ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A1*

Owner of the Declaration	JORDAHL GmbH
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-JDL-20200260-IBB1-EN
Issue date	18.03.2021
Valid to	17.03.2026

Channel systems

JORDAHL GmbH

Institut Bauen und Umwelt e.V.

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ECO PLATFORM EPD EN 15804 VERIFIED

London, Canary Wharf, Photo by David Liff

JORDAHL® anchored in quality

1. General Information

JORDAHL GmbH

Programme holder
IBU – Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Declaration number
EPD-JDL-20200260-IBB1-EN

This declaration is based on the product category rules:
Reinforcing Steel, 11.2017
(PCR checked and approved by the SVR)

Issue date
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17.03.2026

Dipl. Ing. Hans Peters
(chairman of Institut Bauen und Umwelt e.V.)

Dr. Alexander Röder
(Managing Director Institut Bauen und Umwelt e.V.))

JORDAHL mounting channels JM, JML, JXM and cast-in anchor channel systems JTA, JXA, JZA

Owner of the declaration
JORDAHL GmbH
Nobelstraße 51
12057 Berlin
Germany
Europe

Declared product / declared unit
The declared unit is one running metre cast-in anchor channel with a weight of 2.668 kg per meter.

Scope:
This document refers to the JORDAHL GmbH mounting and cast-in anchor channels, manufactured in Trebbin, Germany. The declared unit refers to 1 meter cast-in anchor channel. The product is made of stainless steel or steel and is declared as an average product. The data collection was collected on a plant-specific basis with current annual data from 2019. The declaration holder is responsible for the underlying data and its verification.

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+A1*. 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 14025:2010*
☐ internally ☒ externally

Christina Bocher
(Independent verifier)

2. Product

2.1 Information about the enterprise

Since its foundation in 1907, JORDAHL has been manufacturing products for fastening, reinforcement, connection and assembly technology as well as façade fastening, which are used worldwide in demanding construction projects. Owned by the Pohl family of shareholders since 1977, JORDAHL stands over more than 100 years for fastening and connection technology. In-house developments such as the “Kahneisen” and the cast-in anchor channel have become milestones in construction technology and have changed architecture worldwide in a lasting way.

2.2 Product description/Product definition

The product portfolio of JORDAHL channel systems includes cast-in anchor channels of the type JTA, JXA and JZA, as well as weldable or screwable mounting channels of the type JM, JML and JXM, in hot-rolled and cold-formed design, including the corresponding hammer-head, hook-head and toothed bolts. The JORDAHL cast-in anchor and mounting channels consist of a C-shaped profile made of steel or stainless steel and matching special bolts. The JORDAHL cast-in anchor channels additionally consist of at least two anchors permanently mounted on the back of the profile. These anchors are formed as round anchors or I-anchors. Cast-in anchor channels are set in concrete flush with the surface. Mounting rails are directly welded onto the substrate. JORDAHL special bolts are mounted in the profiles with corresponding hexagon nuts and washers.
The mounting channels as declared are available in bright-rolled and galvanized steel as well as stainless steel. The cast-in anchor channel as declared product

is available in galvanized or stainless steel. A distinction is made between mounting or cast-in anchor channels with smooth profile lips (JM, JML, JTA) and serrated profile lips (JXM, JXA, JXA-PC, JZA). They transfer high loads from tensile and transverse or longitudinal tension.

For application and use the respective national regulations apply.

JORDAHL mounting and cast-in anchor channel systems (exclude Profile 41/27) are designed in accordance with:

- *EOTA TR 047*, *Design of anchor channels* or
- *EOTA TR 050*, *Calculation Method for the Performance of Anchor Cannels under fatigue loading* or
- *EN 1992-4, Eurocode 2: Design of concrete structures – Part 4: Design of fastenings for use in concrete* and
- European Technical Approval *ETA 15/0386* or
- European Technical Approval *ETA 09/0338* or
- *ICC-ES ESR 2854* or
- Chinese technical building approval *CABR-01-(2019)-003-02* or
- National technical building approvals *Z-21.4-741* and *Z-21.4-1690* from German Institute for Building Technology (DIBt)

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 requires a declaration of performance taking into account *ETA 09/0338*, June 18, 2018, Jordahl cast-in anchor channel JTA and CE marking as well as *ETA 15/0386*, January 13, 2017, JORDAHL mounting channel JM. For the application and use the respective national provision apply.

