cloth.

2.5 Cleaning should include gutters and drainpipes to remove leaves, soil, moss, and other debris that could obstruct the flow of water, causing excess water to accumulate. This accumulation of water can cause rust and moss growth. After cleaning, verify that the water is flowing normally again.

3. Maintenance
3.1 Throughout the life of the panel, maintenance inspections should be performed to identify any evidence of accidental degradation of the protective coatings, which could cause rust, and perform the necessary maintenance as soon as possible to ensure continued maintenance.

3.2 Inspections should be carried out annually, except in cases where the application site has very aggressive environmental characteristics that require increased frequency.

3.3 The following inspections should be performed:
3.3.1 Check for rust around the edges of cut sheets, edges, and panel overlaps. When this problem is ignored, rust can spread to other areas and cause irreparable damage. In these situations, where there are signs of rust, proceed as follows:

- Cut or polish the areas affected by rust. If polishing/sanding the affected area, sand until the metallic color of the sheet is visible and stop immediately, so as not to damage the sheet;
- Clean the cut/sanded area with clean, cold air and/or water and then dry;
- Apply a coat of anti-corrosion primer to the cut edges or the sanded area (limited to the area where the steel is visible);
- Once the first coat of primer has dried, apply a second coat of the same product to the same area as the previous application, but extending the application to the adjacent areas where the original coating of the sheet remains;
- Apply polyurethane acrylic paint to the modified area. Please note that, although the affected area is painted the same color as the original sheet, the color of the two areas may vary over the course of its useful life.

3.3.2 Check for specific paint defects resulting from scratches, perforations in the sheet, or localized corrosion. In cases where the sheet support is not visible, no further corrective action is necessary; simply applying a coat of acrylic polyurethane paint is sufficient. In cases where the sheet substrate is visible, corrective maintenance should be performed, proceeding as follows:

- Clean the affected area and its surroundings;
- Apply a light polyurethane epoxy primer;
- Apply acrylic polyurethane paint to the affected area with a fine brush, covering only the damaged area and not the original layer of the sheet. Please note that, although the affected area is painted the same color as the original sheet, the color of the two areas may vary over its useful life.

In cases where corrosion of the sheet is already evident, proceed as described in section 3.3.1.

3.3.3 Inspect the condition of mechanical fasteners, which, if improperly installed or in poor condition, can cause water infiltration and rust stains. In such cases, proceed as follows:

- Replace defective bolts;
- In the case of localized rust on the sheet metal, proceed as described in section 3.3.1.

AFITI LICOF Centre for Fire Testing and Research

Association for the Promotion of Research and Fire Safety Technology

Test Certificate

Nr: C3347T17(English Version)

Applicant **O FELIZ PAINEL, LDA**
Avda. De San Lourenço – Apartado 2100 - Celeirós
4705-444– BRAGA (Portugal)

Building material Metallic sandwich panel with PUR.
Manufacturer: O Feliz Painel, Lda.

References:	Thickness(mm)
TOPCOVER 3	30, 40, 50, 60, 80, 100
TOPCOVER 5	30, 40, 50, 60, 80, 100
TOPCOVER CAP	30, 40, 50, 60, 80, 100
TOPCOVER TILE	30, 40, 50
INDWALL	30, 40, 50, 60, 80, 100
FACEWALL MICROPERFILADO	40, 50, 60, 80, 100
FACEWALL LISO	40, 50, 60, 80, 100
ICEWALL NERVURADO	60, 80, 100, 120, 150, 180, 200
ICEWALL LISO	60, 80, 100, 120, 150, 180, 200

Tests Test according UNE-EN 13823:2012+A1:2016, *"Reaction to fire tests for products – Building products excluding floorings exposed to the thermal attack by a single burning item" standard.*

Test according UNE-EN ISO 11925-2:2011, *""Reaction to fire tests. Ignitability of building products subjected to direct impingement of flame. Part 2: Single flame source test "*

Test dates 17th-Nov-17; 28th-Nov-17; 29th-Nov-17; 30th-Nov-17;

Certificates of reports Test report Nr 3347T17.R2 (issued by AFITI-LICOF with date 24th-Apr-18).
Classification report Nr. 3347T17-2 (issued by AFITI-LICOF with date 21th-Dic -17).
Technical report EXAP Nr. EXAP-3347T17.R1 (issued by AFITI-LICOF with date 05th-Mar-18).

