ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	**Schöck Bauteile GmbH**
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-SBG-20200239-IBA1-EN
Issue date	16.07.2021
Valid to	15.07.2026

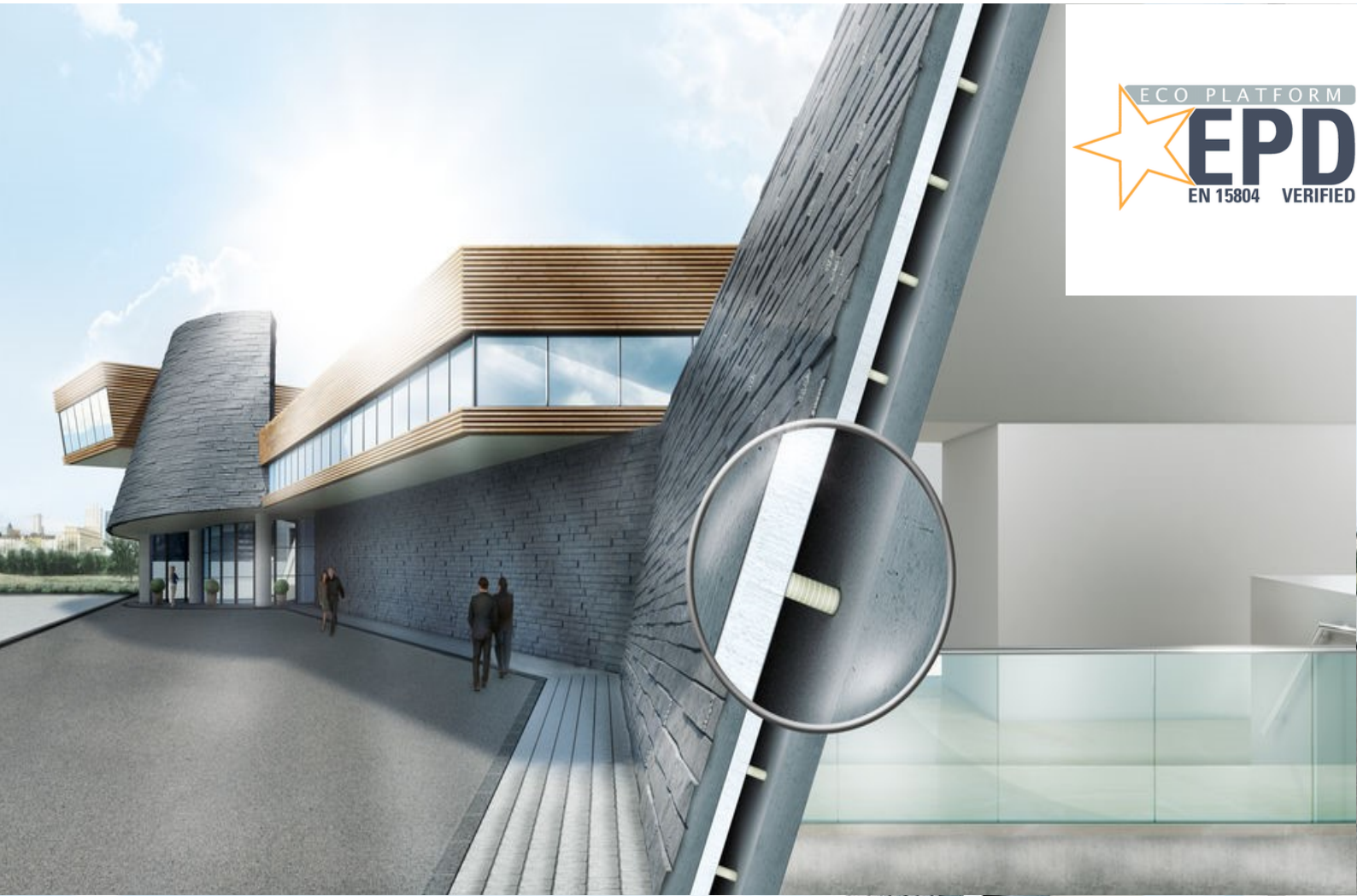
Schöck Isolink® Typ C-EH, C-ED, C-SH, C-SD, F-S

Schöck Bauteile GmbH

Institut Bauen und Umwelt e.V.

