epddanmark

ECO PLATFORM EPD EN 15804 VERIFIED

Owner: Triplan International A/S
No.: MD-20038-EN
Issued: 24-06-2021
Valid to: 24-06-2026

3rd PARTY **VERIFIED**

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | **ISO 14025 & EN 15804**

Owner of declaration
Triplan International A/S
Industriskellet 12, DK-2635 Ishøj
VAT No.: 16664081

Programme
EPD Danmark
www.epddanmark.dk

☐ Industry EPD
☒ Product EPD

Declared products
TRIPLAN LITE® | 34 – 50 dB. A classic glazed interior wall system with a door opening and equipped with aluminium profiles. Taped glass jointing or with transoms.

Number of declared datasets/product variations: 14

Production site
Triplan International A/S, Industriskellet 12, DK-2635 Ishøj

Product use
Triplan LITE® glass wall systems are used for internal glass solutions, and are available in a variety of types, with different glazing thicknesses, glazing types, and profile depths.

Declared unit
1 m^2 glass wall system

Year of data
2018/2019

Issued: 24-06-2021
Valid to: 24-06-2026

Basis of calculation
This EPD is developed in accordance with the European standard EN 15804+A1.

Comparability
EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

Validity
This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

Use
The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

EPD type
☒Cradle-to-gate
☐Cradle-to-gate with options
☐Cradle-to-grave

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

☐ internal ☒ external

Third party verifier:

Ninkie Bendtsen, Niras A/S

Henrik Fred Larsen
EPD Danmark

Life cycle stages and modules (MND = module not declared)																
Product			Construction process		Use							End of life				Beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use, recovery and 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	MND	MND

Product information

Product description

The main product components of Triplan LITE® glass wall systems are shown in the table below.

Material	Weight-% of declared product
Glass	93 - 96%
Aluminium profiles	2,2 - 3,8%
Sealing strip	1 - 2%
Glazing blocks	>1%
Glazing cassettes	>1%
Joint filler	>1%
Felt	>1%
Acoustic tape	>0,1%
Joint tape	>0,1%
Bolts	>0,1%
Acoustic sealant	>0,1%

Representativity

The declared unit is 1 m^2 glass wall solution, based on the production at Triplans manufacturing site in Ishøj, Denmark. The calculations are based on consumption- and production data from October 2018 to September 2019.

Background data is based on the GaBi databases version 2020. The majority of datasets are <5 years old, and all the used datasets are <10 years old in accordance with EN15804:2012+A1:2013.

Hazardous substances

The products covered in this EPD do not contain substances listed in the "Candidate List of Substances of Very High Concern for authorisation".

(http://echa.europa.eu/candidate-list-table)

Essential characteristics (CE)

Triplan LITE® glass wall systems are not covered by harmonised European product standards. The majority of components are however CE-marked products.

Further technical information can be obtained by contacting the manufacturer or on the manufacturers' website:

https://www.triplan.dk/en

Reference Service Life (RSL)

No RSL is declared, as this EPD is based on a cradle-to-gate LCA.

Picture of product(s)