Reaction to fire classification **B-s2,d0**

Classification according to UNE-EN 13501-1:2007+A1:2010 *"Fire classification of construction products and building elements-Part 1: Classification using data from reaction to fire tests".*

Toledo, 29th of August of 2018

Digitally Signed Document

Fdo: David Sáez García
Technical Director of
Reaction to Fire Laboratory

This Test Certificate contains the English version only from the spanish TestCertificate Report dated 29th-August-18. In case of doubt, the Spanish version Test Report prevails.
The results of this Certificate refer solely and exclusively to the specimens tested, and not to the product in general.
The specified reports include important aspects of the test performance and development which have made it possible to obtain the aforementioned Reaction to Fire classification. This certificate should be used together with the referenced reports.
Cancellation or modification of the aforementioned reports implies cancellation or modification of this certificate.

HEAD OFFICE & LABORATORIES Camino del Estrechillo, 8 E-28500 Arganda del Rey - Madrid (Spain)
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AFITI LICOF Centre for Fire Testing and Research

Association for the Promotion of Research and Fire Safety Technology

Test Certificate

Nr: C3345T17(English Version)

Applicant **O FELIZ PAINEL, LDA**
Avda. De San Lourenço – Apartado 2100 - Celeirós
4705-444– BRAGA (Portugal)

Building material Metallic sandwich panel with PIR.
Manufacturer: O Feliz Painel, Lda.

References:	Thickness(mm)
TOPCOVER 3	30, 40, 50, 60, 80, 100
TOPCOVER 5	30, 40, 50, 60, 80, 100
TOPCOVER CAP	30, 40, 50, 60, 80, 100
TOPCOVER TILE	30, 40, 50
INDWALL	30, 40, 50, 60, 80, 100
FACEWALL MICROPERFILADO	40, 50, 60, 80, 100
FACEWALL LISO	40, 50, 60, 80, 100
ICEWALL NERVURADO	60, 80, 100, 120, 150, 180, 200
ICEWALL LISO	60, 80, 100, 120, 150, 180, 200

Tests Test according UNE-EN 13823:2012+A1:2016, *"Reaction to fire tests for products – Building products excluding floorings exposed to the thermal attack by a single burning item" standard.*
Test according UNE-EN ISO 11925-2:2011, *""Reaction to fire tests. Ignitability of building products subjected to direct impingement of flame. Part 2: Single flame source test "*

Test dates 17th-Nov-17; 28th-Nov-17; 29th-Nov-17; 30th-Nov-17;

Certificates of reports Test report Nr 3345T17.R2 (issued by AFITI-LICOF with date 05th-Mar-18).
Classification report Nr. 3345T17-2 (issued by AFITI-LICOF with date 14th-Dic -17).
Technical report EXAP Nr. EXAP-3345T17.R1 (issued by AFITI-LICOF with date 05th-Mar-18).

Reaction to fire classification **B-s2,d0**

Classification according to UNE-EN 13501-1:2007+A1:2010 *"Fire classification of construction products and building elements-Part 1: Classification using data from reaction to fire tests".*

Toledo, 29th of August of 2018

Digitally Signed Document

Fdo: David Sáez García
Technical Director of
Reaction to Fire Laboratory

This Test Certificate contains the English version only from the spanish TestCertificate Report dated 29th-August-18. In case of doubt, the Spanish version Test Report prevails.
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AFITI LICOF Centre for Fire Testing and Research

Association for the Promotion of Research and Fire Safety Technology

Test Certificate

Nr: C3432T18(English Version)

Applicant **O FELIZ PAINEL, LDA**
Avda. De San Lourenço – Apartado 2100 - Celeirós
4705-444– BRAGA (Portugal)

Building material Metallic sandwich panel with PIR.
Manufacturer: O Feliz Painel, Lda.

