EPD®
THE INTERNATIONAL EPD® SYSTEM

KiiLTO

ENVIRONMENTAL PRODUCT DECLARATION

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

KIILTO PRIMER 001

KIILTO OY

Programme:	Programme operator:	EPD registration number:	Publication date:	Valid until:	Geographical scope:
The International EPD® System, www.environdec.com	***EPD International AB***	*S-P-06039*	*2022-05-12*	*2027-05-11*	***Finland***

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.

One Click LCA Environmental Product Declaration created with One Click LCA

ECO PLATFORM EPD VERIFIED

GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	Kiilto Oy
Address	PL 250
Contact details	productsafety@kiilto.com
Website	www.kiilto.com

PRODUCT IDENTIFICATION

Product name	Primer paint product
Additional label(s)	Kiilto Primer 001
Product number / reference	T5510
Place(s) of production	Lempäälä, Finland
CPC code	3511-Paints and varnishes and related products

The International EPD System

EPDs within the same product category but from different programmes 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) is used.
EPD author	Viivi Kettula
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
Verification date	2022-05-10
EPD verifier	Anni Oviir, Rangi Maja OÜ, anni.oviir@lcasupport.com
EPD number	S-P-06039
ECO Platform nr.	-
Publishing date	2022-05-12
EPD valid until	2027-05-11

PRODUCT INFORMATION

PRODUCT DESCRIPTION

Kiilto Primer 001 is a vinyl acetate ethylene copolymer (VAE) dispersion based primer for Kiilto waterproofing membranes. It improves Kiilto waterproofing membranes' adhesion to substrates which are suitable for wet rooms, for example, smoothing compounds, concrete and board. Namely, it forms a good bond between the levelling compound and the subfloor.

PRODUCT APPLICATION

Adhesion-improving primer prior to applying Kiilto waterproofing membranes and levelling compound. This water-based product is used as primers for both industrial and commercial applications.

TECHNICAL SPECIFICATIONS

Application temperature: +10–25 °C
Frost resistance: Freezing
Coverage: Primer 1 l covers approx. 5-10m2, depending on the diluting ratio and the substrate
Density/Specific weight: approx. 1 kg/dm3
Storage: In unopened containers, above +1 °C, for 1 year.
Color: White

PRODUCT STANDARDS

Primer is part of CE/ETAG.

PHYSICAL PROPERTIES OF THE PRODUCT

For the further information please visit www.kiilto.com

ADDITIONAL TECHNICAL INFORMATION

Further information can be found at www.kiilto.com.

PRODUCT RAW MATERIAL COMPOSITION

Product and Packaging Material	Weight, kg	Post-consumer %	Renewable %	Country Region of origin
Polymer	0,8-0,9	0.87%	N/A	Germany
Water	0,1-0,2	N/A	N/A	Finland

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 primer product consists of four steps: raw material manufacturing, raw material transportation to Kiilto, mixing, packaging. During the mixing water polymer dispersion and filler are mixed together. Energy which is used in the process comes from two different sources: natural gas and wind. Waste generated in the process consists of small amounts of losses from the raw materials. The product is packed with a package made of polypropylene. The manufacturing process includes also water as input which becomes wastewater and does not include in the final product. Eventually, the product is moved out and transported to the customer in the package.

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.

The transportation distance is defined according to average distance. Average distance of transportation from production plant to building site is assumed as 300 km and the transportation method is assumed to be lorry.

Weight loss, ancillary materials and energy consumption during installation are negligible. The impacts of waste processing of packaging materials (plastic box and wood pallet) have been taken into consideration within the scope of the installation.