www.ibu-epd.com | https://epd-online.com

ECO PLATFORM EPD EN 15804 VERIFIED



1. General Information

Schöck Bauteile GmbH

Schöck Isolink® Typ C-EH, C-ED, C-SH, C-SD, F-S

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

Owner of the declaration
Schöck Bauteile GmbH
Vimbucher Straße 2
D-76534 Baden-Baden

Declaration number
EPD-SBG-20200239-IBA1-EN

Declared product / declared unit
1 kg Anker Isolink® mit einem Durchmesser von 12 mm

This declaration is based on the product category rules:
Wall plugs made of plastic and metal, 07.2014
(PCR checked and approved by the SVR)

Scope:
This EPD relates to a specific load bearing thermal insulation element from Schöck Bauteile GmbH – Schöck Isolink® type C-EH, C-ED, C-SH, C-SD, F-S and the Schöck Combar® product.
The Combar material required to produce the Isolink® Schöck Isolink® type C-EH, C-ED, C-SH, C-SD and F-S product and the Schöck Combar® product is manufactured in collaboration with Fiberline Composites A/S in Middelfart, Denmark. Final assembly of all the necessary components takes place at the Schöck plant in Landsberg (near Halle, Germany).

Issue date
16.07.2021

Valid to
15.07.2026

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 14025:2010*
☐ internally ☒ externally

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

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

Angela Schindler
(Independent verifier)

2. Product

2.1 Product description/Product definition

Schöck Isolink® types C-EH, C-ED, C-SH, C-SD and F-S represent an alternative to conventional stainless steel anchors when connecting the concrete skins of core-insulated sandwich and element walls.
The Schöck Isolink® made from the Combar® material with a nominal diameter of 12 mm is an anchor comprising a glass fibre composite material. The anchor has a profiling mould in the shape of a trapezoidal thread with a profile depth of 0.6 to 0.75 mm and a lead of 8 mm. Types C-ED and C-SD have a perpendicular end. Type C-EH is angled. The anchor's function is based on exploiting the connection between the glass fibre connecting bar and the concrete.

As with the other Isolink® types, type F-S consists of the Combar material but also has a stainless steel screw (see *EPD-EJO-20140113-IBC1-DE*) and thus provides thermally broken spaced installation. It is available in nominal diameters of 12, 16, 20, 25 and 32 mm.
The use of the product is subject to the respective national regulations at the place of use, for example, in Germany, the building regulations of the federal states and the technical provisions based on these regulations.

2.2 Application

Schöck Isolink® types C-EH, C-SH, C-ED and C-SD provide static transmission of tensile and compressive forces when connecting triple layer reinforced

concrete walls (facing shells - insulating layer - load-bearing layer).
The load-bearing layer can comprise a precast element or a combination of a precast element and an in-situ concrete layer.
Depending on the design of the facing shell (self-supporting or supported), a combination of Schöck Isolink® type C-EH or C-SH and type C-ED or C-SD is required.

Schöck Isolink® type F-S allows a permanent thermally isolated spaced installation of loads from an add-on component to the brickwork or concrete substructure. The anchoring to the substructure is achieved with an approved injection system. Add-on components are fixed using stainless steel screws (see *EPD-EJO-20140113-IBC1-DE)*.

The Schöck Isolink® types allow façades to have a continuous thermally insulated design. As a rule, local imperfections within the thermal insulation layer must be taken into account when assessing the thermal insulation of outer walls.
However, a façade design which is free of thermal bridges is always possible with Schöck Isolink® due to its static and thermal insulation parameters as the the Isolink® anchors influence the flat U value for the outer walls by less than 3% and can therefore be ignored in accordance with *DIN EN ISO 6946:2008-04*.

2.3 Technical Data

The technical data for the products which are within the scope of the EPD are based on the relevant building authority approvals (*Z-1.6-238; Z-21.8-2082; Z-21.8-1894*) and are therefore subject to continuous internal and external monitoring which ensures permanent compliance with the values.

