

**Declaration Owner****Shanghai Jinka Flooring Technology Co., Ltd. (JINKA)**

818 Huifu Road, Waigang Town, Jiading District, Shanghai

Vietnam Jinka Construction Technology Co., Ltd. (JINKA)

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- JINKA PVC Free Flooring

EPD represents delivery of product to customers in Europe.

Functional Unit

The functional unit is one square meter of flooring installed and maintained for over a 1-year period

EPD Number and Period of Validity

SCS-EPD-10526

EPD Valid November 7, 2025 through November 6, 2030

Product Category RuleThe International EPD System, 2024-04-30, PCR 2019:14
CONSTRUCTION PRODUCTS, version 2.0.1, VALID UNTIL: 2030-04-07.The International EPD System, C-PCR-004 (TO PCR 2019:14),
RESILIENT, TEXTILE AND LAMINATE FLOOR COVERINGS (EN
16810:2017), VERSION 1.0.0, VALID UNTIL: 2030-04-08CEN standard EN 15804 serves as the core Product Category Rules
(PCR)**Program Operator**

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<https://www.scsglobalservices.com/certified-green-products-guide>*

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Addresses:	818 Huifu Road, Waigang Town, Jiading District, Shanghai	
	Lot L8, Do Son Hai Phong Industrial Park, Ngoc Xuyen ward, Do Son district, HP, Viet Nam	
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LCA Practitioner:	Riley Tesman, SCS Global Services	
LCA Software and LCI database:	OpenLCA 2.4 software and the Ecoinvent v3.10 database	
Product RSL:	1 year	
Markets of Applicability:	Global	
EPD Type:	Product-Specific	
EPD Scope:	Cradle-to-Grave and Module D	
LCIA Method and Version:	EN15804 (EF3.1)	
Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071	☐ internal ☒ external	
LCA Reviewer:	 Lindita Bushi, PhD, Athena Sustainable Materials Institute	
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Part A PCR Review conducted by:	The Technical Committee of the International EPD® System. Review chair: Rob Rouwette (chair), Noa Meron (Co-Chair)	
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Part B PCR Review conducted by:	The Technical Committee of the International EPD® System.	
Independent verification of the declaration and data, according to ISO 14025 and the PCR	☐ internal ☒ external	
EPD Verifier:	 Lindita Bushi, PhD, Athena Sustainable Materials Institute	
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Disclaimers: This EPD conforms to ISO 14025, 14040, 14044, and EN 15804:2012+A2:2019/AC:2021. Scope of Results Reported: The PCR requirements limit the scope of the LCA metrics such that the results exclude environmental and social performance benchmarks and thresholds, and exclude impacts from the depletion of natural resources, land use ecological impacts, ocean impacts related to greenhouse gas emissions, risks from hazardous wastes and impacts linked to hazardous chemical emissions. Accuracy of Results: Due to PCR constraints, this EPD provides estimations of potential impacts that are inherently limited in terms of accuracy. Comparability: EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025. The owner of the declaration shall be liable for the underlying information and evidence; SCS shall not be liable with respect to manufacturer information, life cycle assessment data, and evidence supplied or made available to SCS.		

1. Jinka

Shanghai Jinka Flooring Technology Co., Ltd. (JINKA) was established in 2003 and is headquartered in Jiading, Shanghai. We are one of the top 3 OEM manufacturers in China, with 3 plants in China (Shanghai & Jiangsu) certified to ISO 9001 & ISO 14001 and 1 new plant in Vietnam (Haiphong) that started mass production in late 2020.

JINKA is capable of manufacturing many kinds of flooring products on the market. Innovation, high quality, consolidated services, competitive price and on-time delivery are the key elements to meet the demands and earn the recognitions among our large and diverse global customer base.

We own an R&D center equipped with top-class lab and are committed to continually improving our productivity through investment on strict quality control. With the aid of the competitive research skills coupled with our profession, JINKA continues to strengthen our research productivity and keep achieving new breakthroughs, able to maintain a leading position in the industry.

2. Product

2.1 PRODUCT DESCRIPTION

This type of floor covering is intended for use in commercial, light commercial, and residential buildings.

Our products refer to the ISO EN16776 and ISO19322 stands, which cover solid vinyl floor tiles that are monolithic, surface decorated or printed, and protected by a clear wear layer.

This type of floor covering is intended for use in commercial, light commercial, and residential buildings. These products follow the relevant classification: UNSPSC Class Code 30161700

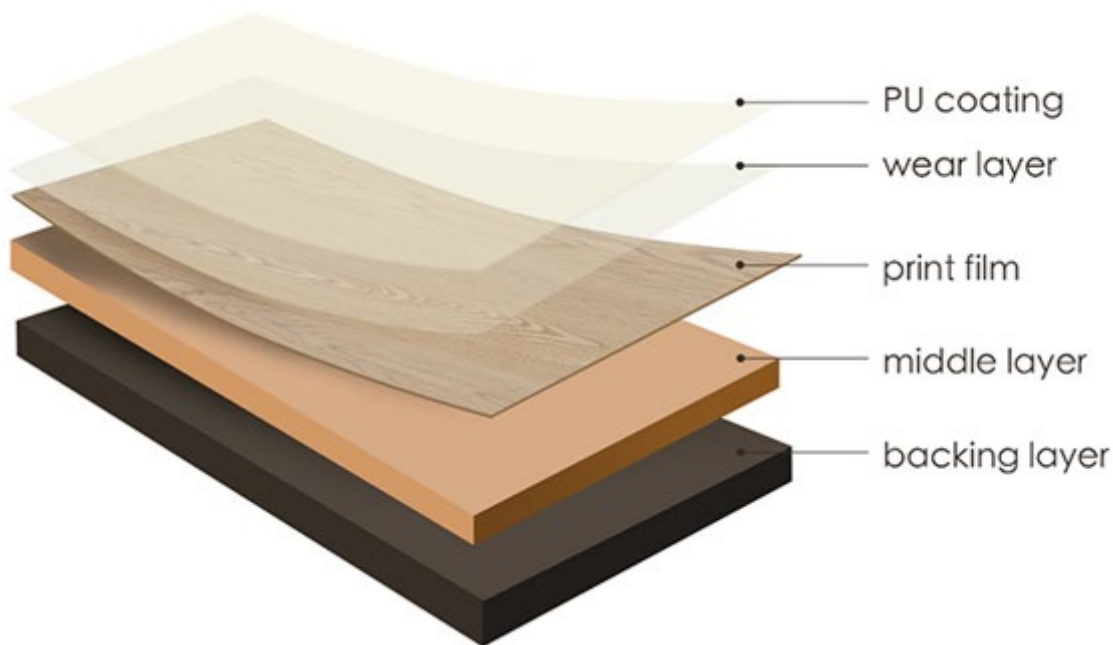
Our flooring product layers from top to bottom are PU coating, wear-resistant layer, color film layer, substrate layer 1 and substrate layer 2. Its advantages are:

1. It has personalized design;
2. Waterproof, no bulging in water;
3. Formaldehyde emission belongs to E1 level;
4. No phthalines, no heavy metals.
5. Low VOC Emission.

The following flooring products included in the EPD scope are summarized in Table 1.

Table 1. Jinka Flooring flooring products included in the LCA scope.

Product Name	Product Thickness (mm)	Product weight (kg/m ²)	Manufacturing Facility Location	Consumer Markets	Overall Thickness (mm)	Length - Tiles (mm)	Width - Tiles (mm)
JINKA PVC Free Flooring (1.2mm)	1.2	2.06	Vietnam	Global	1.1-1.3	457	457
JINKA PVC Free Flooring (2.0mm)	2.0	3.58	Vietnam	Global	1.9-2.1	457	457
JINKA PVC Free Flooring (2.5mm)	2.5	4.34	Vietnam	Global	2.4-2.6	457	457
JINKA PVC Free Flooring (5.0mm)	5.0	9.14	Vietnam	Global	4.9-5.1	457	457
JINKA PVC Free Flooring (1.2mm)	1.2	2.06	China	Global	1.1-1.3	457	457
JINKA PVC Free Flooring (2.0mm)	2.0	3.58	China	Global	1.9-2.1	457	457
JINKA PVC Free Flooring (2.5mm)	2.5	4.34	China	Global	2.4-2.6	457	457
JINKA PVC Free Flooring (5.0mm)	5.0	9.14	China	Global	4.9-5.1	457	457



2.2 PRODUCT FLOW DIAGRAM

A flow diagram illustrating the production processes and life cycle phases included in the scope of the EPD is provided below.



2.3 APPLICATION

The Jinka flooring products provide the primary function of flooring for interior applications. The products are used in various residential and commercial applications including retail, healthcare, education, and hospitality.

2.4 DECLARATION OF METHODOLOGICAL FRAMEWORK

The scope of the EPD is cradle-to-grave and Module D, including raw material extraction and processing, transportation, product manufacture, product delivery, installation and use, and product disposal. The LCA is conducted using an attributional approach. The environmental loads and benefits resulting from recyclable materials leaving a product system (Module D) are negligible. Cut-off and allocation procedures are described below and conform to the PCR and ISO standards.

The life cycle phases included in the product system boundary are shown below.

Table 2. Life cycle phases included in the Jinka flooring product system boundary.

	Product			Construction Process		Use							End-of-life				Benefits and loads beyond the system boundary
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
	Raw material extraction and processing	Transport to manufacturer	Manufacturing	Transport	Construction - installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, recovery and/or recycling potential
Modules Declared	x	x	x	x	x	n/a	x	n/a	n/a	n/a	n/a	n/a	x	x	x	x	x
Geography	GLO	GLO	CN, VN	RER	RER	n/a	RER	n/a	n/a	n/a	n/a	n/a	RER	RER	RER	RER	GLO
Share of specific data	>90%			>90%		-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-			-		-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	-			-		-	-	-	-	-	-	-	-	-	-	-	-

X = Included in system boundary

GLO = Global; CN = China; VN = Vietnam

n/a = Module not applicable

2.5 TECHNICAL DATA

Technical specifications for the products are summarized in Tables 3 through Table 6

Table 3. Product specifications for the Jinka PVC Free (1.2mm) Flooring products.

Characteristic			Description			
Sustainable certifications			Cradle to Cradle, Blue Angel, FloorScore®®, Indoor Air Comfort Gold, CE, ISO14001, ISO9001			
VOC emissions test method			EN16516			
Use Classification (according to EN ISO 10874)			Class 21, 22, 23			
Characteristic			Average Value	Unit	Min Value	Max Value
Product thickness			1.2 (0.05)	mm (in)	-	-
Wear layer thickness (where applicable)			0.2 (0.01)	mm (in)	-	-
Product weight			2,000 (6.55)	g/m2 (oz/ft2)	-	-
Product Form	Tiles	Width	457.2 (18)	mm (in)	-0.5mm	+0.5mm
		Length	457.2 (18)	mm (in)	-0.5mm	+0.5mm
Product Form	Tiles	Width	184 (7.24)	mm (in)	-0.2mm	+0.2mm
		Length	1219.2 (48)	mm (in)	-0.5mm	+0.5mm

Table 4. Product specifications for the Jinka PVC Free (2.0mm) Flooring products.

Characteristic			Description			
Sustainable certifications			Cradle to Cradle, Blue Angel, FloorScore®®, Indoor Air Comfort Gold, CE, ISO14001, ISO9001			
VOC emissions test method			EN16516			
Use Classification (according to EN ISO 10874)			Class 21, 22, 23, 31, 32, 33			
Characteristic			Average Value	Unit	Min Value	Max Value
Product thickness			2.00 (0.08)	mm (in)	1.9 (0.07)	2.1 (0.08)
Wear layer thickness (where applicable)			0.3 (0.01)	mm (in)	0.295 (0.01)	0.305 (0.01)
Product weight			3,600 (11.8)	g/m ² (oz/ft ²)	3,240 (10.6)	4,068 (13.3)
Product Form	Tiles	Width	457.2 (18)	mm (in)	-0.5mm	+0.5mm
		Length	457.2 (18)	mm (in)	-0.5mm	+0.5mm
Product Form	Tiles	Width	184 (7.24)	mm (in)	-0.2mm	+0.2mm
		Length	1219.2 (48)	mm (in)	-0.5mm	+0.5mm

Table 5. Product specifications for the Jinka PVC Free (2.5mm) Flooring products.

Characteristic			Description			
Sustainable certifications			Cradle to Cradle, Blue Angel, FloorScore®®, Indoor Air Comfort Gold, CE, ISO14001, ISO9001			
VOC emissions test method			EN16516			
Use Classification (according to EN ISO 10874)			Class 21, 22, 23, 31, 32, 33, 34			
Characteristic			Average Value	Unit	Min Value	Max Value
Product thickness			2.50 (0.10)	mm (in)	2.4 (0.09)	2.6 (0.10)
Wear layer thickness (where applicable)			0.55 (0.02)	mm (in)	0.50 (0.01)	0.60 (0.03)
Product weight			4,300 (14.0)	g/m ² (oz/ft ²)	3,870 (12.7)	4,859 (15.9)
Product Form	Tiles	Width	457.2 (18)	mm (in)	-0.5mm	+0.5mm
		Length	457.2 (18)	mm (in)	-0.5mm	+0.5mm
Product Form	Tiles	Width	184 (7.24)	mm (in)	-0.2mm	+0.2mm
		Length	1219.2 (48)	mm (in)	-0.5mm	+0.5mm

Table 6. Product specifications for the Jinka PVC Free (5.0mm) Flooring products.

Characteristic			Description			
Sustainable certifications			Cradle to Cradle, Blue Angel, Indoor Air Comfort Gold, CE, ISO14001, ISO9001			
VOC emissions test method			EN16516			
Use Classification (according to EN ISO 10874)			Class 21, 22, 23, 31, 32, 33, 41, 42, 43			
Characteristic			Average Value	Unit	Min Value	Max Value
Product thickness			5.00 (0.20)	mm (in)	4.90 (0.19)	5.10 (0.20)
Wear layer thickness (where applicable)			0.55 (0.02)	mm (in)	0.50 (0.01)	0.60 (0.03)
Product weight			9,100 (29.8)	g/m ² (oz/ft ²)	8,190 (26.8)	10,283 (33.7)
Product Form	Tiles	Width	457.2 (18)	mm (in)	-0.5mm	+0.5mm
		Length	457.2 (18)	mm (in)	-0.5mm	+0.5mm
Product Form	Tiles	Width	184 (7.24)	mm (in)	-0.2mm	+0.2mm
		Length	1219.2 (48)	mm (in)	-0.5mm	+0.5mm

2.6 MARKET PLACEMENT/APPLICATION RULES

Technical specifications and product performance results of the flooring products can be found on the manufacturer's website: <http://www.en.jinkaflooring.com/>.

2.7 PROPERTIES OF DECLARED PRODUCT AS DELIVERED

The products are delivered for installation in the form of tiles of various thicknesses.

2.8 MATERIAL COMPOSITION

The primary materials include various plastics, calcium carbonate, additives, and various stabilizers and coatings.

Table 7. Material content for the Jinka PVC Free flooring products in kg per square meter and percent of total mass.

