

Environmental product declaration

Twin Floor raised floor
Company: Transpack Group Service Spa

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

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EPD references

EPD OWNER	Transpack Group Service Spa Via San Marco 11 35129 Padova (PD) Italy VAT Number IT03462190285
REFERENCE PRODUCTION SITE	Via dell'Industria 19, 35028 Piove di Sacco (PD) Italy
PROGRAM OPERATOR	EPDIItaly, via De Castilia, 10 - 20124 Milano (www.epditaly.it)
INDEPENDENT VERIFICATION	This declaration was developed according to the general instructions of the EPDIItaly program. The declaration and data were verified according to ISO 14025:2010 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External Third-party verification carried out by: ICMQ SpA, via De Castilia, 10 - 20124 Milano (www.icmq.it). Accredited by Accredia.
FIELD OF APPLICATION	The study is carried out for the 600x600 mm raised floor panels with twin floor core, produced by Nesite - Transpack Group Service Spa with ceramic core support and stoneware finish (PKGA0HX00B). The functional unit examined is one square metre of raised floor, produced in the factory located in via dell'Industria 19, 35028 Piove di Sacco (PD) Italy. The data collected refer to production in 2020.
UNCPC CODE	314 Boards and panels: CPC 31431 – Particleboard
PCR AND REFERENCE REGULATION	EPDIItaly Regulation revision 6.0 of 30/10/2023, available at www.epditaly.it. PCR ICMQ-001/15 rev 3 Construction products and construction services, EPDIItaly. Issue date: 02/12/2019. Standard EN 15804:2012+A2:2019/AC:2021 - Construction sustainability. Environmental Product Declarations. Development key rules for the product category.
COMPARABILITY	Environmental Declarations published within the same product category, but from different programmes, may not be comparable. In particular, EPDs of construction products may not be comparable if they do not comply with EN 15804:2012+A2:2019/AC:2021.
LIABILITY	Nesite - Transpack Group Service Spa shall not hold EPDIItaly liable for any failure to comply with environmental legislation. The declaration holder shall be responsible for the justifying information and evidence; EPDIItaly shall not be held liable for the manufacturer's information, nor for the data and results of the life-cycle assessment.
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Company

Founded more than fifty years ago in Padua, NESITE accompanies the best architectural international projects, collaborating over time in the realization of real monuments of contemporary cities: from the Nuvola by Fuksas in Rome, to the Louvre in Abu Dhabi by Jean Nouvel up to some major works in Milan such as WPP, Gioia 22 and the Metro Blu line.

The company produces raised floors for indoor and outdoor use, with a wide range of solutions and customizations for executive, commercial and medical buildings, large infrastructures, museums, residential complexes and public centers.

Associated with the Green Building Council Italy and with FSC® Chain of Custody certification to guarantee sourcing from certified forests, Nesite espouses a 'green' philosophy, to which it adds the possibility of customizing the flooring with finishes and materials specifically designed for the client. The drive to customise solutions, which also includes interaction with new technologies, has progressively led the brand to grow and specialise in the search for innovative solutions that have expanded the possibilities of the raised floor application, always with the utmost attention to the quality and technical performance of the system.





Field of application

The study is carried out for the 600x600 mm raised floor panels with twin floor core produced by Nesite - Transpack Group Service Spa with ceramic core: PKGA0HX00B.

Nesite by Transpack Group Service Spa takes care of the selection of raw materials and their processing (gluing, squaring) to obtain the finished products. The data collected relates to the year 2020. The production process takes place entirely at the factory in via dell'Industria 19, 35028 Piove di Sacco (PD).

