ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

TEQPLAN SYSTEM FLOOR

TEQTON

Programme: The International EPD® System, www.environdec.com	Programme operator: **EPD International AB**	EPD registration number: S-P-04906	Publication date:2021-12-19	Valid until: 2026-12-15

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com.

GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	Teqton
Address	Kristensmindevej 2 4250 Fuglebjerg
Contact details	mailto:danmark@teqton.com
Website	https://www.teqton.com/

PRODUCT IDENTIFICATION

Product name	Teqplan System Floor
Additional label(s)	Teqplan and Teqbase
Product number / reference	N/A
Place(s) of production	Scandinavia
CPC code	375 – Articles of concrete, cement and plaster

The International EPD System

EPDs within the same product category but from different programs may not be comparable.

EPD INFORMATION

The EPD owner has the sole ownership, liability, and responsibility for the EPD. Construction products EPDs may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPD program operator	The international EPD System
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. In addition, the Int'l EPD System PCR 2019:14 Construction products, version 1.11 (05.02.2021) and c-PCR-003 Concrete and concrete elements (EN 16757) is used.
EPD author	Ole Skov, Teqton Denmark
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
Verification date	2021-12-18
EPD verifier	Bárbara M. Civit
EPD number	*S-P-04906*
ECO Platform nr.	-
Publishing date	2021-12-20
EPD valid until	2026-12-19

PRODUCT INFORMATION

PRODUCT DESCRIPTION

Teqton System Floor is made as a joint free roller compacted concrete floor with a polymer reinforced wear layer on top.

The base layer is an 18cm thick cement stabilised gravel with no iron reinforcements.
The top Wear layer is a 2cm thick polymer reinforced concrete consisting of granite, sand, cement and liquid polymer.

With a standard thickness of 20cm the Teqton System floor is made without any dilatation joints and with no fibre or iron reinforcement.

PRODUCT APPLICATION

Teqton System Floor can be used in any environment that has high demands for wear resistance and load handling.
It is traditionally used in industry, logistics, warehousing, transport, auto store, heavy production, and the likes.

TECHNICAL SPECIFICATIONS

TEQBASE

TECHNICAL DATA:

Sub-base
Portable backfilling of sand, nut stones or stable gravel, possibly hard lagging.

Joints
Normally a jointless surface. Separation joints in Teqbase by all foundations and adjacent building elements as well as thin cold joints. System solutions are created for connections.

Normal thickness
On average 18 cm – can be made thicker if needed.

Working temperature
Frost-free.

Load
Depending on sub-base and construction thickness: Surface loads of up to 200 kN/m2 Point loads of up to 100 kN on 0.1 x 0.1 m. When dealing with special loads and complicated sub-bases, special geotechnical tests on consolidation conditions should be carried out.

Flatness
In accordance with German DIN 18202, table 3, line 2.

Anchorage
Teqbase facilitates anchorage of bearings and element supports. When dealing with heavy loads, pull tests should be carried out. Suitable for installing machines and shelves.

Daily output
Around 1,500 m2 per day per work team.
TEQPLAN

TECHNICAL DATA:

Fixing agent
Synthetic material dispersion and concrete

Aggregates
Granite gravel and sand

Sub-base
Teqbase or concrete (min. 25 MPa.)

Laying down procedure
Manual or mechanical work. Around 800 m2 per day per work team.

Temperature
Min. + 5°C. The building must be closed (windows and doors installed, waterproof roof).

Layer thickness
1,0-3,0 cm.

Curing time
Usable after about 2 days (depending on temperature). Loadable after about 4 days.

Density
Around 2.0 – 2.2 t/m³.

Point load
Up to 100 kN on 0.1 x 0.1 m. Tested according to German regulation DIN 18 560.

Flatness
regulation DIN 18 560. Flatness: In accordance with German regulation DIN 18202, table 3, line 3 or 4.
Extreme flatness possible in accordance with German regulation DIN 15 185 for utilisation with positive drive trucks.

Wear resistance
In accordance with regulation HUS AMA, table ESE/6, class A. Very high standards.

Compressive strength
Min. 50 N/mm².

Tension
Around 10 N/mm².

