

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

Owner of the Declaration	nora systems GmbH
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
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Issue date	12.06.2026
Valid to	11.06.2031

norament® 825/925

nora systems GmbH

www.ibu-epd.com | <https://epd-online.com>



1. General Information

nora systems GmbH

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-NOR-20250662-IBA1-EN

This declaration is based on the product category rules:

Floor coverings, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

12.06.2026

Valid to

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Dipl.-Ing. Hans Peters
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Dr. Martina Bender
(Managing Director Institut Bauen und Umwelt e.V.)

norament[®] 825/925

Owner of the declaration

nora systems GmbH
Höhnerweg 2-4
69469 Weinheim
Germany

Declared product / declared unit

1 m² resilient floor covering
(A1-A3: 1 m² produced, A1-A5: 1 m² installed)

Scope:

norament[®] 825 classic round pastille design with a thickness of 3.2 mm as a representative product of the norament[®] 825/925 product group. In the annex you can find more products with different thicknesses.

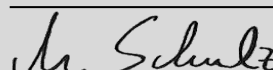
High-pressure pressed homogeneous floor coverings made from rubber in various colours and designs. This declaration is an Environmental Product Declaration according to ISO 14025, describing the specific environmental performance of the mentioned construction products produced in Germany (Weinheim/Bergstraße).

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 evidence.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard is abbreviated 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	
☐	internal
☒	external



Matthias Schulz,
(Independent verifier)

2. Product

2.1 Product description/Product definition

In this Environmental Product Declaration (EPD) the resilient rubber floor covering named norament[®] 825 classic round pastille design with a thickness of 3,2 mm is modelled. This product stands as a representative of norament 825/925 product group with different design variations. It is also sold as norament[®] hammered and norament[®] xp in North America. Specific characteristics of the norament[®] 825/925 coverings include:

- manufacturing method: high-pressure pressed in tiles
- covering structure: single-layered, homogeneous
- no addition of PVC, chlorine-containing polymers and phthalate plasticizers
- suitable for heavy traffic areas
- no coating needed
- highly fire-retardant (Cfl)
- no welding required

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 4041:2018-05, Resilient, textile, laminate and modular multilayer floor coverings - Essential characteristics* and the CE-marking.

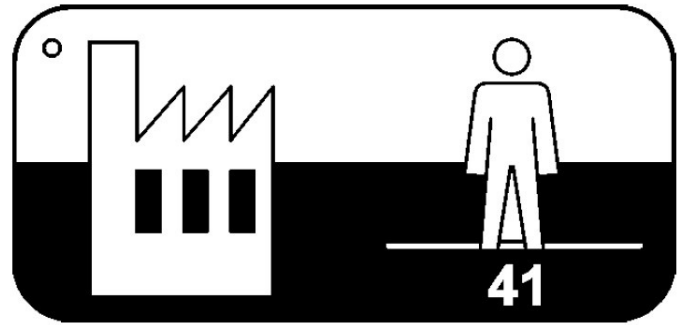
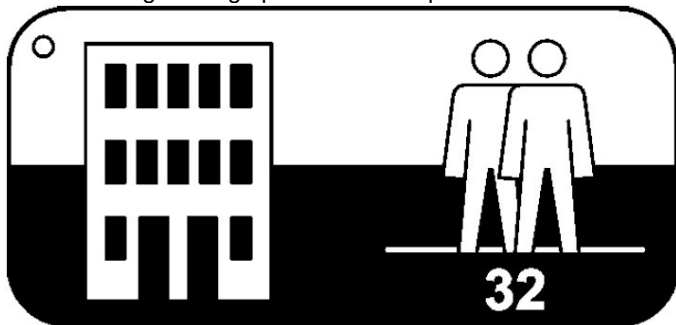
For the product line norament[®] 825/925 further standards apply:

- *EN 12199:2020: Resilient floor coverings Specifications for homogeneous and heterogeneous relief rubber floor coverings*
- *DIN EN 1817:2020: Resilient floor coverings Specification for homogeneous and heterogeneous smooth rubber floor coverings*
- *EN ISO 10874:2021: Resilient, textile and laminate floor coverings - Classification*

2.2 Application

norament[®] 825/925 floorings can be used in various application areas such as in Industry & Life Science, Public Buildings or Shops and Stores. For use and application, the respective national provisions apply.

Floor coverings are classified according to *DIN EN ISO 10874*. Floor coverings for high performance in professional use:



For 3.5 mm: commercial use 34 and industrial use 43.

2.3 Technical data

Excerpt of technical data sheets: (available at www.nora.com)

Constructional data

Name	Value	Unit
Product thickness	3.2	mm
Grammage	4400	g/m ²
Product Form	tiles	-
Type of manufacture	pressing	-
Hardness DIN ISO 7619	87	Shore A
Abrasion resistance ar 5 N load DIN ISO 4649 (Verfahren A)	130	mm ³
Improvement in footfall sound DIN EN ISO 10140-3	9	dB
DIN EN 16165 DIN EN 16165	R9	dependent on surface structure

Beside the declared floor covering with 3.2 mm thickness, it is also available with 2.7 or 3.5 mm (see Annex).

