

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804 for:

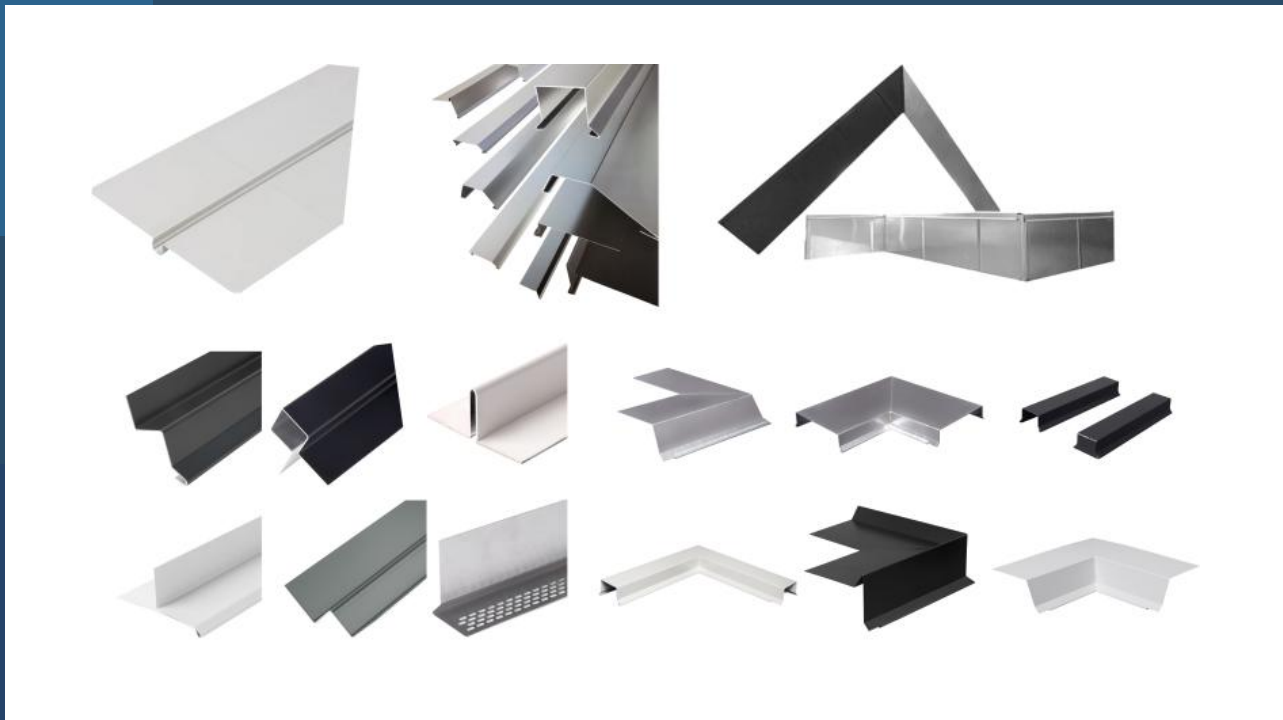
[GTBUILD - Aluminum]

From

[Taicang Gronsedt Technology Co., Ltd.]



Declared product:



| | |
|----------------------|--------------|
| Programme operator: | EPD China |
| Registration number: | EPD-CN-00012 |
| Issued date: | 2024-10-21 |
| Valid until: | 2029-10-20 |

Programme Information

| | |
|--|--|
| EPD Owner | Taicang Gronsedt Technology Co., Ltd. No.198 Shalu Road, Shaxi Town, Taicang City www.gronsedt.com Info@gronsedt.com |
| Product Name | GTBUILD - Aluminum |
| Production Site | No.198 Shalu Road, Shaxi Town, Taicang City |
| Identification of product | Manufacture of metal structures |
| Field of Application | Construction material |
| Programme Operator | EPD China Address of Headquarter: Tianping Road, Xuhui District, Shanghai Website: www.epdchina.cn Email: info@epdchina.cn secretary@epdchina.cn |
| LCA Practitioner | Taicang Gronsedt Technology Co., Ltd. |
| Responsibility | The EPD owner has the sole ownership, liability, and responsibility for the EPD |
| Comparability | EPDs within same category of product in different programme operator are not suggested to be compared. Full conformance with a PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible even applying the same PCR. |
| Liability | The EPD owner has the sole ownership, liability, and responsibility for the EPD. |
| Validity | The EPD is published on 2024-10-21 and valid to 2029-10-20 |
| LCA Software (version) | SimaPro 9.6.0.1 |
| LCI Dataset (version) | Ecoinvent 3.10 |
| Year(s) of Primary Data | 01/06/2023-31/05/2024 |
| PCR | EPDCN-PCR-202204 PCR FOR CONSTRUCTION PRODUCTS AND CONSTRUCTION SERVICES TO EN 15804 V2.0 |
| Other Reference Document | 15804:2012+A2:2019 Sustainability of construction works-Environment product declarations-Core rules for the product category of construction products |
| Verification statement according EN15804 | |
| Independent verification of the declaration and data according to EN ISO 14025:2010 <input type="checkbox"/> internal <input checked="" type="checkbox"/> external Third-party institution verification: <Lihua Wen, Ti Certification (Shanghai) Co., Ltd.> is an approved certification body accountable for third-party verification Approved by: EPD China | |
| Procedure for follow-up of data during EPD validity involves a third-party certification body: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |

