Environmental Product Declaration

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

[Steel Press Fitting]

from

[*BESCO GmbH*]

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products from a company
EPD registration number:	EPD-IES-0027805:001
Version date:	2026-01-19
Validity date:	2031-01-19

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 the representative results of the product group

GeGENERAL INFORMATION

Programme Information	
Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	support@environdec.com

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): ***CONSTRUCTION PRODUCTS, PCR 2019:14, VERSION 2.0.1 ,Valid until 2030-04-07>，UNCPC code：412***
PCR review was conducted by: <*Rob Rouwette*>
c-PCR, if applicable: Not available

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: <*Michael ZHU Jiang* , *DQS AP LTD.*>
Approved by: International EPD System

*EPD process certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.envrondec.com.

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:
Besco GmbH

Address:
Märkische Str. 12, 47809 Krefeld, Germany

Contact:
jemmy.lee@bescofittings.de

Address and contact information of the LCA practitioner commissioned by the EPD owner, if applicable:
Karen Wu from Besco GmbH
karenwu@bescofittings.de

Description of the organisation:

Besco fittings is a steel fittings manufacturer based in Germany and production facilities in China. In 2001, they started the OEM fittings manufacturing with the purpose of supplying the plumbing distribution companies with quality products and affordable prices. A team of industry professional was assembled, their purpose being to maintain a natural climate of dialogue and openness with all the customers by providing them with responses adapted to needs and a business promise of win-win. They have developed new quality standards and new products made from selected materials like steel, brass, bronze ,steel, stainless steel etc. Our tight relationship with European customers prompted the opportunity of opening, in 2009, of a new subsidiary and a warehouse in Krefeld, Germany under the name of Besco GmbH. Today, our products are well represented by our partners from European markets like: Germany, France, Belgium, Poland, Italy, Sweden.

Product-related or management system-related certifications:
None

PRODUCT INFORMATION

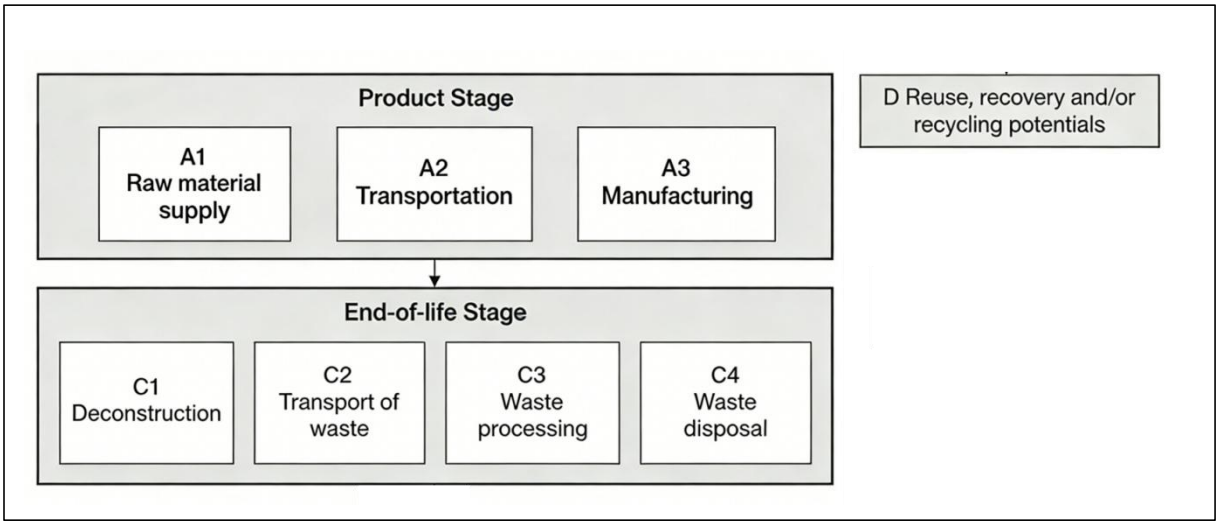
Product name
Steel Press Fitting

Product identification:

