Statement of Verification

BREG EN EPD No: 000757 Issue: 01

This is to verify that the Environmental Product Declaration provided by:

Amtico International

are in accordance with the requirements of:

EN 15804:2012+A2:2019

and

BRE Global Scheme Document SD207

This declaration is for:
1m2 Amtico Click Smart (9.85kg/m2)

Company Address

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amtico
A MANNINGTON COMPANY

Signed for BRE Global Limited — Hayley Thomson, Operator

Date of this Issue	Date of First Issue	Expiry Date
20 February 2026	20 February 2026	19 February 2031

BRE Global Verified EPD

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ECO PLATFORM EPD VERIFIED

Environmental Product Declaration

EPD Number: 000757

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE 2025 Product Category Rules (PN 514 Rev 3.2) for Type III environmental product declaration of construction products to EN 15804:2012+A2:2019
Commissioner of LCA study	**LCA consultant/Tool**
Amtico International Kingfield Road, Coventry UK CV6 5AA	John Baggaley/BRE LINA A2
Declared/Functional Unit	**Applicability/Coverage**
1m^2 Amtico Click Smart (9.85kg/m^2)	Product Specific.
EPD Type	**Background database**
Cradle to Gate with options	Ecoinvent v3.8

Demonstration of Verification
CEN standard EN 15804 serves as the core PCR [a]
Independent verification of the declaration and data according to EN ISO 14025:2010 ☒Internal ☐ External
(Where appropriate [b])Third party verifier: Bala Subramanian
a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)

Comparability
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A2:2019. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A2:2019 for further guidance

Information modules covered

Product			Construction		Use stage							End-of-life					Benefits and loads beyond the system boundary
					Related to the building fabric					Related to the building							
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		D
Raw materials supply	Transport	Manufacturing	Transport to site	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
☑	☑	☑	☑	☑	☐	☑	☐	☐	☐	☐	☐	☑	☑	☑	☑		☑

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Manufactured under contract in Shanghai, China

Construction Product:

Product Description

Amtico Click Smart is an easy-fit click LVT flooring with a rigid core and 1mm acoustic backing, allowing fast installation without the need of an underlay. The collection is available in a range of wood and stone designs, in three sizes and a parquet laying pattern.

Amtico Click Smart products have a total thickness of 6mm with a 0.55mm wear layer and 1mm acoustic foam backing, providing a usage classification (EN 16511) of

1. 23 Heavy Domestic
2. 34 Heavy Commercial (31 Moderate Commercial in parquet)

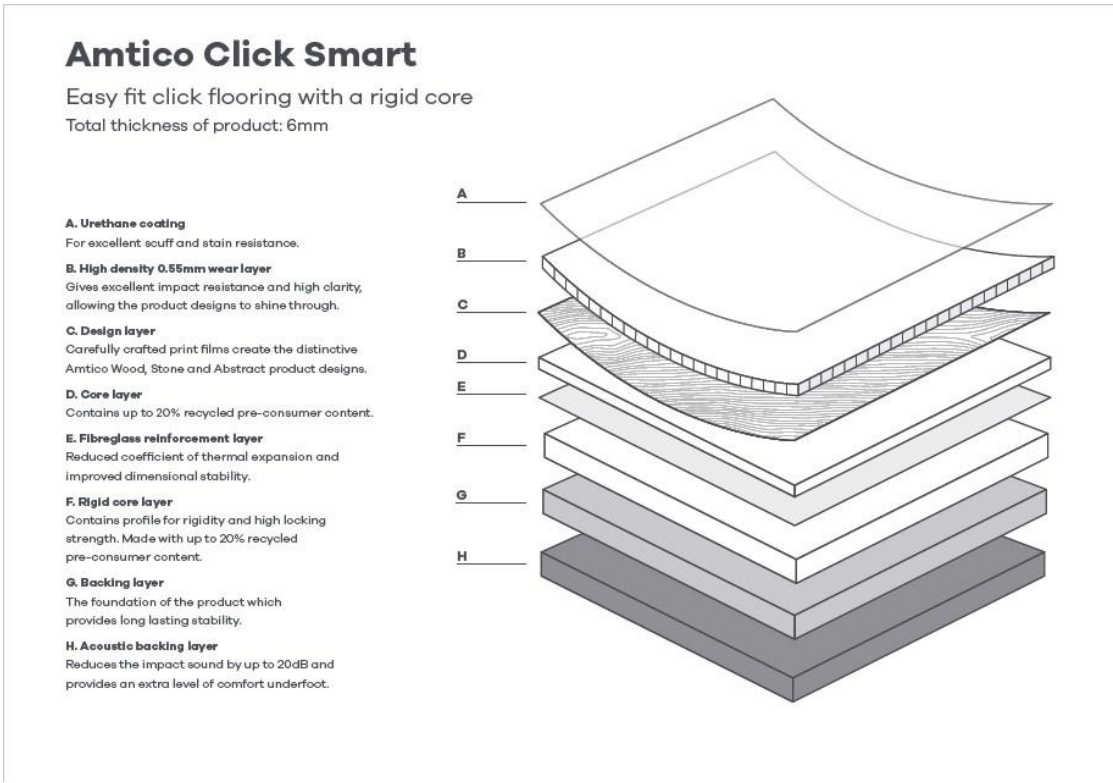
The Click Smart Collection comes with a 20-years wear out warranty for residential installation and 10 years for commercial use.