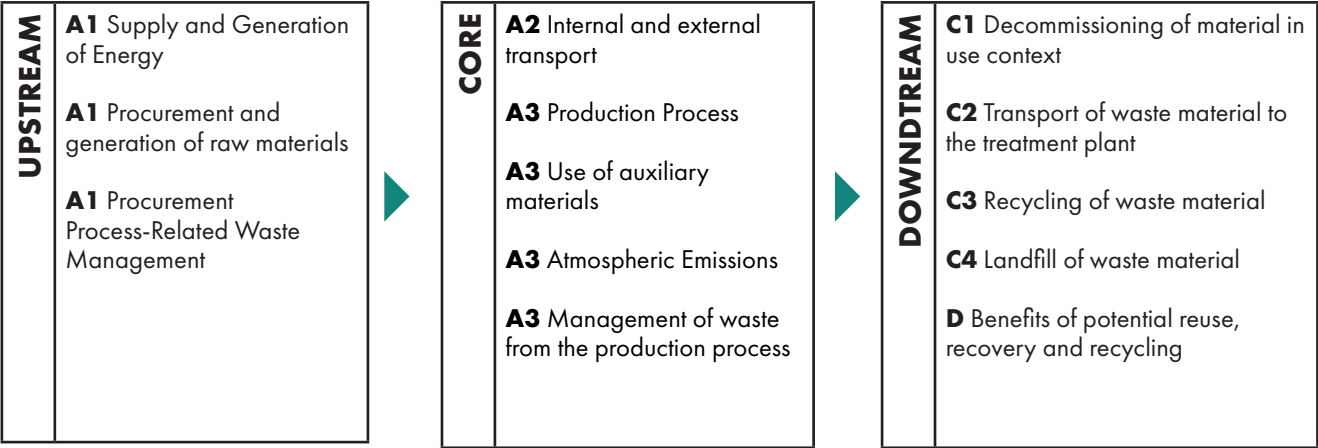
This EPD is intended for B2B communication.

The system boundaries analysed fall within the "cradle to gate with modules C1-C4 and module D" typology and include the modules:

- A1-A3: production processes and consumption of energy and materials in the system considered (A1), transport of raw materials to the factory gate (A2), manufacturing processes and treatment of process waste (A3).
- C1-C4: modules related to the end-of-life of the product, from the demolition phase (C1), transport (C2), waste processing (C3) to disposal (C4)
- D: benefits of product recycling and reuse.

BUILDING LIFE CYCLE ASSESSMENT														SUPPLEMENTARY INFORMATIONS				
Production phase			Construction phase			Use phase							End life phase				Advantages and loads beyond the system boundaries	
Raw materials	Transport	Production	Tansport	Installation	Use	Maintenance	Repair	Replacement	Reconditioning	Energy during use	Water consumption during use	Demolition	Transport	Waste processing	Decommissioning	Potential Reuse, Recovery and Recycling		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X		
Geographical purpose EU	EU	IT	-	-	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO		

Declared modules. Legend: X: declared module - ND: undeclared module



Type of EPD	The EPD in question is of the type 'from cradle to gate with modules C1-C4 and module D'. The type of EPD is specific for raised floor panels with calcium sulphate core with various coverings, produced by Nesite by Transpack Group Service Spa.
Geographical validity	The performances were calculated considering the production site of Nesite by Transpack Group Service Spa in Piove di Sacco (PD). The reference market is global.
Time validity	The reference period is the calendar year 2020.
Electricity	Italian Residual Energy Mix referred to the year 2020 (GWP-GHG: 0,557 kg CO ₂ eq).
Databases used:	Ecoinvent 3.8
Software:	SimaPro 9.5.0.2

Product and production process description

The raised floor panels produced by Nesite - Transpack Group Service Spa consist of the following layers:

- **the stoneware-ceramic finish**, the top coating on which the final appearance of the panel depends;
- **the ceramic core**, a special support, in which the ceramic production is stopped before the final stage.

An ABS edge trim is added to the perimeter of the panel, which, thanks to its mechanical and thermal resistance characteristics, has the purpose of protecting the panel from accidental blows and creating a perfect joint between the panels.

Nesite's products meet the requirements of the UNI EN 13501 standard for fire resistance and reaction; in addition, Nesite also offers solutions with mechanical performance that meet all load bearing classes identified by EN 12825 and is also careful to provide acoustic performance according to the requirements of UNI EN ISO 10140.

Element	Element detail	PKGA0HX00B
CORE	Ceramic support	●
FINISHING	Stoneware finishing	●
EDGE	Edge thickness 0.5 mm with height 32 mm	●
	Total weight of finished panel	67,55

No substances on the List of Substances of Very High Concern for Authorisation (SVHC) according to the REACH Regulations are present in the panels, either above the registration limit according to the European Chemicals Agency or above 0.1% (w/w).

The production line takes place entirely at the plant in Via dell'Industria 19 35028 Piove di Sacco (PD) Italy.

Starting with the ceramic core, according to customer requirements, the top finish is glued with vinyl glues. The intermediate products thus composed are squared and edged with a custom-cut ABS edge.

The finished products are automatically stacked on a wooden pallet, strapped, fitted with a cardboard cap and transported on rollers to the packing area for labelling.

Finished products, ready for shipment to the customer, are stored in warehouses within the factory.

Results

The following tables summarise the total impacts for each indicator.