M Profile Steel Press Fitting	2270, 2243G, 2270G, 2240, 2271, 2358G, 2331G, 2002, 2001, 2041, 2040, 2001G, 2002G, 2301, 2243, 2130, 2130R, 2130G, 2090G, 2280, 2281, 2510；1270, 1271, 1002, 1001, 1041, 1040, 1243, 1130, 1130R, 1301, 1030, 1085, 1092G, 1090G, 1472G, 1270G, 1243G, 1130G, 1358G, 1331G, 1280, 1281, 1510

UN CPC code: 412

Product description: The steel press fittings from Besco are the ideal products for installations and closed circuit systems for heating or cooling. The M press uses the technique of cold-forming which will result into a fast and safe system. The steel press fittings are practically, value for money and suitable to any plumbing installation with the size range from 12mm to 108mm.



More information:

A1-A2 stage

The primary raw material is steel plate with PVC ring cover over the edge of the press fitting.The additional processing techniques for steel and PVC ring are also included. Packaging materials are aggregated into corrugated boxes. All input data in the A1 stage is based on the gross mass. The total transportation are calculated to 517.32kgkm under “Transport, freight, lorry, unspecified {RoW}| transport, freight, lorry, all sizes, EURO5 to generic market for transport, freight, lorry, unspecified | Cut-off, S”

Manufacturing (A3)

The steel press fitting process begins with steel pipes, which first undergo cutting, initial cleaning, and forming, followed by a second cleaning. Next, the formed fittings undergo pressure testing and leak detection; after this, they are warehoused (then retrieved from storage) to be sent for outsourced electrophoretic coating. Post-electrophoresis, the fittings are warehoused again (then retrieved) for spray molding, after which rubber rings are installed. The final steps involve coding the fittings, packaging them, and ultimately warehousing the finished products for storage and subsequent transportation.

The climate impact of the energy source behind electricity in the manufacturing process in A3 is shown below:

Province involved	Process	Production mix	Technology year	GWP-GHG (kgCO2/kWh)
Zhejiang	Casting and machining	Electricity, medium voltage {CN-ECGC}| market for electricity, medium voltage | Cut-off, U	2024	0.855

End-of-Life (C1-C4)

The end-of-life stages begin with the deconstruction and demolition from the installation site, followed by transfer for recycling and disposal. It is assumed that the press fitting will be removed by manual labour, thus no additional energy/materials are needed. The discarded product is then transported either to the recycling site or to landfills for final disposal (C2); as a conservative assumption, a distance of 80 km to waste processing sites is adopted according to the PCR. Regarding waste treatment, the average recycling rate of steel after its life cycle is 85% (C3), and the remaining 15% is assumed to be landfilled (C4). The PVC plastic ring cover is assumed to be finally landfilled. The

complete waste disposal process is based on a generic dataset from the Ecoinvent dataset, with the included scenarios currently in use and representative of one of the most likely scenario alternatives.

Module D

- Module D aims at transparency for the environmental benefits or loads resulting from reusable products, recyclable materials and/or useful energy carriers leaving a product system. All declared net benefits and loads from net flows leaving the product system that have passed the end-of-waste state shall be included in module D.
- In this LCA study, the recycling of steel from C3 are considered in module D. 0.83kg steel in recycled will be modelled as the avoided product via “Pig iron {RoW}| market for pig iron | Cut-off, S” dataset.

Excluded Processes

The following stages are excluded from the system boundary as their impacts are deemed irrelevant or minor to the steel press fitting product LCA:

- Production, disposal, and maintenance of infrastructure/capital equipment (buildings, machines, transport media, roads);
- Product storage phases;
- Accidental product losses (e.g., natural disasters, fires);
- Secondary and transit packaging materials.

Cut-off Rules

No specific cut-off rules—all flows with potential for significant air/water/soil emissions are included.

Allocation

In the production of steel press fittings, special production is used because all the inputs and outputs are clearly corresponding to the products. Steel wire scraps bear economic costs and thus treated as reaching EoW at the factory gate.

