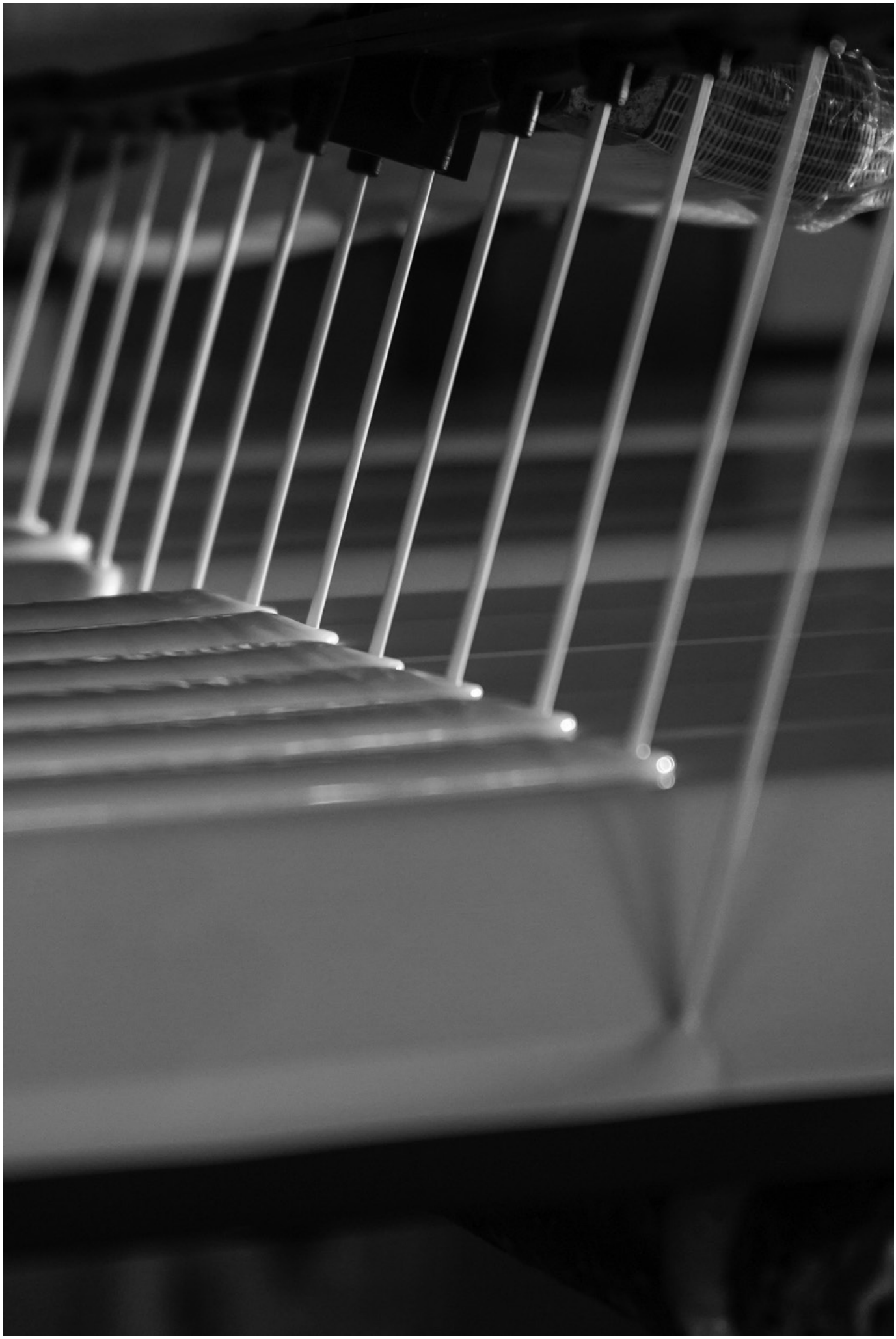
ELASTRON
STEEL SERVICE CENTERS

ECOPANEL® FL
Cold rooms

CORE
PANELS



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Introduction

A specialized area of construction buildings covered with thermal insulated panels is that of the production storage, preservation, cold/freezing rooms for food and other sensitive products.

Nowadays, the need for transportation and distribution of these products over long distances is getting greater.

For this reason, the European directive for the hygiene and security of food, which Greece has instituted as well, determines the specifications that must be met for the production, storage, preservation and freezing areas of food and other sensitive products. In response to the specific demands of these constructions, ELASTRON S.A. produces the range of thermal insulated panels "ECOPANEL® FL".

Description

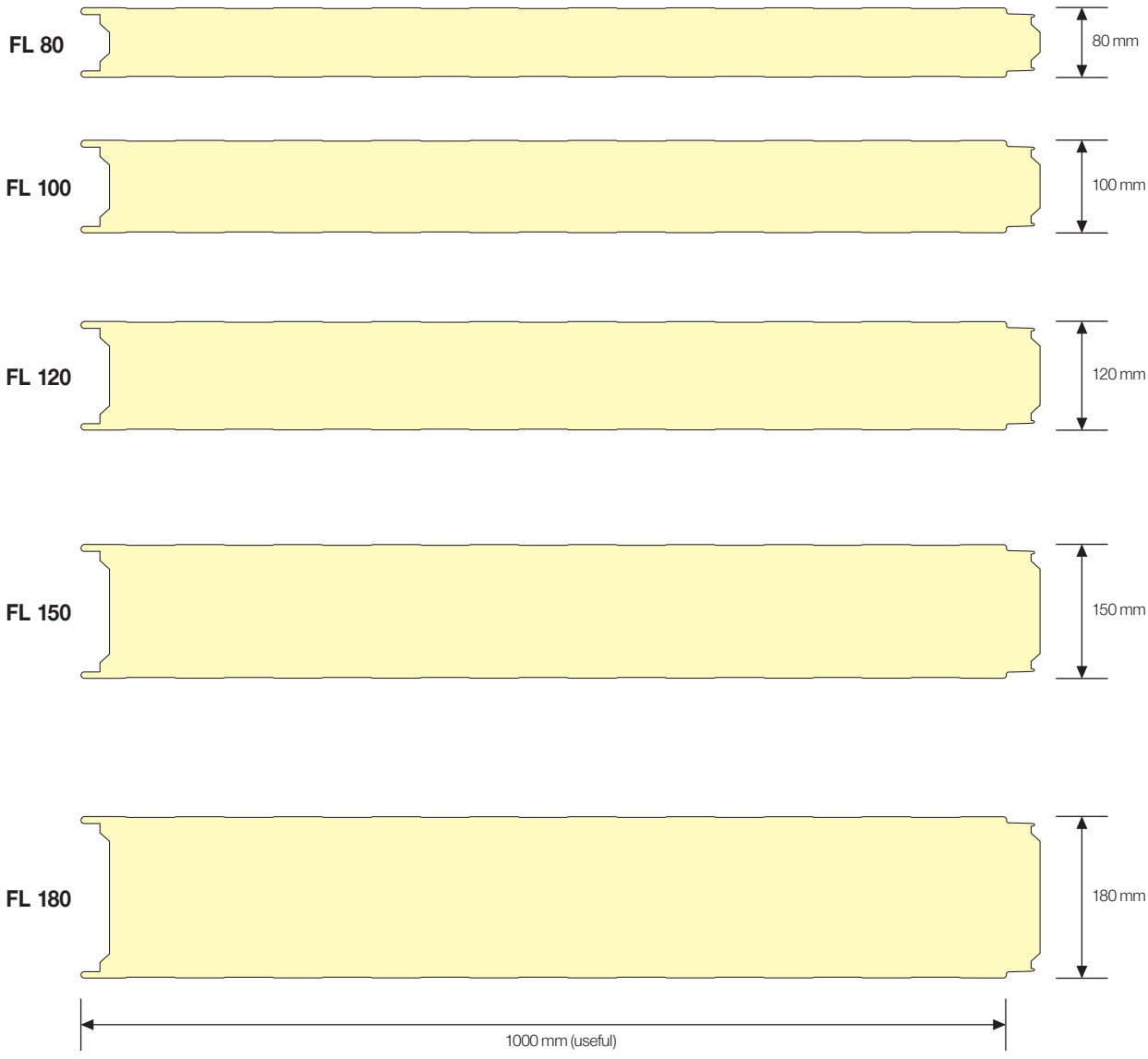
ECOPANEL® FL are designed to meet the special needs and growing demands of the areas for which they are destined.