1 General Information

1.1 Company information

Gronstedt Technology is a private, family-owned Danish company group established in 2007. We specialize in the design, production, and sale of stainless steel and aluminum products. Our offerings include both mass-produced products for the construction industry through our GTBUILD division, as well as smaller series and customized products for a variety of industries through our GTINDUSTRY division. With a presence in Europe, Asia, and the Middle East—including our own factories, central warehouse, and distribution center in China—we supply products to customers worldwide, either directly or via our distribution center in Denmark for European clients.



Figure 1: Picture of the company

1.2 Scope and type of EPD

The system boundary in the EPD report is from cradle to grave, including modules A1–A3, A4, A5, C1–C4 and module D.

Table 1: Process stages and and EPD modules.

| PRODUCT STAGE | | | CONSTRUCTION PROCESS STAGE | | USE STAGE | | | | | | | END OF LIFE STAGE | | | | BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES |
|---------------------|-----------|------------|--------------------------------|----------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|---|
| Raw material supply | Transport | Production | Transport from the gate to the | Assembly | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstruction/ demolition | Transport | Waste processing | Disposal | reuse- recovery- recycling- potential |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| X | X | X | X | X | ND | ND | ND | ND | ND | ND | ND | X | X | X | X | X |

Note: X=Declared Module, ND=Module not Declared.

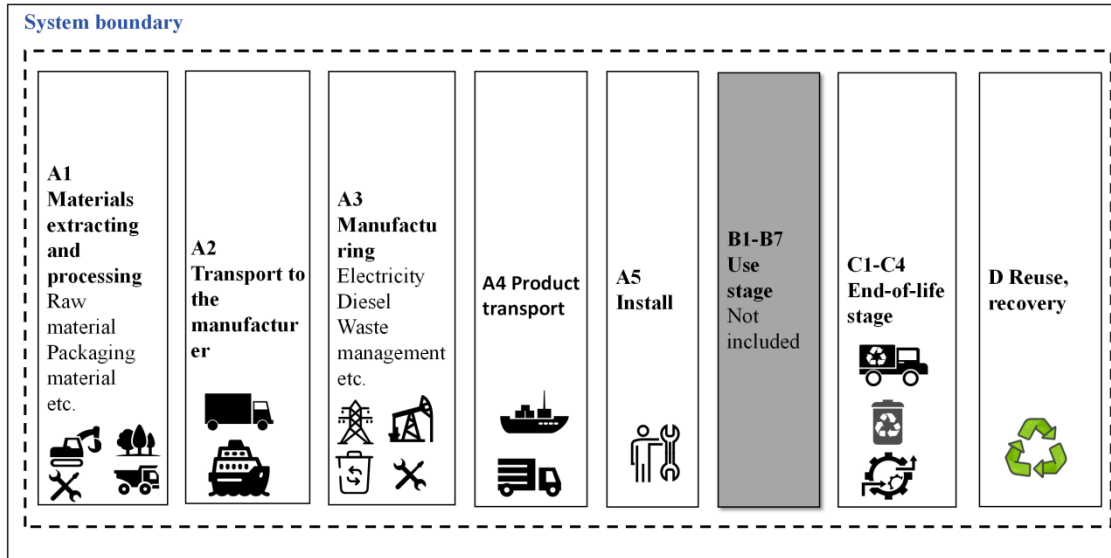


Figure 2: System boundary

2 Detailed Product Description

GTBUILD has developed modern, attractive, and easy-to-install, module-based fascia and bargeboard trim parts, as well as complete systems. These components can be used individually or in combination. The products are made of aluminum, with or without coating, and are available in various thicknesses and dimensions.

These products ensure a maintenance-free construction for many years, making them suitable for both new builds and renovations. The design concept involves mounting a durable metal profile on top of wooden fascias, bargeboards, façade sections, and various house constructions where water ingress or exposure is not desired.