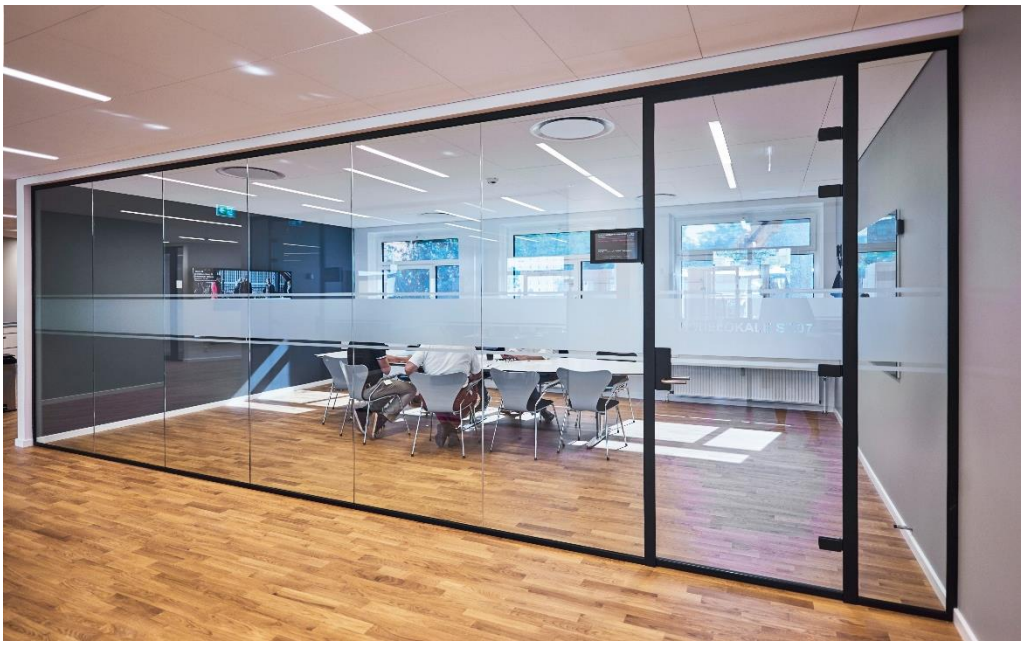


Table 1. Triplan LITE® wall types included in the EPD

TRIPLAN LITE®	WALL THICKNESS	GLAZING	GLAZING TYPE		
Wall No.	Profile depth	Thickness	Hardened	Laminated	Sound-reducing
1	25 mm	10 mm	x	-	-
2	25 mm	12 mm	x	-	-
4	25 mm	12,76 mm	x	x	-
5	25 mm	12,76 mm	x	x	x
6	25 mm	12,76 mm	-	x	-
7	25 mm	12,76 mm	-	x	x
8	30 mm	17,14 mm	x	x	-
9	30 mm	16,76 mm	x	x	x
10	30 mm	17,52 mm	-	x	x
11	30 mm	16,76 mm	-	x	x
12	35 mm	21,14 mm	x	x	-
13	35 mm	21,52 mm	x	x	x
15	55 mm	39 mm	x	x	x
16	55 mm	41 mm	-	x	x

LCA background

Declared unit

The LCI and LCIA results in this EPD relates to 1 m^2 Triplan Lite®. The results are calculated based on a total module area of 5,54 m^2. The calculated module does not include a door.

Name	Wall type							Unit
	No. 1	No. 2	No. 4	No. 5	No. 6	No. 7	No. 8	
Declared unit	1	1	1	1	1	1	1	m^2
Density	24,82	29,41	31,18	31,18	31,18	31,18	41,44	kg/m^2
Conversion factor to 1 kg	0,0403	0,0340	0,0321	0,0321	0,0321	0,0321	0,0241	-

Name	Wall type							Unit
	No. 9	No. 10	No. 11	No. 12	No. 13	No. 15	No. 16	
Declared unit	1	1	1	1	1	1	1	m^2
Density	40,56	42,33	40,56	50,89	49,54	44,31	47,85	kg/m^2
Conversion factor to 1 kg	0,0247	0,0236	0,0247	0,0196	0,0202	0,0226	0,0209	-