Click Smart is manufactured from ortho-phthalate free plasticisers, contains up to 7% recycled pre-consumer content.
Click Smart is a low VOC product, certified to Eurofins Indoor Air Comfort Gold and Finnish RTS M1.

Technical Information

Property	Value, Unit
Usage Classification (EN ISO 10874)	23,34, (31 Parquet)
Manufacturing Standard (EN 16511)	Conforms
Wear Layer Thickness (EN ISO 24340)	0.55mm
Total Thickness (EN ISO 24346)	6.0mm
Mass per Unit Area (EN ISO 23997)	9850g/m^2
Flammability /Smoke Emissions (EN 13501-1)	Bfl s1
Slip Resistance (EN 13893)	Class DS
Click Locking Strength (ISO 24334)	Long side >2.0kN/m Short side > 3.5kN/m
Thermal Resistance (EN 12664)	0.036 m^{2}K/W
VOC Emissions Eurofins Indoor Air Comfort Gold	IACG-352-02-06-2023

Note: the technical information is extracted from Amico Click Smart specification sheet. For more information, please contact Amtico or visit Amtico Click Smart Collection | 0.55mm Commercial Click LVT Flooring | Amtico Commercial



Main Product Contents

Material/Chemical Input	%
Urethane Lacquer	<0.1
Wear Layer	23
Polyvinyl chloride	25
Plasticisers	7.5
Filler	39
Design Print Film	2
Stabilisers & Pigments	<1
Acoustic Foam & Adhesive	2.5

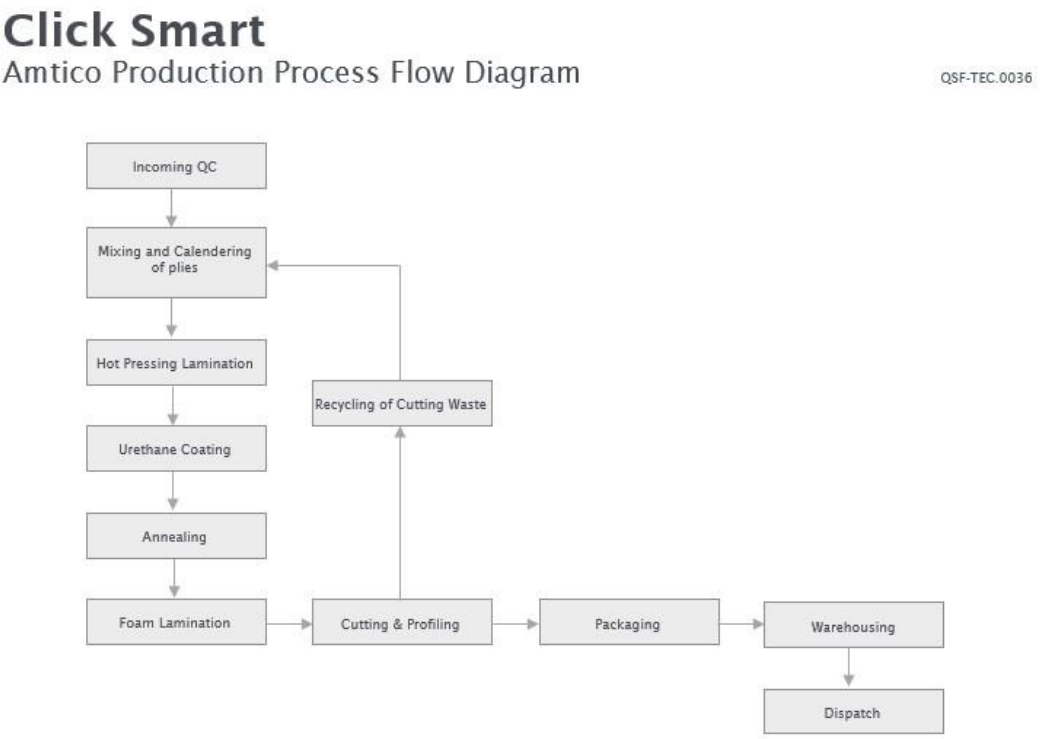
Manufacturing Process

The product is constructed by the thermal lamination of a wear layer, print film and backing plies. The wear layer and backing plies are all manufactured as follows,