Particular attention has been given to the design of their joints as well as to the characteristics of their components such as the polyurethane insulation core and the steel sheet quality.

They completely meet the current European specifications that refer to the hygiene and protection of food in the areas of its production, storage, preservation and freezing.

The panels are produced with foam core of polyurethane (PUR) or polyisocyanurate (PIR) which gives them certified class flammability **B-s2,d0 and fire resistance EI-30** in accordance with the European Standard EN 14509 and bear CE mark.

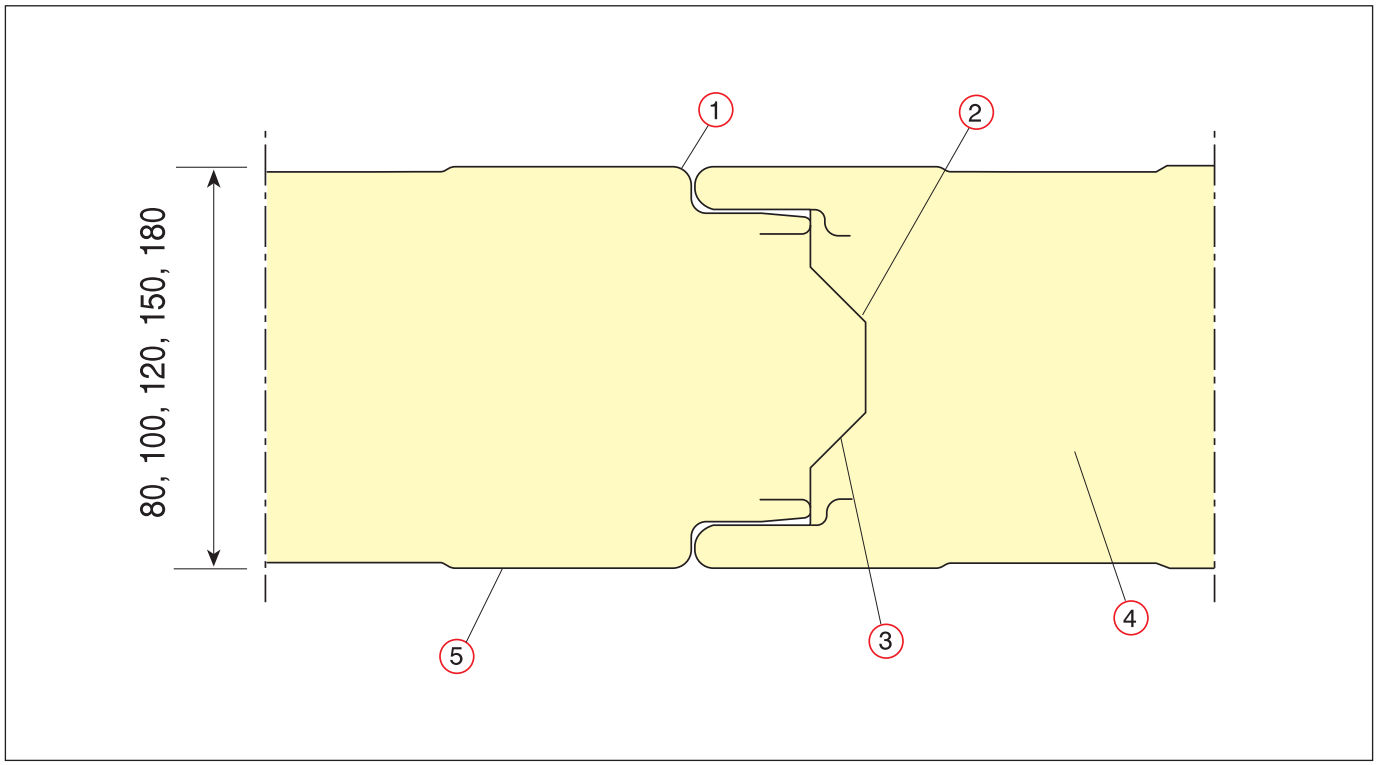
ECOPANEL® FL



Type of panel	Sheet thickness (mm)		Thickness D (mm)	Weight (kg/m²)	Heat transmission coefficient U (W/m² * K)	Maximum production length (m)
	Outer	inner				
FL 80	0,45	0,45	80	8,99	0,26	16,00
FL 100	0,45	0,45	100	10,89	0,21	
FL 120	0,45	0,45	120	11,65	0,18	
FL 150	0,45	0,45	150	12,79	0,14	
FL 180	0,45	0,45	180	13,93	0,12	

Thermal conductivity factor: «λ» = 0,02 W/m*K

ECOPANEL® FL



Special technical characteristics

1 External joints suitable for areas of high sanitary requirements that meet the specification of “HCCP”.

2 Specially shaped internal joints to ensure maximum high thermal insulation performance .

3 Removable - before installation - paper strips on both sides of the joint for better foam contact and avoidance of heat loss.

4 Polyurethane foam PUR or PIR of high thermal capability CFC Free & HCFC Free.

5 Steel sheet shape slightly corrugated or flat in both sides.

Panel thickness selection		
Room’s use	**Thickness D (mm)**	**Operating temperature (°C)**
Chill rooms	FL 80	from +10 until 0
Chill rooms	FL 100	from +6 until -6
Chill rooms	FL 120	from 0 until -15
Freezer rooms	FL 150	from -10 until -20
Deep freezer rooms	FL 180	from -15 until -45

Technical specifications

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Metal sheets

TYPE
Steel, stainless steel (upon request).

STANDARD TYPE
Steel S220GD - S320GD (EN 10346).

METAL SHEET PROTECTION
Hot dip galvanizing Z100 (100gr/m^2) - Z275 (275gr/m^2)
(EN 10346).

BASIC TYPE OF COATING
Polyester paint (Polyester - SP), thickness 25 mμ (EN 10169). PVC Food-Safe thickness 110μm - 120μm (sanitary type for inner spaces).

OTHER COATING OPTIONS (upon request)
PVDF / Special Coatings.

Polyurethane (PUR) / polyisocyanurate (PIR) foam

PHYSICAL FOAM CHARACTERISTICS
Has no smell, chemically neutral, mould free, not affected by moisture, no hygroscopic.

FOAM SWELLING
Through blowing agents safe for the environment and the ozone layer (CFC Free & HCFC Free).

Thermal insulated panel ECOPANEL®

FOAM DENSITY
40 ± 2 Kgr/m^3.