Component	Renewable	Recycled Content (%)	PVC Free Flooring (1.2mm)	PVC Free Flooring (2.0mm)	PVC Free Flooring (2.5mm)	PVC Free Flooring (5.0mm)
Calcium Carbonate	No	0%	1.15 (56%)	2.10 (59%)	2.54 (59%)	6.00 (65%)
m-PET	No	0%	0.280 (14%)	0.420 (12%)	0.490 (11%)	0.980 (11%)
Additives	No	0%	5.00x10 ⁻² (2.4%)	8.00x10 ⁻² (2.2%)	0.100 (2.3%)	0.220 (2.4%)
Film	No	0%	0.120 (5.8%)	0.120 (3.4%)	0.110 (2.5%)	0.120 (1.3%)
TPU	No	0%	0.230 (11%)	0.410 (11%)	0.490 (11%)	1.21 (13%)
Coating	No	0%	1.30x10 ⁻² (0.63%)	1.30x10 ⁻² (0.36%)	1.30x10 ⁻² (0.30%)	1.30x10 ⁻² (0.14%)
Wear layer	No	0%	0.220 (11%)	0.440 (12%)	0.600 (14%)	0.600 (6.6%)
Total Product			2.06 (100%)	3.58 (100%)	4.34 (100%)	9.14 (100%)

Based on a review of the product components provided by the manufacturer, no regulated chemicals, i.e., substances of Very High Concern (SVHC) or substances on the REACH Candidate List, were identified in the product or product components.

2.9 MANUFACTURING

Jinka resilient flooring products are produced at their manufacturing facilities in Shanghai, China and Do Son Vietnam. The tile flooring is made primarily from a plastic component, calcium carbonate (mineral reinforcement), plasticizers, and additives (i.e., pigments and stabilizers). The product is structured with multiple layers, including a coating layer, a wear layer, a film layer, and a middle and backing layer.

2.10 PACKAGING

The products are packaged for shipment using corrugated box materials and plastic for packaging.

Table 8. Material content for the Jinka PVC Free flooring product packaging, in kg per square meter and percent of total mass.

Component	Renewable	Recycled Content (%)	PVC Free Flooring (1.2mm-VN)	PVC Free Flooring (2.0mm-VN)	PVC Free Flooring (2.5mm-VN)	PVC Free Flooring (5.0mm-VN)
Corrugated Box	Yes	0%	1.40 (91%)	1.40 (91%)	1.40 (91%)	1.40 (91%)
Plastic for Packaging	Yes	0%	0.140 (9%)	0.140 (9%)	0.140 (9%)	0.140 (9%)
Total Packaging			1.54 (100%)	1.54 (100%)	1.54 (100%)	1.54 (100%)

Table 9. Material content for the Jinka PVC Free flooring product packaging, in kg per square meter and percent of total mass.

Component	Renewable	Recycled Content (%)	PVC Free Flooring (1.2mm-CN)	PVC Free Flooring (2.0mm-CN)	PVC Free Flooring (2.5mm-CN)	PVC Free Flooring (5.0mm-CN)
Corrugated Box	Yes	0%	1.40 (69%)	1.40 (69%)	1.40 (69%)	1.40 (69%)
Plastic for Packaging	Yes	0%	0.630 (31%)	0.630 (31%)	0.630 (31%)	0.630 (31%)
Total Packaging			2.03 (100%)	2.03 (100%)	2.03 (100%)	2.03 (100%)

2.11 PRODUCT INSTALLATION

Installation of the product and periodic cleaning are included in the life cycle Use phase. The manufacturer provided installation and maintenance guidelines detailing the recommended installation methods, as well as maintenance and cleaning guidance. For the current assessment, the impacts associated with the product installation are assumed negligible. Approximately 4% of the product mass is assumed lost as waste during product installation which is landfilled. The VOC emissions associated with the installation, use and maintenance of the products are negligible.

2.12 USE CONDITIONS

No special conditions of use are noted.

2.13 PRODUCT REFERENCE SERVICE LIFE AND BUILDING ESTIMATED SERVICE LIFE

The Reference Service Life (RSL) of the flooring product is one year based on PCR requirements.

2.14 RE-USE PHASE

The flooring products are not reused at end-of-life.

2.15 DISPOSAL

At end-of-life, the product is assumed to be disposed of in a landfill per PCR requirements. Transportation for end-of-life scenarios was modeled assuming a distance of 161 km from the point of product use to a landfill. Ecoinvent datasets are used to model the impacts associated with landfilling, which does not include energy recovery from landfill gas. The end-of-life disposal parameters are summarized in Table 10.

Table 10. End-of-life disposal scenario parameters for the flooring products.

Product	Assumptions for scenario development	Collected with mixed construction waste (kg)	Recovery	Disposal - Landfill (kg)	Removals of biogenic carbon (kg CO ₂ eq)
JINKA PVC Free Flooring (1.2mm-VN)	100% Landfill	2.06	n/a	2.06	n/a
JINKA PVC Free Flooring (2.0mm-VN)	100% Landfill	3.58	n/a	3.58	n/a
JINKA PVC Free Flooring (2.5mm-VN)	100% Landfill	4.34	n/a	4.34	n/a
JINKA PVC Free Flooring (5.0mm-VN)	100% Landfill	9.14	n/a	9.14	n/a
JINKA PVC Free Flooring (1.2mm-CN)	100% Landfill	2.06	n/a	2.06	n/a
JINKA PVC Free Flooring (2.0mm-CN)	100% Landfill	3.58	n/a	3.58	n/a
JINKA PVC Free Flooring (2.5mm-CN)	100% Landfill	4.34	n/a	4.34	n/a
JINKA PVC Free Flooring (5.0mm-CN)	100% Landfill	9.14	n/a	9.14	n/a

2.16 FURTHER INFORMATION

Further information on the product can be found on the manufacturers' website at <http://www.en.jinkaflooring.com>

3. LCA: Calculation Rules

3.1 FUNCTIONAL UNIT

The functional unit used in the study is defined as 1 m² of floor covering installed and maintained for use over a 1-year period. The corresponding reference flow for each product system is presented in Table 11. For the present assessment, a reference service lifetime (RSL) is 1-year in conformance with the PCR.

Table 11. *Reference flows and RSL for the flooring products.*

Product Name	Reference Flow (kg/m ²)	Reference Service Life – RSL (years)
JINKA PVC Free Flooring (1.2mm-VN)	2.06	1
JINKA PVC Free Flooring (2.0mm-VN)	3.58	1
JINKA PVC Free Flooring (2.5mm-VN)	4.34	1
JINKA PVC Free Flooring (5.0mm-VN)	9.14	1
JINKA PVC Free Flooring (1.2mm-CN)	2.06	1
JINKA PVC Free Flooring (2.0mm-CN)	3.58	1
JINKA PVC Free Flooring (2.5mm-CN)	4.34	1
JINKA PVC Free Flooring (5.0mm-CN)	9.14	1

3.2 SYSTEM BOUNDARY

The scope of the EPD is cradle-to-grave, including raw material extraction and processing, transportation, product manufacture, product delivery, installation and use, and product disposal. The following processes are excluded from the system boundary, consistent with the PCR:

- Construction activities, capital equipment, and infrastructure
- Maintenance and operation of capital equipment
- Personnel travel and resource use

The life cycle phases included in the EPD scope are described in Table 12 and illustrated in Figure 1.

Table 12. *The modules and unit processes included in the scope for the Jinka flooring products.*

Module	Module Description	Unit Processes Included in Scope
A1	Extraction and processing of raw materials; any reuse of products or materials from previous product systems; processing of secondary materials; generation of electricity from primary energy resources; energy, or other recovery processes from secondary fuels	Extraction and processing of raw materials for the product components.
A2	Transport (to the manufacturer)	Transport of component materials to the manufacturing facilities
A3	Manufacturing, including ancillary material production	Manufacturing of flooring products and packaging (including upstream unit processes*)
A4	Transport (to the building site)	Transport of product (including packaging) to the building site
A5	Construction-installation process	Impacts from the installation of the product are assumed negligible. Impacts from the production, transport and disposal of waste material associated with installation are included in this phase in addition to impacts from packaging disposal
B1	Product use	Module not applicable
B2	Product maintenance	Maintenance of products over the product RSL, including periodic cleaning.
B3	Product repair	Module not applicable
B4	Product replacement	Module not applicable
B5	Product refurbishment	Module not applicable
B6	Operational energy use by technical building systems	Module not applicable
B7	Operational water uses by technical building systems	Module not applicable
C1	Deconstruction, demolition	Demolition of the product is accomplished using hand tools with no associated emissions and negligible impacts
C2	Transport (to waste processing)	Transport of the product to waste treatment at end-of-life
C3	Waste processing for reuse, recovery and/or recycling	The products are disposed of by landfilling which requires no waste processing
C4	Disposal	Disposal of the product
D	Reuse-recovery-recycling potential	There are no significant impacts associated with Module D as no recycled materials are used in the products. In addition, no product components are recycled at end-of-life.

It is noted that generation of electricity used in the manufacturing process should be included in stage A1 as specified by EN 15804. However, since the separation of combustion emissions and energy resource extraction for electricity generation could not be accomplished with the LCI data used for the modeling, impacts from electricity use are modeled in the manufacturing stage A3 and impacts from stages A1 through A3 are combined and reported in aggregate in the LCA results presented in this EPD.

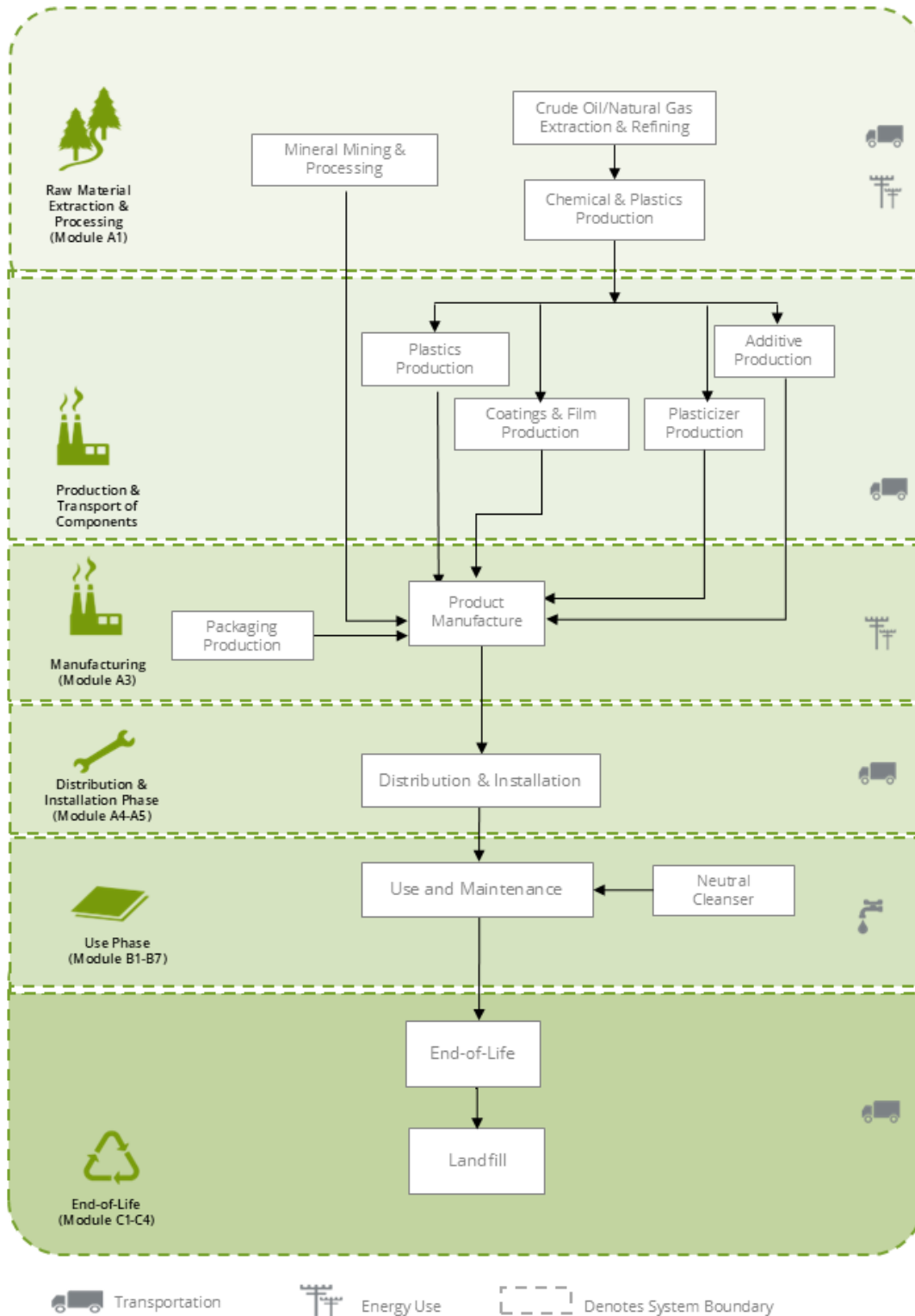


Figure 1. Flow Diagram for the life cycle of the Jinka Flooring product system.

3.3 PRODUCT SPECIFIC CALCULATION FOR USE PHASE

The recommended cleaning regime is highly dependent on the use of the premises where the floor covering is installed. In high traffic areas more frequent cleaning will be needed compared to areas where there is low traffic. For the purposes of this EPD, average maintenance (moderate traffic levels) is presented based on typical installations.

3.4 UNITS

All data and results are presented using SI units.

3.5 ESTIMATES AND ASSUMPTIONS

- Electricity use at the manufacturing facility was allocated to the products based on the product area as a fraction of the total production.
- The Jinka facilities under review are located in China and Vietnam. An Ecoinvent inventory dataset for the country-specific energy grid was used to model resource use and emissions from electricity use at the manufacturing facility.
- The Reference Service Life (RSL) of the products was modeled based on PCR requirements.
- Downstream transport was modeled based on information provided by the manufacturer representing distribution to consumer markets in Europe.
- The maintenance phase of the product life cycle was modeled based on information provided by the manufacturer including recommended installation and cleaning methods, as well as cleaning frequency.
- For the product end-of-life, disposal of product is landfilled while product packaging is modeled based on regional statistics regarding recycling rates of packaging materials.
- For final disposal of the packaging material and flooring products at end-of-life, all materials are assumed to be transported 161 km by diesel truck to either a landfill or material reclamation facility (for recycling). Datasets representing disposal in a landfill are from Ecoinvent.

The PCR requires the results for several inventory flows related to construction products to be reported including energy and resource use and waste and outflows. These are aggregated inventory flows, and do not characterize any potential impact; results should be interpreted considering this limitation.

3.6 CUT-OFF RULES

According to the PCR, processes contributing greater than 1%, and with a limit of 5% of the total environmental impact indicator for each impact are included in the inventory. No data gaps were allowed which were expected to significantly affect the outcome of the indicator results. No known flows are deliberately excluded from this EPD.

3.7 DATA SOURCES

Primary data were provided by Jinka for their manufacturing facility. The sources of secondary LCI data are the Ecoinvent database.

Table 13. Data sources for the Jinka PVC Free flooring product system.

