Statement of Verification

BREG EN EPD No.: 000241 Issue 1
ECO EPD Ref. No. 00000841

This is to verify that the

Environmental Product Declaration

provided by:

Amtico International

is in accordance with the requirements of:

EN 15804:2012+A1:2013

and

BRE Global Scheme Document SD207

This declaration is for:

Amtico First Luxury Vinyl Floor Tiles

Company Address

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Signed for BRE Global Ltd	Laura Crition Operator	22 February 2019 Date of this Issue
22 February 2019 Date of First Issue		21 February 2024 Expiry Date

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Environmental Product Declaration

EPD Number: 000241

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Environmental Profiles 2013 Product Category Rules for Type III environmental product declaration of construction products to EN 15804:2012+A1:2013
Commissioner of LCA study	**LCA consultant/Tool**
Amtico International Kingfield Road, Coventry UK CV6 5AA	BRE/LINA
Declared/Functional Unit	**Applicability/Coverage**
1m^2 of Amtico First Luxury Vinyl Floor Tiles	Product Average.
EPD Type	**Background database**
Cradle to Gate with options	ecoinvent

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: Nigel Jones
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+A1:2013. 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+A1:2013 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)

Make under contract in the People's Republic of China.	

Construction Product

Product Description

Amtico First is a design-led, high-performance vinyl tile collection consisting of 54 products: 30 Woods, 16 Stones and 8 Abstract designs. Available in a range of embosses, tile/plank formats.
Amtico First is suitable for commercial applications such as offices and student accommodation.
Amtico First is a 2.0 mm product with a 0.30 mm wear layer and is classified as per EN ISO 10874 for use in the following areas,

1. Class 23, Heavy Domestic
2. Class 31, Moderate Commercial

Amtico First products are recommended for use over properly prepared concrete, suspended wood, metal and other suitable substrates.
Amtico First should only be installed using Amtico Adhesives, all of which are certified as EC1 Plus very low emissions, as defined by the GEV EMICODE scheme.

Technical Information

Property	Value, Unit
Usage Classification (EN ISO 10874)	23,31
Manufacturing Standard (EN 10582)	Pass
Total Thickness (EN ISO 24346)	2.0mm
Wear Layer Thickness (EN ISO 24340)	0.3mm
Weight (EN ISO 23997)	3675 g/m^2
Abrasion Resistance (EN 10582)	Type 1
Residual Indentation (EN ISO24343-1)	≤0.1mm
Dimensional Stability (EN ISO23999)	≤0.25%
Dimensional Stability, Curling (EN ISO 23999)	≤2mm
Flexibility (EN ISO 24344 Method A)	Pass
Slip Resistance (DIN 51130)	R10
Slip Resistance (EN13893)	Class DS
Chemical Resistance (EN ISO 26987)	Excellent
Light Stability (EN ISO 105-B02)	≥6
Flammability /Smoke Emissions (EN 13501-1)	B_{fl} s1
Impact Sound Reduction (EN ISO 717-2)	3dB
Emissions (France - Emissions dans l'air interieur)	A+
Emissions (M1)	Pass
Eurofins Indoor Air Comfort Gold	IACG-352-02-05-2018
Amtico First Technical Data Sheet is available on the Amtico website. https://www.amtico.com/commercial/technical/docs/first-collection	

Main Product Contents

Material/Chemical Input	%
Urethane Lacquer	<0.5
Polyvinyl chloride	40
Plasticisers	15
Filler	44
Stabilisers & Pigments	<1.0

