epd-norway
Global Program Operator

ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	ISOLA as
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
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Valid to	29.11.2026

Isola Tyvek Soft Xtra
Isola as, N-3946 Porsgrunn

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1. General Information

Isola as, N-3946 Porsgrunn

Isola Tyvek® Soft Xtra

Programme holder
IBU – Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Owner of the declaration
Isola as
Prestemoen 9
N- 3946 Porsgrunn

Declaration number
EPD-DUP-20210189-IBC1-EN

Declared product / declared unit
1 m² Isola Tyvek® Soft Xtra

This declaration is based on the product category rules:
False ceiling and underlay sheeting, 11.2017
(PCR checked and approved by the SVR)

Scope:
This document applies to Isola Tyvek® Soft Xtra monolayer high density polyethylene (HDPE) membranes manufactured by DuPont in L-2984 Contern, with a declared unit weight of 69 g/m². The LCA data were compiled using production data from the year 2019 by DuPont Luxembourg s.à r.l. The declaration holder is responsible for the underlying data and its verification.

Issue date
30.11.2021

Valid to
29.11.2026

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 14025:2010*
☐ internally ☒ externally

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

Dr. Alexander Röder
(Managing Director Institut Bauen und Umwelt e.V.))

Vito D'Incognito
(Independent verifier)

2. Product

2.1 Product description/Product definition

Isola Tyvek® is a nonwoven material made of HDPE, which is diffusion open but watertight. It is used as a roof and wall underlay.

For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) *Regulation (EU) No. 305/2011 (CPR)* applies. The product needs a declaration of performance taking into consideration *EN 13859-1:2010 Flexible sheets for waterproofing - Definitions and characteristics of underlays - Part 1: Underlays for discontinuous roofing and EN 13859-2:2010 Flexible sheets for waterproofing - Definitions and characteristics of underlays - Part 2 Underlays for walls* and the CE-marking. For the application and use the respective national provisions apply.

2.2 Application

Tyvek® underlays are used in roofs and walls. They constitute the second water shedding layer and at the same time protect the insulation from trapped moisture, wind penetration, dust and insects. Insulation installed below Tyvek® is kept dry and performs as designed.

2.3 Technical Data

The following chapter comprises technical data for the characteristics listed in the Declaration of Performance according to the harmonized technical specifications *EN 13859-1* and *EN 13859-2*.

Constructional data

Name	Value	Unit
Length * acc. to EN 1848-2	50m standard	m
Width * acc. to EN 1848-2	1.3m standard 2.8m standard 3.0m standard	m
Grammage * acc. to EN 1849-2	0.069	kg/m²
Resistance to water penetration acc. to EN 1928 (class)	W1	-

Water vapor diffusion equivalent air layer thickness acc. to EN ISO 12572	0.021	m
Maximum tensile force acc. to EN 12311-1	205 - 170	N/50mm
Elongation acc. to EN 12311-1	9 - 13	%
Tear Resistance (nail) acc. to EN 12310-1	80 - 80	N/mm
Resistance to water penetration after ageing acc. to EN 1297, EN 1928 (class)	W1	-

* Not listed in the declaration of performance

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to *EN 13859-1:2010 Flexible sheets for waterproofing - Definitions and characteristics of underlays - Part 1: Underlays for discontinuous roofing and EN 13859-2:2010 Flexible sheets for waterproofing - Definitions and characteristics of underlays - Part 2 Underlays for walls*.

2.4 Delivery status

The single selling unit is a roll of up to 3 m width and a length of up to 100 m. Usually several rolls are strapped and piled on a wooden pallet.
The order unit is square meter [m²].

2.5 Base materials/Ancillary materials

Tyvek® single layer membranes are made of
- high density polyethylene (HDPE) >99 %
- hindered amine light stabilizers (HALS, added for UV stabilization) <1 %.

2.6 Manufacture

Tyvek® underlays are produced on semi-continuously operating production facilities in different countries. Process steps include:

1. Spinning of thin HDPE filaments.
2. Bonding of filament sheet.
3. Printing, slitting and packaging of the finished roll goods.