2.3 Application

JORDAHL mounting or cast-in anchor channels ensure the transfer of high loads to steel structures or into reinforced and unreinforced concrete components. Mounting channels can be welded or screwed directly to components.
Cast-in anchor channels are positioned in the component before the concrete is poured and mounted to the formwork, reinforcement or with the aid of a suitable auxiliary construction.
JORDAHL channel systems are used for reliable and non-destructive fixing of attachments to various components. In addition, the JORDAHL mounting and cast-in anchor channel are durable products which allows recurring applications using JORDAHL special bolts. JORDAHL mounting and cast-in anchor channel profiles are available in different types of cross-sections and differ in their dimensions and areas of application.
Examples are:

- **JTA W** for glass facades, elevator guide rails and doors, signal and ventilation systems in tunnels, heavy steel structures and connections with load changes (wind, traffic, vibration)
- **JTA K** for precast connections, railings, lighting systems, building equipment and stadium seats
- **JM W** for medium-heavy to heavy constructions e.g. supporting frames or highly loaded screw connections with high tightening torques. Subsequent installation possible
- **JM K** for fastening supply and disposal lines, electric cables, cable trays or air conditioning ducts
- **JML K** can be screwed on directly, for fastening pipes, electric cables and subordinate fastenings
- **JXA W** for dynamic load connection in tunnels, crane track system anchorages, facade connections and highly stressed precast element connections
- **JXA-PC** to bridge high expected crack widths for safety relevant areas like power plants
- **JZA** for the transmission of forces in the longitudinal direction of channels, especially in cable support systems and other technical building equipment fixings
- **JXM W** guarantees flexibility in planning through subsequent installation. For power transmission in longitudinal direction of the channel

2.4 Technical Data

The following technical data apply to JORDAHL mounting and cast-in anchor channels. The test standard is dimensioned for the JTA according to the European Technical Assessment (ETA) *ETA 09/0338, 18.June 2018*, JORDAHL cast-in anchor channel JTA. The test standard is dimensioned for the JM according to the European Technical Assessment (ETA) *ETA 15/0386, 13.January 2017*, JORDAHL mounting channel JM. The test standard for the JXA is dimensioned in accordance with the national technical building approval *Z-21.4-1690* and for the JZA in accordance with the national technical building approval
Z-21.4-741.

All geometrical dimensions, product-specific parameters and the static load capacities of the different channel systems JM, JTA, JXA and JZA are given in the following technical specifications:

JM, JTA system:

- *ETA 15/0386*
- *ETA 09/0338*
- *CABR-01-(2019)-003-02*
- *ICC-ES ESR 2854*

JXA and JZA system:

- *Z-21.4-741*
- *Z-21.4-1690*

Constructional data construction steel

Name	Value	Unit
Thermal expansion coefficient	0,011 [mm/m* K]	10-6K-1
Grammage	2.668	kg/m
Tensile strength	340 - 510	N/mm²
Modulus of elasticity	210000	N/mm²
Melting point	1420 - 1460	°C
Thermal conductivity	50	W/(mK)
Electrical conductivity at 20°C	ca. 8.5	Ω-1m-1
Density	7850	kg/m³

Constructional data stainless steel

Name	Value	Unit
Thermal expansion coefficient	13	$10^{-6}K^{-1}$
Tensile stength	650	N/mm²
Modulus of elasticity	200000	N/mm²
Melting point	1470	°C
Thermal conductivity	15	W/(mK)
Electrical conductivity at 20°C	0,7	$\Omega^{-1}m^{-1}$
Density	7800	kg/m³

Performance data of the product accoridng to harmonized standards, based on provisions for harmonization.

2.5 Delivery status

The dimensions of the mounting and cast-in anchor channels in the delivery condition for hot rolled profiles are an installation height of at least 90 mm and a minimum channel length of 150 mm.
For cold-rolled mounting and cast-in anchor channels, the installation height is at least 50 mm and the minimum channel length 100 mm. Mounting channels are supplied from 100 mm up to a length of 6000 mm.