Structural engineering data for Schöck Combar

Name	Value	Unit
Characteristic tensile strength ftk	>1000	N/mm²
Design value for the tensile strength ftd	445	N/mm²
Modulus of elasticity	60.000	N/mm²
Characteristic compressive strength fpk	264	N/mm²
Design value for the tensile strength for C30/37	2,3	N/mm²
Nominal cross-section Ø12	113	mm
Nominal value	0,3	kg/m
Electrical resistance R	>10^10	Ωm
Thermal conductivity λ	0,7	W/m*K
Specific mass ρ	2,200	g/cm³

Performance values for the product with respect to its features in accordance with the relevant technical provision ((*Z-1.6-238; Z-21.8-2082; Z-21.8-1894*).

2.4 Delivery status

Schöck Isolink® types C-EH, C-SH, C-ED, C-SD and type F-S are prefabricated to customer specifications and customised to the required length.

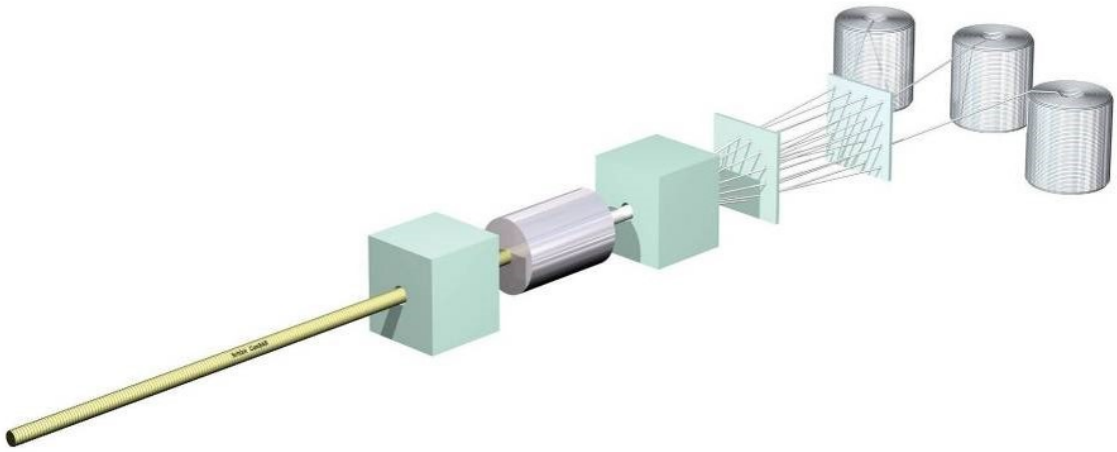
2.5 Base materials/Ancillary materials

The main components of Combar are:
vinyl ester resin: 13%
glass fibre: E-CR:(E-Glass Corrosion Resistant): 87%
an additional screw depending on the various types (type F-S); see *EPD-EJO-20140113-IBC1-DE*
spacer (type C-SH or C-SD)

1) The product/commodity/at least one sub-product contains substances on the ECHA list of Substances of Very High Concern (SVHC) (as of December 2020) at more than 0.1% by mass which require approval: **No**.
2) The product/commodity/at least one sub-product contains other CMR substances in Category 1A or 1B, which are not on the candidate list, at more than 0.1% by mass in at least one sub-product: **No**
3) Biocide products have been added to the building product in question or it has been treated with biocide products (it is thus a treated product as defined in the Biocidal Products Regulation (EU) No. 528/2012): **No**

2.6 Manufacture

The product is manufactured in a “pultrusion” process. E-CR rovings are bundled together and impregnated with a vinyl ester resin. The glass fibres are shaped by a pultrusion process in which they are drawn through a die. The bars are then profiled.



The glass fibre reinforced polymer bars (Combar) are manufactured by the company Fiberline in Denmark and transported from there to the Landsberg plant (Halle) where they are cut to length and provided with an appropriate spacer in the case of the Schöck Isolink® type C-SH and type C-SD. The spacer is provided by WÖKU GmbH. The Schöck Isolink® type F-S is provided with a hole in the end face and prefitted with a stainless steel screw (see *EPD-EJO-20140113-IBC1-DE)*.

Quality management - production:
The company has been certified to *DIN EN ISO 9001* since 2006.

2.7 Environment and health during manufacturing

The criteria for environmental and energy management and the requirements relating to health and safety in the workplace are maintained in accordance with the following certifications:

Occupational health and safety – production:
Occupational health and safety management in accordance with *BS OHSAS 18001:2007*.