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to *EN 14041:2018-05 Resilient, textile, laminate and modular multilayer floor coverings - Essential characteristics*.

2.4 Delivery status

The delivery takes place as tiles of up to 1004 x 1004 mm, loose on pallets.

The backs of the coverings are sanded and have arrows indicating the installation direction.

The product is available with a factory-fitted adhesive backing for clean, safe and fast installation.

2.5 Base materials/auxiliary materials

Simplified formulation of norament[®] 825/925

Name	Value	Unit
Synthetic rubber	42	%
Mineral fillers	46	%
Colour pigments	5	%
Additive und Auxiliary substances and vulcanisation system	7	%

The auxiliary substances used are waxes and antioxidants; the vulcanisation system is based on sulphur as cross-linking agent, vulcanisation accelerators and zinc compounds.

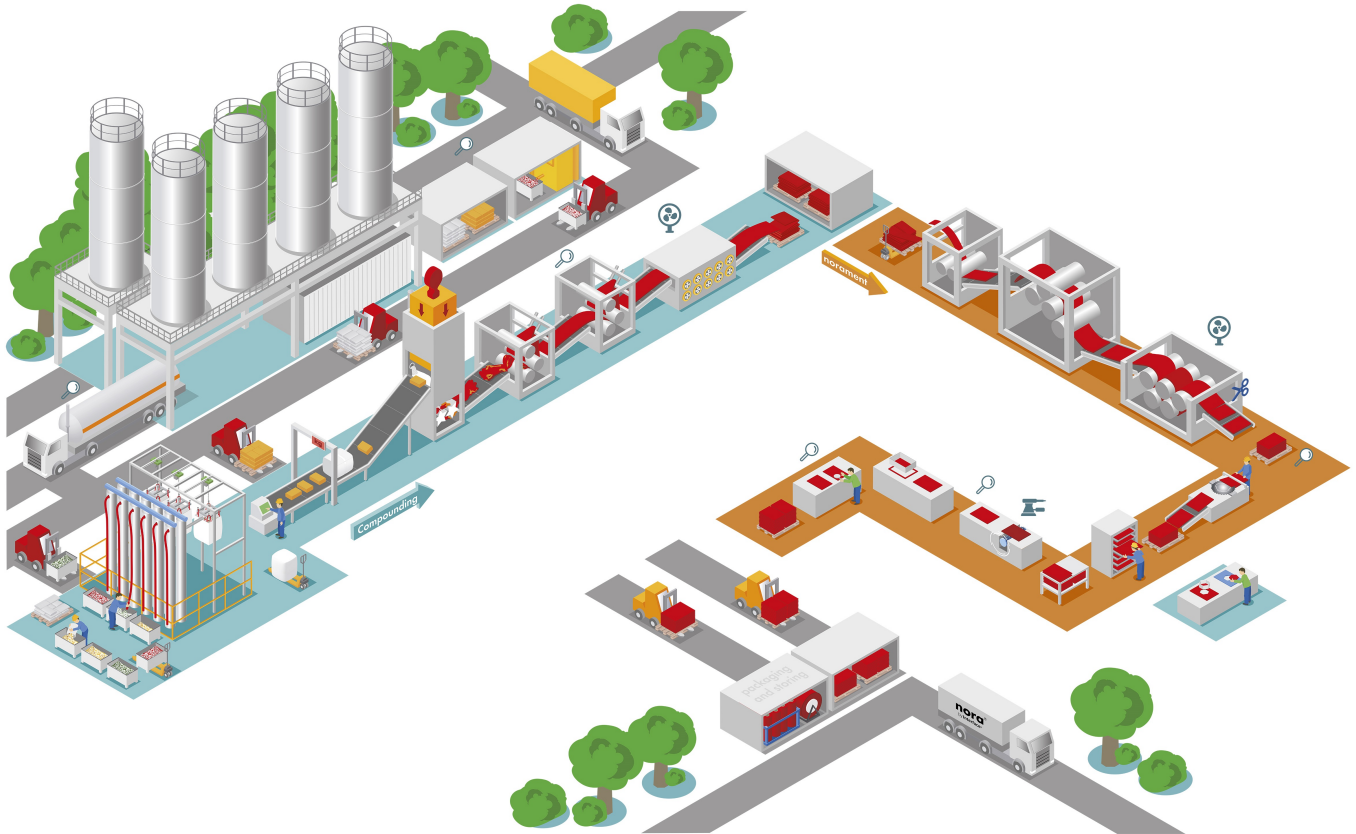
1) 'This product contains substances listed in the candidate list (date: 05.11.2025) exceeding 0.1 percentage by mass: NO'.

