

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

Owner of the Declaration	Etex Building Performance International
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ETE-20240005-IBC1-EN
Issue date	12/03/2024
Valid to	11/03/2029

PregyMetal AquaBoard - AZ150 galvanized steel profiles with 0,6mm thickness
Etex Building Performance SpA

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ECO PLATFORM
EPD
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1. General Information

Etex Building Performance SpA

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-ETE-20240005-IBC1-EN

This declaration is based on the product category rules:

Structural steels, 01/08/2021
(PCR checked and approved by the SVR)

Issue date

12/03/2024

Valid to

11/03/2029



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(Managing Director Institut Bauen und Umwelt e.V.)

PregyMetal AquaBoard - AZ150 galvanized steel profiles with 0,6mm thickness

Owner of the declaration

Etex Building Performance International
Rue Marcel Demonque 500
84915 Avignon Cedex 9
France

Declared product / declared unit

1 kg of average steel structure for PregyMetal "AquaBoard" profile with 0,6mm thickness.

Scope:

This EPD is an average EDP and applies for the following specific SINIAT products brand developed by Etex Building Performance S.p.A: Montante PregyMetal AquaBoard C50/50 (or Montante PregyMetal XT C50/50), Montante PregyMetal AquaBoard C75/50 (or Montante PregyMetal XT C75/50), Montante PregyMetal AquaBoard C100/50 (or Montante PregyMetal XT C100/50), Montante PregyMetal AquaBoard C150/50 (or Montante PregyMetal XT C150/50), Profilo PregyMetal AquaBoard S6027 BA, Guida PregyMetal AquaBoard U50/40 (or Guida PregyMetal XT U50/40), Guida PregyMetal AquaBoard U75/40 (or Guida PregyMetal XT U75/40), Guida PregyMetal AquaBoard U100/40 (or Guida PregyMetal XT U100/40), Guida PregyMetal AquaBoard U150/40 (or Guida PregyMetal XT U150/40), Guida PregyMetal AquaBoard U28/28 (or Guida PregyMetal XT U28/28), Profilo PregyMetal AquaBoard S6027 BA (or Profilo PregyMetal XT S6027 BA)

This EPD was developed from data collected at the Etex Building Performance S.p.A steel profile factory located in Corfinio. CAP 67030 (AQ), Italy, producing 100% of the total production of these products. Data refers to year 2021.

The EPD is a cradle-to-gate with options EPD and covers Siniat PregyMetal AquaBoard steel profiles.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR	
Independent verification of the declaration and data according to ISO 14025:2011	
<input type="checkbox"/>	internally
<input checked="" type="checkbox"/>	externally



Vito D'Incognito,
(Independent verifier)

2. Product

2.1 Product description/Product definition

Siniat PregyMetal AquaBoard profiles covered by this EPD are used in the construction sector as a support framing for plasterboard walls and ceilings. Three main groups can be distinguished:

- 'U' tracks Guida, profiles that, on the floor and ceiling, block the foot and head of the vertical studs of the wall warps,
- 'C' studs Montanti, profiles that constitute the vertical structures of the wall frames,
- 'C' channels Profili, profiles used to form the frame for a suspended ceiling system.

The galvanized carbon steel profiles here studied have a AZ150 aluminum and zinc coating (150 g/m² as minimum weight), mainly used for external walls and ceilings or internal high humidity areas.

The EPD covers the Italian version of the steel profiles for plasterboards drywall system.

The EPD refers to 1 average kg of steel profiles with coating. For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) Regulation (EU) No. 305/2011 (CPR) applies. The product needs a declaration of performance taking into consideration EN 14195:2005, Metal framing components for gypsum board systems - Definitions, requirements and test methods and the CE-marking.

For the application and use the respective national provisions apply.

2.2 Application

Siniat PregyMetal profiles covered by this EPD are used in all construction types (residential, commercial, healthcare, ...new or renovation), to build drywall systems. The various profiles can be used as vertical plasterboard frames, with improved stiffness and mechanical properties for high walls. They can be considered easy to install products.

Possible plasterboard frames fields of application are:

- Interior use, for walls and ceilings,
- Exterior use, for facade, sheathing walls, ceilings and eaves.

2.3 Technical Data

Detailed technical information is available in the specific product data sheets at www.siniat.it.

- Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to UNI EN 14195:2005

- Tensile strenght: ≥ 300 N/mm²

- Quality steel grade: DX51 D+AZ150

- Class of reaction to fire performance: A1

Constructional data

Below is a list of the number of meters necessary to obtain 1 kg of each individual product (o profile)

Name	Value	Unit
Density	7.85	kg/m ³
Guida PregyMetal AquaBoard U100/40 or Guida PregyMetal XT U100/40	1.24	m
Guida PregyMetal AquaBoard U150/40 or Guida PregyMetal XT U150/40	0.98	m
Guida PregyMetal AquaBoard U28/28 or Guida PregyMetal XT U28/28	2.85	m
Guida PregyMetal AquaBoard U50/40 or Guida PregyMetal XT U50/40	1.8	m
Guida PregyMetal AquaBoard U75/40 or Guida PregyMetal XT U75/40	1.5	m
Montante PregyMetal AquaBoard C100/50 or Montante PregyMetal XT C100/50	1.07	m
Montante PregyMetal AquaBoard C150/50 or Montante PregyMetal XT C150/50	0.82	m
Montante PregyMetal AquaBoard C50/50 or Montante PregyMetal XT C50/50	1.4	m
Montante PregyMetal AquaBoard C75/50 or Montante PregyMetal XT C75/50	1.2	m
Profilo PregyMetal AquaBoard S6027 BA or Profilo Pregymetal XT S6027 BA	1.89	m

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to UNI EN 14195:2005

2.4 Delivery status

Siniat PregyMetal AquaBoard profiles covered by this EPD are delivered in variable dimensions, specified by their respective data sheets available at www.siniat.it. The typical length of the structures is 3 m. The selling unit is a set of a defined number of structures bound by different plastic straps and separated by wooden slats.

2.5 Base materials/Ancillary materials

Steel structure

Name	Value	Unit
Galvanized carbon steel DX51D	1	Kg
Recycled steel content	35	%

Siniat PregyMetal AquaBoard profiles covered by this EPD are made from galvanized carbon steel DX51D with 35% of post consumer recycled content.

The metallic coating is the AZ150 Aluzinc coating is represented of 55% aluminium, 43,4% zinc and 1,6% silicon. The steel profiles covered by this EPD do not contain any substances listed in the 'Candidate List of Substances of Very High Concern for Authorisation' (SVHC) ([/\(/https://echa.europa.eu/it/candidate-list-table](https://echa.europa.eu/it/candidate-list-table) - date: 27.06.2018)/ exceeding 0.1% by mass.

The Candidate list can be found on the ECHA website address: <https://echa.europa.eu/de/home>.

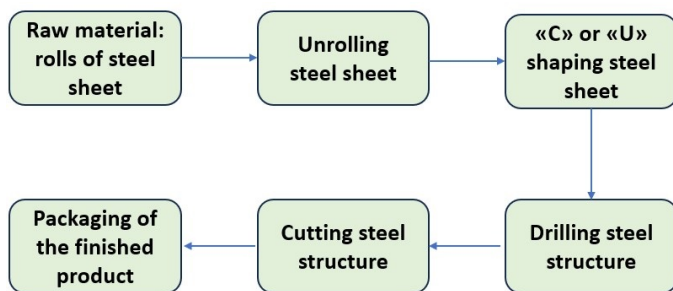
The steel structures covered by this EPD do not contain any other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1% by mass.

2.6 Manufacture

The manufacturing process is illustrated in the Figure below.

The production process consists of cutting, modeling, and

drilling of channels, studs and metal tracks. The raw materials first arrive at the plants in the form of rolls of galvanized steel, separated from each other by wooden slats, bound by plastic straps and subsequently stored inside the Company's warehouse. The actual process begins when the rolls of raw material are placed at the beginning of special machines that work the profiles. Initially, the steel coil is unrolled and passes through a set of rollers that gives the desired shape (U or C). Subsequently, the profile thus formed passes through a machine that drills it according to pre-established schemes. Finally, the formed and perforated steel structures are cut in length according to predetermined measures. The finished products are then grouped and held together by plastic strapping and separated from each other with wooden slats. The management system operated by the site is in compliance with the UNI EN ISO 9001:2015.



