Environmental Product Declaration

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

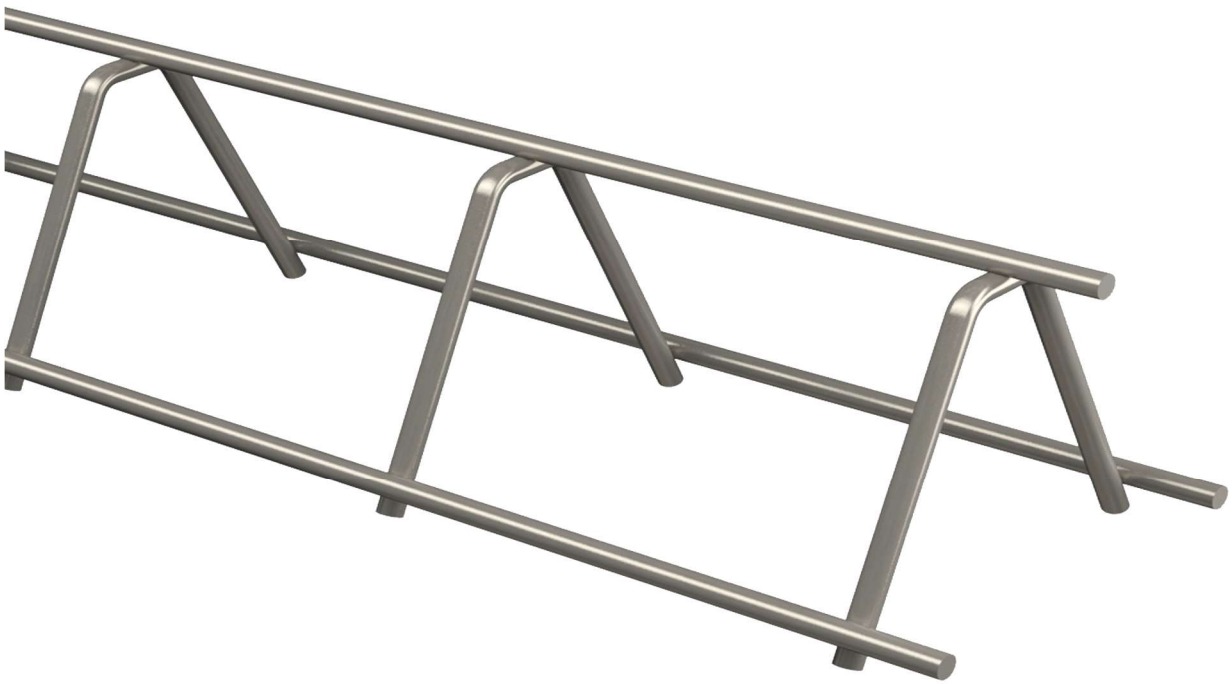
Steel spacers for reinforced concrete construction

(EPD of multiple products, based on the worst case results of the product group)

from

Exte 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-0025099:001
Version date:	2025-10-27
Validity date:	2030-10-26
	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



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 PCR
PCR: PCR 2019:14: CONSTRUCTION PRODUCTS, version 2.0.1
PCR review was conducted by: **The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair Rob Rouwette and review co-chair Noa Meron. The review panel may be contacted via the Secretariat on www.environdec.com/contact.**
c-PCR: Not applicable

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: Luciano Sambataro, Cacta Sustainability Solutions LLC Approved by: The International EPD® System
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: Exte GmbH
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Address and contact information of the LCA practitioner commissioned by the EPD owner:
Sphera Solutions GmbH, 70771 Leinfelden-Echterdingen, Germany, www.sphera.com

Description of the organisation:

EXTE Group

The EXTE Group is a global supplier of specialised products for the concrete, roller shutter box and window construction industries. Our independent, medium-sized family business combines tradition with innovation. Since our foundation in 1959, we evolved constantly and became a key player in the construction industry.
To live up to our guiding principles, we have been using an energy management system at our sites for over a decade, which is certified according to ISO 50 001.

