Environmental Product Declaration

In accordance with ISO 14025:2006, EN 15804:2012+A2:2019/AC:2021, and ISO 21930:2017 for:

Trespa® Meteon® EDF grade 8mm

Trespa International B.V.

by Nemho, center of excellence for innovation and technology for Broadview Holding B.V.

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-07213
Publication date:	2022-12-23
Revision date:	2023-01-11 (version 1)
Valid until:	2027-12-22

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

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14. CONSTRUCTION PRODUCTS. VERSION 1.2.4
PCR review was conducted by: the Technical Committee of the International EPD® System. Chair of the review is Claudia A. Peña. The review panel may be contacted via info@environdec.com
Life Cycle Assessment (LCA)
LCA accountability: Irmak Akal, Andrea Scandroglio, Nemho
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006 via: ☒ EPD verification by EPD Process Certification* Internal auditor: Sara Corrado, Nemho Third-party verification: SGS Italia S.p.A. Via Caldera 21, 20153 Milano.(www.it.sgs.com) is an approved certification body accountable for third-party verification Third-party verifier is accredited by: *Accredia, certificate n.006H* *For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI v.4, Section 7.5.
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical

declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Nemho, Wetering 20, 6002 SM Weert, The Netherlands

Contact: s.corrado@nemho.com

Description of the organisation:
Nemho is the Innovation Centre of all material companies of the Broadview Holding. Nemho carries out all sustainability-related activities, including LCA studies, for Trespa International B.V.

Description of the manufacturing company:
Trespa International B.V. is a leading innovator in the field of architectural materials, recognised internationally as a premier developer of high quality panels for exterior cladding, decorative façades, and scientific surface solutions. Since its founding in 1960, Trespa has worked closely with architects, designers, installers, distributors, raw material suppliers and end users globally. Trespa's focus is on product development, combining quality-manufacturing technologies with intelligent solutions for architectural and scientific surface applications. With unique insights into key market challenges, trends and demands, Trespa passionately delivers innovative aesthetically pleasing and high performance solutions for a wide range of needs.

Product-related or management system-related certifications:
Trespa International B.V. is, amongst other certification schemes, certified based on ISO 9001, ISO 14001, PEFC and FSC

Name and location of production site(s): Trespa International B.V., Weert, The Netherlands

Product information

Product name: Trespa® Meteon ® EDF grade - 8mm

Product identification: Decorative high-pressure compact laminates (high-pressure laminates, HPL) tested according to EN 438-6:2016. Information on the product performance can be found on www.trespa.info

Product description:
Trespa® Meteon® EDF grade, 8mm thick panels comprise sheets consisting of layers of natural fibre, impregnated with thermosetting resins and pressed under high pressure. The panels are attributed a decorative on one or both sides of the panels. In case of one-sided décor layer, the back side is plain black showing production batch information. The panels are available in a number of colors and décors with different finishes. Trespa® Meteon® EDF grade panel in 8mm is a versatile exterior cladding for innovative and functional ventilated façades and other exterior vertical applications like sunblind solutions.

The abbreviations EDF is an abbreviation standardized in the norm EN 438 - High pressure decorative laminate (HPL) - Sheets based on thermosetting resins - commonly called laminates - Part 1: Introduction and general information.
Explanation on meaning of EDF:
Main classification: E - denotes Exterior grade
Sub classification: D - denotes Heavy duty or severe use
F - denotes Flame-retardant grade

For detailed information on product performance in relation to type EDF see our material property datasheets published on the website www.trespa.info.

UN CPC code: n.a.

LCA information

Declared unit: 1 squared meter of finished panel, 8 mm thick, weighing 11,2 kg, plus primary packaging. All the possible product décor layers, different for the color and for the finishing, are covered by this EPD.

Reference service life: 50 years provided to appropriate design of the solution, installation, use and maintenance under normal conditions.

Time representativeness: Data used for the LCA calculation refer to the production year 2021.

