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LANDOLT
The Swiss specialist for temporary surface protection

Environmental Product Declaration

Average EPD

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

Floorliner™ vapor & Floorliner™ basic

Fritz Landolt AG

Programme
EPD Square | www.epdsquare.com

Programme operator
EPD Square, s.r.o.

EPD Registration number
SQ 00-036

Publication date
03.09.2025

Valid until
02.09.2030

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General information

Product
Floorliner™ vapor & Floorliner™ basic

Program operator
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Registration number
SQ 00-036

Publication date
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02.09.2030

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SWITZERLAND
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Place of production
Bahnhofstr. 35, CH - 8752 Näfels
SWITZERLAND

Product Category Rules (PCR)
The CEN standard EN 15804+A2 serves as the core PCR.
In addition, EPD Square PCR v1.0, 2024 is used.

Declared unit
1 m^2

Mass per DU
0.15 kg

UN CPC code
36910 - Floor coverings of plastics, in rolls or in the form of tiles; wall or ceiling coverings of plastics

Geographical scope
World

Year of study
Jan 2024- Dec 2024

Comparability
EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in the context of the building.

EPD author
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Verification type
Independent verification of the declaration and data, according to ISO14025:2006
Internal: ☐
External: ☒

Verified by
Gaurav Das

GD

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

System boundaries

Cradle to gate with modules C1–C4 and module D. The LCA was carried out considering the product stage A1-A3, modules C1–C4, module D.

Modules declared and geographical scope

	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	✓	✓	✓	✓	✓	MND	MND	MND	MND	MND	MND	MND	✓	✓	✓	✓	✓
Geography	EU	EU	CH	world	world	MND	MND	MND	MND	MND	MND	MND	world	world	world	world	world

Modules not declared = MND

Description of Organization

Fritz Landolt AG, founded in 1884 and ISO 9001 certified, is a Swiss company that stands out with innovative, tailor-made products and services.

As the Swiss Specialist in temporary surface protection and as trusted manufacturer of technical nonwovens, Fritz Landolt AG serves a wide range of industries and applications. Our high-quality products reliably protect surfaces from external influences and enhance work safety – whether on construction sites or in the maintenance of vehicles, ships, or aircraft.

We protect what you care for.

Product information

Product name
Floorliner™ basic & Floorliner™ vapor

Product description
Floorliner™ basic: Adhesive nonwoven with a waterproof film on the surface. Multiple use is possible.

Floorliner™ vapor: Adhesive nonwoven with a waterproof, vapour open film on the surface. Multiple use is possible.

Product application
Floorliner™ basic: Surface protection for floors against liquids and mechanical impacts in construction industry. They can be used for tiled floors, parquet, laminate floors, textile floors kitchens, worktops, ceramics, sanitary facilities.

Floorliner™ vapor: Surface protection for floors against liquids and mechanical impacts in construction industry, especially for freshly installed floors to enable evaporation of rising moisture and solvents. It can be used for ceramic and natural stone floors and oiled parquet sealed on site.

Technical Specifications
Floorliner™ basic: Width 100-200 cm, roll length: 25-50 m and thickness 1.4mm.

Floorliner™ vapor: Width 100-200 cm, roll length: 25-50 m and thickness 1.8mm.

