

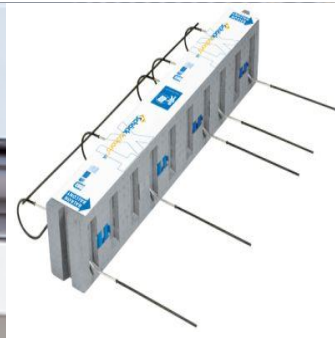
ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

| | |
|--------------------------|--------------------------------------|
| Owner of the Declaration | Schöck Bauteile GmbH |
| Programme holder | Institut Bauen und Umwelt e.V. (IBU) |
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| Valid to | 12.12.2021 |

Schöck Isokorb® Typ QXT-H200-REI120 Schöck Bauteile GmbH

www.ibu-epd.com / <https://epd-online.com>



1. General Information

Schöck Bauteile GmbH

Programme holder

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

Declaration number

EPD-SBG-20160212-IBC1-EN

This Declaration is based on the Product Category Rules:

Load-bearing thermal insulation elements, 07/2014
(PCR tested and approved by the SVR)

Issue date

13.12.2016

Valid to

12.12.2021



Prof. Dr.-Ing. Horst J. Bossenmayer
(President of Institut Bauen und Umwelt e.V.)



Dr. Burkhard Lehmann
(Managing Director IBU)

Schöck Isokorb® Type QXT-H200-REI120

Owner of the Declaration

Schöck Bauteile GmbH
Vimbucher Straße 2
D-76534 Baden-Baden

Declared product / Declared unit

1 metre Schöck Isokorb® Type QXT10-H200-REI120

Scope:

This EPD refers to a specific load-bearing thermal insulation element manufactured by Schöck Bauteile GmbH – Schöck Isokorb® Type QXT10-H200-REI120. The compression modules required for Schöck Isokorb® Type QXT are manufactured in the Schöck plant in Landsberg (near Halle, Germany). Final assembly of all required components takes place in the Schöck plant in Baden-Baden.

The EPD results for manufacturing Schöck Isokorb® Type QXT10-H200-REI120 are applicable for all other load-bearing capacities of this Isokorb® type (QXT20 to QXT90) using the factors indicated in section 6.

This document is translated from the German Environmental Product Declaration into English. It is based on the German original version EPD-SBG-20160212-IBC1-DE. The verifier has no influence on the quality of the translation.


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.

Verification

The CEN Norm /EN 15804/ serves as the core PCR

Independent verification of the declaration
according to /ISO 14025/

☐ internally ☒ externally



Dr. Stefan Diederichs
(Independent verifier appointed by SVR)

2. Product

2.1 Product description / Product definition

Schöck Isokorb® Type QXT10-H200-REI120 is a load-bearing thermal insulation element for thermal separation of supported reinforcement concrete elements from the inner slab construction. It comprises a thermal insulation layer 120 mm in thickness made of polystyrene rigid foam (Neopor®) as well as an effective static framework system of welded steel bars (shear bars) and a system of compression modules made of ultra-high-strength concrete (high thermal performance (HTE) compact compression modules). The forces are transferred to the respective adjacent components via bond stress and pressure. Schöck Isokorb® Type QXT is available in several load-bearing capacities which are aligned towards the required load capacities. The number of shear bars and HTE compression modules depends on the load-

bearing capacity. The exact fittings displayed by Schöck Isokorb® Type QXT10-H200-REI120 are indicated in the table in section 2.3.

The declared product is supplied in a fire-resistant version with fire-resistant slabs attached on the top and bottom in the factory, and displays a fire-resistance duration of 120 minutes (REI120). The EPD results for manufacturing Schöck Isokorb® Type QXT10-H200-REI120 are applicable to all Isokorb® types with higher load-bearing capacity. The products with the respective load-bearing capacities (QXT20 to QXT90) have identical components which vary depending on their mass (number of steel bars and compression modules). The manufacturing process for the products with load-bearing capacities (QXT20 to QXT90) is the same.

