Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Metal ceiling systems. Aluminium

from

THU Perfil S.L.U.

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of a single product from a manufactured
EPD registration number:	EPD-IES-0025192:001
Version date:	2025-10-24
Validity date:	2030-10-24
	An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com

EPD of multiple products, based on worst-case results.

This EPD covers all the aluminium ceiling systems listed below:

1. **Sicilia CLIP-IN** (perforated and non-perforated model)
2. **Modena T24** (perforated and non-perforated model)
3. **Parma T15** (perforated and non-perforated model)
4. **Roma** (perforated and non-perforated model)
5. **Murano** (perforated and non-perforated model)
6. **Veneto** (non-perforated model, available in two sizes)
7. **Treviso** (perforated and non-perforated model)
8. **Venezia** (perforated and non-perforated model)
9. **Verona** (non-perforated model, available in two sizes)
10. **Italia** (non-perforated model)
11. **Milan** grid (non-perforated model, available in two sizes)

GENERAL INFORMATION

Programme Information	
Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): *Construction products, 2019:14 version 2.0.1.*
PCR review was conducted by: *The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com. The review panel may be contacted via support@environdec.com. Chairs of the PCR review: Rober Rouwette (chair), Noa Meron (co-chair).*
c-PCR, if applicable: *N/A*

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ **Individual EPD verification without a pre-verified LCA/EPD tool** Third party verifier: CERTINALIA, Anardi Area Aldea, 5, 20730 Azpeitia, Guipuzkoa (Spain). Accredited by: ENAC nº125/C-PR283. Auditor: Cristina Gazulla Santos.
Procedure for follow-up of data during EPD validity involves third party verifier: ☒ Yes ☐ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: THU Perfil S.L
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Company information

THU Perfil (hereinafter abbreviated as THU) is a leading Spanish company dedicated to the development and manufacture of metal ceiling systems and profiles for drywall construction. With over 35 years of experience, THU has positioned itself as a trusted partner in the construction and architecture sectors, offering high-quality, durable, and aesthetically versatile solutions. The company specializes in suspended ceilings, T-profiles, structural profiles, and customized finishes, combining functionality with modern design. Their main activity is performed in their headquarters in Ribarroja de Turia, Valencia (Spain).

Committed to innovation and continuous improvement, THU integrates sustainability and efficiency into its production processes. Its products are widely used in commercial, industrial, and public spaces across Europe and beyond. With a customer-focused approach, THU offers technical advice, adaptable solutions, and a strong logistics network to ensure reliable service and project success.

THU operates under a Quality Management System based on the ISO 9001 standard, which has been implemented in the company since 2006. In addition, THU holds several quality certifications, including AENOR and NF marks. All its products are certified by accredited laboratories to ensure compliance with the most rigorous UNE standards, allowing them to carry the CE marking. Combined with excellent customer service and highly competitive pricing, this guarantees maximum client satisfaction.

From an environmental perspective, THU is committed to minimizing its ecological footprint. Its products are designed using 100% recyclable materials such as steel and aluminium. Furthermore, a proportion of recycled material is used during the manufacturing process. All production activities are powered by electricity from 100% renewable energy sources.

All THU ceiling products are classified in accordance with the UNE-EN 13501-1 standard for fire behaviour. Pre-painted or lacquered products achieve a Euroclass A2-s1, d0 rating (non-combustible), while non-coated versions are classified as Euroclass A1, indicating no contribution to fire development. Regarding quality, THU holds several key certifications that support continuous improvement and ensure customer satisfaction, both of them audited by Bureau Veritas:

- **ISO 9001:2015 Quality Management System.**
- **ISO 14001:2015 Environmental Management System.**

THU ceilings offer high levels of sound insulation and excellent acoustic absorption, resulting in optimal reverberation times for a wide range of spaces and applications. All ceiling systems are designed and manufactured according to the UNE-EN 13964 standard.

Product information

Among the wide variety of products manufactured by THU, the Environmental Product Declaration (EPD) covers all the ceiling aluminium systems listed below:

Panel model	Available sizes (m)	Thickness (mm)	Panel weight range (kg/m^2)	Perforated	Non-perforated	Acoustic fleece (only in perforated models)
Sicilia CLIP-IN	0.6x0.6	0.55	1.83	X	X	X
Modena T24	0.6x0.6	0.55	1.56	X	X	X
Parma T15	0.6x0.6	0.55	1.62	X	X	X
Roma	0.3x1.2	0.55	2.00	X	X	X
Murano	0.6x0.6	0.55	2.06	X	X	X
Veneto	0.085x1 0.1x1	0.45	1.57-1.69	Not available	X*	No applicable
Treviso	0.3x1.2	0.45	1.54	X	X	No applicable
Venezia	0.2x1.2	0.45	1.80	X	X	X
Verona	0.15x1 0.1x1	0.42	1.39-1.47	Not available	X*	No applicable
Italia	0.03x1	0.40	2.51	Not available	X	No applicable
Milan grid	0.6x0.6	0.40 0.50	2.17-2.72***	Not available	X**	No applicable

**Two sizes available*
***Two thickness available*
**** Weight of the Milan model used as reference*

UN CPC Code: All of them correspond to UN CPC Code 4219 Other structures (except prefabricated buildings) and parts of structures of iron, steel or aluminium.

Name and location of the production site: The name and location of the production site is THU Perfil S.L.U. C/ Masía de monte Alcedo, parcela 4.3. Pol. Ind. Masia Baló, 46394 Ribarroja del Turia (Valencia)

Product description: the main function of ceiling solutions presented in this EPD is the use as a cover for ceiling keeping aesthetics together with excellent thermal and acoustic insulation, as well as fire resistance.

Aluminium metal ceiling systems are manufactured from pre-painted aluminium coils that arrive at THU's production facilities. Using an overhead crane, the raw material is transferred to the appropriate production lines. The process involves decoiling and cutting the aluminium to the required length, performing various cuts, bends, and joints. Each model includes different types and weights of accessories, such as rods, hangers, and mounting clips. The products are delivered to the customer ready for on-site installation in suspended ceiling systems.

In this document, the smallest available dimensions of metal ceiling variants for each model within THU's aluminium product range have been selected for analysis. These smaller dimensions involve:

- A higher relative number of cuts, bends, and joints per square meter compared to larger modules.
- A greater density of accessories per installed surface area.
- An increase in cutting waste due to higher geometric complexity and on-site adjustments.

Since these factors result in a higher environmental impact per square meter installed, analysing this more demanding configuration allows for the representation of a maximum expected impact scenario within the product range. This approach provides greater robustness and environmental safety, ensuring that other variants —larger or simpler— will present equal or lower impacts per declared unit.

These panels are produced using high-quality aluminium ensuring excellent durability and resistance. In addition to their long-lasting properties, these materials are easy to clean and maintain. The ceiling structures are designed to allow quick and easy access to lighting, electrical wiring, and HVAC systems, helping to avoid complex repairs and reducing maintenance efforts. Lifespan of the product can be considered to be more than 25-30 years since is a high-durable product with a proper maintenance.

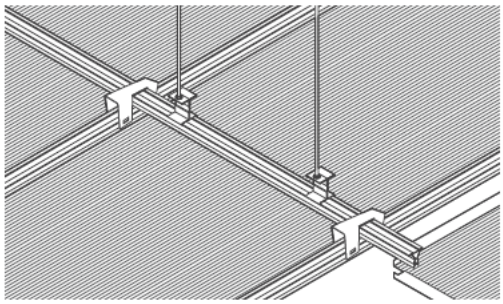
The different perforation patterns enhance acoustic performance in spaces where such features are required. Additionally, the integration of an acoustic fleece (only in perforated models) further improves the overall effectiveness of the system.