Environmental protection – production:
Certified environmental management in accordance with *DIN EN ISO 14001* since 2013.

Energy management in accordance with *DIN EN ISO 50001* and to *BS OHSAS 18001* certified by DEKRA Certification GmbH.
Any waste such as stainless steel, glass fibres, plastics, wood, (wooden pallets and wooden fittings) and packaging film which occur while manufacturing the product or which are left over as excess material are separated, stored and recycled as far as is possible.

2.8 Product processing/Installation

Schöck Isolink® types C-EH, C-SH, C-ED and C-SD are supplied to the relevant customer groups (prefabricating plant) and processed as part of the production process for sandwich or element walls. A concrete layer is then reinforced and covered with concrete as part of this customer-specific manufacturing process. The predrilled insulation layer is then added. Schöck Isolink® is installed from above through the insulating layer into fresh, unset concrete. The upper layer of concrete, mainly the load-bearing layer, is then reinforced and covered with concrete. Once the drying phase is complete, the finished wall can be lifted from the production table.
The prefabricated outer walls are put in place on site by a crane and fixed with anchors or similar.

2.9 Packaging

Schöck Isolink® is stacked on wooden pallets in cardboard packaging and is delivered either with or without a protective film wrapping depending on the country-specific requirements.
The specific packaging materials are separated and recycled. Wooden pallets are returned through the Interseroh scheme to authorised waste disposal companies.

2.10 Condition of use

Once installed, all materials used are protected against external exposure for their service life and are designed for the service life of the construction. If the products are used as intended, there is no danger to water, air or soil.

2.11 Environment and health during use

Schöck Isolink® does not interact with its environment. There are no detrimental effects on the environment or health during the use phase due to the integration of the product during the building phase.

2.12 Reference service life

Schöck Isolink® types have a minimum service life of 50 years confirmed through test scenarios which corresponds to average building use and building design. However, the actual service life can be considerably longer. The service life complies with fatigue tests which simulate a service life of 50 years using load spectra (temperature, deformation, environmental influences) and are part of the approval by building authorities. A further precondition for the service life is that the necessary conditions for packaging, transport, storage, installation and use are met.

The test scenario for meeting a general construction authority certification from the German Institute for Construction Technology includes corresponding fatigue tests which simulate the ageing process for Schöck Isolink®. These tests have not revealed any appearance of ageing in the material over the nominal service life.

A Reference Service Life (RSL) to *ISO 15686* has not been declared.

2.13 Extraordinary effects

Fire
Fire tests in accordance with the criteria of a general construction authority certification confirm the declared product has achieved a fire resistance of 120 minutes in accordance with and is classed in the fire resistance class REI120 to *Report 17055MH/14_2* when installed.

Fire protection

Name	Value
Building material class	B
Burning droplets	S1
Smoke gas development	d0

Water
Due to the use of glass-fibre reinforced plastics and the appropriate embedded length into the construction to which it is to be connected, there is no danger of corrosion. The materials used in the Schöck Isolink® types do not exhibit any chemical reaction with water, are not soluble in water, and do not release any substances which may pollute water.

Mechanical destruction
When demolishing buildings, Schöck Isolink® can be demolished in the same way as reinforced concrete without any further consideration as no components of the material structure are released as a result of mechanical destruction.

2.14 Re-use phase
Demolition takes place at the same time as the connected reinforced concrete inner slabs in the load-bearing construction. Care should be taken to sort materials during demolition as far as this is possible to facilitate an efficient recycling process.

2.15 Disposal
Non-recyclable components of the Schöck Isolink® types can be disposed of at any waste disposal site using the relevant waste code (in accordance with *European Waste Catalogue Waste Codes :* 170904).

2.16 Further information
Other information on the product is available at www.schoeck.de.
The life cycle assessment results for other product selections can be found in an appendix to the EPD.

3. LCA: Calculation rules

3.1 Declared Unit
This declaration relates to 1kg of the Isolink® façade anchor type F-S with a diameter of 12 mm.
It is produced in Denmark (unprocessed product) and Germany (finishing and prefabrication).
Annual production figures for 2018 are used as the source data.

Declared unit

Name	Value	Unit
Declared unit	1	kg
Conversion factor to 1 kg -	-	-

3.2 System boundary
- Type of EPD: From the scales to the factory gate using modules A5, C2–C4 and module D (A1–A3, A5, C and D). This environmental product declaration relates to the manufacturing stage (A1-A3), installation (A5), disposal stage (C2-C4) and module D.