1. Required ply raw materials are initially blended.
2. The ply blend is then heated and calendered on a mill to produce a ply of the required thickness.
3. The plies required to form the product, along with the print film, are thermally laminated together under pressure, to form the final product.
4. The product is then coated with polyurethane, the acoustic foam adhered, before being cut to size, and the click mechanism machined along the edges.
5. The product is then boxed and dispatched to the customer.

Cutting waste is recycled back into the product.

Process flow diagram



Construction Installation

Amtico Click Smart can be installed over all subfloor types and over any existing hard floor coverings as long as they are smooth, hard and flat, as detailed in BS 8203. Full details on Amtico Click Smart product installation can be found at Amtico Click Smart Technical Information - Amtico Commercial

Use Information

The Amtico Click Smart manufacturing site is certificated to ISO 9001 and ISO 14001.
Amtico Click Smart adheres to the emission requirements of Indoor Air Comfort Gold, German AgBB/DIBt, Belgium, and is rated as A+ in the French “Emissions dans l’air interieur” scheme.

End of Life

At the end of the product's life, the flooring is lifted from the subfloor and disposed of by landfill, incineration/energy recovery or recycling. It is assumed that no energy required to remove the floor.

It is assumed that 87% of the product will go to landfill, 12% to incineration/energy recovery schemes and 1% to recycling. The distance travelled from the demolition site to a disposal site will be no more than 200km.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1m^2 Amtico Click Smart (9.85kg/m^2)

System boundary

This is a cradle-to-gate with options LCA study that follows the modular approach defined in EN15804:2012+A2:2019 and BRE 2025 Product Category Rules (PN 514 Rev 3.2) and includes the processes covered in the manufacturing site and product stage (A1 to A3), construction stage (A4, A5), use stage (B2), end-of-life stage (C1-C4) and benefits beyond system boundary (D).

Data sources, quality and allocation

Specific primary data derived from manufacturer's production process in the factory, have been modelled using the LINA A2 software and the the Ecoinvent v3.8 (2021) database. In accordance with the requirements of EN15804:2012+A2:2019, the most current available data has been used. The manufacturer-specific data covers a period of one year (01/01/2021 – 31/12/2021). Secondary data has been obtained for all other upstream and downstream processes that are beyond the control of the manufacturer (i.e., raw material production) from the the Ecoinvent v3.8 (2021) database. All the Ecoinvent v3.8 (2021) datasets are complete within the context used and conform to the system boundary and the criteria for the exclusion of inputs and outputs, according to the requirements specified in EN15804:2012+A2:2019.

The manufacturer makes other LVT products at its production site, in addition to the product covered by this EPD. Calculations were performed to enable allocation of total site energy use, water and waste to the Amtico Click Smart product. Allocation procedures were by mass allocation and are according to EN 15804 and are based on the ISO14044 guidance. All the input and output materials such as packaging, transportation, energy, water usage and wastes are included. Only exceptions are outputs to air, water or soil as these are not measured at the site.

Products manufactured in China are shipped to Coventry for distribution in the UK, Ireland, the Middle East and to Bremen for European, Scandinavia distribution. Distribution into the Far East and Australia is directly from China. The average distance transported for each geographical market was calculated by multiplying the distance travelled by the percentage sales volume by square meter. Regions where sales were less than 1% were not considered.

The electricity supply was determined by the electricity supplier's meters. The assumed Chinese electricity emission factor was 1.05 kg CO2 eq./kWh (consumption mix, China).
Wastewater to sewer was determined by a water meter.

Module C4 end of life assumes that 1% of the PVC flooring is recycled, 12% is used in energy recovery/incineration, with the remainder going to landfill. This ratio is based on a study performed by BRE.

Quality Level	Geographical representativeness	Technical representativeness	Time representativeness
Very Good	Data from area under study.	Data from processes and products under study. Same state of technology applied as defined in goal and scope (i.e. identical technology).	There is less than 5 years between the Ecoinvent v3.8 (2021) LCI reference year, and the time period for which the LCA was undertaken.

