

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

Owner of the Declaration

Programme holder

Publisher

Declaration number

Issue date

Valid to

Institut Bauen und Umwelt e.V. (IBU)

Institut Bauen und Umwelt e.V. (IBU)

EPD-DUP-20220294-CBA1-EN

13/12/2022

12/12/2027

DuPont™ Tyvek® Tape 1310D

DuPont de Nemours (Luxembourg) s.à.r.l.

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ECO PLATFORM

EPD
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General Information

DuPont de Nemours (Luxembourg) s.à.r.l.

Programme holder

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Declaration number

EPD-DUP-20220294-CBA1-EN

This declaration is based on the product category rules:

False ceiling and underlay sheeting, 11.2017
(PCR checked and approved by the SVR)

Issue date

13/12/2022

Valid to

12/12/2027



Dipl. Ing. Hans Peters
(chairman of Institut Bauen und Umwelt e.V.)



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DuPont™ Tyvek® Tape 1310D

Owner of the declaration

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Declared product / declared unit

1 m² DuPont™ Tyvek® Tape 1310D

Scope:

This document applies to DuPont™ Tyvek® Tape 1310D, which is an acrylic-based tape. The declared unit weight is 155.5 g/m² (it does not include the release paper). LCA data were compiled using production data for the year 2021. The declaration holder is responsible for the underlying data and its verification.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of *EN 15804+A2*. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard *EN 15804* serves as the core PCR

Independent verification of the declaration and data according to *ISO 14025:2011*

☐ internally ☒ externally



Vito D'Incognito
(Independent verifier)

Product

Product description/Product definition

DuPont™ Tyvek® Double-sided Acrylic Tape (Style 1310D) is made of solvent free modified acrylic adhesive based on an aqueous dispersion. The acrylic adhesive is embedded in a PES/PVA grid. The tape has good adhesion to Tyvek® membranes and many other materials such as PP non-wovens, PE films, timber and metal.

For the use and application of the product the respective national provisions at the place of use apply, in Germany for example the building codes of the federal states and the corresponding national specifications.

Application

DuPont™ Tyvek® Double-sided Acrylic Tape has outstanding performance in high humidity conditions and is suitable for use within a wide temperature range. The product is ideally suited for sealing membrane laps, but is also appropriate for sealing membranes at roof, wall and floor junctions. It may also be used to repair a damaged membrane in conjunction with a suitable patch. DuPont™ Tyvek® Double-sided Acrylic Tape has a high initial tack and an excellent resistance to ageing, fluctuations in

temperature and humidity and most commonly used chemicals.

Users should check that DuPont™ Tyvek® Double-sided Acrylic Tape is suitable for the proposed use.

- The application should be carried out on a dry and clean surface (no dust, grease or solvent).
- DuPont™ Tyvek® Double-sided Acrylic Tape should be cut off the reel with a sharp craft knife or safety cutter (scissors are inappropriate). Any adhesive residue on the knife blade can be removed effectively with a white spirit type solvent (exercise care when doing so).
- Storage: The rolls should be stored in their initial packaging, flat in a clean and dry environment. Storage temperature should be between +10 °C and +30 °C without direct exposure to sunlight.

Technical Data

Constructional data

The properties given below correspond to nominal values, as declared in the Technical Data Sheet of the product. There is nevertheless an intrinsic variability for



these properties, which explains the small difference between the grammage declared below and the weight used for the LCA calculation.

Name	Value	Unit
Grammage acc. to EN 1849-2	0.14	kg/m ²
Thickness	150	µm
Temperature range	-40 to 80*	°C

*short exposure to 100°C would not change properties

Performance data of the product with respect to its characteristics in accordance with the relevant technical provision (no CE-marking).

Base materials/Ancillary materials

The product is made of an acrylic mixture (97 % of product weight) and a scrim carrier (3 % of product weight).

This product/article/at least one partial article contains substances listed in the candidate list (08.07.2022) exceeding 0.1 percentage by mass: no.

Reference service life

The service life is assumed to be 30 years, even if longer lifetime can be obtained for membranes out of plastic or elastomers (40 years according to *BNB* <http://www.nachhaltigesbauen.de/baustoff-und-gebaeuedaten/nutzungsdaern-von-bauteilen.html>). Since the whole lifecycle of the product is not considered and for sake of compliance to *EN 15804+A2 (2019)*, the functional unit does not have to be declared. Instead, the declaration unit is 1 m² of the envelope.

