

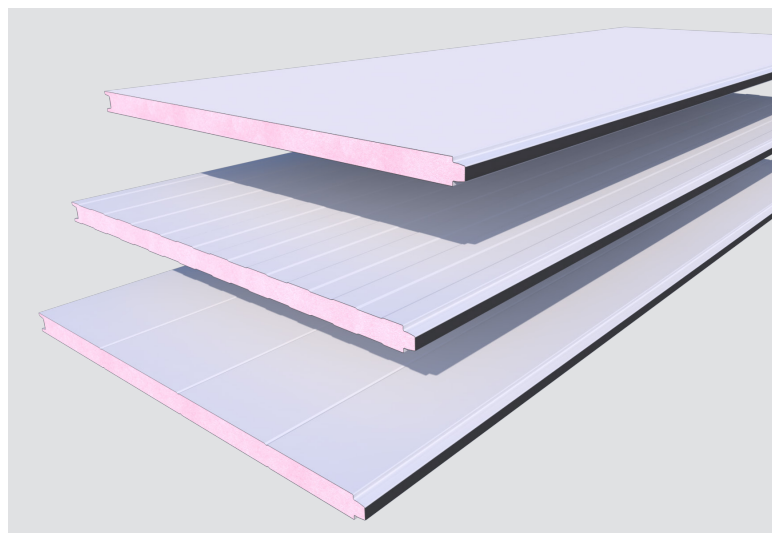
# HI-F40

## Insulating panel

Panel for refurbishment and wall cladding



- ▶ Panel certified by <FM GLOBAL> in accordance with the FM 4880 standard for indoor use (HI-PIRM F40 panel, subject to mounting and coating conditions).
- ▶ Available in four different finishes: microprofiled, standard, flat and plank.
- ▶ Wide range of coatings (PET, polyester and HDX etc) to ensure a high durability.
- ▶ Does not absorb water and maintains its performance throughout its lifetime and is not affected by biological agents.
- ▶ Available in two different joint types: DS / DJ.



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### Description and applications

Sandwich panel with metal faces and rigid, insulating core, designed for **refurbishment** and **wall cladding** applications.

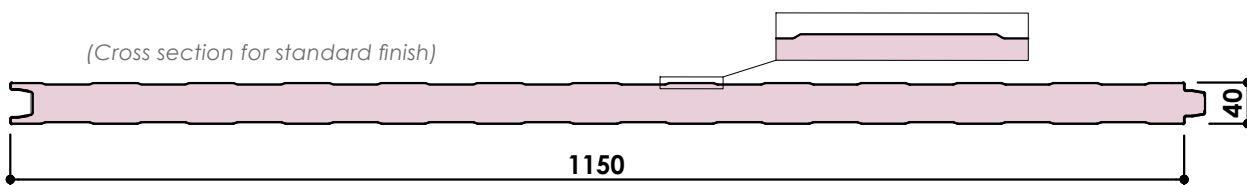
Good **fire performance**, certified by <FM GLOBAL> (HI-PIRM F40 panel). Compliant with standard **FM 4880** for indoor use.

The HI-F40 range of panels is available with two insulating cores: **PIR** (HI-PIR F40) and **PIRM** (HI-PIRM F40).

Available in various **steel thicknesses**, **coatings** and different exterior profiling finishes.



### Dimensions, weight and thermal properties



|   |  |
|---|--|
| <b>Useful width</b>                                   | 1,150 mm (1,120 mm, check availability)                              |
| <b>Manufacturing length</b>                           | 2,0 to 13,5 m<br>13,5 to 18,0 m (special transport)                  |
| <b>Type of joint</b>                                  | DJ   DS  |
| <b>Fresh thermal conductivity</b>                     | 0,020 W/mK   |
| <b>Declared thermal conductivity<sup>1</sup></b>      | 0,,022 W/mK (considering an aged core)                               |
| <b>Insulating core density</b>                        | PIR: 40 (± 5) kg/m <sup>3</sup>   PIRM: 40 (-2/+5) kg/m <sup>3</sup> |
| <b>Thickness</b>                                      | 40 (mm)  |
| <b>Weight<sup>2</sup></b>                             | 9.83 (kg/m <sup>2</sup> )  |
| <b>Thermal transmittance<sup>1,2</sup> (PIR/PIRM)</b> | 0.53 (W/m <sup>2</sup> K)  |
| <b>Thermal resistance<sup>2</sup> (PIR/PIRM)</b>      | 1.94 m <sup>2</sup> K/W)   |

NOTES: (1) Thermal transmittance determined according to UNE-EN 14509:2013 standard, 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) and DJ joint. Consult other options.

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### Components

#### Insulating core

Rigid polyisocyanurate foam (PIR or PIRM), continuous injection by a process that does not release HCFCs.

