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Environmental Product Declaration

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

TopLab®BASE 16mm CGS

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-08372
Publication date	2023-10-09
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Valid until	2028-10-09

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

EPD®

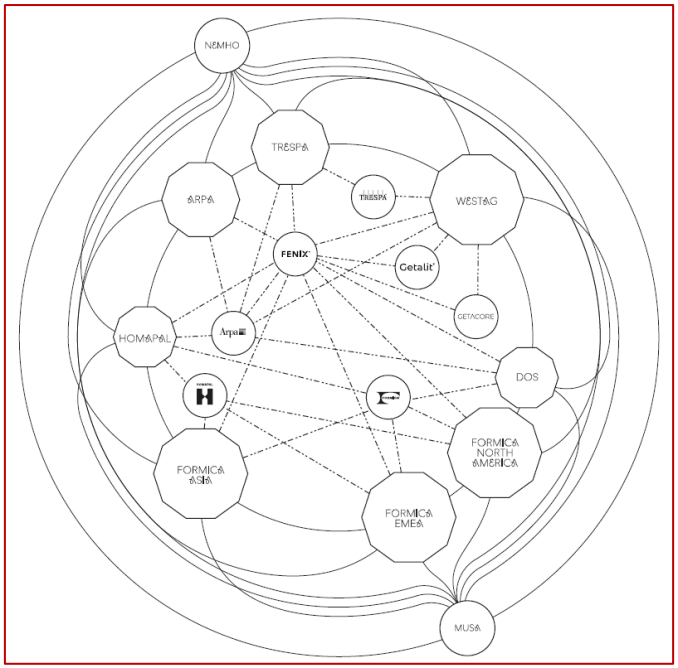
ECO PLATFORM EPD VERIFIED

NEMHO

Nemho is located in Weert in the Netherlands and it is the Innovation Centre of the material companies of the Broadview Holding. Nemho carries out all sustainability-related activities, including LCA studies, for Trespa International B.V.

Nemho is the owner of this EPD.

Contact Person: Sara Corrado (s.corrado@nemho.com).



TRESPA INTERNATIONAL B.V.

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.

Trespa International B.V. is located in Weert, in the Netherlands.

Trespa International B.V. is certified according to ISO 9001, ISO 14001, PEFC and FSC.

TOPLAB®BASE 16MM CGS

HPLs are decorative high-pressure panels. These products, in all their build-ups, are comprised of individual layers of natural fibres, treated with thermosetting resins and pressed under high pressure. The panels are attributed with an integrated decorative layer on one or both sides of the panels.

PRODUCT DESCRIPTION

Trespa Toplab® panels are decorative high-pressure compact panels (high-pressure laminates, HPL). Trespa Toplab® panels comprise sheets consisting of layers of natural fibres, impregnated with thermosetting resins and pressed under high pressure. Trespa TopLab®BASE is always double-sided, with both sides of the panel having decorative designs. It is suitable for worktops and cabinets for sectors such as education, laboratories and institutions.

The abbreviations CGS is an abbreviation standardized in the norm EN 438 - High pressure decorative laminate (HPL) - Sheets based on thermosetting resins - commonly called laminates - Part 4:

Classification and specifications for compact laminates of thickness 2 mm and greater.

Explanation on meaning of CGS:

Main classification:	C - denotes Compact grade
Sub classification:	G - denotes General Purpose
	S - denotes Standard grade

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

PRODUCT IDENTIFICATION:

Decorative high-pressure compact laminates (high-pressure laminates, HPL) tested according to EN 438-4:2016. Information on the product performance can be found on www.trespa.info.

UN CPC CODE

Not applicable.

METHODOLOGY

This EPD has been developed based on the PCR for construction products 2019:14, Version 1.2.5.

DECLARED UNIT

The declared unit is 1 square meter of finished panel, 16 mm thick, weighing 22,4 kg, plus primary packaging. All the possible product décor layers, different for the color and for the finishing, are covered by this EPD.

TopLab®BASE 16mm CGS corresponds to a weighted average of panels produced in the plants of Weert (the Netherlands).

REFERENCE SERVICE LIFE

Not applicable.

TIME REPRESENTATIVENESS

Data used for the LCA calculation refer to the production year 2022.

DATA, DATABASE(S) AND LCA SOFTWARE

Activities under the direct control of the company are modelled using specific data.

The LCA study was performed with the support of the Simapro LCA software (version 9.5).

Generic data are taken from Ecoinvent 3.9.1 ad Carbon Minds database.

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.