Manufacturing Process

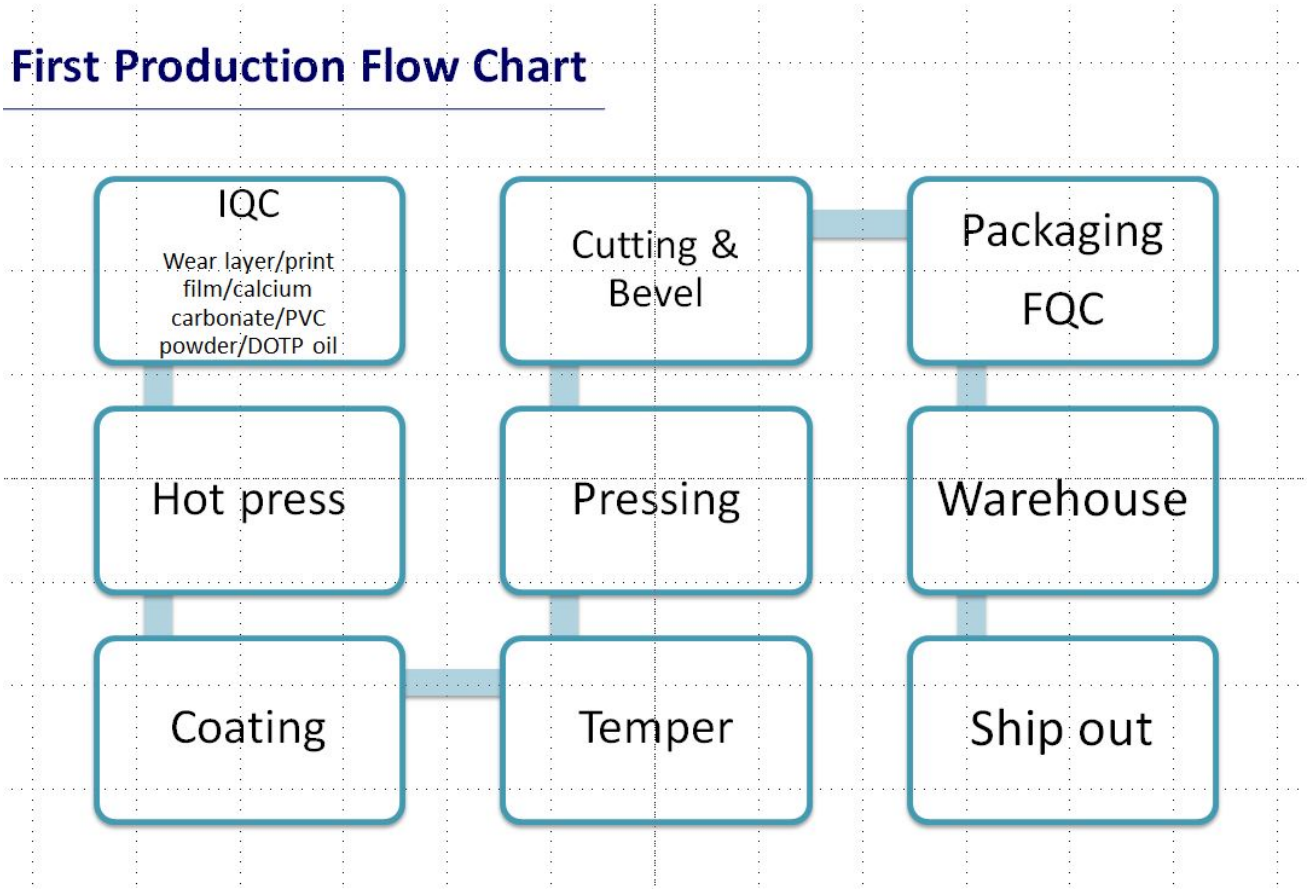
The product is constructed by the thermal lamination of the wear layer, print film and backing plies. The wear layer and backing plies are all manufactured as follows,

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 end 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, before being cut to size, boxed and dispatched to the customer.

Cutting waste is recycled back into the product.

Process flow diagram



Construction Installation

Amtico First should be bonded with a suitably low emissions adhesive to an appropriately prepared subfloor as detailed in BS8302. Full details on installation can be found at

https://www.amtico.com/media/2215989/amtico-signature-spacia-form-first-assura-installation-guidelines-des-in-20170731-02-gb.pdf.

Installation off cuts can be disposed of via recycling such as AgPR, energy recovery schemes or landfilled. Wherever possible it is recommended that products should always be recycled.

Use Information

Emissions
Amtico First adheres to the emission requirements of
Indoor Air Comfort Gold, German AgBB/DIBt, Belgium, Finnish M1 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 mechanically removed from the subfloor and disposed of by landfill or Incineration/energy recovery. It is assumed that the amount of energy required to remove the floor is 0.03kWh/m2.