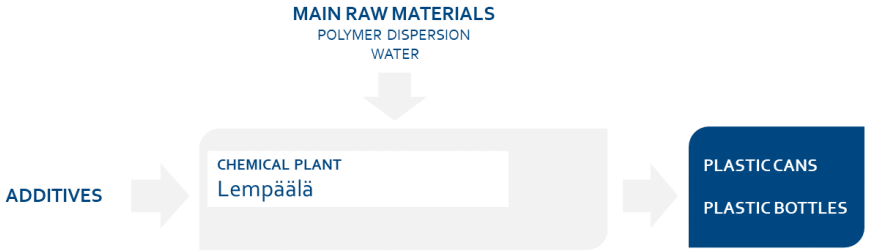
PRODUCT USE AND MAINTENANCE (B1-B7)

Product use and maintenance is considered negligible due to their minor existence.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

The consumption of energy and natural resources is negligible for disassembling of the end-of-life product, as the primer is a part of another product, so the impacts of demolition are assumed zero (C1). The dismantled structure on which the primer is applied to is delivered to the nearest construction waste treatment plant (C2). According to a conservative scenario end-of-life product is assumed to be treated in an inert landfill, so waste treatment processes such as recycling, recovery are not applicable. (C3, C4) Benefits are due to the incineration of wood pallet considering its reusing scenario. (D)

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

Period for data	2020

DECLARED AND FUNCTIONAL UNIT

Declared unit	1 kg
Mass per declared unit	1 kg

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.0023

SYSTEM BOUNDARY

This EPD covers the *cradle to gate with options* including following modules; A1 (Raw material supply), A2 (Transport), A3 (Manufacturing), A4 (Transport) and A5 (Assembly) as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing), C4 (Disposal) and D (benefits and loads).

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	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x	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

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.

The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass. This study does not exclude any modules or processes which represent more than 1 % of the emissions of studied life cycle stage.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation 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.

In this study allocation could not be avoided for ancillary material, energy consumption and waste production as the information was only measured on factory or production process level. The inputs were allocated to studied product based on annual production volume (mass). There was no need to conduct allocation for raw material data as the amounts per declared unit were gotten directly from the product recipe. As a deviation from this, production loss was added to the values by including the allocated product related waste into the raw material inputs.

The values for 1 kg are calculated by considering the total annual production. In the factory, several kinds of adhesives and sealants are produced; since the production processes of these products are similar, the annual production percentages are taken into consideration for allocation. As the processes for all products produced at the factory are very similar regardless of the products formulation, energy consumption and waste streams are assumed to be the same for all types of products.

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.

All estimations and assumptions are given below.

- Modules A2, A4 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. It may vary but as the role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are not considered as it is assumed that return trip is used by transportation companies to serve the needs of other clients.

- Module A4: Transportation doesn't cause losses as products are packaged properly. Also, volume capacity utilisation factor is assumed to be approximately 1 for the nested packaged products. In addition, transport distances and vehicle types are assumed based on delivery in the past year. According to the basic data used (Ecoinvent) for trucks, average load factors are taken into account. According to the Ecoinvent data used, the average load factor is between 16 and 30 tonnes. Considering that the range is quite flexible in the Ecoinvent data and the components are neither light nor heavy, it is reasonable to assume that the volume factor is 1.

- Module A5: The product can be applied manually so the energy consumption is assumed as zero. In addition, the weight loss during installation and the ancillary materials are negligible. Only the treatment methods of packaging materials are assessed. Also, wood pallet is assumed to be used 10 times.

- Module C1: Consumed energy and other sources for demolition process of the product is negligible.

- Module C2: Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is assumed as lorry which is the most common.
- Modules C3, C4: According to a conservative scenario end-of-life product is assumed to be treated in an inert landfill.
- Module D: The benefits of incineration wood pallet after 10 times using have been assessed according to the reference Eriksson, O & Finnveden, G. 2017.

AVERAGES AND VARIABILITY

Primary data represents the manufacturers manufacturing site in Lempäälä. There is no average data or variations since the study is done for a single product.

Data specificity and GWP-GHG variability for GWP-GHG for A1-A3.