Within this EPD, the highest impact results are described, which in most cases are those related to Italia model, except for "Global warming potential - biogenic (GWP-biogenic)" and "Abiotic depletion potential - non-fossil resources (ADPE)" for the compulsory impact categories. Details are provided in Section about Environmental Performance.

The above-mentioned references are described in detail below:

1. Sicilia CLIP-IN

This panel has dimensions of 600 x 600 mm and is also available in a perforated version. Additionally, it can include an acoustic fleece to enhance the overall performance. All panels are supplied with a protective adhesive film.

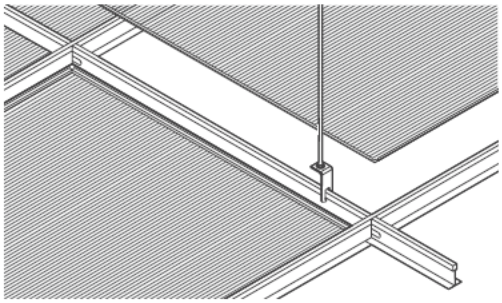


The Environmental Product Declaration (EPD) takes into account the different accessories required for proper ceiling installation:

Triangle Profile:
Suspension system for Sicilia panels. The triangular-shaped profile secures the panels by pressure and remains concealed (clip-in system).
Hanger Piece:
Hanger element for the triangle profile designed for use with threaded support rods. It is placed as a guide on top of the triangle profile.
Rod:
Threaded rod for technical ceiling fixing. To be connected to the suspension parts or battens and to the floor slab.
Acoustic Fleece:
A 0.2 mm thick acoustic fleece that also prevents the accumulation of dust and dirt. It is thermally bonded to the inner side of the panel.
Cross-piece:
Metal component used as a connector between the upper and lower triangle profiles, allowing the lower profiles to slide beneath the upper ones to facilitate the installation of the panels.

2. Modena T24

This panel has dimensions of 600 x 600 mm and is also available in a perforated version. Additionally, it can include an acoustic fleece to enhance the overall performance. All panels are supplied with a protective adhesive film.

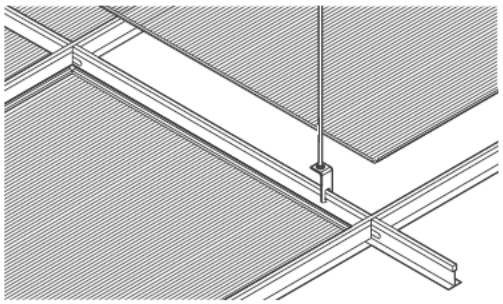


The Environmental Product Declaration (EPD) considers the different accessories required for proper ceiling installation:

T-24 Profile:
Suspension system composed of primary (3.7 m) and secondary (1.2 and 0.6 m) T-shaped profiles with a 24 mm base, creating a grid structure on which the panels are supported.
Hanging Piece:
Connecting element between the profiles and the threaded support rod. It is placed on top of the T-24 profiles.
Rod:
Threaded rod for technical ceiling fixing. To be connected to the suspension parts or battens and to the floor slab.
Acoustic Fleece:
A 0.2 mm thick acoustic fleece that also prevents the accumulation of dust and dirt. It is thermally bonded to the inner face.

3. Parma T15

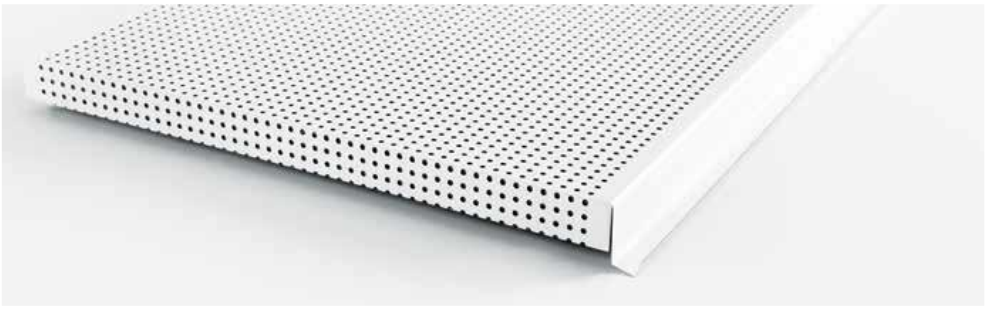
This panel has dimensions of 600 x 600 mm and is also available in a perforated version. Additionally, it can include an acoustic fleece to enhance the overall performance. All panels are supplied with a protective adhesive film.



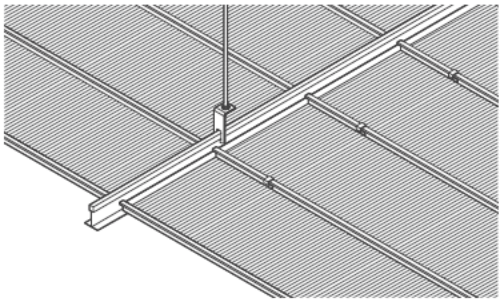
The Environmental Product Declaration (EPD) takes into account the different accessories required for proper ceiling installation:

T-15 Profile:
Suspension system composed of primary (3.7 m) and secondary (1.2 and 0.6 m) T-shaped profiles with a 15 mm base, creating a grid structure on which the panels rest.
Hanging Piece:
Connector between the profiles and the threaded support rod. It is placed on top of the T-15 profiles.
Rod:
Threaded rod for technical ceiling fixing. To be connected to the suspension parts or battens and to the floor slab.
Acoustic Fleece:
A 0.2 mm thick acoustic fleece that also prevents the accumulation of dust and dirt. It is thermally bonded to the inner side.

4. Roma



This panel has dimensions of 300 x 1200 mm and is also available in a perforated version. Additionally, it can include an acoustic fleece to enhance the overall performance. All panels are supplied with a protective adhesive film. This model can use T-24 Profile or bead.

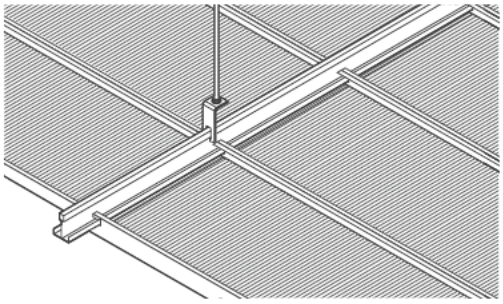


The Environmental Product Declaration (EPD) considers the different accessories required for proper ceiling installation:

Batten:
Element for longitudinal fixing of the slats, suspended from the slab by means of threaded rods inserted in its upper part.
Hanging Piece:
Connector between the profiles and the threaded support rod. It is placed on top of the T-24 profiles.
Rod:
Threaded rod for technical ceiling fixing. To be connected to the suspension parts or battens and to the floor slab.
Joining Clip:
Plastic clip used to securely fix the joints between panels.
Acoustic Fleece:
A 0.2 mm thick acoustic fleece that also prevents the accumulation of dust and dirt. It is thermally bonded to the inner side.