ALLOCATION APPROACH

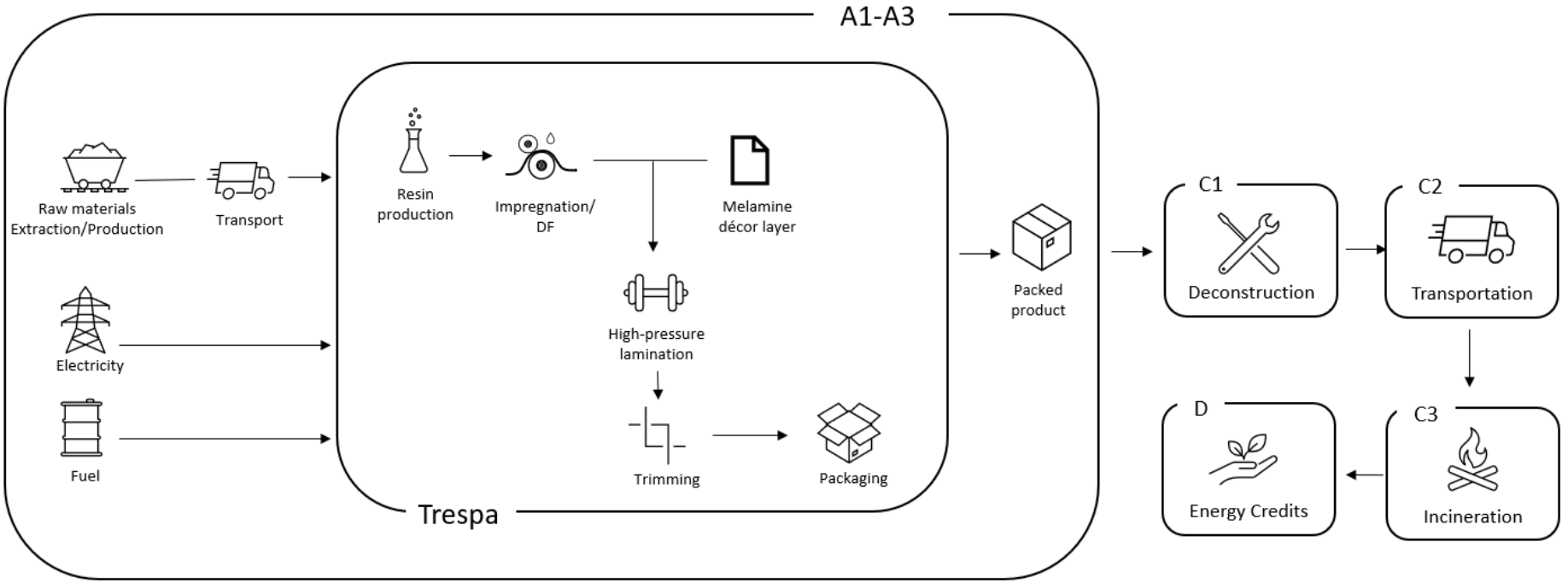
Environmental impacts of multi-output processes at the plant level are allocated to the outputs based on their mass.

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 TopLab®BASE 16mm CGS, carried out in the plant of Weert (NL), the production of raw materials, electricity, and natural gas.

The deconstruction of TopLab®BASE 16mm CGS (module C1) is modeled 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 at the end of life is sent to incineration with thermal efficiency higher than 60% (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 reported by ICDLI (2015).



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, n.a: not applicable

CONTENT INFORMATION

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Kraft paper	16,707 ± 0,334	0%	74,6% ± 1,5% 0,38 ± 0,008
Phenolic resin	5,512 ± 0,11	0%	0% ± 0% 0 ± 0
Melamine Formaldehyde Polymer	0,182 ± 0,004	0%	0% ± 0% ±
TOTAL	22,4 ± 0,448	0%	74,6% ± 1,5% 0,38 ± 0,008

Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
PP coversheets	0,248	1%	36,3%
PE film	0,024	0%	3,5%
Steelbands	0,044	0%	6,4%
TOTAL	0,316	1%	0,463

TopLab®BASE 16mm CGS does 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 the date of issuing of this EPD.

ENVIRONMENTAL PERFORMANCE

POTENTIAL ENVIRONMENTAL IMPACT – MANDATORY INDICATORS ACCORDING TO EN 15804

Results for 1 m2 TopLab®BASE 16mm CGS							
Indicator	**Unit**	**Tot.A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Climate change – total	kg CO_2 eq.	3,46E+00	1,39E+00	2,32E-01	5,05E+01	0,00E+00	-3,07E+01
Climate change - fossil	kg CO_2 eq.	3,47E+01	1,39E+00	2,32E-01	1,92E+01	0,00E+00	-3,07E+01
Climate change – biogenic	kg CO_2 eq.	-3,13E+01	0,00E+00	0,00E+00	3,13E+01	0,00E+00	0,00E+00
Climate change – land use and land use change	kg CO_2 eq.	3,07E-02	3,15E-03	8,30E-05	2,38E-04	0,00E+00	-3,70E-02
Ozone depletion	kg CFC 11 eq.	4,35E-06	9,02E-09	3,69E-09	1,90E-08	0,00E+00	-3,59E-07
Acidification	mol H^+ eq.	1,02E-01	6,56E-03	9,83E-04	7,95E-03	0,00E+00	-9,33E-02
Eutrophication aquatic freshwater	kg P eq.	9,53E-03	6,37E-04	1,55E-05	1,66E-04	0,00E+00	-7,98E-03
Eutrophication aquatic marine	kg N eq.	2,63E-02	1,30E-03	3,69E-04	4,85E-03	0,00E+00	-1,96E-02
Eutrophication terrestrial	mol N eq.	2,72E-01	1,30E-02	3,94E-03	3,97E-02	0,00E+00	-1,99E-01
Photochemical ozone formation	kg NMVOC eq.	9,92E-02	3,89E-03	1,41E-03	1,00E-02	0,00E+00	-7,34E-02
Depletion of abiotic resources - minerals and metals*	kg Sb eq.	7,74E-05	1,29E-06	3,67E-07	1,35E-06	0,00E+00	-2,82E-05
Depletion of abiotic resources - fossil fuels*	MJ	6,19E+02	1,81E+01	3,30E+00	6,93E+00	0,00E+00	-4,04E+02
Water use	m^3 eq.	6,67E+00	2,49E-01	1,52E-02	2,39E-02	0,00E+00	-3,21E+00