Supply-chain specific data for GWP-GHG	97%
Variation in GWP-GHG between products	N/A
Variation in GWP-GHG between sites	N/A

The International EPD System additional data requirements

ENVIRONMENTAL IMPACT DATA

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

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	1,87E0	1,76E-1	5,6E-2	2,1E0	2,85E-2	2,17E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,38E-3	0E0	5,28E-3	-4,03E-3
GWP – fossil	kg CO_2e	1,87E0	1,76E-1	6,41E-2	2,11E0	2,88E-2	1,33E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,37E-3	0E0	5,27E-3	-3,95E-3
GWP – biogenic	kg CO_2e	2,58E-4	1,2E-4	-8,19E-3	-7,81E-3	2,09E-5	8,38E-3	MND	MND	MND	MND	MND	MND	MND	0E0	3,9E-6	0E0	1,04E-5	-4,3E-5
GWP – LULUC	kg CO_2e	8,32E-4	5,55E-5	1,44E-5	9,02E-4	8,66E-6	2,04E-7	MND	MND	MND	MND	MND	MND	MND	0E0	2,25E-6	0E0	1,56E-6	-3,72E-5
Ozone depletion pot.	kg CFC_{-11}e	9,06E-8	4,11E-8	7,78E-9	1,4E-7	6,76E-9	1,22E-10	MND	MND	MND	MND	MND	MND	MND	0E0	1,46E-9	0E0	2,17E-9	-4,97E-10
Acidification potential	mol H^+e	6,99E-3	9,57E-4	2,16E-4	8,16E-3	1,21E-4	4,39E-6	MND	MND	MND	MND	MND	MND	MND	0E0	2,62E-5	0E0	5E-5	-1,86E-5
EP-freshwater[3)]	kg Pe	3,77E-5	1,4E-6	8,3E-6	4,74E-5	2,34E-7	6,19E-9	MND	MND	MND	MND	MND	MND	MND	0E0	5,5E-8	0E0	6,36E-8	-1,88E-7
EP-marine	kg Ne	1,26E-3	2,75E-4	4,9E-5	1,58E-3	3,64E-5	1,74E-6	MND	MND	MND	MND	MND	MND	MND	0E0	7,77E-6	0E0	1,72E-5	-2,86E-6
EP-terrestrial	mol Ne	1,38E-2	3,05E-3	4,36E-4	1,73E-2	4,02E-4	1,89E-5	MND	MND	MND	MND	MND	MND	MND	0E0	8,59E-5	0E0	1,9E-4	-3,52E-5
POCP (“smog”)	kg NMVOCe	5,89E-3	9,35E-4	1,4E-4	6,97E-3	1,29E-4	4,98E-6	MND	MND	MND	MND	MND	MND	MND	0E0	2,7E-5	0E0	5,51E-5	-9,08E-6
ADP-minerals & metals	kg Sbe	2,19E-5	2,94E-6	3,39E-7	2,52E-5	4,91E-7	1,55E-8	MND	MND	MND	MND	MND	MND	MND	0E0	1,59E-7	0E0	4,81E-8	-1,18E-8
ADP-fossil resources	MJ	6,06E1	2,72E0	1,09E0	6,44E1	4,48E-1	8,79E-3	MND	MND	MND	MND	MND	MND	MND	0E0	9,72E-2	0E0	1,47E-1	-1,08E-1
Water use[2)]	m^3e depr.	1,17E0	9,92E-3	7,42E-3	1,18E0	1,66E-3	-2,55E-5	MND	MND	MND	MND	MND	MND	MND	0E0	3,45E-4	0E0	6,81E-3	-9,02E-4

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.

ADDITIONAL 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
Particulate matter	Incidence	5,55E-8	1,54E-8	5,76E-10	7,15E-8	2,6E-9	4,91E-11	MND	MND	MND	MND	MND	MND	MND	0E0	4,92E-10	0E0	9,72E-10	-1,05E-10
Ionizing radiation[5)]	kBq U235e	4,87E-2	1,19E-2	2,14E-4	6,08E-2	1,96E-3	3,33E-5	MND	MND	MND	MND	MND	MND	MND	0E0	4,25E-4	0E0	6,04E-4	-2,53E-3
Ecotoxicity (freshwater)	CTUe	1,76E1	2,06E0	5,79E-1	2,02E1	3,42E-1	9,45E-3	MND	MND	MND	MND	MND	MND	MND	0E0	7,59E-2	0E0	9,29E-2	-7,27E-2
Human toxicity, cancer	CTUh	4,48E-10	5,53E-11	1,96E-11	5,23E-10	8,75E-12	8,06E-13	MND	MND	MND	MND	MND	MND	MND	0E0	2,15E-12	0E0	2,2E-12	-1,34E-12
Human tox. non-cancer	CTUh	1,59E-8	2,42E-9	5,18E-10	1,88E-8	4,05E-10	3,49E-11	MND	MND	MND	MND	MND	MND	MND	0E0	8,71E-11	0E0	6,79E-11	-3,52E-11
SQP	-	1,66E0	3,94E0	3,38E-2	5,63E0	6,76E-1	6,31E-3	MND	MND	MND	MND	MND	MND	MND	0E0	1,08E-1	0E0	2,5E-1	-3,25E-3