Key Assumptions

The key assumptions of this Life Cycle Assessment (LCA) study are presented as follows:

- For steel press fitting products, electroplating is employed to apply a thin layer of anti rust powder on the surface. Since the treatment process is outsourced, the ecoinvent dataset of “hard chromium coating, electroplating, steel substrate, 0.14 mm thickness GLO” is utilized. The surface area per declared unit of the steel press fitting is calculated based on an average thickness of 5 mm for the press-fitting, which is used to calculate the surface area.
- For transportation, an ecoinvent dataset of unspecified transport load under the EURO5 standard is selected, specifically “Transport, freight, lorry, unspecified {RoW}| transport, freight, lorry, all sizes, EURO5 to generic market for transport, freight, lorry, unspecified | Cut - off, S”.
- It is assumed that the demolition and deinstallation of products such as steel press fittings are carried out through manual labor. The steel is recycled at 85% while remaining 15% steel is landfilled. The PVC ring is landfilled.

Data quality Assessments

According to EN15941 Annex C, the Environmental Product Declaration (EPD) for press fitting is based on data collected by Besco Company from its Taizhou Manufacturing Plants over the period 2024/01/01~2024/12/31. This EPD is representative of press fitting at Besco’s Taizhou sites and for all press fitting under study are manufactured from the corresponding manufacturing sites. The datasets

cover the geographical boundary (China) for the life cycle stages of the press fitting. The EPD utilizes background data from Ecoinvent 3.10.1 database. Data quality—evaluated for *time, geographical, and technological representativeness* per EN 15804:2012+A2:2019, Annex E, E1 shows Fair to Good in most cases. The EPD uses electricity consumption mix to improve its geographical representativeness and the manufacturing electricity consumption contributes to a fraction of 20.3% for climate change-total category over A-C life cycles for steel press fitting.

Per the PCR 2019:14 version 2.0.1 requirement, processes contributing more than 10% of the GWP-GHG impact category over the A1-A3 should be reported, which is documented in the following

Datasets	Type of Source	Source	Reference Year	Data Category	Share
Hard chromium coat, electroplating, steel substrate, 0.14 mm thickness {GLO}| market for hard chromium coat, electroplating, steel substrate, 0.14 mm thickness | Cut-off, S	Database	Ecoinvent 3.10.1	2024	Representative secondary data	50.7%
Steel, unalloyed {RoW}| steel production, converter, unalloyed | Cut-off, S	Database	Ecoinvent 3.10.1	2024	Representative secondary data	21.4%
Electricity, medium voltage {CN-ECGC}| market for electricity, medium voltage | Cut-off, S	Database	Ecoinvent 3.10.1	2024	Primary data	20.3%

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

	Product stage			Distribution/ installation stage		Use stage							End-of-life stage				Beyond product life cycle
	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	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	CN	CN	CN										GLO	GLO	GLO	GLO	GLO
Share of primary data	21.17%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%*					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	N.A.					-	-	-	-	-	-	-	-	-	-	-	-

*: The EPD covers various products of steel press fitting with different lengths. Per the declared unit of 1kg, the materials and manufacturing (A1-A3) for the products are same. Thus, no variation of products is presented.

*: "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.

Process	Source type	Source	Reference year	Data category	Share of primary data
Generation of electricity (manufacturing use)	Database	Ecoinvent v3.10	2024	Primary data	20.3%
Raw materials transport (A2)	Database	Ecoinvent v3.10	2024	Primary data	0.87%
Other processes	Database	Ecoinvent v3.10	2024	Secondary data	0%
Total share of primary data (GWP-GHG, A1-A3)					21.17%