Specific Chinese datasets have been selected from the Ecoinvent v3.8 (2021) LCI for this LCA. The quality level of geographical and technical representativeness is therefore Very Good. The quality level of time

representativeness is Very Good as the background LCI datasets are based on Ecoinvent v3.8 which was compiled in 2021. Therefore, there is less than 5 years between the Ecoinvent v3.8 (2021) LCI reference year and the time period for which the LCA was undertaken.

Cut-off criteria

All stages of the manufacturing process have been included. Ancillary materials are not recorded at manufacturing sites. Transport distances to site were not calculated for Sales Business Units with <1% of product sales. The product life was based on the residential 20-year warranty. All inputs or outputs have been included and all raw materials, packaging and transport, energy, water use and wastes, are included, except for direct emissions to air, water and soil, which are not measured. Upstream extraction and/or processing of inputs are included within the use of the background datasets within LINA.

LCA Results

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts									
			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO_2 eq	kg CO_2 eq	kg CO_2 eq	kg CO_2 eq	kg CFC11 eq	mol H^+ eq	kg $(PO_4)^{3-}$ eq
Product stage	Raw material supply	A1	2.03E+01	2.03E+01	-4.20E-02	1.73E-02	2.39E-05	9.26E-02	5.53E-03
	Transport	A2	2.91E-01	2.91E-01	2.63E-04	1.10E-04	6.82E-08	1.20E-03	1.85E-05
	Manufacturing	A3	4.10E+00	4.60E+00	-5.01E-01	3.01E-03	1.18E-07	2.18E-02	8.81E-04
	Total (Consumption grid)	A1-3	2.47E+01	2.52E+01	-5.43E-01	2.05E-02	2.41E-05	1.16E-01	6.43E-03
Construction process stage	Transport	A4	1.62E+00	1.62E+00	3.82E-04	9.80E-04	3.40E-07	3.57E-02	7.17E-05
	Construction	A5	1.24E+00	7.73E-01	4.66E-01	6.23E-04	7.24E-07	3.65E-03	1.98E-04
	Maintenance	B2	1.31E+00	1.26E+00	4.77E-02	1.15E-03	1.30E-07	9.28E-03	5.32E-04
87% Landfill, 12% Incineration/Energy Recovery, 1% Recycled									
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.28E-01	3.27E-01	2.79E-04	1.29E-04	7.58E-08	1.33E-03	2.11E-05
	Waste processing	C3	2.53E+00	2.53E+00	5.31E-03	3.68E-04	8.11E-08	1.96E-03	1.14E-04
	Disposal	C4	7.23E-01	7.22E-01	9.07E-04	9.46E-05	2.75E-08	7.87E-04	1.32E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-9.18E-01	-9.06E-01	-1.12E-02	-8.89E-04	-1.65E-07	-4.98E-03	-4.50E-04

GWP-total = Global warming potential, total;
GWP-fossil = Global warming potential, fossil;
GWP-biogenic = Global warming potential, biogenic;
GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;
AP = Acidification potential, accumulated exceedance; and
EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts									
			EP-marine	EP-terrestrial	POCP	ADP-mineral &metals	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m^3 world eq deprived	disease incidence
Product stage	Raw material supply	A1	1.80E-02	1.78E-01	5.91E-02	2.62E-04	4.19E+02	1.29E+01	8.94E-07
	Transport	A2	3.62E-04	3.95E-03	1.24E-03	8.73E-07	4.46E+00	2.07E-02	2.88E-08
	Manufacturing	A3	5.55E-03	5.31E-02	1.43E-02	9.29E-06	4.37E+01	9.33E-01	3.32E-07
	Total (Consumption grid)	A1-3	2.39E-02	2.35E-01	7.46E-02	2.72E-04	4.67E+02	1.39E+01	1.25E-06
Construction process stage	Transport	A4	8.91E-03	9.89E-02	2.60E-02	3.46E-06	2.21E+01	7.11E-02	8.30E-08
	Construction	A5	7.96E-04	7.89E-03	2.49E-03	8.21E-06	1.43E+01	4.25E-01	4.00E-08
	Maintenance	B2	5.27E-03	1.68E-02	5.49E-03	1.81E-05	3.61E+01	1.56E+00	1.10E-07
87% Landfill, 12% Incineration/Energy Recovery, 1% Recycled									
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	4.00E-04	4.37E-03	1.34E-03	1.14E-06	4.95E+00	2.23E-02	2.83E-08
	Waste processing	C3	5.78E-04	5.24E-03	1.47E-03	2.86E-06	4.22E+00	4.71E+00	1.69E-08
	Disposal	C4	3.39E-03	2.88E-03	9.81E-04	3.01E-07	2.14E+00	9.58E-02	1.56E-08
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-7.48E-04	-7.84E-03	-2.20E-03	-4.06E-06	-1.63E+01	-4.69E-01	-3.55E-08

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;
EP-terrestrial = Eutrophication potential, accumulated exceedance;
POCP = Formation potential of tropospheric ozone;
ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;
ADP-fossil = Depletion potential of the stratospheric ozone layer;
WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and
PM = Particulate matter.