For the placing on the market in the EU/EFTA (with the exception of Switzerland) the following legal provisions apply: General technical approval No. Z-15.7-240 of Deutsches Institut für Bautechnik (DIBt)

2.2 Application

Schöck Isokorb® Type QXT serves as static transfer of shear forces and is used on supported reinforcement concrete constructions such as balconies, for example. It is arranged linearly in the external thermal insulation level (e.g. composite heat insulation system) in such a way that the thermal flow between the interior and exterior area is minimised locally and thermal bridges reduced.

Because of its thermal and statically optimised design, the Isokorb® ensures effective thermal insulation which is indicated by the equivalent thermal conductivity (λ_{eq}).

2.3 Technical Data

Structural data

| Name | Value | Unit |
|--|-------|--------|
| Description of product types QXT10-H200-REI120 | - | - |
| Insulation thickness | 120 | mm |
| Concrete covering /DIN 1045-1/ /DIN EN 1992-1-1/NA/ | 30 | mm |
| Height | 200 | mm |
| Length | 1000 | mm |
| Shear bars (number; diameter) | 5 Ø 6 | mm |
| HTE compression modules (number) | 4 | - |
| Fire-resistance class DIN EN 1365-2, DIN EN 13501-2, DIN 4102-2, Z-15.7-240 | 120 | - |
| Equivalent thermal conductivity λ_{eq} DIN EN ISO 10211, DIN EN ISO 6946, Z-15.7-240 | 0.071 | W/(mK) |
| Thermal conductivity of the Neopor thermal insulation material DIN EN 13163 | 0.031 | W/(mK) |
| Shear resistance at C25/30 according to DIN 1045-1, DIN EN 1992-1-1/NA | 35.3 | kN/m |

2.4 Delivery status

Schöck Isokorb® Type QXT10-H200-REI120 is manufactured at a length of 1000 mm and a height of 200 mm.

2.5 Base materials / Ancillary materials

| Name | Value | Unit |
|---|-------|------|
| Reinforcement steel B500 | 13,4 | % |
| Stainless steel B500 NR | 6,0 | % |
| Polystyrene | 5,4 | % |
| Cement-bound fire safety boards | 49,4 | % |
| Insulation material (polystyrene rigid foam) | 9,3 | % |
| HTE compression modules (fine concrete) | 16,5 | % |

The product weight in relation to the declared unit is 5.89 kg.

2.6 Manufacture

Processing raw materials

The base material for the welded reinforcement steel-stainless steel compounds in the Schöck Isokorb® is wound as "metal wire" on coils, delivered and decoiled in special plants, aligned and cut to the required length or manufactured straight from the coil using recognised and certified welding processes on special automatic welding machines within in-house production in Baden-Baden. The shear bars are bent on in-house bending machines and bundled using retaining clips. The HTE compression modules made of high-performance concrete are cast in prefabricated plastic moulds which serve as integrated formwork in the plant in Landsberg in accordance with the mixtures stored at Deutsches Institut für Bautechnik.

End assembly

The materials required for final assembly of the various Schöck Isokorb® models are produced in-house and procured from selected suppliers. The various Schöck Isokorb® models are assembled on special manufacturing lines according to type and depending on specific customer requests. During final assembly in the plant in Baden-Baden, the requisite components (shear bars, compression modules, foam parts and fire-resistant slabs) are bonded in accordance with the applicable manufacturing drawing and the corresponding quality guidelines using mechanical bonding technology as well as a special hot-melt adhesive.