The results of the impact assessment constitute relative information and are not able to predict future impacts on the final value of the category, the exceeding of possible thresholds, safety margins or risks.

Disclaimers:

- [1] IRP: *this impact category mainly concerns the possible impact of low-dose ionising radiation on human health from the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, exposure during work activities or due to the dumping of radioactive waste in underground facilities. Potential ionising radiation from soil, radon and other building materials is also not measured by this indicator.*
- [2] ADPF, ADPE, Water Use, ETP-fw, HTP-c, HTP-nc, SQP: *The results of these environmental impact indicators should be used with caution as the uncertainties of these results are high or as there is limited experience with these indicators.*

PKGA0HX00B - TWIN FLOOR

ENVIRONMENTAL IMPACT INDICATORS	Impact category	UM	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
	GWP	Kg CO2eq	5,14E+01	3,10E-01	5,57E-01	5,22E+01	0,00E+00	5,89E-01	0,00E+00	1,28E+00	1,79E+00
	GWP-fossil	Kg CO2eq	5,09E+01	3,10E-01	1,11E+00	5,23E+01	0,00E+00	5,89E-01	0,00E+00	7,11E-01	-2,68E-02
	GWP-biogenic	Kg CO2eq	3,98E-01	9,82E-05	-5,60E-01	-1,62E-01	0,00E+00	1,88E-04	0,00E+00	5,67E-01	1,81E+00
	GWP-land use	Kg CO2eq	6,84E-02	2,49E-06	2,51E-03	7,09E-02	0,00E+00	4,76E-06	0,00E+00	7,20E-04	-1,35E-04
	ODP	Kg CFC11 eq.	5,10E-06	7,32E-08	1,16E-07	5,29E-06	0,00E+00	1,40E-07	0,00E+00	2,16E-07	-3,64E-09
	AP	Mol H+ eq.	2,37E-01	1,40E-03	3,17E-03	2,42E-01	0,00E+00	2,62E-03	0,00E+00	6,00E-03	-1,49E-04
	EP-freshwater	Kg P eq.	1,45E-03	1,58E-07	3,26E-05	1,49E-03	0,00E+00	3,02E-07	0,00E+00	1,10E-05	-2,08E-06
	EP-marine	Kg N eq.	4,27E-02	5,14E-04	1,33E-03	4,46E-02	0,00E+00	9,56E-04	0,00E+00	2,04E-03	-4,06E-05
	EP-terrestrial	Mol N eq.	4,63E-01	5,65E-03	1,06E-02	4,79E-01	0,00E+00	1,05E-02	0,00E+00	2,25E-02	-4,44E-04
	POCP	Kg NMVOC eq.	1,42E-01	1,47E-03	2,94E-03	1,47E-01	0,00E+00	2,73E-03	0,00E+00	6,51E-03	-1,39E-04
	ADPF ^[2]	MJ	7,34E+02	4,37E+00	1,06E+01	7,49E+02	0,00E+00	8,35E+00	0,00E+00	1,67E+01	-4,61E-01
	ADPE ^[2]	Kg Sb eq.	1,18E-03	1,34E-08	1,44E-07	1,18E-03	0,00E+00	2,56E-08	0,00E+00	2,32E-06	-1,69E-09
Water Use ^[2]	m3 world eq deprived	1,56E+01	-7,31E-04	2,50E-01	1,59E+01	0,00E+00	-1,40E-03	0,00E+00	7,28E-01	-3,96E-03	

RESOURCES USE	Categoria d'impatto	UM	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
	PERE	MJ	3,74E+01	6,70E-03	1,04E+01	4,79E+01	0,00E+00	1,28E-02	0,00E+00	2,85E-01	-2,76E+00
	PERM	MJ	3,12E+03	0,00E+00	0,00E+00	3,12E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	3,16E+03	6,70E-03	1,04E+01	3,17E+03	0,00E+00	1,28E-02	0,00E+00	2,85E-01	-2,76E+00
	PENRE	MJ	7,94E+02	4,64E+00	1,14E+01	8,10E+02	0,00E+00	8,87E+00	0,00E+00	1,78E+01	-4,87E-01
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	7,94E+02	4,64E+00	1,14E+01	8,10E+02	0,00E+00	8,87E+00	0,00E+00	1,78E+01	-4,87E-01
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m3	4,43E-01	1,20E-05	7,66E-03	4,50E-01	0,00E+00	2,29E-05	0,00E+00	1,77E-02	-2,48E-04