5. Murano

This panel has dimensions of 600 x 600 mm and is also available in a perforated version. Additionally, it can include an acoustic fleece to enhance the overall performance. All panels are supplied with a protective adhesive film.

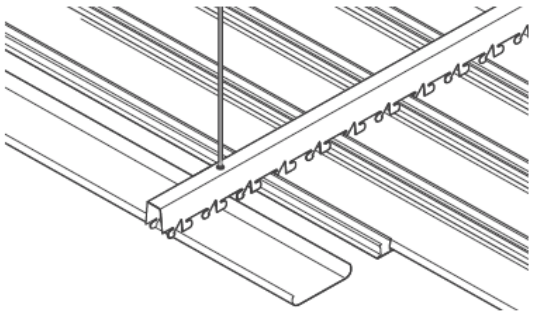


The Environmental Product Declaration (EPD) takes into account the different accessories required for proper ceiling installation:

Murano Profile:
Main supporting element for the Murano panels, with a length of 3.70 m.
Spacer Piece:
Concealed profile designed to stabilize the primary profiles of the accessible ceiling structure.
Hanging Piece:
Connector between the profiles and the threaded support rod.
Rod:
Threaded rod for technical ceiling fixing. To be connected to the suspension parts or battens and to the floor slab.
Acoustic Fleece:
A 0.2 mm thick acoustic fleece that also prevents the accumulation of dust and dirt. It is thermally bonded to the inner side.

6. Veneto

This panel has dimensions of 100 x 1000 mm and is also available in a perforated version. Slats made of 0.45 mm thick pre-lacquered aluminium with coatings formed by cold rolling.

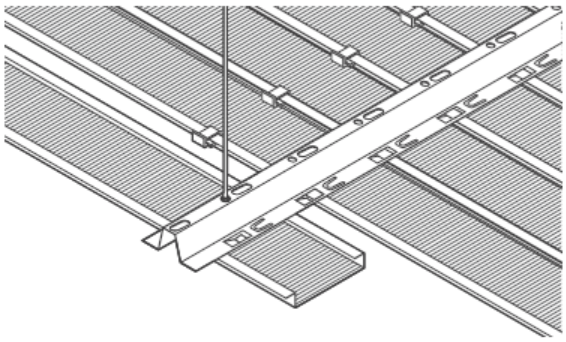


The Environmental Product Declaration (EPD) takes into account the different accessories required for proper ceiling installation:

Batten:
Element for longitudinal fixing of the slats, suspended from the slab by means of threaded rods inserted in its upper part.
Perimetral U-20:
Profile designed to support and secure the perimeter slats using plastic clips.
Hanging Piece:
Suspension element for the triangular profile designed for use with threaded support rods. It is placed as a guide on the upper part of the triangular profile.
Rod:
Threaded rod for technical ceiling fixing. To be connected to the suspension parts or battens and to the floor slab.
Perimeter Trim:
Profile designed to support and secure the perimeter slats using plastic clips.

7. Treviso

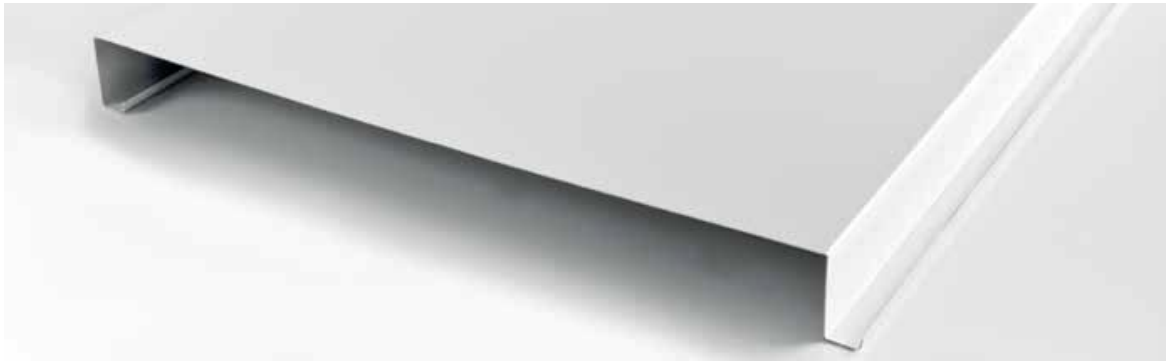
This panel has dimensions of 300 x 1200 mm and is also available in a perforated version. Slats made of pre-coated aluminium with a thickness of 0.45 mm plus coatings, shaped by cold rolling.



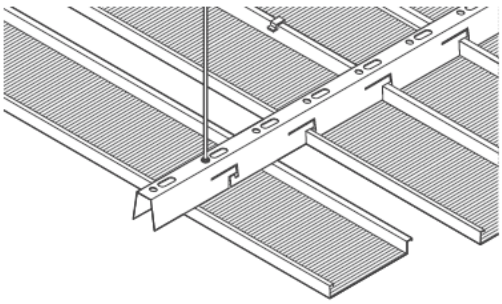
The Environmental Product Declaration (EPD) takes into account the different accessories required for proper ceiling installation:

Batten:
Element for longitudinal fixing of the slats, suspended from the slab by means of threaded rods inserted in its upper part.
Joining Clip:
Plastic clip used to ensure the proper fastening of the joints between Treviso slats.
Perimetral U-20:
Profile designed to support and secure the perimeter slats using plastic clips.
Hanging Piece:
Connector between the profiles and the threaded support rod.
Rod:
Threaded rod for technical ceiling fixing. To be connected to the suspension parts or battens and to the floor slab.
Perimeter Trim:
Profile designed to support and secure the perimeter slats using plastic clips.

8. Venezia



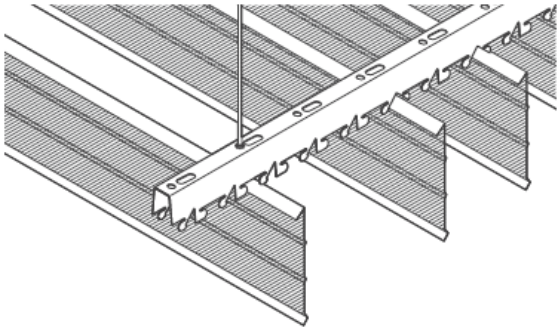
This panel has dimensions of 200 x 1200 mm and is also available in a perforated version. Additionally, it can include an acoustic fleece to enhance the overall performance.



The Environmental Product Declaration (EPD) considers the different accessories required for proper ceiling installation:

Batten:
Element for longitudinal fixing of the Venezia slats, suspended from the slab by means of threaded rods inserted in its upper part.
Joining Clip:
Plastic clip used to ensure the proper fastening of the joints between Venezia slats.
Perimeter Trim:
Profile designed to support and secure the perimeter slats using plastic clips.
Hanging Piece:
Connector between the profiles and the threaded support rod.
Rod:
Threaded rod for technical ceiling fixing. To be connected to the suspension parts or battens and to the floor slab.
Acoustic Fleece:
0.2 mm thick acoustic fleece that also prevents dust and dirt accumulation. It is thermally bonded to the inner side

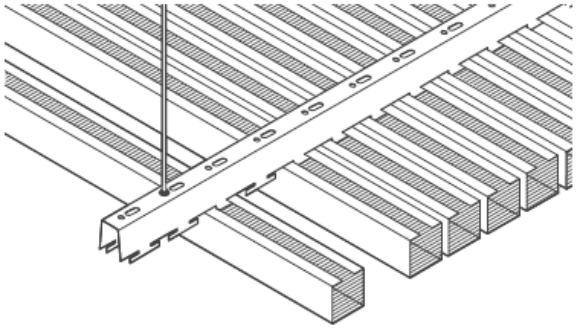
9. Verona



There are two different dimensions for this panel, 100 x 1000 mm or 150 x 1000 mm. Slats are made of pre-coated aluminium with a thickness of 0.42 mm plus coatings, shaped by cold rolling. In this case, the slats are arranged vertically. The EPD considers the various accessories required for the correct installation of the ceiling system:

Batten:
Element for longitudinal fixing of the slats, suspended from the slab by means of threaded rods inserted in its upper part.
Hanging Piece:
Connector between the profiles and the threaded support rod.
Rod:
Threaded rod for technical ceiling fixing. To be connected to the suspension parts or battens and to the floor slab.