2.7 Environment and health during manufacturing

Relating to health protection during the manufacturing process, the plant follows and respects the specific Italian Regulation. The manufacturing process is certified according to Occupational Health and Safety Management System UNI ISO 45001:2018.

Steel profiles are manufactured in a plant permitted by emission law and by external waste recovery in accordance with the Italian regulation. The management system operated by the site is in compliance with the standard UNI EN ISO 14001:2015.

2.8 Product processing/Installation

The manufacturing process is carried out in dedicated automated machines that work the profiles: security protections according to the safety machinery standards are installed to avoid any risks for operators.

During handling, storage and installation: eye protection should be worn when using hand tools, gloves should be worn when handling metal sections and components to avoid risk of lacerations, packs should be stacked in a safe and stable manner, pack strapping should not be used for lifting, coils and metal sections may spring apart when strapping is released.

2.9 Packaging

For product protection the steel profiles are packed in groups of 192 or 360 and held together with plastic strapping and wooden slats.

2.10 Condition of use

Siniat PregyMetal AquaBoard profiles for plasterboard are suitable for any type of wall and ceiling created for plasterboard systems. No maintenance or repair is required over the service

life. The material composition of the product does not change during its use phase.

2.11 Environment and health during use

These products are not classified as hazardous under the EU CLP Regulation (European Regulation EC/1272/2008 on the classification, labelling and packaging of substances and mixtures).

2.12 Reference service life

The reference service life (RSL) is not relevant for consideration of the LCA as the steel structures are long-lasting products, therefore the use phase is not considered. Furthermore, the use stage (modules B1-B7) doesn't cause any environmental impact as the structures, once installed, do not require any manufacturing, water or electricity use or substitutions. In this particular case, in accordance with the "Federal office for building and regional planning" BBSR table "Service lives of components for life cycle assessment according to BNB" (<http://www.nachhaltigesbauen.de/baustoff-und-gebaeuedaten/nutzungsdauern-von-bauteilen.html>), a service life can be declared (not a RSL according to ISO 15686). The voice 'Unterkonstruktionen: Trockenbauprofile (Stahl, Holz)', meaning Drywall profiles for substructures, here in steel. The service life is considered to be higher than 50 years.

Description of the influences on the ageing of the product when applied in accordance with the rules of technology.

2.13 Extraordinary effects

Fire

Information on the fire performance according to EN 13501:1 or established national standards. According to EN 13501:1:

- The classes of building products regarding their fire performance are predefined as: A1

Water

Contains no substances that have any impact on water in case of flood.

Mechanical destruction

If relevant: information on the product performance including possible impacts on the environment following unforeseeable mechanical destruction.

2.14 Re-use phase

For the "C3" recycling phase, a scenario was used that recovers 90% of the steel and therefore sent for material recovery

2.15 Disposal

Disposal in accordance with the waste code: 17 04 05 Steel and iron waste from construction and demolition operations. The structures can be disassembled and, since they are entirely made out of steel, at least 90% can be recycled. National disposal guidelines have to be observed.

2.16 Further information

www.siniat.it

3. LCA: Calculation rules

3.1 Declared Unit

The LCA results presented in this EPD are related to 1 kg of average steel profile with 0,6mm thickness. The arithmetic mean was carried out between the environmental impact results of the different products considered.

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	kg
Conversion factor:		
Guida PregyMetal AquaBoard U100/40 or Guida PregyMetal XT U100/40	1.24	m/kg
Guida PregyMetal AquaBoard U150/40 or Guida PregyMetal XT U150/40	0.98	m/kg
Guida PregyMetal AquaBoard U28/28 or Guida PregyMetal XT U28/28	2.85	m/kg
Guida PregyMetal AquaBoard U50/40 or Guida PregyMetal XT U50/40	1.8	m/kg
Guida PregyMetal AquaBoard U75/40 or Guida PregyMetal XT U75/40	1.5	m/kg
Montante PregyMetal AquaBoard C100/50 or Montante PregyMetal XT C100/50	1.07	m/kg
Montante PregyMetal AquaBoard C150/50 or Montante PregyMetal XT C150/50	0.82	m/kg
Montante PregyMetal AquaBoard C50/50 or Montante PregyMetal XT C50/50	1.4	m/kg
Montante PregyMetal AquaBoard C75/50 or Montante PregyMetal XT C75/50	1.2	m/kg
Profilo PregyMetal AquaBoard S6027 BA or Profilo Pregymetal XT S6027 BA	1.89	m/kg
Density	7500	kg/m ³