#### Wall facings

Cold-profiled sheet from a reel of S220GD grade structural steel of certified quality and hot-galvanised according to EN 10346 and EN 10169. Manufactured with three exterior profiling options: standard, plank and flat. Standard sheet thickness (exterior/interior) 0.5/0.5mm. Plank finish is not available in 1,120 mm width panels.

It is essential to respect the outer face (transparent film) and the inner side face (blue film).

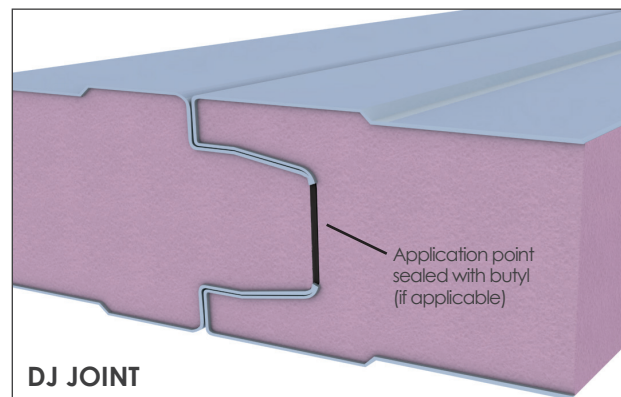
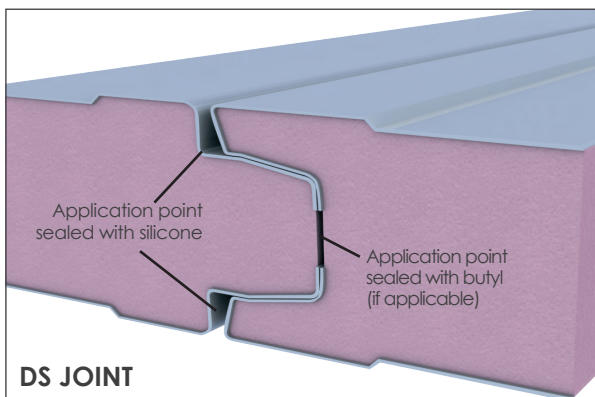
### Leak-tightness and joint types

The HI-F40 panel is available with two types of joints, both with tongue and groove and flexible, closed-cell polyethylene joint.

Both the DJ and DS joints were designed to guarantee the best leak-tightness with quick and easy installation, with the only difference being that

the DS joint is designed to contain an additional length of sealing tape in the exterior, which can be executed when the panel installation is completed.

Both joint types also allow the installation of a butyl sealing inside, to be applied during the assembly stage.



### Mechanical strength and usage tables (m)

The tables below indicate the maximum admissible distance between supports (m) depending on panel thickness (mm) and the characteristic downward load (without weighting) distributed uniformly (daN/m<sup>2</sup>). The tables are calculated according to the European Standard EN 14509:2013 for SLS and ULU. Please consult us for suction loads.

| L(m)           | Pressure loads (daN/m <sup>2</sup> ) |      |      |      |      |      |      |
|----------------|--------------------------------------|------|------|------|------|------|------|
|                | 50                                   | 75   | 100  | 125  | 150  | 175  | 200  |
| Two supports   | 3,92                                 | 3,15 | 2,36 | 1,89 | 1,57 | 1,35 | 1,18 |
| Three supports | 3,56                                 | 3,08 | 2,36 | 1,89 | 1,58 | 1,35 | 1,18 |

1 daN/m<sup>2</sup> ≈ 1 kp/m<sup>2</sup>

NOTES: Support width: 50mm. Consult HUURRE for other support widths.  
Tables for light coloured panels. Consult for dark panel.  
Minimum external temperature considered -10°C.

# HI-F40 Insulating panel

## Panel for refurbishment and wall cladding



### Recubrimientos disponibles

Table of coatings choice to ensure the maximum durability of the panel. CPI1 and RC1 classifications considered suitable for healthy environments, and CPI5 and RC5 suitable for very aggressive environments.