Component	Dataset	Data Source	Publication Date
PRODUCT			
Calcium Carbonate	limestone production, crushed, washed limestone, crushed, washed EN15804GD, S/RoW	EI v3.10	2023
Coating	chemical production, organic chemical, organic EN15804GD, S/GLO	EI v3.10	2023
Film	packaging film production, low density polyethylene packaging film, low density polyethylene EN15804GD, S/RoW	EI v3.10	2023
Polypropylene	polypropylene production, granulate polypropylene, granulate EN15804GD, S/RoW	EI v3.10	2023
Additive - Confidential	Confidential	EI v3.10	2023
Wear layer - Confidential	Confidential	EI v3.10	2023
Polyethylene Terephthalate	polyethylene terephthalate production, granulate, amorphous polyethylene terephthalate, granulate, amorphous EN15804GD, S/RoW	EI v3.10	2023
Polyurethane	polyurethane adhesive production polyurethane adhesive EN15804GD, S/GLO	EI v3.10	2023
PACKAGING			
Color Box	corrugated board box production corrugated board box EN15804GD, S/RoW	EI v3.10	2023
Polyethylene Film	packaging film production, low density polyethylene packaging film, low density polyethylene EN15804GD, S/RoW	EI v3.10	2023
Plastic Straps	polypropylene production, granulate polypropylene, granulate EN15804GD, S/RoW	EI v3.10	2023
White Box	corrugated board box production corrugated board box EN15804GD, S/RoW	EI v3.10	2023
TRANSPORT			
Road transport	transport, freight, lorry 16-32 metric ton, EURO4 transport, freight, lorry 16-32 metric ton, EURO4 EN15804GD, S/RER; transport, freight, lorry 16-32 metric ton, EURO4 EN15804GD, S/RoW	EI v3.10	2023
Ship transport	transport, freight, sea, container ship transport, freight, sea, container ship EN15804GD, S/GLO	EI v3.10	2023
MAINTENANCE			
Neutral cleaner	market for ethoxylated alcohol (AE7) ethoxylated alcohol (AE7) EN15804GD, S/RER fatty acid production, from palm oil fatty acid EN15804GD, S/RER tap water production, conventional treatment tap water EN15804GD, S/Europe without Switzerland	EI v3.10	2023
Electricity	market group for electricity, low voltage electricity, low voltage EN15804GD, S/RER	EI v3.10	2023
Water	tap water production, conventional treatment tap water EN15804GD, S/Europe without Switzerland	EI v3.10	2023
WASTE DISPOSAL			
Landfill	treatment of municipal solid waste, sanitary landfill municipal solid waste EN15804GD, S/RoW ¹	EI v3.10	2023
RESOURCES			
Grid electricity (Vietnam)	market for electricity, medium voltage electricity, medium voltage EN15804GD, S/VN	EI v3.10	2023
Grid electricity (China)	market group for electricity, medium voltage electricity, medium voltage EN15804GD, S/CN	EI v3.10	2023
Wastewater	treatment of wastewater, average, wastewater treatment wastewater, average EN15804GD, S/RoW	EI v3.10	2023
Water	tap water production, conventional treatment tap water EN15804GD, S/RoW	EI v3.10	2023

¹ RoW LCI datasets are used as a proxy for C4 {RER} LCI datasets, as {RER} LCI datasets were not available.

3.8 DATA QUALITY

The data quality assessment addressed the following parameters: time-related coverage, geographical coverage, technological coverage, precision, completeness, representativeness, consistency, reproducibility, sources of data, and uncertainty.

Table 14. Data quality assessment for the Jinka product system.

Data Quality Parameter	Data Quality Discussion
Time-Related Coverage: Age of data and the minimum length of time over which data is collected	The most recent available data are used, based on other considerations such as data quality and similarity to the actual operations. Typically, these data are less than 5 years old. All of the data used represented an average of at least one year's worth of data collection, and up to three years in some cases. Manufacturer-supplied data (primary data) are based on annual production for 2023.
Geographical Coverage: Geographical area from which data for unit processes is collected to satisfy the goal of the study	The data used in the analysis provide the best possible representation available with current data. Electricity use for product manufacture is modeled using representative data for Asia. Surrogate data used in the assessment are representative of global or European operations. Data representative of European operations are considered sufficiently similar to actual processes. Data representing product disposal are based on regional statistics.
Technology Coverage: Specific technology or technology mix	For the most part, data are representative of the actual technologies used for processing, transportation, and manufacturing operations. Representative fabrication datasets, specific to the type of material, are used to represent the actual processes, as appropriate.
Precision: Measure of the variability of the data values for each data expressed	Precision of results are not quantified due to a lack of data. Data collected for operations were typically averaged for one or more years and over multiple operations, which is expected to reduce the variability of results.
Completeness: Percentage of flow that is measured or estimated	The LCA model included all known mass and energy flows for production of the flooring products. In some instances, surrogate data used to represent upstream and downstream operations may be missing some data which is propagated in the model. No known processes or activities contributing to more than 5% of the total environmental impact for each indicator are excluded.
Representativeness: Qualitative assessment of the degree to which the data set reflects the true population of interest	Data used in the assessment represent typical or average processes as currently reported from multiple data sources and are therefore generally representative of the range of actual processes and technologies for production of these materials. Considerable deviation may exist among actual processes on a site-specific basis; however, such a determination would require detailed data collection throughout the supply chain back to resource extraction.
Consistency: Qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis	The consistency of the assessment is considered to be high. Data sources of similar quality and age are used; with a bias towards Ecoinvent v3.10 data where available. Different portions of the product life cycle are equally considered.
Reproducibility: Qualitative assessment of the extent to which information about the methodology and data values would allow an independent practitioner to reproduce the results reported in the study	Based on the description of data and assumptions used, this assessment would be reproducible by other practitioners. All assumptions, models, and data sources are documented.
Sources of the Data: Description of all primary and secondary data sources	Data representing energy use at the manufacturing facility represents an annual average and are considered of high quality due to the length of time over which these data are collected, as compared to a snapshot that may not accurately reflect fluctuations in production. For secondary LCI data, Ecoinvent v3.10 LCI data are used.
Uncertainty of the Information: Uncertainty related to data, models, and assumptions	Uncertainty related to materials in the products and packaging is low. Actual supplier data for upstream operations were not available and the study relied upon the use of existing representative datasets. These datasets contained relatively recent data (<10 years) but lacked geographical representativeness. Uncertainty related to the impact assessment methods used in the study are high. The impact assessment method required by the PCR includes impact potentials, which lack characterization of providing and receiving environments or tipping points.

3.9 PERIOD UNDER REVIEW

The period of review is calendar year 2023.

3.10 ALLOCATION

Resource use at the manufacturing facility (e.g., water and energy) was allocated to the products based on the product area as a fraction of the total facility production volume (i.e., area-based allocation). Area-based allocation was deemed most appropriate for the flooring products as total facility production was available as total square meters of product.

Electricity use at the manufacturing facility was modeled using ecoinvent inventory datasets for the country-specific electrical grid. Manufacturing scrap has no economic value and is disposed of via landfilling. No allocation of scrap is necessary.

Impacts from transportation, including product distribution to point of sale, were attributed to the products based on the mass of material and distance transported.

3.11 COMPARABILITY

The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.

4. LCA: Scenarios and Additional Technical Information

Delivery and Installation stage (A4 - A5)

Distribution of the flooring products to the point of installation is included in the assessment. Transportation parameters for modeling product distribution are summarized in Table 15. Production-weighted average distances by transport mode were used to represent product distribution to Europe.

Table 15. Product distribution parameters, per 1 m²

Parameter	Unit	Value	
Truck transport			
Fuel type	-	Diesel	
Liters of fuel	L/100km	18.7	
Vehicle type	-	Diesel truck	
Capacity utilization	%	76	
Ocean transport			
Fuel type	-	Fuel oil	
Liters of fuel	g/tkm	2.53	
Vehicle type	-	Ocean freighter	
Capacity utilization	%	70	
Product Name	Gross mass transported (kg)	Transport Distance (km)	
		Road	Ship
JINKA PVC Free Flooring (1.2mm) – Vietnam	3.60	450	20,296
JINKA PVC Free Flooring (2.0mm) – Vietnam	5.12	450	20,296
JINKA PVC Free Flooring (2.5mm) – Vietnam	5.88	450	20,296
JINKA PVC Free Flooring (5.0mm) – Vietnam	10.7	450	20,296
JINKA PVC Free Flooring (1.2mm) – China	4.09	187	15,895
JINKA PVC Free Flooring (2.0mm) – China	5.61	187	15,895
JINKA PVC Free Flooring (2.5mm) – China	6.37	187	15,895
JINKA PVC Free Flooring (5.0mm) – China	11.2	187	15,895

Installation of the product and periodic cleaning are included in the life cycle Use phase. The manufacturer provided installation and maintenance guidelines detailing the recommended installation methods, as well as maintenance and cleaning guidance. For the current assessment, the impacts associated with the product installation are assumed negligible. Approximately 4% of the product mass is assumed lost as waste during product installation which is landfilled. The VOC emissions associated with the installation, use and maintenance of the products are negligible.

Impacts associated with the disposal of packaging materials are also included in the installation life cycle phase. Assumed recycling rates for packaging component materials are based on the PCR requirements and are summarized in Table 16.

Table 16. *Recycling rates for packaging materials at end-of-life.*

Material	Packaging Recycling Rate (%)
Recycling Rates	
Plastics	40.3%
Paper & Pulp	82.8%
Disposal of Non-recyclables	
Landfill	55%
Incineration	45%

Table 17 summarizes the relevant parameters for the product installation phase including biogenic carbon emissions and removals, and wastes associated with product packaging.

Table 17. *Installation parameters for the flooring products from Vietnam, per 1 m².*

Parameter		PVC Free Flooring (1.2mm-VN)	PVC Free Flooring (2.0mm-VN)	PVC Free Flooring (2.5mm-VN)	PVC Free Flooring (5.0mm-VN)
Ancillary materials		0.00	0.00	0.00	0.00
Net freshwater consumption (m ³)		0.00	0.00	0.00	0.00
Electricity consumption (kWh)		0.00	0.00	0.00	0.00
Product loss per functional unit (kg)		0.083	0.143	0.174	0.366
Waste materials generated by product installation (kg)		1.62	1.68	1.71	1.91
Output materials resulting from on-site waste processing (kg)		n/a	n/a	n/a	n/a
Mass of packaging waste (kg)	Plastic	0.140	0.140	0.140	0.140
	Corrugate	1.40	1.40	1.40	1.40
Biogenic carbon contained in packaging (kg CO ₂)		2.57	2.57	2.57	2.57
Direct emissions (kg)		0.00	0.00	0.00	0.00

Table 18. *Installation parameters for the flooring products from China, per 1 m².*

Parameter		PVC Free Flooring (1.2mm-CN)	PVC Free Flooring (2.0mm-CN)	PVC Free Flooring (2.5mm-CN)	PVC Free Flooring (5.0mm-CN)
Ancillary materials		0.00	0.00	0.00	0.00
Net freshwater consumption (m ³)		0.00	0.00	0.00	0.00
Electricity consumption (kWh)		0.00	0.00	0.00	0.00
Product loss per functional unit (kg)		0.627	0.083	0.143	0.174
Waste materials generated by product installation (kg)		2.66	2.11	2.17	2.20
Output materials resulting from on-site waste processing (kg)		n/a	n/a	n/a	n/a
Mass of packaging waste (kg)	Plastic	0.630	0.630	0.630	0.630
	Corrugate	1.40	1.40	1.40	1.40
Biogenic carbon contained in packaging (kg CO ₂)		2.57	2.57	2.57	2.57
Direct emissions (kg)		0.00	0.00	0.00	0.00

Use stage (B1)

No impacts are associated with the use of the product over the Reference Service Lifetime.

Maintenance stage (B2)

According to the manufacturer, typical maintenance involves regular sweeping and damp mopping, as well as periodic machine cleaning of the vinyl flooring. The present assessment is based on a recommended weekly cleaning schedule including sweeping and mopping with a neutral cleaner and monthly machine cleaning. The parameters used to model the product maintenance are summarized in Table 19.

Table 19. *Maintenance parameters for the flooring products, per 1 m².*

Parameter	Unit	Value
Maintenance cycle	Cycles / RSL	52
Maintenance process	-	Damp mopping
Net freshwater consumption	m ³ /m ² /yr	0.0058
Cleaning agent	kg/m ² /yr	0.0119
Maintenance process	-	Vacuuming
Electricity	kWh/m ² /yr	0.022
Further assumptions	-	Moderate traffic; weekly maintenance

Disposal stage (C1 - C4)

The disposal stage includes removal of the products (C1); transport of the flooring products to waste treatment facilities (C2); waste processing (C3); and associated emissions as the product degrades in a landfill (C4). For the flooring products, no emissions are generated during demolition (C1) while no waste processing (C3) is required for landfill disposal.

At end-of-life, the product is assumed to be disposed of in a landfill. Transportation for end-of-life scenarios was modeled assuming a distance of 161 km from the point of product use to a landfill. Ecoinvent datasets are used to model the impacts associated with landfilling, which does not include energy recovery from landfill gas. The end-of-life disposal parameters are summarized in Table 20.

Table 20. End-of-life disposal scenario parameters for the JINKA PVC Free flooring products produced in Vietnam.

Parameter		PVC Free Flooring (1.2mm-VN)	PVC Free Flooring (2.0mm-VN)	PVC Free Flooring (2.5mm-VN)	PVC Free Flooring (5.0mm-VN)
Assumptions for scenario development		100% landfill	100% landfill	100% landfill	100% landfill
Collection process		-	-	-	-
		2.06	3.58	4.34	9.14
Recovery		-	-	-	-
Disposal		2.06	3.58	4.34	9.14
Removals of biogenic carbon, excluding packaging (kg CO ₂ eq)		0.0	0.0	0.0	0.0

Table 21. End-of-life disposal scenario parameters for the JINKA PVC Free flooring products produced in China.

Parameter		PVC Free Flooring (1.2mm-CN)	PVC Free Flooring (2.0mm-CN)	PVC Free Flooring (2.5mm-CN)	PVC Free Flooring (5.0mm-CN)
Assumptions for scenario development		100% landfill	100% landfill	100% landfill	100% landfill
Collection process		-	-	-	-
		2.06	3.58	4.34	9.14
Recovery		-	-	-	-
Disposal		2.06	3.58	4.34	9.14
Removals of biogenic carbon, excluding packaging (kg CO ₂ eq)		0.0	0.0	0.0	0.0

5. LCA: Results

Results of the Life Cycle Assessment are presented below. It is noted that LCA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. All LCA results are stated to three significant figures in agreement with the PCR for this flooring product and therefore the sum of the total values may not exactly equal 100%.

The impact indicators specified by the PCR include:

- Potential for Global Warming,
- Acidification Potential,
- Eutrophication Potential,
- Ozone Depletion Potential,
- Photochemical Ozone (smog) Creation Potential.
- Ecotoxicity,
- Human Toxicity, and
- Land Use/Land Occupation

Impact category indicators for acidification, eutrophication, ozone depletion potential and photochemical ozone creation are estimated using the characterization factors¹, as prescribed by the PCR, including from CML-IA and ReCiPe methodologies as well as those defined by EN 15804 reference package based on EF 3.1. Impact indicators for Ecotoxicity and Human Toxicity are estimated using the USEtox 2.02 characterization method, while Land Occupation impacts are estimated using the ReCiPe 2016 version 1.1 methodology. The impact category indicators included in the assessment are summarized below.