Standard: ISO 9073-part 1-3

More details on the application of products can be found under www.landolt.com

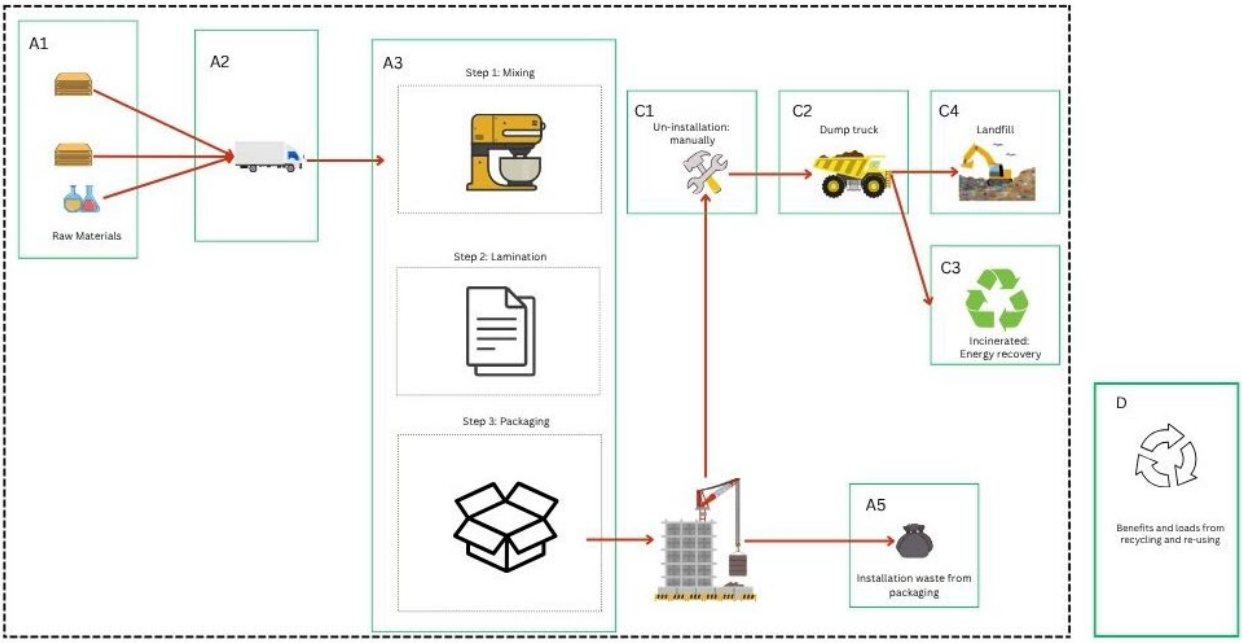
Geographical scope
World

Product contents information

Product components	Weight, %	Post-consumer material, weight-%	Renewable material, weight-%
Fibre	60-64	95	0
Binder	18-20	0	0
Plastic film	18-20	0	
Total	100	58	0
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	
Cardboard	0.00287	1.9	
Plastic Film	0.001387	0.92	
Wooden Pallet	0.00893	5.95	

Manufacturing process

The product is manufactured through the production of a PES nonwoven made from a fiber mixture with various components, which is then coated with an adhesive acrylate compound. This coated nonwoven is subsequently laminated with a polyethylene (PE) film, with the type of film varying depending on the product variant. The laminated material is then cut to the desired width, wound onto a cardboard roll at a specified length, and packed using PE films. Finally, the rolls are arranged on a wooden pallet and wrapped with stretch film for shipment.



Life cycle assessment

Cut-off criteria

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass. Additives are not included in this study as their mass is less than 5% of total inputs. The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.
In accordance with EN 15804+A2 cut-off criteria, additives used in the manufacturing process, which account for 1% of the total mass input, have been excluded from the Life Cycle Assessment (LCA). The justification for this exclusion is as follows:

Mass Contribution: The total mass of additives is below the 5% threshold defined in EN 15804+A2, which allows for the omission of inputs that contribute less than 5% to the total mass of the system.

Environmental Relevance: The environmental impact of these additives is expected to be negligible compared to the primary raw materials (sand, chrome shavings, water) and energy consumption. Their exclusion is unlikely to significantly influence the overall LCA results or conclusions.

Data Availability and Effort Justification: Given their minor contribution, the effort required to collect detailed data on the production and environmental impact of these additives would be disproportionate to their expected effect on the results.

Compliance with EN 15804+A2: The exclusion follows the cut-off rules of EN 15804+A2, which state that omitted inputs must not exceed 5% of energy use, mass, or environmental impact and should not alter the overall conclusions of the LCA.

