epd-norge
Global program operatør

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Nordanger LVTgulv Standard

NORDANGER GULV AS

The Norwegian EPD Foundation

Owner of the declaration:
Nordanger Gulv AS

Product:
Nordanger LVTgulv Standard

Declared unit:
1 m2

This declaration is based on Product Category Rules:
CEN Standard EN 15804:2012+A2:2019 serves as core PCR
IBU PCR Part B: Requirements on the EPD for Floor coverings

Program operator:
The Norwegian EPD Foundation

Declaration number:

NEPD-8635-8303-EN

Registration number:

NEPD-8635-8303-EN

Issue date: 03.01.2025

Valid to: 03.01.2030

EPD software:
LCAno EPD generator ID: 693711

General information

Product

Nordanger LVTgulv Standard

Owner of the declaration:

Nordanger Gulv AS
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Program operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-norge.no

Manufacturer:

Nordanger Gulv AS
Professor Birkelands vei 36
1082 Oslo, Norway

Declaration number:

NEPD-8635-8303-EN

Place of production:

Nordanger Gulv
Produksjonsstedet
Jiangsu, China

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
IBU PCR Part B: Requirements on the EPD for Floor coverings

Management system:

-

Statement of liability:

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

Organisation no:

979448759

Declared unit:

1 m2 Nordanger LVTgulv Standard

Issue date:

03.01.2025

Declared unit with option:

A1-A3,A4,A5,C1,C2,C3,C4,D

Valid to:

03.01.2030

Year of study:

2023

Functional unit:

Not applicable.

Comparability:

EPD of construction products may not be comparable if they do not comply with EN 15804 and seen in a building context.

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway.

Developer of EPD: Pedro Ferreira

Reviewer of company-specific input data and EPD: Børge Heggen Johansen, Energiråd AS

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Alexander Borg, Asplan Viak AS

(no signature required)

Approved:

Håkon Hauan
Managing Director of EPD-Norway

Product

Product description:

Nordanger LVTgulv Standard is available in many beautiful designs. Its wear resistance and durability make it very suitable for commercial use such as shops, offices, restaurants, hotels, nursing homes, rental apartments, etc.

Nordanger Gulv AS introduced LVT (Luxury Vinyl Tiles) to the Norwegian market in 1978, and has since worked hard to offer products that can withstand high loads and at the same time have an aesthetically pleasing appearance. Over the years, we have supplied floors to over 10,000 premises in public environments, such as shops, offices, restaurants and hotels. Our floors are developed to withstand high traffic and high wear while being functional and having a modern design. Nordanger LVT floors are supplied in more than 50 different varieties adapted to the different areas of use.

• All activity in Nordanger Gulv AS has focus on environmental perspectives. Our work environment shall be clean end safe, and all employees must consider environmental consequences throughout their workdays.
• Nordanger Gulv AS assures that all production of flooring apply current environmental legislation, both in the short and the long term. The production must not harm the natural environment, nor threaten people's health, safety or working environment.
• Nordanger Gulv AS informs our customers about our products' environmental qualifications, and can present relevant certifications.
• Our products meet the requirements for achieving BREEAM NOR approval.

Product specification:

Materials	kg	%
Limestone	2,64	61,37
Plastic - Polyvinyl chloride (PVC)	1,18	27,35
Chemicals	0,49	11,28
Total	4,31	100,00

Packaging	kg	%
Packaging - Recycled cardboard	0,09	100,00
Total incl. packaging	4,40	100,00

Technical data:

Technical information	Method	Result
Type of flooring	EN ISO 16511	Heterogeneous vinyl
Classification of living environment	EN ISO 10874	23
Classification public environment	EN ISO 10874	33
Size of rods (wood patterns)	EN 427	152,4 914,4 mm; 184,15 x 1219,2 mm; 228.6x1219.2 mm
Tile size (stone/concrete patterns)	EN 427	304,8 x 457,2 mm; 457,2 x 457,2 mm; 457.2 x 609.6 mm; 609,6 x 609,6 mm
Total thickness	EN ISO24337	2.5 mm
Thickness of wear layer	EN ISO24340	0.55 mm
Total weight	EN ISO23997	4.3057 kg/m2
Surface treatment	-	PUR/UV
Fire classification	EN 13501-1	Bfl-s1
TVOC emissions	EN 16516	Approved

Market:

Norway.

Reference service life, product

Not applicable.

Reference service life, building or construction works

Not applicable.