LCA: Calculation rules

Declared Unit

This declaration applies to 1 m² of DuPont™ Tyvek® 1310D tape, with a declared unit weight of 155.5 g/m².

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	m ²
Grammage	0.1555	kg/m ²
Layer thickness	0.00015	m

Primary production data were collected to model the manufacturing process (A1-A3). They are representative for the year 2021; the product is manufactured in Germany. All energy and materials flows were considered. Only a few material flows were excluded from the modelling, but the sum of their weight did not exceed 1 % of the total input mass. Manufacturing of the production machines and systems and associated infrastructure were not taken into account for the life cycle assessment.

Transport to the construction site (A4) is based on market shares of 2021 at country level, provided by DuPont Luxembourg s.à.r.l., to cover at least 90 % of the sales. Eurostat data representative of 2019 were used to model the shares between the packaging disposal routes during the installation into the building (A5). Regarding possible off-cuts during installation, the amount is lower than 5 % and therefore neglected.

Regarding background data, the German electricity grid mix was applied to the production plants in these countries. Other background data were specific to Germany or the European average and were not older

than 10 years. A proxy was used for the acrylic mixture.

The representativeness can be classified as very good for all the foreground data, and for most of the background data.

The *GaBi database* (Sphera Solutions GmbH, 2022.1) was used to model background data.

System boundary

Type of EPD: Cradle-to-gate (with options)
The system boundaries of the EPD follow the modular construction system as described by *EN 15804*.

The LCA considers the following modules:

- A1-A3: Manufacturing of pre-products, packaging, ancillary materials, transport to the factory and production, with the associated energy supply and waste handling
- A4: Transport to the construction site
- A5: Installation into the building including disposal of packaging
- C4: Waste disposal, namely incineration
- D: Potential for reuse, recovery and/or recycling including benefits for product incineration from module C4

Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

LCA: Scenarios and additional technical information

Characteristic product properties

Information on biogenic carbon

The product does not contain biogenic carbon.

Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic carbon content in	0.0211	kg C

accompanying packaging		
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Transport to the building site (A4)

Name	Value	Unit
Transport distance (truck)	1099	km



Transport distance (container ship)	333	km
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Installation into the building (A5)

Name	Value	Unit
Cardboard/paper waste to landfill	1.22E-02	kg
Cardboard/paper waste to incineration	1.31E-02	kg

End of life (C1-C4)

Name	Value	Unit
Collected as mixed construction waste	0.1555	kg
Energy recovery	0.1555	kg

LCA: Results

The results displayed below apply to 1 m² of DuPont™ Tyvek® Tape 1310D, with a declared unit weight of 155.5 g/m².

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	ND	MNR	MNR	MNR	ND	ND	ND	ND	ND	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m² DuPont™ Tyvek® 1310D

Core Indicator	Unit	A1-A3	A4	A5	C4	D
Global warming potential - total	[kg CO ₂ -Eq.]	9.64E-1	2.84E-2	3.68E-2	1.47E-1	-5.35E-2
Global warming potential - fossil fuels	[kg CO ₂ -Eq.]	1.03E+0	2.78E-2	1.35E-3	6.62E-2	-5.32E-2
Global warming potential - biogenic	[kg CO ₂ -Eq.]	-6.27E-2	4.52E-4	3.55E-2	8.04E-2	-2.32E-4
GWP from land use and land use change	[kg CO ₂ -Eq.]	2.98E-4	1.53E-4	5.04E-7	-8.16E-7	-4.80E-6
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	9.89E-10	1.70E-15	3.22E-15	2.79E-14	-2.78E-13
Acidification potential, accumulated exceedance	[mol H ⁺ -Eq.]	1.78E-3	1.94E-4	9.48E-6	7.17E-5	-6.07E-5
Eutrophication, fraction of nutrients reaching freshwater end compartment	[kg P-Eq.]	2.56E-5	8.23E-8	9.81E-8	1.11E-8	-5.74E-8
Eutrophication, fraction of nutrients reaching marine end compartment	[kg N-Eq.]	6.23E-4	8.85E-5	4.44E-6	2.86E-5	-1.76E-5
Eutrophication, accumulated exceedance	[mol N-Eq.]	6.54E-3	9.79E-4	3.88E-5	3.64E-4	-1.89E-4
Formation potential of tropospheric ozone photochemical oxidants	[kg NMVOC-Eq.]	1.58E-3	1.75E-4	1.42E-5	7.37E-5	-4.97E-5
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	1.07E-6	2.33E-9	1.11E-10	3.44E-10	-6.78E-9
Abiotic depletion potential for fossil resources	[MJ]	2.11E+1	3.78E-1	1.79E-2	7.64E-2	-8.93E-1
Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	[m ³ world-Eq deprived]	2.81E-1	2.48E-4	2.36E-3	2.44E-2	-4.34E-3