EXTE GmbH in Nienburg (Saale), Germany

At our site in Nienburg (Saale), Germany, the EXTE GmbH employs 200 people in development, manufacture, warehousing, sales, and distribution. On a production area of around 22,000 m² formwork accessories and spacers for concrete construction are made from steel and plastics – a complete product range tailored to the needs of our customers.

Product-related or management system-related certifications: ISO 50 001

PRODUCT INFORMATION

Product name:
Steel spacers for reinforced concrete construction

Product identification:
Steel spacers identified by internal product codes (S, SBA) and used in reinforced concrete construction

Product description:
A steel spacer is a component which is placed to maintain a defined distance between two horizontal layers of steel reinforcement mesh in reinforced concrete construction. Certain spacers additionally provide support for the reinforcement. Spacers differ in shape and size.

This EPD includes the following spacer types:

- **Continuous highchairs Type S** – characterised by a uniform height and elongated serpentine-shape; used between bottom and top reinforcement mesh to support the top mesh
- **Continuous highchairs Type SBA** – characterised by a uniform height, elongated linear shape and triangular cross section; used between bottom and top reinforcement mesh to support the top mesh

To produce continuous highchairs the method of mesh welding is used. Process steps:

1. Wire drawing
   Steel wire (grade B10 or S235JR) is fed through a series of drawing dies or rolling stands to reduce its diameter. The processed wire is spooled into coils and stored until needed.
2. Wire Preparation and Positioning
   Wires are drawn from coils, fed through straightening units and positioned in grid-like structures on the mesh welding machine.
3. Welding
   Resistance welding uses electrodes to apply heat and pressure at the wire intersections to fuse them together.
4. Shearing and Pressing
   The welded mesh is conveyed into the mesh shear station which separates the grid into narrow ladder-like meshes.
   The cut-to-size mesh strips are positioned into the forming mould of a pressing unit and shaped by the counterpressure of a counterpunch.
5. Quality Control and Packaging
   Visual inspections, dimensional checks, and mechanical testing are performed to ensure quality standards are met.
   The highchairs are bundled using plastic or wire strapping, before being packaged onto pallets and prepared for distribution.

Visual representation (e.g., an image) of the product:
A visual representation of the products is provided in the “List of products” section.

UN CPC code: 4219 Structural metal products and parts thereof - Other structures

Name and location of production site(s): Industriestraße 3, 06429 Nienburg (Saale), Germany

CONTENT DECLARATION

Content declaration is done for steel spacers for reinforced concrete construction

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg Carbon / product or declared unit
Steel wire	1	82%	0%	0
TOTAL	1	82%	0%	0

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg Carbon / product or declared unit
Pallets	5.72E-02	5.4100%	0.0200
Wire	3.80E-05	0.0040%	--
PP strapping	3.00E-04	0.0280%	--
PET strapping	4.83E-04	0.0460%	--
Metal strapping	1.90E-04	0.0180%	--
Sticky label	5.60E-06	0.0005%	--
Label	1.50E-05	0.0014%	--
Attachment loop	5.80E-06	0.0005%	--
TOTAL	5.83E-02	5.5060%	0.0200

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO_2.

No substance contained within the product requires declaration according to the Candidate List of SVHC for Authorisation subject to Article 59(10) of the Regulation (EC) No. 1907/2006 (“REACH”).