2.7 Environment and health during manufacturing

The criteria for environmental and energy management as well as the requirements concerning health and safety in the workplace are maintained in line with the respective certifications:

Health and safety during manufacturing

Occupational health and safety management in accordance with BS OHSAS 18001:2007

Environmental protection during manufacturing:

Quality management in accordance with DIN EN ISO 14001

Energy management in accordance with DIN EN ISO 50001

Quality management during manufacturing

Quality management in accordance with DIN EN ISO 9001

The company has been certified to DIN EN ISO 9001 since 2006, DIN EN ISO 14001 since 2013 and DIN EN ISO 50001 since 2014, as well as to BS OHSAS 18001 by DEKRA Certification GmbH.

Where possible, all types of waste, e.g. stainless steel, reinforcement steel, expanded polystyrene (EPS), plastic, wood (wooden pallets and wood sets) and packaging foil, incurred during manufacturing of the product or remaining as excess material are separated, stored and redirected to the material cycle.

2.8 Product processing/Installation

Schöck Isokorb® Type QXT10-H200-REI120 is supplied as a metre element ready for installation and in a linear and flush arrangement between the inner slab and the balcony slab by means of a tongue-and-

groove system. If necessary, it can be cut to length using a standard hand saw. Isokorb® is positioned in the building shell during or after installation of the inner slab and balcony slab reinforcement and without using any lifting equipment, interconnected with the reinforcement available on site and secured against floating during the subsequent concrete process. No special environmental protection measures need to be taken while processing Schöck Isokorb®.

2.9 Packaging

Schöck Isokorb® is stacked on wooden pallets with wood sets at the side and delivered wrapped with or without foil depending on the specific national requirements.

The individual packaging materials are separated and redirected to the material cycle. The wooden pallets are returned to authorised disposal companies within the framework of the Interseroh System.

2.10 Condition of use

On installation, all materials used are protected against external influences for the entire term of use and designed for the service life of the respective construction. No risks can arise to water, air and soil if the products are used as designated.

2.11 Environment and health during use

Integrated application of the products in the building shell does not incur any negative effects on the environment and health during the use phase.

2.12 Reference service life

A service life of at least 50 years confirmed by test scenarios is applicable for the Schöck Isokorb® Type QXT10-H200-REI120 which complies with the average building utilisation and plans. The practical service life can however be considerably longer. The service life is based on fatigue tests which simulate a useful life of 50 years based on sets of stress factors (temperature, deformation, environment) and are a component of the building approval. Another prerequisite for the useful life is that the requisite conditions governing packaging, transport, storage, installation and application are complied with.

2.13 Extraordinary effects

Fire

The declared product with fire slabs has a fire-resistance duration of 120 minutes in accordance with the fire tests required for general building approval and is classified in Fire-resistance class REI120 in accordance with DIN EN 13501.

Fire protection

| Name | Value |
|-------------------------|-------|
| Building material class | A1-A2 |
| Burning droplets | S1 |
| Smoke gas development | d0 |

Water

By using stainless steel with the corresponding bond length in the structures to be connected, the risk of corrosion is eliminated. The materials contained in Schöck Isokorb® Type QXT10-H200-REI120 are chemically neutral when exposed to water as well as being insoluble in water and they do not emit any substances which are hazardous to water.

Mechanical destruction

Not of relevance

2.14 Re-use phase

De-construction is in conjunction with the bonded reinforcement steel slabs in the load-bearing construction. The steel components of the declared product can be returned to the material cycle and recycled. Importance should be attached to de-construction which is as pure as possible to ensure an efficient recycling process.

2.15 Disposal

The non-recyclable portions of Schöck Isokorb® Type QXT-H200-REI120 can be disposed of in any landfill with the corresponding waste code number (as per the waste code in the European Waste Catalogue: 170904).

2.16 Further information

For more details on the product, see www.schoeck.de.

3. LCA: Calculation rules

3.1 Declared Unit

This Declaration refers to one metre of specific load-bearing thermal insulation elements manufactured by Schöck Bauteile GmbH – Schöck Isokorb® Type QXT10-H200-REI120.