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m² DuPont™ Tyvek® 1310D

Indicator	Unit	A1-A3	A4	A5	C4	D
Renewable primary energy as energy carrier	[MJ]	2.12E+0	2.10E-2	2.29E-3	1.57E-2	-1.92E-1
Renewable primary energy resources as material utilization	[MJ]	5.06E-2	1.15E-13	1.41E-13	5.08E-13	-1.04E-11
Total use of renewable primary energy resources	[MJ]	2.17E+0	2.10E-2	2.29E-3	1.57E-2	-1.92E-1
Non-renewable primary energy as energy carrier	[MJ]	2.11E+1	3.79E-1	1.79E-2	7.63E-2	-8.93E-1
Non-renewable primary energy as material utilization	[MJ]	4.88E-4	1.29E-5	3.79E-7	2.95E-6	-2.66E-5
Total use of non-renewable primary energy resources	[MJ]	2.11E+1	3.79E-1	1.79E-2	7.63E-2	-8.93E-1
Use of secondary material	[kg]	5.25E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of renewable secondary fuels	[MJ]	0.00	0.00	0.00	0.00	0.00
Use of non-renewable secondary fuels	[MJ]	0.00	0.00	0.00	0.00	0.00
Use of net fresh water	[m ³]	9.99E-3	2.37E-5	5.59E-5	5.72E-4	-1.84E-4

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m² DuPont™ Tyvek® 1310D

Indicator	Unit	A1-A3	A4	A5	C4	D
Hazardous waste disposed	[kg]	2.40E-9	1.81E-12	2.46E-12	7.49E-12	-1.30E-10
Non-hazardous waste disposed	[kg]	2.15E-2	5.38E-5	9.59E-3	1.80E-2	-3.94E-4
Radioactive waste disposed	[kg]	2.27E-4	4.66E-7	4.56E-7	3.72E-6	-5.47E-5
Components for re-use	[kg]	0.00	0.00	0.00	0.00	0.00
Materials for recycling	[kg]	0.00	0.00	0.00	0.00	0.00
Materials for energy recovery	[kg]	0.00	0.00	0.00	0.00	0.00
Exported electrical energy	[MJ]	0.00E+0	0.00E+0	2.80E-2	1.92E-1	0.00E+0
Exported thermal energy	[MJ]	0.00E+0	0.00E+0	5.08E-2	4.38E-1	0.00E+0

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 m² DuPont™ Tyvek® 1310D

Indicator	Unit	A1-A3	A4	A5	C4	D
Potential incidence of disease due to PM emissions	[Disease Incidence]	ND	ND	ND	ND	ND
Potential Human exposure efficiency relative to U235	[kBq U235-Eq.]	ND	ND	ND	ND	ND
Potential comparative toxic unit for ecosystems	[CTUe]	ND	ND	ND	ND	ND
Potential comparative toxic unit for humans - cancerogenic	[CTUh]	ND	ND	ND	ND	ND
Potential comparative toxic unit for humans - not cancerogenic	[CTUh]	ND	ND	ND	ND	ND
Potential soil quality index	[-]	ND	ND	ND	ND	ND

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”.

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.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”.

The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

References

Standards

EN 15804

EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

EN 1849-2

EN 1849-2:2019, Flexible sheets for waterproofing - Determination of thickness and mass per unit area - Part 2: Plastic and rubber sheets

ISO 14025

EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

Further References

BNB

Bewertungssystem Nachhaltiges Bauen
<https://www.nachhaltigesbauen.de/austausch/nutzungs-dauern-von-bauteilen/>

GaBi software and database:2022

GaBi software/database, version 10.6.2.9. Sphera Solutions GmbH, 2022.

IBU 2021

Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V., Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021. www.ibu-epd.com

PCR 2021, Part A

PCR Guidance-Texts for Building-Related Products and Services: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report according to EN 15804+A2:2019

PCR 2017, Part B

PCR Guidance-Texts for Building-Related Products and Services: Requirements on the EPD for False ceiling and underlay sheeting (version 1.6, 2017)

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