LCA INFORMATION

Declared unit: 1 kg of steel spacers

Reference service life: Not applicable

Time representativeness: 2024

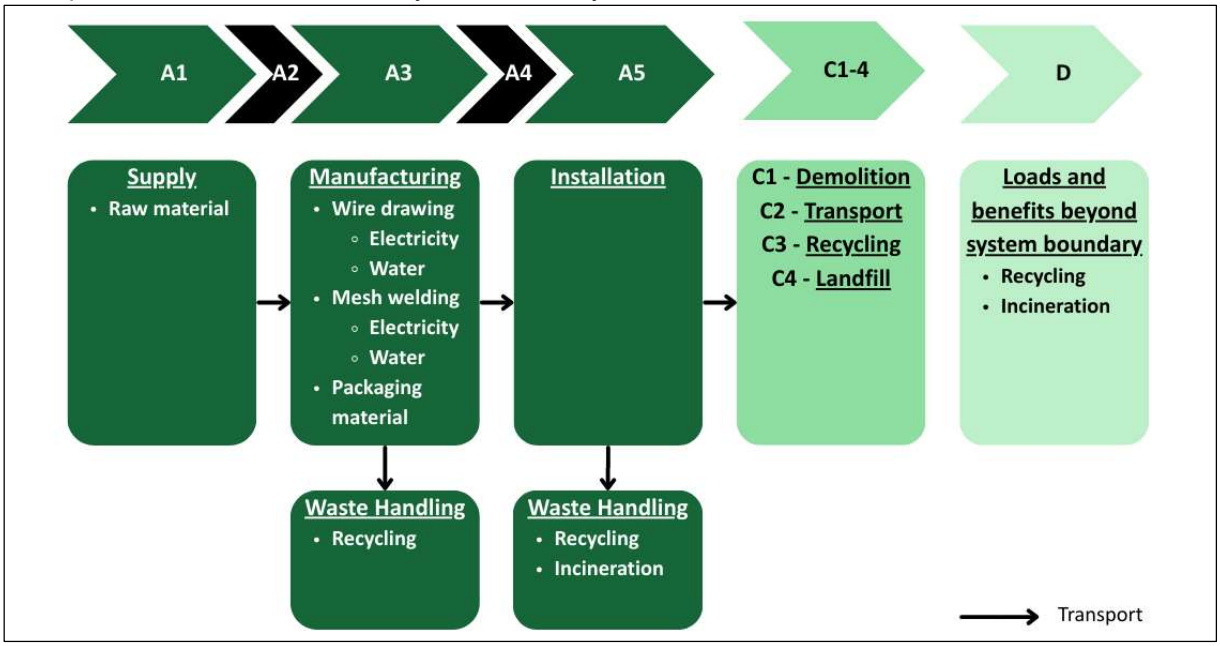
Geographical scope: A1-A2: EU, A3: Germany; A4-A5 and C1-D: EU

Database(s) and LCA software used:
The background data has been taken from the Sphera MLC database CUP 2025.1. The LCA model was created using Sphera's LCA for Experts (LCA FE) software, version 10.9.

EPD/LCA Tool used: Not applicable

Description of system boundaries:
Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules A4 and A5).

Process flow diagram:
Process flow diagram of the product system, divided into the life-cycle stages and modules showing the main processes included and the system boundary of the LCA.



More information:
More information on the product can be found under https://www.exte.de/schalungszubehoer/

Information on electricity used in the manufacturing process:
Exte produces solar PV power on-site, which in the year 2024 substituted 3.37% of the total manufacturing electricity demand. In accordance with the PCR, the German residual grid mix is used for the LCA-calculations to account for the rest of the 96.63%. The emission factor (with regards to the GWP-GHG indicator) accounts for: 0.85 kg CO_2 eq./kWh.

Information on secondary material input:
The steel spacers produced by Exte consist of at least 82% secondary material. The scrap enters the system boundary burden-free. The recycled material inputs, which encompass the steel recycling process via electric arc furnace process, contribute to more than 10% to the GWP-GHG results of modules A1-A3. The GWP-GHG intensity of the resulting recycled material ranges from 140 kg CO_2 eq./tonne to 740 kg CO_2 eq./tonne.

Information about declared modules and scenarios:

General:
This EPD covers a whole range of different products, and a worst-case representative of these products is declared. The declared average product composition represents the specific composition of all spacers produced at the production site over one year.