FIRE CLASS
Foam PUR = F / Foam PIR = B-s2,d0 (EN 13501-1).

FIRE RESISTANCE
Foam PIR EI-30 (EN 13501-1-2)

CLOSED CELLS PERCENTAGE
> 90%.

TOLERANCES
Cut to length: ± 5 - 10 mm (depending on panel's length).
Width: 2 mm
Thickness: 2 mm (D≤100 mm) - 2% (D>100 mm)
End square: 6%.

Metal sheet coating qualities

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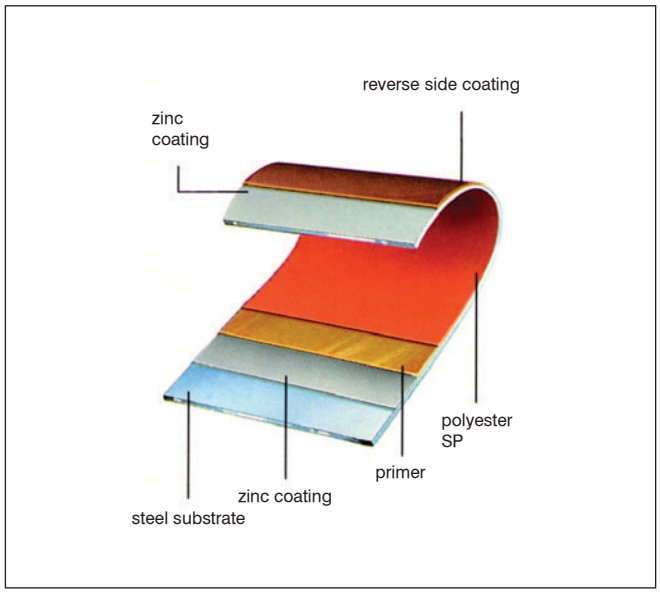
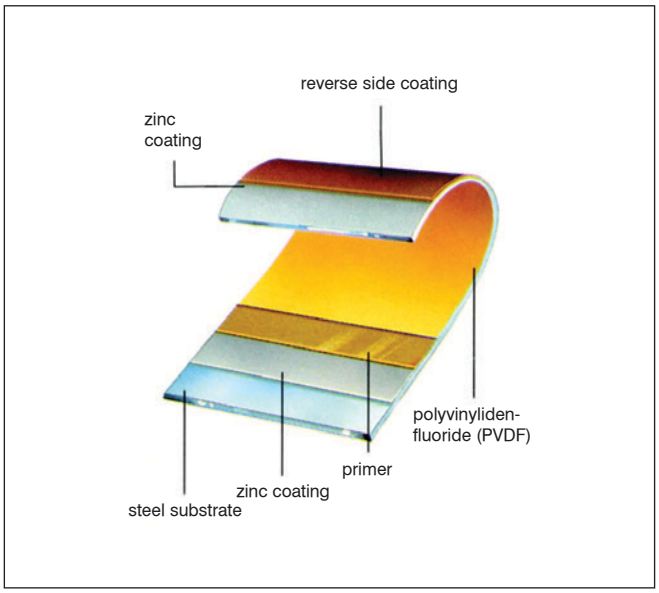


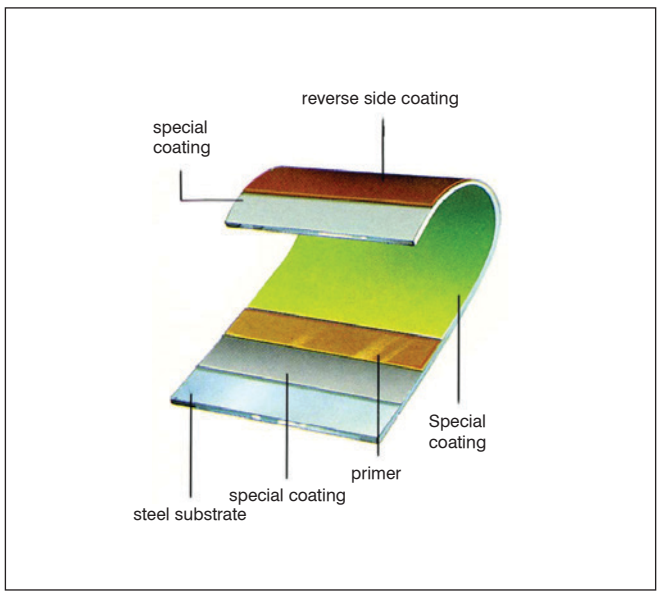
Polyester (SP)

- Anti-corrosion protection.
- Suitable for normal environmental conditions (non-polluting).
- Total coating thickness 25µm.



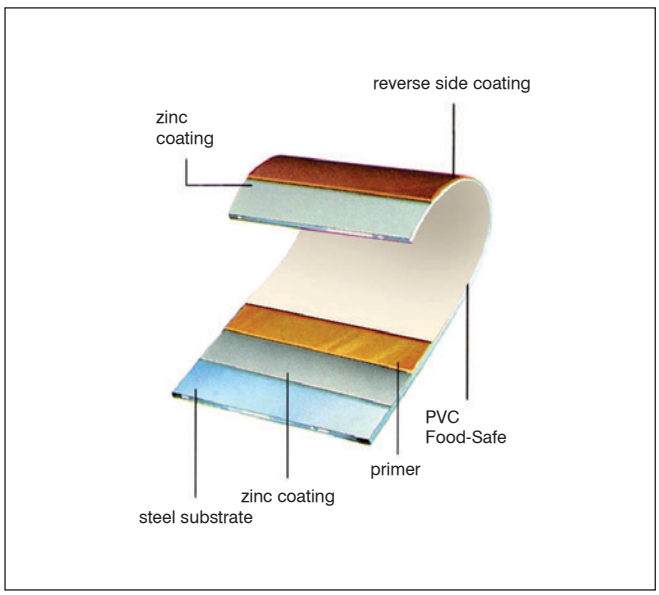
Polyvinylidene-Fluoride (PVDF)

- Increased anti-corrosion protection.
- Increased UV protection.
- Total coating thickness 25µm - 50µm.



Special Coatings

- Special coatings upon request.
- Increased anti-corrosion protection.
- Increased UV protection.
- Total coating thickness 35µm - 60µm.



PVC Food-Safe

- Special coating for areas of controlled atmosphere, food processing and storage, laboratories (pharmaceutical, microbiological, etc.).
- Nontoxic, chemical free surface, anti-bacterial coating.
- Only for internal use (not exposed to UV radiation).
- Total coating thickness 110µm - 120µm.

Special sanitary fitting

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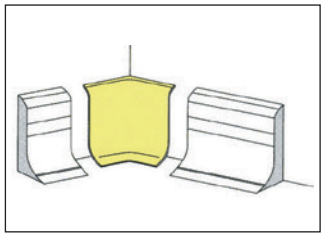
Apart from the flashings made of coated, galvanized steel sheets of the same quality specification as the sheets of ECOPANEL® FL, ELASTRON S.A. offers a complete range of sanitary flashings.

Those sanitary flashings are realized with thermoplastic resins of first quality in accordance with the European specifications.

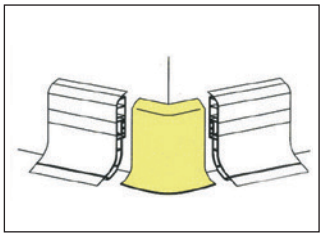
They are used for the finish of interior edges (such as vertical and horizontal corners, skirting board, etc.) in areas of the production, preservation and maturation of food.