2) This product contains other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not in the candidate list, exceeding 0.1 percentage by max: NO'.

3) Biocidal products have been added to this construction product or it has been treated with biocidal products (it is therefore a treated article within the meaning of the *Biocidal Products Regulation (EU) No. 528/2012*): NO.

2.6 Manufacture

After weighing and mixing of the rubber compounds of the different components, the blanks undergo moulding on the calender. Vulcanisation (crosslinking with sulphur) is done in high pressure multi presses with a pressing power of approximately 1.200 tonnes and at a temperature of 170 °C. Due to the high pressure, a dense, closed vulcanisation skin is formed on the surface. The vulcanised tiles are sanded and die-cut to the exact final dimensions. The resulting product is tiles of one square metre and a weight of 4.4 kg



nora systems GmbH purchases the total electrical energy for production and administration at the site Weinheim from renewable energy sources. Respective evidence has been approved by the verifier.

Thermal energy is generated centrally and in heating boilers from natural gas.

Our quality and energy management is certified according to *DIN EN ISO 9001* and *DIN EN ISO 50001*.

2.7 Environment and health during manufacturing

All German occupational exposure limit values for chemicals are consistently met, or rather, considerably under-run.

In the high-noise identified areas of heavy machines, hearing protection is used. The lifting of loads (raw materials) is facilitated in many ways through appropriate lifting assistance.

Since 2000, the environmental management system from the nora systems GmbH (existing since 1996) is certified in accordance with *DIN EN ISO 14001* Environmental management systems.

2.8 Product processing/Installation

The installation of the floor covering is based on the technical regulations of *DIN 18365 Flooring works*. Suitable subfloors are made of screed according *DIN 18353*, *hard poured asphalt* according to *DIN 18354 Asphalt flooring work*, chipboards,

plywood, etc..

Before installing rubber floor coverings, the subfloor generally must be levelled.

The application of the adhesives over the entire surface is done in accordance with the installation recommendations of the nora systems GmbH, using adhesives and further auxiliary material approved and available e.g. at www.nora.com.

When selecting the installation materials, the requirements of the basic award criteria of the Blue Angel- 'Low-Emission Floor Covering Adhesive and other Installation Materials' (*DE-UZ 113*) should be observed, alternatively *GEV-EMICODE EC1plus*. These specifications ensure excellent health protection due to minimized emissions.

In addition, the instructions of the laying material manufacturers are generally to be followed. When working with laying auxiliary material, the latest version of the German standard TRGS 610 is to be complied with. Cuttings should be used for energy recovery.

Initial cleaning and initial polishing may only be carried out after the bonding phase of the adhesive, i.e. at the earliest 48 hours after installation.

2.9 Packaging

Delivery on wooden pallets, sealed in recyclable polyethylene foil.

2.10 Condition of use

Because of their dense and closed surface and the 'nora cleanguard' finish, norament[®] floor coverings usually don't need to be coated and can be cleaned easily only with water. The coverings are permanently resilient; they remain dimensionally stable when bonded and have good ergonomic properties.

2.11 Environment and health during use

Because of their dense surface, norament[®] rubber floor coverings don't have to be coated during the entire life cycle. norament[®] 825/925 complies with the following environmental standards:

- Indoor Air Emission Label A+
- Greenguard Gold Certification

2.12 Reference service life

A calculation of the reference service life according to *ISO 15686* is not possible. According to manufacturers' estimation, a technical service life of 50 years is possible. This estimated service lifetime of 50 years has been proven in project references.

Due to their very high abrasion resistance and their single-layer structure (rubber through and through), the floor coverings hardly wear down even when extensively used. When used in the designated areas of application and under the usage conditions commonly associated, they stay fully functional and visually appealing during the indicated useful life. Description of the influences on the ageing of the product when applied in accordance with the rules of technology.

2.13 Extraordinary effects

Fire

norament[®] 825/925 is, according to *DIN EN 13501-1*, hardly inflammable (Cfl -s1, bonded Bfl -s1).

Fire Resistance

Name	Value
Building material class non-boned	Cfl
Building material class boned	Bfl
Smoke gas development	s1

Water

norament[®] 825/925 is resistant to water exposure to the extent to what is typical for indoor use. Not suitable for real wet areas e.g. showers, wading pools, etc..

Mechanical destruction

Not relevant.

2.14 Re-use phase

For norament[®] rubber floor coverings there are basically the following options for a re-use phase:

- Material recycling (e.g. granulating and processing into landing mats, industrial or stable mats, and coverings of sports areas or silent asphalt)
- Thermal recycling (e.g. use as substitute fuel in thermal power plants)
- Full material and thermal recycling for energy recovery in the cement industry. Use of stored thermal energy as well as use of mineral filler as raw material.