Allocation, estimations, and assumptions

Allocation is based on annual production rate and made with high accuracy and precision. The values for 1 m^2 of the products which are used within this study are calculated by considering the total product weight per annual production. In the production plant, several kinds of products are produced; since the production processes of these products are similar, the annual production percentages are taken into consideration for allocation. According to the ratio of the annual production of the declared product to the total annual production at the factory, the annual total energy consumption, packaging materials and the generated waste per the declared product are allocated. Subsequently, the produced products output fixed to 1 m^2 and the corresponding amount of product is used in the calculations.

Database(s) and LCA software

This EPD has been created using One Click LCA Pre-Verified EPD Generator. Ecoinvent v3.10.1 and One Click LCA databases were used as sources of environmental data.

LCA Scenarios and additional technical information

Scenarios included in the LCA are based on realistic scenarios which are currently in use and are representative for one of the most likely scenario alternatives.

Life cycle stages A2 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. It may vary but as the role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by transportation companies to serve the needs of other clients.

Module A5: The packaging waste is considered in A5. 9% of the plastic packaging is recycled and 12% incinerated with energy recovery.32% of the wooden pallets are recycled and 30% is incinerated with energy recovery. The remaining plastic packaging is landfilled. The remaining wooden pallet are also landfilled.

Module C1: The impacts of the disassembly stage are assumed zero, since the consumption of energy and natural resources for disassembling the end-of-life product is negligible. The product is removed manually. Module C2: Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is assumed as lorry which is the most common. Transportation of product back to manufacturing site is taken as the conservative 100 km based on the estimate provided manufacturer (see A2 transportation distance).

Module C3: 80% of the product is incinerated with energy recovery.

Module C4: 20% of the product ends at a landfill without prior treatment.

D: The benefits of the packaging are considered as well as the benefits from substitution based on the exported energy amount from C3.

Manufacturing energy scenario

Electricity data source and quality, Grid	Consumption mix w/o renewables, Switzerland, 2022, IEA
Electricity kg CO_2e / kWh	0.021
Electricity data source and quality, Solar	Electricity production, photovoltaic, ecoinvent 3.10.1
Electricity kg CO_2e / kWh	0.12
District Heating	District Heating, ecoinvent 3.10.1
District Heating kg CO_2e / kWh	0.0331
Heating (Natural Gas)	Natural gas at diffusion absorption heat pump, ecoinvent 3.10.1
Natural Gas kg CO_2e / kWh	0.0603

End of Life (C1, C2, C3, C4)

	Value	Unit
Collected separately	0	kg
Collected as mixed construction waste	0	kg
Reuse	0	kg
Recycling	0	kg
Energy recovery	0.12	kg
To landfill	0.03	kg

Benefits and loads beyond boundary system (D)

Benefits and loads beyond the boundary system are considered. The benefits and loads of the packaging only are considered.

LCA results

Results are presented per 1 m^2 (Declared Unit) of the product. Estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

Core environmental impact indicators – EN 15804+A2

Impact Category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	3.1E-01	1.2E-02	1.4E-02	0.0E+00	1.5E-03	2.9E-01	2.8E-03	-1,99E-02
GWP-fossil	kg CO2 eq.	3.2E-01	1.2E-02	1.1E-03	0.0E+00	1.5E-03	2.9E-01	2.8E-03	-2,11E-02
GWP-biogenic	kg CO2 eq.	-1.3E-02	2.7E-06	1.2E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1,19E-03
GWP-LULUC	kg CO2 eq.	2.5E-03	4.8E-06	4.2E-07	0.0E+00	5.1E-07	2.2E-06	2.3E-07	-4.04E-05
ODP	kg CFC11 eq.	9.4E-08	2.6E-10	8.1E-12	0.0E+00	2.9E-11	1.1E-10	8.7E-12	-3.65E-10
AP	mol H^+ eq.	8.9E-04	2.9E-05	2.3E-06	0.0E+00	4.5E-06	6.5E-05	2.5E-06	-1,13E-04
EP-freshwater	kg P eq.	4.0E-05	8.6E-07	1.2E-07	0.0E+00	9.6E-08	8.9E-07	3.8E-08	-1.36E-05
EP-marine	kg N eq.	1.8E-04	7.6E-06	4.1E-06	0.0E+00	1.5E-06	3.7E-05	6.3E-05	-1,83E-05
EP-terrestrial	mol N eq.	1.6E-03	8.2E-05	8.5E-06	0.0E+00	1.7E-05	3.2E-04	1.0E-05	-1,71E-04
POCP	kg NMVOC eq.	8.8E-04	5.0E-05	3.3E-06	0.0E+00	7.1E-06	7.9E-05	4.1E-06	-6,54E-05
ADP-M&M	kg Sb eq.	1.4E-06	3.5E-08	1.8E-09	0.0E+00	4.7E-09	2.1E-08	7.7E-10	-5,60E-08
ADP-fossil	MJ	1.1E+02	1.8E-01	7.4E-03	0.0E+00	2.0E-02	5.6E-02	7.5E-03	-4,45E-01
WDP	m^3	2.5E+00	9.4E-04	7.4E-05	0.0E+00	1.0E-04	1.9E-02	3.9E-05	-8,80E-03