** 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 for 1 m2 TopLab®BASE 16mm CGS							
Indicator	**Unit**	**Tot.A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG**	kg CO2 eq.	3,42E+01	1,36E+00	2,27E-01	1,92E+01	0,00E+00	-3,00E+01

POTENTIAL ENVIRONMENTAL IMPACT – ADDITIONAL VOLUNTARY INDICATORS. RESULTS FOR NORTH AMERICA CALCULATED ACCORDING TO ISO 21930

Results for 1 m2 TopLab®BASE 16mm CGS							
Indicator	**Unit**	**Tot.A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Climate change – GWP 100 (ISO 21930)	kg CO2 eq.	3,38E+01	1,34E+00	2,24E-01	1,92E+01	0,00E+00	-2,95E+01
Ozone depletion - ODP (ISO 21930)	kg CFC-11 eq.	4,59E-06	1,58E-08	4,02E-09	2,04E-08	0,00E+00	-4,61E-07
Eutrophication potential - EP (ISO 21930)	kg N eq	2,18E-01	4,90E-03	1,86E-04	9,38E-03	0,00E+00	-6,22E-02
Acidification potential - AP (ISO 21930)	kg SO2 eq	8,54E-02	5,61E-03	8,83E-04	7,34E-03	0,00E+00	-8,01E-02
Photochemical ozone formation potential – POCP (ISO 21930)	kg O3 eq.	1,39E+00	7,34E-02	2,27E-02	2,28E-01	0,00E+00	-1,13E+00

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

*.** 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.*

USE OF RESOURCES

Results for 1 m2 TopLab®BASE 16mm CGS							
Indicator	**Unit**	**Tot.A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials (PERE)	MJ	7,78E+01	1,98E+00	2,81E-02	1,10E-01	0,00E+00	-2,36E+01
Use of renewable primary energy resources used as raw materials (PERM)	MJ	4,79E+02	3,21E-01	8,60E-03	5,22E-02	0,00E+00	-3,88E+00
Total use of renewable primary energy resources (PERT)	MJ	5,57E+02	2,31E+00	3,67E-02	1,63E-01	0,00E+00	-2,75E+01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (PENRE)	MJ	4,39E+02	1,81E+01	3,30E+00	6,93E+00	0,00E+00	-4,04E+02
Use of non-renewable primary energy resources used as raw materials (PENRM)	MJ	1,80E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy re-sources (PENRT)	MJ	6,19E+02	1,81E+01	3,30E+00	6,93E+00	0,00E+00	-4,04E+02
Use of secondary material (SM)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels (RSF)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable secondary fuels (NRSF)	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water (FW)	m^3	2,63E-01	1,03E-02	4,77E-04	3,38E-03	0,00E+00	-1,24E-01

WASTE PRODUCTION

Results for 1 m2 TopLab®BASE 16mm CGS							
Indicator	**Unit**	**Tot.A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	1,29E-01	5,67E-04	7,99E-05	1,43E+00	0,00E+00	-8,14E-03
Non-hazardous waste disposed	kg	3,95E+00	7,96E-02	2,98E-01	7,51E-01	0,00E+00	-1,28E+00
Radioactive waste disposed	kg	1,51E-03	5,35E-05	6,51E-07	2,20E-06	0,00E+00	-6,00E-04

OUTPUT FLOWS

Results for 1 m2 TopLab®BASE 16mm CGS							
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	1,95E-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	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	8,43E+01	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	1,71E+02	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. **Documentation | Trespa.**

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

PROGRAM 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

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 1.2.5:
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: 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.

DIFFERENCES WITH PREVIOUS VERSIONS

The system boundaries graph has been adjusted, no other changes have been made.

REFERENCES

- General Programme instructions of the International EPD® System. Version 4.
- Gervasio, Dimova, Pinto (2018). Benchmarking the Life-Cycle Environmental Performance of Buildings. Sustainability.
- ICDLI (2015). Technical characteristics and physical properties of HPL (Technical leaflet).
- LCA background report for TopLab®BASE 16mm CGS
- PCR 2019:14 Construction products, Version 1.2.5

Approved 29/09/2023