2.6 Base materials/Ancillary materials

The base materials of JORDAHL mounting channels are:

- C-shape: bright-rolled, galvanized steel or stainless steel: 100 M.-%

The base materials of JORDAHL cast-in anchor channels JTA are:

- C-shape: hot-dip galvanized steel or Stainless steel: 90 - 95 M.-%
- Anchor: hot-dip galvanized steel or Stainless steel: 5 - 10 M.-%
- Filler: polyethylene (PE)-filling or. polystyrene (PS)-filling: < 1 M.-%

This product or at least one partial article contains substances listed in the *candidate list* (27.06.2018) exceeding 0.1 percentage by mass: no.

This product or at least one partial article contains other *CMR substances* in categories 1A or 1B which are not on the ECHA candidate list, exceeding 0.1 percentage by mass: no.

Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Ordinance on *Biocide Products* No. 528/2012): no.

2.7 Manufacture

The C-profiles are purchased from qualified vendors as bright-rolled steel or stainless steel. After delivery, JORDAHL mounting and cast-in anchor channels are further processed or manufactured from cold-formed or hot-rolled channel profiles.
The anchors are attached to the C-profiles or backs of the channels by punching or riveting or channel backs are perforated. Afterwards the channels are galvanized.
The accumulated metal scrap and filter dust are stored in containers, collected by a scrap dealer and disposed of in accordance with regulations.
The finished channels are packed in cardboard boxes and loaded on pallets.

2.8 Environment and health during manufacturing

During the entire manufacturing process, no health protection measures beyond the usual industrial safety measures for commercial enterprises are required.

The following certifications exist:

- *ISO 9001* (Quality Management)
- *ISO 50001* (Energy Management)

2.9 Product processing/Installation

Both the JORDAHL mounting channels JM, JML, JXM and the cast-in anchor channel systems JTA, JXA and JZA are supplied as ready-to-install channel elements. The cast-in anchor channel is concreted in flush with the surface. After the concrete has hardened and the formwork has been removed, the PE or PS filling can be replaced. The mounting channel can be welded directly or screwed to a frame construction.
JORDAHL special bolts are mounted in the profiles using appropriate hexagon nuts and washers.
Installation must be carried out by trained personnel in accordance with assembly instructions specified by the manufacturer. The manufacturer's instructions must be observed.

2.10 Packaging

JORDAHL mounting and cast-in anchor channels are packed in cardboards and loaded on Euro pallets for transport. The bolts are also packed in cardboards according to the different sizes. The packaging material is easily separable and can be reused if used properly.

The remaining part can be collected by type and sent to the regional recycling supplier. Residual materials must be disposed of in accordance with the respective national regulations.

2.11 Condition of use

The material composition of JORDAHL mounting and cast-in anchor channels does not change during their service life.

2.12 Environment and health during use

No environmental pollution is caused by processing/ installation of the products mentioned. No special measures to protect the environment are to be taken. No risks can arise to water, air and soil if the products are used as designated.

2.13 Reference service life

The reference service life could not be determined in compliance with *ISO 15686*. According to the service lives of components for life cycle analyses according to the Sustainable Building Assessment System (*BBSR*), the reference service life of stainless steel components such as mounting and cast-in anchor channels is at least 50 years.
The product is made of hot-galvanized steel or stainless steel. The product is protected against external influences after installation. It therefore shows no weathering per year.

2.14 Extraordinary effects

Fire
The JTA cast-in anchor channels correspond to building material class A1 according to *EN 13501.*

Fire protection

Name	Value
Building material class	A1
Burning droplets	-
Smoke gas development	-

Water
No water-endangering ingredients are washed out.

Mechanical destruction
In the event of mechanical destruction, all substances remain in bound state. There are no relevant environmental impacts associated with mechanical destruction.

2.15 Re-use phase

The mounting and cast-in anchor channels can be recycled after dismantling. Reuse is not possible.

2.16 Disposal

The waste codes are according to the Waste Catalogue Ordinance
(Abfall Verzeichnis Verordnung *AVV*) and European Waste Catalogue *(EWC*):

- 17 04 05 – Iron and Steel
- 17 02 03 – Plastics

2.17 Further information

JORDAHL products are sold centrally in Germany through PohlCon Vertriebs GmbH. Further information and downloads are available on www.pohlcon.com.