These impact categories are globally deemed mature enough to be included in Type III environmental declarations. Other categories are being developed and defined and LCA should continue making advances in their development. However, the EPD users shall not use additional measures for comparative purposes.

Note that the use of the results of modules A1-A3 without considering the results of module C is discouraged.

¹ <https://www.environdec.com/resources/indicators>

Table 22 Core Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (1.2mm-VN))

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Core Indicators							
Global Warming Potential - total (GWP-total)	kg CO ₂ eq.	3.55	0.833	1.09	3.82x10 ⁻²	0.288	0.952
	%	53%	12%	16%	0.57%	4.3%	14%
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO ₂ eq.	4.42	0.833	0.627	4.83x10 ⁻²	0.288	6.50x10 ⁻²
	%	70%	13%	10%	0.77%	4.6%	1%
Global Warming Potential - biogenic (GWP-biogenic)	kg CO ₂ eq.	-0.883	-1.78x10 ⁻⁴	0.459	-3.56x10 ⁻²	3.09x10 ⁻⁵	0.887
	%	-210%	-0.042%	110%	-8.3%	0.0072%	210%
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO ₂ eq.	1.14x10 ⁻²	4.07x10 ⁻⁴	5.14x10 ⁻⁴	2.54x10 ⁻²	2.85x10 ⁻⁵	1.83x10 ⁻⁵
	%	30%	1.1%	1.4%	67%	0.075%	0.048%
Global warming potential (GWP-GHG)	kg CO ₂ eq.	4.62	0.834	0.890	7.39x10 ⁻²	0.288	0.765
	%	62%	11%	12%	0.99%	3.9%	10%
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	8.46x10 ⁻⁷	1.21x10 ⁻⁸	4.02x10 ⁻⁸	1.25x10 ⁻⁹	4.43x10 ⁻⁹	4.37x10 ⁻¹⁰
	%	94%	1.3%	4.4%	0.14%	0.49%	0.048%
Acidification potential, Accumulated Exceedance (AP)	mol H ⁺ eq.	2.25x10 ⁻²	1.83x10 ⁻²	3.69x10 ⁻³	3.17x10 ⁻⁴	1.52x10 ⁻³	2.18x10 ⁻⁴
	%	48%	39%	7.9%	0.68%	3.3%	0.47%
Eutrophication potential - freshwater (EP-freshwater)	kg P eq.	1.41x10 ⁻³	3.79x10 ⁻⁵	7.03x10 ⁻⁵	1.88x10 ⁻⁵	5.40x10 ⁻⁶	9.75x10 ⁻⁵
	%	86%	2.3%	4.3%	1.1%	0.33%	5.9%
Eutrophication potential - marine (EP-marine)	kg N eq.	7.15x10 ⁻³	4.67x10 ⁻³	1.65x10 ⁻³	2.10x10 ⁻⁴	6.60x10 ⁻⁴	1.83x10 ⁻³
	%	44%	29%	10%	1.3%	4.1%	11%
Eutrophication potential - terrestrial (EP-terrestrial)	mol N eq.	5.85x10 ⁻²	5.18x10 ⁻²	1.41x10 ⁻²	8.69x10 ⁻⁴	7.23x10 ⁻³	6.80x10 ⁻⁴
	%	44%	39%	11%	0.65%	5.4%	0.51%
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	2.14x10 ⁻²	1.43x10 ⁻²	5.31x10 ⁻³	2.95x10 ⁻⁴	2.88x10 ⁻³	4.36x10 ⁻⁴
	%	48%	32%	12%	0.66%	6.4%	0.98%
Depletion of abiotic resources - minerals and metals (kg Sb eq) ¹	MJ	1.80x10 ⁻⁵	1.39x10 ⁻⁶	1.05x10 ⁻⁶	6.32x10 ⁻⁷	1.90x10 ⁻⁷	4.63x10 ⁻⁸
	%	84%	6.5%	4.9%	3%	0.89%	0.22%
Depletion of abiotic resources - fossil fuels (MJ) ¹	kg Sb eq.	70.2	10.7	8.20	1.08	3.74	0.412
	%	74%	11%	8.7%	1.1%	4%	0.44%
Water use (m ³ depriv.) ¹	m ³ World eq.	1.37	3.53x10 ⁻²	7.41x10 ⁻²	5.02x10 ⁻²	6.13x10 ⁻³	4.35x10 ⁻³
	%	89%	2.3%	4.8%	3.3%	0.4%	0.28%

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

Table 23. Additional Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. **(JINKA PVC Free Flooring (1.2mm-VN))**

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Additional Indicators							
Potential incidence of disease due to PM emissions (PM)	Disease Incidence	3.10×10^{-7}	3.74×10^{-8}	6.32×10^{-8}	4.20×10^{-9}	3.74×10^{-8}	2.94×10^{-9}
	%	68%	8.2%	14%	0.92%	8.2%	0.65%
Potential Human exposure efficiency relative to U235 (IRP) ²	kBq U235 eq.	0.184	6.12×10^{-3}	9.44×10^{-3}	8.88×10^{-3}	1.16×10^{-3}	1.03×10^{-3}
	%	87%	2.9%	4.5%	4.2%	0.55%	0.49%
Potential Comparative Toxic Unit for ecosystems (ETP-fw)	CTUe	24.4	2.15	9.03	0.674	0.326	12.8
	%	49%	4.4%	18%	1.4%	0.66%	26%
Potential Comparative Toxic Unit for humans - cancer effects (HTP-c) ¹	CTUh	1.53×10^{-8}	3.75×10^{-9}	1.40×10^{-9}	1.80×10^{-10}	4.32×10^{-10}	1.33×10^{-10}
	%	72%	18%	6.6%	0.85%	2%	0.63%
Potential Comparative Toxic Unit for humans - non-cancer effects (HTP-nc) ¹	CTUh	5.59×10^{-8}	4.07×10^{-9}	4.82×10^{-9}	6.57×10^{-10}	6.00×10^{-10}	6.09×10^{-9}
	%	78%	5.6%	6.7%	0.91%	0.83%	8.4%
Potential Soil quality index (SQP) ¹	Dimensionless	120	2.63	5.62	1.31	0.427	0.769
	%	92%	2%	4.3%	1%	0.33%	0.59%

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

Table 24. Resource use for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.
(JINKA PVC Free Flooring (1.2mm-VN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Resources							
Use of renewable primary energy resources used as energy carrier (PERE)	MJ	22.1	0.118	0.906	0.966	2.30×10^{-2}	1.28×10^{-2}
	%	92%	0.49%	3.8%	4%	0.096%	0.053%
Use of renewable primary energy resources used as raw materials (PERM)	MJ	23.8	0.00	0.952	0.00	0.00	0.00
	%	96%	0%	3.8%	0%	0%	0%
Total use of renewable primary energy resources (PERT)	MJ	1.98	0.118	-4.57×10^{-2}	0.966	2.30×10^{-2}	1.28×10^{-2}
	%	65%	3.9%	-1.5%	32%	0.75%	0.42%
Use of non renewable primary energy resources used as energy carrier (PENRE)	MJ	65.6	11.5	6.06	1.05	4.81	0.379
	%	73%	13%	6.8%	1.2%	5.4%	0.42%
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ	4.61	1.23	0.563	6.25×10^{-2}	0.538	3.32×10^{-2}
	%	66%	17%	8%	0.89%	7.7%	0.47%
Total use of non renewable primary energy resources (PENRT)	MJ	69.2	12.6	6.29	1.09	5.31	0.409
	%	73%	13%	6.6%	1.1%	5.6%	0.43%
Use of secondary materials (SM)	kg	1.18	8.71×10^{-3}	4.85×10^{-2}	5.71×10^{-3}	1.32×10^{-3}	0.00
	%	95%	0.7%	3.9%	0.46%	0.11%	0%
Use of renewable secondary fuels (RSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of non renewable secondary fuels (NRSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of net fresh water (FW)	m ³	3.20×10^{-2}	1.12×10^{-3}	5.80×10^{-4}	7.15×10^{-3}	2.78×10^{-4}	-4.84×10^{-3}
	%	88%	3.1%	1.6%	20%	0.77%	-13%

Table 25. Waste and outflows for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (1.2mm-VN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Wastes							
Hazardous waste disposed (HWD)	kg	6.38×10^{-4}	7.28×10^{-5}	5.15×10^{-5}	1.35×10^{-5}	3.72×10^{-5}	2.56×10^{-6}
	%	78%	8.9%	6.3%	1.7%	4.6%	0.31%
Non hazardous waste disposed (NHWD)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Radioactive waste disposed (RWD)	kg	4.44×10^{-5}	1.78×10^{-6}	2.17×10^{-6}	2.27×10^{-6}	4.02×10^{-7}	2.49×10^{-7}
	%	87%	3.5%	4.2%	4.4%	0.78%	0.49%
Components for re-use (CRU)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Materials for recycling (MFR)	kg	0.239	8.31×10^{-3}	1.06×10^{-2}	4.89×10^{-3}	1.15×10^{-3}	0.00
	%	91%	3.1%	4%	1.8%	0.43%	0%
Materials for energy recovery (MER)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Exported electrical energy (EEE)	MJ	1.66×10^{-2}	6.86×10^{-4}	7.83×10^{-4}	1.41×10^{-3}	1.46×10^{-4}	0.00
	%	85%	3.5%	4%	7.2%	0.74%	0%
Exported thermal energy (EET)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%

Table 26. Core Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. **(JINKA PVC Free Flooring (2.0mm-VN))**

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Core Indicators							
Global Warming Potential - total (GWP-total)	kg CO ₂ eq.	4.29	1.10	1.12	3.82x10 ⁻²	0.502	1.66
	%	49%	13%	13%	0.44%	5.8%	19%
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO ₂ eq.	5.16	1.10	0.637	4.83x10 ⁻²	0.502	0.113
	%	68%	15%	8.4%	0.64%	6.6%	1.5%
Global Warming Potential - biogenic (GWP-biogenic)	kg CO ₂ eq.	-0.876	-2.36x10 ⁻⁴	0.486	-3.56x10 ⁻²	5.37x10 ⁻⁵	1.54
	%	-78%	-0.021%	43%	-3.2%	0.0048%	140%
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO ₂ eq.	1.17x10 ⁻²	5.38x10 ⁻⁴	5.32x10 ⁻⁴	2.54x10 ⁻²	4.96x10 ⁻⁵	3.18x10 ⁻⁵
	%	31%	1.4%	1.4%	66%	0.13%	0.083%
Global warming potential (GWP-GHG)	kg CO ₂ eq.	5.36	1.10	0.922	7.39x10 ⁻²	0.502	1.33
	%	58%	12%	9.9%	0.8%	5.4%	14%
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	1.31x10 ⁻⁶	1.60x10 ⁻⁸	5.90x10 ⁻⁸	1.25x10 ⁻⁹	7.71x10 ⁻⁹	7.60x10 ⁻¹⁰
	%	94%	1.1%	4.2%	0.089%	0.55%	0.054%
Acidification potential, Accumulated Exceedance (AP)	mol H ⁺ eq.	2.58x10 ⁻²	2.42x10 ⁻²	4.04x10 ⁻³	3.17x10 ⁻⁴	2.65x10 ⁻³	3.80x10 ⁻⁴
	%	45%	42%	7.1%	0.55%	4.6%	0.66%
Eutrophication potential - freshwater (EP-freshwater)	kg P eq.	1.47x10 ⁻³	5.02x10 ⁻⁵	7.57x10 ⁻⁵	1.88x10 ⁻⁵	9.40x10 ⁻⁶	1.70x10 ⁻⁴
	%	82%	2.8%	4.2%	1%	0.52%	9.5%
Eutrophication potential - marine (EP-marine)	kg N eq.	8.34x10 ⁻³	6.17x10 ⁻³	1.80x10 ⁻³	2.10x10 ⁻⁴	1.15x10 ⁻³	3.19x10 ⁻³
	%	40%	30%	8.6%	1%	5.5%	15%
Eutrophication potential - terrestrial (EP-terrestrial)	mol N eq.	7.14x10 ⁻²	6.84x10 ⁻²	1.52x10 ⁻²	8.69x10 ⁻⁴	1.26x10 ⁻²	1.18x10 ⁻³
	%	42%	40%	8.9%	0.51%	7.4%	0.7%
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	2.58x10 ⁻²	1.90x10 ⁻²	5.66x10 ⁻³	2.95x10 ⁻⁴	5.01x10 ⁻³	7.59x10 ⁻⁴
	%	46%	34%	10%	0.52%	8.9%	1.3%
Depletion of abiotic resources - minerals and metals (kg Sb eq) ¹	MJ	2.06x10 ⁻⁵	1.84x10 ⁻⁶	1.17x10 ⁻⁶	6.32x10 ⁻⁷	3.30x10 ⁻⁷	8.06x10 ⁻⁸
	%	84%	7.4%	4.7%	2.6%	1.3%	0.33%
Depletion of abiotic resources - fossil fuels (MJ) ¹	kg Sb eq.	79.9	14.1	8.70	1.08	6.51	0.718
	%	72%	13%	7.8%	0.97%	5.9%	0.65%
Water use (m ³ depriv.) ¹	m ³ World eq.	1.42	4.66x10 ⁻²	7.57x10 ⁻²	5.02x10 ⁻²	1.07x10 ⁻²	7.57x10 ⁻³
	%	88%	2.9%	4.7%	3.1%	0.66%	0.47%

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

Table 27. Additional Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. **(JINKA PVC Free Flooring (2.0mm-VN))**

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Additional Indicators							
Potential incidence of disease due to PM emissions (PM)	Disease Incidence	3.73×10^{-7}	4.95×10^{-8}	6.59×10^{-8}	4.20×10^{-9}	6.51×10^{-8}	5.12×10^{-9}
	%	66%	8.8%	12%	0.75%	12%	0.91%
Potential Human exposure efficiency relative to U235 (IRP) ²	kBq U235 eq.	0.193	8.09×10^{-3}	9.90×10^{-3}	8.88×10^{-3}	2.02×10^{-3}	1.79×10^{-3}
	%	86%	3.6%	4.4%	4%	0.9%	0.8%
Potential Comparative Toxic Unit for ecosystems (ETP-fw)	CTUe	26.3	2.84	9.50	0.674	0.568	22.3
	%	42%	4.6%	15%	1.1%	0.91%	36%
Potential Comparative Toxic Unit for humans - cancer effects (HTP-c) ¹	CTUh	1.92×10^{-8}	4.96×10^{-9}	1.60×10^{-9}	1.80×10^{-10}	7.52×10^{-10}	2.32×10^{-10}
	%	71%	18%	5.9%	0.67%	2.8%	0.86%
Potential Comparative Toxic Unit for humans - non-cancer effects (HTP-nc) ¹	CTUh	6.31×10^{-8}	5.38×10^{-9}	5.28×10^{-9}	6.57×10^{-10}	1.04×10^{-9}	1.06×10^{-8}
	%	73%	6.3%	6.1%	0.76%	1.2%	12%
Potential Soil quality index (SQP) ¹	Dimensionless	126	3.48	5.93	1.31	0.743	1.34
	%	91%	2.5%	4.3%	0.94%	0.53%	0.96%