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts							
			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U^{235} eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	1.24E+00	4.28E+02	1.98E-08	3.74E-07	6.39E+01
	Transport	A2	2.28E-02	3.48E+00	1.06E-10	3.72E-09	3.91E+00
	Manufacturing	A3	1.42E-01	1.01E+02	2.42E-09	4.77E-08	5.90E+01
	Total (Consumption grid)	A1-3	1.41E+00	5.33E+02	2.23E-08	4.25E-07	1.27E+02
Construction process stage	Transport	A4	1.05E-01	1.50E+01	8.43E-10	1.25E-08	7.91E+00
	Construction	A5	4.44E-02	1.62E+01	7.73E-10	1.31E-08	3.86E+00
	Maintenance	B2	7.69E-02	1.01E+02	3.43E-09	6.45E-08	5.85E+00
87% Landfill, 12% Incineration/Energy Recovery, 1% Recycled							
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	2.54E-02	3.86E+00	1.25E-10	4.05E-09	3.40E+00
	Waste processing	C3	2.81E-02	1.39E+02	5.48E-10	3.92E-08	2.47E+00
	Disposal	C4	1.01E-02	3.31E+01	7.30E-11	6.42E-09	5.08E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-2.08E-01	-1.29E+01	-3.86E-10	-9.51E-09	-3.77E+00

IRP = Potential human exposure efficiency relative to U235;
ETP-fw = Potential comparative toxic unit for ecosystems;
HTP-c = Potential comparative toxic unit for humans;
HTP-nc = Potential comparative toxic unit for humans; and
SQP = Potential soil quality index.

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, primary energy

			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	1.84E+01	0.00E+00	1.84E+01	2.53E+02	1.63E+02	4.16E+02
	Transport	A2	5.98E-02	0.00E+00	5.98E-02	4.34E+00	0.00E+00	4.34E+00
	Manufacturing	A3	4.66E+00	7.29E+00	1.19E+01	-6.38E+01	9.97E+01	3.59E+01
	Total (Consumption grid)	A1-3	2.31E+01	7.29E+00	3.04E+01	1.94E+02	2.62E+02	4.56E+02
Construction process stage	Transport	A4	2.14E-01	0.00E+00	2.14E-01	2.16E+01	0.00E+00	2.16E+01
	Construction	A5	-7.43E+00	8.35E+00	9.20E-01	5.78E+00	8.11E+00	1.39E+01
	Maintenance	B2	1.61E+00	0.00E+00	1.61E+00	1.37E+01	2.09E+01	3.45E+01
87% Landfill, 12% Incineration/Energy Recovery, 1% Recycled								
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	6.97E-02	0.00E+00	6.97E-02	4.86E+00	0.00E+00	4.86E+00
	Waste processing	C3	3.59E-01	0.00E+00	3.59E-01	-2.57E+01	2.96E+01	3.87E+00
	Disposal	C4	3.82E-02	0.00E+00	3.82E-02	-1.82E+02	1.84E+02	2.10E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.86E+00	0.00E+00	-1.86E+00	-1.42E+01	-2.12E+00	-1.63E+01

PERE = Use of renewable primary energy excluding renewable primary energy 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 resource

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m^3
Product stage	Raw material supply	A1	5.52E-02	0.00E+00	0.00E+00	4.60E-01
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	5.11E-04
	Manufacturing	A3	2.89E-01	0.00E+00	0.00E+00	2.50E-02
	Total (Consumption grid)	A1-3	3.44E-01	0.00E+00	0.00E+00	4.86E-01
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	1.76E-03
	Construction	A5	1.03E-02	0.00E+00	0.00E+00	1.48E-02
	Maintenance	B2	3.95E-03	0.00E+00	0.00E+00	3.67E-02
87% Landfill, 12% Incineration/Energy Recovery, 1% Recycled						
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	5.52E-04
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	1.10E-01
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	2.25E-03
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-8.70E-04	0.00E+00	0.00E+00	-1.15E-02