10. Italia 30

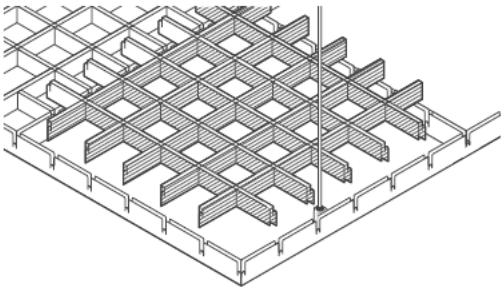


Dimensions for this panel are 30 x 1000 mm. Slats are made of pre-coated aluminium with a thickness of 0.42 mm plus coatings, shaped by cold rolling.

The EPD considers the various accessories required for the correct installation of the ceiling system:

Batten 50:
Element for longitudinal fixing of the slats, suspended from the slab by means of threaded rods inserted in its upper part.
Hanging Piece:
Suspension element for the triangular profile designed for use with threaded support rods. It is placed as a guide on the upper part of the triangular profile.
Rod:
Longitudinal black-coated element used for fixing the Italia panel, suspended from the slab by threaded rods housed in its upper part.

11. Milan grid



The EPD considers the various accessories required for the correct installation of the ceiling system:

Grid profile:
Suspension system consisting of primary and secondary "U"-shaped profiles that form a grid structure where the panels are placed. The profiles can be 40 or 50 mm in height, depending on the selected panel.
Splice Piece:
Splice component designed to connect the primary support profiles.
T-15:
Suspension system composed of primary and secondary “T”-shaped profiles with a 15 mm base, forming a grid structure on which the panel rest.
Hanging Piece:
Connector between the profiles and the threaded support rod.
Rod:
Threaded rod for technical ceiling fixing. To be connected to the suspension parts or battens and to the floor slab.

CONTENT DECLARATION

The material content in the declared unit is ”1 m^2 of ceiling system” and considers the product with the highest weight and lowest recycled post-consumer content, containing acoustic fleece and plastic joining clip. The declared content represents the worst-case scenario, not necessarily a real product.

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Aluminium (panel and accessories)	6.16	18.21	0.00	0.00
Steel (accessories)	1.08	4.08	0.00	0.00
Textile non-woven (acoustic fleece)	0.06	0.00	0.00	0.00
Plastic (joining clip)	0.07	0.00	0.00	0.00
TOTAL	**7.37**	**22.29**	**0.00**	**0.00**

The aluminium used in the panel with the highest recycled origin, does not contribute more than 10% in the total carbon footprint impact categories.

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
Corrugated board (box)	0.17	2.27	7.52E-02
Wood (pallet)	0.41	5.56	1.93E-01
Plastic (film)[1]	0.00	0.00	0.00E+00
TOTAL	**0.58**	**7.83**	**2.69E-01**

The calculations for balancing out of the biogenic carbon material contained (considering that 1 kg of biogenic carbon is equivalent to a 44/12 kg CO_2) are summarised as follows:

- Corrugated board: Considering 0.17 kg box/ declared unit *0.4502 kg C /Dry mass[2]= 7.52E-02 kg C.
- Wood pallet: Considering 0.41 kg wood/declared unit*0.4717 kg C /Dry mass= 1.93E-01 kg C.

Therefore, the total biogenic material is 2.69E-01 kg C, which when multiplied by 44/12, is equivalent to 9.85E-01 kg de CO_2.

In the declared product, no Hazardous substances from the candidate list of SVHC are used.

[1] Not all models contains plastic in its packaging.
[2] The quantity of Carbon content, non-fossil in kg C/kg dry mass are obtained from Ecoinvent 3.11 Database (for Corrugated board and for EUR pallet).

LCA INFORMATION

The LCA has been performed in accordance with the current life cycle assessment standards ISO 14040:2006 and ISO 14044:2006, as well as with the requirements of EN 15804+A2, PCR 2019:14 for Construction Products and JRC characterization factors (EF3.1).

Declared unit:
The declared unit is "1m^2 of metallic ceiling system". Thickness depends on the type of ceiling system, being between 0.40 and 0.55 mm. The thickness of the heaviest model (Milán) is 0.40 mm while in the case for the models with less recycled content (Roma, Venezia, Italia) the values are 0.55, 0.45 and 0.40, respectively.

Conversion factor to mass if mass is not used as declared unit (not applicable for services): The declared unit can be converted to mass (kg) taking the total mass of the aluminium ceiling system (panel and accessories), which is 7.37 kg.

Time representativeness:
The data used covers 2024 period.

Geographical scope:
The scope of this EPD is Europe.

Database(s) and LCA software used:
SimaPro 10.2.0.0 with Ecoinvent 3.11 database. EN15804 + A2 / Environmental Footprint 3.1 (adapted for SimaPro substances) has been used.

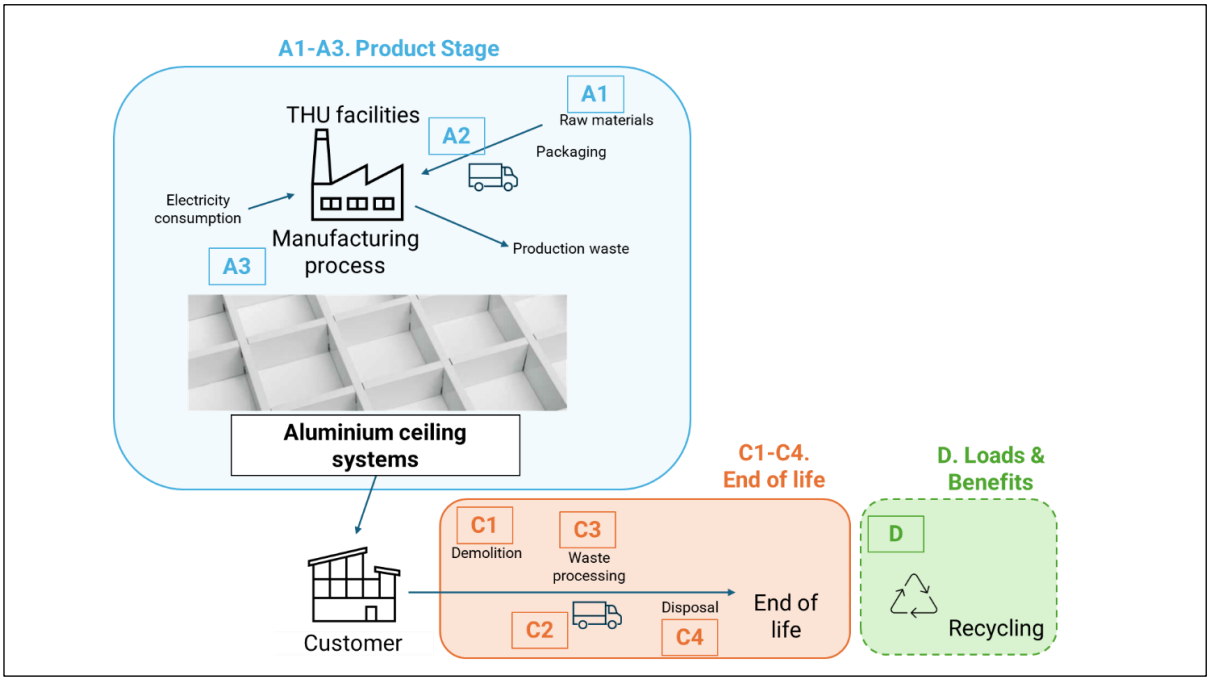
Description of system boundaries:
The type of EPD is cradle-to-gate modules C1-C4 and module D (A1-A3+C+D).