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

Table 28. Resource use for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.
(JINKA PVC Free Flooring (2.0mm-VN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Resources							
Use of renewable primary energy resources used as energy carrier (PERE)	MJ	22.3	0.165	0.913	0.966	3.99×10^{-2}	2.23×10^{-2}
	%	91%	0.68%	3.7%	4%	0.16%	0.091%
Use of renewable primary energy resources used as raw materials (PERM)	MJ	23.8	0.00	0.952	0.00	0.00	0.00
	%	96%	0%	3.8%	0%	0%	0%
Total use of renewable primary energy resources (PERT)	MJ	2.21	0.165	-3.88×10^{-2}	0.966	3.99×10^{-2}	2.23×10^{-2}
	%	66%	4.9%	-1.2%	29%	1.2%	0.66%
Use of non renewable primary energy resources used as energy carrier (PENRE)	MJ	77.6	16.1	5.76	1.05	8.32	0.660
	%	71%	15%	5.3%	0.96%	7.6%	0.6%
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ	5.78	1.72	0.521	6.25×10^{-2}	0.931	5.78×10^{-2}
	%	64%	19%	5.7%	0.69%	10%	0.64%
Total use of non renewable primary energy resources (PENRT)	MJ	82.3	17.7	5.95	1.09	9.19	0.711
	%	70%	15%	5.1%	0.93%	7.9%	0.61%
Use of secondary materials (SM)	kg	1.19	1.22×10^{-2}	4.87×10^{-2}	5.71×10^{-3}	2.28×10^{-3}	0.00
	%	95%	0.96%	3.9%	0.45%	0.18%	0%
Use of renewable secondary fuels (RSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of non renewable secondary fuels (NRSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of net fresh water (FW)	m ³	3.41×10^{-2}	1.57×10^{-3}	4.24×10^{-4}	7.15×10^{-3}	4.81×10^{-4}	-8.42×10^{-3}
	%	97%	4.4%	1.2%	20%	1.4%	-24%

Table 29. Waste and outflows for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (2.0mm-VN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Wastes							
Hazardous waste disposed (HWD)	kg	7.35×10^{-4}	1.02×10^{-4}	4.90×10^{-5}	1.35×10^{-5}	6.44×10^{-5}	4.46×10^{-6}
	%	76%	11%	5.1%	1.4%	6.7%	0.46%
Non hazardous waste disposed (NHWD)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Radioactive waste disposed (RWD)	kg	4.78×10^{-5}	2.49×10^{-6}	2.26×10^{-6}	2.27×10^{-6}	6.96×10^{-7}	4.34×10^{-7}
	%	85%	4.5%	4%	4.1%	1.2%	0.78%
Components for re-use (CRU)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Materials for recycling (MFR)	kg	0.248	1.16×10^{-2}	1.09×10^{-2}	4.89×10^{-3}	1.98×10^{-3}	0.00
	%	89%	4.2%	3.9%	1.8%	0.71%	0%
Materials for energy recovery (MER)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Exported electrical energy (EEE)	MJ	1.79×10^{-2}	9.58×10^{-4}	8.14×10^{-4}	1.41×10^{-3}	2.53×10^{-4}	0.00
	%	84%	4.5%	3.8%	6.6%	1.2%	0%
Exported thermal energy (EET)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%

Table 30. Core Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. **(JINKA PVC Free Flooring (2.5mm-VN))**

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Core Indicators							
Global Warming Potential - total (GWP-total)	kg CO ₂ eq.	4.87	1.24	1.21	3.82x10 ⁻²	0.599	1.98
	%	49%	12%	12%	0.38%	6%	20%
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO ₂ eq.	5.73	1.24	0.710	4.83x10 ⁻²	0.598	0.135
	%	68%	15%	8.4%	0.57%	7.1%	1.6%
Global Warming Potential - biogenic (GWP-biogenic)	kg CO ₂ eq.	-0.873	-2.65x10 ⁻⁴	0.498	-3.56x10 ⁻²	6.41x10 ⁻⁵	1.84
	%	-61%	-0.019%	35%	-2.5%	0.0045%	130%
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO ₂ eq.	1.19x10 ⁻²	6.06x10 ⁻⁴	5.46x10 ⁻⁴	2.54x10 ⁻²	5.92x10 ⁻⁵	3.80x10 ⁻⁵
	%	31%	1.6%	1.4%	66%	0.15%	0.098%
Global warming potential (GWP-GHG)	kg CO ₂ eq.	5.93	1.24	1.00	7.39x10 ⁻²	0.599	1.59
	%	57%	12%	9.6%	0.71%	5.7%	15%
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	1.63x10 ⁻⁶	1.80x10 ⁻⁸	7.18x10 ⁻⁸	1.25x10 ⁻⁹	9.19x10 ⁻⁹	9.07x10 ⁻¹⁰
	%	94%	1%	4.2%	0.072%	0.53%	0.053%
Acidification potential, Accumulated Exceedance (AP)	mol H ⁺ eq.	2.81x10 ⁻²	2.72x10 ⁻²	4.34x10 ⁻³	3.17x10 ⁻⁴	3.16x10 ⁻³	4.53x10 ⁻⁴
	%	44%	43%	6.8%	0.5%	5%	0.71%
Eutrophication potential - freshwater (EP-freshwater)	kg P eq.	1.54x10 ⁻³	5.65x10 ⁻⁵	8.05x10 ⁻⁵	1.88x10 ⁻⁵	1.12x10 ⁻⁵	2.02x10 ⁻⁴
	%	81%	3%	4.2%	0.98%	0.59%	11%
Eutrophication potential - marine (EP-marine)	kg N eq.	9.06x10 ⁻³	6.95x10 ⁻³	1.92x10 ⁻³	2.10x10 ⁻⁴	1.37x10 ⁻³	3.81x10 ⁻³
	%	39%	30%	8.2%	0.9%	5.9%	16%
Eutrophication potential - terrestrial (EP-terrestrial)	mol N eq.	7.92x10 ⁻²	7.71x10 ⁻²	1.62x10 ⁻²	8.69x10 ⁻⁴	1.50x10 ⁻²	1.41x10 ⁻³
	%	42%	41%	8.5%	0.46%	7.9%	0.74%
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	2.87x10 ⁻²	2.13x10 ⁻²	6.02x10 ⁻³	2.95x10 ⁻⁴	5.97x10 ⁻³	9.05x10 ⁻⁴
	%	45%	34%	9.5%	0.47%	9.4%	1.4%
Depletion of abiotic resources - minerals and metals (kg Sb eq) ¹	MJ	2.33x10 ⁻⁵	2.07x10 ⁻⁶	1.30x10 ⁻⁶	6.32x10 ⁻⁷	3.94x10 ⁻⁷	9.61x10 ⁻⁸
	%	84%	7.4%	4.7%	2.3%	1.4%	0.35%
Depletion of abiotic resources - fossil fuels (MJ) ¹	kg Sb eq.	89.4	15.9	9.34	1.08	7.76	0.856
	%	72%	13%	7.5%	0.87%	6.2%	0.69%
Water use (m ³ depriv.) ¹	m ³ World eq.	1.48	5.25x10 ⁻²	7.96x10 ⁻²	5.02x10 ⁻²	1.27x10 ⁻²	9.03x10 ⁻³
	%	88%	3.1%	4.7%	3%	0.75%	0.54%

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

Table 31. Additional Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. **(JINKA PVC Free Flooring (2.5mm-VN))**

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Additional Indicators							
Potential incidence of disease due to PM emissions (PM)	Disease Incidence	4.13×10^{-7}	5.57×10^{-8}	6.96×10^{-8}	4.20×10^{-9}	7.77×10^{-8}	6.11×10^{-9}
	%	66%	8.9%	11%	0.67%	12%	0.98%
Potential Human exposure efficiency relative to U235 (IRP) ²	kBq U235 eq.	0.203	9.11×10^{-3}	1.04×10^{-2}	8.88×10^{-3}	2.41×10^{-3}	2.13×10^{-3}
	%	86%	3.9%	4.4%	3.8%	1%	0.9%
Potential Comparative Toxic Unit for ecosystems (ETP-fw)	CTUe	29.5	3.20	9.84	0.674	0.678	26.6
	%	42%	4.5%	14%	0.96%	0.96%	38%
Potential Comparative Toxic Unit for humans - cancer effects (HTP-c) ¹	CTUh	2.17×10^{-8}	5.59×10^{-9}	1.75×10^{-9}	1.80×10^{-10}	8.96×10^{-10}	2.76×10^{-10}
	%	71%	18%	5.8%	0.59%	3%	0.91%
Potential Comparative Toxic Unit for humans - non-cancer effects (HTP-nc) ¹	CTUh	6.81×10^{-8}	6.06×10^{-9}	5.67×10^{-9}	6.57×10^{-10}	1.24×10^{-9}	1.26×10^{-8}
	%	72%	6.4%	6%	0.7%	1.3%	13%
Potential Soil quality index (SQP) ¹	Dimensionless	130	3.91	6.13	1.31	0.886	1.60
	%	90%	2.7%	4.3%	0.91%	0.62%	1.1%

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

Table 32. Resource use for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.
(JINKA PVC Free Flooring (2.5mm-VN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Resources							
Use of renewable primary energy resources used as energy carrier (PERE)	MJ	22.4	0.189	0.915	0.966	4.85×10^{-2}	2.66×10^{-2}
	%	91%	0.77%	3.7%	3.9%	0.2%	0.11%
Use of renewable primary energy resources used as raw materials (PERM)	MJ	23.8	0.00	0.952	0.00	0.00	0.00
	%	96%	0%	3.8%	0%	0%	0%
Total use of renewable primary energy resources (PERT)	MJ	2.29	0.189	-3.73×10^{-2}	0.966	4.85×10^{-2}	2.66×10^{-2}
	%	66%	5.4%	-1.1%	28%	1.4%	0.76%
Use of non renewable primary energy resources used as energy carrier (PENRE)	MJ	83.1	18.4	5.45	1.05	10.1	0.787
	%	70%	15%	4.6%	0.88%	8.5%	0.66%
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ	6.34	1.96	0.483	6.25×10^{-2}	1.13	6.89×10^{-2}
	%	63%	20%	4.8%	0.62%	11%	0.69%
Total use of non renewable primary energy resources (PENRT)	MJ	88.3	20.2	5.61	1.09	11.2	0.848
	%	69%	16%	4.4%	0.86%	8.8%	0.67%
Use of secondary materials (SM)	kg	1.20	1.39×10^{-2}	4.88×10^{-2}	5.71×10^{-3}	2.77×10^{-3}	0.00
	%	94%	1.1%	3.8%	0.45%	0.22%	0%
Use of renewable secondary fuels (RSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of non renewable secondary fuels (NRSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of net fresh water (FW)	m ³	3.48×10^{-2}	1.79×10^{-3}	3.22×10^{-4}	7.15×10^{-3}	5.84×10^{-4}	-1.00×10^{-2}
	%	100%	5.2%	0.93%	21%	1.7%	-29%

Table 33. Waste and outflows for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (2.5mm-VN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Wastes							
Hazardous waste disposed (HWD)	kg	7.72×10^{-4}	1.16×10^{-4}	4.63×10^{-5}	1.35×10^{-5}	7.82×10^{-5}	5.32×10^{-6}
	%	75%	11%	4.5%	1.3%	7.6%	0.52%
Non hazardous waste disposed (NHWD)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Radioactive waste disposed (RWD)	kg	4.91×10^{-5}	2.85×10^{-6}	2.28×10^{-6}	2.27×10^{-6}	8.45×10^{-7}	5.18×10^{-7}
	%	85%	4.9%	3.9%	3.9%	1.5%	0.89%
Components for re-use (CRU)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Materials for recycling (MFR)	kg	0.252	1.33×10^{-2}	1.09×10^{-2}	4.89×10^{-3}	2.41×10^{-3}	0.00
	%	89%	4.7%	3.9%	1.7%	0.85%	0%
Materials for energy recovery (MER)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Exported electrical energy (EEE)	MJ	1.83×10^{-2}	1.10×10^{-3}	8.17×10^{-4}	1.41×10^{-3}	3.07×10^{-4}	0.00
	%	83%	5%	3.7%	6.4%	1.4%	0%
Exported thermal energy (EET)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%

Table 34. Core Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (5.0mm-VN))

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Core Indicators							
Global Warming Potential - total (GWP-total)	kg CO ₂ eq.	7.82	2.27	1.50	3.82x10 ⁻²	1.38	4.55
	%	45%	13%	8.5%	0.22%	7.9%	26%
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO ₂ eq.	8.65	2.26	0.903	4.83x10 ⁻²	1.38	0.311
	%	64%	17%	6.7%	0.36%	10%	2.3%
Global Warming Potential - biogenic (GWP-biogenic)	kg CO ₂ eq.	-0.848	-4.85x10 ⁻⁴	0.595	-3.56x10 ⁻²	1.48x10 ⁻⁴	4.24
	%	-21%	-0.012%	15%	-0.9%	0.0037%	110%
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO ₂ eq.	1.32x10 ⁻²	1.11x10 ⁻³	6.21x10 ⁻⁴	2.54x10 ⁻²	1.36x10 ⁻⁴	8.74x10 ⁻⁵
	%	33%	2.7%	1.5%	63%	0.34%	0.22%
Global warming potential (GWP-GHG)	kg CO ₂ eq.	8.88	2.27	1.27	7.39x10 ⁻²	1.38	3.66
	%	51%	13%	7.3%	0.42%	7.9%	21%
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	3.49x10 ⁻⁶	3.28x10 ⁻⁸	1.48x10 ⁻⁷	1.25x10 ⁻⁹	2.12x10 ⁻⁸	2.09x10 ⁻⁹
	%	94%	0.89%	4%	0.034%	0.57%	0.056%
Acidification potential, Accumulated Exceedance (AP)	mol H ⁺ eq.	4.05x10 ⁻²	4.97x10 ⁻²	5.91x10 ⁻³	3.17x10 ⁻⁴	7.27x10 ⁻³	1.04x10 ⁻³
	%	39%	47%	5.6%	0.3%	6.9%	1%
Eutrophication potential - freshwater (EP-freshwater)	kg P eq.	1.85x10 ⁻³	1.03x10 ⁻⁴	1.06x10 ⁻⁴	1.88x10 ⁻⁵	2.58x10 ⁻⁵	4.66x10 ⁻⁴
	%	72%	4%	4.1%	0.73%	1%	18%
Eutrophication potential - marine (EP-marine)	kg N eq.	1.32x10 ⁻²	1.27x10 ⁻²	2.58x10 ⁻³	2.10x10 ⁻⁴	3.15x10 ⁻³	8.77x10 ⁻³
	%	33%	31%	6.3%	0.52%	7.8%	22%
Eutrophication potential - terrestrial (EP-terrestrial)	mol N eq.	0.124	0.141	2.13x10 ⁻²	8.69x10 ⁻⁴	3.46x10 ⁻²	3.25x10 ⁻³
	%	38%	43%	6.6%	0.27%	11%	1%
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	4.49x10 ⁻²	3.90x10 ⁻²	7.70x10 ⁻³	2.95x10 ⁻⁴	1.38x10 ⁻²	2.09x10 ⁻³
	%	42%	36%	7.2%	0.27%	13%	1.9%
Depletion of abiotic resources - minerals and metals (kg Sb eq) ¹	MJ	3.57x10 ⁻⁵	3.78x10 ⁻⁶	1.88x10 ⁻⁶	6.32x10 ⁻⁷	9.07x10 ⁻⁷	2.21x10 ⁻⁷
	%	83%	8.8%	4.4%	1.5%	2.1%	0.51%
Depletion of abiotic resources - fossil fuels (MJ) ¹	kg Sb eq.	134	29.0	12.1	1.08	17.9	1.97
	%	68%	15%	6.2%	0.55%	9.1%	1%
Water use (m ³ depriv.) ¹	m ³ World eq.	1.79	9.58x10 ⁻²	9.47x10 ⁻²	5.02x10 ⁻²	2.93x10 ⁻²	2.08x10 ⁻²
	%	86%	4.6%	4.5%	2.4%	1.4%	1%