Electrical discharge ability
Spark-free and inflammable (in accordance with German regulation DIN 51 953) between 104 and 107 ohm. No static charge.

Joints
Normally jointless. Statically determined joints in tower blocks must be secured using joint profile 1.

Colour
Light concrete grey.

Warranty
5 years.

Resistibility
Water-resistant and to a great extend resistible to oil and chemicals.

PRODUCT STANDARDS

In accordance with Din 18202/Din 15185
In accordance with DIN 18 560
In accordance with HUS AMA, table ESE/6, class A. Very high standards.
In accordance with DIN 51 953) between 104 and 107 ohm. No static charge.
Joint free.

PHYSICAL PROPERTIES OF THE PRODUCT

https://www.teqton.com/en/products/teqbase-and-teqplan/

ADDITIONAL TECHNICAL INFORMATION

Further information can be found at https://www.teqton.com/.

TABLE:1 PRODUCT RAW MATERIAL COMPOSITION

Product and Packaging Material	Weight, kg	Post-consumer %	Renewable %	Country Region of origin
Cement Cem I 32,5	40,8	-	-	DK
Gravel size 0-32mm	396	-	-	DK
Sand	20	-	-	DK
Granite Gravel	16	-	-	NO
Polymer Dispersion	1,8	-	-	DE
Water	12,9			DK

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

MANUFACTURING AND PACKAGING (A1-A3)

The production of the roller compacted concrete floor begins with testing the level of compression of the gravel layer underneath.
If sufficient strength is achieved, the production of the floor itself commences.
For the Base layer, the mixing plant is set up on site and materials for the floor is delivered in free weight on site, without packing materials.
Only the Cement is delivered in paper bags on wood pallets.
The materials are mixed outside the building and taken in by dumper.
To achieve required levelness the material is evened out by a laser-controlled tractor grater.
After that the floor is roller compacted into place.
For a minimum of three weeks, the floors are left to dry. During this period other works commences and the buildings are finished using the roller compacted concrete floor as a mounting platform.

When the building is done, the base layer is high pressure cleaned.
The water used i this process is absorbed by the material and used by the left-over cement to harden, and to add moisture to the top layer as this hardens.
No water from the cleaning goes into the drains.

The top layer is mixed on site and driven into the building by dumper.
It is levelled out by machine and finally evened out by a double disk trowelling machine.

Teqton Teqplan system floor is produced on site and therefore has no additional transport of material after production.
The use of materials and fuels for machines is placed i A1-A3.
Only the waste product from the manufacturing is calculated here.
The cement comes in paper bags placed on wood pallets.
The bags are taken to incineration and used in the general production of heat for housing.
The wood pallets are part of a recycling programme where all used pallets are collected and taken back in the system to be reused.
Only in case of a pallet being destroyed during production, is it taken to incineration.

A pallet is calculated as 25kg.
9 pallets are used in producing 10.000m² of floor.
90% of used pallets are taken back into recycling and 10% is destroyed during production.
this adds up to 0,00225kg of waste wood /m² of standard floor.

When trowelled to its final levelness, helicopter trowellers with dual metal discs are used.
The largest discs used weigh 28kg. 10 discs are worn out making 10.000m² of floor.
Thus, adding up to 0,0028kg of metal used /m² of floor.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

At the end-of-life, in the demolition phase 100% of the waste is assumed to be collected as separate construction waste. The demolition process consumes energy in the form of diesel fuel used by building machines. Energy consumption of a demolition process is on the average 10 kWh/m2 (Bozdağ, Ö & Seçer, M. 2007). Basing on a Level(s) project, an average mass of a reinforced concrete building is about 1000 kg/m2. However, as the Teqton floor does not contain any iron reinforcements and has an estimated weight per m² of 487,5kg the energy use is set to 50% of (Bozdağ, Ö & Seçer, M. 2007)