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

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	1.36E+00	2.45E+01	4.76E-04
	Transport	A2	4.79E-03	8.43E-02	1.25E+01
	Manufacturing	A3	4.70E-01	3.60E+00	3.76E-05
	Total (Consumption grid)	A1-3	1.84E+00	2.82E+01	1.25E+01
Construction process stage	Transport	A4	2.74E-02	3.18E-01	1.52E-04
	Construction	A5	5.76E-02	1.17E+00	3.75E-01
	Maintenance	B2	9.28E-02	1.64E+00	4.56E+00
87% Landfill, 12% Incineration/Energy Recovery, 1% Recycled					
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	5.46E-03	9.69E-02	3.35E-05
	Waste processing	C3	6.54E-01	1.61E+00	1.93E-05
	Disposal	C4	4.25E-03	8.66E+00	1.27E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-5.72E-02	-2.67E+00	-6.40E-05

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

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows – at end of life								
			CRU	MFR	MER	EE	Biogenic carbon (product)	Biogenic carbon (packaging)
			kg	kg	kg	MJ per energy carrier	kg C	kg C
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	2.34E+00	0.00E+00	0.00E+00	0.00E+00	-8.28E-03
	Total (Consumption grid)	A1-3	0.00E+00	2.34E+00	0.00E+00	0.00E+00	0.00E+00	-8.28E-03
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Construction	A5	0.00E+00	6.20E-01	9.29E-09	0.00E+00	0.00E+00	1.25E-01
	Maintenance	B2	0.00E+00	5.65E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
87% Landfill, 12% Incineration/Energy Recovery, 1% Recycled								
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	9.85E-02	1.18E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;
MFR = Materials for recycling

MER = Materials for energy recovery;
EE = Exported Energy

Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
A4 – Transport to the building site	Products manufactured in China are shipped to Coventry for UK and The Middle East distribution and Bremen for distribution across Europe and Scandinavia. The Far East is supplied directly from China. The below listed transportation distance is the total distance from the manufacturing site to the corresponding delivery location, the LCA calculation is based on the average distance transported for each geographical market was calculated by multiplying the distance travelled by the percentage sales volume by square meter and includes the shipping distance from China. The sales volumes were those in 2021. The transportation data is taken from the Ecoinvent v3.8 (2021) datasets.		
	UK Direct Delivery: Road	Diesel / Van	0.32l/km
	Distance:	km	460
	Capacity utilisation (incl. empty returns)	%	61
	Bulk density of transported products	kg/m^3	1642
	UK Direct Delivery: Sea	Marine Bunker Oil / Container Ship	0.21tonnes/km
	Distance:	km	14271
	Capacity utilisation (incl. empty returns)	%	65
	Bulk density of transported products	kg/m^3	1642
	Worldwide: Road	Diesel / 16–32 ton Lorry	0.032l/km
	Distance:	km	221
	Capacity utilisation (incl. empty returns)	%	61
	Bulk density of transported products	kg/m^3	1642
	Worldwide: Sea	Marine Bunker Oil / Container Ship	0.21tonnes/km
	Distance:	km	5237
	Capacity utilisation (incl. empty returns)	%	65
	Bulk density of transported products	kg/m^3	1642
A5 – Installation in the building	Amtico Click Smart does not require the use of adhesive for installation. For full details on Amtico Click Smart product installation, please see the relevant document at www.amtico.com		
	Installation Wastage Rate	%	3