WASTE PRODUCTION AND OUTPUT FLOWS	Categoria d'impatto	UM	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
	HWD	kg	6,44E-01	1,15E-05	1,72E-05	6,44E-01	0,00E+00	2,19E-05	0,00E+00	2,59E-05	-6,63E-07
	NHWD	kg	8,39E+00	1,80E-04	6,59E-01	9,05E+00	0,00E+00	3,44E-04	0,00E+00	6,77E+01	-4,99E-04
	RWD	kg	1,66E-03	3,13E-05	4,23E-05	1,74E-03	0,00E+00	5,97E-05	0,00E+00	9,99E-05	-3,22E-06
	CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ADDITIONAL INDICATORS	Impact category	UM	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
	PM	disease inc.	1,41E-04	3,15E-08	6,13E-08	1,41E-04	0,00E+00	3,90E-08	0,00E+00	1,20E-07	-1,55E-09
	IRP ^[1]	kBq U235 eq.	1,77E+00	1,90E-02	3,40E-02	1,83E+00	0,00E+00	3,63E-02	0,00E+00	6,53E-02	-3,14E-03
	ETP-fw ^[2]	CTUe	9,44E+02	1,91E+00	1,19E+01	9,58E+02	0,00E+00	3,28E+00	0,00E+00	1,19E+01	-2,19E-01
	HTP-nc ^[2]	CTUh	1,31E-06	3,70E-09	7,60E-09	1,32E-06	0,00E+00	4,84E-09	0,00E+00	7,98E-09	-2,93E-10
	HTP-c ^[2]	CTUh	3,56E-08	2,67E-11	8,34E-10	3,64E-08	0,00E+00	4,45E-11	0,00E+00	5,12E-10	-6,67E-12
	SQP ^[2]	Pt	1,61E+02	1,18E-02	5,31E+01	2,14E+02	0,00E+00	2,25E-02	0,00E+00	4,00E+01	-1,64E+01

Legend

ENVIRONMENTAL IMPACT INDICATORS

GWP	Global warming potential at 100 years
GWP-fossil	Global warming potential at 100 years – Fossil
GWP-biogenic	Global warming potential at 100 years – Biogenic
GWP-land use	Global warming potential at 100 years – Land use and change of land use
GWP-uptake	Global warming potential at 100 years – uptake
ODP	Ozone layer depletion potential in the stratosphere
AP	Acidification potential of soil water
EP-freshwater	Eutrophication potential, freshwater
EP-marine	Eutrophication potential, saltwater
EP-terrestrial	Eutrophication potential, terrestrial
POCP	Photochemical ozone creation
ADPF	Potential for depletion of fossil abiotic resources
ADPE	Potential for depletion of non-fossil abiotic resources
Water Use	Water use

RESOURCES USE

PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials
PERM	Use of renewable primary energy resources used as raw materials
PERT	Total use of renewable primary energy resources
PENRE	Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials
PENRM	Use of non renewable primary energy resources used as raw materials
PENRT	Total use of non-renewable primary energy resources
SM	Use of secondary materials
RSF	Use of renewable secondary fuels
NRSF	Use of non renewable secondary fuels
FW	Use of freshwater

WASTE PRODUCTION AND OUTPUT FLOWS

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

ADDITIONAL INDICATORS

PM	Particulate matter emissions - Potential incidence of disease due to PM emissions
IRP	Ionising radiation, human health - Potential human exposure efficiency relative to U235
ETP-fw	Ecotoxicity freshwater - Potential comparative toxic unit for ecosystem
HTP-nc	Human toxicity non cancer effects - Potential comparative toxic unit for humans
HTP-c	Human toxicity cancer effects - Potential comparative toxicity unit for CTUh
SQP	Land use related impacts / soil quality - Potential soil quality index

Additional indicators

Recycled content

The finished product contains no recycled material.

Biogenic carbon

The finished product contains no biogenic carbon; the biogenic carbon content of the finished product packaging is 0.20 kg.

Calculation method

The Life Cycle Assessment (LCA) methodology was adopted as the reference standard for this study; "LCA studies the environmental aspects and potential impacts (for example the use of resources and the environmental consequences of releases) throughout the whole product life cycle from raw materials acquisition through production and to the end-of-life treatment, recycling and final disposal (i.e. cradle-to-grave)" [ISO 14040:2006].

Functional Unit/Declared Unit

The declared unit is 1 m² of raised floor panel, which is 67.55 kg.