4) SQP = Land use related impacts/soil quality. 5) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

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	1,18E0	3,36E-2	4,12E-1	1,63E0	5,63E-3	1,38E-4	MND	MND	MND	MND	MND	MND	MND	0E0	1,38E-3	0E0	1,19E-3	-3,35E-2
Renew. PER as material	MJ	0E0	0E0	7,99E-2	7,99E-2	0E0	-7,99E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	1,18E0	3,36E-2	4,92E-1	1,71E0	5,63E-3	-7,98E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,38E-3	0E0	1,19E-3	-3,35E-2
Non-re. PER as energy	MJ	2,08E1	2,72E0	6,05E-1	2,42E1	4,48E-1	8,79E-3	MND	MND	MND	MND	MND	MND	MND	0E0	9,72E-2	0E0	1,47E-1	-1,08E-1
Non-re. PER as material	MJ	3,98E1	0E0	0E0	3,98E1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of non-re. PER	MJ	6,06E1	2,72E0	6,05E-1	6,39E1	4,48E-1	8,79E-3	MND	MND	MND	MND	MND	MND	MND	0E0	9,72E-2	0E0	1,47E-1	-1,08E-1
Secondary materials	kg	7,45E-3	0E0	0E0	7,45E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m^3	1,91E-2	5,53E-4	7,27E-4	2,04E-2	9,32E-5	5,54E-6	MND	MND	MND	MND	MND	MND	MND	0E0	1,84E-5	0E0	1,61E-4	-2,9E-5

6) PER = Primary energy resources

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	5,04E-2	2,65E-3	7,15E-4	5,38E-2	4,35E-4	1,21E-4	MND	MND	MND	MND	MND	MND	MND	0E0	1,01E-4	0E0	1,37E-4	-2,76E-4
Non-hazardous waste	kg	1,62E0	2,82E-1	2,9E-2	1,93E0	4,81E-2	1,04E-2	MND	MND	MND	MND	MND	MND	MND	0E0	8,41E-3	0E0	1E0	-6,78E-3
Radioactive waste	kg	4,61E-5	1,87E-5	2,14E-7	6,5E-5	3,07E-6	5,15E-8	MND	MND	MND	MND	MND	MND	MND	0E0	6,65E-7	0E0	9,74E-7	-1,08E-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	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	5,83E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

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	1,87E0	1,76E-1	6,41E-2	2,11E0	2,88E-2	1,33E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,37E-3	0E0	5,27E-3	-3,95E-3

7) 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

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	- Electricity production, wind, >3mw turbine, onshore, Finland, Ecoinvent 3.6 - Electricity production, natural gas, conventional power plant, Finland, Ecoinvent 3.6
Electricity Kg CO_2e / kWh	0,0279 (wind) 0,85 (natural gas)

Transport scenario documentation (A4)

Scenario parameter	Value
Specific transport CO_2e emissions, kg CO_2e / tkm	0.0901
Average transport distance, km	300
Capacity utilization (including empty return) %	100
Bulk density of transported products	≈ 1 kg/dm^3
Volume capacity utilization factor	1

End of life scenario documentation

Scenario parameter	Value
Collection process – kg collected with mixed waste	1
Disposal (total) – kg for final deposition	1
Scenario assumptions e.g. transportation	End-of-life product is transported 50 km with an average lorry