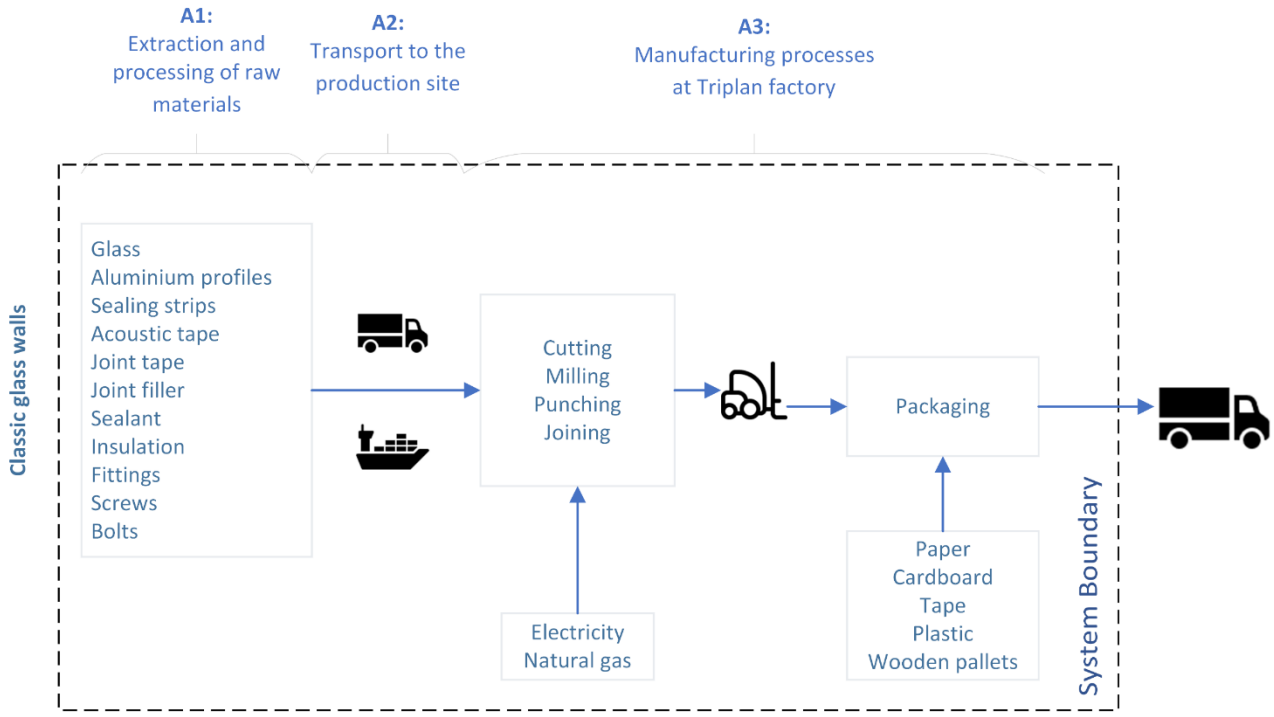
Functional Unit

Not defined.

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804:2012+A1:2013.

Flowdiagram



System boundary

This EPD is based on a cradle-to-gate LCA, in which 100 weight-% has been accounted for.

The general rules for the exclusion of inputs and outputs follows the requirements in EN 15804, 6.3.5, where the total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass and 1 % of energy usage and mass for unit processes.

Product stage (A1-A3) includes:

A1 – Extraction and processing of raw materials

A2 – Transport to the production site

A3 – Manufacturing processes

Triplan LITE® is a glass wall solution that is delivered for final assembly at the construction site and leaves the Triplan manufacturing site in separate subcomponents (Mounting-profiles and accessories, sealing strips, glazing blocks, doors, and glass-modules). This EPD covers all such separate components that are delivered as a package, with the exception for doors which are not included.

The product stage comprises the acquisition of all raw materials, products and energy, transport to the production site, packaging and waste processing up to the ”end-of-waste” state or final disposal. The LCA results are declared in aggregated form for the product stage, which means, that the sub-modules A1, A2 and A3 are declared as one module A1-A3.

The production of energy, resulting from the disposal of waste in municipal waste incineration, is allocated within the system boundary, and the generated thermal- and electrical energy is deducted from the consumption.

Construction process stage (A4-A5) includes:

Modules not declared.

Use stage (B1-B7) includes:

Modules not declared.

End of Life (C1-C4) includes:

Modules not declared.

Re-use, recovery and recycling potential (D) includes:

Module not declared.

LCA results

TRIPLAN LITE		ENVIRONMENTAL IMPACTS PER m2 TRIPLAN LITE						
Parameter	Unit	No. 01	No. 02	No. 04	No. 05	No. 06	No. 07	No. 08
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
GWP	[kg CO_2 eq.]	5,28E+01	5,98E+01	6,26E+01	6,26E+01	5,60E+01	5,60E+01	7,92E+01
ODP	[kg CFC11 eq.]	7,17E-12	7,24E-12	7,25E-12	7,25E-12	7,24E-12	7,24E-12	8,08E-12
AP	[kg SO_2 eq.]	3,07E-01	3,57E-01	3,76E-01	3,76E-01	3,42E-01	3,42E-01	4,89E-01
EP	[kg $(PO_4)^{3-}$ eq.]	3,26E-02	3,82E-02	4,04E-02	4,04E-02	3,66E-02	3,66E-02	5,29E-02
POCP	[kg Ethen eq.]	-2,97E-02	-3,62E-02	-3,88E-02	-3,88E-02	-3,48E-02	-3,48E-02	-5,30E-02
ADPE	[kg Sb eq.]	5,53E-06	5,86E-06	6,02E-06	6,02E-06	5,73E-06	5,73E-06	7,05E-06
ADPF	[MJ]	6,76E+02	7,57E+02	7,91E+02	7,91E+02	7,01E+02	7,01E+02	9,92E+02
Caption	GWP = Global warming potential; ODP = Ozone depletion potential; AP = Acidification potential of soil and water; EP = Eutrophication potential; POCP = Photochemical ozone creation potential; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources							