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the production of 1 m cast-in anchor channel with an average weight of 2.668 kg/m.

Declared unit

Name	Value	Unit
Declared unit	1	m
Grammage	2.668	kg/m
Conversion factor to 1 kg	0.375	-

The mounting and cast-in anchor channels vary in size, weight and slightly in their composition. The product was modeled on the basis of annual average data and is available either as a steel or stainless steel version.
The product considered in the model has a steel content of 95 M.-% and a stainless steel content of 5 M.-%.

3.2 System boundary

The Life Cycle Assessment considers the system boundaries "cradle to gate - with options" and follows the modular construction system described by *EN 15804*. The LCA takes into account the following modules:

- A1: Raw material supply: extraction of raw material, production of precursors, processing of secondary material
- A2: Transport: transport of raw materials to manufacturing plant
- A3: Manufacturing: production of cast-in anchor channels
- C2: Transportation towards disposal: transport of discarded product as part of waste processing
- C3: Waste processing: Waste management for reuse, recovery and/or recycling
- C4: Disposal
- D: Reuse, recovery or recycling potential as net flows and credits (benefits) for stainless steel

3.3 Estimates and assumptions

Plant-specific and data regarding the production process was provided by JORDAHL GmbH. Missing data was supplemented by estimates based on comparable substitutes or data used from the secondary literature, which have no significant relevance for the results. Missing data set in the database were modeled by the life cycle assessor.

3.4 Cut-off criteria

All relevant data, i.e. all applied materials according to the recipe and the energy used originate from the production data acquisition and have been considered within the inventory analysis.
The actual transport distances were used for the inputs and outputs taken into account. Material- and energyflows with a proportion of less than 1 % were collected. It can be assumed, that the sum of the

neglected processes does not exceed 5 % of the impact categories.
The operating expanses for the provision of the infrastructure (machines, buildings, etc.) of the entire foreground system were not taken into account.

3.5 Background data
Primary data has been provided by the manufacturer. All background data required for the Life Cycle Assessment originates form the database *ecoinvent 3:6*.

3.6 Data quality
For modelling the Life Cycle of channel systems, data from the production year 2019 was collected by JORDAHL GmbH at the Trebbin production plant, according to *ISO 14044*. All other relevant background has been taken from the database of *ecoinvent 3:6* and is not older than 5 years. For the Life Cycle Inventory all input and output flows have been respected.
The selection of the background data was made in accordance to technological, geographical and time-related representativeness of the data basis. Absent of specific data was supplemented with generic data sets or a representative average data.
The representativeness and data quality is therefore classified as good.

3.7 Period under review
The amount of raw materials, input energy and the volume of waste relate to the year 2019. It corresponds to the best currently available technology and thus is representative for the considered time period. The reference area is Germany.

3.8 Allocation
Co-product allocation does not exist in the manufacturing process.
All product-related data refer to the declared product. More detailed information on the allocation in the background data can be found in the documentation for the ecoinvent 3.6 database.

After the use phase, the product can be subjected to material recycling. When modeling the end-of-life (EoL), a collection rate of 95% after the use phase was assumed ("cut-off" approach).

3.9 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.

The LCA background database *ecoinvent 3:6* was used.

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4. LCA: Scenarios and additional technical information

The following technical information models the basis for the declared modules or can be used for developing specific scenarios within the context of a building assessment.

The reference life span according to *ISO 15686* could not be determined. The information on service life is taken from Table *BBSR* 2017, Service life of components for - Life cycle analyses according to the Sustainable Building Assessment System (Bewertungssystem Nachhaltiges Bauen BNB).

Reference service life

Name	Value	Unit
Reference service life (according to ISO 15686-1, -2, -7 and -8)	-	a
Life Span (according to BBSR)	≥ 50	a

End of life (C1 - C4)

Name	Value	Unit
Collected as mixed construction waste	2.668	kg
Recycling	2.535	kg
Landfilling (recycling loss 5%)	0.133	kg

The product is made almost entirely from secondary material, therefore the net amount of steel scrap is negative and is -0.2055 kg. It results from a steel scrap input of 2.74 kg and an amount of steel scrap at the end of its life of 0.95 kg, taking into account a recycling loss of 5%. Cuttings within production were recorded. The collection rate is set at 100%, the recycling loss at 5%.