2.15 Disposal

The manufacturer recommends introducing the products after their use stage into thermal recycling (secondary fuel for waste incineration). *EWG-number*: e.g. 17 02 03.

2.16 Further information

Further information under www.interface.com

3. LCA: Calculation rules

3.1 Declared unit

The reference unit is 1 m² of floor covering. The values of module A1-A3 refer to 1 m² produced. This EPD represents a product declaration, i.e. the production and disposal of off-cuts during installation stage are assigned to module A5. The combined modules A1- A3, A4 and A5 refer to a reference unit of 1 m² installed.

The material for subfloor preparation and adhesive bonding, needed during installation, is not considered. Information on the complete floor structure can be found in Environmental Product Declarations based on the PCR 'Dispersion adhesives and primers for floor coverings' and 'Mineral factory-made mortar'.

Declared unit

Name	Value	Unit
Declared unit	1	m ²
Grammage	4.4	kg/m ²
Layer thickness	3.2	mm

3.2 System boundary

Type of EPD: cradle to gate with options, modules C1–C4, and module D (A1–A3 + C + D and additional modules. The additional modules are A4, A5 and B2).

The analysis of the product life cycle includes the following stages:

A1–A3: Product Stage

A1: Raw material extraction and processing, including recycled materials

A2: Transport of raw and processed materials to manufacturing sites

A3: Manufacturing at site, including materials, packaging, energy, and waste disposal or recycling. All energy purchased at manufacturing sites is allocated per square meter produced, including offices and warehouses. 100 % renewable electricity and thermal energy credits are used for all sites. Waste factor in production. Rubber flooring involves compounding, pressing, vulcanisation, and packaging

A4–A5: Construction Stage

A4: Transport of finished product to building site

A5: Installation includes ancillary materials (adhesives), trim waste disposal, packaging waste, transport of installation waste and extra production to compensate for the 5 % installation waste. Assumed 5 % installation waste for all flooring types. Installation waste sent to incineration, with energy recovery benefits accounted for in Module D. Industry recommendations followed for adhesive types

B1–B7: Use Stage

B2: Maintenance effort declared for one year, repeated over the Reference Service Life (RSL). Modular carpet: daily vacuuming, biweekly wet extraction cleaning. Rubber flooring: machine cleaning (annual), manual cleaning (biweekly). LVT: dust

mopping, buffing, cleaning solution, electricity, water, and wastewater treatment
Other Use Modules (B1, B3–B7): Not relevant or not declared for these flooring products

C1–C4: End of Life

C1: Deconstruction process, which requires electricity to remove the product from the building at end of life. This requirement is modeled with DE:Electricity grid mix
C2: Transport of waste to local disposal using diesel truck datasets
C3: Waste processing for reuse, recovery, or recycling
C3: 100 % scenario for incineration with Energy recovery processing, which includes an incineration process with an R1-value >0.6
C3/1: 100 % scenario for waste processing through landfill
C4: Disposal of post-consumer flooring, incineration without energy recovery or landfill
C4: 100 % scenario for disposal through incineration with energy recovery
C4/1: 100 % scenario for disposal through landfill

Module D: Benefits and Loads Beyond the System Boundary
Two end-of-life scenarios are modelled, resulting in two Module D scenarios: Module D and Module D/1
In Module D, the avoided benefits and loads associated with 100 % incineration with energy recovery scenario are calculated using RER: Electricity grid mix and RER: Process steam from natural gas as substituted energy sources.
In Module D/1, the avoided benefits and loads associated with 100% landfill scenario are set to zero, as the landfilling of plastics does not result in energy recovery.
Both Module D and Module D/1 scenarios account for avoided benefits and loads from A5, which include incineration with energy recovery of packaging waste, and incineration with energy recovery of installation waste.

For the environmental impact, the use of green electricity was calculated. The proportion of the total manufacturing electricity requirement covered by green electricity is 100 %.

3.3 Estimates and assumptions

The datasets for the upstream chain of basic material production are taken from the *MLC Database* from Sphera. Inventories of some materials are not completely available and so are partly approximated by datasets on similar chemicals or estimated by consolidation of existing datasets and literature research.

The assumptions about the cleaning scenario are described in chapter 4. scenarios.

3.4 Cut-off criteria

In the assessment, all available data from production processes are considered, i.e. all raw materials used, utilised thermal energy, and electric power consumption using best available LCI datasets and specific CF- information. Thus, material and energy flows contributing more than 1 % of mass or energy are considered.
Transport processes are only considered for the relevant basic materials. Transport processes for minor amounts of basic materials and for packaging materials are neglected. According to previous studies (EPDs for noraplan® and norament®), the impact for the transports of the relevant basic materials contribute to less than 0,5 % of the total primary energy demand in relation to the manufacturing of all the basic materials.

The maintenance is modeled with an assumption for the use of a certain amount of water and cleaning agent. Emissions of

potential VOCs while cleaning are not known, assumed to be included in the NMVOC emissions of the cleaning agent.