Database(s) and LCA software used: The LCA study was performed with the support of the Simapro LCA software (version 9.3) and Ecoinvent 3.8 ad Carbon Minds database

Description of system boundaries:
The system boundaries of this EPD are from cradle to gate with modules C1–C4 and module D (A1–A3 + C + D).
The product stage (modules A1-A3) includes the manufacturing process of Trespa® Meteon® EDF grade 8mm, carried out in the plants of Trespa International B.V. located in Weert, the production of raw materials, electricity, and natural gas.
The deconstruction of Trespa® Meteon® EDF grade 8mm (module C1) is modelled according to Gervasio et al. (2018). The transport of HPLs at the end of life (module C2) assumed an average transport distance equal to 100km. HPLs are commonly used as secondary material for energy recovery, therefore it is assumed that 100% of the HPL panel at the end of life is sent to incineration (module C3). Loads from material incineration and resulting energy credits (module D) are declared. Energy credits are calculated considering a lower heating value (LHV) of panels equal to 19 MJ/kg as shown from a test run by BioMassaKraftcentrale (Germany, Luhnen) that incinerates Trespa products.

System diagram:

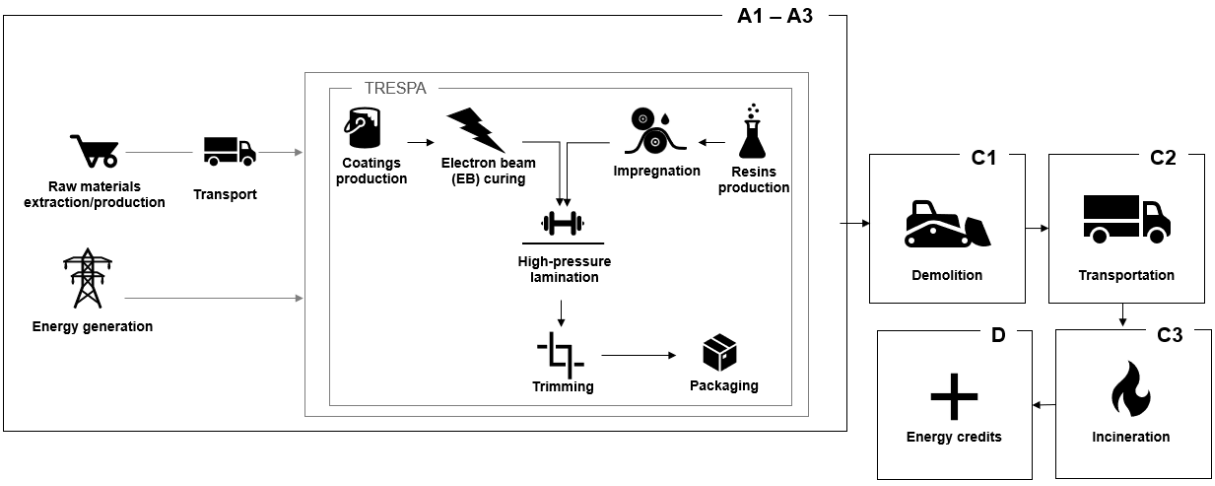

Figure 1: System boundary diagram for Trespa Meteon EDF 8mm

More information:

Electricity modelling:

According to the guarantees of origin for the specific electricity mix purchased by Trespa for the production location in Weert, which corresponds to 100% renewable energy, specifically from wind.

Main assumptions adopted in the study:

- Secondary data are taken from the database Ecoinvent v 3.8 and Carbon Minds. In the selection of secondary data, priority is given to more representative data in terms of temporal coverage, geographical coverage, and production technology.
- When the supplier of a raw material is known, specific transport distances from the supplier to the factory are considered in the study, otherwise transport is modelled according to average transport distances reflecting the market mix.
- The transport of packaging materials is excluded from the system boundary.

Allocation approach

Environmental impacts of multi-output processes at the plant level are allocated to the outputs based on their mass.