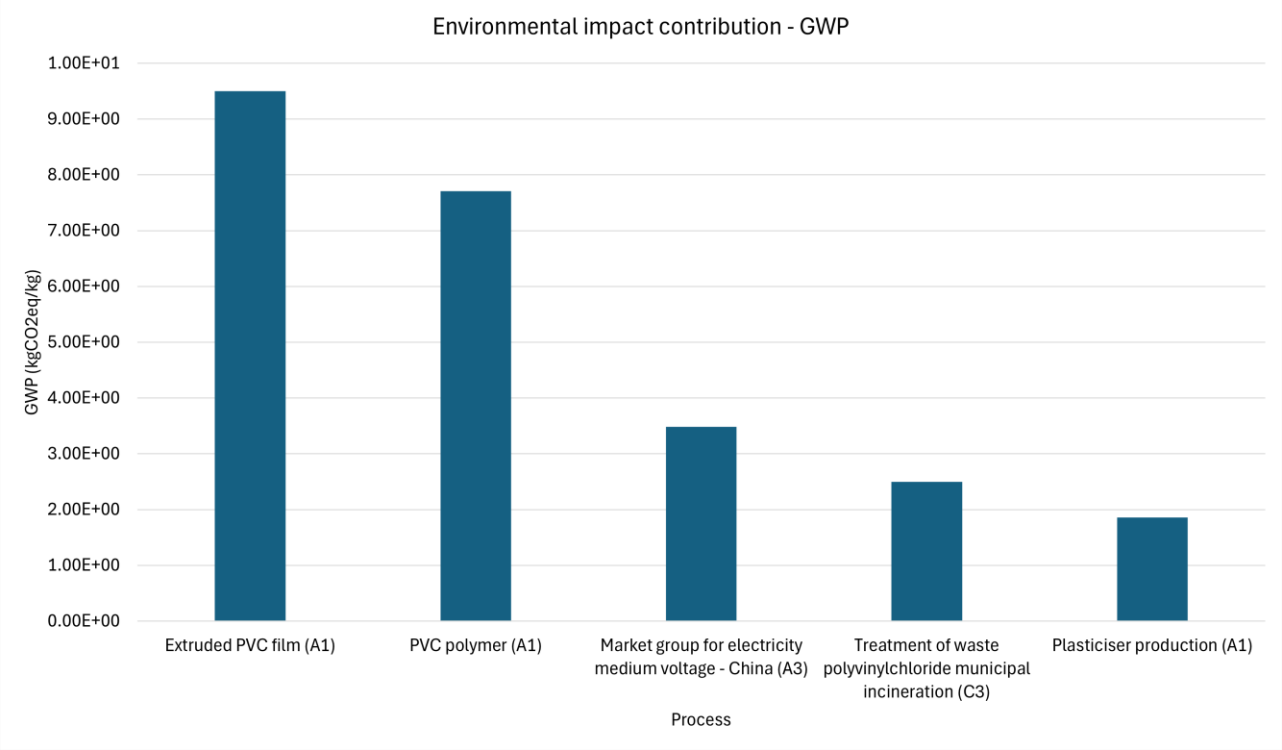
Scenarios and additional technical information			
Scenario	Parameter	Units	Results
	Material Waste	Installation off cuts mass per unit area of product installed kg/m^2	0.2955
	Cardboard Packaging	Mass per unit area of product installed kg/m^2	0.279
	Wood Packaging	Mass per unit area of Product installed kg/m^2	0.300
	Plastic Packaging	Mass per unit area of product installed kg/m^2	0.006
B2 – Maintenance	The required recommended cleaning and maintenance regime is dependent on the place of installation and the foot traffic over the floor. High traffic areas will generally require more cleaning and maintenance than low traffic situations. Dry cleaning may be performed with a dust mop or with a vacuum cleaner. Wet cleaning can be performed with a mop, detergent and water. Power cleaning is also a possibility with scrubber driers etc. The calculations are assumed for 1m^2 per year.		
	52 Wet Cleans per year (Water use)	l/yr./m^2	3.224
	Detergent usage	kg/yr./m^2	0.0416
	Transport distance	km	10
Reference service life	Amtico International (hereinafter referred to as the Company) hereby guarantees that in the event of the Amtico Click Smart flooring supplied to the original purchaser under this agreement, requiring replacement due to 'Wear- out' from normal foot traffic within twenty years from the date of purchase. The floor will be repaired or replaced with the same or similar material free of charge. 'Wear-out' means the removal of the pattern and colour from the Amtico Click Smart floor caused by the removal of the protective wear layer. Reference service life used in LCA was the residential warranty.		
	Residential Product Warranty.	Years	20
C1 to C4 End of life,	Data for post-consumer end of life for PVC flooring scenarios is limited. BRE BREEAM PEP scheme (2008) assumed 87% went to landfill, 12% for incineration/energy recovery and 1% was recycled. An Axion report "Post-Zero Avoidable Waste in Flooring-Towards a Circular Economy", published February 2022, also has a figure of 1%. The 87:12:1 ratio was used in this study.		
C1 – Deconstruction	At the product's end of life that the product is manually mechanically removed from the sub-floor. No ancillary materials, energy or water was required for the process. It is assumed that 100% of the product is recovered at its end of life.	kg/m^2	9.85
C2 – Transport	It has been assumed that the maximum distance to a landfill disposal, incineration or recycling plant will be 200km.		
	Road transport (Diesel / 16–32 ton Lorry)	km	200
C3 – Waste Processing	Minimal waste pre-processing was considered necessary with no further ancillary materials, energy or water required.		
	12% is incinerated /energy recovery	kg/m^2	1.182