The sum of the excluded material flows does not exceed 5 % of mass, energy or assumed environmental relevance.

Production of capital equipment, facilities and infrastructure required for manufacture are outside the scope of this assessment.

3.5 Background data

For life cycle modelling of the products considered, the *LCA FE Software* System for Life Cycle Engineering, developed by Sphera Solutions GmbH, is used. Upstream data specific information that is not available are taken from the *MLC 2025.1 database*.

3.6 Data quality

Datasets were, if available, taken from the above-mentioned *MLC 2025.1 database*.

Further datasets on the upstream chain of the basic material production are approximated with datasets on similar chemicals or are estimated by consolidation of existing datasets and literature information.

The background data is based on the year 2024.

The data quality can be described as good.

3.7 Period under review

The collection of manufacturing data from 2024 serves as the database.

3.8 Geographic representativeness

Country or region in which the declared product system is manufactured, used or handled at the end of the product's life span: Europe

3.9 Allocation

Allocation of upstream data:

For all refinery products, allocation by mass and net calorific value has been applied. The manufacturing route of every refinery product is modelled and the product-specific effort associated with their production is calculated. For other materials' inventory used in the production process calculation the most suitable allocation rules are applied. Further information can be found in the corresponding published documentation (<https://lcadatabase.sphera.com/>).

Allocation in the foreground data:

The production process does not deliver any coproducts. The applied software model does not contain any allocation. The total production of nora systems GmbH includes further products besides the declared product family. The values for thermal and electrical energy as well as for operating materials are assigned respectively while data collection on the site. Allocation keys are mass, area, pieces or retention time in the plant.

Allocation for waste materials:

Production waste is fed into an energy recovery process. The Corresponding burden is declared; Energy gains from production waste are not taken into account. The calculation of emissions from the waste incineration plant follows a partial stream consideration for the combustion process, according to the specific composition of the incinerated material. A waste incineration plant with an R1-value higher than 0.6 is assumed. The environmental burdens of the incineration process of installation off-cut and the product in the end-of-life scenario are assigned to the system (A5, C3); resulting energy gain for thermal and electrical energy are declared in module D. The avoided environmental burdens are considered according to European average data for electrical and thermal energy

generated from natural gas.

3.10 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all data sets to be compared were created according

to *EN 15804* and the building context and product-specific performance characteristics are taken into account. As database for background data the *MLC database 2025.1* is applied.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	0.097	kg C
Biogenic carbon content in accompanying packaging	0.102	kg C

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

The GWP for the electricity mix (wind power) used in A1-A3 is 0,0101 kg CO₂e/kWh.

Transport to the construction site (A4)

Name	Value	Unit
Litres of fuel (truck)	0.0021	l/100km
Transport distance (truck)	1000	km
Capacity utilisation (including empty runs) (truck)	61	%
Litres of fuel (boat)	0,0003	l/100km
Transport distance (boat)	500	km
Capacity utilisation (including empty runs) (boat)	70	%

Installation in the building (A5)

For installation, a worst case scenario has been modeled and is included in the results. 0.3 kg of adhesive per square meter is required during the installation phase (A5).

Name	Value	Unit
Auxiliary Adhesive	0.3	kg
Material loss	0.22	kg
Output substances following waste treatment on site	0.22	kg

Maintenance (B2)

Cleaning of the floor covering depends on the use of the premises. A kind of 'average' cleaning scenario is assumed

following the recommendation of the manufacturer.

1x yearly:

machine intensive cleaning with 250 ml/m² cleaning solution (5 % solution); use of single disc machine (1,1 kW, 0,5 h/100 m²) and wet vacuum cleaner (1,0 kW, 0,25 h/100 m²);

2x weekly:

manual cleaning with 80 ml/m² cleaning solution (0,5 % solution);

Resulting in the following amounts per 1 year:

Name	Value	Unit
Maintenance cycle	104	Number/RSL
Water consumption	8,526	l/m ²
Auxiliary	0,054	l/m ²
Electricity consumption	0,029	MJ/m ²

Depending on the application based on *EN ISO 10874*, the technical service life recommended by the manufacturer and the anticipated strain on the floor by customers, the case-specific useful life can be established. The effects of Module B2 need to be calculated on the basis of this useful life in order to obtain the overall environmental impacts.

Reference service life

Name	Value	Unit
Life Span (according to BBSR)	50	a
Life Span according to the manufacturer	50	a

End of Life (C1-C4)

Collected as mixed construction waste: 4.4 kg

Two scenarios for EOL:

Incineration: 4,4 kg (C3)

Landfilling: 4.4 kg (C4/1)

Name	Value	Unit
Energy recovery	4.4	kg
Landfilling	4.4	kg

5. LCA: Results

The indicator values for module B2 'Maintenance' refer to a period of 1 year.