3.2 System boundary

This EPD is a cradle-to-gate with options EPD, covering the following life cycle stages:

- steel structures manufacturing (modules A1-A3), including the production of the steel rolls, the transport to the manufacturing site, as well as impacts due to energy consumption, as well as auxiliary materials, waste treatment;
- transport of the steel structures from the manufacturing to the building site (module A4), Installation (module A5), including the production of auxiliaries and of waste deriving from packaging;
- emissions during the use phase (modules B). No emissions occur during the Etex Building Performance S.p.A steel structure use phase;
- end-of-life (modules C1-C4), including impacts from manual deconstruction, transport of waste to treatment facility, and waste processing and waste disposal. The scenario studied considers 90% of the structure recyclable (C3) and 10% sent to landfill (C4);
- benefits and loads beyond the system boundaries (D).

3.3 Estimates and assumptions

Assumptions regarding transport distances were made for the installation and end-of-life of the studied products, following the indications found in the EN 15804+A2 standard.

3.4 Cut-off criteria

In this study the packaging relating to the packaging materials of the finished product were placed in Cut-Off

3.5 Background data

The life cycle model supporting the EPD was developed in SimaPro 9.5, using background data from Ecoinvent 3.9.1, with the cutoff system model. When background data representative of the Italian market was not available in the Ecoinvent database, European average data ('Europe without Switzerland' or 'RER') or global data ('GLO') was used instead.

3.6 Data quality

Background data is from the Ecoinvent 3.9.1 database. Some of these background datasets have been collected more than 10 years ago but are still representative of current technology. Primary data provided by Etex Building Performance S.p.A and reviewed by Greenwich Srl is representative of the annual production for the year 2021. Since this is an average EPD, the environmental impacts reported are considered representative of all products as both the raw material and the production process remain identical.

3.7 Period under review

The data used for the study complies with the current level of knowledge at the time of modelling the LCA in 2021.

3.8 Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product's lifespan: EU-27 Member States

3.9 Allocation

In accordance with the PCR, the allocation was made considering the production of 2021. Specifically, the total quantity of profiles produced at the Corfinio plant, measured in mass (kg), was obtained from the internal monitoring reports. The percentage of the studied metal structures compared to the total production within the Corfinio plant is 91%.

3.10 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to EN 15804 and the building context, respectively the product-specific characteristics of performance, are taken into account. Background data base : Ecoinvent 3.9.1

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

The total mass of biogenic carbon containing materials is less than 5 % of the total mass of the product and accompanying packaging. Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO₂.

The A5 installation phase considers all materials, waste and energy consumed to install the studied product at the construction site into the building.

The steel structures that arrive on site are positioned manually and installed using a drill to screw the screws to hold the various structural parts (studs, tracks etc.) together, ready to contain the plasterboard wall or ceiling that will be placed there, without the need for auxiliary materials.

Installation into the building (A5)

For the installation phase, a typical situation was estimated per meter of structure installed:

- screws per meter = 10
- seconds needed to tighten a screw = 5
- Total operating time = 50 seconds
- Drill power = 600 W

A consumption of 0.0208 kWh of electricity is therefore estimated for every meter of structure installed.

Name	Value	Unit
Electricity consumption	0.0208	kWh

In case a **reference service life** according to applicable ISO standards is declared then the assumptions and in-use conditions underlying the determined RSL shall be declared. In addition, it shall be stated that the RSL applies to the reference conditions only.

The same holds for a service life declared by the manufacturer. Corresponding information related to in-use conditions needs not be provided if a service life taken from the list of service life by *BNB* is declared.

Reference service life

Name	Value	Unit
Life Span (according to BBSR)	50	a
Maintenance e.g. required frequency, type and quality and replacement of components	-	-

End of life (C1 - C4)

C1: The product dismantling from the building is done manually through the use of a drill to unscrew the screws that hold the channels, studs and tracks together.