BIBLIOGRAPHY

Standards and PCR

ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations Principles and procedures

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines

EN 15804+A2 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products

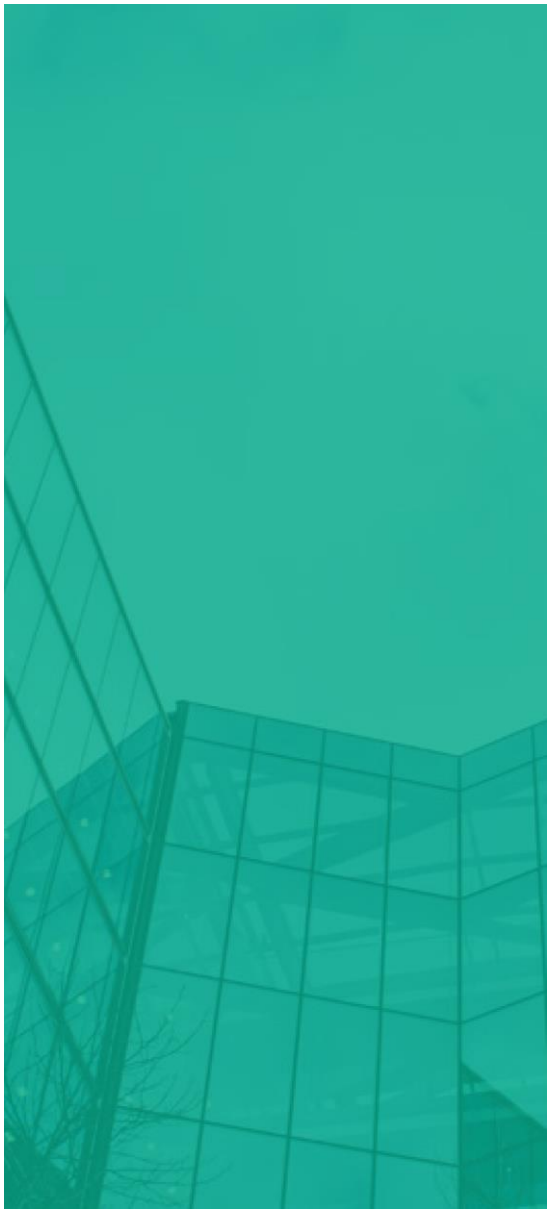
PCR 2019:14. Construction Products. Version 1.1

Data references:

Ecoinvent v3.6 (2019)

CEPE 2016

Eriksson, O & Finnveden, G. 2017



ABOUT THE MANUFACTURER

Kiilto is a growing, family-owned company, with over a hundred-year history and a vision looking ahead to 2080. We develop, produce and sell chemical industry solutions in four business areas: construction, industrial adhesives and fireproofing, professional hygiene and consumer goods. Please find more info at www.kiilto.com

EPD AUTHOR AND CONTRIBUTORS

Manufacturer	Kiilto Oy
EPD author	Viivi Kettula
EPD verifier	Anni Oviir, Rangi Maja OÜ, anni.oviir@lcasupport.com
EPD program operator	The International EPD System
Background data	This EPD is based on Ecoinvent 3.6 (cut-off), CEPE 2016
LCA software	The LCA and EPD have been created using One Click LCA Pre-Verified EPD Generator for Paints and coatings

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	Anni Oviir, Rangi Maja OÜ, anni.oviir@lcasupport.com
EPD verification started on	2022-03-09
EPD verification completed	2022-05-10
Supply-chain specific data %	97%
Approver of the EPD verifier	The International EPD System

Author & tool verification	Answer
EPD author	Kiilto Oy
EPD Generator module	Paints and coatings
Independent software	Ugo Pretato, Studio Fieschi & soci Srl.
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.