The characterization factors of the *JRC publication* according to *EF 3.1/EN 15804+A2* are applied.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = 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	MND	X	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m2 norament® 825/925

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C3/1	C4	C4/1	D	D/1
GWP-total	kg CO ₂ eq	1.1E+01	2.35E-01	1.93E+00	3.29E-01	4.83E-02	1.83E-02	3.82E+00	0	0	4.81E-01	-1.56E+00	-1.51E-01
GWP-fossil	kg CO ₂ eq	1.15E+01	2.26E-01	1.36E+00	3.19E-01	4.76E-02	1.73E-02	3.48E+00	0	0	1.42E-01	-1.55E+00	-1.5E-01
GWP-biogenic	kg CO ₂ eq	-6.37E-01	7.79E-03	5.61E-01	9.68E-03	5.83E-04	7.62E-04	3.38E-01	0	0	3.38E-01	-7.2E-03	-4.5E-04
GWP-luluc	kg CO ₂ eq	1.25E-01	1.93E-03	6.29E-03	8.94E-05	3.92E-05	1.9E-04	8.87E-05	0	0	3.89E-04	-1.83E-03	-8.43E-05
ODP	kg CFC11 eq	2.24E-08	3.58E-14	1.14E-09	2.75E-11	1.6E-12	3.06E-15	2.63E-13	0	0	4.84E-13	-1.25E-11	-5.6E-13
AP	mol H ⁺ eq	2.3E-02	1.62E-03	2.68E-03	1E-03	8.68E-05	6.59E-05	3.44E-04	0	0	8.46E-04	-1.67E-03	-1.13E-04
EP-freshwater	kg P eq	4.39E-05	5.18E-07	3.52E-06	1.09E-05	1.53E-07	4.97E-08	7.41E-08	0	0	7.92E-05	-1.22E-06	-5.92E-08
EP-marine	kg N eq	6.33E-03	7.24E-04	5.83E-04	2.16E-04	2.66E-05	3.13E-05	9.17E-05	0	0	1.83E-04	-5.01E-04	-3.96E-05
EP-terrestrial	mol N eq	7.3E-02	7.88E-03	6.59E-03	1.91E-03	2.95E-04	3.39E-04	1.63E-03	0	0	2E-03	-5.58E-03	-4.41E-04
POCP	kg NMVOC eq	2.02E-02	1.71E-03	2.03E-03	9.93E-04	5.87E-05	6.03E-05	2.6E-04	0	0	5.79E-04	-1.38E-03	-1.15E-04
ADPE	kg Sb eq	1.9E-04	1.37E-08	9.85E-06	5.85E-08	1.13E-08	1.23E-09	3.15E-09	0	0	9.64E-09	-1.36E-07	-7.92E-09
ADPF	MJ	2.49E+02	2.98E+00	2.67E+01	8E+00	5.64E-01	2.36E-01	5.5E-01	0	0	2.35E+00	-2.7E+01	-2.48E+00
WDP	m ³ world eq deprived	3.09E+00	9.49E-04	3.18E-01	5.49E-02	1.21E-03	8.43E-05	2.98E-01	0	0	1.75E-02	-1.38E-01	-6.29E-03

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m2 norament® 825/925

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C3/1	C4	C4/1	D	D/1
PERE	MJ	5.55E+01	1.84E-01	7.41E+00	5.5E-01	6.47E-01	1.78E-02	2.7E+00	0	0	3.92E-01	-7.63E+00	-3.44E-01
PERM	MJ	6.55E+00	0	-4E+00	0	0	0	-2.55E+00	0	0	0	0	0
PERT	MJ	6.2E+01	1.84E-01	3.41E+00	5.5E-01	6.47E-01	1.78E-02	1.51E-01	0	0	3.92E-01	-7.63E+00	-3.44E-01
PENRE	MJ	1.71E+02	2.98E+00	2.84E+01	8E+00	5.64E-01	2.36E-01	7.73E+01	0	0	2.35E+00	-2.7E+01	-2.48E+00
PENRM	MJ	7.84E+01	0	-1.68E+00	0	0	0	-7.67E+01	0	0	0	0	0
PENRT	MJ	2.49E+02	2.98E+00	2.67E+01	8E+00	5.64E-01	2.36E-01	5.5E-01	0	0	2.35E+00	-2.7E+01	-2.48E+00
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0
FW	m ³	1.01E-01	9.29E-05	8.89E-03	1.41E-03	1.98E-04	8.8E-06	6.99E-03	0	0	5.13E-04	-5.96E-03	-2.7E-04

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 material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m2 norament® 825/925