C2: 100 km estimated

C3: 90% of product mass is recycled

C4: 10% of product mass is send to landfill

Name	Value	Unit
Recycling	0.9	kg
Landfilling	0.1	kg

5. LCA: Results

The following table shows the result of the LCA for 1 kg of the reference product. The results in the B module are based on a period of one year as no reference service life is declared. The environmental impact due to the use phase is null.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction 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	MND	X	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 Kg Average PregyMetal AquaBoard - AZ150 galvanized steel profiles with 0,6mm thickness

Parameter	Unit	A1	A2	A3	A5	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq	2.47E+00	9.5E-02	2.84E-03	1.33E-02	1.29E-02	1.92E-02	1.73E-02	6.35E-04	-1.2E+00
GWP-fossil	kg CO ₂ eq	2.46E+00	9.49E-02	3.33E-03	1.23E-02	1.18E-02	1.92E-02	1.73E-02	6.34E-04	-1.19E+00
GWP-biogenic	kg CO ₂ eq	2.16E-03	9.11E-05	-4.86E-04	1.57E-03	1.08E-03	1.84E-05	1.66E-05	4.1E-07	-2.43E-03
GWP-luluc	kg CO ₂ eq	2.05E-03	4.56E-05	2.68E-06	2.02E-06	1.81E-06	9.21E-06	8.29E-06	3.73E-07	-5.12E-04
ODP	kg CFC11 eq	6.1E-08	2.02E-09	1.59E-10	2.67E-10	2.57E-10	4.09E-10	3.68E-10	1.76E-11	-2.19E-08
AP	mol H ⁺ eq	4.32E-02	3.83E-04	1.38E-05	4.32E-05	4.14E-05	7.74E-05	6.97E-05	4.58E-06	-4.86E-03
EP-freshwater	kg P eq	1.14E-03	6.52E-06	7.06E-07	1.85E-06	1.82E-06	1.32E-06	1.19E-06	5.06E-08	-5.55E-04
EP-marine	kg N eq	3.36E-03	1.46E-04	2.78E-06	7.74E-06	7.08E-06	2.95E-05	2.66E-05	1.76E-06	-1.08E-03
EP-terrestrial	mol N eq	1.64E-01	1.56E-03	2.7E-05	8.74E-05	8.04E-05	3.15E-04	2.84E-04	1.88E-05	-1.15E-02
POCP	kg NMVOC eq	1.15E-02	5.61E-04	5.23E-05	3.7E-05	3.45E-05	1.13E-04	1.02E-04	6.56E-06	-5.46E-03
ADPE	kg Sb eq	2.75E+01	1.32E+00	1.1E-01	1.87E-01	1.8E-01	2.67E-01	2.4E-01	1.51E-02	-1.19E+01
ADPF	MJ	4.78E-05	2.99E-07	2.3E-08	2.18E-08	2.04E-08	6.04E-08	5.44E-08	8.44E-10	-9.83E-06
WDP	m ³ world eq deprived	8.27E-01	5.45E-03	6.73E-04	7.26E-03	7.24E-03	1.1E-03	9.92E-04	6.7E-04	-2.45E-01

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 Kg Average PregyMetal AquaBoard - AZ150 galvanized steel profiles with 0,6mm thickness

Parameter	Unit	A1	A2	A3	A5	C1	C2	C3	C4	D
PERE	MJ	2.24E+00	2.05E-02	1.26E-02	4.58E-02	4.56E-02	4.14E-03	3.73E-03	1.28E-04	0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.24E+00	2.05E-02	1.26E-02	4.58E-02	4.56E-02	4.14E-03	3.73E-03	1.28E-04	0
PENRE	MJ	2.92E+01	1.4E+00	1.17E-01	2.02E-01	1.95E-01	2.84E-01	2.55E-01	1.61E-02	0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.92E+01	1.4E+00	1.17E-01	2.02E-01	1.95E-01	2.84E-01	2.55E-01	1.61E-02	0
SM	kg	3.5E-01	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m ³	2.48E-02	1.88E-04	2.24E-05	1.95E-04	1.94E-04	3.8E-05	3.42E-05	1.61E-05	-6.69E-03

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 resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA - WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 Kg Average PregyMetal AquaBoard - AZ150 galvanized steel profiles with 0,6mm thickness