GWP-total: Global Warming Potential; 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; See "additional requirements" for indicator given as PO4 eq. EP-marine: Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-terrestrial: Eutrophication potential, Accumulated Exceedance; POCP: Formation potential of tropospheric ozone; ADP-M&M: Abiotic depletion potential for non-fossil resources (minerals and metals); ADP-fossil: Abiotic depletion potential for fossil resources; WDP: Water deprivation potential, deprivation weighted water consumption

Additional (optional) environmental impact indicators – EN 15804+A2

Impact Category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease Incidence	1.1E-08	1.2E-09	5.1E-11	0.0E+00	1.1E-10	3.4E-10	5.5E-11	-7.38E-10
IRP	kBq U235 eq.	6.1E-02	2.2E-04	1.6E-05	0.0E+00	2.6E-05	1.0E-04	8.1E-06	-8.27E-03
ETP-fw	CTUe	1.5E+00	2.2E-02	5.5E-03	0.0E+00	2.7E-03	5.6E-01	1.0E-01	-6.44E-02
HTP-c	CTUh	7.0E-11	2.0E-12	2.0E-13	0.0E+00	2.5E-13	2.4E-11	3.3E-13	-3.96E-12
HTP-nc	CTUh	4.7E-09	1.2E-10	1.1E-11	0.0E+00	1.3E-11	8.5E-10	6.7E-11	-1,75E-10
SQP	[-]	2.0E+00	1.9E-01	9.7E-03	0.0E+00	1.2E-02	1.6E-02	1.7E-02	-9,60E-02

PM: Particulate matter emissions; IRP: Ionising radiation, human health; ETP-fw: Ecotoxicity (freshwater); ETP-c: Human toxicity, cancer effects; HTP-nc: Human toxicity, non-cancer effects; SQP: Land use related impacts / soil quality

Use of Natural Resources

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
RPEE	MJ	8.7E-01	3.0E-03	-1.8E-01	0.0E+00	3.5E-04	2.3E-03	1.3E-04	-4,87E-02
RPEM	MJ	1.2E-01	0.0E+00	-1.2E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	7,03E-03
TPE	MJ	9.9E-01	3.0E-03	-1.8E-01	0.0E+00	3.5E-04	2.3E-03	1.3E-04	-4,17E-02
NRPE	MJ	1.2E+00	1.8E-01	-4.2E-02	0.0E+00	2.0E-02	-4.3E+00	-1.1E+00	-4,45E-01
NRPM	MJ	5.8E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	-4.4E+00	-1.4E+00	6,14E-02
TRPE	MJ	7.0E+00	1.8E-01	-4.2E-02	0.0E+00	2.0E-02	5.6E-02	7.5E-03	-3,84E-01
SM	kg	1.2E-01	8.0E-05	4.7E-06	0.0E+00	9.3E-06	5.1E-05	2.7E-06	1,43E-03
RSF	MJ	4.0E-03	1.0E-06	5.2E-08	0.0E+00	1.2E-07	1.7E-06	5.1E-08	-2,85E-07
NRSF	MJ	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0,00E+00
W	m^3	3.0E-01	2.7E-05	-3.1E-05	0.0E+00	2.7E-06	3.2E-04	-1.1E-04	-2,98E-04