Cut off rules

Excluded from this study are:

- showrooms in Padua and Milan;
- travel and transport of company employees;
- steel tray printing (carried out by a subcontractor);
- the galvanised steel structures which support the floors (carried out by a subcontractor);
- the manufacture of equipment used in production, buildings and any other assets;
- research and development activities;
- the transport of auxiliary materials;
- long-term emissions.

On the other hand, the following were considered within the 5% cut-off:

- talc used occasionally on the aluminium foil gluing line considering the small quantities;
- labels and scotch tape used for the packaging of the finished product;
- the packaging of raw materials;
- the transport by sea of the vinyl finishing from the Irish supplier.

Data quality

The data are site-specific related to UPSTREAM phases A1 and A2 and CORE phase A3 related to the definition of impacting components/aspects and their quantification; the relevant processes were selected from the Ecoinvent 3.8 database. For DOWNSTREAM phases C1, C2, C3, C4 and phase D, reference was made to literature data, in the absence of primary data. The site-specific data refer to the production year 2020.

Generic data were selected taking into account the period 2015 and 2020 and applying criteria of:

- geographical equivalence (Italian or European systems);
- technological equivalence (comparable technological systems);
- equivalence with respect to system boundaries (systems considering similar inputs, outputs and phases).

For the items that could not be modelled in a precisely the following proxy data were chosen from the Ecoinvent 3.8 database; the impact of proxy data is still less than 0,00000572% of the total impact of steps A1-A3.

Period under examination

The primary data collected in this study refers to the period from January to December of 2020.

Allocation

Based on the principles of modularity and "polluter pays", the allocation of all stages was made on the basis of 2020 production, on which it was then possible to calculate the impact of the declared unit of 1 m² of product.

Reference scenarios

The products under consideration consist of several layers held together by vinyl glues (and hardeners), whose perimeter is covered with an ABS edge trim; starting with the top layer, the panel is composed of:

A1 Raw materials (UPSTREAM)

The products under consideration consist of several layers held together by vinyl glues (and hardeners), whose perimeter is covered with an ABS edge trim; starting with the top layer, the panel is composed of:

- stoneware finish;
- ceramic core.

A2 Raw materials transport (CORE)

In the phase CORE A2, inside and outside transport to the factory at via dell'Industria 19, 35028 Piove di Sacco (PD) Italy is included.

A3 Production (CORE)

The phase CORE A3 includes:

- the production process;
- emissions;
- the use of auxiliary materials, such as grease and lubricating oil;
- waste management related to the production process.

C1 Demolition of material in the context of use (DOWNSTREAM)

The demolition phase of the construction site includes all demolition operations, including the dismantling of raised floor panels, their initial sorting on site and their demolition. Considering that these operations are carried out manually and without the use of special machinery, the impacts related to this phase are considered not relevant.

C2 Waste Management - Waste Transport (DOWNSTREAM)

The phase DOWNSTREAM C2 includes the transport of the decomposed material to the final treatment plants. Given the lack of primary data, a distance of 50 km was assumed between the construction site and the above-mentioned facilities.

C3 Waste Management - Recycling (DOWNSTREAM)

For the end-of-life scenario, a 100% landfill scenario is assumed, thus considering Phase C3 to be zero.

C4 Waste Management - Disposal (DOWNSTREAM)

As mentioned in the previous paragraph, an end-of-life scenario corresponding to 100% landfill is considered.

The biogenic GWP related to the woody biomass content in the finished product packaging is balanced in Phase C4.

D Benefits beyond the system boundaries - Potential Reuse, Recovery and Recycling

Concerning the benefit due to material reuse/recovery, considering that no material recovery is foreseen in phase C3, phase D is considered not relevant.

References

- [1] UNI EN ISO 14040:2021, Environmental management – Life cycle assessment – Principles and framework.
- [2] UNI EN ISO 14044:2021, Environmental management – Life cycle assessment – Requirements and guidelines.
- [3] UNI EN ISO 14025:2010, Environmental labels and declarations – Type III environmental declarations – Principles and procedures.
- [4] EN 15804:2012+A2:2019/AC:2021, sustainability of construction works – Environmental product declarations Core rules for the product category of construction products.
- [5] PCR ICMQ-001/15 rev 3 Production products and services, EPDIItaly. Issue date: 02/12/2019.
- [6] EPDIItaly Regulation rev 6.0 del 30/10/2023.
- [7] Nesite by Transpack Group Service Spa, Life cycle analysis of raised floor panels with chipboard core and ceramic backing with various coverings and finishes. Rev. 3 of 06/08/2024. Edited by F. Gilardelli (Greenwich Srl).