Process flow diagram:

A1-A3. Product stage includes all the processes needed for:

- Extraction of raw materials for the metal ceiling systems production.
- Transport of the raw materials to the THU facilities.
- Production of packaging associated to the ceiling systems.
- Transport of the packaging to the THU facilities.
- Energy consumption for the manufacturing process and treatment of waste generated in the factory.

- **C. End of life**, including:
  - Transport to a waste management plant.
  - Waste processing of the ceiling systems.
- **D. Beyond system boundary.** Benefits and loads beyond the system boundary is included. In this case, aluminium is easily recoverable material with high economic value in the recycling market. Module D considers the avoided impacts for recycling of metals, which avoids the production of new virgin metals.



The following stages have been considered **exclusions** from this study for the reasons outlined below:

- **A4-A5. Distribution and installation stage,** composed of:
  - A4. Transport to the construction site of the ceiling systems because it depends on the location of each customer.
  - A5. Distribution and installation on the construction site. In this case, this process is not relevant since it does not require additional energy consumption.

- **B. Use stage**
  - B. The usage phase is excluded due to the lack of maintenance requirements.

All equipment with a useful life of more than 3 years, as well as the construction of plant equipment, infrastructure and other capital goods, have not been included in the LCA calculations, including both the databases used and the primary process data used.

The end of life has been modelled following the prescriptions of the report from Pristera et al (2024) Techno-economic and environmental assessment of construction and demolition waste management in the European Union" (https://publications.jrc.ec.europa.eu/repository/handle/JRC135470) that considers *"that nearly all steel and aluminium are collected for recycling, regardless of the demolition method"*. To this end, the default values provided by the PCR 2019:14 were used, specifically with regard to the power, fuel consumption as well as transport during end-of-life operations.

In this study, modules C1 (deconstruction/demolition) and C4 (disposal) are reported as zero contribution, since the evaluated product is fully recovered for recycling and is neither landfilled nor incinerated. Deconstruction and demolition operations are carried out manually; therefore, their emissions are assumed to be zero. The environmental loads related to dismantling activities, their subsequent transport to recycling plants, and their treatment are accounted for in modules C2 and C3, in accordance with the PCR guidelines.

The following table summarises the end-of-life phase considered (100% of all metallic materials, including panels and accessories, will be recycled after the building is demolished). The end-of-life scenario for the worst-case model considers only the management of aluminium. In some models, however, some accessories can be made of steel. Table 15 of the standard EN 15804 is shown below:

Processes	Description	Quantity (kg/m^2)
Collection process	kg collected separately	7.37
	kg collected with mixed construction waste	0.00
Recovery system	kg for recycling	7.37
	kg for re-use	0.00
	kg for energy recovery	0.00
Disposal specified by type	kg product or material for final deposition	0.00
Assumptions for scenario development	km	For transportation to waste management plant, it has been assumed an average scenario of 80 km. A 16–32 metric ton lorry has been used.

Module D accounts both the environmental loads and the **avoided impacts from recycling metals (aluminium from panels and steel and aluminium for accessories), that avoid the need for virgin metals production.** The recycling rate (assumed as the 100% for the steel ceiling systems) is based on the economic incentive at end-of-life, where the gap between product price and scrap value encourages collection and recycling. Therefore, the recycling rate applied in the life cycle assessment reflects the high probability that these products will be collected and recycled, in line with current market practices.

Module D has been modelled as a unique scenario for Europe, so that there were no additional scenarios for module D. Module D has been calculated for the content materials that have been declared in this EPD. The materials avoided are considered to be only the virgin ones. The table details the amount of material replaced, as well as the datasets used to calculate this replacement for the heavier aluminium panel. It has been considered a material efficiency factor (Y) of 1, since all the aluminium scrap substitutes the primary aluminium in virgin aluminium production. (JRC, 2010).

Aluminium ceiling system	Avoided material	Avoided quantity per declared unit	Unit
Virgin aluminium (51.93%)	Aluminium, primary, liquid {GLO}| market for aluminium, primary, liquid | Cut-off, U	0.5193*1*(6.16)= 3.20	kg

Allocation:
The allocation of packaging quantities per declared unit for each model has been avoided, as THU has provided the specific amounts of packaging (corrugated board box, wooden pallet, and plastic film) used for each of the models.
Similarly, in the case of calculating the energy consumption of each panel, allocation has been avoided as THU has been able to measure the consumption required for the manufacture of each one of the models. This quantity (per declared unit) has been calculated by multiplying the amount of electricity consumed (in kWh) for each panel (provided by THU), by its surface area.

On the other hand, in the case of auxiliary electrical consumption (associated with lighting, air conditioning, computers and other factory equipment, such as electric forklifts and overhead cranes), THU calculated this during the manufacture of the heaviest steel model. This calculation of auxiliary consumption has been extrapolated to the other panels analysed.

Additionally, for the calculation of the amount of each type of waste generated per declared unit, the total amount of hazardous and non-hazardous waste generated at THU was estimated based on the average of the wastage during the manufacturing of perforated panels.

For aluminium, recycled content and end-of-life recycling are treated according to the allocation rules of EN 15804. This approach ensures that the environmental burdens of primary and secondary material production are consistently allocated, avoids double counting, and reflects both the use of recycled content in the packaging and the potential for material recovery at the end of life.

Data quality:
Data type, sources and reference year for each module of the EPD are included in the following table. The assessment has been done using the data quality level and criteria schemes of UN Environment Global Guidance on LCA database development. As can be drawn from the table, all the data uses as refence year 2024 onwards, while only primary data comes from the manufacturing process, while the remaining data is based on well-known databases, so that data can be considered as enough quality. The contribution of primary data is 0.20%. The share of primary data is calculated based on GWP-GHG results.