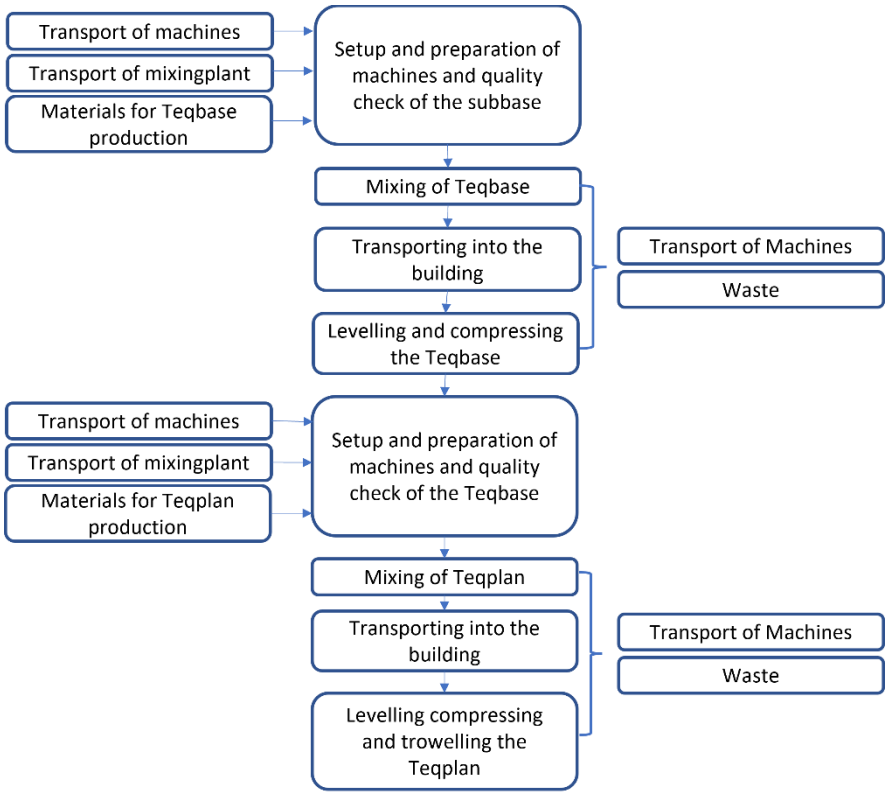
Therefore, energy consumption demolition is assumed to be 5 kWh/1000 kg = 0,005 kWh/kg. The source of energy is diesel fuel used by work machines (C1).

The dismantled floor is delivered to the nearest construction waste treatment plant. It is estimated that there is no mass loss during the use of the product, therefore the end-of-life product is assumed that it has the same weight with the declared product. Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is lorry which is the most common (Editorial note: This is a reasonable assumption for an average distance to waste handling facilities in Denmark) (C2).

At the waste treatment plant, waste that can be reused, recycled or recovered for energy is separated and diverted for further use. It is assumed that 100% of the floor materials are transported to a waste treatment plant, where the material is crushed and 80% of concrete (Betoniteollisuus ry, 2020) are recycled.
The process losses of the waste treatment plant are assumed to be negligible (C3). The remaining 20% of concrete are assumed to be send to the landfill (C4).

Due to the recycling potential of concrete, it can be used as secondary raw material, which avoids the use of virgin raw materials. The 80 % of concrete going to waste processing is converted into secondary raw materials after recycling. The recycled material content in the concrete itself is assumed to be 0 % (D).

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

Period for data	2020

DECLARED AND FUNCTIONAL UNIT

Declared unit	1 m²
Mass per declared unit	487,5
Functional unit	N/A
Reference service life	50 years