Module A1 to A3:
The product stage includes provision of all raw materials, transportation of raw materials to manufacturing site and the production process, as well as waste processing up to the end-of-waste state or disposal of final residues during the product stage.

The raw material for the steel spacers is steel wire which is purchased in different compositions (Module A1). The worst-case steel wire composition purchased by Exte is declared in this EPD, i.e. wire composition with 82% recycled steel and 18% alloyed carbon steel. This is delivered to the production site by EURO mix truck (Module A2). Further processing of the steel wire is done by welding, shearing and pressing (Module A3). The impact of packaging material and its transportation is included.

Module A4:
This module considers 100 km truck transport to site (diesel driven, EURO mix, 40 tons total load, 64% utilization). The transport distance can be modified project-specific if required by linear scaling.

Module A5:
Manual installation is considered in this module. Treatment and disposal of packaging material are included in this module as well, i.e. recycling of steel packaging and incineration of plastic and wood packaging.

Module C1 to C4:
- Demolition (C1): Demolition of the spacers is done along with the concrete elements they are installed in; for spacers only, the environmental loads are assumed as unsignificant and declared as 0.
- Transport (C2): 50 km EURO mix Truck (EU Scenario).

Scenario 0 (Recycling): Declared scenario
- Waste processing (C3): Spacers reach end-of-waste status after demolition and are recycled.
- Landfill (C4): Not relevant, as spacers are not landfilled.

Scenario 1 (Landfill): [S1]
- Waste processing (C3): Not relevant, as the spacers are landfilled.
- Disposal (C4): Spacers are disposed of in landfill.

Module D:
Scenario 0 (Recycling): Declared scenario

- Benefits and loads from recycling of product
- Benefits and loads from module A5, i.e. recycling of steel packaging
- Benefits from module A5, i.e. credits from incineration
- The end-of-life treatment for the steel product follows a net scrap approach for steel waste generated from manufacturing (Module A3) and end-of-life processing (Module C). The total scrap generated from modules A3 and C is 1.03 kg per functional unit. In the production of steel wire 0.97 kg of scrap is used as input. The surplus scrap is accounted for as a credit in module D.

Scenario 1 (Landfill): [S1]

- Benefits and loads from module A5, i.e recycling of steel packaging
- Benefits from module A5, i.e. credits from incineration

Excluded data and flows from the LCA calculation:
Infrastructure and capital goods are not considered within this EPD.
Allocation principles for secondary material:
Secondary steel (in the product) and secondary plastics (in packaging) are assumed to reach the end-of-waste status before the recycling process; the recycling process is included in A1-A3. In the recycling end-of-life scenario (C3), environmental impacts of recycling steel are allocated to module D.

Data Quality Assessment

Technological: All primary and secondary data are modelled to be specific to the technologies or technology mixes under study. Where technology-specific data are unavailable, proxy data are used. The overall technological representativeness is considered to be very good.

Geographical: All primary and secondary data are collected specific to the countries / regions under study. Where country / region specific data are unavailable, proxy data are used. The overall geographical representativeness is considered to be good.

Temporal: All primary data are collected for the year 2024. All secondary data come from the Managed LCA Content (MLC) 2025.1 database and are representative of the years 2021 - 2024. As the study intended to compare the product systems for the reference year 2024, temporal representativeness is good.

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	Data category	Share of primary data, of GWP-GHG results for A1-A3
Manufacturing of product	Collected data	MLC 2025.1	< 5 years	Secondary data	0%
Raw material supply	Databases	MLC 2025.1	< 5 years	Secondary data	0%
Generation of electricity used in manufacturing of product	Databases and collected data	MLC 2025.1	< 5 years	Primary data	14%
Transport of raw materials	Databases and collected data	MLC 2025.1	< 5 years	Primary data	2%
Other processes	Databases	MLC 2025.1	< 5 years	Secondary data	0%
Total share of primary data, of GWP-GHG results for A1-A3					16%

Scenarios

The reference scenario shows that 100% of the products are sent for recycling. A 100% landfill scenario [S1], i.e. 100% of the product waste is sent to landfill, is also stated in this EPD. Details of the scenario are given below:

Module A4: Transport to the building site

This module considers 100 km truck transport to site (diesel driven, EURO mix, 40 tons total load, 64% utilization). The transport distance can be modified project-specific if required by linear scaling.