Declared unit

| Name | Value | Unit |
|---------------------------|-------|-------------------|
| Metre length | 1 | m |
| Conversion factor to 1 kg | 0.17 | - |
| Declared unit | 1 | piece/prod uct |
| Weight per declared unit | 5,89 | kg |

3.2 System boundary

Type of EPD: cradle to gate – with options

The Environmental Product Declaration refers to the product stage (A1-A3), the end-of-life stage (C4) and recycling stage which is declared in the module governing benefits and loads outside the system

boundaries (D). The consumption values associated with landfilling non-recyclable materials are outlined in Module C4.

3.3 Estimates and assumptions

Assumptions are made regarding the following raw materials / preliminary products: microfibres (raw material: steel fibres, 0.4% by mass) are estimated with reinforcement steel.

3.4 Cut-off criteria

All data from the operating data survey is taken into consideration, i.e. all starting materials used according to the formula, the thermal energy used as well as electricity.

The total material and energy volumes not taken into consideration is less than 5 per cent in terms of mass, energy or environmental relevance.

3.5 Background data

All background data used was taken from the /GaBi ts Software/ data bases. The consistent data sets contained in the GaBi data base are documented in the online GaBi documentation /GaBi Data/. In order to guarantee comparability of the results, exclusively the consistent background data from the GaBi data base was used in the LCA (e.g. data sets on energy, transport, auxiliaries and consumables).

3.6 Data quality

Data from production year 2013 supplied by Schöck Bauteile GmbH was used for the product stage of Schöck Isokorb® Type QXT10-H200-REI120. The GaBi ts background data used was last revised in 2016. The quality of the data surveyed can be regarded as high.

3.7 Period under review

The data in this LCA is based on data records from 2013. The period under review was 12 months.

3.8 Allocation

The production data was allocated by units in accordance with the annual volume of Schöck

Isokorb® Type QXT10-H200-REI120. The raw materials and energy were calculated in line with this allocation key.

Of the steel scrap incurred in the system during the production and *End-of-Life* phases, the requisite volume of recycled secondary steel for production is redirected or saturated ("*closed loop*"). It is assumed for steel scrap incurred after expiry of the use phase that it has reached its *End-of-Waste* status. Credits are allocated in Module D for such scrap volumes but only for the calculated net scrap volume.

This credit is awarded based on the assumption that steel production with steel scrap represents a substitution for primary steel production.

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 used background database has to be mentioned.

4. LCA: Scenarios and additional technical information

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

Reference Service Life

| Name | Value | Unit |
|------------------------|-------|------|
| Reference service life | 50 | a |

End of Life (C1-C4)

| Name | Value | Unit |
|---|-------|------|
| Collected as mixed construction waste | 5.89 | kg |
| Recycling (Stahl) | 1.14 | kg |
| Energy recovery | 0 | kg |
| Landfilling (nicht recycelbare Materialien) | 4.75 | kg |

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

The LCA includes the *End-of-Life* of the declared product after expiry of the use phase.

By using steel and stainless steel in the manufacture of Schöck Isokorb® Type QXT10-H200-REI120, two metal scrap groups are of relevance in the EoL: steel scrap and stainless steel scrap. The net scrap volume for steel scrap is negative (-0.074 kg), i.e. additional steel scrap needs to be added from outside the system boundaries as the requirements for steel scrap in the manufacturing phase can not be satisfied by the production scrap ("*prompt scrap*") and EoL scrap ("*post-consumer scrap*") incurred. The net scrap volume for stainless steel scrap is positive (0.148 kg); a credit is allocated for this volume (as outlined in section 3.8).

| Name | Value | Unit |
|------------------------------------|--------|------|
| Collection rate | 100 | % |
| Net scrap volume - steel | -0,074 | kg |
| Net scrap volume - stainless steel | +0,148 | kg |

5. LCA: Results

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

| 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 | MND | MND | MND | MND | MND | MND | MND | MND | X | X |