Component/Process		Type of data	Data source	Reference year	Contribution of GWP-GHG to primary data
Raw materials (A1)	Virgin Aluminium	Secondary	Ecoinvent 3.11	2024	0.00%
	Recycled Aluminium (pre)		Ecoinvent 3.11	2024	0.00%
	Recycled Aluminium (post)		Ecoinvent 3.11	2024	0.00%
	Packaging: Film		Ecoinvent 3.11	2024	0.00%
	Packaging: Carton box		Ecoinvent 3.11	2024	0.00%

Component/Process		Type of data	Data source	Reference year	Contribution of GWP-GHG to primary data
	Packaging: Pallet		Ecoinvent 3.11	2024	0.00%
	Sheet rolling		Ecoinvent 3.11	2024	0.00%
Transport of the raw materials to the manufacturing site (A2)		Secondary	Direct primary transport data on the km. The processes have been selected from Ecoinvent 3.11 (secondary)	2024	0.00%
Manufacturing process (A3)		Primary	Direct primary production data provided by THU.	2024	0.20%
Transport to waste management site (C2)		Secondary	Direct primary transport data on the km. The processes have been selected from Ecoinvent 3.11 (secondary)	2024	0.00%
Waste processing (C3)	Fragging of metal		Ecoinvent 3.11 PCR 2019:14	2024	0.00%
	Loading and unloading at sorting facility				

Data compilation	01/01/2024-31/01/2024
Sites used	Production facilities of THU Perfil in Ribarroja de Turia (Valencia, Spain), covering 100% of the ceiling metal system product lines included in the EPD.
Geography	The production is carried out in Spain. The ceiling systems are sold mainly in Europe. The EPD is modeled for end-of-life scenarios within the European context.
Technology	Production technologies reflect current industry practices and THU Perfil's own manufacturing equipment.
Averaging	Weighted average production covering 100% of THU Perfil's ceiling tray products during the reference year.
LCI/LCIA used	Ecoinvent 3.11
EPD used	No EPD has been used as a data source in the present document.
Data quality scheme	EN 15804:2012+A2:2019, Annex E, Table E.1.
Use of regular data with more than 30% of basic impact	Aluminium used in ceiling models production account more than 30% of the total basic impacts: Up-to-date databases were used to model these inputs. No proxy or outdated datasets exceeding 30% of total impact were applied.
Use of deficient relevant data	Some background datasets (e.g. transport, waste treatment) are based on European average datasets rather than Spain-specific values. These represent less than 10% of GWP and other basic indicators.
Use of very deficient relevant data	No very deficient data were used. All datasets meet at least minimum quality requirements according to EN 15804+A2.

Electricity mix:

Manufacturing site purchased electricity from a company which electricity mix is 100% renewable with guarantee of origin. The percentages of each type of renewable energy (wind and solar) have been obtained from the official CNMC website (https://data.cnmc.es/energia/energia-electrica/garantias-de-origen) and can be seen in the following table:

Type of energy	%
Wind	89.81%
Solar	10.19%

The GWP – GHG factor for the purchased energy, modelled based on the company´s invoices, is 2.39E-03 kg CO_2 eq./kWh. The purchased electricity used in the manufacturing process within module A3 accounts for only 0.03% of the total GWP-GHG results of modules A1–A3.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	ND									X	X	X	X	X
Geography	EU27	EU27	ES										EU 27	EU 27	EU 27	EU 27	EU27
Share of primary data (based on GWP-GHG)	0.20%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%-122%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results.

The EPD tables declare the maximum value for each environmental impact category. In the case of impact categories where the maximum value is from a model other than the Italia, this is indicated in a footnote.

Mandatory impact category indicators according to EN 15804

Results per impact category are described in the table below. Please note that:

1) The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.
2) The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	3.18E+01	0.00E+00	5.31E-02	2.73E-03	0.00E+00	-1.34E+02
GWP-biogenic[3]	kg CO_2 eq.	5.99E-02	0.00E+00	1.84E-06	4.46E-07	0.00E+00	0.00E+00
GWP-luluc	kg CO_2 eq.	1.44E-01	0.00E+00	8.40E-07	2.16E-07	0.00E+00	-1.58E-02
GWP-total	kg CO_2 eq.	3.20E+01	0.00E+00	5.31E-02	9.88E-01	0.00E+00	-1.34E+02
ODP	kg CFC 11 eq.	2.46E-07	0.00E+00	1.29E-04	2.77E-13	0.00E+00	-4.36E-07
AP	mol H^+ eq.	2.08E-01	0.00E+00	5.31E-02	2.73E-03	0.00E+00	-1.28E+00
EP-freshwater	kg P eq.	1.04E-02	0.00E+00	1.62E-04	3.36E-03	0.00E+00	-8.12E-02
EP-marine	kg N eq.	3.49E-02	0.00E+00	2.73E-07	3.88E-03	0.00E+00	-1.65E-01
EP-terrestrial	mol N eq.	3.58E-01	0.00E+00	3.28E-12	5.23E-04	0.00E+00	-1.66E+00
POCP	kg NMVOC eq.	1.18E-01	0.00E+00	7.06E-01	2.00E-13	0.00E+00	-5.06E-01
ADP-minerals&metals[4]*	kg Sb eq.	3.62E-04	0.00E+00	2.31E-04	1.13E-11	0.00E+00	-5.77E-06
ADP-fossil*	MJ	3.41E+02	0.00E+00	1.39E-09	7.71E-14	0.00E+00	-1.35E+03
WDP*	m^3	5.04E+00	0.00E+00	1.58E-04	9.01E-12	0.00E+00	-8.39E+00

[3] The maximum GWP-biogenic value correspond to the Milan 50 model.
[4] The maximum ADP-minerals&metals value correspond to the Milan 50 model.

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Acronyms & methods	• Climate change [GWP100, EN 15804. Version: EF 3.1, February 2023**.** Original reference IPCC (2021)] ◦ **GWP-fossil** = Global Warming Potential fossil fuels; ◦ **GWP-biogenic** = Global Warming Potential biogenic; ◦ **GWP-luluc** = Global Warming Potential land use and land use change; • **ODP** = Depletion potential of the stratospheric ozone layer; [Ozone depletion potential (ODP), EN 15804. Version: February 2023. Original reference WMO 2014] • **AP** = Acidification potential, Accumulated Exceedance; [Original references Seppälä et al. 2006, Posch et al. 2008] • **EP-freshwater** = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; [EP, aquatic freshwater, EUTREND model, EN 15804. Version: February 2023. Original references Struijs et al. 2009 as implemented in ReCiPe] • **EP-marine** = Eutrophication potential, fraction of nutrients reaching marine end compartment; [EP, aquatic marine, EUTREND model EN 15804. Version: February 2023. Original references Struijs et al. 2009 as implemented in ReCiPe • **EP-terrestrial** = Eutrophication potential, Accumulated Exceedance; [EP, terrestrial, accumulated exceedance, EN 15804. Version: February 2023. Original references Seppälä et al. 2006, Posch et al. 2008 • **POCP** = Formation potential of tropospheric ozone; [Photochemical ozone creation potential (POCP), LOTOS-EUROS as applied in ReCiPe, EN 15804. Version: February 2023. Original references Van Zelm et al. 2008, ReCiPe 2008] • **ADP-minerals&metals** = Abiotic depletion potential for non-fossil resources; [Abiotic depletion potential (ADP) for minerals and metals, EN 15804. Version: February 2023. Original references Guinée et al. 2002, van Oers et al. 2002, CML 2001 baseline (Version: January 2016)] • **ADP-fossil** = Abiotic depletion for fossil resources potential; [Abiotic depletion potential (ADP) for fossil resources, EN 15804. Version: August 2021. Original references Guinée et al. 2002, van Oers et al. 2002, CML 2001 baseline (Version: January 2016)] • **WDP** = Water (user) deprivation potential, deprivation-weighted water consumption; [Water deprivation potential (WDP), Available water remaining (AWARE) method, EN 15804. Original references Boulay et al (2017)]						

**Disclaimer. The results of this environmental impact indicator shall be used with care as the uncertainties on the results are high or as there is limited experienced with the indicator.*

The biogenic carbon content of the packaging materials has been reported, and the uptake and release of biogenic CO_2 are transparently included in the carbon balance, as described in the Content Declaration section of this EPD. The biogenic carbon content stored in the product is declared in module A1, and its potential release is balanced out in module A1-A3, ensuring a consistent and complete representation of the biogenic carbon flows across the life cycle. The uptake and emissions of biogenic CO_2 of the packaging is balanced out already in modules A1 and A3 as module A5 is not declared.