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

Table 35. Additional Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. **(JINKA PVC Free Flooring (5.0mm-VN))**

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Additional Indicators							
Potential incidence of disease due to PM emissions (PM)	Disease Incidence	6.36×10^{-7}	1.02×10^{-7}	8.44×10^{-8}	4.20×10^{-9}	1.79×10^{-7}	1.41×10^{-8}
	%	62%	10%	8.3%	0.41%	18%	1.4%
Potential Human exposure efficiency relative to U235 (IRP) ²	kBq U235 eq.	0.254	1.66×10^{-2}	1.30×10^{-2}	8.88×10^{-3}	5.55×10^{-3}	4.91×10^{-3}
	%	84%	5.5%	4.3%	2.9%	1.8%	1.6%
Potential Comparative Toxic Unit for ecosystems (ETP-fw)	CTUe	41.4	5.85	11.8	0.674	1.56	61.2
	%	34%	4.8%	9.7%	0.55%	1.3%	50%
Potential Comparative Toxic Unit for humans - cancer effects (HTP-c) ¹	CTUh	3.56×10^{-8}	1.02×10^{-8}	2.55×10^{-9}	1.80×10^{-10}	2.06×10^{-9}	6.36×10^{-10}
	%	70%	20%	5%	0.35%	4%	1.2%
Potential Comparative Toxic Unit for humans - non-cancer effects (HTP-nc) ¹	CTUh	9.51×10^{-8}	1.11×10^{-8}	7.67×10^{-9}	6.57×10^{-10}	2.87×10^{-9}	2.91×10^{-8}
	%	65%	7.5%	5.2%	0.45%	2%	20%
Potential Soil quality index (SQP) ¹	Dimensionless	152	7.14	7.27	1.31	2.04	3.67
	%	88%	4.1%	4.2%	0.76%	1.2%	2.1%

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

Table 36. Resource use for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.
(JINKA PVC Free Flooring (5.0mm-VN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Resources							
Use of renewable primary energy resources used as energy carrier (PERE)	MJ	23.2	0.332	0.949	0.966	9.98×10^{-2}	6.11×10^{-2}
	%	91%	1.3%	3.7%	3.8%	0.39%	0.24%
Use of renewable primary energy resources used as raw materials (PERM)	MJ	23.8	0.00	0.952	0.00	0.00	0.00
	%	96%	0%	3.8%	0%	0%	0%
Total use of renewable primary energy resources (PERT)	MJ	3.13	0.332	-2.88×10^{-3}	0.966	9.98×10^{-2}	6.12×10^{-2}
	%	68%	7.2%	-0.063%	21%	2.2%	1.3%
Use of non renewable primary energy resources used as energy carrier (PENRE)	MJ	124	32.3	6.34	1.05	20.8	1.81
	%	66%	17%	3.4%	0.56%	11%	0.97%
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ	10.3	3.45	0.554	6.25×10^{-2}	2.33	0.159
	%	61%	21%	3.3%	0.37%	14%	0.94%
Total use of non renewable primary energy resources (PENRT)	MJ	132	35.5	6.56	1.09	23.0	1.95
	%	66%	18%	3.3%	0.54%	11%	0.97%
Use of secondary materials (SM)	kg	1.23	2.45×10^{-2}	5.02×10^{-2}	5.71×10^{-3}	5.71×10^{-3}	0.00
	%	93%	1.9%	3.8%	0.43%	0.43%	0%
Use of renewable secondary fuels (RSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of non renewable secondary fuels (NRSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of net fresh water (FW)	m ³	4.26×10^{-2}	3.15×10^{-3}	-4.38×10^{-6}	7.15×10^{-3}	1.20×10^{-3}	-2.31×10^{-2}
	%	140%	10%	-0.014%	23%	3.9%	-75%

Table 37. Waste and outflows for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (5.0mm-VN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Wastes							
Hazardous waste disposed (HWD)	kg	1.11×10^{-3}	2.04×10^{-4}	5.34×10^{-5}	1.35×10^{-5}	1.61×10^{-4}	1.23×10^{-5}
	%	71%	13%	3.4%	0.87%	10%	0.79%
Non hazardous waste disposed (NHWD)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Radioactive waste disposed (RWD)	kg	6.17×10^{-5}	5.01×10^{-6}	2.79×10^{-6}	2.27×10^{-6}	1.74×10^{-6}	1.19×10^{-6}
	%	83%	6.7%	3.7%	3%	2.3%	1.6%
Components for re-use (CRU)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Materials for recycling (MFR)	kg	0.281	2.34×10^{-2}	1.22×10^{-2}	4.89×10^{-3}	4.96×10^{-3}	0.00
	%	86%	7.2%	3.7%	1.5%	1.5%	0%
Materials for energy recovery (MER)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Exported electrical energy (EEE)	MJ	2.29×10^{-2}	1.93×10^{-3}	9.94×10^{-4}	1.41×10^{-3}	6.32×10^{-4}	0.00
	%	82%	6.9%	3.6%	5.1%	2.3%	0%
Exported thermal energy (EET)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%

Table 38. Core Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (1.2mm-CN))

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Core Indicators							
Global Warming Potential - total (GWP-total)	kg CO ₂ eq.	4.71	0.660	1.49	3.82x10 ⁻²	0.288	0.952
	%	58%	8.1%	18%	0.47%	3.5%	12%
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO ₂ eq.	5.62	0.659	0.778	4.83x10 ⁻²	0.288	6.50x10 ⁻²
	%	75%	8.8%	10%	0.65%	3.9%	0.87%
Global Warming Potential - biogenic (GWP-biogenic)	kg CO ₂ eq.	-0.922	-1.67x10 ⁻⁴	0.715	-3.56x10 ⁻²	3.09x10 ⁻⁵	0.887
	%	-140%	-0.026%	110%	-5.5%	0.0048%	140%
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO ₂ eq.	1.27x10 ⁻²	3.31x10 ⁻⁴	5.80x10 ⁻⁴	2.54x10 ⁻²	2.85x10 ⁻⁵	1.83x10 ⁻⁵
	%	33%	0.85%	1.5%	65%	0.073%	0.047%
Global warming potential (GWP-GHG)	kg CO ₂ eq.	5.82	0.660	1.24	7.39x10 ⁻²	0.288	0.765
	%	66%	7.5%	14%	0.84%	3.3%	8.7%
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	8.80x10 ⁻⁷	9.53x10 ⁻⁹	4.33x10 ⁻⁸	1.25x10 ⁻⁹	4.43x10 ⁻⁹	4.37x10 ⁻¹⁰
	%	94%	1%	4.6%	0.13%	0.47%	0.047%
Acidification potential, Accumulated Exceedance (AP)	mol H ⁺ eq.	2.50x10 ⁻²	1.64x10 ⁻²	4.36x10 ⁻³	3.17x10 ⁻⁴	1.52x10 ⁻³	2.18x10 ⁻⁴
	%	52%	34%	9.1%	0.66%	3.2%	0.46%
Eutrophication potential - freshwater (EP-freshwater)	kg P eq.	1.77x10 ⁻³	2.65x10 ⁻⁵	8.70x10 ⁻⁵	1.88x10 ⁻⁵	5.40x10 ⁻⁶	9.75x10 ⁻⁵
	%	88%	1.3%	4.3%	0.94%	0.27%	4.9%
Eutrophication potential - marine (EP-marine)	kg N eq.	7.46x10 ⁻³	4.13x10 ⁻³	2.14x10 ⁻³	2.10x10 ⁻⁴	6.60x10 ⁻⁴	1.83x10 ⁻³
	%	45%	25%	13%	1.3%	4%	11%
Eutrophication potential - terrestrial (EP-terrestrial)	mol N eq.	6.09x10 ⁻²	4.58x10 ⁻²	1.69x10 ⁻²	8.69x10 ⁻⁴	7.23x10 ⁻³	6.80x10 ⁻⁴
	%	46%	35%	13%	0.66%	5.5%	0.51%
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	2.60x10 ⁻²	1.26x10 ⁻²	6.69x10 ⁻³	2.95x10 ⁻⁴	2.88x10 ⁻³	4.36x10 ⁻⁴
	%	53%	26%	14%	0.6%	5.9%	0.89%
Depletion of abiotic resources - minerals and metals (kg Sb eq) ¹	MJ	2.67x10 ⁻⁵	9.25x10 ⁻⁷	1.46x10 ⁻⁶	6.32x10 ⁻⁷	1.90x10 ⁻⁷	4.63x10 ⁻⁸
	%	89%	3.1%	4.9%	2.1%	0.63%	0.15%
Depletion of abiotic resources - fossil fuels (MJ) ¹	kg Sb eq.	104	8.30	11.1	1.08	3.74	0.412
	%	81%	6.4%	8.6%	0.84%	2.9%	0.32%
Water use (m ³ depriv.) ¹	m ³ World eq.	2.36	2.57x10 ⁻²	0.116	5.02x10 ⁻²	6.13x10 ⁻³	4.35x10 ⁻³
	%	92%	1%	4.5%	2%	0.24%	0.17%

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

Table 39. Additional Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. **(JINKA PVC Free Flooring (1.2mm-CN))**

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Additional Indicators							
Potential incidence of disease due to PM emissions (PM)	Disease Incidence	3.59×10^{-7}	2.57×10^{-8}	8.02×10^{-8}	4.20×10^{-9}	3.74×10^{-8}	2.94×10^{-9}
	%	70%	5.1%	16%	0.82%	7.3%	0.58%
Potential Human exposure efficiency relative to U235 (IRP) ²	kBq U235 eq.	0.334	4.39×10^{-3}	1.61×10^{-2}	8.88×10^{-3}	1.16×10^{-3}	1.03×10^{-3}
	%	91%	1.2%	4.4%	2.4%	0.32%	0.28%
Potential Comparative Toxic Unit for ecosystems (ETP-fw)	CTUe	33.3	1.58	15.6	0.674	0.326	12.8
	%	52%	2.5%	24%	1%	0.51%	20%
Potential Comparative Toxic Unit for humans - cancer effects (HTP-c) ¹	CTUh	1.66×10^{-8}	2.89×10^{-9}	1.62×10^{-9}	1.80×10^{-10}	4.32×10^{-10}	1.33×10^{-10}
	%	76%	13%	7.4%	0.83%	2%	0.61%
Potential Comparative Toxic Unit for humans - non-cancer effects (HTP-nc) ¹	CTUh	6.37×10^{-8}	2.78×10^{-9}	6.31×10^{-9}	6.57×10^{-10}	6.00×10^{-10}	6.09×10^{-9}
	%	80%	3.5%	7.9%	0.82%	0.75%	7.6%
Potential Soil quality index (SQP) ¹	Dimensionless	122	1.52	6.02	1.31	0.427	0.769
	%	92%	1.2%	4.6%	0.99%	0.32%	0.58%

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

Table 40. Resource use for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.
(JINKA PVC Free Flooring (1.2mm-CN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Resources							
Use of renewable primary energy resources used as energy carrier (PERE)	MJ	23.8	8.30×10^{-2}	0.985	0.966	2.30×10^{-2}	1.28×10^{-2}
	%	92%	0.32%	3.8%	3.7%	0.089%	0.049%
Use of renewable primary energy resources used as raw materials (PERM)	MJ	23.8	0.00	0.952	0.00	0.00	0.00
	%	96%	0%	3.8%	0%	0%	0%
Total use of renewable primary energy resources (PERT)	MJ	1.44	8.30×10^{-2}	3.26×10^{-2}	0.966	2.30×10^{-2}	1.28×10^{-2}
	%	56%	3.2%	1.3%	38%	0.9%	0.5%
Use of non renewable primary energy resources used as energy carrier (PENRE)	MJ	97.7	8.73	8.66	1.05	4.81	0.379
	%	81%	7.2%	7.1%	0.86%	4%	0.31%
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ	6.62	0.940	0.790	6.25×10^{-2}	0.538	3.32×10^{-2}
	%	74%	10%	8.8%	0.7%	6%	0.37%
Total use of non renewable primary energy resources (PENRT)	MJ	103	9.61	8.17	1.09	5.31	0.409
	%	81%	7.5%	6.4%	0.86%	4.2%	0.32%
Use of secondary materials (SM)	kg	1.23	6.51×10^{-3}	5.07×10^{-2}	5.71×10^{-3}	1.32×10^{-3}	0.00
	%	95%	0.5%	3.9%	0.44%	0.1%	0%
Use of renewable secondary fuels (RSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of non renewable secondary fuels (NRSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of net fresh water (FW)	m ³	5.59×10^{-2}	7.74×10^{-4}	4.66×10^{-4}	7.15×10^{-3}	2.78×10^{-4}	-4.84×10^{-3}
	%	94%	1.3%	0.78%	12%	0.47%	-8.1%

Table 41. Waste and outflows for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (1.2mm-CN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Wastes							
Hazardous waste disposed (HWD)	kg	1.29×10^{-3}	5.32×10^{-5}	8.78×10^{-5}	1.35×10^{-5}	3.72×10^{-5}	2.56×10^{-6}
	%	87%	3.6%	5.9%	0.91%	2.5%	0.17%
Non hazardous waste disposed (NHWD)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Radioactive waste disposed (RWD)	kg	8.15×10^{-5}	1.25×10^{-6}	3.80×10^{-6}	2.27×10^{-6}	4.02×10^{-7}	2.49×10^{-7}
	%	91%	1.4%	4.2%	2.5%	0.45%	0.28%
Components for re-use (CRU)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Materials for recycling (MFR)	kg	0.277	6.31×10^{-3}	1.24×10^{-2}	4.89×10^{-3}	1.15×10^{-3}	0.00
	%	92%	2.1%	4.1%	1.6%	0.38%	0%
Materials for energy recovery (MER)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Exported electrical energy (EEE)	MJ	3.06×10^{-2}	4.91×10^{-4}	1.38×10^{-3}	1.41×10^{-3}	1.46×10^{-4}	0.00
	%	90%	1.4%	4%	4.1%	0.43%	0%
Exported thermal energy (EET)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%

Table 42. Core Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (2.0mm-CN))