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m Schöck Isokorb® Typ QXT10-H200-REI120

| Parameter | Unit | A1-A3 | C4 | D |
|--|---|---------|----------|----------|
| Global warming potential | [kg CO ₂ -Eq.] | 7.09E+0 | 7.63E-2 | -1.27E-1 |
| Depletion potential of the stratospheric ozone layer | [kg CFC11-Eq.] | 1.85E-7 | 7.50E-13 | 5.68E-13 |
| Acidification potential of land and water | [kg SO ₂ -Eq.] | 3.28E-2 | 4.57E-4 | -4.88E-4 |
| Eutrophication potential | [kg (PO ₄) ³ -Eq.] | 2.71E-3 | 6.22E-5 | -3.85E-5 |
| Formation potential of tropospheric ozone photochemical oxidants | [kg ethene-Eq.] | 3.51E-3 | 4.39E-5 | -7.13E-5 |
| Abiotic depletion potential for non-fossil resources | [kg Sb-Eq.] | 9.03E-5 | 2.64E-8 | 1.05E-8 |
| Abiotic depletion potential for fossil resources | [MJ] | 1.36E+2 | 9.92E-1 | -1.19E+0 |

RESULTS OF THE LCA - RESOURCE USE: 1 m Schöck Isokorb® Typ QXT10-H200-REI120

| Parameter | Unit | A1-A3 | C4 | D |
|--|------|---------|---------|----------|
| Renewable primary energy as energy carrier | [MJ] | 2.00E+1 | IND | IND |
| Renewable primary energy resources as material utilization | [MJ] | 3.16E+1 | IND | IND |
| Total use of renewable primary energy resources | [MJ] | 5.15E+1 | 1.17E-1 | 6.23E-2 |
| Non-renewable primary energy as energy carrier | [MJ] | 1.10E+2 | IND | IND |
| Non-renewable primary energy as material utilization | [MJ] | 3.93E+1 | IND | IND |
| Total use of non-renewable primary energy resources | [MJ] | 1.50E+2 | 1.03E+0 | -1.14E+0 |
| Use of secondary material | [kg] | 1.20E+0 | 0.00E+0 | 0.00E+0 |
| Use of renewable secondary fuels | [MJ] | 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 |
| Use of net fresh water | [m³] | IND | IND | IND |

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES:

1 m Schöck Isokorb® Typ QXT10-H200-REI120

| Parameter | Unit | A1-A3 | C4 | D |
|-------------------------------|------|---------|---------|---------|
| Hazardous waste disposed | [kg] | IND | IND | IND |
| Non-hazardous waste disposed | [kg] | IND | IND | IND |
| Radioactive waste disposed | [kg] | IND | IND | IND |
| Components for re-use | [kg] | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| Materials for recycling | [kg] | 1.28E-1 | 1.14E+0 | 0.00E+0 |
| Materials for energy recovery | [kg] | 2.90E-2 | 0.00E+0 | 0.00E+0 |
| Exported electrical energy | [MJ] | 0.00E+0 | 0.00E+0 | 0.00E+0 |
| Exported thermal energy | [MJ] | 0.00E+0 | 0.00E+0 | 0.00E+0 |

Re. Net use of fresh water, Hazardous waste for disposal, Non-hazardous waste for disposal and Radioactive waste for disposal: not all of the data inventories used for calculating the LCA support the methodical approach for declaring the water and waste indicators. The material volumes depicted by these data inventories contribute 49% to product manufacturing. The significance of these data inventories has been examined by means of a sensitivity analysis. It is defined as high. The indicators can not therefore be accounted for (decision by the Expert Committee (SVA) on 07.01.2013).

6. LCA: Interpretation

The stainless steel used exerts a relevant to significant effect in practically all impact categories. The **ADP** (*Abiotic Depletion Potential*) fossil category is determined by the EPS used as this material is based on crude oil. It also contributes to the result in some of the other categories although (like stainless steel) its percentage by mass (5-6%) is low. Accounting for almost 50% by mass, the dominant fire-resistant slab only makes a relevant to significant contribution to the LCA result in the **GWP** (*Global Warming Potential*), **EP** (*Eutrophication Potential*) and **ODP** (*Ozone Depletion Potential*) categories. The compression modules

(based on cement/concrete) and steel play a subordinate role.