They are also necessary in areas of high sanitary and cleanliness demands such as hospitals, clinics, laboratories, congregation centers etc.

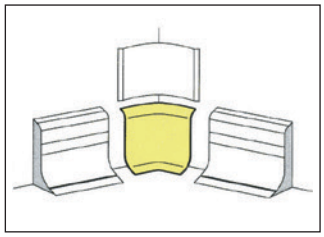
They are inexpensive, strong, ergonomic and functional. Their assembly is simple and steady with hidden fixings.



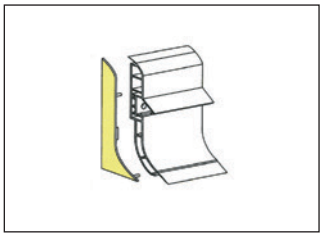
Internal skirt corner.



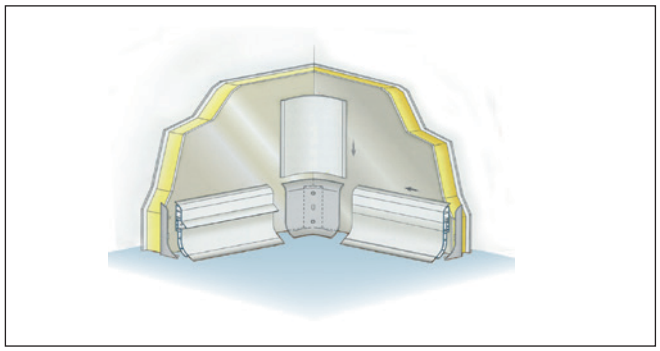
External skirt corner.



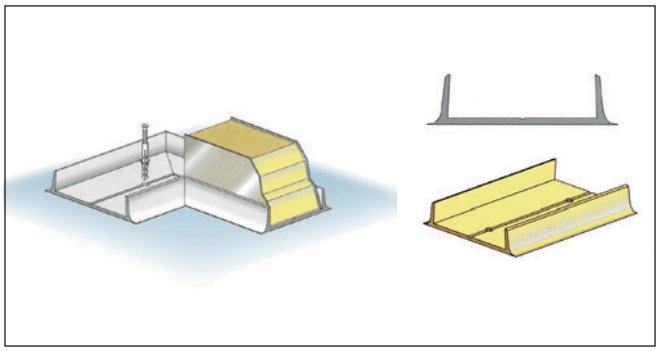
Skirting and vertical corner profile.



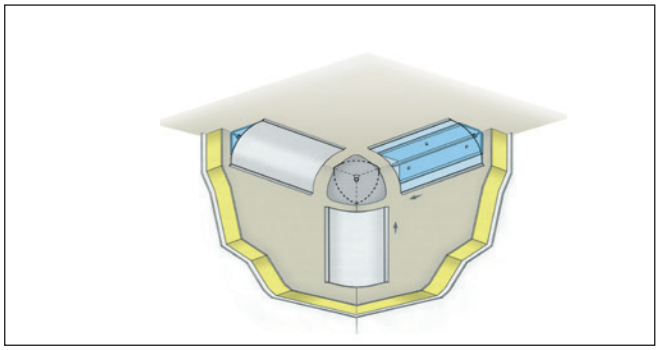
Skirt.



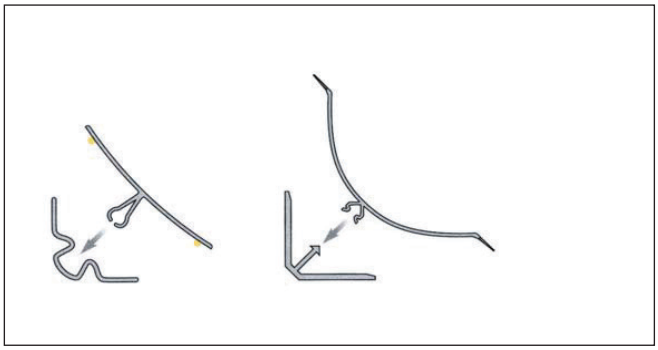
Skirting with rounded plinth profile and corner profile.



U channel profile.



Internal corners and coving profile.



Rounded corners with backing support.

Assembly details

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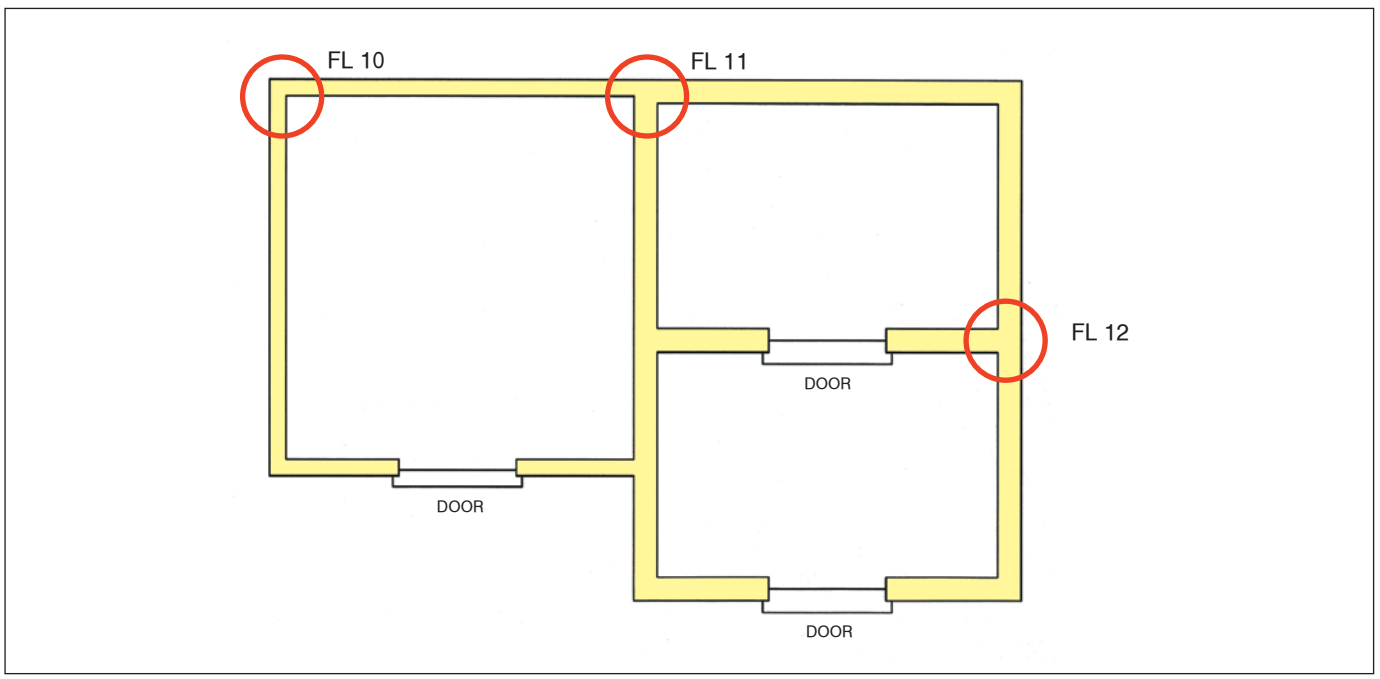
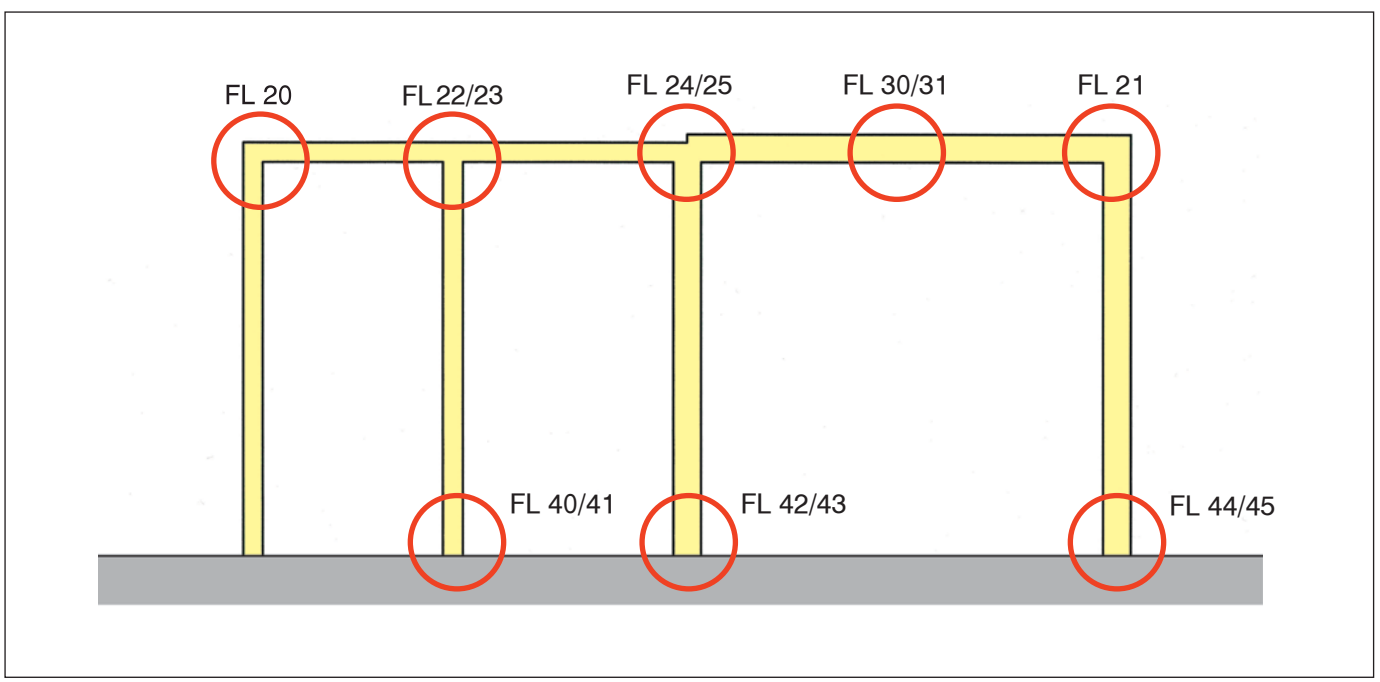
The basic assembly details of ECOPANEL® FL are mentioned in the below sketches of freezer chambers. It is clear that the series of the construction drawings that follow is impossible to satisfy particular requirements of each project.