2.7 Environment and health during manufacturing

Some of the manufacturing facilities employed in the production of Tyvek® are *ISO 14001* certified. All facilities comply with local regulations and DuPont internal standards.
Particular care is taken to ensure the safety of anyone involved in the Tyvek® supply chain in line with the DuPont safety culture: all injuries can be prevented (goal is ZERO).

2.8 Product processing/Installation

Tyvek® membranes for walls and roofs can be either installed on the construction site or in manufacturing facilities in case of pre-fabricated buildings. In both instances the material is usually installed by manually unwinding the sheet from the roll and placing it onto the designated surface. Tools required are usually a knife or scissors to cut the sheet as well as a stapler to fix it to the construction. Refer to Tyvek® installation guidelines for more information.

2.9 Packaging

Tyvek® is wound onto carton cores. Each roll comes with a paper insert sheet. Rolls are individually wrapped in foil (LDPE: low density PE) and stacked on wooden pallets which are also wrapped in LDPE stretch film. Vertical sides of the pallets are protected with a carton profile.
All packaging materials can be reused (e.g. pallets), recycled or valorised through energy recovery.

2.10 Condition of use

Materials are not expected to change or react during the period of use. Tyvek® is intended to be installed on the cold side of the insulation and is designed to withstand substantial temperature changes during service life.

2.11 Environment and health during use

Tyvek® membranes are usually concealed below roof decking or facade cladding. They do not require maintenance and will not produce emissions. There are no environmental or health concerns to be expected from the use of the material.

2.12 Reference service life

The documentation of the RSL is not required for this EPD since not the entire life cycle is declared (without modules B1-B7). Nevertheless, the product is assumed to have a reference service life of 30 years, corresponding to the average roof lifetime (*BNB Nutzungsdauerliste*). But this assumption could not be verified because the Tyvek® envelopes have only been sold for 25 years.
Influences on ageing when applied in accordance with the rules of technology

2.13 Extraordinary effects

Fire

Fire protection

Name	Value
Building material class acc. to EN13501-1	E on mineral wool and wood

Water

Tyvek® membranes are inherently waterproof. No part of the product will dissolve in water nor will the product release any toxic substances to water.

Mechanical destruction

No possible impacts on the environment following unforeseeable mechanical destruction are known.

2.14 Re-use phase

The material is not intended to be re-used or recycled. Energy recovery is possible.

2.15 Disposal

Disposal of the material should be made according to national legislation. Incineration is the preferred way of disposal. *European Waste Codes* (Commission decision 2014/955/EU) for mixed construction and demolition waste is 17 09 04.

2.16 Further information

Additional information about product properties and use can be found at www.building.dupont.com.Safety Data Sheets (SDS) or Article Information Sheets (AIS) of the products can be found at www.dupont.com.

3. LCA: Calculation rules

3.1 Declared Unit

This declaration applies to 1 m^2 of Isola Tyvek® Soft Xtra with a declared unit weight of 69 g/m^2.

Declared unit

Name	Value	Unit
Declared unit	1	m^2
Grammage	0.069	kg/m^2

For IBU core EPDs (where clause 3.6 is part of the EPD): for average EPDs, an estimate of the robustness of the LCA values must be made, e.g. concerning variability of the production process, geographical representativeness and the influence of background data and preliminary products compared to the environmental impacts caused by actual production.

3.2 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 takes into account the following modules:

- A1-A3: Manufacturing of pre-products, packaging, ancillary materials, transport to the factory, production including energy supply and waste handling
- A4: Transport to the construction site
- A5: Installation into the building (disposal of packaging)
- C4: Waste disposal (incineration)
- D: Potential for reuse, recovery and/or recycling (benefits for incineration and recovery of packaging materials from module A5 and envelopes incineration from module C3).

3.3 Estimates and assumptions

The color paste used in the finishing process was valued with a general composition of water-based color paste (conservative approach).

3.4 Cut-off criteria

All data were taken into consideration (recipe constituents, process water, electricity used). In case of missing data, a cut-off criteria of 1 % of the total input mass was applied for unit processes and 5 % for the entire modules (as recommended by *EN 15804*, section 6.3.5) and therefore some inputs were excluded: tape and spiking agent for monolayer production (sum < 0.04 % of total input mass for monolayer production), paper ink, hotmelt, paper, tape and detergent for finishing process (sum < 0.2 % of total input mass for finishing process). Transports were considered for all inputs and outputs. Manufacturing of the production machines and systems and associated infrastructure were not taken into account in the life cycle assessment (LCA). Regarding possible off-cuts during installation, the amount is lower than 5 % and therefore also neglected.