Parameter	Unit	A1	A2	A3	A5	C1	C2	C3	C4	D
HWD	kg	4.34E-04	8.4E-06	5.72E-07	6.47E-07	6.07E-07	1.7E-06	1.53E-06	8.02E-08	-1.01E-04
NHWD	kg	5.9E-01	6.45E-02	3.69E-04	7.96E-04	5.37E-04	1.3E-02	1.17E-02	1E-01	-4.95E-01
RWD	kg	4.28E-05	4.29E-07	6.98E-08	3.92E-07	3.9E-07	8.67E-08	7.8E-08	2.24E-09	-1.05E-05
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	9.5E-03	2E-02	0	0	9E-01	0	0

MER	kg	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 Kg Average PregyMetal AquaBoard - AZ150 galvanized steel profiles with 0,6mm thickness

Parameter	Unit	A1	A2	A3	A5	C1	C2	C3	C4	D
PM	Disease incidence	4.82E-07	7.58E-09	1.53E-10	2.28E-10	1.97E-10	1.53E-09	1.38E-09	1E-10	-8.72E-08
IR	kBq U235 eq	1.69E-01	1.77E-03	2.78E-04	1.5E-03	1.49E-03	3.57E-04	3.21E-04	9.59E-06	-4.16E-02
ETP-fw	CTUe	2.4E+01	6.97E-01	4.32E-02	2.53E-02	2.2E-02	1.41E-01	1.27E-01	7.43E-03	-2.96E+00
HTP-c	CTUh	6.92E-08	1.22E-09	5.46E-11	7.83E-11	7.28E-11	2.47E-10	2.22E-10	7.34E-12	-2.86E-08
HTP-nc	CTUh	1.54E-08	4.23E-11	2.72E-12	3.24E-12	3.06E-12	8.54E-12	7.69E-12	2.59E-13	-7.25E-09
SQP	SQP	8.5E+00	7.85E-01	6.38E-02	3.09E-02	2.77E-02	1.59E-01	1.43E-01	3.01E-02	-3.81E+00

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. 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 or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

6. LCA: Interpretation

Product stage (modules A1-A3) is responsible for the biggest share of the impact for most indicators. About 90% of the

impacts on the Global Warming Potential is due to its production, especially in the raw materials phase in A1.

7. Requisite evidence

The products covered by this document comply with EN 14195 regarding their field of application and with EN 10346 for the

type of surface treatment.

8. References

Standards

EN 15804

EN 15804:2012+A1 2013, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

EN 15804

EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

ISO 14025

EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

Further References

Title of the software/database

Title of the software/database. Addition to the title, version. Place: Publisher, Date of publication [Access on access date].

IBU 2021

Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V., Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021
www.ibu-epd.com

Standards:

EN 15804EN 15804:2012+A1 2013, Sustainability of construction works— Environmental Product Declarations — Core rules for theproduct category of construction products.EN 15804.

EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.ISO 14025.

EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

EN 14195:2005 - Metal framing components for gypsum board systems - Definitions, requirements and test methods and the CE-marking.

UNI EN ISO 9001:2015 - Quality management systems

UNI ISO 45001:2018 - Occupational health and safety management systems

UNI EN ISO 14001:2015 - Environmental management systems

ISO 15686 - Buildings and constructed assets

ISO 13501:1 - Petroleum and natural gas industries

European Regulation EC/1272/2008 -Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance)

EN 14195 - Metal framing components for gypsum board systems

EN 10346 - Continuously hot-dip coated steel flat products

Further References:

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Institut Bauen und Umwelt e.V.: General Instructions for theEPD programme of Institut Bauen und Umwelt e.V., Version2.0, Berlin: Institut Bauen und Umwelt e.V., 2021www.ibu-epd.com.

PCR Part A - Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report according to EN 15804+A2:2019. Version 6, 12/07/2023

PCR Part B - Requirement on the EPD for Structural steel, V.1, 06/04/2023.

Regulation (EU) No. 305/2011 -Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC Text with EEA relevance

Candidate List of Substances of Very High Concern for Authorisation' (SVHC).

EWC-Stat categories - European Waste Classification.

Federal office for building and regional planning (BBSR) BNB " (<http://www.nachhaltigesbauen.de/baustoff-und-gebaeuedaten/nutzungsdauern-von-bauteilen.html>).

Title of the software/database:

Software: SimaPro 9.5.0.1
Database: Ecoinvent 3.9.1

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