The following specific processes were included in the manufacturing stage A1-A3 in the production of the reinforcing rod:
· Preparation processes for preproducts and energy
· Transport of resources and preproducts (glass fibres, hybrid resin) to production site
· Manufacturing process in the plant including energy expenditure
· Production of pro rata packaging
The EPD takes into consideration the CO2 stored in the packaging material (wooden pallet) through photosynthesis within A1–A3 and as re-emitted biogenic CO2 emissions in A5. This ensures the neutrality of the renewable raw materials' CO2 within the system threshold.

The following processes are considered in the disposal stage:
· Transport from the construction site to the inert material disposal site (module C2)
· Energy required to crush and separate any metal component parts (module C3)
· Disposal of inert materials (module C4)

3.3 Estimates and assumptions
Country-specific data sets for power generation were used to produce the life cycle assessment model. The preproducts were mainly generated using European data sets.
Assumptions were made with respect to the following raw materials/preproducts: The vinyl ester hybrid resin (13 M-%) in the Combar material was specifically modelled using conservative estimates.

3.4 Cut-off criteria
All data taken from the operating data i.e. all basic materials in the recipe and the electricity consumption were taken into consideration in the balancing.
Machines, plant and infrastructure required for production were ignored. Assumptions were made for all relevant inputs and outputs for transport applications if no primary data were available.
Transport applications for the packaging material used were not taken into consideration.
Any sawing waste from production (sawdust) was ignored.
Consumptions for removing the product from the building at the end of its life were ignored.

3.5 Background data
The software system for integrated balancing, *GaBi 9*, service pack 40, as developed by Sphera Solutions GmbH, was used to model the façade anchor. The *GaBi 2020* database was used as the background

database. The consistent data sets contained in the GaBi database are documented online in the *GaBi 2020* documentation. The base data for the GaBi database were used for preproducts, energy and transport.

3.6 Data quality

All the relevant background data sets used for production were taken from the GaBi 2020 database from the *GaBi 9* software. Foreground data was provided by Schöck Bauteile GmbH.
The latest revision of the background data used goes back less than 1 year. All the production data are current industrial data from Schöck Bauteile GmbH. Overall, the quality of the data and the robustness of the results can be classified as good.

3.7 Period under review

The fundamental data for the life cycle assessment presented here is based on data acquired for the production of the reinforcing rods during 2018.

3.8 Allocation

No allocation was made in this study, as all production data provided relate exclusively to the production of the façade anchor.

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.

4. LCA: Scenarios and additional technical information

Characteristic product properties
Information on biogenic Carbon
Information on the biogenic carbon content of the relevant packaging:
Cardboard and wood packaging approx. 0.007 kg C.

Information to describe the biogenic carbon content at the factory gate

Name	Value	Unit
Biogenic Carbon Content in product	-	kg C
Biogenic Carbon Content in accompanying packaging	-	kg C

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	-	l/100km
Transport distance	-	km
Capacity utilisation (including empty runs)	-	%
Gross density of products transported	-	kg/m³
Capacity utilisation volume factor	-	-

Installation in the building (A5)
The biogenic carbon content of the cardboard and the pallet is approx. 0.007 kg C and leaves the system in A5 (0.024 kg CO2) as biogenic CO2 emissions.

Name	Value	Unit
Output substances following waste treatment on site	-	kg
Wooden pallet	2,8E-5	kg
PE-Film	0,0007	kg
Cardboard	0,0153	kg

When modelling the paper, the waste paper going into the model is included in the calculation unencumbered and leaves the system limits unencumbered (cut-off approach).