Anni Oviir

VERIFICATION AND REGISTRATION (ENVIRONDEC)

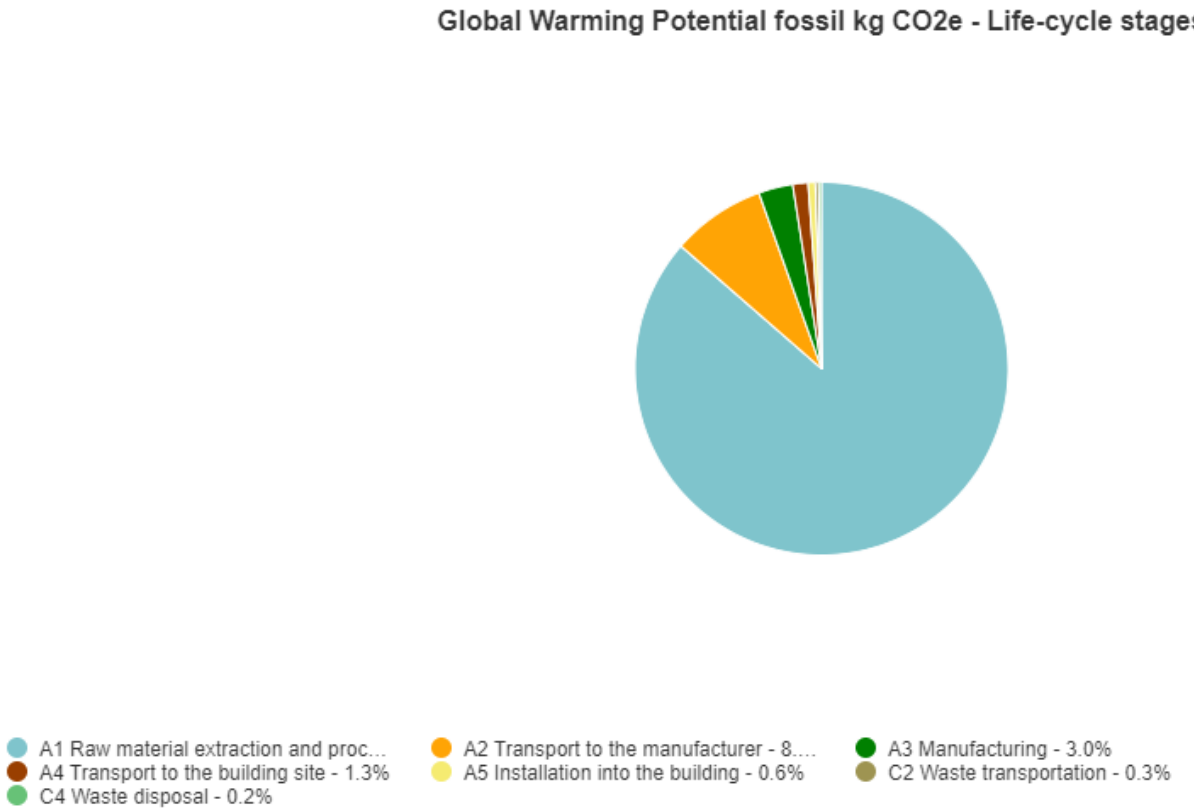
ISO standard ISO 21930 and CEN standard EN 15804 serves as the core Product Category Rules (PCR)	
PCR	PCR 2019:14 Construction products, version 1.11
PCR review was conducted by:	The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. Review chair: Claudia 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	Anni Oviir, Rangi Maja OÜ, anni.oviir@lcasupport.com
	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

EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden, E-mail: info@environdec.com