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	GLO	GLO	NL	-	-	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	n.a.			-	-	-	-	-	-	-	-	-	-	-	-	-	-

X=module declared, ND=module not declared

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Kraft paper	6,640-6,912	0	61% ± 1,21% 0,292 ± 0,006
Phenolic Resin	4,084-4,250	0	0%
Coating Chemicals	0,252-0,262	0	0%
TOTAL	11,2	0	61% ± 1,21% 0,292 ± 0,006
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
PP coversheets	0,113	1,01%	0
PE film	0,011	0,10%	0
Steelbands	0,020	0,18%	0
TOTAL	0,143	1,28%	0

Dangerous substances from the candidate list of SVHC for Authorisation: Trespa® Meteon® EDF grade 8mm panels do not contain substances listed on the candidate list of Substances of Very High Concern, as published on the ECHA website, in concentrations exceeding 0.1 percentage by mass at date of issuing of this EPD.

Environmental Information

Potential environmental impact – mandatory indicators according to EN 15804

Results per functional or declared unit							
Indicator	**Unit**	**Tot.A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2,65E+01	7,08E-01	1,04E-01	9,55E+00	0,00E+00	-1,51E+01
GWP-biogenic	kg CO_2 eq.	-1,20E+01	0,00E+00	0,00E+00	1,20E+01	0,00E+00	0,00E+00
GWP-luluc	kg CO_2 eq.	4,36E-02	1,30E-03	3,91E-05	9,66E-05	0,00E+00	-1,61E-02
GWP-total	kg CO_2 eq.	1,45E+01	7,09E-01	1,04E-01	2,16E+01	0,00E+00	-1,51E+01
ODP	kg CFC 11 eq.	6,17E-06	2,34E-08	2,37E-08	2,76E-08	0,00E+00	-1,27E-06
AP	mol H^+ eq.	1,13E-01	3,49E-03	5,30E-04	3,99E-03	0,00E+00	-4,80E-02
EP-freshwater	kg P eq.	1,09E-02	3,32E-04	7,59E-06	7,88E-05	0,00E+00	-4,07E-03
EP-marine	kg N eq.	2,44E-02	6,67E-04	1,80E-04	2,42E-03	0,00E+00	-9,45E-03
EP-terrestrial	mol N eq.	2,49E-01	6,67E-03	1,96E-03	1,97E-02	0,00E+00	-9,58E-02
POCP	kg NMVOC eq.	7,88E-02	1,80E-03	5,85E-04	4,79E-03	0,00E+00	-2,79E-02
ADP-minerals&metals*	kg Sb eq.	1,76E-04	9,20E-07	2,39E-07	8,94E-07	0,00E+00	-1,90E-05
ADP-fossil*	MJ	5,03E+02	9,22E+00	1,60E+00	3,00E+00	0,00E+00	-2,14E+02
WDP*	m^3 eq.	9,39E+00	1,13E-01	6,16E-03	2,18E-02	0,00E+00	-1,40E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption						

**Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per functional or declared unit							
Indicator	**Unit**	**Tot.1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	2,62E+01	6,96E-01	1,03E-01	9,54E+00	0,00E+00	-1,48E+01

[1] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product.

Potential environmental impact – additional voluntary indicators. Results for North America calculated according to ISO 21930

Results per functional or declared unit							
Indicator	**Unit**	**Tot.A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP (ISO 21930)	kg CO2 eq.	2,59E+01	6,87E-01	1,03E-01	9,54E+00	0,00E+00	-1,46E+01
ODP (ISO 21930)	kg CFC-11 eq.	6,32E-06	2,79E-08	2,50E-08	2,91E-08	0,00E+00	-1,36E-06
EP (ISO 21930)	kg N eq	1,61E-01	2,58E-03	1,11E-04	4,67E-03	0,00E+00	-3,18E-02
AP (ISO 21930)	kg SO2 eq	9,35E-02	2,98E-03	4,71E-04	3,68E-03	0,00E+00	-4,11E-02
POCP (ISO 21930)	kg O_3 eq.	1,26E+00	3,76E-02	1,13E-02	1,13E-01	0,00E+00	-5,43E-01