PENRT (*Primary Energy Non-Renewable Total*): The contributions towards primary energy consumption in the non-renewable area are determined by energy requirements for the production of all preliminary products as well as in **PENRM** (*Primary Energy Non-Renewable Materials*) to a low extent by the fossil energy resources bound as plastics.

PERT (*Primary Energy Renewable Materials Total*): In the area of renewable primary energy, the indicator is

determined by the solar energy bound in the wooden pallets serving as packaging material (PERM).

The environmental impact of other variants can be calculated using the factors in the following tables. The conversion factors for each module are indicated in the tables. Calculate by multiplying the LCA results of the declared product (see section 5) by the conversion factors:

| Modul A1-A3 | | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| Parameter | QXT20 | QXT30 | QXT40 | QXT60 | QXT70 | QXT80 | QXT90 |
| GWP | 1,07 | 1,20 | 1,34 | 1,42 | 1,49 | 1,71 | 1,92 |
| ODP | 1,10 | 1,30 | 1,50 | 1,71 | 1,81 | 2,07 | 2,33 |
| AP | 1,11 | 1,32 | 1,54 | 1,74 | 1,86 | 2,17 | 2,48 |
| EP | 1,06 | 1,18 | 1,30 | 1,39 | 1,44 | 1,64 | 1,83 |
| POCP | 1,07 | 1,22 | 1,37 | 1,51 | 1,60 | 1,82 | 2,03 |
| ADPE | 1,18 | 1,55 | 1,92 | 2,29 | 2,47 | 2,95 | 3,43 |
| ADPF | 1,04 | 1,12 | 1,20 | 1,25 | 1,29 | 1,43 | 1,56 |
| PERT | 1,04 | 1,13 | 1,21 | 1,21 | 1,22 | 1,33 | 1,43 |
| PENRT | 1,04 | 1,13 | 1,22 | 1,28 | 1,32 | 1,47 | 1,61 |

| Modul C4 | | | | | | | |
|-----------|--------|--------|--------|--------|--------|--------|--------|
| Parameter | QXT 20 | QXT 30 | QXT 40 | QXT 60 | QXT 70 | QXT 80 | QXT 90 |
| GWP | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,06 | 1,10 |
| ODP | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,06 | 1,10 |
| AP | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,06 | 1,10 |
| EP | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,06 | 1,10 |
| POCP | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,06 | 1,10 |
| ADPE | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,06 | 1,10 |
| ADPF | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,06 | 1,10 |
| PERT | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,06 | 1,10 |
| PENRT | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,06 | 1,10 |

| Modul D | | | | | | | |
|-----------|--------|--------|--------|--------|--------|--------|--------|
| Parameter | QXT 20 | QXT 30 | QXT 40 | QXT 60 | QXT 70 | QXT 80 | QXT 90 |
| GWP | 1,29 | 1,88 | 2,47 | 2,68 | 2,43 | 2,93 | 3,44 |
| ODP | 1,29 | 1,88 | 2,47 | 2,68 | 2,43 | 2,93 | 3,44 |
| AP | 1,29 | 1,88 | 2,47 | 2,68 | 2,43 | 2,93 | 3,44 |
| EP | 1,29 | 1,88 | 2,47 | 2,68 | 2,43 | 2,93 | 3,44 |
| POCP | 1,29 | 1,88 | 2,47 | 2,68 | 2,43 | 2,93 | 3,44 |
| ADPE | 1,29 | 1,88 | 2,47 | 2,68 | 2,43 | 2,93 | 3,44 |
| ADPF | 1,29 | 1,88 | 2,47 | 2,68 | 2,43 | 2,93 | 3,44 |
| PERT | 1,29 | 1,88 | 2,47 | 2,68 | 2,43 | 2,93 | 3,44 |
| PENRT | 1,29 | 1,88 | 2,47 | 2,68 | 2,43 | 2,93 | 3,44 |

7. Requisite evidence

When used as designated, no negative effects on the environment and health are to be anticipated. The product is encased in concrete and does not have any

contact with indoor air or the outer shell of the building. No legal evidence is required for the product.