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Core Indicators							
Global Warming Potential - total (GWP-total)	kg CO ₂ eq.	4.94	0.849	1.55	3.82x10 ⁻²	0.502	1.66
	%	52%	8.9%	16%	0.4%	5.3%	17%
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO ₂ eq.	5.84	0.849	0.803	4.83x10 ⁻²	0.502	0.113
	%	72%	10%	9.8%	0.59%	6.2%	1.4%
Global Warming Potential - biogenic (GWP-biogenic)	kg CO ₂ eq.	-0.915	-2.15x10 ⁻⁴	0.742	-3.56x10 ⁻²	5.37x10 ⁻⁵	1.54
	%	-69%	-0.016%	56%	-2.7%	0.004%	120%
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO ₂ eq.	1.28x10 ⁻²	4.26x10 ⁻⁴	5.89x10 ⁻⁴	2.54x10 ⁻²	4.96x10 ⁻⁵	3.18x10 ⁻⁵
	%	33%	1.1%	1.5%	65%	0.13%	0.081%
Global warming potential (GWP-GHG)	kg CO ₂ eq.	6.05	0.849	1.29	7.39x10 ⁻²	0.502	1.33
	%	60%	8.4%	13%	0.73%	5%	13%
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	1.34x10 ⁻⁶	1.23x10 ⁻⁸	6.20x10 ⁻⁸	1.25x10 ⁻⁹	7.71x10 ⁻⁹	7.60x10 ⁻¹⁰
	%	94%	0.86%	4.4%	0.088%	0.54%	0.053%
Acidification potential, Accumulated Exceedance (AP)	mol H ⁺ eq.	2.61x10 ⁻²	2.10x10 ⁻²	4.64x10 ⁻³	3.17x10 ⁻⁴	2.65x10 ⁻³	3.80x10 ⁻⁴
	%	47%	38%	8.4%	0.58%	4.8%	0.69%
Eutrophication potential - freshwater (EP-freshwater)	kg P eq.	1.81x10 ⁻³	3.41x10 ⁻⁵	9.18x10 ⁻⁵	1.88x10 ⁻⁵	9.40x10 ⁻⁶	1.70x10 ⁻⁴
	%	85%	1.6%	4.3%	0.88%	0.44%	8%
Eutrophication potential - marine (EP-marine)	kg N eq.	7.74x10 ⁻³	5.31x10 ⁻³	2.26x10 ⁻³	2.10x10 ⁻⁴	1.15x10 ⁻³	3.19x10 ⁻³
	%	39%	27%	11%	1.1%	5.8%	16%
Eutrophication potential - terrestrial (EP-terrestrial)	mol N eq.	6.39x10 ⁻²	5.89x10 ⁻²	1.78x10 ⁻²	8.69x10 ⁻⁴	1.26x10 ⁻²	1.18x10 ⁻³
	%	41%	38%	11%	0.56%	8.1%	0.76%
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	2.72x10 ⁻²	1.62x10 ⁻²	6.96x10 ⁻³	2.95x10 ⁻⁴	5.01x10 ⁻³	7.59x10 ⁻⁴
	%	48%	29%	12%	0.52%	8.9%	1.3%
Depletion of abiotic resources - minerals and metals (kg Sb eq) ¹	MJ	2.81x10 ⁻⁵	1.19x10 ⁻⁶	1.54x10 ⁻⁶	6.32x10 ⁻⁷	3.30x10 ⁻⁷	8.06x10 ⁻⁸
	%	88%	3.7%	4.8%	2%	1%	0.25%
Depletion of abiotic resources - fossil fuels (MJ) ¹	kg Sb eq.	108	10.7	11.4	1.08	6.51	0.718
	%	78%	7.7%	8.2%	0.78%	4.7%	0.52%
Water use (m ³ depriv.) ¹	m ³ World eq.	2.40	3.30x10 ⁻²	0.118	5.02x10 ⁻²	1.07x10 ⁻²	7.57x10 ⁻³
	%	92%	1.3%	4.5%	1.9%	0.41%	0.29%

¹) The results of this environmental impact indicator shall be used with care as uncertainties on these results are high or as there is limited experience with the indicator.

Table 43. Additional Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. **(JINKA PVC Free Flooring (2.0mm-CN))**

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Additional Indicators							
Potential incidence of disease due to PM emissions (PM)	Disease Incidence	3.74×10^{-7}	3.31×10^{-8}	8.21×10^{-8}	4.20×10^{-9}	6.51×10^{-8}	5.12×10^{-9}
	%	66%	5.9%	15%	0.75%	12%	0.91%
Potential Human exposure efficiency relative to U235 (IRP) ²	kBq U235 eq.	0.341	5.65×10^{-3}	1.64×10^{-2}	8.88×10^{-3}	2.02×10^{-3}	1.79×10^{-3}
	%	91%	1.5%	4.4%	2.4%	0.54%	0.48%
Potential Comparative Toxic Unit for ecosystems (ETP-fw)	CTUe	34.4	2.03	16.1	0.674	0.568	22.3
	%	45%	2.7%	21%	0.89%	0.75%	29%
Potential Comparative Toxic Unit for humans - cancer effects (HTP-c) ¹	CTUh	1.74×10^{-8}	3.72×10^{-9}	1.70×10^{-9}	1.80×10^{-10}	7.52×10^{-10}	2.32×10^{-10}
	%	73%	15%	7.1%	0.75%	3.1%	0.96%
Potential Comparative Toxic Unit for humans - non-cancer effects (HTP-nc) ¹	CTUh	6.60×10^{-8}	3.57×10^{-9}	6.62×10^{-9}	6.57×10^{-10}	1.04×10^{-9}	1.06×10^{-8}
	%	75%	4%	7.5%	0.74%	1.2%	12%
Potential Soil quality index (SQP) ¹	Dimensionless	123	1.96	6.12	1.31	0.743	1.34
	%	91%	1.5%	4.5%	0.97%	0.55%	0.99%

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

Table 44. Resource use for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.
(JINKA PVC Free Flooring (2.0mm-CN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Resources							
Use of renewable primary energy resources used as energy carrier (PERE)	MJ	23.9	0.112	0.986	0.966	3.99×10^{-2}	2.23×10^{-2}
	%	92%	0.43%	3.8%	3.7%	0.15%	0.085%
Use of renewable primary energy resources used as raw materials (PERM)	MJ	23.8	0.00	0.952	0.00	0.00	0.00
	%	96%	0%	3.8%	0%	0%	0%
Total use of renewable primary energy resources (PERT)	MJ	1.55	0.112	3.38×10^{-2}	0.966	3.99×10^{-2}	2.23×10^{-2}
	%	57%	4.1%	1.2%	36%	1.5%	0.82%
Use of non renewable primary energy resources used as energy carrier (PENRE)	MJ	101	11.8	7.96	1.05	8.32	0.660
	%	77%	9%	6.1%	0.8%	6.3%	0.5%
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ	6.94	1.27	0.707	6.25×10^{-2}	0.931	5.78×10^{-2}
	%	70%	13%	7.1%	0.63%	9.3%	0.58%
Total use of non renewable primary energy resources (PENRT)	MJ	107	12.9	7.39	1.09	9.19	0.711
	%	77%	9.4%	5.4%	0.79%	6.7%	0.52%
Use of secondary materials (SM)	kg	1.23	8.77×10^{-3}	5.07×10^{-2}	5.71×10^{-3}	2.28×10^{-3}	0.00
	%	95%	0.67%	3.9%	0.44%	0.18%	0%
Use of renewable secondary fuels (RSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of non renewable secondary fuels (NRSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of net fresh water (FW)	m ³	5.68×10^{-2}	1.04×10^{-3}	2.54×10^{-4}	7.15×10^{-3}	4.81×10^{-4}	-8.42×10^{-3}
	%	99%	1.8%	0.44%	12%	0.84%	-15%

Table 45. Waste and outflows for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (2.0mm-CN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Wastes							
Hazardous waste disposed (HWD)	kg	1.32×10^{-3}	7.16×10^{-5}	8.24×10^{-5}	1.35×10^{-5}	6.44×10^{-5}	4.46×10^{-6}
	%	85%	4.6%	5.3%	0.86%	4.1%	0.29%
Non hazardous waste disposed (NHWD)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Radioactive waste disposed (RWD)	kg	8.31×10^{-5}	1.68×10^{-6}	3.81×10^{-6}	2.27×10^{-6}	6.96×10^{-7}	4.34×10^{-7}
	%	90%	1.8%	4.1%	2.5%	0.76%	0.47%
Components for re-use (CRU)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Materials for recycling (MFR)	kg	0.280	8.50×10^{-3}	1.23×10^{-2}	4.89×10^{-3}	1.98×10^{-3}	0.00
	%	91%	2.8%	4%	1.6%	0.64%	0%
Materials for energy recovery (MER)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Exported electrical energy (EEE)	MJ	3.12×10^{-2}	6.61×10^{-4}	1.38×10^{-3}	1.41×10^{-3}	2.53×10^{-4}	0.00
	%	89%	1.9%	3.9%	4%	0.73%	0%
Exported thermal energy (EET)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%

Table 46. Core Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (2.5mm-CN))

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Core Indicators							
Global Warming Potential - total (GWP-total)	kg CO ₂ eq.	5.04	0.934	1.57	3.82x10 ⁻²	0.599	1.98
	%	50%	9.2%	15%	0.38%	5.9%	19%
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO ₂ eq.	5.94	0.934	0.816	4.83x10 ⁻²	0.598	0.135
	%	70%	11%	9.6%	0.57%	7.1%	1.6%
Global Warming Potential - biogenic (GWP-biogenic)	kg CO ₂ eq.	-0.912	-2.37x10 ⁻⁴	0.754	-3.56x10 ⁻²	6.41x10 ⁻⁵	1.84
	%	-55%	-0.014%	46%	-2.2%	0.0039%	110%
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO ₂ eq.	1.29x10 ⁻²	4.69x10 ⁻⁴	5.93x10 ⁻⁴	2.54x10 ⁻²	5.92x10 ⁻⁵	3.80x10 ⁻⁵
	%	33%	1.2%	1.5%	64%	0.15%	0.096%
Global warming potential (GWP-GHG)	kg CO ₂ eq.	6.15	0.935	1.31	7.39x10 ⁻²	0.599	1.59
	%	58%	8.8%	12%	0.69%	5.6%	15%
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	1.64x10 ⁻⁶	1.35x10 ⁻⁸	7.43x10 ⁻⁸	1.25x10 ⁻⁹	9.19x10 ⁻⁹	9.07x10 ⁻¹⁰
	%	94%	0.77%	4.3%	0.071%	0.53%	0.052%
Acidification potential, Accumulated Exceedance (AP)	mol H ⁺ eq.	2.65x10 ⁻²	2.32x10 ⁻²	4.77x10 ⁻³	3.17x10 ⁻⁴	3.16x10 ⁻³	4.53x10 ⁻⁴
	%	45%	40%	8.2%	0.54%	5.4%	0.78%
Eutrophication potential - freshwater (EP-freshwater)	kg P eq.	1.82x10 ⁻³	3.76x10 ⁻⁵	9.38x10 ⁻⁵	1.88x10 ⁻⁵	1.12x10 ⁻⁵	2.02x10 ⁻⁴
	%	83%	1.7%	4.3%	0.86%	0.51%	9.3%
Eutrophication potential - marine (EP-marine)	kg N eq.	7.87x10 ⁻³	5.85x10 ⁻³	2.33x10 ⁻³	2.10x10 ⁻⁴	1.37x10 ⁻³	3.81x10 ⁻³
	%	37%	27%	11%	0.98%	6.4%	18%
Eutrophication potential - terrestrial (EP-terrestrial)	mol N eq.	6.52x10 ⁻²	6.49x10 ⁻²	1.82x10 ⁻²	8.69x10 ⁻⁴	1.50x10 ⁻²	1.41x10 ⁻³
	%	39%	39%	11%	0.52%	9.1%	0.85%
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	2.76x10 ⁻²	1.78x10 ⁻²	7.09x10 ⁻³	2.95x10 ⁻⁴	5.97x10 ⁻³	9.05x10 ⁻⁴
	%	46%	30%	12%	0.49%	10%	1.5%
Depletion of abiotic resources - minerals and metals (kg Sb eq) ¹	MJ	2.88x10 ⁻⁵	1.31x10 ⁻⁶	1.57x10 ⁻⁶	6.32x10 ⁻⁷	3.94x10 ⁻⁷	9.61x10 ⁻⁸
	%	88%	4%	4.8%	1.9%	1.2%	0.29%
Depletion of abiotic resources - fossil fuels (MJ) ¹	kg Sb eq.	110	11.8	11.6	1.08	7.76	0.856
	%	77%	8.2%	8.1%	0.76%	5.4%	0.6%
Water use (m ³ depriv.) ¹	m ³ World eq.	2.41	3.63x10 ⁻²	0.119	5.02x10 ⁻²	1.27x10 ⁻²	9.03x10 ⁻³
	%	91%	1.4%	4.5%	1.9%	0.48%	0.34%

¹ The results of this environmental impact indicator shall be used with care as uncertainties on these results are high or as there is limited experience with the indicator.

Table 47. Additional Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. **(JINKA PVC Free Flooring (2.5mm-CN))**

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Additional Indicators							
Potential incidence of disease due to PM emissions (PM)	Disease Incidence	3.81×10^{-7}	3.64×10^{-8}	8.31×10^{-8}	4.20×10^{-9}	7.77×10^{-8}	6.11×10^{-9}
	%	65%	6.2%	14%	0.71%	13%	1%
Potential Human exposure efficiency relative to U235 (IRP) ²	kBq U235 eq.	0.342	6.22×10^{-3}	1.65×10^{-2}	8.88×10^{-3}	2.41×10^{-3}	2.13×10^{-3}
	%	90%	1.6%	4.4%	2.3%	0.64%	0.56%
Potential Comparative Toxic Unit for ecosystems (ETP-fw)	CTUe	34.8	2.24	16.3	0.674	0.678	26.6
	%	43%	2.8%	20%	0.83%	0.83%	33%
Potential Comparative Toxic Unit for humans - cancer effects (HTP-c) ¹	CTUh	1.78×10^{-8}	4.10×10^{-9}	1.74×10^{-9}	1.80×10^{-10}	8.96×10^{-10}	2.76×10^{-10}
	%	71%	16%	6.9%	0.72%	3.6%	1.1%
Potential Comparative Toxic Unit for humans - non-cancer effects (HTP-nc) ¹	CTUh	6.70×10^{-8}	3.93×10^{-9}	6.77×10^{-9}	6.57×10^{-10}	1.24×10^{-9}	1.26×10^{-8}
	%	73%	4.3%	7.3%	0.71%	1.3%	14%
Potential Soil quality index (SQP) ¹	Dimensionless	124	2.15	6.17	1.31	0.886	1.60
	%	91%	1.6%	4.5%	0.97%	0.65%	1.2%