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	Value	Unit
Steel scrap End of Life volume	2.535	kg
Net steel scrap volume	-0.206	kg

5. LCA: Results

The table displayed below summarizes the results of the Life Cycle Assessment (LCA). The results of the impact assessment do not provide any information on endpoints of the impact categories, exceedances of thresholds,safety margins or risks. The results refer to the declared unit of 1 m cast-in anchor channels. The Impact Assessment is based on CML IA baseline (2001).

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE 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	MND	MND	MND	MNR	MNR	MNR	MND	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A1: 1 m cast-in anchor channel

Parameter	Unit	A1-A3	C2	C3	C4	D
Global warming potential	[kg CO_2-Eq.]	3.28E+0	1.14E-2	0.00E+0	6.46E-4	-9.23E-2
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	3.39E-7	2.07E-9	0.00E+0	1.13E-10	-1.48E-9
Acidification potential of land and water	[kg SO_2-Eq.]	1.56E-2	2.96E-5	0.00E+0	3.89E-6	-9.49E-4
Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	2.06E-3	5.05E-6	0.00E+0	8.13E-7	-5.27E-5
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	9.13E-4	1.09E-6	0.00E+0	1.36E-7	8.58E-5
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	1.32E-2	6.68E-10	0.00E+0	1.77E-10	-1.29E-5
Abiotic depletion potential for fossil resources	[MJ]	4.05E+1	1.60E-1	0.00E+0	8.92E-3	-8.24E-1

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A1: 1 m cast-in anchor channel

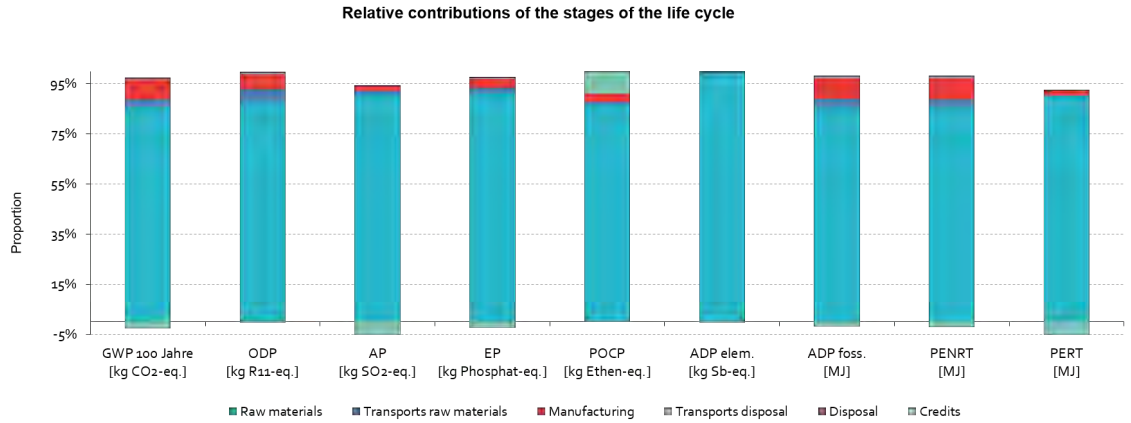
Parameter	Unit	A1-A3	C2	C3	C4	D
Renewable primary energy as energy carrier	[MJ]	1.51E+0	6.29E-5	0.00E+0	2.42E-5	-1.24E-1
Renewable primary energy resources as material utilization	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Total use of renewable primary energy resources	[MJ]	1.51E+0	6.29E-5	0.00E+0	2.42E-5	-1.24E-1
Non-renewable primary energy as energy carrier	[MJ]	4.40E+1	1.70E-1	0.00E+0	9.48E-3	-9.24E-1
Non-renewable primary energy as material utilization	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Total use of non-renewable primary energy resources	[MJ]	4.40E+1	1.70E-1	0.00E+0	9.48E-3	-9.24E-1
Use of secondary material	[kg]	2.74E+0	0.00E+0	0.00E+0	0.00E+0	-2.06E-1
Use of renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of non-renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of net fresh water	[m^3]	1.87E+0	-3.53E-5	0.00E+0	-1.16E-5	-3.60E-2