LCA: Calculation rules

Declared unit:

1 m2 Nordanger LVTgulv Standard

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Materials	Source	Data quality	Year
Chemicals	ecoinvent 3.10	Database	2023
Chemicals	ecoinvent 3.6	Database	2019
Limestone	ecoinvent 3.6	Database	2019
Packaging - Recycled cardboard	Modified ecoinvent 3.6	Database	2019
Plastic - Polyvinyl chloride (PVC)	ecoinvent 3.6	Database	2019

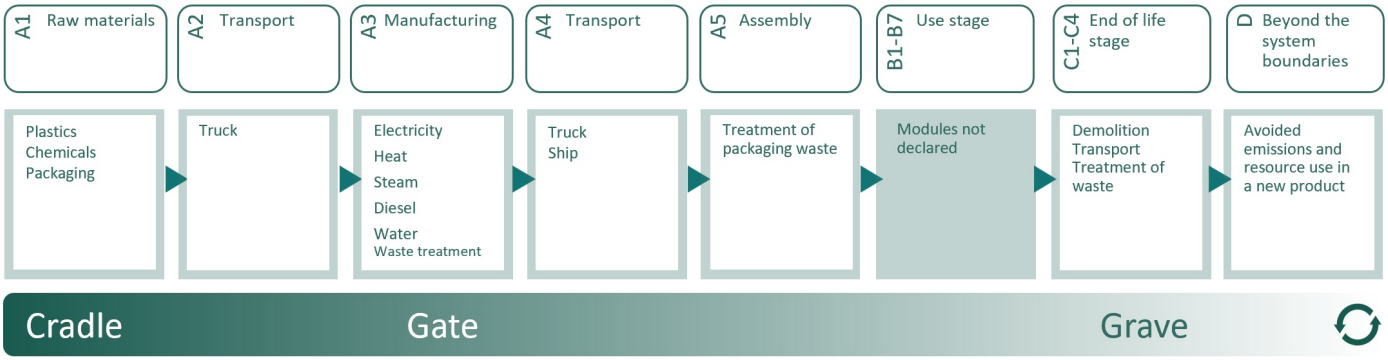
System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Construction installation stage		Use stage							End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	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	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

System boundary:

The product phases include the extraction and production of raw materials and packaging materials (module A1), the transport to the production plant (module A2) and the production of LVT flooring in China (module A3).

Distribution, assembly phase and waste management for the product are included based on the Norwegian market.



Additional technical information:

Not applicable.

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

A4: The LVT flooring is transported from China to Norway by a combination of truck and ship. A standard distance of 150 km is assumed for national distribution.

Modules C and D include the most likely final treatment scenario for mixed construction waste, based on Statistics Norway 2023. It is assumed that 88% of the LVT flooring goes to energy recovery, and 12% to landfill.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Ship, Freight, Transoceanic (km)	65,0 %	20509	0,003	l/tkm	61,53
Truck, 16-32 tons, EURO 6 (km)	36,7 %	183	0,043	l/tkm	7,87

Assembly (A5)	Unit	Value			
Waste, packaging, corrugated board box, 100 % recycled, to average treatment (kg)	kg	0,090			

Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tons, EURO 6 (km)	36,7 %	85	0,043	l/tkm	3,66

Waste processing (C3)	Unit	Value			
Waste treatment per kg Plastic, Mixture, municipal incineration with fly ash extraction (kg)	kg	3,78			

Disposal (C4)	Unit	Value			
Waste, plastic, mixture, to landfill (kg)	kg	0,51			
Landfilling of ashes from incineration of Plastics, Mixture (kg)	kg	0,13			

Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	175,82			
Substitution of electricity, in Norway (MJ)	MJ	11,62			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	0,078			
Substitution of electricity, in Norway (MJ)	MJ	0,0052			

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact										
	Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	GWP-total	kg CO_2 -eq	1,01E+01	9,81E-01	1,56E-01	0,00E+00	6,11E-02	8,97E+00	5,94E-02	-1,06E+00
	GWP-fossil	kg CO_2 -eq	1,03E+01	9,81E-01	1,47E-03	0,00E+00	6,10E-02	8,97E+00	5,94E-02	-1,02E+00
	GWP-biogenic	kg CO_2 -eq	-1,37E-01	2,88E-04	1,54E-01	0,00E+00	2,53E-05	1,95E-04	5,45E-06	-2,11E-03
	GWP-luluc	kg CO_2 -eq	4,88E-03	6,34E-04	4,87E-07	0,00E+00	2,17E-05	3,64E-05	1,20E-06	-3,51E-02
	ODP	kg CFC11 -eq	4,82E-06	2,10E-07	3,11E-10	0,00E+00	1,38E-08	1,95E-08	1,65E-09	-7,43E-02
	AP	mol H+ -eq	4,91E-02	2,80E-02	6,97E-06	0,00E+00	1,75E-04	1,97E-03	4,12E-05	-8,40E-03
	EP-FreshWater	kg P -eq	7,24E-04	4,57E-06	1,21E-08	0,00E+00	4,88E-07	1,73E-06	5,81E-08	-9,06E-05
	EP-Marine	kg N -eq	9,82E-03	6,86E-03	2,30E-06	0,00E+00	3,47E-05	9,40E-04	7,61E-05	-2,75E-03
	EP-Terrestial	mol N -eq	1,07E-01	7,63E-02	2,50E-05	0,00E+00	3,88E-04	9,64E-03	1,63E-04	-2,97E-02
	POCP	kg NMVOC -eq	3,51E-02	1,99E-02	7,17E-06	0,00E+00	1,49E-04	2,32E-03	5,90E-05	-8,19E-03
	ADP-minerals&metals[1]	kg Sb-eq	9,84E-05	9,95E-06	3,58E-08	0,00E+00	1,69E-06	9,81E-07	4,08E-08	-1,01E-05
	ADP-fossil[1]	MJ	1,54E+02	1,28E+01	2,06E-02	0,00E+00	9,23E-01	1,23E+00	1,22E-01	-1,46E+01
	WDP[1]	m^3	6,63E+01	4,09E+00	2,61E-02	0,00E+00	8,93E-01	8,90E+00	1,04E+00	-1,82E+02

GWP-total = Global Warming Potential total; 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

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

1. 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

Remarks to environmental impacts

Not applicable.