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

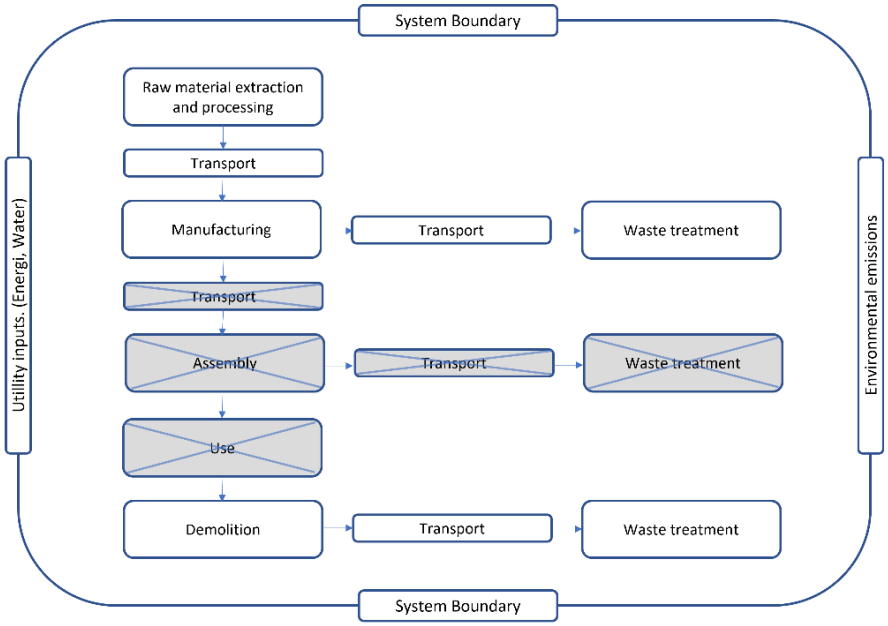
Biogenic carbon content in product, kg C	-
Biogenic carbon content in packaging, kg C	-

SYSTEM BOUNDARY

This EPD covers the *cradle to gate with options* scope with following modules; A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and loads beyond the system boundary is included.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	MND	x	x
Geography, by two-letter ISO country code or regions. The International EPD System only.																		
EU	EU	EU	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.



CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. The study does not exclude any hazardous materials or substances.

For easier modelling and because of lack of accuracy in available modelling resources any constituents under 0,1% of product mass are excluded. These include conservation chemicals added in the polymer, to prevent it from deteriorating in the containers before use.
The conservation is present in the product only in very small amounts and have no serious impact on the emissions of the product.
The production of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation.

In this study, as per EN 15804, allocation is conducted in the following order;

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.

3. Allocation should be based on economic values.

Carbonation is a natural process occurring when carbon dioxide emitted during cement production is rebound to the concrete during use and end of life stages of a building. Carbonation is not taken into account for the calculations.

In this study allocation could not be avoided for raw materials, ancillary material, energy consumption and waste production as the information was only measured on production process level. The inputs were allocated to a studied product based on annual production volume.

The values for 1 square meter of concrete is calculated by considering the total of produced m² per year. The type of concrete produced is always the same in all building sites, only the place differs. Since the production process is the same, the annual production percentages are taken into consideration for allocation. According to the ratio of the annual production of the declared product to the total annual production, the annual total raw materials, energy consumption, packaging materials and the generated waste per the declared product are allocated.

Subsequently, the product output fixed to 487,5kg and the corresponding amount of product is used in the calculations.

Allocation used in Ecoinvent 3.6 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 - standard.

THE INTERNATIONAL EPD SYSTEM ADDITIONAL DATA REQUIREMENTS

Table:2 Data specificity and GWP-GHG variability for GWP-GHG for A1-A3.

Supply-chain specific data for GWP-GHG	> 70 %
Variation in GWP-GHG between products	-
Variation in GWP-GHG between sites	-

ENVIRONMENTAL IMPACT DATA

Note: additional environmental impact data may be presented in annexes.