The technical department of ELASTRON S.A. is always at the disposal of contractors and designers to resolve complex application details that may arise.

Typical plan

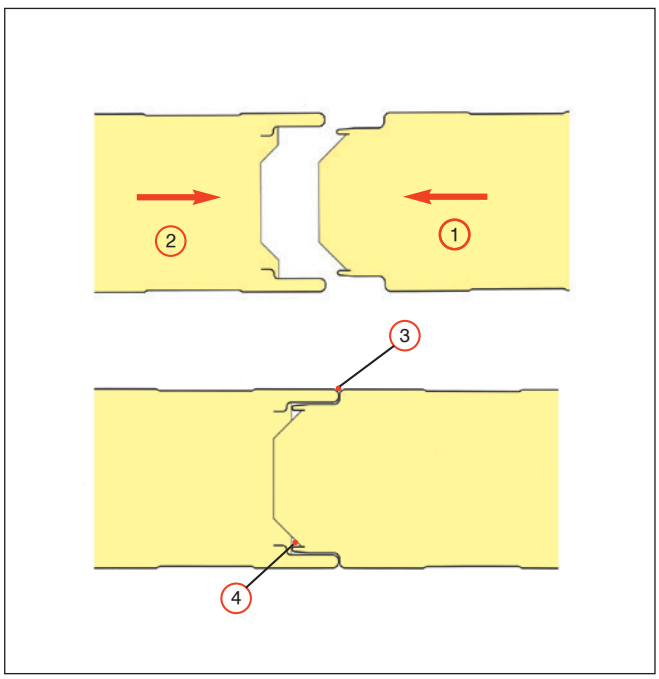


Typical section



Assembly details

Jointing Assembly (horizontal section)



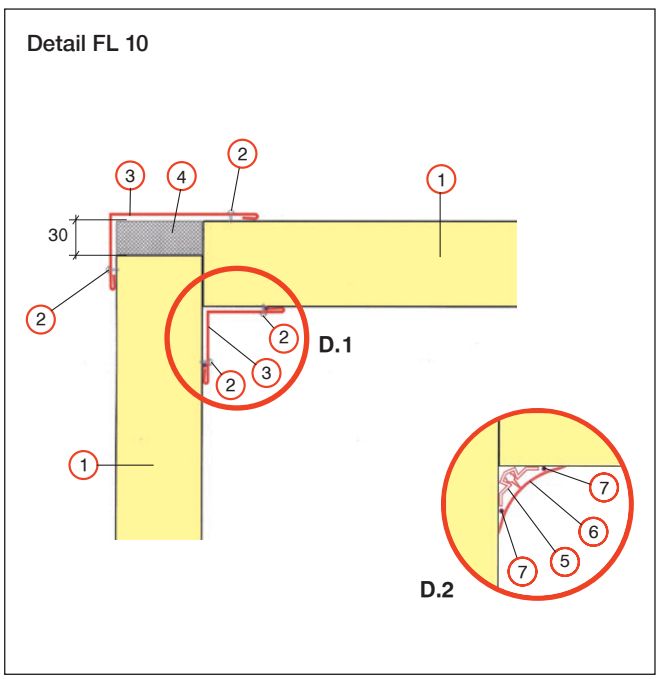
1 ECOPANEL® FL (male).

2 ECOPANEL® FL (female).

3 Option: silicone finish after assembling.

4 Internal sealant mastic silicone type.

Wall to wall assembly (horizontal section)



1 ECOPANEL® FL.

2 Rivet.

3 Coated steel flashing.

4 Polyurethane injection.

5 Angle support.

6 Sanitary angle profile.

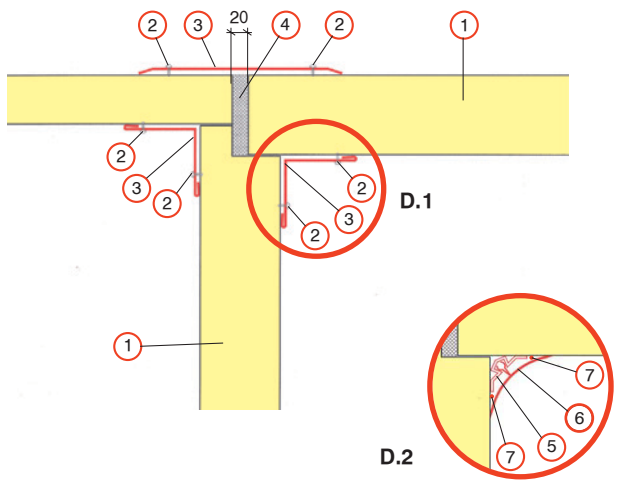
7 Silicone sealant.