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
	1% is recycled	kg/m^2	0.0985
C4 – Disposal	87% of the material is assumed to go to landfill	kg/m^2	8.5695
Module D	The pre-existing recycled content in the raw material can be omitted since it is less than 1 %. This is in line with the cut-off rule provisions of EN15804:2012+A2:2019. For benefits due to incineration of PVC waste, the EU electricity (Electricity, high voltage (RER) market for electricity, high voltage) with an emission factor of 0.396kgCO2eq/kWh, EU heat (Heat, district or industrial, natural gas (RER) market for heat, district or industrial, natural gas) with an emission factor of 0.187kgCO2eq/kWh, and EU heat (Heat, district or industrial, other than natural gas (RER) market for heat, district or industrial, other than natural gas) with an emission factor of 0.244kgCO2eq/kWh extracted from ecoinvent 3.8 database have been used as the background data for the energy recovered.		
	BRE BREEAM PEP scheme used a recycling figure of 1% in its calculations (2008). An Axion report "Post-Zero Avoidable Waste in Flooring-Towards a Circular Economy", published February 2022, also has a figure of 1%.	kg/m^2	0.0985
	Data for post-consumer recycling rates for vinyl flooring is limited. BRE BREEAM PEP scheme used an energy recovery figure of 12% in its calculations (2008).	kg/m^2	1.182

Summary, comments and additional information

Interpretation

Out of the total mass of input materials, Filler accounts for 39%, PVC accounts for 25%, PVC layer and film account for 25% and other additives account for the remaining 11%. The bulk of the environmental impacts and primary energy demand are attributed to the manufacturing phase, covered by information modules A1-A3 of EN15804:2012+A2:2019. From the process level, extruded PVC film and PVC polymer production contributes the most on GWP emission across the whole life cycle stages.



Front Cover Page

Figure 1

About Amtico

LVT is in our DNA.

Amtico is a British manufacturer of industry-leading flooring. A joint venture between American Biltrite and manufacturing giant Courtaulds, we began designing and making luxury vinyl tiles (LVT) in 1964. We're located in Coventry, a historic city, globally recognised for its continued contribution to British design, craft and engineering.

Today, we sell our floors in over 130 countries, but we are the only manufacturer who can proudly say we still make a large proportion of our LVT flooring from scratch, here in the UK.

A passion for brilliance

We've been setting the standard for creative expression in floor design for a long time. And we've become pretty good at it. The formula is simple. We combine relentless dedication with top-of-class expertise. Then we add that to every single floor we make. Our people stop at nothing to ensure every one of our products delivers what's required of it – excellence.

And if you need something completely unique, our in-house design team are ready to provide advice on product choice, laying patterns and finishes. Plus, we have a team of CAD experts who will work with you to draw up your design ready for manufacture.

Where we stand on sustainability

When you choose an Amtico floor, we want you to be sure it's built on foundations that protect our planet and empower our people.

So, we are working on our strategy – a plan for tackling the major challenges, not in the next 20 years, but right now.

To read more about our strategy on sustainability, please visit https://www.amtico.com/commercial/sustainability/.

References

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BSI. Environmental management – Life cycle assessment – Principles and framework.
BS EN ISO 14040:2006. London, BSI, 2006.

BSI. Environmental management – Life cycle assessment – requirements and guidelines.
BS EN ISO 14044:2006. London, BSI, 2006.

BS EN 16511:2014+A1:2019 Loose-laid panels - Semi-rigid multilayer modular floor covering (MMF) panels with wear resistant top layer.

BS EN ISO 10874:2012+A1:2020 Resilient, textile and laminate floor coverings. Classification.

BS EN ISO 24340:2012 Resilient floor Coverings. Determination of thickness of layers

BS EN ISO 24346:2012 Resilient floor coverings. Determination of overall thickness.

BS EN ISO 23997:2012 Resilient floor coverings. Determination of mass per unit area.

BS EN ISO 24334:2019 Laminate floor coverings — Determination of locking strength for mechanically assembled panels

BS EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests.

BS EN 13893:2002 Resilient, laminate and textile floor coverings. Measurement of dynamic coefficient of friction on dry floor surfaces.

BS EN 1815:2016 Resilient and laminate floor coverings. Assessment of static electrical propensity.

BS EN 12664:2001 Thermal performance of building materials and products. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Dry and moist products of medium and low thermal resistance.

BS 8203:2017 Code of practice for installation of resilient floor coverings