TABLE :3 CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO_2e	4,16E1	3,13E0	2,62E0	4,73E1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	8,24E-1	2,22E0	1,56E0	5,15E-1	-3,27E0
GWP – fossil	kg CO_2e	4,09E1	3,13E0	2,53E0	4,66E1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	8,24E-1	2,22E0	1,56E0	5,13E-1	-3,22E0
GWP – biogenic	kg CO_2e	6,23E-1	1,42E-3	9,2E-2	7,16E-1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	2,29E-4	1,61E-3	4,34E-4	1,02E-3	-3,98E-2
GWP – LULUC	kg CO_2e	1,23E-2	1,15E-3	2,29E-3	1,58E-2	0E0	MND	MND	MND	MND	MND	MND	MND	MND	6,96E-5	6,67E-4	1,32E-4	1,52E-4	-4,18E-3
Ozone depletion pot.	kg CFC_{-11}e	1,86E-6	6,86E-7	2,47E-7	2,79E-6	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,78E-7	5,21E-7	3,37E-7	2,11E-7	-2,92E-7
Acidification potential	mol H^+e	1,22E-1	1,31E-2	1,53E-2	1,5E-1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	8,62E-3	9,3E-3	1,63E-2	4,87E-3	-2,11E-2
EP-freshwater[2)]	kg Pe	7,34E-4	3,12E-5	1,47E-4	9,12E-4	0E0	MND	MND	MND	MND	MND	MND	MND	MND	3,33E-6	1,8E-5	6,31E-6	6,2E-6	-2,07E-4
EP-marine	kg Ne	2,84E-2	3,8E-3	5,2E-3	3,73E-2	0E0	MND	MND	MND	MND	MND	MND	MND	MND	3,81E-3	2,8E-3	7,21E-3	1,68E-3	-4,44E-3
EP-terrestrial	mol Ne	3,4E-1	4,2E-2	6,06E-2	4,43E-1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	4,18E-2	3,1E-2	7,91E-2	1,85E-2	-5,86E-2
POCP ("smog")	kg NMVOCe	8,88E-2	1,31E-2	1,57E-2	1,18E-1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,15E-2	9,96E-3	2,17E-2	5,37E-3	-1,48E-2
ADP-minerals & metals	kg Sbe	7,49E-4	7,6E-5	6,57E-6	8,32E-4	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,26E-6	3,78E-5	2,38E-6	4,69E-6	-3,56E-4
ADP-fossil resources	MJ	2,41E2	4,67E1	3,36E1	3,22E2	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,13E1	3,45E1	2,15E1	1,44E1	-4,62E1
Water use[1)]	m^3e depr.	1E1	1,93E-1	3,25E-1	1,05E1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	2,12E-2	1,28E-1	4,01E-2	6,64E-1	-5,76E0

1) GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

TABLE :4 USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy	MJ	1,5E1	5,36E-1	1,78E1	3,34E1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	6,14E-2	4,34E-1	1,16E-1	1,16E-1	-3,94E0
Renew. PER as material	MJ	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	1,5E1	5,36E-1	1,78E1	3,34E1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	6,14E-2	4,34E-1	1,16E-1	1,16E-1	-3,94E0
Non-re. PER as energy	MJ	2,21E2	4,67E1	3,36E1	3,01E2	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,13E1	3,45E1	2,15E1	1,44E1	-4,62E1
Non-re. PER as material	MJ	2,08E1	0E0	0E0	2,08E1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

Total use of non-re. PER	MJ	2,41E2	4,67E1	3,36E1	3,22E2	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,13E1	3,45E1	2,15E1	1,44E1	-4,62E1
Secondary materials	kg	5,79E-2	0E0	1,89E-3	5,98E-2	0E0	MND	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m^3	8,68E-1	8,91E-3	8,78E-3	8,86E-1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1E-3	7,17E-3	1,9E-3	1,57E-2	-4,6E-1

6) PER = Primary energy resources

TABLE :5 END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	9,59E-1	6,14E-2	1,77E-1	1,2E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,22E-2	3,35E-2	0E0	1,34E-2	-2,41E-1
Non-hazardous waste	kg	3,27E1	4,16E0	5,67E0	4,25E1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,3E-1	3,7E0	0E0	9,75E1	-9,86E0
Radioactive waste	kg	1E-3	3,09E-4	1,49E-4	1,46E-3	0E0	MND	MND	MND	MND	MND	MND	MND	MND	7,94E-5	2,37E-4	0E0	9,5E-5	-2,13E-4

TABLE :6 END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	2,8E-3	2,8E-3	0E0	MND	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy rec	kg	0E0	0E0	1,35E-2	1,35E-2	0E0	MND	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

TABLE :7 ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG	kg CO_2e	4,09E1	3,13E0	2,53E0	4,66E1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	8,24E-1	2,22E0	1,56E0	5,13E-1	-3,22E0

8) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013) This indicator Is almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

SCENARIO DOCUMENTATION

Table:8 Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Market for electricity, high voltage (Reference product: electricity, high voltage), Denmark
Electricity CO_2e / kWh	0.32
District heating data source and quality	-
District heating CO_2e / kWh	-