Assembly details

CORE

Partition wall to external walls of different width assembly (horizontal section)

Detail FL 11



1 ECOPANEL® FL.

2 Rivet.

3 Coated steel flashing.

4 Polyurethane injection.

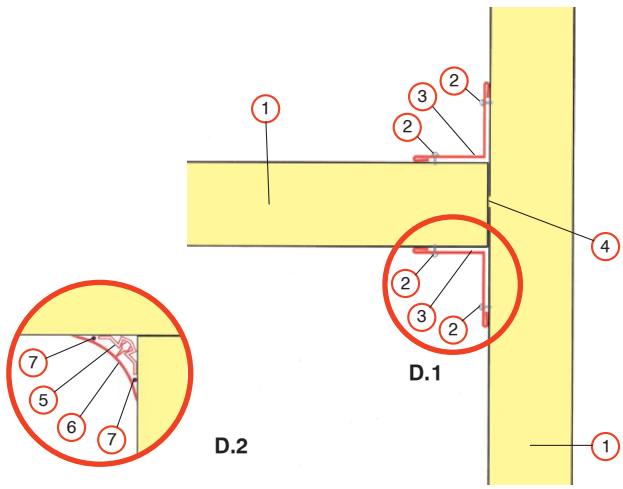
5 Angle support.

6 Sanitary angle profile.

7 Silicone sealant.

Partition wall to external walls assembly (horizontal section)

Detail FL 12



1 ECOPANEL® FL.

2 Rivet.

3 Coated steel flashing.

4 Thermal break (Steel sheet cutting).

5 Angle support.

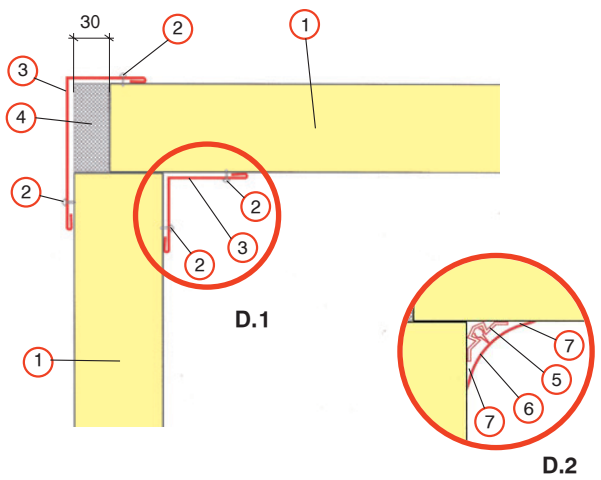
6 Sanitary angle profile.

7 Silicone sealant.

Assembly details

External wall to ceiling assembly (vertical section)

Detail FL 20



1 ECOPANEL® FL.

2 Rivet.

3 Coated steel flashing.

4 Polyurethane injection.

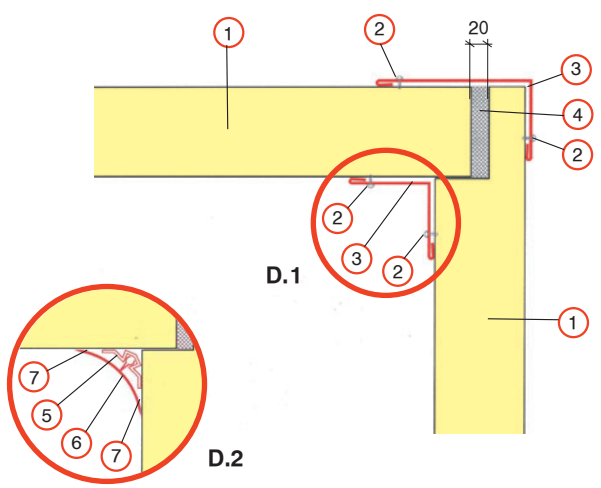
5 Angle support.

6 Sanitary angle profile.

7 Silicone sealant.

External wall to ceiling assembly (vertical section)

Detail FL 21



1 ECOPANEL® FL.

2 Rivet.

3 Coated steel flashing.

4 Polyurethane injection.

5 Angle support.

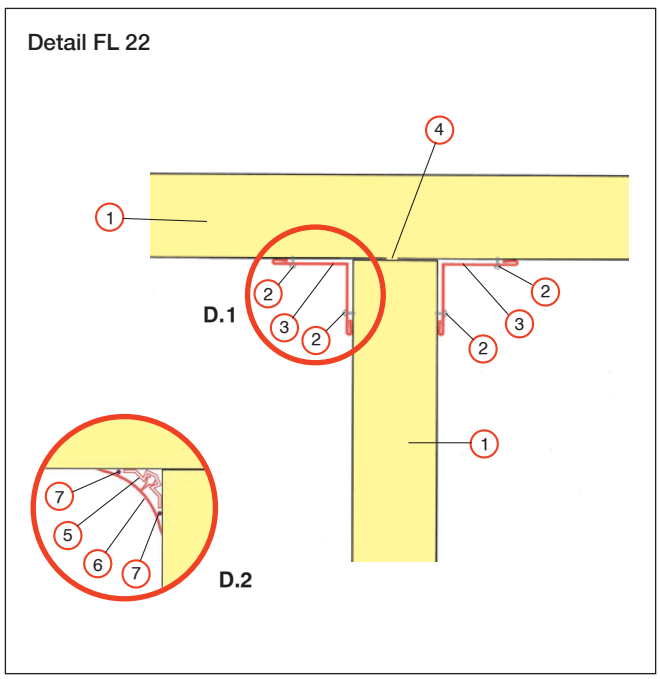
6 Sanitary angle profile.

7 Silicone sealant.

Assembly details

CORE

Partition wall to ceiling assembly (vertical section)



1 ECOPANEL® FL.

2 Rivet.

3 Coated steel flashing.

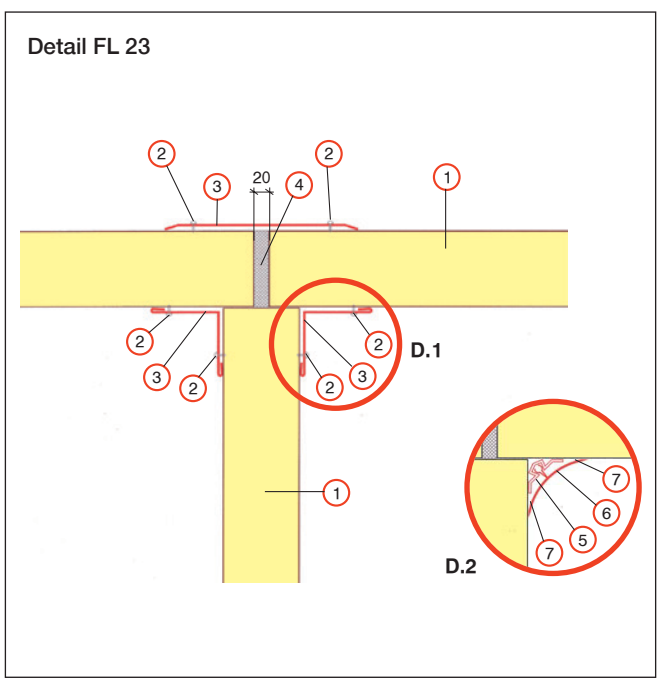
4 Thermal break
(Steel sheet cutting).