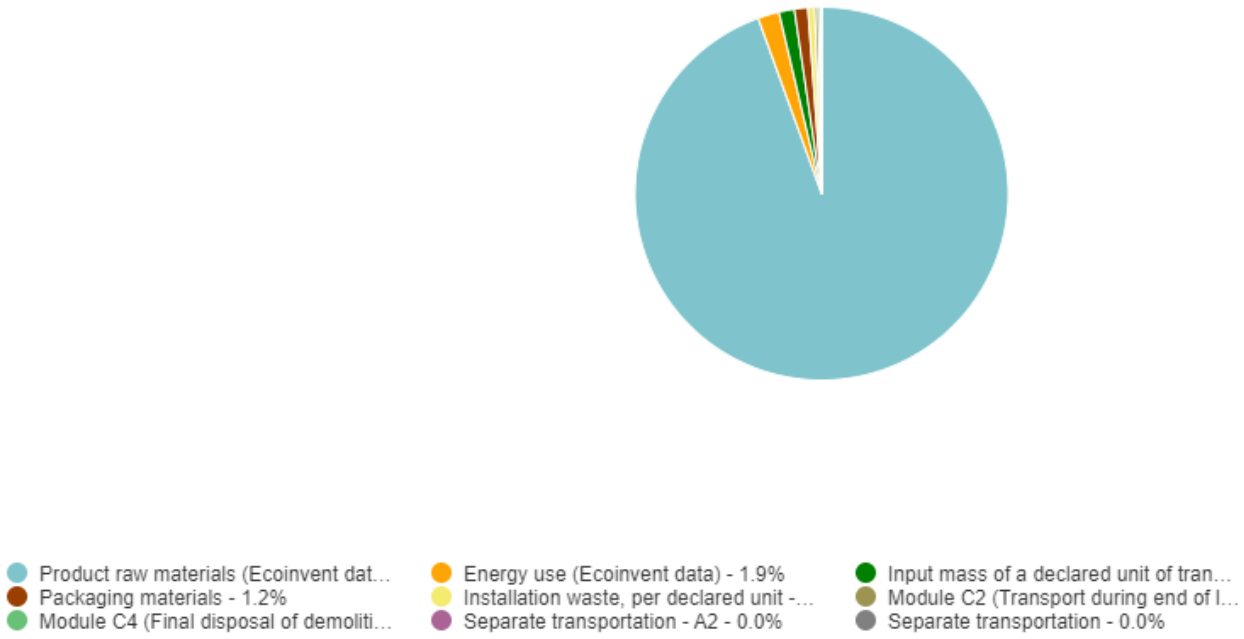
ANNEX 1 : ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

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	1,73E0	1,75E-1	6,22E-2	1,97E0	2,85E-2	1,33E-2	MND	MND	MND	MND	MND	MND	MND	0E0	6,32E-3	0E0	5,17E-3	-3,88E-3
Ozone depletion Pot.	kg CFC_{-11}e	7,79E-8	3,27E-8	5,33E-9	1,16E-7	5,38E-9	9,89E-11	MND	MND	MND	MND	MND	MND	MND	0E0	1,16E-9	0E0	1,72E-9	-6,53E-10
Acidification	kg SO_2e	5,84E-3	5,42E-4	1,82E-4	6,56E-3	5,85E-5	2,66E-6	MND	MND	MND	MND	MND	MND	MND	0E0	1,3E-5	0E0	2,08E-5	-1,56E-5
Eutrophication	kg PO_4^3e	1,73E-3	9,17E-5	3,61E-5	1,86E-3	1,18E-5	1,83E-6	MND	MND	MND	MND	MND	MND	MND	0E0	2,7E-6	0E0	4,03E-6	-5,53E-6
POCP (“smog”)	kg C_2H_4e	5,71E-4	2,68E-5	1,47E-5	6,13E-4	3,71E-6	9,39E-8	MND	MND	MND	MND	MND	MND	MND	0E0	8,39E-7	0E0	1,53E-6	-6,47E-7
ADP-elements	kg Sbe	2,19E-5	2,94E-6	3,39E-7	2,52E-5	4,91E-7	1,55E-8	MND	MND	MND	MND	MND	MND	MND	0E0	1,59E-7	0E0	4,81E-8	-1,18E-8
ADP-fossil	MJ	6,06E1	2,72E0	1,09E0	6,44E1	4,48E-1	8,79E-3	MND	MND	MND	MND	MND	MND	MND	0E0	9,72E-2	0E0	1,47E-1	-1,08E-1

ANNEX 2 : LIFE-CYCLE ASSESSMENT RESULT VISUALIZATION



Global Warming Potential fossil kg CO2e - Classifications



Global Warming Potential fossil kg CO2e - Resource types

This is a drilldown chart. Click on the chart to view details