RPEE: Renewable primary energy resources used as energy carrier; RPEM: Renewable primary energy resources used as raw materials; TPE: Total use of renewable primary energy resources; NRPE: Non-renewable primary energy resources used as energy carrier; NRPM: Non-renewable primary energy resources used as materials; TRPE: Total use of non-renewable primary energy resources; SM: Use of secondary materials; RSF: Use of renewable secondary fuels; NRSF: Use of non-renewable secondary fuels; W: Use of net fresh water

End of life – Waste

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HW	KG	9.7E-03	2.7E-04	3.3E-05	0.0E+00	2.9E-05	4.9E-03	1.4E-05	-1,33E-03
NHW	KG	1.0E+00	5.3E-03	4.5E-02	0.0E+00	6.2E-04	1.3E-01	1.5E-01	-7,83E-02
RW	KG	9.6E-06	5.5E-08	3.9E-09	0.0E+00	6.5E-09	2.6E-08	2.0E-09	-2.12E-06

HW: Hazardous waste disposed; NHW: Non-hazardous waste disposed; RW: Radioactive waste disposed

End of life – Output flows

Impact Category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
CR	kg	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
MR	kg	1.8E-02	0.0E+00	3.8E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
MER	kg	2.0E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
EEE	MJ	0.0E+00	0.0E+00	3.5E-03	0.0E+00	0.0E+00	1.6E+00	0.0E+00	0.0E+00
ETE	MJ	0.0E+00	0.0E+00	3.5E-03	0.0E+00	0.0E+00	1.6E+00	0.0E+00	0.0E+00

CR: Components for reuse; MR: Materials for recycling; MER: Materials for energy recovery; EEE: Exported electric energy; ETE: Exported thermal energy

Information describing biogenic carbon content at factory gate

Biogenic carbon content	Value	Unit
Biogenic carbon content in product	0	kg C
Biogenic carbon content in the accompanying packaging	0.0373	kg C

Specific data (GWP-GHG) and data variation for A1-A3

Specific data and data variation	Value-%
Specific data	60
Variation - product	4%
Variation - site	Not relevant

Hazardous substances

☒ The product does not contain any REACH SVHC substances in amounts greater than 0.1 %.

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Annex

Environmental impacts – EN 15804+A1, CML/ISO 21930

Impact Category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP	kg CO2e	3.2E-01	1.2E-02	1.8E-03	0.0E+00	1.4E-03	2.9E-01	2.7E-03	-2.09E-02
ODP	kg CFC11e	6.2E-08	2.0E-10	6.5E-12	0.0E+00	2.3E-11	9.4E-11	7.0E-12	-3.10E-10
AP	kg SO2e	7.3E-04	2.3E-05	1.7E-06	0.0E+00	3.5E-06	4.6E-05	1.9E-06	-9,58E-05
EP	kg PO4e	2.2E-03	5.7E-06	1.1E-06	0.0E+00	8.8E-07	1.7E-05	3.2E-06	-7.76E-05
POCP	kg Ethenee	7.9E-05	2.3E-06	3.3E-07	0.0E+00	3.3E-07	3.1E-06	5.4E-07	-6,10E-06
ADP-non fossil	kg Sbe	1.4E-06	3.4E-08	1.8E-09	0.0E+00	4.6E-09	1.4E-08	7.5E-10	-5,54E-08
ADP-fossil fuels	MJ	1.1E+02	1.8E-01	7.2E-03	0.0E+00	2.0E-02	5.4E-02	7.4E-03	-2,99E-01

Environmental impacts – GWP-GHG

Impact Category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP - GHG	kg CO2e	3.2E-01	1.2E-02	1.1E-03	0.0E+00	1.5E-03	2.9E-01	2.8E-03	-2,11E-02

GWP- GHG: Global Warming Potential, greenhouse gases