ENVIRONMENTAL PERFORMANCE

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

Mandatory impact category indicators according to EN 15804 with EF3.1

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Climate change - total	kg CO2 eq	9.35E+00	0.00E+00	1.26E-02	2.64E-02	1.98E-03	-1.56E+00
Climate change - Fossil	kg CO2 eq	9.33E+00	0.00E+00	1.26E-02	2.63E-02	1.97E-03	-1.56E+00
Climate change - Biogenic	kg CO2 eq	8.10E-03	0.00E+00	2.22E-06	6.90E-05	1.29E-06	-1.84E-04
Climate change - Land use and LU change	kg CO2 eq	8.43E-03	0.00E+00	5.12E-06	3.06E-05	5.79E-07	-3.68E-04
Ozone depletion	kg CFC11 eq	7.97E-08	0.00E+00	1.78E-10	2.97E-10	3.16E-11	-4.57E-09
Acidification	mol H+ eq	4.30E-02	0.00E+00	4.20E-05	2.64E-04	7.90E-06	-5.40E-03
Eutrophication, freshwater	kg P eq	3.26E-03	0.00E+00	1.01E-06	1.29E-05	9.63E-08	-4.19E-04
Eutrophication, marine	kg N eq	8.94E-03	0.00E+00	1.35E-05	6.11E-05	8.45E-06	-1.24E-03
Eutrophication, terrestrial	mol N eq	9.30E-02	0.00E+00	1.47E-04	6.86E-04	3.27E-05	-1.34E-02
Photochemical ozone formation	kg NMVOC eq	2.82E-02	0.00E+00	5.93E-05	2.04E-04	1.18E-05	-4.55E-03
Resource use, minerals and metals	kg Sb eq	2.40E-05	0.00E+00	3.94E-08	1.37E-06	1.86E-09	-8.12E-07
Resource use, fossils	MJ	1.09E+02	0.00E+00	1.78E-01	3.16E-01	2.68E-02	-1.52E+01
Water use	m3 depriv.	1.93E+00	0.00E+00	8.55E-04	4.10E-03	-1.40E-03	-9.81E-02

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

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."

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).

Biogenic carbon have been balanced out already in modules A1-A3.

Additional mandatory and voluntary impact category indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq	9.35E+00	0.00E+00	1.26E-02	2.64E-02	1.98E-03	-1.56E+00

Resource use indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	9.31E+00	0.00E+00	2.35E-03	3.84E-02	2.62E-04	-2.99E-01
PERM	MJ	3.22E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	9.64E+00	0.00E+00	2.35E-03	3.84E-02	2.62E-04	-2.99E-01
PENRE	MJ	1.08E+02	0.00E+00	1.78E-01	3.16E-01	2.68E-02	-1.52E+01
PENRM	MJ	7.88E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.09E+02	0.00E+00	1.78E-01	3.16E-01	2.68E-02	-1.52E+01
SM	kg	0.00E+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	5.82E-02	0.00E+00	2.51E-05	1.25E-04	-3.20E-05	-3.22E-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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-

Results per declared unit
renewable secondary fuels; FW = Use of net fresh water

Option A method has been applied for primary energy indicators. PENRM and PERM are balanced in A1-A3 stage.

Waste indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	7.41E-01	0.00E+00	2.14E-04	1.60E-03	2.17E-05	-1.98E-02
Non-hazardous waste disposed	kg	3.66E+00	0.00E+00	1.67E-03	1.15E-02	2.41E-01	-9.04E-01
Radioactive waste disposed	kg	2.16E-04	0.00E+00	3.80E-08	2.58E-07	4.50E-09	-2.86E-06

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	8.37E-01	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)

This EPD does not declare additional LCIA impact categories

ADDITIONAL ENVIRONMENTAL INFORMATION

The sensitivity analysis is carried out based on the requirements from the PCR 2019:014 version 2.0.1. Recycling scenarios for 100% recycling, 100% incineration and 100% landfill of the steel press fitting product are analyzed in the sensitivity analysis.