Use (B1) see section 2.12 Use

Name	Value	Unit

Maintenance (B2)

Name	Value	Unit
Information on maintenance	-	-
Maintenance cycle	-	Number/RSL
Water consumption	-	m³
Auxiliary	-	kg
Other resources	-	kg
Electricity consumption	-	kWh
Other energy carriers	-	MJ
Material loss	-	kg

Repair (B3)

Name	Value	Unit
Information on the repair process	-	-
Information on the inspection process	-	-
Repair cycle	-	Number/RSL
Water consumption	-	m³
Auxiliary	-	kg
Other resources	-	kg
Electricity consumption	-	kWh
Other energy carriers	-	MJ
Material loss	-	kg

Replacement (B4)/Conversion/Renovation (B5)

Name	Value	Unit
Replacement cycle	-	Number/RSL
Electricity consumption	-	kWh
Litres of fuel	-	l/100km
Replacement of worn parts	-	kg

Reference service life

Name	Value	Unit
Reference service life (nach ISO 15686-1, -2, -7 und -8)	50	a
Life Span (nach BBSR)	-	a
Life Span (nach BBSR)	-	a
Declared product properties (at the gate) and finishes	-	-
Design application parameters (if	-	-

instructed by the manufacturer), including the references to the appropriate practices and application codes		
An assumed quality of work, when installed in accordance with the manufacturer's instructions	-	-
Outdoor environment, (for outdoor applications), e.g. weathering, pollutants, UV and wind exposure, building orientation, shading, temperature	-	-
Indoor environment (for indoor applications), e.g. temperature, moisture, chemical exposure	-	-
Usage conditions, e.g. frequency of use, mechanical exposure	-	-
Maintenance e.g. required frequency, type and quality and replacement of components	-	-

Operational energy (B6) and water consumption (B7)

Name	Value	Unit
Water consumption	-	m^3
Electricity consumption	-	kWh
Other energy carriers	-	MJ
Equipment output	-	kW

End of life cycle (C2-C4)

Once the usage phase has run its course, this is followed by manual disassembly (module C1 not declared), transport (30 km) to the disposal site, disposal of the Combar component at an inert materials disposal site, and recycling of the stainless steel component.

Name	Value	Unit
Collected as mixed construction waste	1	kg
Recycling	0.46	kg
Landfilling	0.54	kg

Reuse, recovery and recycling potential (D), relevant scenario data

Name	Value	Unit

5. LCA: Results

Below is a representation of the environmental impact of 1 kg of the façade anchor Isolink® type F-S with a diameter of 12 mm as produced by Schöck Bauteile GmbH in Denmark and Germany. The modules in accordance with *EN 15804* marked with an 'X' are dealt with here. The modules marked 'ND' (Not Declared) are not part of this process.
The following tables show the results of the indicators from the impact assessment, the consumption of resources, including to waste, and other output flows relevant to the declared unit.
Disclaimer:
EP-freshwater: This indicator has been calculated as "kg P eq" as required in the characterization model (EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe; http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml).

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

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 kg Fassadenanker Isolink® TA-S 12mm

Core Indicator	Unit	A1-A3	A5	C2	C3	C4	D
Global warming potential - total	[kg CO_2-Eq.]	2.84E+0	2.49E-2	1.89E-3	4.04E-2	8.22E-3	-4.58E-1
Global warming potential - fossil fuels	[kg CO_2-Eq.]	2.84E+0	9.27E-4	1.81E-3	4.03E-2	8.16E-3	-4.59E-1
Global warming potential - biogenic	[kg CO_2-Eq.]	-7.87E-3	2.40E-2	8.25E-5	1.34E-4	3.00E-5	2.18E-3
GWP from land use and land use change	[kg CO_2-Eq.]	2.85E-3	3.36E-8	1.08E-7	5.83E-5	2.35E-5	-8.54E-4
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.36E-13	2.84E-19	3.03E-19	8.86E-16	3.06E-17	-8.28E-16
Acidification potential, accumulated exceedance	[mol H^+-Eq.]	1.81E-2	1.40E-7	1.84E-6	8.89E-5	5.85E-5	-2.01E-3
Eutrophication, fraction of nutrients reaching freshwater end compartment	[kg P-Eq.]	6.26E-6	4.75E-11	4.20E-10	1.08E-7	1.41E-8	-3.92E-7
Eutrophication, fraction of nutrients reaching marine end compartment	[kg N-Eq.]	2.19E-3	3.88E-8	5.73E-7	1.97E-5	1.51E-5	-3.15E-4
Eutrophication, accumulated exceedance	[mol N-Eq.]	2.39E-2	6.31E-7	6.35E-6	2.07E-4	1.66E-4	-3.41E-3
Formation potential of tropospheric ozone photochemical oxidants	[kg NMVOC-Eq.]	6.90E-3	1.11E-7	1.65E-6	5.41E-5	4.56E-5	-9.44E-4
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	7.04E-5	4.20E-12	7.18E-11	1.17E-8	7.36E-10	-1.38E-5
Abiotic depletion potential for fossil resources	[MJ]	4.18E+1	3.85E-4	2.55E-2	7.08E-1	1.07E-1	-5.48E+0
Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	[m^3 world-Eq deprived]	4.25E-1	1.09E-4	5.05E-6	8.77E-3	8.52E-4	-1.80E-1