References:	Thickness(mm)
TOPCOVER 3	30, 40, 50, 60, 80, 100
TOPCOVER 5	30, 40, 50, 60, 80, 100
TOPCOVER CAP	30, 40, 50, 60, 80, 100
TOPCOVER TILE	30, 40, 50
INDWALL	30, 40, 50, 60, 80, 100
FACEWALL MICROPERFILADO	40, 50, 60, 80, 100
FACEWALL LISO	40, 50, 60, 80, 100
ICEWALL NERVURADO	60, 80, 100, 120, 150, 180, 200
ICEWALL LISO	60, 80, 100, 120, 150, 180, 200

Tests Test according UNE-EN 13823:2012+A1:2016, *"Reaction to fire tests for products – Building products excluding floorings exposed to the thermal attack by a single burning item" standard.*
Test according UNE-EN ISO 11925-2:2011, *""Reaction to fire tests. Ignitability of building products subjected to direct impingement of flame. Part 2: Single flame source test "*

Test dates 02nd-Mar-18; 05th-Mar-18

Certificates of reports Test report Nr 3432T18.R1 (issued by AFITI-LICOF with date 24th-Apr-18).
Classification report Nr. 3432T18-2 (issued by AFITI-LICOF with date 26th-Mar -18).
Technical report EXAP Nr. EXAP-3432T18 (issued by AFITI-LICOF with date 26th-Mar-18).

Reaction to fire classification **B-s1,d0**

Classification according to UNE-EN 13501-1:2007+A1:2010 *"Fire classification of construction products and building elements-Part 1: Classification using data from reaction to fire tests".*

Toledo, 29th of August of 2018

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Certificado

CERTIFICADO DE REGULARIDADE DO DESEMPENHO

CERTIFICATE OF CONSTANCY OF PERFORMANCE

1328–CPR–0708

De acordo com o Regulamento (UE) n.º 305/2011 do Parlamento Europeu e do Conselho, de 9 de março de 2011 (o Regulamento dos Produtos de Construção ou RPC), este certificado aplica-se ao produto de construção

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product

PAINÉIS SANDWICH AUTOPORTANTES, ISOLANTES, COM DUPLA FACE METÁLICA
SELF-SUPPORTING DOUBLE SKIN METAL FACED INSULATING PANELS

colocado no mercado em nome ou com marca comercial de / *placed on the market under the name or trade mark of*

O Feliz Painel, Lda.
Av. de São Lourenço, n.º 41
4705-444 Celeirós BRG - Portugal

e fabricado na(s) unidade(s) fabril(is) / *and produced in the manufacturing plant(s)*

O Feliz Painel, Lda.
Av. de São Pedro, n.º 22
4705-630 Tebosa BRG - Portugal

Este certificado atesta que todas as disposições relativas à avaliação e verificação da regularidade do desempenho descritas no Anexo ZA da(s) norma(s)

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard(s)

EN 14509:2013

de acordo com o sistema 1, para o desempenho indicado neste certificado, são aplicadas e que o controlo da produção em fábrica efetuado pelo fabricante é avaliado para garantir **a regularidade do desempenho do produto de construção.**

Este certificado foi emitido pela primeira vez em 2018-05-03 e manter-se-á válido desde que a norma harmonizada, o produto de construção, os métodos de avaliação e verificação da regularidade do desempenho e as condições de produção na unidade fabril não se alterem significativamente, a não ser que seja suspenso ou anulado pelo organismo de certificação de produtos notificado.