Use of resources

Results per functional or declared unit							
Indicator	**Unit**	**Tot.A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	2,65E+01	9,16E-01	1,33E-02	4,81E-02	0,00E+00	-1,12E+01
PERM	MJ	2,67E+02	1,42E-01	4,44E-03	2,38E-02	0,00E+00	-1,76E+00
PERT	MJ	2,94E+02	1,06E+00	1,78E-02	7,19E-02	0,00E+00	-1,30E+01
PENRE	MJ	3,81E+02	9,22E+00	1,60E+00	3,00E+00	0,00E+00	-2,14E+02
PENRM	MJ	1,23E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	5,03E+02	9,22E+00	1,60E+00	3,00E+00	0,00E+00	-2,14E+02
SM	kg	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	2,99E-01	5,14E-03	2,01E-04	1,93E-03	0,00E+00	-6,35E-02
Acronyms	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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water						

Waste production and output flows

Waste production

Results per functional or declared unit							
Indicator	**Unit**	**Tot.A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	6,56E-02	3,38E-03	1,23E-04	7,14E-01	0,00E+00	-4,17E-02
Non-hazardous waste disposed	kg	4,70E+00	4,47E-02	1,49E-01	3,72E-01	0,00E+00	-5,98E-01
Radioactive waste disposed	kg	1,66E-03	2,86E-05	1,06E-05	6,03E-06	0,00E+00	-3,53E-04

Output flows

Results per functional or declared unit							
Indicator	**Unit**	**Tot.A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	2,64E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	1,12E+01	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	4,21E+01	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	8,55E+01	0,00E+00	0,00E+00

Additional information

Reducing the carbon footprint is key for Trespa's overall sustainability policy and it is based on the core belief that it is the right thing to do. We are also convinced that reducing our overall environmental footprint is essential to the long-term success of our business and the environment around us. That is why sustainability is embedded in our business philosophy with the credo 'do no harm, do good, do better.'
At the core of our sustainability strategy is the principle that we should start with ourselves when we seek to improve the world: 'do no harm.' Our approach is straightforward: we measure our impact, select targets to reduce this impact and monitor and report on progress. To measure our impact, we use the Life Cycle Assessment (LCA) methodology.

The second element of our strategy is to look for opportunities that support the environment beyond the direct scope of our own manufacturing footprint: 'do good.' This includes creating highly durable products that have a long lifespan that limit the need for replacement. Additionally, we will develop projects that absorb or reduce carbon emissions that are not directly linked to our factories or product portfolio. We believe that addressing sustainability challenges will allow our company to continue to grow and 'do better' in the future. Investing in sustainability should – in the end – ensure that these efforts go beyond established regulatory requirements and the net effect of our efforts will positively impact the environment in which we operate.

Further details on our philosophy, approach and goals can be found in our position paper available online: **Documentatie | Trespa.**

Information on the product, its performance, testing and certification evidence can be found at www.trespa.info.

Trespa® Meteon® panels are installed as a component of rainscreen cladding or ventilated façade system. This "breathing" envelope system, employed the world over, can contribute a number of advantages to building designs. For more information, please check www.trespa.info.

EPD's based on ISO 14025:2006, EN 15804:2012+A2:2019/AC:2021, and ISO 21930:2017 will contribute to gaining points in so called Green Building Rating schemes.

Differences versus previous version

- 2023-01-11
  Updated product description
  Updated description of system boundaries
  Updated references

References

1. General Programme Instructions of the International EPD® System. Version 4.
2. PCR 2019:14. CONSTRUCTION PRODUCTS. VERSION 1.2.4
3. LCA Background report for Trespa® Meteon® EDF grade 8mm
4. EN 438-4:2016 High-pressure decorative laminates (HPL).
5. EN 15804:2012+A2 Sustainability of construction works – Environmental product declarations - Core rules for the product category of construction products.
6. ISO. (2006). ISO 14040: Environmental management – Life cycle assessment – Principles and framework. Geneva: International Organization for Standardization.
7. ISO. (2006). ISO 14044: Environmental management – Life cycle assessment – Requirements and guidelines. Geneva: International Organization for Standardization.

EPD®

www.environdec.com