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 kg Fassadenanker Isolink® TA-S 12mm

Indicator	Unit	A1-A3	A5	C2	C3	C4	D
Renewable primary energy as energy carrier	[MJ]	7.51E+0	2.62E-1	1.28E-4	3.14E-1	1.41E-2	-1.09E+0
Renewable primary energy resources as material utilization	[MJ]	2.61E-1	-2.61E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Total use of renewable primary energy resources	[MJ]	7.77E+0	1.32E-3	1.28E-4	3.14E-1	1.41E-2	-1.09E+0
Non-renewable primary energy as energy carrier	[MJ]	3.99E+1	1.66E-2	2.56E-2	7.08E-1	1.93E+0	-5.49E+0
Non-renewable primary energy as material utilization	[MJ]	1.84E+0	-1.63E-2	0.00E+0	0.00E+0	-1.82E+0	0.00E+0
Total use of non-renewable primary energy resources	[MJ]	4.18E+1	3.86E-4	2.56E-2	7.08E-1	1.07E-1	-5.49E+0
Use of secondary material	[kg]	0.00E+0	0.00E+0	0.00E+0	ND	0.00E+0	ND
Use of renewable secondary fuels	[MJ]	0.00E+0	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	0.00E+0
Use of net fresh water	[m^3]	1.52E-2	2.58E-6	2.10E-7	3.63E-4	2.69E-5	-7.04E-3

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 kg Fassadenanker Isolink® TA-S 12mm

Indicator	Unit	A1-A3	A5	C2	C3	C4	D
Hazardous waste disposed	[kg]	7.03E-8	1.24E-12	6.73E-12	2.93E-10	1.63E-9	-3.41E-8
Non-hazardous waste disposed	[kg]	3.27E-1	9.01E-5	2.77E-6	5.02E-4	5.38E-1	-3.94E-2
Radioactive waste disposed	[kg]	1.47E-3	1.62E-8	4.21E-8	1.07E-4	1.20E-6	-2.32E-5
Components for re-use	[kg]	0.00E+0	0.00E+0	0.00E+0	ND	0.00E+0	0.00E+0
Materials for recycling	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+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	0.00E+0
Exported electrical energy	[MJ]	0.00E+0	2.00E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported thermal energy	[MJ]	0.00E+0	4.00E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:
1 kg Fassadenanker Isolink® TA-S 12mm

Indicator	Unit	A1-A3	A5	C2	C3	C4	D
Potential incidence of disease due to PM emissions	[Disease Incidence]	ND	ND	ND	ND	ND	ND
Potential Human exposure efficiency relative to U235	[kBq U235-Eq.]	ND	ND	ND	ND	ND	ND
Potential comparative toxic unit for ecosystems	[CTUe]	ND	ND	ND	ND	ND	ND
Potential comparative toxic unit for humans - cancerogenic	[CTUh]	ND	ND	ND	ND	ND	ND
Potential comparative toxic unit for humans - not cancerogenic	[CTUh]	ND	ND	ND	ND	ND	ND
Potential soil quality index	[-]	ND	ND	ND	ND	ND	ND

Constraint note 2 – applies for indicators ADPE, ADPF, WDP
The results of this environmental impact indicator must be used with care as the uncertainties in these results are high or because experience with this indicator is limited.

6. LCA: Interpretation

In all impact categories, the main contribution to the total impact potential is in the production phase (modules A1-A3). The loading in this phase is primarily produced by the upstream chain of the raw materials.

The production energy, transport and packaging have little to negligible impact.

7. Requisite evidence

No negative effects on the environment or health are to be anticipated with correct use. The product is cast into concrete and has no contact with the internal spaces or external shell of the building. No verifications are required by law for the product.

