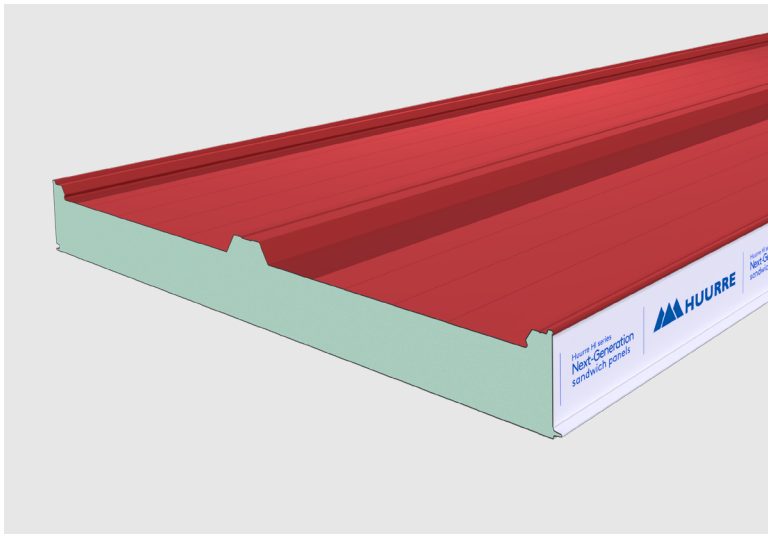
HI-CT Roof insulating panel

DATA SHEET

High performance insulating for roofs with hidden fastening



- Rigid insulating core with high thermal properties (thermal conductivity is only 0.022 W/mK considering an aged foam core).
- The design of the longitudinal joint and hidden fasteners covered by flashing to ensure high water-tightness.
- Panel overlap option for roofs of more than 16 m long.
- High mechanical strength with spans up to 6.0 m.
- Structural steel sheets with various long-lasting coating options.
- Does not absorb water and maintains its performance throughout its lifetime and is not affected by biological agents.
- Guaranteed and certified quality and safety.

CE AENOR AISLANTE TÉRMICO 020/003372 020/003373

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Insulating panel for roofs with hidden fastening

Description and applications

Sandwich panel for roofs with rigid insulating core and exterior faces of profiled structural steel sheets.

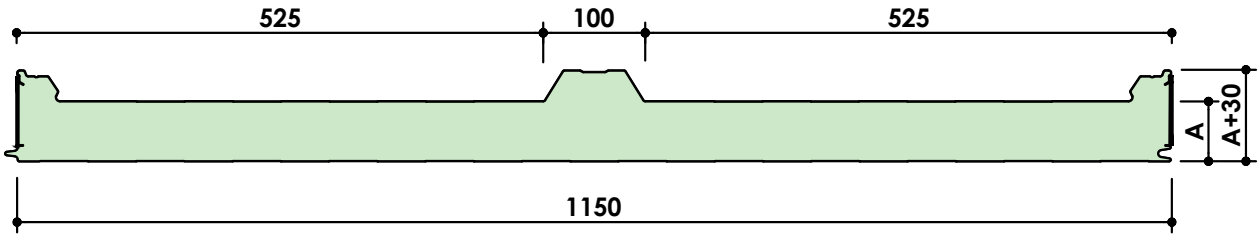
Lightweight enclosure with high insulating properties, its tongue-and-groove sealed joints guarantees high water tightness. Integrated skylights available: COMPLET (simple or double) and TZ-CLIC.

The HI-CT range of panels is available with a PIR (HI-PIR CT) or PIRM (HI-PIRM CT) insulating core.

Available in various steel thicknesses, coatings and colours.

Thermally efficient roofs, with high aesthetic value and quick execution for industrial, commercial, agricultural sector buildings and public centres.