Additional mandatory and voluntary impact category indicators

In the case of additional impact category indicators please note that the results of the environmental impact indicators classified as Type 3 (Ecotoxicity, Human Toxicity and Land Use) shall be used with care as the uncertainties on these results are high or as there is limited experienced with these indicators.

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[5]	kg CO_2 eq.	3.19E+01	0.00E+00	5.31E-02	2.73E-03	0.00E+00	-1.34E+02
Particulate matter emissions (PM)	Disease incidence	2.44E-06	0.00E+00	1.49E-05	2.16E-07	0.00E+00	-7.40E-06
Ionizing radiation, human health (IRP)**	kBq U235 eq.	8.19E-01	0.00E+00	8.98E-04	6.90E-08	0.00E+00	-7.22E+00
Eco-toxicity - freshwater (ETP-fw)***	CTUe	8.84E+01	0.00E+00	2.32E-02	2.73E-03	0.00E+00	-2.65E+02
Human toxicity, cancer effect (HTP-c)***	CTUh	1.90E-08	0.00E+00	1.63E-12	8.31E-11	0.00E+00	-5.32E-08
Human toxicity, non-cancer effects (HTP-nc)***	CTUh	3.41E-07	0.00E+00	3.30E-10	1.77E-06	0.00E+00	-8.49E-07
Land use related impacts/Soil quality (SQP)***	dimensionless	4.40E+01	0.00E+00	1.21E-09	1.85E-05	0.00E+00	-1.10E+02

***Disclaimer. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.*

****Disclaimer. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as the uncertainties on these results are high or as there is limited experienced with the indicator.*

[5] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Resource use indicators

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3.51E+01	0.00E+00	1.76E-03	4.32E-04	0.00E+00	2.44E+01
PERM	MJ	2.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	3.77E+01	0.00E+00	1.76E-03	4.32E-04	0.00E+00	2.44E+01
PENRE	MJ	3.65E+02	0.00E+00	7.51E-01	1.85E-01	0.00E+00	-1.06E+03
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	3.65E+02	0.00E+00	7.51E-01	1.85E-01	0.00E+00	-1.06E+03
SM	kg	1.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.36E+02	0.00E+00	7.54E-03	1.73E-03	0.00E+00	-1.38E+02
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water						

Option A of Annex 3 of PCRs 2019:14 v2.0.1. has been selected to estimate the energy balance, since the energy used as raw material shall be declared as an input to the module where it enters the product system and as an equally large output from the product system where it exits the product system for use in another product system or as waste.

Waste indicators

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	2.84E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	1.38E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radioactive waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Output flow indicators

Results per declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	7.37E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy. electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy. thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Additional LCA results (other environmental performance results) of the product(s)

These EPD is for multiple products, whose difference is within the dimensions and quantity of raw materials employed, and the use of different accessories, affecting therefore in the weight of the ceiling system.

The tables on the previous pages of this EPD indicate the maximum value for each environmental impact category, most corresponding to Italia model. In the case of impact categories where the maximum value comes from another model different than Italia, this has been indicated in a footnote.

The following table shows the variation from the maximum value for each impact indicator for the perforated models, in most cases corresponding to Italia model, except for ADP-minerals&metals and GWP-biogenic value. Modules A-C have been included in the calculations. As required by the PCR, variations -in percentage - between two numbers are calculated by dividing the absolute value of the difference between the numbers by the average of the numbers and then multiplying by 100.

LCA result per declared unit	Sicilia perforated	Modena perforated	Parma perforated	Roma perforated	Murano perforated	Veneto 100	Treviso perforated	Venezia perforated	Verona 150	Milan 50
GWP-fossil	115%	108%	110%	17%	103%	107%	114%	32%	122%	89%
GWP-biogenic[6]	82%	7%	0%	87%	109%	93%	89%	138%	97%	133%
GWP-luluc	52%	51%	52%	14%	50%	66%	69%	23%	69%	59%
GWP-total	114%	107%	110%	17%	103%	107%	114%	32%	122%	90%
ODP	54%	59%	59%	8%	51%	49%	58%	17%	70%	40%
AP	126%	121%	125%	21%	116%	118%	131%	38%	135%	94%
EP-freshwater	103%	87%	88%	20%	77%	89%	99%	35%	107%	53%
EP- marine	122%	118%	122%	18%	113%	115%	123%	33%	131%	98%
EP-terrestrial	123%	119%	122%	20%	114%	115%	124%	35%	132%	98%
POCP	110%	108%	110%	17%	102%	102%	111%	31%	121%	89%
ADP-minerals&metals[7]*	64%	70%	66%	108%	49%	47%	80%	115%	83%	0%
ADP-fossil*	98%	93%	96%	13%	88%	93%	100%	26%	110%	77%
WDP*	63%	58%	58%	4%	46%	56%	69%	15%	79%	21%

[6] The maximum GWP – biogenic value correspond to the Parma perforated model.
[7] The maximum ADP-minerals&metals value correspond to the Milan 50 model.

The following table shows the variation from the maximum value for each impact indicator for the non-perforated models.

LCA result per declared unit	Sicilia non-perforated	Modena non-perforated	Parma non-perforated	Roma non-perforated	Murano non-perforated	Veneto 85	Treviso non-perforated	Venezia non-perforated	Verona 100	Italia 30	Milan 40
GWP-fossil	116%	109%	112%	15%	104%	109%	110%	23%	121%	0%	96%
GWP-biogenic	82%	10%	3%	99%	107%	96%	73%	134%	93%	112%	142%
GWP-luluc	52%	51%	52%	1%	50%	67%	68%	17%	69%	0%	61%
GWP-total	116%	109%	112%	15%	104%	109%	110%	24%	121%	0%	96%
ODP	57%	63%	64%	9%	55%	51%	54%	14%	68%	0%	47%
AP	126%	122%	125%	18%	115%	120%	124%	27%	133%	0%	102%
EP-freshwater	103%	87%	88%	17%	76%	92%	93%	25%	105%	0%	62%
EP- marine	124%	120%	123%	15%	115%	116%	118%	24%	130%	0%	105%
EP-terrestrial	125%	121%	124%	17%	116%	116%	119%	26%	131%	0%	105%
POCP	112%	110%	113%	15%	104%	104%	106%	23%	120%	0%	96%
ADP-minerals&metals	62%	69%	66%	105%	45%	53%	67%	108%	78%	91%	16%
ADP-fossil*	101%	97%	99%	12%	90%	94%	95%	20%	108%	0%	83%
WDP*	63%	58%	58%	2%	44%	59%	62%	8%	77%	0%	31%

Additional environmental information

Finally, the conversion factor for converting the maximum declared result for each impact category and all the perforated and non-perforated models is presented. When the value is 1 indicates the maximum value for each impact category. Modules A-C have been included in the calculations.