8. References

BS OHSAS 18001

BS OHSAS 18001:2007-07-31: Occupational health and safety management systems – Requirements

DIN 1045-1:2008-08: Concrete, reinforced and pre-stressed concrete structures – Part 1: Rating and construction

DIN 1045-1

DIN 4102-2

DIN 4102-2:1977-09: Fire behaviour of building material and building components; Building components; Definitions, requirements and tests

DIN EN 1992-1-1/NA

DIN EN 1992-1-1/NA:2013-04: National Annex – Nationally determined parameters – Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings

DIN EN 13501-2

DIN EN 13501-2:2010-02: Fire classification of construction products and building elements – Part 2: Classification using data from fire-resistance tests, excluding ventilation services; German version EN 13501-2:2007 + A1:2009

DIN EN 13163

DIN EN 13163:2013-03: Thermal insulation products for buildings – Factory-made expanded polystyrene (EPS) products – Specification; German version EN 13163:2012

DIN EN 1365-2

DIN EN 1365-2:2012-12: Fire-resistance tests for load-bearing elements – Part 2: Floors and roofs; German version prEN 1365-2:2012

DIN EN ISO 10211

DIN EN ISO 10211:2008-04: Thermal bridges in building construction – Heat flows and surface temperatures – Detailed calculations (ISO 10211:2007); German version EN ISO 10211:2007

DIN EN ISO 6946

DIN EN ISO 6946:2008-04: Building components and building elements – Thermal resistance and thermal transmittance – Calculation method (ISO 6946:2007); German version EN ISO 6946:2007

DIN EN ISO 9001

DIN EN ISO 9001:2008: Quality management systems – Success through quality

DIN EN ISO 14001

DIN EN ISO 14001:2009-11: Environmental management systems – Requirements with guidance for use (ISO 14001:2004 + Cor. 1:2009); German and English versions EN ISO 14001:2004 + AC:2009

DIN EN ISO 50001

DIN EN ISO 50001:2011-12: Energy management systems – Requirements with guidance for use (ISO 50001:2011)

GaBi ts Data

GaBi 7.3 data set documentation for the software system and data bases, LBP, University of Stuttgart and thinkstep AG, Leinfelden-Echterdingen, 2016 (<http://documentation.gabi-software.com/>)

GaBi ts Software

Software and data base for life cycle engineering, LBP, University of Stuttgart and thinkstep AG, Leinfelden-Echterdingen, 2016

IBU 2013 Part A

PCR – Part A: Calculation rules for the LCA and requirements on the Background Report, Version 1.2, Institut Bauen und Umwelt e.V., www.bau-umwelt.com, 2013

IBU 2014 Part B

PCR – Part B: Requirements on the EPD for load-bearing thermal insulation elements, Version 1.0, Institut Bauen und Umwelt e.V., www.bau-umwelt.com, 2016

Z-15.7-240

General construction inspection approval no. Z-15.7-240: Schöck Isokorb with concrete compression module (applicable from 01.01.2016 to 31.12.2020)

European Waste Catalogue

Ordinance governing the European List of Wastes (List of Wastes – AVV) dated 10 December 2001

Institut Bauen und Umwelt

Institut Bauen und Umwelt e.V., Berlin(pub.): Generation of Environmental Product Declarations (EPDs); www.ibu-epd.de

ISO 14025

DIN EN ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

EN 15804

EN 15804:2012-04+A1 2013: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

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