Dimensions, mass and thermal properties



Useful width	1,150 mm						
Manufacturing length	2.0 to 13.5 m						
	13.5 to 16.0 m (special transport)						
Fresh thermal conductivity	0.020 W/mK						
Declared thermal conductivity[1]	0.022 W/mK (considering an aged core)						
Insulating core density	PIR: 40 (± 5) kg/m^3 | PIRM: 40 (-2/+5) kg/m^3						
Insulating core thickness (A)	30	40	50	60	80	120	(mm)
Mass[2]	9.81	10.21	10.61	11.01	11.81	13.41	(kg/m^2)
Thermal transmittance[1,2] **(PIR/PIRM)**	0.65	0.50	0.41	0.35	0.26	0.18	(W/m^{2}K)
Thermal resistance[2] **(PIR/PIRM)**	1.58	2.03	2.49	2.94	3.85	5.67	(m^{2}K/W)

NOTES: (1) Thermal transmittance determined according to UNE-EN 14509:2014, considering the effect of ageing of the insulating core, and certified by the AENOR "N" stamp.

(2) For 0,5/0,5 mm steel sheets (int/ext). Consult for other options.

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Components

Insulating core

Rigid polyisocyanurate foam (PIR or PIRM), injected continuously.

Exterior faces

Cold-profiled sheet from a reel of type S220GD structural steel of certified quality.
Ribbed upper face and standard profiled lower face.

Standard sheet thicknesses: 0.5 mm (other thicknesses on demand).

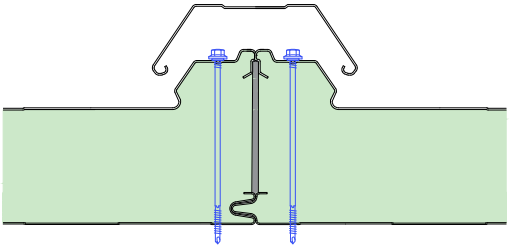
Applicable standards

Hot-galvanised sheet according to EN 10346.
Organic coatings according to EN 10169.

Coatings

The HI-CT panel can be produced with various coatings to guarantee high durability, depending on the environment and proposed conditions of use (see table of available coatings).

Close-up of joint



Available coatings

Table of coatings choice to guarantee the maximum durability of the panel, considering the classification of CPI1 and RC1 suitable for healthy environments, and CPI5 and RC5 suitable for very aggressive environments.

	Outdoor environment								Indoor environment			
		Urban/ Industrial		Marine			Resistance		Non-agressive environments			
	Rural without pollution	Moderate	Severe	Between 3 and 20 km	< 3 km (1)	Mixed	Outdoor corrosion category	UV	Low humidity	Medium humidity	Aggressive and/ or very humid environments	Resistance Indoor corrosion category
E5001	⊗	⊗	⊗	⊗	⊗	⊗	NA	NA	✓	⊗	⊗	!
Polyester 25 µ	✓	✓	!	!	⊗	⊗	!	!	✓	⊗	Ai3 (2)	CPI2
Polyester plus 25 µ	✓	✓	!	✓	⊗	⊗	RC3	RUV2	✓	✓	Ai3	CPI3
HDS 35 µ	✓	✓	!	✓	!	!	RC4	RUV4	✓	✓	Ai3	CPI4
PVDF 35 µ	✓	✓	!	✓	!	!	RC4	RUV4	✓	✓	Ai3	CPI4
HDX 55 µ	✓	✓	✓	✓	✓	!	RC5	RUV4	✓	✓	Ai3	CPI4

✓ Suitable coating ⊗ Unsuitable coating ! Check with HUURRE IBÉRICA (1) Please contact us for distances < 300 m. (2) Check conditions.

(NA) Non applicable. Consult with our Technical Department for other coatings.

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Tables of maximum spans (m)

The tables below indicate the maximum admissible distance between supports (m) depending on panel thickness (mm) and the downward uniformly distributed load (daN/m2). Contact our technical department for upward load cases.