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

Table 48. Resource use for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.
(JINKA PVC Free Flooring (2.5mm-CN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Resources							
Use of renewable primary energy resources used as energy carrier (PERE)	MJ	24.0	0.126	0.985	0.966	4.85×10^{-2}	2.66×10^{-2}
	%	92%	0.48%	3.8%	3.7%	0.19%	0.1%
Use of renewable primary energy resources used as raw materials (PERM)	MJ	23.8	0.00	0.952	0.00	0.00	0.00
	%	96%	0%	3.8%	0%	0%	0%
Total use of renewable primary energy resources (PERT)	MJ	1.57	0.126	3.26×10^{-2}	0.966	4.85×10^{-2}	2.66×10^{-2}
	%	57%	4.6%	1.2%	35%	1.8%	0.96%
Use of non renewable primary energy resources used as energy carrier (PENRE)	MJ	103	13.3	7.45	1.05	10.1	0.787
	%	76%	9.8%	5.5%	0.77%	7.5%	0.58%
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ	7.07	1.43	0.649	6.25×10^{-2}	1.13	6.89×10^{-2}
	%	68%	14%	6.2%	0.6%	11%	0.66%
Total use of non renewable primary energy resources (PENRT)	MJ	108	14.6	6.83	1.09	11.2	0.848
	%	76%	10%	4.8%	0.76%	7.8%	0.59%
Use of secondary materials (SM)	kg	1.24	9.91×10^{-3}	5.06×10^{-2}	5.71×10^{-3}	2.77×10^{-3}	0.00
	%	95%	0.76%	3.9%	0.44%	0.21%	0%
Use of renewable secondary fuels (RSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of non renewable secondary fuels (NRSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of net fresh water (FW)	m ³	5.69×10^{-2}	1.18×10^{-3}	1.24×10^{-4}	7.15×10^{-3}	5.84×10^{-4}	-1.00×10^{-2}
	%	100%	2.1%	0.22%	13%	1%	-18%

Table 49. Waste and outflows for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (2.5mm-CN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Wastes							
Hazardous waste disposed (HWD)	kg	1.33×10^{-3}	8.10×10^{-5}	7.81×10^{-5}	1.35×10^{-5}	7.82×10^{-5}	5.32×10^{-6}
	%	84%	5.1%	4.9%	0.85%	4.9%	0.34%
Non hazardous waste disposed (NHWD)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Radioactive waste disposed (RWD)	kg	8.35×10^{-5}	1.90×10^{-6}	3.78×10^{-6}	2.27×10^{-6}	8.45×10^{-7}	5.18×10^{-7}
	%	90%	2.1%	4.1%	2.5%	0.91%	0.56%
Components for re-use (CRU)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Materials for recycling (MFR)	kg	0.280	9.62×10^{-3}	1.23×10^{-2}	4.89×10^{-3}	2.41×10^{-3}	0.00
	%	91%	3.1%	4%	1.6%	0.78%	0%
Materials for energy recovery (MER)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Exported electrical energy (EEE)	MJ	3.13×10^{-2}	7.47×10^{-4}	1.36×10^{-3}	1.41×10^{-3}	3.07×10^{-4}	0.00
	%	89%	2.1%	3.9%	4%	0.88%	0%
Exported thermal energy (EET)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%

Table 50. Core Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (5.0mm-CN))

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Core Indicators							
Global Warming Potential - total (GWP-total)	kg CO ₂ eq.	5.92	1.63	1.76	3.82x10 ⁻²	1.38	4.55
	%	39%	11%	12%	0.25%	9%	30%
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO ₂ eq.	6.79	1.62	0.913	4.83x10 ⁻²	1.38	0.311
	%	61%	15%	8.2%	0.44%	12%	2.8%
Global Warming Potential - biogenic (GWP-biogenic)	kg CO ₂ eq.	-0.887	-4.12x10 ⁻⁴	0.851	-3.56x10 ⁻²	1.48x10 ⁻⁴	4.24
	%	-21%	-0.0099%	20%	-0.85%	0.0035%	100%
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO ₂ eq.	1.33x10 ⁻²	8.16x10 ⁻⁴	6.29x10 ⁻⁴	2.54x10 ⁻²	1.36x10 ⁻⁴	8.74x10 ⁻⁵
	%	33%	2%	1.6%	63%	0.34%	0.22%
Global warming potential (GWP-GHG)	kg CO ₂ eq.	7.02	1.63	1.49	7.39x10 ⁻²	1.38	3.66
	%	46%	11%	9.8%	0.48%	9%	24%
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	3.48x10 ⁻⁶	2.35x10 ⁻⁸	1.49x10 ⁻⁷	1.25x10 ⁻⁹	2.12x10 ⁻⁸	2.09x10 ⁻⁹
	%	95%	0.64%	4%	0.034%	0.58%	0.057%
Acidification potential, Accumulated Exceedance (AP)	mol H ⁺ eq.	3.03x10 ⁻²	4.03x10 ⁻²	5.78x10 ⁻³	3.17x10 ⁻⁴	7.27x10 ⁻³	1.04x10 ⁻³
	%	36%	47%	6.8%	0.37%	8.5%	1.2%
Eutrophication potential - freshwater (EP-freshwater)	kg P eq.	1.97x10 ⁻³	6.53x10 ⁻⁵	1.12x10 ⁻⁴	1.88x10 ⁻⁵	2.58x10 ⁻⁵	4.66x10 ⁻⁴
	%	74%	2.5%	4.2%	0.71%	0.97%	18%
Eutrophication potential - marine (EP-marine)	kg N eq.	8.88x10 ⁻³	1.02x10 ⁻²	2.80x10 ⁻³	2.10x10 ⁻⁴	3.15x10 ⁻³	8.77x10 ⁻³
	%	26%	30%	8.2%	0.62%	9.3%	26%
Eutrophication potential - terrestrial (EP-terrestrial)	mol N eq.	7.57x10 ⁻²	0.113	2.13x10 ⁻²	8.69x10 ⁻⁴	3.46x10 ⁻²	3.25x10 ⁻³
	%	30%	45%	8.6%	0.35%	14%	1.3%
Photochemical Ozone Creation Potential (POCP)	kg NMVOC eq.	3.19x10 ⁻²	3.10x10 ⁻²	8.12x10 ⁻³	2.95x10 ⁻⁴	1.38x10 ⁻²	2.09x10 ⁻³
	%	37%	36%	9.3%	0.34%	16%	2.4%
Depletion of abiotic resources - minerals and metals (kg Sb eq) ¹	MJ	3.43x10 ⁻⁵	2.28x10 ⁻⁶	1.85x10 ⁻⁶	6.32x10 ⁻⁷	9.07x10 ⁻⁷	2.21x10 ⁻⁷
	%	85%	5.7%	4.6%	1.6%	2.3%	0.55%
Depletion of abiotic resources - fossil fuels (MJ) ¹	kg Sb eq.	125	20.4	12.9	1.08	17.9	1.97
	%	70%	11%	7.2%	0.6%	10%	1.1%
Water use (m ³ depriv.) ¹	m ³ World eq.	2.58	6.32x10 ⁻²	0.128	5.02x10 ⁻²	2.93x10 ⁻²	2.08x10 ⁻²
	%	90%	2.2%	4.4%	1.7%	1%	0.72%

¹⁾ The results of this environmental impact indicator shall be used with care as uncertainties on these results are high or as there is limited experience with the indicator.

Table 51. Additional Life Cycle Impact Assessment results for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. **(JINKA PVC Free Flooring (5.0mm-CN))**

Impact Category	Unit	A1-A3	A4	A5	B2	C2	C4
Additional Indicators							
Potential incidence of disease due to PM emissions (PM)	Disease Incidence	4.34x10 ⁻⁷	6.34x10 ⁻⁸	9.03x10 ⁻⁸	4.20x10 ⁻⁹	1.79x10 ⁻⁷	1.41x10 ⁻⁸
	%	55%	8.1%	12%	0.53%	23%	1.8%
Potential Human exposure efficiency relative to U235 (IRP) ²	kBq U235 eq.	0.369	1.08x10 ⁻²	1.80x10 ⁻²	8.88x10 ⁻³	5.55x10 ⁻³	4.91x10 ⁻³
	%	88%	2.6%	4.3%	2.1%	1.3%	1.2%
Potential Comparative Toxic Unit for ecosystems (ETP-fw)	CTUe	38.9	3.89	17.9	0.674	1.56	61.2
	%	31%	3.1%	14%	0.54%	1.3%	49%
Potential Comparative Toxic Unit for humans - cancer effects (HTP-c) ¹	CTUh	2.10x10 ⁻⁸	7.13x10 ⁻⁹	2.04x10 ⁻⁹	1.80x10 ⁻¹⁰	2.06x10 ⁻⁹	6.36x10 ⁻¹⁰
	%	64%	22%	6.2%	0.55%	6.2%	1.9%
Potential Comparative Toxic Unit for humans - non-cancer effects (HTP-nc) ¹	CTUh	7.53x10 ⁻⁸	6.84x10 ⁻⁹	7.93x10 ⁻⁹	6.57x10 ⁻¹⁰	2.87x10 ⁻⁹	2.91x10 ⁻⁸
	%	61%	5.6%	6.5%	0.54%	2.3%	24%
Potential Soil quality index (SQP) ¹	Dimensionless	128	3.75	6.54	1.31	2.04	3.67
	%	88%	2.6%	4.5%	0.9%	1.4%	2.5%

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

Table 52. Resource use for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.
(JINKA PVC Free Flooring (2.5mm-CN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Resources							
Use of renewable primary energy resources used as energy carrier (PERE)	MJ	24.4	0.214	1.00	0.966	9.98x10 ⁻²	6.11x10 ⁻²
	%	91%	0.8%	3.7%	3.6%	0.37%	0.23%
Use of renewable primary energy resources used as raw materials (PERM)	MJ	23.8	0.00	0.952	0.00	0.00	0.00
	%	96%	0%	3.8%	0%	0%	0%
Total use of renewable primary energy resources (PERT)	MJ	2.02	0.214	4.94x10 ⁻²	0.966	9.98x10 ⁻²	6.12x10 ⁻²
	%	59%	6.3%	1.4%	28%	2.9%	1.8%
Use of non renewable primary energy resources used as energy carrier (PENRE)	MJ	117	22.5	7.10	1.05	20.8	1.81
	%	69%	13%	4.2%	0.62%	12%	1.1%
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ	8.29	2.43	0.592	6.25x10 ⁻²	2.33	0.159
	%	60%	18%	4.3%	0.45%	17%	1.1%
Total use of non renewable primary energy resources (PENRT)	MJ	123	24.8	6.41	1.09	23.0	1.95
	%	68%	14%	3.6%	0.6%	13%	1.1%
Use of secondary materials (SM)	kg	1.25	1.68x10 ⁻²	5.09x10 ⁻²	5.71x10 ⁻³	5.71x10 ⁻³	0.00
	%	94%	1.3%	3.8%	0.43%	0.43%	0%
Use of renewable secondary fuels (RSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of non renewable secondary fuels (NRSF)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Use of net fresh water (FW)	m ³	6.08x10 ⁻²	2.00x10 ⁻³	-3.79x10 ⁻⁴	7.15x10 ⁻³	1.20x10 ⁻³	-2.31x10 ⁻²
	%	130%	4.2%	-0.79%	15%	2.5%	-48%

Table 53. Waste and outflows for the flooring products over a 1-yr time horizon. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits. (JINKA PVC Free Flooring (2.5mm-CN))

Parameter	Unit	A1-A3	A4	A5	B2	C2	C4
Wastes							
Hazardous waste disposed (HWD)	kg	1.47×10^{-3}	1.37×10^{-4}	7.59×10^{-5}	1.35×10^{-5}	1.61×10^{-4}	1.23×10^{-5}
	%	79%	7.3%	4.1%	0.72%	8.6%	0.66%
Non hazardous waste disposed (NHWD)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Radioactive waste disposed (RWD)	kg	9.02×10^{-5}	3.22×10^{-6}	4.02×10^{-6}	2.27×10^{-6}	1.74×10^{-6}	1.19×10^{-6}
	%	88%	3.1%	3.9%	2.2%	1.7%	1.2%
Components for re-use (CRU)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Materials for recycling (MFR)	kg	0.291	1.63×10^{-2}	1.26×10^{-2}	4.89×10^{-3}	4.96×10^{-3}	0.00
	%	88%	4.9%	3.8%	1.5%	1.5%	0%
Materials for energy recovery (MER)	kg	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%
Exported electrical energy (EEE)	MJ	3.38×10^{-2}	1.27×10^{-3}	1.45×10^{-3}	1.41×10^{-3}	6.32×10^{-4}	0.00
	%	88%	3.3%	3.8%	3.7%	1.6%	0%
Exported thermal energy (EET)	MJ	0.00	0.00	0.00	0.00	0.00	0.00
	%	0%	0%	0%	0%	0%	0%

6. LCA: Interpretation

Results were summarized by life cycle phase for a cradle-to-grave assessment of the Jinka flooring product system. With few exceptions, the potential impacts over a single product life cycle are dominated by the raw material extraction and processing and product manufacturing life cycle stages (A1-A3). The product disposal stage (C4) is generally the next highest contributor to the cradle-to-grave impacts over a single product life cycle, followed by product distribution (A4), product installation (A5), and maintenance (B2).

7. Additional Environmental Information

7.1 ENVIRONMENT AND HEALTH DURING MANUFACTURING

The Jinka manufacturing facility is certified to ISO 9001 and ISO 14001 – Environmental management systems.

7.2 ENVIRONMENT AND HEALTH DURING INSTALLATION

The Jinka flooring products meet the requirements of the following:

1. Indoor Air Comfort Gold (VOC certification)
2. CDPH/EHLB Standard Method v1.2-2017 (California Section 01350)

7.3 ENVIRONMENTAL ACTIVITIES AND CERTIFICATIONS

For more information on Jinka' certifications and environmental initiatives please view the website at <http://www.en.jinkaflooring.com>

8. Abbreviations

- EPD – Environmental Product Declaration
- PCR – Product Category Rule
- RSL – Reference Service Life
- LCA – Life Cycle Assessment
- LCIA – Life Cycle Impact Assessment
- ISO – International Organization for Standardization
- EN – European Norm
- GLO – Global
- CN – China
- VN – Vietnam
- RER – Europe (ecoinvent region code)
- SVHC – Substances of Very High Concern
- REACH – Registration, Evaluation, Authorisation and Restriction of Chemicals
- m-PET – Modified Polyethylene Terephthalate
- TPU – Thermoplastic Polyurethane
- VOC – Volatile Organic Compounds
- MJ – Megajoules
- kg – Kilograms
- CO₂ eq. – Carbon Dioxide Equivalent
- NMVOC – Non-Methane Volatile Organic Compounds
- CFC-11 eq. – Chlorofluorocarbon-11 Equivalent
- CTUe – Comparative Toxic Unit for ecosystems
- CTUh – Comparative Toxic Unit for humans
- SQP – Soil Quality Potential
- PERE – Renewable Primary Energy Resources (energy carrier)
- PERM – Renewable Primary Energy Resources (raw materials)
- PERT – Total Renewable Primary Energy Resources
- PENRE – Non-renewable Primary Energy Resources (energy carrier)
- PENRM – Non-renewable Primary Energy Resources (raw materials)
- PENRT – Total Non-renewable Primary Energy Resources
- SM – Secondary Materials
- RSF – Renewable Secondary Fuels
- NRSF – Non-renewable Secondary Fuels
- FW – Net Fresh Water Use
- HWD – Hazardous Waste Disposed
- NHWD – Non-Hazardous Waste Disposed
- RWD – Radioactive Waste Disposed
- CRU – Components for Reuse
- MFR – Materials for Recycling
- MER – Materials for Energy Recovery
- EEE – Exported Electrical Energy
- EET – Exported Thermal Energy
- GWP – Global Warming Potential
- AP – Acidification Potential
- EP – Eutrophication Potential
- ODP – Ozone Depletion Potential
- POCP – Photochemical Ozone Creation Potential
- IRP – Ionizing Radiation Potential
- CML – Centre of Environmental Science (methodology)
- USEtox – Toxicity model used in LCIA
- ReCiPe – LCIA methodology

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