8. References

EN 15804
EN 15804:2019-04+A2 (in Druck), Nachhaltigkeit von Bauwerken – Umweltproduktdeklarationen – Grundregeln für die Produktkategorie Bauprodukte.

ISO 14025
DIN EN ISO 14025:2011-10, Umweltkennzeichnungen und -deklarationen – Typ III Umweltdeklarationen – Grundsätze und Verfahren.

IBU 2016
Institut Bauen und Umwelt e.V.: Allgemeine EPD-Programmanleitung des Institut Bauen und Umwelt e.V. (IBU). Version 1.1, Berlin: Institut Bauen und Umwelt e.V., 2016.
www.ibu-epd.com

Z-1.6-238
Allgemeine bauaufsichtliche Zulassung/ Allgemeine Bauartgenehmigung Z-1.6-238: Bewehrungsstab Schöck Combar, (Geltungsdauer vom 08.07.2019 - 01.01.2024)

***Z*-21.8-2082**
Allgemeine bauaufsichtliche Zulassung/ Allgemeine Bauartgenehmigung *Z-21.8-2082: Schöck Isolink TA-S für Verankerungen im Beton und Mauerwerk*, (Geltungsdauer vom 01.10.2018 - 01.10.2023)

Z-21.8-1894
Allgemeine bauaufsichtliche Zulassung/ Allgemeine Bauartgenehmigung *Z-21.8-1894:* Schöck Isolink® für mehrschichtige Betontafeln, (Geltungsdauer vom 22.11.2019 - 22.11.2024)

Bericht 17055MH/14_2
Klassifizierungsbericht über Sandwichwände aus Stahlbeton mit Schöck Thermoanker

DIN EN ISO 6946:2008-04
Bauteile - Wärmedurchlasswiderstand und Wärmedurchgangskoeffizient - Berechnungsverfahren

BS OHSAS 18001:2007
BS OHSAS 18001:2007-07-31: Arbeitsschutzmanagementsysteme. Forderungen

DIN EN ISO 14001
DIN EN ISO 14001:2009-11: Umweltmanagementsysteme – Anforderung mit Anleitung zur Anwendung (ISO 14001:2004 + Cor. 1:2009); Deutsche und Englische Fassung EN ISO 14001:2004 + AC:2009

DIN EN ISO 50001
DIN EN ISO 50001:2011-12: Energiemanagementsysteme – Anforderungen mit Anleitung zur Anwendung (ISO 50001:2011)

DIN EN ISO 9001
DIN EN ISO 9001:2008: Qualitätsmanagementsysteme – Erfolg durch Qualität

Abfallkatalog auf Basis des Europäischen Abfallverzeichnisses Stand: 2002

EPD-EJO-20140113-IBC1-DE
Gewindefurchende Schrauben aus Edelstahl EJOT Baubefestigungen GmbH; Gültigkeitsdauer 28.10.2020

GaBi 9
Software und Datenbank zur Ganzheitlichen Bilanzierung. 1992-2020 (SP 40), Sphera Solutions GmbH, Leinfelden-Echterdingen, mit Anerkennung der LBP Universität Stuttgart

GaBi 2020
Dokumentation der GaBi 9-Datensätze der Datenbank zur Ganzheitlichen Bilanzierung. LBP, Universität Stuttgart und Sphera Solutions GmbH, Leinfelden-Echterdingen, 2020(http://www.gabi-software.com/international/databases/)

Publisher
Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Tel +49 (0)30 3087748- 0
Fax +49 (0)30 3087748- 29
Mail info@ibu-epd.com
Web **www.ibu-epd.com**

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

Tel +49 (0)30 - 3087748- 0
Fax +49 (0)30 – 3087748 - 29
Mail info@ibu-epd.com
Web **www.ibu-epd.com**

Author of the Life Cycle Assessment
Sphera Solutions GmbH
Hauptstraße 111- 113
70771 Leinfelden-Echterdingen
Germany

Tel +49 711 341817-0
Fax +49 711 341817-25
Mail info@sphera.com
Web **www.sphera.com**

Owner of the Declaration
Schöck Bauteile GmbH
Vimbucher Str. 2
76534 Baden-Baden
Germany

Tel +49 7223 967-0
Fax +49 7223 967-454
Mail schoeck@schoeck.com
Web **www.schoeck.com**