3.5 Background data

All background data for the LCA model were taken from the database of *GaBi 10.5.0.78*.

3.6 Data quality

To simulate the product stage, data recorded by DuPont Luxembourg s.à r.l. and the converting plant in Germany from the production year 2019 were used. *Eurostat* data for the years 2018-2019 were used to model the modules A4 (freight transport modal split) and A5 (packaging disposal routes).
Regarding background processes, the Luxembourg and German electricity grid mix were applied to the production plants in these countries (A1-A3). Other background data were specific to Germany or the European average, and were not older than 10 years. The representativeness can be classified as very good for all the foreground data, and most of the background data.

3.7 Period under review

The period of study encompasses the year 2019.

3.8 Allocation

Mass allocation was applied for production. At the DuPont site in Luxembourg, Tyvek® waste materials are sold and transformed externally. The further use of the valorized HDPE granulates was cut-off from the system boundaries, as for the packaging materials sent for recycling. The Tyvek® final waste material sent to incineration is modelled through the combustion process of the specific material and the avoided conventional energy production is considered in module D. The potential benefit in module D will be possible only if the
Tyvek® will be separate and incinerated.

3.9 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.

GaBi 10.5.0.78 was used to model background data.

4. 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 factury gate

Name	Value	Unit
Biogenic Carbon Content in product	0	kg C
Biogenic Carbon Content in accompanying packaging	0.0037	kg C

The following technical information serves as a basis for the declared modules or can be used for the

development of specific scenarios in the context of a building assessment.

Transport to the building site (A4)

Name	Value	Unit
Transport distance	3064	km
Transport (train)	1.75E-02	tkm
Transport (road)	7.57E-02	tkm
Transport (water)	1.41E-01	tkm

Installation into the building (A5)

Name	Value	Unit
Wood waste to landfill	2.97E-04	kg
Wood waste to incineration	1.78E-04	kg
Cardboad waste to landfill	2.96E-04	kg
Cardboard waste to incineration	2.26E-04	kg
Plastic waste to landfill	2.66E-05	kg
Plastic waste to incineration	3.63E-05	kg

In case a **reference service life** according to applicable ISO standards is declared then the assumptions and in-use conditions underlying the determined RSL shall be declared. In addition, it shall be stated that the RSL applies for the reference conditions only

The same holds for a service life declared by the manufacturer. Corresponding information related to in-use conditions needs not be provided if a service life taken from the list on service life by *BNB* is declared.

End of life (C1-C4)

Name	Value	Unit
Collected separately Tyvek® waste	0.069	kg
Energy recovery	100	%
R1 value	< 0.6	

5. LCA: Results

The results displayed below apply to Isola Tyvek® Soft Xtra.

Disclaimer:
EP-freshwater: This indicator has been calculated as “kg P eq” as required in the characterization model (EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe; http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml).

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 Isola Tyvek® Soft Xtra

Core Indicator	Unit	A1-A3	A4	A5	C4	D
Global warming potential - total	[kg CO_2-Eq.]	3.31E-1	7.12E-3	1.85E-3	2.16E-1	-1.14E-1
Global warming potential - fossil fuels	[kg CO_2-Eq.]	3.31E-1	6.97E-3	1.50E-4	2.16E-1	-1.14E-1
Global warming potential - biogenic	[kg CO_2-Eq.]	3.60E-4	9.74E-5	1.70E-3	7.18E-6	-5.35E-4
GWP from land use and land use change	[kg CO_2-Eq.]	2.50E-4	4.73E-5	4.91E-8	1.16E-6	-7.18E-5
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	4.18E-12	5.62E-18	2.39E-19	1.62E-17	-1.18E-15
Acidification potential, accumulated exceedance	[mol H^+-Eq.]	1.28E-3	7.77E-5	3.89E-7	2.15E-5	-1.41E-4
Eutrophication, fraction of nutrients reaching freshwater end compartment	[kg P-Eq.]	5.12E-7	1.78E-8	3.68E-9	2.16E-9	-1.36E-7
Eutrophication, fraction of nutrients reaching marine end compartment	[kg N-Eq.]	2.05E-4	2.82E-5	1.70E-7	4.52E-6	-4.10E-5
Eutrophication, accumulated exceedance	[mol N-Eq.]	2.21E-3	3.11E-4	1.58E-6	1.01E-4	-4.40E-4
Formation potential of tropospheric ozone photochemical oxidants	[kg NMVOC-Eq.]	7.25E-4	6.38E-5	6.85E-7	1.35E-5	-1.16E-4
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	5.06E-8	5.31E-10	5.04E-12	2.45E-10	-1.77E-8
Abiotic depletion potential for fossil resources	[MJ]	8.28E+0	9.42E-2	8.54E-4	2.64E-2	-1.97E+0
Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	[m^3 world-Eq deprived]	3.00E-2	8.36E-5	8.61E-5	1.99E-2	-7.80E-3