5 Angle support.

6 Sanitary angle profile.

7 Silicone sealant.

Ceiling joint on partition wall (vertical section)



1 ECOPANEL® FL.

2 Rivet.

3 Coated steel flashing.

4 Polyurethane injection.

5 Angle support.

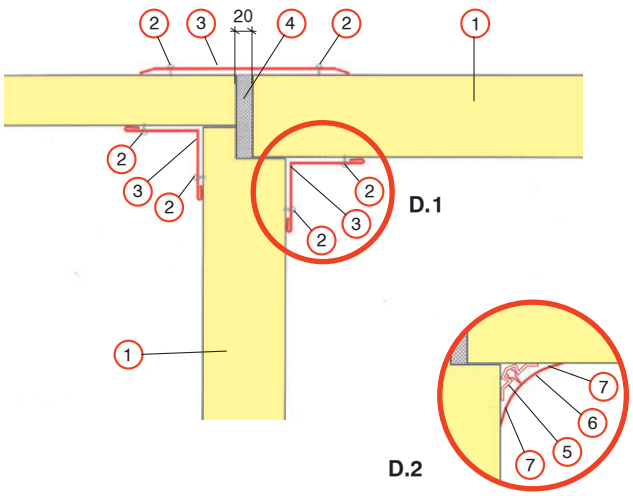
6 Sanitary angle profile.

7 Silicone sealant.

Assembly details

Partition to ceiling assembly with thickness change (vertical section)

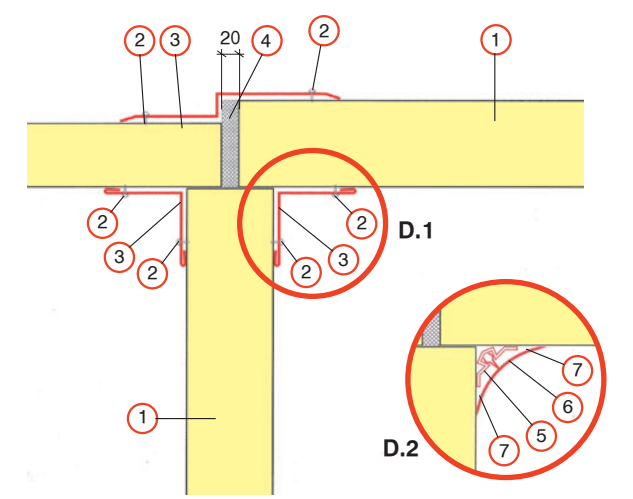
Detail FL 24



1 ECOPANEL® FL.
2 Rivet.
3 Coated steel flashing.
4 Polyurethane injection.
5 Angle support.
6 Sanitary angle profile.
7 Silicone sealant.

Partition to ceiling assembly with thickness change (vertical section)

Detail FL 25



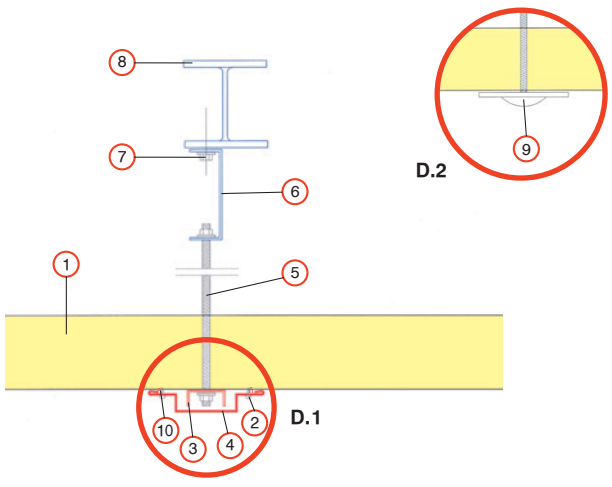
1 ECOPANEL® FL.
2 Rivet.
3 Coated steel flashing.
4 Polyurethane injection.
5 Angle support.
6 Sanitary angle profile.
7 Silicone sealant.

Assembly details

CORE

Ceiling support (vertical section)

Detail FL 30



1 ECOPANEL® FL.

2 Rivet.

3 Supporting galvanized U profile 1 - 2 mm.

4 Coated steel flashing.

5 Teflon screw rod.

6 Galvanized U profile 1 - 2 mm.

7 Screw.

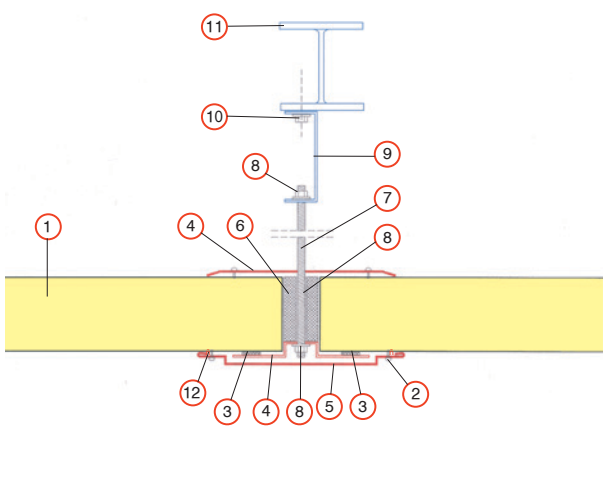
8 Truss.

9 Teflon washered screw.

10 Silicone sealant.

Injected joint ceiling support (vertical section)

Detail FL 31



1 ECOPANEL® FL.

2 Rivet.

3 Sealing tape.

4 Supporting galvanized Ω profile 1 - 2 mm.

5 Coated steel flashing.

6 Polyurethane injection.

7 Teflon screw rod.

8 Nut.

9 Galvanized U profile 1 - 2 mm.

10 Screw.

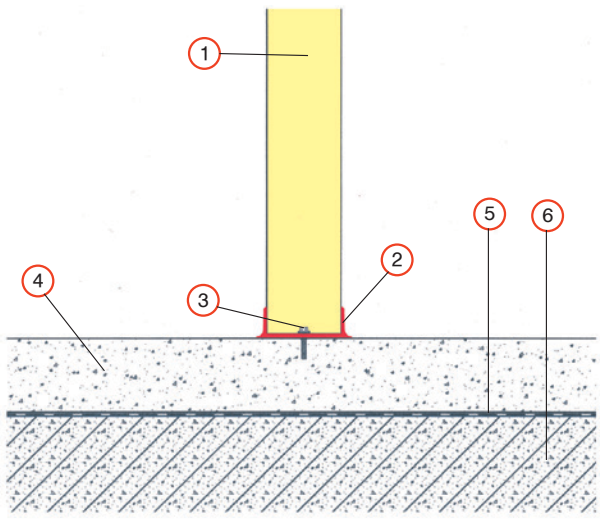
11 Truss.