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C3/1	C4	C4/1	D	D/1
HWD	kg	2.89E-05	1.16E-10	2.82E-04	4.14E-04	1.37E-09	9.48E-12	2.97E-10	0	0	5.26E-10	-1.49E-08	-6.89E-10
NHWD	kg	2.34E+00	3.82E-04	1.44E-01	1.8E-02	5.81E-04	3.3E-05	1.04E-01	0	0	4.68E+00	-1.22E-02	-8.41E-04
RWD	kg	2.18E-03	5.22E-06	2.86E-04	2.03E-04	3.56E-05	4.46E-07	2.95E-05	0	0	3.39E-05	-1.76E-03	-7.91E-05
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0

EEE	MJ	0	0	2.78E-01	0	0	0	5.94E+00	0	0	0	0	0
EET	MJ	0	0	5.5E-01	0	0	0	1.07E+01	0	0	0	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:

1 m2 norament® 825/925

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C3/1	C4	C4/1	D	D/1
PM	Disease incidence	3.07E-07	2.89E-08	2.77E-08	1.28E-08	6.84E-10	4.56E-10	3.24E-09	0	0	8.7E-09	-1.36E-08	-9.06E-10
IR	kBq U235 eq	2.63E-01	7.45E-04	1.28E-01	1.3E-01	4.43E-03	6.4E-05	4.65E-03	0	0	4.54E-03	-2.91E-01	-1.3E-02
ETP-fw	CTUe	2.04E+02	3.54E+00	1.59E+01	1.48E+00	1.85E-01	3.08E-01	2.6E-01	0	0	5.38E+00	-2.12E+00	-1.14E-01
HTP-c	CTUh	5.13E-09	4.86E-11	3.54E-10	9.04E-11	1.36E-11	4.15E-12	1.98E-11	0	0	7.4E-11	-2.58E-10	-1.8E-11
HTP-nc	CTUh	6.17E-08	2.46E-09	5.21E-09	6.63E-09	3.61E-10	2.32E-10	1.72E-10	0	0	1.31E-09	-4.02E-09	-2.04E-10
SQP	SQP	7.04E+01	1.06E+00	3.66E+00	2.16E-01	3.97E-01	1.04E-01	1.77E-01	0	0	3.63E-01	-4.48E+00	-2.02E-01

PM = Potential incidence of disease due to PM emissions; IR = Potential human exposure efficiency relative to U235; ETP-fw = Potential comparative toxic unit for ecosystems; HTP-c = Potential comparative toxic unit for humans (carcinogenic); HTP-nc = Potential comparative toxic unit for humans (not carcinogenic); SQP = Potential soil quality index

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 or 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 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 – carcinogenic”, “Potential comparative toxic unit for humans - not carcinogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

6. LCA: Interpretation

The environmental impact of the life cycle of norament® (825/925) floor coverings is mainly determined by the production of the basic materials (A1). The impact of the manufacturing at nora system, referring to the category GWP is significant; otherwise the influence on the total production phase is low. Besides, the maintenance referring to the total use stage is an important factor. The calculation depends strongly on the assumption for the cleaning scenario. The recommended cleaning scenario by the manufacturer is assumed. The negative values in module D describe the energy gain of the incineration of packaging material (A5), the off-cuts of the installation (A5) and the product in the end-of-life scenario for incineration with energy recovery (C3). The negative values in module D/1 describe the energy gain of the incineration of packaging material (A5), the off-cuts of the installation (A5) and the product in the end-of-life scenario landfill (C4/1).

Possible variance in results for different design options in relation to the representative product are slightly different

environmental impacts due to different pigmentations and different amounts of design granulates.

In the Annex, the EPDs for different thicknesses of the flooring are reported. The Global Warming Potential of these variations are summarized here:

EN15804+A2 (EF3.1)

norament (825/925)			
EN 15804+A2 (kg CO2 eq/m2)	2.7mm	3.2mm	3.5mm
Climate Change - total	1,06E+01	1,10E+01	1,33E+01
Climate Change, fossil	1,11E+01	1,15E+01	1,39E+01
Climate Change, biogenic	-6,27E-01	-6,37E-01	-6,70E-01
Climate Change, land use and land use cha	1,17E-01	1,25E-01	1,48E-01

7. Requisite evidence

7.1 VOC emissions - Germany

norament® 825/925 has been audited for emissions at the approved test house Eurofins Product Testing A/S, Galten, Denmark (test report no. 392-2023-00103701_B_EN).

The product complies with the Emission Award Criteria for the Blue Angel *DE-UZ 120* for resilient floor coverings with the following requirements on emissions:

Compound or Substance	3rd Day	Final Value (28th Day)
Total organic compounds within the retention range C ₆ – C ₁₆ (TVOC)	< 1000 µg/m³	< 300 µg/m³
Total organic compounds within the retention range > C ₁₆ – C ₂₂ (TSVOC)	-	< 30 µg/m³
Carcinogenic substances ²²	< 10 µg/m³ total	< 1 µg/m³ per single value
Total VOC without LCI ²³	-	< 100 µg/m³
R value ²⁴	-	< 1
Formaldehyde	-	< 60 µg/m³ (0.05 ppm)

7.2 VOC emissions - IRK

Additionally, the following relevant values are met, derived from the guideline's values for indoor air, according to the German Indoor Air Hygiene Commission (IRK):
styrene ≤ 30 µg/m³

7.3 VOC emissions - USA

The product complies with the emission criteria of Greenguard Gold Certification.