TWO SUPPORTS

Thickness (mm)	Downward load (daN/m²) 50	75	100	125	150	175	200
30	3.85	3.35	3.10	2.85	2.70	2.55	2.45
40	4.25	3.70	3.40	3.15	2.95	2.80	2.70
50	4.60	4.00	3.65	3.40	3.20	3.00	2.90
60	4.80	4.20	3.80	3.55	3.35	3.20	3.00
80/120	5.30	4.60	4.20	3.90	3.65	3.50	3.35

THREE SUPPORTS

Thickness (mm)	Downward load (daN/m²) 50	75	100	125	150	175	200
35	4,35	3.80	3.45	3.20	3.00	2.85	2.75
40	4.80	4.20	3.80	3.50	3.30	3.15	3.00
50	5.15	4.50	4.10	3.80	3.55	3.40	3.25
60	5.45	4.80	4.35	4.05	3.80	3.60	3.45
80/120	6.00	5.25	4.80	4.45	4.15	3.95	3.80

1 daN/m² ≈ 1 kp/m²

NOTES: Load charts based on L/200 deflection limit.
Contact our technical department for values according to standard UNE-EN 14509:2014.

Reaction to fire

Fire reaction classification

EUROCLASS B-s1,d0

B:	Very limited contribution to fire and will not lead to flashover[1]
s1:	Little or no smoke production
d0:	No flaming droplets / particles

(1) Best classification possible for an organic type of material.

Reaction to fire determined according to UNE-EN 13501:1-2019 standard. In the case of HI-PIRM CT thicknesses 30, 40 and 50 mm, according to UNE-EN 13501-1:2017+A1:2010.

Broof CLASSIFICATION (according to standard EN 13501-5:2016), which classifies construction products with respect to non-propagation and behavior against an external fire.

Reaction to fire according to the <FM Approvals> standard (only for the HI-PIRM CT panel)

FM APPROVED

FM 4880 Class 1* Fire resistance of building panels or interior finishing materials
FM 4471 Class 1* Panel roofs

Test programme FM 4880 assess the fire performance of HI-PIRM CT panel against the highest fire protection requirements.

(2) Subject to mounting and coating conditions. Consult with our technical department.

RoofNav

The inclusion of the HI-PIRM CT panel in RoofNav accredits that the roof solution is certified* by FM Approvals. Subject to installation conditions.

(*) Subject to assembly conditions. Consult coating conditions with our technical department.

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Manufacturing quality and standards

HI-PIR CT and HI-PIRM CT panel certifications

CE marking according to EN 14509:2013.

Product certified with the "N" quality assurance stamp of AENOR. (Certified to 020/003372 for PIR and 020/003373 for PIRM).

HI-PIRM CT panel certifications - FM APPROVALS

Insurer approvals are large scale testing regimes that provide objective third-party testing, which is underpinned by annual factory surveillance audits to verify compliance. Insurer approvals are subject to panel thickness, method of assembly and steel coating.

Additional features

Resistance to biological agents

HUURRE panels, thanks to the closed structure of the insulating core, are resistant to attack by fungi, moulds and other deteriorating biological agents.

Water absorption

The insulating core does not absorb water and thus maintains its thermal properties throughout its lifetime. For this reason, they can be installed in adverse weather conditions.

Tightness

The careful tongue and groove design of the hidden panel joints ensures complete leak-tightness against rainwater. Regarding the impermeability requirement for the CTE enclosures, sections 5.2.6, 5.2.7 and 5.2.8 of EN 14509:2013 determine that the sandwich panels with metal faces will be considered sealed against water, air and water vapour, with these parameters only being relevant at the joints and fastenings depending on the installation.

Sustainability

Both the steel and their metallic and organic coatings are free of SVHC (Substances of Very High Concern), in conformity with the requirements of the European REACH regulation.

The insulating core of the panel is injected using a process that does not release HCFC type gases.

Warranty

The HUURRE HI-CT panel has a 25-year warranty for its operational performance and up to 35 years for its coatings. Conditions apply.

Guaranteed and certified quality

HUURRE's Integrated Quality Management System, in accordance with ISO 9001, is certified by AENOR and IQNet (certificate ER-0947/1998).

HUURRE's Environmental Management System, in accordance with ISO 14001, and the Occupational Health and Safety System, in accordance with ISO 45001, are certified by AENOR and IQNet (certificates GA2003/0091 and ES-SST-0035/2010 respectively).

The Compliance Management System, in accordance with ISO 37301:2021, is certified by Advanced Certification Ltd.

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