C & D impacts for 100% landfill scenario

Remark	Unit	C1	C2	C3	C4	D
Climate change	kg CO2 eq	0.00E+00	1.26E-02	0.00E+00	7.20E-03	0.00E+00
Climate change - Fossil	kg CO2 eq	0.00E+00	1.26E-02	0.00E+00	7.20E-03	0.00E+00
Climate change - Biogenic	kg CO2 eq	0.00E+00	2.22E-06	0.00E+00	2.70E-06	0.00E+00
Climate change - Land use and LU change	kg CO2 eq	0.00E+00	5.12E-06	0.00E+00	3.27E-06	0.00E+00
Acidification	mol H+ eq	0.00E+00	1.78E-10	0.00E+00	1.83E-10	0.00E+00
Eutrophication, freshwater	kg P eq	0.00E+00	4.20E-05	0.00E+00	4.49E-05	0.00E+00
Eutrophication, marine	kg N eq	0.00E+00	1.01E-06	0.00E+00	5.30E-07	0.00E+00
Eutrophication, terrestrial	mol N eq	0.00E+00	1.35E-05	0.00E+00	2.25E-05	0.00E+00
Photochemical ozone formation	kg NMVOC eq	0.00E+00	1.47E-04	0.00E+00	1.87E-04	0.00E+00
Ozone depletion	kg CFC11 eq	0.00E+00	5.93E-05	0.00E+00	6.70E-05	0.00E+00
Resource use, minerals and metals	kg Sb eq	0.00E+00	3.94E-08	0.00E+00	1.00E-08	0.00E+00
Resource use, fossils	MJ	0.00E+00	1.78E-01	0.00E+00	1.55E-01	0.00E+00
Water use	m3 depriv.	0.00E+00	8.55E-04	0.00E+00	4.19E-03	0.00E+00

C & D impacts for 100% incineration scenario

Remark	Unit	C1	C2	C3	C4	D
Climate change	kg CO2 eq	0.00E+00	1.88E-02	0.00E+00	4.91E-02	-1.37E-02
Climate change - Fossil	kg CO2 eq	0.00E+00	1.88E-02	0.00E+00	4.90E-02	-1.36E-02
Climate change - Biogenic	kg CO2 eq	0.00E+00	3.32E-06	0.00E+00	4.84E-05	-1.75E-06
Climate change - Land use and LU change	kg CO2 eq	0.00E+00	7.68E-06	0.00E+00	3.54E-05	-3.77E-06
Acidification	mol H+ eq	0.00E+00	2.67E-10	0.00E+00	4.02E-10	-7.98E-11
Eutrophication, freshwater	kg P eq	0.00E+00	6.30E-05	0.00E+00	1.18E-04	-5.76E-05
Eutrophication, marine	kg N eq	0.00E+00	1.52E-06	0.00E+00	1.47E-05	-1.91E-06
Eutrophication, terrestrial	mol N eq	0.00E+00	2.03E-05	0.00E+00	4.39E-05	-1.27E-05
Photochemical ozone formation	kg NMVOC eq	0.00E+00	2.21E-04	0.00E+00	4.66E-04	-1.35E-04
Ozone depletion	kg CFC11 eq	0.00E+00	8.90E-05	0.00E+00	1.56E-04	-4.12E-05
Resource use, minerals and metals	kg Sb eq	0.00E+00	5.91E-08	0.00E+00	6.45E-08	-8.69E-09

Remark	Unit	C1	C2	C3	C4	D
Resource use, fossils	MJ	0.00E+00	2.67E-01	0.00E+00	3.20E-01	-1.53E-01
Water use	m3 depriv.	0.00E+00	1.28E-03	0.00E+00	2.19E-02	-1.31E-03