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure ***the constancy of performance of the construction product.***

This certificate was first issued on 2018-05-03 and will remain valid as long as neither the harmonised standard, the construction product, the assessment and verification of constancy of performance methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

Almada, 2022-07-29

Francisco Barroca
Diretor Geral / *General Manager*

IPAC acreditação
C0004
ISO/IEC 17065
Produtos

Este Certificado é constituído por um Anexo com 3 (três) páginas
This Certificate includes one Annex with 3 (three) pages

Certif – Associação para a Certificação
Rua José Afonso, 9 E – 2810-237 Almada – Portugal – Tel.: 351. 21 258 69 40 – E-mail: mail@certif.pt

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ANEXO AO CERTIFICADO DE REGULARIDADE DO DESEMPENHO

ANNEX TO THE CERTIFICATE OF CONSTANCY OF PERFORMANCE

1328–CPR–0708

CARACTERÍSTICAS TÉCNICAS / *TECHNICAL CHARACTERISTICS*	
Referências *Type References*	**Espessura dos painéis sandwich (mm)** *Thickness of the sandwich panel (mm)*
TOPCOVER 3	30, 40, 50, 60, 80, 100
TOPCOVER 5	30, 40, 50, 60, 80, 100
TOPCOVER CAP	30, 40, 50, 60, 80, 100
TOPCOVER TILE	30, 40, 50
INDWALL	30, 40, 50, 60, 80, 100
FACEWALL MICROPERFILADO	40, 50, 60, 80, 100
FACEWALL LISO	40, 50, 60, 80, 100
ICEWALL NERVURADO	60, 80, 100, 120, 150, 180, 200
ICEWALL LISO	60, 80, 100, 120, 150, 180, 200
Reação ao fogo *Reaction to fire*	B – s1, d0
Material isolante do núcleo *Insulating core material*	Poliisocianurato (PIR) – PIR-HI *Polyisocyanurate (PIR) – PIR-HI*
Faces metálicas *Metal faces*	Chapas metálicas de aço perfiladas e termolacadas *Profiled steel metal sheets and thermo-lacquered*
Utilização prevista *Intended use*	Coberturas e revestimentos de coberturas, paredes exteriores e revestimentos de paredes, paredes interiores (incluindo divisórias) e tetos *Roofs and roof cladding, external walls and wall cladding and internal walls (including partitions) and ceilings*

Almada, 2022-07-29

Francisco Barroca
Diretor Geral / *General Manager*

IPAC acreditação
CO004
ISO/IEC 17065
Produtos

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ANEXO AO CERTIFICADO DE REGULARIDADE DO DESEMPENHO

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1328–CPR–0708

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FACEWALL LISO	40, 50, 60, 80, 100
ICEWALL NERVURADO	60, 80, 100, 120, 150, 180, 200
ICEWALL LISO	60, 80, 100, 120, 150, 180, 200
Reação ao fogo *Reaction to fire*	B – s2, d0
Material isolante do núcleo *Insulating core material*	Poliisocianurato (PIR) *Polyisocyanurate (PIR)*
Faces metálicas *Metal faces*	Chapas metálicas de aço perfiladas e termolacadas *Profiled steel metal sheets and thermo-lacquered*
Utilização prevista *Intended use*	Coberturas e revestimentos de coberturas, paredes exteriores e revestimentos de paredes, paredes interiores (incluindo divisórias) e tetos *Roofs and roof cladding, external walls and wall cladding and internal walls (including partitions) and ceilings*

Almada, 2022-07-29

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Diretor Geral / *General Manager*

IPAC acreditação
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CARACTERÍSTICAS TÉCNICAS / *TECHNICAL CHARACTERISTICS*	
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ICEWALL LISO	60, 80, 100, 120, 150, 180, 200
Reação ao fogo *Reaction to fire*	B – s2, d0
Material isolante do núcleo *Insulating core material*	Poliuretano (PUR) *Polyurethane (PUR)*
Faces metálicas *Metal faces*	Chapas metálicas de aço perfiladas e termolacadas *Profiled steel metal sheets and thermo-lacquered*
Utilização prevista *Intended use*	Coberturas e revestimentos de coberturas, paredes exteriores e revestimentos de paredes, paredes interiores (incluindo divisórias) e tetos *Roofs and roof cladding, external walls and wall cladding and internal walls (including partitions) and ceilings*

Almada, 2022-07-29

Francisco Barroca
Diretor Geral / *General Manager*

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EN 14509

ISO 9001

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