|                            | Outdoor environment     |                  |        |                     |                       |            | Indoor environment         |                             |              |   |                                      |                 |
|----------------------------|-------------------------|------------------|--------|---------------------|-----------------------|------------|----------------------------|-----------------------------|--------------|---|--------------------------------------|-----------------|
|                            | Rural without pollution | Urban/Industrial |        | Marine              |                       | Resistance |                            | Non-aggressive environments |              | Aggressive and/or very humid environments | Resistance indoor corrosion category |                 |
|                            |                         | Moderate         | Severe | Between 3 and 20 km | < 3 km <sup>(1)</sup> | Mixed      | Outdoor corrosion category | UV                          | Low humidity |   |                                      | Medium humidity |
| <b>E5001</b>               | ⊗                       | ⊗                | ⊗      | ⊗                   | ⊗                     | ⊗          | NA                         | NA                          | ✓            | ⊗   | ⊗                                    | ⊕               |
| <b>Polyester 25 μ</b>      | ✓                       | ✓                | ⊕      | ⊕                   | ⊗                     | ⊗          | ⊕                          | ⊕                           | ✓            | ✓   | Ai3 <sup>2</sup>                     | CPI2            |
| <b>Polyester plus 25 μ</b> | ✓                       | ✓                | ⊕      | ✓                   | ⊗                     | ⊗          | RC3                        | RUV2                        | ✓            | ✓   | Ai3                                  | CPI3            |
| <b>PVDF 35 μ</b>           | ✓                       | ✓                | ⊕      | ✓                   | ⊕                     | ⊕          | RC4                        | RUV4                        | ✓            | ✓   | Ai3                                  | CPI4            |
| <b>HDS 35 μ</b>            | ✓                       | ✓                | ⊕      | ✓                   | ⊕                     | ⊕          | RC4                        | RUV4                        | ✓            | ✓   | Ai3                                  | CPI4            |
| <b>HDX 55 μ</b>            | ✓                       | ✓                | ✓      | ✓                   | ✓                     | ⊕          | RC5                        | RUV4                        | ✓            | ✓   | Ai3                                  | CPI4            |
| <b>PET 50 μ</b>            | ⊗                       | ⊗                | ⊗      | ⊗                   | ⊗                     | ⊗          | NA                         | NA                          | ✓            | ✓   | Ai5                                  | CPI5            |

✓ Suitable coating    ⊗ Unsuitable coating    ⊕ Check with HUURRE IBÉRICA    (1) Please contact us for distances < 300 m    (2) Check conditions  
(NA) Not applicable. For other coatings, consult our Technical Department.

### Reaction to fire

#### Fire reaction classification

##### EUROCLASS B-s1,d0

**B:** Very limited contribution to fire and will not lead to flashover<sup>1</sup>

**s1:** Little or no smoke production

**d0:** No flaming droplets / particles

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

Determined reaction to fire: HI-PIR F40 in accordance with the UNE-EN 13501-1:2019 standard. HI-PIRM F40 in accordance with the UNE-EN 13501-1:2017+A1:2010 standard.

#### Reaction to fire according to FM APPROVALS standards (only HI-PIRM F panel)



**FM 4880 Class 1\*** Fire resistance of construction panels or interior finishing materials.

The FM 4880 test program ensures good fire performance in partition walls and interior ceilings with the HI-PIRM F40 panel, of any height, with the highest fire protection requirements.

(\*) Subject to assembly conditions and coating conditions. Consult with our technical department. Tested under the name HI-PIRM F.

### Energy loss through the enclosure

The following table gives the energy losses through the enclosure (W/m<sup>2</sup>), depending on the temperature gradient (ΔT) between its two faces in °C. U= 0.53 W/m<sup>2</sup>°C.

| ΔT (°C)                           | 10   | 15   | 20    | 25    | 30    | 35    | 40    | 45    | 50    | 55    | 60    | 65    | 70    | 75    | 80    |
|-----------------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Pérdidas (W/m<sup>2</sup>)</b> | 5.32 | 7.98 | 10.64 | 13.30 | 15.96 | 18.62 | 21.28 | 23.94 | 26.60 | 29.26 | 31.92 | 34.58 | 37.24 | 39.90 | 42.56 |

# HI-F40 Insulating panel

## Panel for refurbishment and wall cladding




### Manufacturing quality and standards

#### Guaranteed and certified quality

The HUURRE Comprehensive Quality Management System, which is in accordance to the ISO 9001 standard, is audited and certified by AENOR and IQNet (ER-0947/1998 certification).

#### HI-PIR F40 and HI-PIRM F40 panel certifications

 CE marking according to EN 14509:2013 standard.

 Product certified with the "N" quality assurance stamp of AENOR. (Certificate 020/003499 for PIR and 020/003500 for PIRM)<sup>1</sup>.

 Avis Technique d'Application CSTB - HI-F 2/16-1770<sup>1</sup>.

(1) Tested under the name of HI-F.

#### HI-PIRM F40 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

#### Resistencia a agentes biológicos

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

Therefore, they can be used for applications that require a high degree of hygiene and health (agri-food sector, laboratories, etc.).

#### Water absorption

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

#### Warranty

The HUURRE HI-F40 panel has a warranty of up to 25 years for its functional features and up to 35 years for its coatings. Conditions apply.

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#### 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.

The HUURRE Environmental Management System (ISO 14001) and the Health and Safety in the Workplace System (ISO 45001) are certified by AENOR and IQNet (certifications GA-2003/0091 y ES-SST-0035/2010 respectively).

#### Environmental Product Declaration



The HI-PIRM F40 panel has an environmental product declaration in accordance with European standards ISO 14025 and UNE-EN 15804:2012 + A1:2013.