12 Silicone sealant.

Assembly details

Partition wall to floor joint (vertical section)

Detail FL 40



1 ECOPANEL® FL.

2 Internal partition guide.

3 Screw support with Upat in at spaces ~ 600 mm.

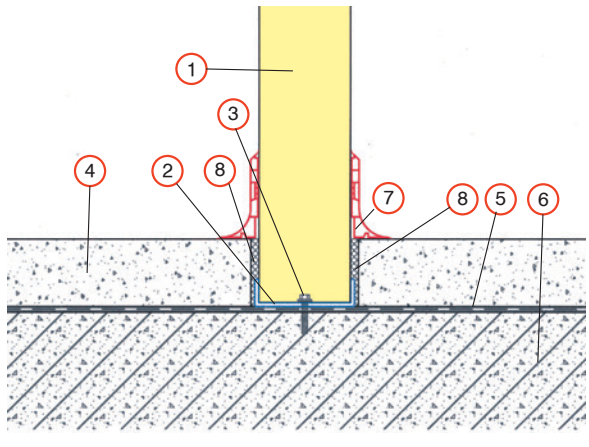
4 Finished floor.

5 Vapour - seal.

6 Concrete floor.

Partition wall to floor assembly (vertical section)

Detail FL 41



1 ECOPANEL® FL.

2 Galvanized U profile 1 - 2 mm.

3 Screw support with Upat in at spaces ~ 600 mm.

4 Finished floor.

5 Vapour - seal.

6 Concrete floor.

7 Sanitary skirt.

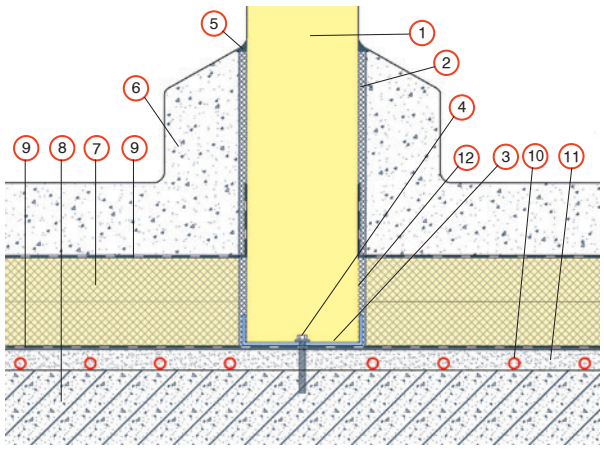
8 Thermal insulation.

Assembly details

CORE

Wall panel bottom on floor insulation (vertical section)

Detail FL 42



1 ECOPANEL® FL.

2 Thermal insulation.

3 Galvanized U profile 1 - 2 mm.

4 Screw support with Upat in at spaces ~ 600 mm.

5 Silicone sealant.

6 Finished floor.

7 Floor insulation.

8 Concrete floor (heated or ventilated).

9 Vapour - seal.

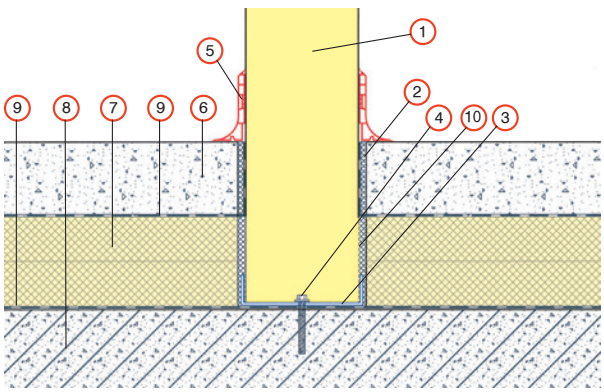
10 Heater elements.

11 Sand cement screed.

12 Thermal break (steel sheet cutting).

Wall panel bottom on floor insulation (vertical section)

Detail FL 43



1 ECOPANEL® FL.

2 Thermal insulation.

3 Galvanized U profile 1 - 2 mm.

4 Screw support with Upat in at spaces ~ 600 mm.

5 Sanitary skirt.

6 Finished floor.

7 Floor insulation.

8 Concrete floor (heated or ventilated).

9 Vapour - seal.

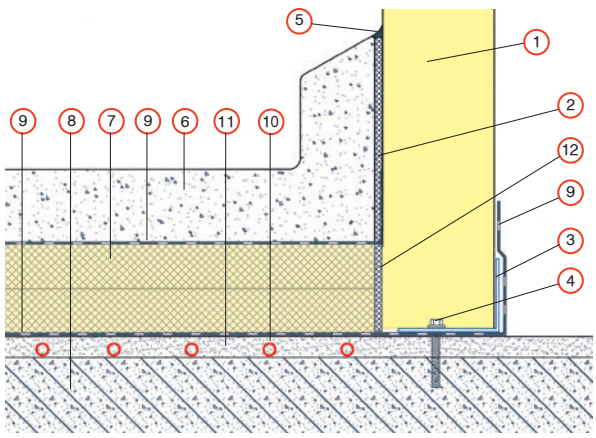
10 Thermal break (steel sheet cutting).

Assembly details

CORE

Partition wall bottom on floor insulation (vertical section)

Detail FL 44



1 ECOPANEL® FL.

2 Thermal insulation.

3 Galvanized U or L profile 1 - 2 mm.

4 Screw support with Upat in at spaces ~ 600 mm.

5 Silicone sealant.

6 Finished floor.

7 Floor insulation.

8 Concrete floor (heated or ventilated).

9 Vapour - seal.

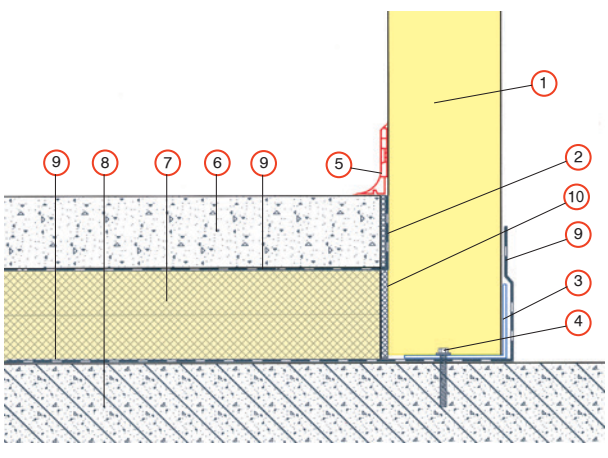
10 Heater elements.

11 Sand cement screed.

12 Thermal break (Steel sheet cutting).

Wall panel bottom on floor insulation (vertical section)

Detail FL 45



1 ECOPANEL® FL.

2 Thermal insulation.

3 Galvanized U or L profile 1 - 2 mm.

4 Screw support with Upat in at spaces ~ 600 mm.

5 Sanitary skirt.

6 Finished floor.

7 Floor insulation.

8 Concrete floor (heated or ventilated).

9 Vapour - seal.

10 Thermal break (Steel sheet cutting).

The information, descriptions, procedures, specifications, and dimensions contained in this catalogue are true and valid until the date of issue. ELASTRON S.A. STEEL SERVICE CENTERS reserves the right to make changes to the design, and the materials of its products for their improvement or removal, without prior notice. Although ELASTRON S.A. STEEL SERVICE CENTERS has made every effort to ensure that the information, technical instructions and data presented in this catalogue are accurate, nevertheless it remains for the user (reader) the obligation to verify whether the above are suitable to cover any of its needs. The company is not liable and is not responsible for any technical or typographical errors that cannot be predicted or have occurred unintentionally or due to force majeure. Especially for the elaboration of particular mechanical engineering studies, we ask you to contact the technical department of our company, in order to receive an updated copy of our catalogue, and to provide you with information and clarifications regarding the data listed in it.

October 2020

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