Additionally, these products provide protection against the ingress of mice, rats, birds, and other small animals into small spaces within house structures. They also serve a decorative function, enhancing the aesthetics of modern housing designs.

The following table lists the models and specifications of the GTBUILD - Aluminum product.

Table 1 Product model and specification

| Name | Model and specification | | | |
|--------------------|-------------------------|----------------|-------------|------------|
| | Model No. | Thickness (mm) | Length (mm) | Width (mm) |
| GTBUILD - Aluminum | FP | 0.6-1.0 | 1000-3000 | 60-220 |
| | GP | 0.3-0.7 | 1000-1200 | 180-320 |
| | TP | 0.6-2.2 | 500-3000 | 30-850 |
| | TMS | 0.6-2.0 | 1000 | 50-500 |
| | GVS | 0.5 | 1150 | 200-320 |

The declared unit is: 1 kilogram of product

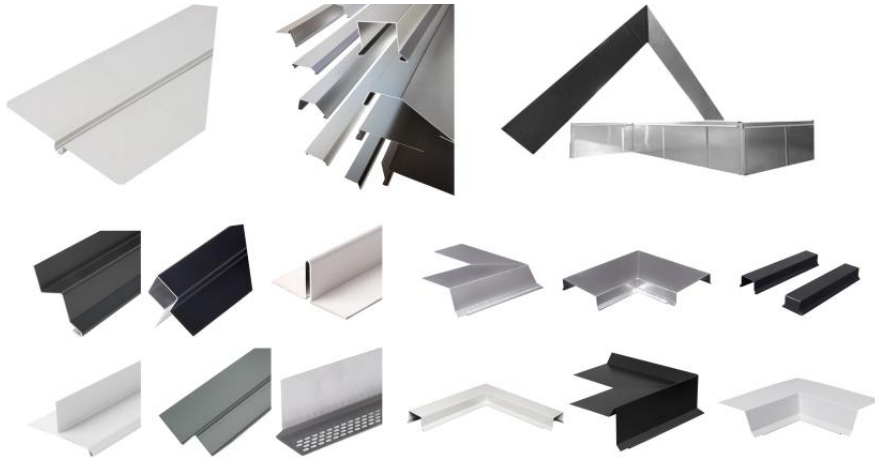


Figure 3: Picture of the declared product.



Figure 4: The production process in selected stages.

Table 3: Main product components and packaging materials per unit.

| Product components | Weight, kg | Weight-% |
|--------------------------|------------|-------------------------------|
| ALU plate | 1.03 | 103% |
| TOTAL | 1.03 | 103% |
| Packaging materials | Weight, kg | Weight-% (versus the product) |
| Pitch | 0.00411 | 0.411% |
| Dolomite sand | 0.00374 | 0.374% |
| Plastic wrap | 0.00205 | 0.205% |
| PET packing belt | 0.000370 | 0.037% |
| Steel strap packing band | 0.00123 | 0.123% |
| Pallet | 0.0921 | 9.21% |
| Box | 0.0596 | 5.96% |
| TOTAL | 0.1632 | 16.32% |

Dangerous substances

The products do not contain any of the substances of very high concern (SVHC) for authorisation regulated by the Regulation (EC) No 1907/2006 (REACH) or the Regulation (EC) No 1272/2008 of European parliament.

3 LCA results according to EN 15804

3.1 Environmental Impacts

The LCA results of GTBUILD - Aluminum per declared unit is listed as the table.

Table 4: Environmental impacts according to EN 15804.