It is assumed that 80% of the product will go to landfill, with the remaining 20% being recycled or used in energy recovery schemes. 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 First Luxury Vinyl Floor Tiles

System boundary

Modules A1-A3: Includes raw materials, energy, water and transport processes required to make the product up to the factory gate, as well as production, packaging and general site waste.

Module A4: Transport from factory gate to UK and then to the installation site. Distance was calculated as an average based on product sales across UK, Europe, Middle and Far East.

Module A5: Floor installation, including adhesive and disposal of off-cuts and packaging.

Module B2: Electricity, water, cleaning products required to clean and maintain the product for one year.
Module C1: The amount of electricity required to remove a floor.
Module C2: Transportation of removed flooring to landfill or energy recovery site. Assumed distance is 200km.
Module C3: Waste processing of flooring waste.
Module C4: Disposal

Data sources, quality and allocation

In addition to First, other LVT products are also manufactured at the same production site. Calculations were performed to enable allocation of total site energy use, water and waste to the Amtico First production. Allocation procedures were by physical allocation and are according to EN 15804 and are based on the ISO14044 guidance

Transportation distances were calculated for Amtico First, based on the percentage of total square meters supplied to a distribution centre or sales region and the distance to the distribution centre or sales region.

The LCA was calculated using BRE LINA V2.0.8 with Ecoinvent

Cut-off criteria

1. Transport distances to site were not calculated for Sales Business Units with <1% of product sales.
2. The product life was based on the commercial 7 years warranty.

LCA Results

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

Parameters describing environmental impacts									
			GWP	ODP	AP	EP	POCP	ADPE	ADPF
			kg CO_2 equiv.	kg CFC 11 equiv.	kg SO_2 equiv.	kg $(PO_4)^{3-}$ equiv.	kg C_2H_4 equiv.	kg Sb equiv.	MJ, net calorific value.
Product stage	Raw material supply	A1	6.50e+0	1.07e-7	2.44e-2	4.49e-3	6.62 e-3	2.58e-5	1.35e+2
	Transport	A2	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Manufacturing	A3	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Total (of product stage)	A1-3	6.50e+0	1.07e-7	2.44e-2	4.49e-3	6.62 e-3	2.58e-5	1.35e+2
Construction process stage	Transport	A4	2.18e+0	3.74e-7	2.35e-2	3.53e-3	2.39e-3	4.31e-6	3.20e+1
	Construction	A5	9.25e--1	1.10e-7	5.49e-3	1.61e-3	1.12e-3	4.99e-6	2.21e+1
Use stage	Use	B1	MND	MND	MND	MND	MND	MND	MND
	Maintenance	B2	1.10e+1	7.92e-7	6.09e-2	1.66e-2	4.34e-3	2.05e-5	1.89e+2
	Repair	B3	MND	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND	MND
End of life	Deconstruction, demolition	C1	1.80e-2	1.17e-9	9.77e-5	2.24e-5	5.56e-6	2.18e-8	2.78e-1
	Transport	C2	1.23e-1	2.26e-8	4.11e-4	1.08e-4	7.17e-5	3.24e-7	1.86e+0
	Waste processing	C3	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Disposal	C4	1.88e-1	8.07e-9	6.00e-4	1.11e-2	6.56e-5	4.40e-8	7.48e-1
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	MND	MND	MND	MND	MND	MND	MND

GWP = Global Warming Potential;
ODP = Ozone Depletion Potential;
AP = Acidification Potential for Soil and Water;
EP = Eutrophication Potential;
POCP = Formation potential of tropospheric Ozone;
ADPE = Abiotic Depletion Potential – Elements;
ADPF = Abiotic Depletion Potential – Fossil Fuels;

LCA Results (continued)