LCA result per declared unit	Sicilia perforated	Modena perforated	Parma perforated	Roma perforated	Murano perforated	Veneto 100	Treviso perforated	Venezia perforated	Verona 150	Milan 50
GWP-fossil	0.27	0.30	0.29	0.84	0.32	0.30	0.27	0.72	0.24	0.38
GWP-biogenic	2.40	1.07	1.00	2.54	3.41	2.74	2.60	5.45	2.88	4.99
GWP-luluc	0.59	0.60	0.59	0.87	0.60	0.50	0.49	0.80	0.48	0.54
GWP-total	0.27	0.30	0.29	0.84	0.32	0.30	0.27	0.72	0.24	0.38
ODP	0.58	0.55	0.54	0.92	0.59	0.60	0.55	0.84	0.48	0.67
AP	0.23	0.24	0.23	0.81	0.27	0.26	0.21	0.68	0.19	0.36
EP-freshwater	0.32	0.39	0.39	0.82	0.44	0.38	0.34	0.70	0.30	0.58
EP- marine	0.24	0.26	0.24	0.83	0.28	0.27	0.24	0.72	0.21	0.34
EP-terrestrial	0.24	0.25	0.24	0.82	0.27	0.27	0.24	0.70	0.20	0.34
POCP	0.29	0.30	0.29	0.84	0.32	0.32	0.29	0.73	0.25	0.38
ADP-minerals&metals*	0.52	0.48	0.50	0.30	0.60	0.62	0.43	0.27	0.42	1.00
ADP-fossil*	0.34	0.36	0.35	0.88	0.39	0.37	0.33	0.77	0.29	0.44
WDP*	0.52	0.55	0.55	0.96	0.63	0.56	0.49	0.86	0.43	0.81

LCA result per declared unit	Sicilia non-perforated	Modena non-perforated	Parma non-perforated	Roma non-perforated	Murano non-perforated	Veneto 85	Treviso non-perforated	Venezia non-perforated	Verona 100	Italia 30	Milan 40
GWP-fossil	0.27	0.29	0.28	0.86	0.32	0.29	0.29	0.79	0.25	1.00	0.35
GWP-biogenic	2.38	1.11	1.03	2.96	3.30	2.83	2.16	5.07	2.75	3.53	5.94
GWP-luluc	0.59	0.60	0.59	0.99	0.60	0.50	0.49	0.84	0.49	1.00	0.53
GWP-total	0.27	0.29	0.28	0.86	0.32	0.30	0.29	0.79	0.25	1.00	0.35
ODP	0.56	0.52	0.52	0.91	0.57	0.59	0.58	0.87	0.49	1.00	0.62
AP	0.23	0.24	0.23	0.84	0.27	0.25	0.23	0.76	0.20	1.00	0.32
EP-freshwater	0.32	0.39	0.39	0.85	0.45	0.37	0.37	0.77	0.31	1.00	0.52
EP- marine	0.24	0.25	0.24	0.86	0.27	0.27	0.26	0.79	0.21	1.00	0.31
EP-terrestrial	0.23	0.24	0.23	0.85	0.27	0.27	0.26	0.77	0.21	1.00	0.31
POCP	0.28	0.29	0.28	0.86	0.31	0.32	0.31	0.79	0.25	1.00	0.35
ADP-minerals&metals*	0.53	0.49	0.51	0.31	0.63	0.58	0.50	0.30	0.44	0.37	0.85
ADP-fossil*	0.33	0.35	0.34	0.89	0.38	0.36	0.36	0.82	0.30	1.00	0.41
WDP*	0.52	0.55	0.55	0.98	0.64	0.54	0.53	0.92	0.45	1.00	0.73

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization
CPC	Central product classification
Other Relevant Terms	
SVHC	Substances of Very High Concern
MJ	Megajoule
kg	Kilogram
m^3	Cubic Meter
NMVOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO_2 eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO_2 eq.	Kilograms of Carbon Dioxide Equivalent
ND	Not Declared

REFERENCES

a) General Programme Instructions of International EPD® System, version 5.0, based on ISO 14025 and ISO 14040/14044.
b) UNE-EN 15804:2012+A1:2014. Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.
c) UNE-EN 13501-1 Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests
d) UNE-EN 13964 Suspended ceilings - Requirements and test methods.
e) UNE-EN ISO 14025:2010. Environmental labels and declarations - Type III environmental declarations - Principles and procedures (ISO 14025:2006)
f) Product category rules (PCR) 2019:14. Construction products. Version 2.0.1
g) Comisión Nacional de los Mercados y la Competencia (CNMC). Garantías de origen: https://data.cnmc.es/energia/energia-electrica/garantias-de-origen.
h) Khan, M.H., Deviatkin, I., Havukainen, J. *et al.* Environmental impacts of wooden, plastic, and wood-polymer composite pallet: a life cycle assessment approach (2021)
i) CRISTOBAL GARCIA, J., CARO, D., FOSTER, G., PRISTERA, G., GALLO, F. and TONINI, D., Techno-economic and environmental assessment of construction and demolition waste management in the European Union, Publications Office of the European Union, Luxembourg, 2024.
j) Muchova L, Eder P. End-of-waste Criteria for Iron and Steel Scrap: Technical Proposals . EUR 24397 EN. Luxembourg (Luxembourg): Publications Office of the European Union; 2010. JRC58526.

VERSION HISTORY

Original Version of the EPD, 2025-10-XX

The products declared in this EPD were included in the 2019-11-29 version of EPD-IES-001724, but this is the first version of the current EPD. This EPD has also been developed and aligned with the updated PCR 2019:14 version 2.0.1.

CERTINALIA
tecnalia group

VERIFICATION STATEMENT CERTIFICATE

CERTIFICADO DE DECLARACIÓN DE VERIFICACIÓN

Certificate No. / Certificado nº: EPD003902

CERTINALIA, S.L.U., confirms that independent third-party verification has been conducted of the Environmental Product Declaration (EPD) on behalf of:
CERTINALIA, S.L.U., confirma que se ha realizado verificación de tercera parte independiente de la Declaración Ambiental de Producto (DAP) en nombre de:

THU PERFIL, S.L.U.
Calle Masía de Monte Alcedo
46394 Ribarroja de Turia (Valencia) - SPAIN

for the following products:
para los siguientes productos:

Metal ceiling systems. Aluminium
Sistemas de techos metálicos. Aluminio

with registration number **EPD-IES-0025192:001** in the International EPD® System *(www.environdec.com)*
*con número de registro **EPD-IES-0025192:001** en el Sistema International EPD® (www.environdec.com)*

it´s in conformity with:
es conforme con:

- **ISO 14025:2010 Environmental labels and declarations. Type III environmental declarations.**
- **General Programme Instructions for the International EPD® System v5.**
- **PCR 2019:14 Construction products (EN 15804:A2) version 2.0.**
- **UN CPC 4219 Other structures (except prefabricated buildings) and parts of structures of iron, steel or aluminium.**

Issued date / *Fecha de emisión:*	22/10/2025
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Organismo de certificación CERTINALIA

Carlos Nazabal Alsua
Manager

ENAC
CERTIFICACIÓN
ISO 17065
Nº125 / C-PR283

The validity of this certificate is subject to the validity of its related EPD.
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