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m2 Isola Tyvek® Soft Xtra)

Indicator	Unit	A1-A3	A4	A5	C4	D
Renewable primary energy as energy carrier	[MJ]	7.38E-1	5.95E-3	8.75E-5	5.22E-3	-4.04E-1
Renewable primary energy resources as material utilization	[MJ]	3.39E-4	-1.11E-14	-1.22E-16	2.17E-14	-8.15E-13
Total use of renewable primary energy resources	[MJ]	7.38E-1	5.95E-3	8.75E-5	5.22E-3	-4.04E-1
Non-renewable primary energy as energy carrier	[MJ]	8.28E+0	9.43E-2	8.54E-4	2.64E-2	-1.97E+0
Non-renewable primary energy as material utilization	[MJ]	1.82E-4	3.03E-6	1.67E-8	9.33E-7	-6.38E-5
Total use of non-renewable primary energy resources	[MJ]	8.28E+0	9.43E-2	8.54E-4	2.64E-2	-1.97E+0
Use of secondary material	[kg]	3.62E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of renewable secondary fuels	[MJ]	5.65E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of non-renewable secondary fuels	[MJ]	6.23E-7	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of net fresh water	[m^3]	4.16E-3	6.55E-6	2.05E-6	4.66E-4	-3.93E-4

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m2 Isola Tyvek® Soft Xtra

Indicator	Unit	A1-A3	A4	A5	C4	D
Hazardous waste disposed	[kg]	1.77E-9	4.90E-12	1.54E-13	4.71E-12	-4.36E-10
Non-hazardous waste disposed	[kg]	3.23E-3	1.53E-5	4.46E-4	8.57E-4	-8.63E-4
Radioactive waste disposed	[kg]	1.43E-4	6.36E-7	1.79E-8	1.50E-6	-1.29E-4
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	1.46E-3	4.61E-1	0.00E+0
Exported thermal energy	[MJ]	0.00E+0	0.00E+0	2.08E-3	8.20E-1	0.00E+0

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 m2 Isola Tyvek® Soft Xtra)