C & D impacts for 100% recycling scenario

Remark	Unit	C1	C2	C3	C4	D
Climate change	kg CO2 eq	0.00E+00	1.26E-02	3.10E-02	0.00E+00	-1.88E+00
Climate change - Fossil	kg CO2 eq	0.00E+00	1.26E-02	3.09E-02	0.00E+00	-1.88E+00
Climate change - Biogenic	kg CO2 eq	0.00E+00	2.22E-06	8.12E-05	0.00E+00	-2.97E-04
Climate change - Land use and LU change	kg CO2 eq	0.00E+00	5.12E-06	3.60E-05	0.00E+00	-4.64E-04
Acidification	mol H+ eq	0.00E+00	1.78E-10	3.49E-10	0.00E+00	-1.67E-08
Eutrophication, freshwater	kg P eq	0.00E+00	4.20E-05	3.10E-04	0.00E+00	-6.53E-03
Eutrophication, marine	kg N eq	0.00E+00	1.01E-06	1.52E-05	0.00E+00	-5.05E-04
Eutrophication, terrestrial	mol N eq	0.00E+00	1.35E-05	7.19E-05	0.00E+00	-1.50E-03
Photochemical ozone formation	kg NMVOC eq	0.00E+00	1.47E-04	8.07E-04	0.00E+00	-1.61E-02
Ozone depletion	kg CFC11 eq	0.00E+00	5.93E-05	2.40E-04	0.00E+00	-5.52E-03
Resource use, minerals and metals	kg Sb eq	0.00E+00	3.94E-08	1.61E-06	0.00E+00	-1.37E-06
Resource use, fossils	MJ	0.00E+00	1.78E-01	3.72E-01	0.00E+00	-1.86E+01
Water use	m3 depriv.	0.00E+00	8.55E-04	4.82E-03	0.00E+00	-1.32E-01

ADDITIONAL SOCIAL AND ECONOMIC INFORMATION

None

INFORMATION RELATED TO SECTOR EPD

None

ABBREVIATIONS

All abbreviations used in the EPD must be added. Please add all the abbreviations used.

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CLC	Co-location centre
CPC	Central product classification
GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
SVHC	Substances of Very High Concern
ND	Not Declared
ADP	Abiotic Depletion Potential
AP	Acidification Potential
CR	Components for recycling
CRU	Components for re-use
CSI	Construction specification Institute
EE	Exported energy per energy carrier
EP	Eutrophication Potential
EPC	Engineered Plastic Composite
EPD	Environmental Product Declaration
ETP	Potential comparative Toxic for ecosystem
FW	Use of net fresh water
GWP	Global Warming Potential
HTP	Potential comparative Toxic for Humans

HWD	Hazardous waste disposed
IBU	Institut Bauen und Umwelt e.V.
IRP	Ionizing Radiation, human health
ISO	International Organization for Standardization
LCA	Life cycle assessment
MER	Materials for energy recovery
MR	Materials for recycling
MSDS	Material Safety Data Sheet
NHWD	Non-hazardous waste disposed
NRSF	Use of none renewable secondary fuels
ODP	Ozone Layer Depletion Potential
PCR	Product Category Rules
PENRE	Non-renewable primary resources used as an energy carrier (fuel)
PENRM	Non-renewable primary resources with energy content used as material
PENRT	Total use of Non-renewable primary energy resources
PERE	Renewable primary energy used as energy carrier (fuel)
RERM	Renewable primary re- sources with energy content used as material
PERT	Total use of renewable primary energy resources
PM	Particulate Matter emissions
POCP	Photochemical Ozone Creation Potential
PUR	Polyurethane
PVC	Polyvinyl chloride
RSF	Use of renewable secondary fuels
RWD	Radioactive waste disposed
SGCC	State Grid Corporation of China
SM	Secondary materials
UL	Underwriters Laboraties Inc.
WDP	Water (user) deprivation potential, deprivation-weighted water consumption

REFERENCES

a) General Programme Instructions of International EPD System. Version. 5.0.1
b) Ecoinvent, 2024. Swiss Centre for Life Cycle Assessment, v3.10 (www.ecoinvent.ch).
c) EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products.
d) ISO 14025:2006, Environmental labels and declarations-Type III environmental declarations-Principles and procedures.
e) ISO 14040: 2006/Amd 1:2020 Environmental management - Life cycle assessment - Principles and framework Amendment 1 (ISO 2020).
f) ISO 14044: 2006/Amd 2:2020 Environmental management - Life cycle assessment - Requirements and guidelines Amendment 2 (ISO 2020).
g) EPD International PCR for Construction Product 2019:14 version 2.0.1 valid until 2030-04-07

VERSION HISTORY

This is a new submission