The following table displays technical information used in module A4 (transportation by truck to the building site)

Parameter	Unit	Amount
Diesel consumption	l/100 km (per kg of transported good)	0.0029
Distance	km	100
Capacity utilization (including empty returns)	%	64
Gross weight of transported product	kg	1
Volume capacity utilization factor	-	1

Module A5: Installation in the building

The following table displays technical information regarding the installation in the building (treatment of packaging waste).

Parameter	Unit	Amount
Wooden pallets sent to incineration	kg/ declared unit	0.0500
Steel packaging waste sent to recycling	kg/ declared unit	0.0019
Plastic packaging waste sent to incineration	kg/ declared unit	0.0009

Note: Installation off-cuts or installation efforts and related auxiliary materials are not considered in this study and therefore not listed.

Module C: End-of-life

The following table displays the waste flows at the products' end of life (for the worst-case product). The transportation distance for C2 is considered to be 50 km.

The amounts listed represent gross quantities including secondary material.

Parameter	Unit	Amount
Waste collected as mixed construction waste	kg	1
Scenario 1 (S1) Waste materials for final deposition to landfill	kg	1

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	X	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X
Geography	EU	EU	DE	EU	EU								EU	EU	EU	EU	EU
Share of primary data	16%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-31%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

ENVIRONMENTAL PERFORMANCE

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

The calculation of the resource use indicators follows option B from Annex 3 in PCR 2019:14 - Construction Products v.3.4 for packaging. Thus, there is an input in A3 for PERM and PENRM values and output in A5. Calorific value for steel is declared as zero. Calorific value of secondary materials is declared. Biogenic carbon leaving the product system in module A5 has been balanced out in modules A1-A3.

Mandatory impact category indicators according to EN 15804

Results per 1 kg of steel spacers for reinforced concrete construction									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	9.03 E-01	8.31 E-03	8.77 E-02	0	3.93 E-03	0	0	-1.43 E-01
GWP-fossil	kg CO_2 eq.	9.84 E-01	8.21 E-03	3.59 E-03	0	3.88 E-03	0	0	-1.42 E-01
GWP-biogenic	kg CO_2 eq.	-8.23 E-02	1.54 E-05	8.41 E-02	0	7.26 E-06	0	0	-1.78 E-04
GWP-luluc	kg CO_2 eq.	1.43 E-03	8.63 E-05	2.07 E-06	0	4.08 E-05	0	0	-6.70 E-05
ODP	kg CFC 11 eq.	7.80 E-12	1.39 E-15	1.01 E-14	0	6.58 E-16	0	0	-4.60 E-13
AP	mol H^+ eq.	2.30 E-03	1.22 E-05	1.46 E-05	0	5.78 E-06	0	0	-2.51 E-04
EP-freshwater	kg P eq.	1.18 E-06	2.26 E-08	1.60 E-09	0	1.07 E-08	0	0	-8.01 E-08
EP-marine	kg N eq.	5.59 E-04	4.85 E-06	4.25 E-06	0	2.29 E-06	0	0	-5.99 E-05
EP-terrestrial	mol N eq.	6.10 E-03	5.04 E-05	6.10 E-05	0	2.38 E-05	0	0	-6.46 E-04
POCP	kg NMVOC eq.	1.92 E-03	1.08 E-05	1.17 E-05	0	5.12 E-06	0	0	-2.00 E-04
ADP-minerals&metals*	kg Sb eq.	5.12 E-07	5.58 E-10	1.15 E-10	0	2.64 E-10	0	0	2.74 E-08
ADP-fossil*	MJ	1.16 E+01	1.07 E-01	2.16 E-02	0	5.08 E-02	0	0	-1.21 E+00
WDP*	m^3	1.13 E-01	3.84 E-05	9.60 E-03	0	1.81 E-05	0	0	-4.43 E-03
Acronyms	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; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

** 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 experience 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).