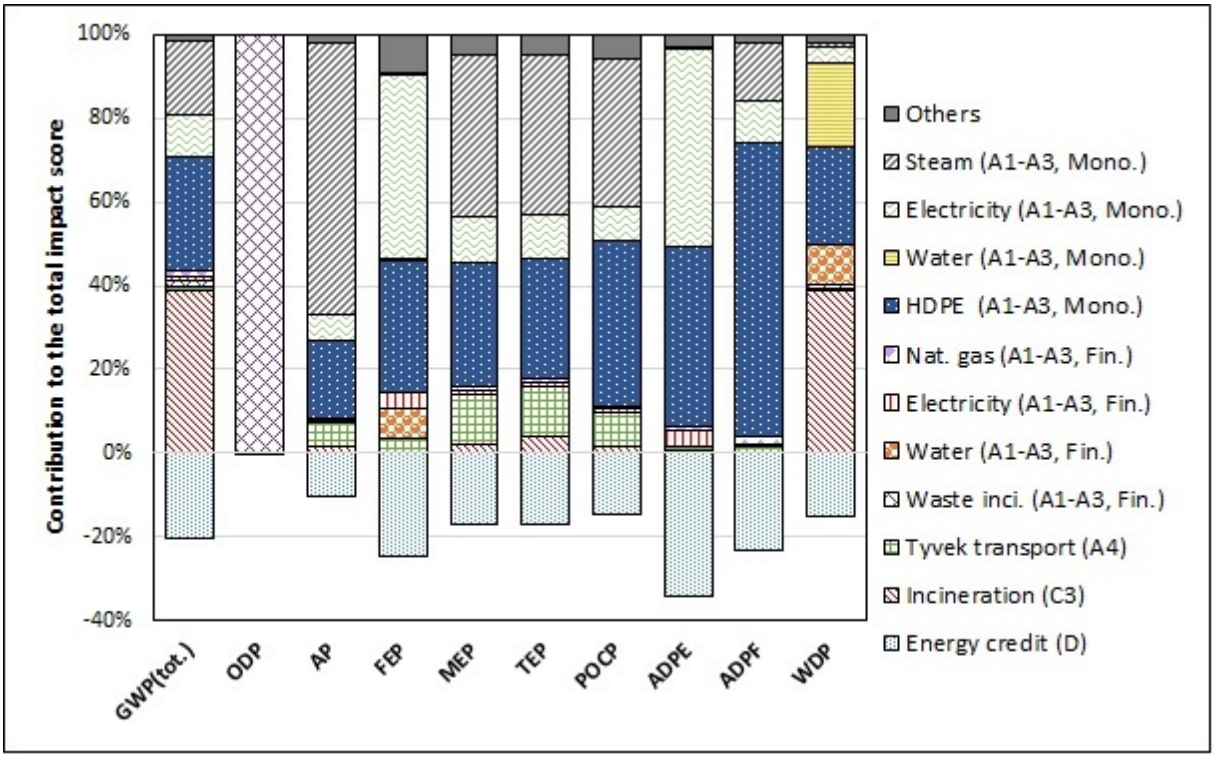
Indicator	Unit	A1-A3	A4	A5	C4	D
Potential incidence of disease due to PM emissions	[Disease Incidence]	ND	ND	ND	ND	ND
Potential Human exposure efficiency relative to U235	[kBq U235-Eq.]	ND	ND	ND	ND	ND
Potential comparative toxic unit for ecosystems	[CTUe]	ND	ND	ND	ND	ND
Potential comparative toxic unit 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 radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators: “abiotic depletion potential for fossil resources”, “abiotic depletion potential for non-fossil resources”, “water (user) deprivation potential”, “deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans - cancer effects”, “potential comparative toxic unit for humans – non-cancer effects”, “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 experience with the indicator.

6. LCA: Interpretation

The following chart shows the relative contributions of the different modules to the various LCA categories in a dominance analysis.



For most of the impact categories, more than 70 % of the impacts are dominated by the Tyvek® production (A1-A3) and in particular by the supply of HDPE granulates, steam and electricity.
The production phase represents 59 % of **GWP**, which is also highly influenced by the final disposal (39 % of the generated impact). This is due to the emissions of carbon dioxide from the incineration plant.
The avoided energy production thanks to waste incineration leads to significant benefits, which are mostly around 20 % of the impact results.

Waste incineration during the finishing step, including Tyvek® and packaging materials, is completely dominating the **ODP** score due to halogens emissions to air in the module „EU-28: Waste incineration of plastics (PE, PP, PS, PB)“. The transport of Tyvek® products to the customers contributes to 12 % of **MEP** and **TEP** due to the emissions of nitrogen monoxide during lorry and sea transport (module A4). As expected, the use of water, in particular cold water for monolayer production, dominates the **WDP** score.