TRIPLAN LITE		ENVIRONMENTAL IMPACTS PER m2 TRIPLAN LITE						
Parameter	Unit	No. 09	No. 10	No. 11	No. 12	No. 13	No. 15	No. 16
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
GWP	[kg CO_2 eq.]	7,78E+01	7,15E+01	6,91E+01	9,50E+01	9,28E+01	8,81E+01	8,35E+01
ODP	[kg CFC11 eq.]	8,08E-12	8,06E-12	8,06E-12	9,14E-12	9,14E-12	8,75E-11	8,75E-11
AP	[kg SO_2 eq.]	4,79E-01	4,51E-01	4,34E-01	5,94E-01	5,79E-01	5,32E-01	5,18E-01
EP	[kg $(PO_4)^{3-}$ eq.]	5,18E-02	4,88E-02	4,69E-02	6,46E-02	6,29E-02	5,71E-02	5,56E-02
POCP	[kg Ethen eq.]	-5,18E-02	-4,88E-02	-4,65E-02	-6,58E-02	-6,39E-02	-5,52E-02	-5,41E-02
ADPE	[kg Sb eq.]	6,97E-06	6,72E-06	6,58E-06	8,10E-06	7,98E-06	1,79E-05	1,78E-05
ADPF	[MJ]	9,75E+02	8,84E+02	8,57E+02	1,18E+03	1,16E+03	1,09E+03	1,02E+03
Caption	GWP = Global warming potential; ODP = Ozone depletion potential; AP = Acidification potential of soil and water; EP = Eutrophication potential; POCP = Photochemical ozone creation potential; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources							

TRIPLAN LITE		RESSOURCE USE PER m2 TRIPLAN LITE						
Parameter	Unit	No. 01	No. 02	No. 04	No. 05	No. 06	No. 07	No. 08
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
PERE	[MJ]	1,14E+02	1,19E+02	1,21E+02	1,21E+02	1,18E+02	1,18E+02	1,36E+02
PERM	[MJ]	4,58E+00	4,64E+00	4,64E+00	4,64E+00	4,64E+00	4,64E+00	5,34E+00
PERT	[MJ]	1,19E+02	1,24E+02	1,26E+02	1,26E+02	1,22E+02	1,22E+02	1,42E+02
PENRE	[MJ]	7,11E+02	7,98E+02	8,33E+02	8,33E+02	7,40E+02	7,40E+02	1,04E+03
PENRM	[MJ]	1,46E+01	1,31E+01	1,31E+01	1,31E+01	1,31E+01	1,31E+01	1,35E+01
PENRT	[MJ]	7,26E+02	8,11E+02	8,47E+02	8,47E+02	7,54E+02	7,54E+02	1,06E+03
SM	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m^3]	2,31E-01	2,41E-01	2,46E-01	2,46E-01	2,38E-01	2,38E-01	2,77E-01
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Use of net fresh water							

TRIPLAN LITE		RESSOURCE USE PER m2 TRIPLAN LITE						
Parameter	Unit	No. 09	No. 10	No. 11	No. 12	No. 13	No. 15	No. 16
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
PERE	[MJ]	1,35E+02	1,33E+02	1,31E+02	1,54E+02	1,53E+02	1,64E+02	1,63E+02
PERM	[MJ]	5,34E+00	5,34E+00	5,34E+00	6,24E+00	6,24E+00	3,41E+00	3,41E+00
PERT	[MJ]	1,41E+02	1,38E+02	1,36E+02	1,60E+02	1,59E+02	1,67E+02	1,66E+02
PENRE	[MJ]	1,03E+03	9,34E+02	9,05E+02	1,25E+03	1,22E+03	1,16E+03	1,08E+03
PENRM	[MJ]	1,35E+01	1,35E+01	1,35E+01	1,39E+01	1,39E+01	1,49E+01	1,49E+01
PENRT	[MJ]	1,04E+03	9,47E+02	9,18E+02	1,26E+03	1,23E+03	1,17E+03	1,10E+03
SM	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m^3]	2,75E-01	2,69E-01	2,65E-01	3,14E-01	3,11E-01	3,41E-01	3,39E-01
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Use of net fresh water							