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A1: 1 m cast-in anchor channel

Parameter	Unit	A1-A3	C2	C3	C4	D
Hazardous waste disposed	[kg]	1.72E-3	4.24E-7	0.00E+0	2.27E-8	2.10E-5
Non-hazardous waste disposed	[kg]	1.20E+0	6.66E-6	0.00E+0	1.32E-1	-4.57E-1
Radioactive waste disposed	[kg]	2.39E-4	1.16E-6	0.00E+0	6.46E-8	-4.27E-6
Components for re-use	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Materials for recycling	[kg]	0.00E+0	0.00E+0	2.53E+0	0.00E+0	0.00E+0
Materials for energy recovery	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported electrical energy	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported thermal energy	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0

6. LCA: Interpretation

The following figure shows the relative contributions of different Life Cycle processes and the primary energy demand in the form of a dominance analysis.



Indicators of the impact assessment

The declared product was modeled on the basis of the annual average production and thus represents a representative production mix. The product can vary in its material composition. The product delared has a steel content of 95 M-% and a stainless steel content of 5 M-%. The respective steel proportions can be different in individual cases (0-100 M-%) and cause a range of the greenhouse gas potential (GWP) within production (A1-3) between -34% and + 365%.

The impact categories of mounting and cast-in anchor channels are determined along the life cycle mainly by the supply of raw materials. The main driver is the use of steel and stainless steel, which contributes approx. 89% of the global warming potential (GWP) within production (A1-A3). Compared to the raw material supply, the contributions to the environmental impacts from the transport (A2) of the primary products and the energy input for production (A3) within the production stage are less pronounced.
For the product, the end-of-life (EoL) results in credits (-0.09 kgCO2eqv.) and charges resulting from the net flow statement for the secondary materials used over the entire life cycle. Credits can be issued for the primary raw materials contained in the product, while debits are incurred for losses of secondary materials used.

Global warming potential (GWP)
The GWP factor is determined in particular by the raw material supply with approx. 89 % within the production (A1-A3), followed by the required energy source electricity (3 %) and natural gas (approx. 5 %). The minor scrap losses in the recycling scenario must be compensated within the life cycle consideration by the production of primary steel at the end of its life (D).

Depletion potential of the stratospheric ozone layer (ODP)
The ozone depletion potential is mainly determined by the provision of the precursors (approx. 88 %). Transportation accounts for 6 %, the use of electricity for approx. 1 % and natural gas for 4 % of the ODP factor within the production module (A3).

Acidification potential of land and water (AP)
The acidification potential within the production is determined by the use of precursors at 97 %. The use of energy sources in A3 contributes 2 % to AP.

Eutrophication potential (EP)
The eutrophication potential is determined to 94 % by the intermediate products, followed by the use of the energy sources electricity (with 3 %) and natural gas (1 %) in A3.

Potential of tropospheric ozone photochemical oxidants (POCP)
The POCP value is dominated to approx. 95 % by the use of steel and stainless steel.

Abiotic depletion potential for non-fossil resources (ADP elem.)
The ADP elementary value is almost exclusively determined by the intermediate products (100%).

Abiotic depletion potential for fossil resources (ADP foss.)
Within production (A1-A3), the ADP fossil value results mainly from the provision of intermediate products (approx. 87%) and the use of electricity (approx. 2%) and natural gas (approx. 6%).

The **total primary energy demand** within the production (A1-A3) is divided into about 97 % from non-renewable energy sources and about 3 % from renewable energies.

7. Requisite evidence

Not relevant.

8. References

BBSR
Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR): Service lifes of construction components. Service lifes of construction components for Life Cycle Assessments according to the assessment system for sustainable construction (BNB), in: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (ed.), 2017.

Regulation 528/2012
Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products, in: Official Journal of the European Union L 161/I, 2012.

Candidate List
European Chemical Agency (ECHA): Candidate List of substances of very high concern for Authorisation, in: https://echa.europa.eu/candidate-list-table, 2020.

CMR Substances
European Chemical Agency (ECHA): CMR substances from Annex VI of the CLP regulation registered under REACH and/ or notified under CLP.

Construction Product Regulation
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