Parameters describing resource use, primary energy								
			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	4.38e+0	1.12e-4	4.38e+0	1.56e+2	0.00e+0	1.56e+2
	Transport	A2	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Manufacturing	A3	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Total (of product stage)	A1-3	4.38e+0	1.12e-4	4.38e+0	1.56e+2	0.00e+0	1.56e+2
Construction process stage	Transport	A4	6.94e-1	3.05e-6	6.94e-1	3.23e+1	0.00e+0	3.23e+1
	Construction	A5	2.34e+0	1.04e-5	2.34e+0	2.35e+1	0.00e+0	2.35e+1
Use stage	Use	B1	MND	MND	MND	MND	MND	MND
	Maintenance	B2	1.41e+1	3.56e-5	1.41e+1	2.40e+2	0.00e+0	2.40e+2
	Repair	B3	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND
End of life	Deconstruction, demolition	C1	2.40e-2	4.33e-8	2.40e-2	3.70e-1	0.00e+0	3.70e-1
	Transport	C2	2.46e-2	9.18e-8	2.46e-2	1.84e+0	0.00e+0	1.84e+0
	Waste processing	C3	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Disposal	C4	2.40e-2	6.59e-8	2.40e-2	7.57e-1	0.00e+0	7.57e-1
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	MND	MND	MND	MND	MND	MND

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)

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	0.00e+0	0.00e+0	0.00e+0	5.31e-1
	Transport	A2	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Manufacturing	A3	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Total (of product stage)	A1-3	0.00e+0	0.00e+0	0.00e+0	5.31e-1
Construction process stage	Transport	A4	0.00e+0	0.00e+0	0.00e+0	8.11e-3
	Construction	A5	0.00e+0	0.00e+0	0.00e+0	6.02e-2
Use stage	Use	B1	MND	MND	MND	MND
	Maintenance	B2	0.00e+0	0.00e+0	0.00e+0	7.99e-2
	Repair	B3	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND
End of life	Deconstruction, demolition	C1	0.00e+0	0.00e+0	0.00e+0	7.39e-5
	Transport	C2	0.00e+0	0.00e+0	0.00e+0	4.02e-4
	Waste processing	C3	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Disposal	C4	0.00e+0	0.00e+0	0.00e+0	8.46e-4
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	MND	MND	MND	MND

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)

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	1.11e-1	1.30e-1	4.54e-5
	Transport	A2	0.00e+0	0.00e+0	0.00e+0
	Manufacturing	A3	0.00e+0	0.00e+0	0.00e+0
	Total (of product stage)	A1-3	1.11e-1	1.30e-1	4.54e-5
Construction process stage	Transport	A4	1.92e-2	7.10e-1	2.16e-4
	Construction	A5	1.92e-2	1.12e-1	5.01e-5
Use stage	Use	B1	MND	MND	MND
	Maintenance	B2	6.00e-2	4.57e-1	1.15e-3
	Repair	B3	MND	MND	MND
	Replacement	B4	MND	MND	MND
	Refurbishment	B5	MND	MND	MND
	Operational energy use	B6	MND	MND	MND
	Operational water use	B7	MND	MND	MND
End of life	Deconstruction, demolition	C1	4.22e-5	4.49e-4	2.04e-6
	Transport	C2	7.78e-4	8.65e-2	1.28e-5
	Waste processing	C3	0.00e+0	0.00e+0	0.00e+0
	Disposal	C4	5.68e-4	2.95e+0	4.70e-6
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	MND	MND	MND

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

LCA Results (continued)

Other environmental information describing output flows – at end of life						
			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	7.35e-2	1.44e-1	0.00e+0	0.00e+0
	Transport	A2	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Manufacturing	A3	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Total (of product stage)	A1-3	7.35e-2	1.44e-1	0.00e+0	0.00e+0
Construction process stage	Transport	A4	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Construction	A5	3.68e-3	3.64e-1	1.84e-1	0.00e+0
Use stage	Use	B1	MND	MND	MND	MND
	Maintenance	B2	0.00e+0	0.00e+0	6.24e-2	0.00e+0
	Repair	B3	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND
End of life	Deconstruction, demolition	C1	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Transport	C2	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Waste processing	C3	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Disposal	C4	0.00e+0	0.00e+0	7.40e-1	0.00e+0
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	MND	MND	MND	MND