Additional mandatory and voluntary impact category indicators

Results per 1 kg of steel spacers for reinforced concrete construction									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	1.00 E+00	8.40 E-03	3.63 E-03	0	3.97 E-03	0	0	-1.44 E-01

Resource use indicators

Results per 1 kg of steel spacers for reinforced concrete construction									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3.54 E+00	8.10 E-03	8.50 E-01	0	3.83 E-03	0	0	-4.74 E-02
PERM	MJ	8.45 E-01	0	-8.45 E-01	0	0	0	0	0
PERT	MJ	4.39 E+00	8.10 E-03	5.77 E-03	0	3.83 E-03	0	0	-4.74 E-02
PENRE	MJ	1.16 E+01	1.07 E-01	4.71 E-02	0	5.08 E-02	0	0	-1.21 E+00
PENRM	MJ	2.55 E-02	0	-2.55 E-02	0	0	0	0	0
PENRT	MJ	1.16 E+01	1.07 E-01	2.16 E-02	0	5.08 E-02	0	0	-1.21 E+00
SM	kg	9.75 E-01	0	0	0	0	0	0	6.76 E-02
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	4.82 E-03	4.00 E-06	2.26 E-04	0	1.89 E-06	0	0	-7.74 E-05
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								

[1] 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 characterisation factor for biogenic CO_2 is set to zero.

Waste indicators

Results per 1 kg of steel spacers for reinforced concrete construction									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	6.60 E-09	4.31 E-12	1.14 E-11	0	2.04 E-12	0	0	-7.42 E-11
Non-hazardous waste disposed	kg	1.48 E-02	1.50 E-05	1.70 E-03	0	7.09 E-06	0	0	-1.49 E-03
Radioactive waste disposed	kg	6.26 E-04	2.03 E-07	1.16 E-06	0	9.58 E-08	0	0	-6.01 E-06

Output flow indicators

Results per 1 kg of steel spacers for reinforced concrete construction									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0
Material for recycling	kg	3.11 E-02	0	0	0	0	1.00 E+00	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	1.23 E-01	0	0	0	0	0
Exported energy, thermal	MJ	0	0	2.21 E-01	0	0	0	0	0

Further information on the assumptions made in the LCA calculation and the interpretation of the results can be provided upon request.

Additional LCA results on environmental performance: other scenarios for modules C and D

The most representative scenario (for the geographical scope of the EPD) has been declared as the main environmental performance results. Results of 100% landfill [S1] are declared here.

Results per 1 kg of steel spacers for reinforced concrete construction						
Indicator	**Unit**	**C1**	**C2**	**C3 (S1)**	**C4 (S1)**	**D (S1)**
GWP-total	kg CO_2 eq.	0	3.93 E-03	0	1.53 E-02	-2.42 E-02
GWP-fossil	kg CO_2 eq.	0	3.88 E-03	0	1.53 E-02	-2.40 E-02
GWP-biogenic	kg CO_2 eq.	0	7.26 E-06	0	4,94 E-08	-1.21 E-04
GWP-luluc	kg CO_2 eq.	0	4.08 E-05	0	6.27 E-05	-3.24 E-05
ODP	kg CFC 11 eq.	0	6.58 E-16	0	4.26 E-14	-2.21 E-13
AP	mol H^+ eq.	0	5.78 E-06	0	1.08 E-04	-2.86 E-05
EP-freshwater	kg P eq.	0	1.07 E-08	0	2.28 E-08	-2.16 E-08
EP-marine	kg N eq.	0	2.29 E-06	0	2.83 E-05	-8.22 E-06
EP-terrestrial	mol N eq.	0	2.38 E-05	0	3.08 E-04	-9.18 E-05
POCP	kg NMVOC eq.	0	5.12 E-06	0	8.47 E-05	-2.25 E-05
ADP-minerals&metals*	kg Sb eq.	0	2.64 E-10	0	9.47 E-10	-2.19 E-09
ADP-fossil*	MJ	0	5.08 E-02	0	2.01 E-01	-4.19 E-01
WDP*	m^3	0	1.81 E-05	0	1.65 E-03	-2.44 E-03
Acronyms	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; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption					