TRIPLAN LITE		WASTE CATEGORIES AND OUTPUT FLOWS PER m2 TRIPLAN LITE						
Parameter	Unit	No. 01	No. 02	No. 04	No. 05	No. 06	No. 07	No. 08
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
HWD	[kg]	7,34E-06	7,85E-06	8,06E-06	8,06E-06	7,97E-06	7,97E-06	9,28E-06
NHWD	[kg]	5,93E+00	6,44E+00	6,64E+00	6,64E+00	6,30E+00	6,30E+00	7,91E+00
RWD	[kg]	1,90E-02	2,06E-02	2,12E-02	2,12E-02	2,01E-02	2,01E-02	2,51E-02
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	1,26E+00	1,49E+00	1,58E+00	1,58E+00	1,58E+00	1,58E+00	2,10E+00
MER	[kg]	2,30E-01	2,80E-01	2,90E-01	2,90E-01	2,90E-01	2,90E-01	3,90E-01
EEE	[MJ]	7,04E-01	8,58E-01	8,88E-01	8,88E-01	8,88E-01	8,88E-01	1,19E+00
EET	[MJ]	2,47E+00	3,01E+00	3,11E+00	3,11E+00	3,11E+00	3,11E+00	4,19E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy							

TRIPLAN LITE		WASTE CATEGORIES AND OUTPUT FLOWS PER m2 TRIPLAN LITE						
Parameter	Unit	No. 09	No. 10	No. 11	No. 12	No. 13	No. 15	No. 16
		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
HWD	[kg]	9,18E-06	9,25E-06	9,06E-06	1,04E-05	1,03E-05	9,64E-06	9,91E-06
NHWD	[kg]	7,81E+00	7,53E+00	7,36E+00	9,25E+00	9,10E+00	9,39E+00	9,26E+00
RWD	[kg]	2,48E-02	2,39E-02	2,33E-02	2,92E-02	2,87E-02	2,96E-02	2,91E-02
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	2,06E+00	2,15E+00	2,06E+00	2,58E+00	2,51E+00	2,25E+00	2,43E+00
MER	[kg]	3,80E-01	4,00E-01	3,80E-01	4,80E-01	4,70E-01	4,20E-01	4,50E-01
EEE	[MJ]	1,16E+00	1,23E+00	1,16E+00	1,47E+00	1,44E+00	1,29E+00	1,38E+00
EET	[MJ]	4,08E+00	4,29E+00	4,08E+00	5,15E+00	5,05E+00	4,51E+00	4,83E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy							

Additional information

Indoor air

The EPD does not give information on release of dangerous substances to indoor air because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonised test methods according to the provisions of the respective technical committees for European product standards are not available.

Soil and water

The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonised test methods according to the provisions of the respective technical committees for European product standards are not available.

References

Publisher	www.epddanmark.dk
Programme operator	Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA-practitioner	Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA software /background data	Thinkstep GaBi 10.0 2020 incl. databases www.gabi-software.com
3rd party verifier	Ninkie Bendtsen, NIRAS, Sortemosevej 19, 3450 Allerød https://www.niras.com/

General programme instructions
Version 2.0
www.epddanmark.dk

EN 15804
DS/EN 15804:2012 + A1:2013 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

EN 15942
DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

ISO 14025
DS/EN ISO 14025:2010 – " Environmental labels and declarations – Type III environmental declarations – Principles and procedures"

ISO 14040
DS/EN ISO 14040:2008 – " Environmental management – Life cycle assessment – Principles and framework"

ISO 14044
DS/EN ISO 14044:2008 – " Environmental management – Life cycle assessment – Requirements and guidelines"