| RESULTS OF THE LCA - ENVIRONMENTAL IMPACT per functional or declared unit | | | | | | | | | |
|---|----------------------------|-----------|-----------|-----------|----------|----------|----------|----------|-----------|
| Core indicator | Unit | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| Global Warming Potential total (GWP-total) | [kg CO ₂ eq.] | 2.64E+01 | 2.26E-01 | 1.27E-02 | 0.00E+00 | 1.56E-02 | 1.27E-01 | 0.00E+00 | -2.18E+01 |
| Global Warming Potential fossil fuels (GWP-fossil) | [kg CO ₂ eq.] | 2.65E+01 | 2.26E-01 | 1.05E-02 | 0.00E+00 | 1.56E-02 | 1.11E-01 | 0.00E+00 | -2.19E+01 |
| Global Warming Potential biogenic (GWP-biogenic) | [kg CO ₂ eq.] | -1.58E-01 | -6.48E-05 | -2.55E-04 | 0.00E+00 | 9.19E-07 | 1.52E-02 | 0.00E+00 | 6.71E-02 |
| Global Warming Potential land use and land use change (GWP-luluc) | [kg CO ₂ eq.] | 1.36E-02 | 1.16E-04 | 1.01E-05 | 0.00E+00 | 6.37E-06 | 1.33E-04 | 0.00E+00 | -3.18E-03 |
| Depletion potential of the stratospheric ozone layer (ODP) | [kg CFC 11 eq.] | 1.34E-07 | 3.24E-09 | 1.02E-10 | 0.00E+00 | 2.27E-10 | 1.24E-09 | 0.00E+00 | -8.36E-08 |
| Acidification potential, Accumulated Exceedance (AP) | [mol H ⁺ eq.] | 2.36E-01 | 6.19E-03 | 4.76E-05 | 0.00E+00 | 7.09E-05 | 5.07E-04 | 0.00E+00 | -2.13E-01 |
| Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater) | [kg P eq.] | 1.27E-02 | 8.01E-06 | 1.35E-06 | 0.00E+00 | 1.25E-06 | 2.93E-05 | 0.00E+00 | -1.14E-02 |
| Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine) | [kg N eq.] | 3.23E-02 | 1.55E-03 | 1.81E-05 | 0.00E+00 | 2.66E-05 | 1.84E-04 | 0.00E+00 | -2.78E-02 |
| Eutrophication potential, Accumulated Exceedance (EP-terrestrial) | [mol N eq.] | 3.30E-01 | 1.72E-02 | 1.75E-04 | 0.00E+00 | 2.90E-04 | 2.00E-03 | 0.00E+00 | -2.82E-01 |
| Formation potential of tropospheric ozone (POCP) | [kg NMVOC eq.] | 1.01E-01 | 4.69E-03 | 6.08E-05 | 0.00E+00 | 1.00E-04 | 6.16E-04 | 0.00E+00 | -8.56E-02 |
| Abiotic depletion potential for non-fossil resources (ADP-minerals&metals) | [kg Sb eq.] | 3.36E-05 | 2.56E-07 | 2.71E-08 | 0.00E+00 | 4.88E-08 | 3.01E-07 | 0.00E+00 | -1.36E-05 |
| Abiotic depletion potential for fossil resources (ADP-fossil) | MJ, net calorific value | 2.73E+02 | 2.80E+00 | 1.07E-01 | 0.00E+00 | 2.22E-01 | 1.15E+00 | 0.00E+00 | -2.19E+02 |
| Water (user) deprivation potential, deprivation-weighted water consumption | [m ³ world eq.] | 2.15E+00 | 7.08E-03 | 7.20E-04 | 0.00E+00 | 1.06E-03 | 3.65E-02 | 0.00E+00 | -1.49E+00 |

| | | | | | | | | | |
|-------|-----------|--|--|--|--|--|--|--|--|
| (WDP) | Deprived] | | | | | | | | |
|-------|-----------|--|--|--|--|--|--|--|--|

3.2 Resource use and waste categories

The LCA results of GTBUILD - Aluminum per declared unit is listed as the table.

Table 5: Resource use and waste categories according to EN 15804.

| RESULTS OF THE LCA - Resource use and waste categories per functional or declared unit | | | | | | | | | |
|---|----------------|-----------|----------|----------|----------|----------|----------|----------|-----------|
| Core indicator | Unit | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| Use of renewable primary energy excluding renewable primary energy resources used as raw materials (PERE) | MJ | -1.92E+01 | 2.15E-02 | 3.91E-03 | 0.00E+00 | 2.91E-03 | 2.88E-02 | 0.00E+00 | -3.61E+00 |
| Use of renewable primary energy resources used as raw materials (PERM) | MJ | 3.15E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Total use of renewable primary energy resources (PERT) (primary energy and primary energy resources used as raw materials) | MJ | 1.24E+01 | 2.15E-02 | 3.91E-03 | 0.00E+00 | 2.91E-03 | 2.88E-02 | 0.00E+00 | -3.61E+00 |
| Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (PENRE) | MJ | 2.73E+02 | 2.80E+00 | 1.07E-01 | 0.00E+00 | 2.22E-01 | 1.15E+00 | 0.00E+00 | -2.19E+02 |
| Use of non-renewable primary energy resources used as raw materials (PENRM) | MJ | 9.56E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Total use of non-renewable primary energy resources (PENRT) (primary energy and primary energy resources used as raw materials) | MJ | 2.73E+02 | 2.80E+00 | 1.07E-01 | 0.00E+00 | 2.22E-01 | 1.15E+00 | 0.00E+00 | -2.19E+02 |
| Use of secondary material (SM) | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Use of renewable secondary fuels (RSF) | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Use of non-renewable secondary fuels (NRSF) | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Net use of fresh water (FW) | m ³ | 6.96E-02 | 2.23E-04 | 2.25E-05 | 0.00E+00 | 3.14E-05 | 1.03E-03 | 0.00E+00 | -4.35E-02 |
| Hazardous waste disposed (HWD) | kg | 2.16E-02 | 4.19E-05 | 1.98E-05 | 0.00E+00 | 5.88E-06 | 1.30E+00 | 0.00E+00 | -8.03E-03 |