8. References

AgBB-Scheme

AgBB-Scheme: Health-related Evaluation of Emissions of Volatile Organic Compounds (VVOC, VOC and SVOC) from Building Products, 2015

BBSR

BBSR (Bundesinstitut für Bau-, Stadt- und Raumforschung). (2026). Nutzungsdauern von Bauteilen.

Biocidal products

Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products

CPR

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

DE-UZ 113

DE-UZ 113: Award Criteria Blue Angel: Low-Emission Floor-covering adhesives

DE-UZ 120

DE-UZ 120: Award Criteria Blue Angel: Elastic Floor Covering

DIN EN 16165

DIN EN 16165:2023-02: Testing of floor coverings - Determination of the anti-slip property - Workrooms and fields of activities with slip danger - Walking method - Ramp test

DIN EN 1817

DIN EN 1817:2020-07: Determination of slip resistance of pedestrian surfaces - Methods of evaluation;

DIN EN 13501-1

DIN EN 13501-1:2019-05: Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

LCA FE Software

LCA FE Software: (GaBi Software) from Sphera Solutions Inc.

PEF

Product Environmental Footprint Category Rules Guidance, version 6.3 – May 2018AgBB-Scheme

EWC Code

Regulation on the European Waste List (European Waste Code - EWC)

EN 14041

DIN EN 14041:2018-05: Resilient, textile, laminate and modular multilayer floor coverings - Essential characteristics

EN ISO 14001

DIN EN ISO 14001: 2016-03: Environmental management systems - Requirements with guidance for use

EN 15804

EN 15804+A2:2012+A2:2019+Ac:2021: Sustainability of construction works – Environmental product declarations –

Core rules for the product category of construction products

EN ISO 10140-3

DIN EN ISO 10140-3:2021-09: Acoustics - Laboratory measurement of sound insulation of building elements - Part 3: Measurement of impact sound insulation

EN ISO 10874

DIN EN ISO 10874:2021-04: Resilient, textile and laminate floor coverings - Classification

EN ISO 14040

DIN EN ISO 14040:2021-02: Environmental management - Life cycle assessment - Principles and framework

EN ISO 14044

DIN EN ISO 14044: 2021-02: Environmental management - Life cycle assessment - Requirements and guidelines

EN ISO 24346

DIN EN ISO 24346:2012-04: Resilient floor coverings - Determination of overall thickness

EN ISO 23997

DIN EN ISO 23997:2012-04: Resilient floor coverings - Determination of mass per unit area

MLC DB

MLC database for life cycle engineering, Sphera Solutions GmbH, Leinfelden-Echterdingen, database version 2025.1

GHG

Product Life Cycle Accounting and Reporting Standard, Greenhouse Gas Protocol, World Resource Institute and World Business Council for Sustainable Development, September 2011

ISO 4649

DIN ISO 4649:2021-06: Rubber, vulcanized or thermoplastic - Determination of abrasion resistance using a rotating cylindrical drum device

ISO 7619

DIN ISO 7619:2012-02: Rubber, vulcanized or thermoplastic - Determination of indentation hardness - Part 1: Durometer method (Shore hardness)

ISO 9001

ISO 9001:2015-11: Quality management systems – Requirements

ISO 50001

ISO 50001:2018-12: Energy management systems - Requirements with guidance for use

ISO 14025

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

ISO 15686

ISO 15686-1:2011-05: Buildings and constructed assets - Service life planning

M1 Classification

M1: Emission classification of building materials: general instructions, Rakennustieto, Finland

EMICODE EC1 PLUS

EMICODE EC1 PLUS:

Emissionslabel: www.emicode.com/grenzwerte

Indoor Air ComfortIndoor

Air Comfort Certification by

Eurofins: <https://www.eurofins.com/consumer-product/testing/industries/construction-building/indoor-air-comfort/>

ISO 48-4

DIN ISO 48-4:2021-2: Rubber, vulcanized or thermoplastic - Determination of hardness - Part 4: Indentation hardness bydurometer method (Shore hardness)

PCR part A

Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report, version 1.4, IBU, 15.04.2024

PCR part B

Part B: Requirements on the EPD for Floor coverings, version 11 from 01.08.2024, IBU

REACH

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

TRGS 610

TRGS 610:2011-01: Substitutes, substitution of working methods for solvent based primer and adhesives for floorings

PEF

Product Environmental Footprint Category Rules Guidance, version 6.3 – May 2018AgBB-Scheme

EWG Code

Regulation on the European Waste List (European Waste Code - EWC)



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