Additional environmental impact indicators										
Indicator		**Unit**	A1-A3	A4	A5	C1	C2	C3	C4	D
	PM	Disease incidence	5,63E-07	8,05E-09	1,03E-10	0,00E+00	3,74E-09	8,61E-09	8,22E-10	-5,09E-07
	IRP[2]	kgBq U235 -eq	2,54E-01	5,52E-02	8,81E-05	0,00E+00	4,03E-03	3,10E-03	5,88E-04	-9,32E-02
	ETP-fw[1]	CTUe	2,25E+02	7,79E+00	2,75E-02	0,00E+00	6,84E-01	1,90E+01	1,49E-01	-7,93E+01
	HTP-c[1]	CTUh	7,91E-09	0,00E+00	1,00E-12	0,00E+00	0,00E+00	5,19E-10	3,00E-12	-1,45E-09
	HTP-nc[1]	CTUh	1,17E-07	1,61E-09	3,40E-11	0,00E+00	7,47E-10	2,37E-08	1,03E-10	-7,60E-08
	SQP[1]	dimensionless	2,54E+01	2,84E+00	1,38E-02	0,00E+00	6,46E-01	2,25E-01	4,58E-01	-9,75E+01

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

1. 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
2. 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.

Resource use										
Indicator		Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	PERE	MJ	9,61E+00	1,02E-01	3,39E-04	0,00E+00	1,32E-02	6,86E-02	5,69E-03	-9,01E+01
	PERM	MJ	5,32E-01	0,00E+00	-5,32E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	1,01E+01	1,02E-01	3,39E-04	0,00E+00	1,32E-02	6,86E-02	5,69E-03	-9,01E+01
	PENRE	MJ	1,29E+02	1,28E+01	2,06E-02	0,00E+00	9,23E-01	1,23E+00	1,22E-01	-1,46E+01
	PENRM	MJ	2,53E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,52E+01	0,00E+00	0,00E+00
	PENRT	MJ	1,54E+02	1,28E+01	2,06E-02	0,00E+00	9,23E-01	-2,40E+01	1,22E-01	-1,46E+01
	SM	kg	1,23E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	6,51E-02	2,81E-03	1,12E-05	0,00E+00	4,73E-04	1,47E-03	1,19E-04	-1,58E-02
	NRSF	MJ	3,55E-02	2,84E-02	4,63E-05	0,00E+00	1,69E-03	0,00E+00	6,61E-04	-5,34E+00
	FW	m^3	7,35E-02	7,77E-04	9,71E-06	0,00E+00	9,87E-05	1,04E-02	1,51E-04	-1,08E-01

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 resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

End of life - Waste

Indicator		Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	HWD	kg	1,38E-01	5,64E-04	0,00E+00	0,00E+00	4,76E-05	0,00E+00	3,53E-03	-6,85E-04
	NHWD	kg	3,97E+00	1,22E-01	9,10E-02	0,00E+00	4,49E-02	0,00E+00	5,21E-01	-3,45E-01
	RWD	kg	3,18E+00	8,90E-05	0,00E+00	0,00E+00	6,29E-06	0,00E+00	8,00E-07	-7,63E-05

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

End of life - Output flow

Indicator		Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	kg	3,53E-04	0,00E+00	8,46E-02	0,00E+00	0,00E+00	0,00E+00	4,63E-05	0,00E+00
	MER	kg	4,08E-04	0,00E+00	6,36E-03	0,00E+00	0,00E+00	3,79E+00	1,13E-06	0,00E+00
	EEE	MJ	5,00E-07	0,00E+00	5,20E-03	0,00E+00	0,00E+00	5,82E+00	7,35E-05	0,00E+00
	EET	MJ	7,56E-06	0,00E+00	7,87E-02	0,00E+00	0,00E+00	8,81E+01	1,11E-03	0,00E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

Biogenic Carbon Content

Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in accompanying packaging	kg C	4,21E-02

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2

Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Source	Amount	Unit
Electricity, China (kWh)	ecoinvent 3.6	1102,91	g CO2-eq/kWh

Dangerous substances

The product contains no substances given by the REACH Candidate list.

Indoor environment

Not applicable.

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products									
Indicator	**Unit**	A1-A3	A4	A5	C1	C2	C3	C4	D
GWPIOBC	kg CO_2 -eq	1,01E+01	9,81E-01	1,47E-03	0,00E+00	6,11E-02	8,97E+00	7,02E-02	-1,04E+00

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

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NS-EN 13329:2016+A2:2021 Laminate floor coverings - Elements with a surface layer based on aminoplastic thermosetting resins - Specifications, requirements and test methods

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