| | | | | | | | | | |
|-------------------------------------|-------------------------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Non-hazardous waste disposed (NHWD) | kg | 7.99E-01 | 2.01E-02 | 3.21E-03 | 0.00E+00 | 1.36E-02 | 2.09E-01 | 0.00E+00 | -4.52E-01 |
| Radioactive waste disposed (RWD) | kg | 3.44E-04 | 3.36E-07 | 6.24E-08 | 0.00E+00 | 4.71E-08 | 3.58E-07 | 0.00E+00 | -2.78E-04 |
| Components for re-use (CRU) | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for recycling(MR) | kg | 3.48E-02 | 0.00E+00 | 1.55E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.00E+00 | 0.00E+00 |
| Materials for energy recovery (MER) | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported electricity energy (EEE) | MJ, net calorific value | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported thermal energy (ETE) | MJ, net calorific value | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

3.3 Information on biogenic carbon content

Table 6: Biogenic carbon content

| Biogenic carbon content | Unit (expressed per functional unit or per declared unit) |
|---|---|
| Biogenic carbon content in product | 0 kg C |
| Biogenic carbon content in accompanying packaging | 0.00067 kg C |
| NOTE: 1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂ . | |

4 Supplementary information

4.1 Calculation rules

In this section, it is suggested to include but not limited to following information:

- Declared or functional unit: 1 kilogram of product.
- Time representativeness: The data represents the period between 1st June 2023 and 31st May 2024.
- Cut-off rules: On the input side all flows entering the system and comprising more than 1% in total mass or contributing more than 1% to primary energy consumption are considered.
- Data quality: The evaluation of the quality of the modules used in the database is available in the appendix of the report.
- Allocation: The plant produces multiple products and the total quantities used on the sites have been allocated to the products by dividing the amount of the product in question with the total amount of all products produced at the site.
- In this report, the average value of each product group is used to represent the EPD declared results of the products in the product group. The product process, equipment and main materials in each product group are the same, and the differences between different models are mainly due to the differences in length, width and thickness. The declared unit of 1kg is used, and the difference is small, so the average value is adopted. That is, the data of the total raw material consumption, raw material transportation, energy consumption, waste, product transportation and other stages of different models and specifications of each product group are divided by the total output of the product group.

4.2 Scenarios and additional technical information

In this section, the A1-A3 is divide into 3 parts in the LCA model, including A1 raw material supply, A2 transport, and A3 manufacture. It is suggested to include but not limited to following information:

- Firstly, the raw material supply part covers the raw material and the packaging material.
- Secondly, the upstream transport of each material is modelled in the A2 part; the transport type, mass and distance are modelled according to the primary data and the loading rate and empty return rate is respectively set as 100% and 0%.
- Thirdly, the A3 manufacture process includes the resources input and the manufacture wastes in production. The production process consumes electricity and diesel according to the primary data. It is assumed that the distance of end-of-life product transportation (C2), product transportation from downstream customers to the construction site (A2), and the transportation of waste generated during installation and construction (A5) are 100km, 50km, and 50km respectively, and the transportation means are trucks (no specified model).

References

- ISO 14040: 2006, Environmental management – Life cycle assessment – Principles and framework
- ISO 14044: 2006, Environmental management – Life cycle assessment – Requirements and guidelines
- ISO 14025: Environmental labels and declarations – Type III environmental declarations – Principles and procedures (2006)
- EN 15804:2012+A2:2019 Sustainability of construction works-Environment product declarations-Core rules for the product category of construction products
- EPDCN-PCR-202204 PCR FOR CONSTRUCTION PRODUCTS AND CONSTRUCTION SERVICES TO EN 15804 V2.0
- EPD CHINA GENERAL PROGRAMME INSTRUCTIONS Version3
- SimaPro Tutorial, Version:6.0

Revision history

Any revision has been made after the EPD registration shall be clearly updated in this section.

Annex

An Annex may contain all additional information required for specific national use in different countries.