Glossary:

ADPE: Abiotic depletion potential for non-fossil resources
ADPF: Abiotic depletion potential for fossil resources
AP: Acidification potential, accumulated exceedance
FEP: Eutrophication, fraction of nutrients reaching freshwater end compartment
Fin.: Finishing process
GWP: Global Warming Potential
HDPE: High-Density Polyethylene
LCA: Life Cycle Assessment
MEP: Eutrophication, fraction of nutrients reaching marine end compartment
Mono: Monolayer production
Nat. gas: Natural gas
ODP: Depletion potential of the stratospheric ozone layer
POCP: Formation potential of tropospheric ozone photochemical oxidants
TEP: Eutrophication, accumulated exceedance
WDP: Water (user) deprivation potential, deprivation-weighted water consumption

7. Requisite evidence

No requisite evidence is required for Isola Tyvek® Soft Xtra

8. References

EN 12310-1
EN 12310-1:1999, Flexible sheets for waterproofing - Part 1: Bitumen sheets for roof waterproofing; determination of resistance to tearing (nail shank)

EN 12311-1
EN 12311-1:1999, Flexible sheets for waterproofing - Part 1: Bitumen sheets for roof waterproofing; Determination of tensile properties

EN 1297
EN 1297:2004, Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Method of artificial ageing by long term exposure to the combination of UV radiation, elevated temperature and water

EN 13501-1
EN 13501-1:2007+A1:2010, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

EN 13859-1
EN 13859-1:2010, Flexible sheets for waterproofing - Definitions and characteristics of underlays - Part 1: Underlays for discontinuous roofing

EN 13859-2
EN 13859-2:2010, Flexible sheets for waterproofing - Definitions and characteristics of underlays - Part 2: Underlays for walls

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

EN 1848-2
EN 1848-2:2001, Flexible sheets for waterproofing - Determination of length, width, straightness and flatness - Part 2: Plastic and rubber sheets for roof waterproofing

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

EN 1928
EN 1928:2000, Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of watertightness

EN ISO 12572
EN ISO 12572:2017, Hygrothermal performance of building materials and products -- Determination of water vapour transmission properties

EN ISO 14001
EN ISO 14001:2015, Environmental management systems - Requirements with guidance for use (ISO 14001:2015)

ISO 14025
DIN EN ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

PCR, Part A
PCR 2021, Part A - PCR Guidance-Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report according to EN 15804+A2:2019 (version 1.1.1, 2021)

PCR, Part B
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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BNB Nutzungsdauerliste
BNB Nutzungsdauerliste: 2017. Nutzungsdaueren von Bauteilen published by Informationsportal Nachhaltiges Bauen des Bundesministeriums des Inneren für Bau und Heimat.

European Waste Code
European Waste Code:2000. European List of Waste European Waste Codes: (Commission decision 2014/955/EU)

Eurostat
Eurostat:2021, Data browser, Packaging waste by waste management operations; Recycling rate of packaging waste by type of packaging

GaBi 10.5.0.78
GaBi 10.5.0.78:2021. Life Cycle Engineering software and database. Sphera Solutions GmbH, 2021.

Regulation (EU) No. 305/2011
Regulation (EU) No. 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC

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ANNEX 1

ANNEX 1*:* Self declaration from EPD owner

Specific Norwegian requirements

1 Applied electricity data set used in the manufacturing phase

The electricity mix for the electricity used in manufacturing (A3) is the electricity grid mix

1500 g CO_2 eqv/MJ (477 g CO_2 eqv/kW/h (enova))

2 Content of dangerous substances

- ☐ X The product contains no substances given by the REACH Candidate list or the Norwegian priority list.
- ☐ The product contains substances that are less than 0.1% by weight given by the REACH Candidate or the Norwegian priority list.
- ☐ The product contains dangerous substances more than 0.1% by weight given in the REACH candidate list or the Norwegian Priority List, concentrations is given in the EPD:

Dangerous substances from the REACH candidate list or the Norwegian Priority List	**CAS No.**	**Quantity (concentration, wt%/FU(DU)).**
Substance 1		
Substance n		

3 Transport from the place of manufacture to a central warehouse

Transport distance, and CO_2-eqv./DU from transport of the product from factory gate to central warehouse in Oslo shall be given. The following table shall be included in the EPD:

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy use	Unit	Value (l/t)	Kg CO2-eqv./DU
Boat							
Truck	50	Truck 16 tonn	1000	0,019914	l/tkm	19,91	
Railway							
Rail							
Air							
Total							

4 Impact on the indoor environment

- ☐ Indoor air emission testing has been performed; specify test method and reference; M1, _____
- ☐ No test has being performed
- ☐ X Not relevant; specify **_Product is used for outdoors applications**