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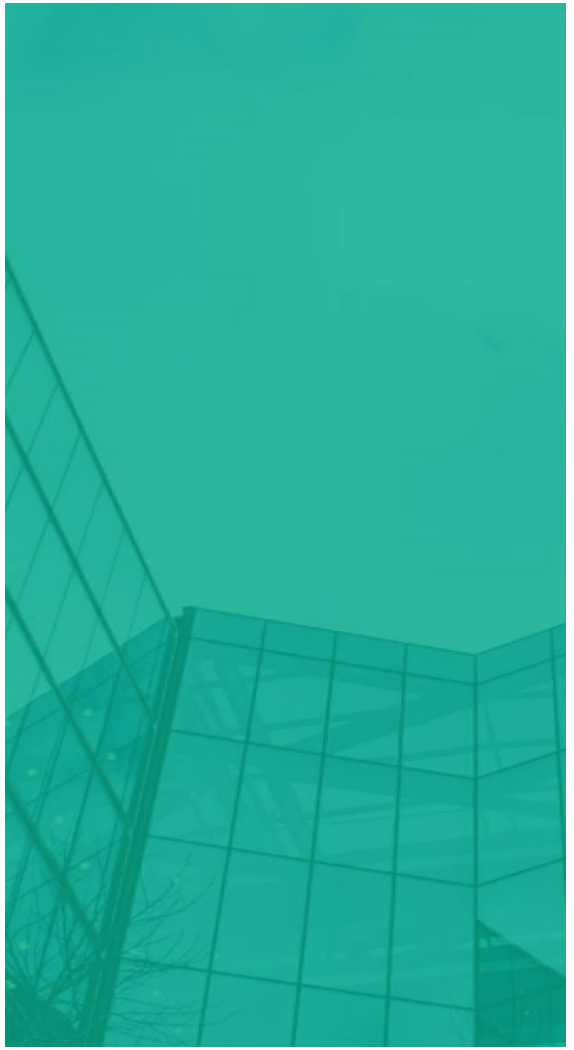
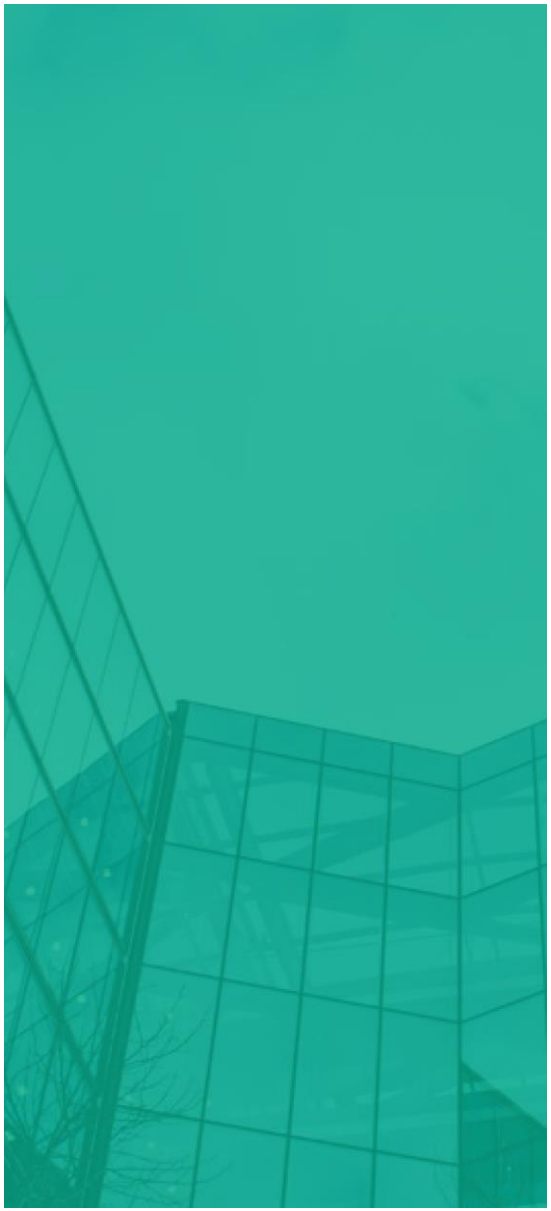
EPD. General Programme Instructions of the international EPD® system. Version 4.0

Teqplan System Floor LCA background report 12.11.2021



Teqplan System Floor



ABOUT THE MANUFACTURER

Teqton are specialists in consulting, calculation and execution of joint-free rollercompacted concrete floors for all types of warehouses, logistics, industry and production floors. Our flagship is the Teqplan floor system, which consists of a Teqbase subfloor on which a joint-free polymer-reinforced Teqplan wear layer is placed. We carry out projects throughout Scandinavia, from our offices in in Denmark, Iceland, Norway, Sweden, and Finland. In our projects, we always try to involve local subcontractors and suppliers to keep costs and transportation down. In this way, we make sure to make as small an environmental footprint as possible.