ADDITIONAL ENVIRONMENTAL INFORMATION

Mass-based conversion factor for converting the declared results to results for specific products within the product group shall be used. The products represented by this EPD are provided in the “List of products” section. The mass of the products is provided upon request.

ABBREVIATIONS

Abbreviation	Definition
CEN	European Committee for Standardization
CO_2 eq.	Carbon Dioxide Equivalent
CO_2	Carbon Dioxide
c-PCR	Complementary Product Category Rule
DBV	Deutscher Beton- und Bautechnik-Verein e.V (German Concrete and Construction Engineering Association)
EC	European Commission
ECHA	European Chemicals Agency
EN	Europäische Norm (European Standard)
EoL	End of Life
EPD	Environmental Product Declaration
EU	European Union
GPI	General Programme Instructions
GWP-GHG	Global Warming Potential of Greenhouse Gases
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
MND	Module Not Declared
PCR	Product Category Rules
PENRM	Primary Energy Non-Renewable, Material
PERM	Primary Energy Renewable, Material
PET	Polyethylene Terephthalate
PP	Polypropylene
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
SVHC	Substances of Very High Concern
UN CPC	United Nations Central Product Classification

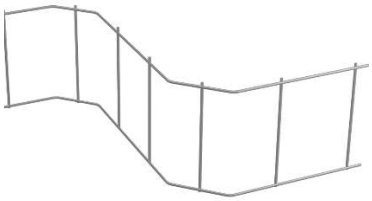
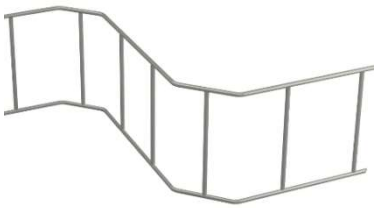
REFERENCES

a) General Programme Instructions of International EPD System. Version 4.
b) PCR 2019:14: CONSTRUCTION PRODUCTS. version 2.0.1. The International EPD System. www.environdec.com.
c) EN 15804:2012+A2:2019, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.
d) ISO14025, 2006. Environmental labels and declarations — Type III environmental declarations — Principles and procedures.
e) Software and database: Sphera LCA for Experts. LCA FE. software-system and databases. Managed LCA content MLC (fka GaBi database). University of Stuttgart and Sphera Solutions GmbH. 2024. CUP Version: 2024.1. MLC data set documentation under https://lcadatabase.sphera.com/ (Oct 2024)
f) Candidate list of substances of very high concern (SVHC) for authorisation published by ECHA as defined in the REACH Regulation 1907/2006/EC (> 0.1 wt%)
g) DBV-Merkblatt, Unterstützungen nach Eurocode 2 (available Deutscher Beton- und Bautechnik-Verein e.V., Kurfürstenstraße 129,10785 Berlin)

VERSION HISTORY

Original Version of the EPD, 2025-10-27

List of products

Article number	Description	Product image
940XX	S - Highchair spacer for lower and upper reinforcement mats	
943XX	S - Highchair spacer for lower and upper reinforcement mats (tested according to DBV code)	
944XX	S - Highchair spacer for lower and upper reinforcement mats (without protruding feet)	
942XX	SBA - Highchair spacer for lower and upper reinforcement mats	
945XX	SBA - Highchair spacer for lower and upper reinforcement mats (tested according to DBV code)	
X = height (cm)		

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