EPD AUTHOR AND CONTRIBUTORS

Manufacturer	Teqton
EPD author	Ole Skov, Teqton Denmark
EPD verifier	Bárbara M. Civit
EPD program operator	The International EPD System
Background data	This EPD is based on Ecoinvent 3.6 (cut-off) and One Click LCA databases.
LCA software	The LCA and EPD have been created using One Click LCA Pre-Verified EPD Generator for Cementitious Products

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with EN 15804, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The background report (project report) for this EPD

Why does verification transparency matter? Read more online.

VERIFICATION OVERVIEW

Following independent third party has verified this specific EPD:

EPD verification information	Answer
Independent EPD verifier	Bárbara M. Civit
EPD verification started on	2021-11-18
EPD verification completed on	2021-12-18
Supply-chain specific data %	> 70%
Approver of the EPD verifier	The International EPD System

Author & tool verification	Answer
EPD author	Ole Skov, Teqton Denmark
EPD author training completion	2020-11-20
EPD Generator module	Cementitious Products

Independent software verifier	Bárbara M. Civit
Software verification date	2021-05-11

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of

- the data collected and used in the LCA calculations,
- the way the LCA-based calculations have been carried out,
- the presentation of environmental data in the EPD, and
- other additional environmental information, as present

with respect to the procedural and methodological requirements in ISO 14025:2010 and EN 15804:2012+A2:2019.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance. I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification. I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Bárbara M. Civit

VERIFICATION AND REGISTRATION (ENVIRONDEC)

ISO standard ISO 21930 and CEN standard EN 15804 serves as the core Product Category Rules (PCR)	
PCR	PCR 2019:14 Construction products, version 1.11
PCR review was conducted by:	The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.
Independent third-party verification of the declaration and data, according to ISO 14025:2006:	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
Third party verifier	Bárbara M. Civit
	Approved by: The International EPD® System Technical Committee, supported by the Secretariat
Procedure for follow-up during EPD validity involves third party verifier	☐ yes ☑ no

THE INTERNATIONAL EPD® SYSTEM

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ANNEX 1 : ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	4,05E1	3,09E0	2,49E0	4,61E1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	8,18E-1	2,2E0	1,55E0	5,04E-1	-3,15E0
Ozone depletion Pot.	kg CFC_{-11}e	1,78E-6	5,45E-7	2,1E-7	2,54E-6	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,41E-7	4,14E-7	2,67E-7	1,68E-7	-2,67E-7
Acidification	kg SO_2e	9,03E-2	9,49E-3	6,05E-3	1,06E-1	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,22E-3	4,51E-3	2,3E-3	2,03E-3	-1,3E-2
Eutrophication	kg PO_4^3e	2,98E-2	2,18E-3	4,25E-3	3,62E-2	0E0	MND	MND	MND	MND	MND	MND	MND	MND	2,14E-4	9,1E-4	4,06E-4	3,93E-4	-6,97E-3
POCP (“smog”)	kg C_2H_4e	4,28E-3	4,11E-4	3,29E-4	5,02E-3	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,25E-4	2,86E-4	2,37E-4	1,49E-4	-1,06E-3
ADP-elements	kg Sbe	7,49E-4	7,6E-5	6,57E-6	8,32E-4	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,26E-6	3,78E-5	2,38E-6	4,69E-6	-3,56E-4
ADP-fossil	MJ	2,41E2	4,67E1	3,36E1	3,22E2	0E0	MND	MND	MND	MND	MND	MND	MND	MND	1,13E1	3,45E1	2,15E1	1,44E1	-4,62E1