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 are shipped to Coventry and then distributed in the UK, across Europe, Scandinavia, the Middle and Far East. The average distance transported for each geographical market was calculated by multiplying the distance travelled by the percentage sales volume by square meter. Sales regions where sales were less than 1% were not considered. The sales volumes were those in 2017. The transportation data is taken from Ecoinvent datasets.		
	Worldwide: Ship to UK	Litre of fuel type per distance or vehicle type	303l/km
	Distance:	km	19964
	Capacity utilisation (incl. empty returns)	%	65
	Bulk density of transported productskg/m3	kg/m^3	1838
	Worldwide: Ship to UK	Diesel / 16-32 tonne Lorry	0.032l/km
	Distance:	km	249
	Capacity utilisation (incl. empty returns)	%	35
	Bulk density of transported productskg/m^3	kg/m^3	1838
	UK Direct Delivery: Diesel/Vehicle	Litre of fuel type per distance or vehicle type	0.32l/km
	Distance	km	108
	Capacity utilisation (inc. empty return)	%	Not Stated
	Bulk density of transported productskg/m^3	kg/m^3	1838
	Worldwide: Road	Diesel / 16-32 tonne Lorry	0.032l/km
	Distance:	km	665
	Capacity utilisation (incl. empty returns)	%	35
	Bulk density of transported productskg/m^3	kg/m^3	1838
	Worldwide: Ship	Litre of fuel type per distance or vehicle type	303l/km
	Distance:	km	807
	Capacity utilisation (incl. empty returns)	%	65
	Bulk density of transported productskg/m3	kg/m^3	1838

A5 – Installation in the building	Amtico First should be bonded with a suitable low emission adhesive to an appropriately prepared subfloor as detailed in BS8302. Full details on installation can be found at www.amtico.com. Installation off cuts can be disposed of via recycling, used in energy recovery schemes or landfilled. Wherever possible it is recommended that products should always be recycled		
	% Installation Wastage Rate		5
	Post installation Cleaning	l/m^2	0.02
	Ancillary Materials	Mass per unit area of product installed kg/m^2	0.288
	Material Waste	Installation off cuts mass per unit area of product installed kg/m^2	0.184
	Cardboard Packaging	Mass per unit area of product installed kg/m^2	0.201
	Wood Packaging	Mass per unit area of product installed kg/m^2	0.154
	Shrink Wrap	Mass per unit area of product installed kg/m^2	0.001
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 Powered Cleaning operations a year, 1.5kW machine	kWh/m^2	0.27
	52 Wet Cleans per year (Water use)	$l/yr./m^2$	3.224
	Detergent usage	$kg/yr./m^2$	0.0416
Reference service life	Amtico International (hereinafter referred to as the Company) hereby guarantees that in the event of the Amtico First flooring supplied to the original purchaser under this agreement, requiring replacement due to 'wear-out' from normal foot traffic, within seven years from the date of purchase, the floor will be repaired or replaced with the same or similar material free of charge. The floor must have been installed in accordance with our installation instructions including our recommended adhesives. 'Wear-out' means the removal of the pattern and colour from the Amtico First floor caused by the removal of the protective wear layer.		
	Commercial Product Warranty	Years	7
	Commercial and residential warranties can be found on the Amtico website https://www.amtico.com/commercial/technical/docs/first-collection		

C1 to C4 End of life,	Description of scenario		
C1	At the end of the product's life, the flooring is mechanically removed from the subfloor and disposed of by landfill or Incineration/energy recovery.		
	Electricity for power tools	kWh/m^2	0.03
C2	It is assumed that 80% of the dismantled product goes to land fill and the remaining 20% is incinerated for energy recovery or recycled. The disposal sites are within 200km of the demolition site.		

C3	The floor is mechanically removed from the installation and is then processed as follows, Landfill 80%. No further processing required. Incineration/energy recovery 20%. No further processing required		
C4	Final disposal		
	Polyvinyl chloride Waste to Energy recovery	kg	0.735
	Polyvinyl chloride Waste to landfill	kg	2.940

Summary, comments and additional information

Product Brochures
Amtico First brochure is available at
https://www.amtico.com/commercial/brochures/

Technical Product Information
Amtico First Technical Data Sheet and Declaration of Performance, are available on the Amtico website.
https://www.amtico.com/commercial/technical/docs/first-collection

Technical Standards
Copies of the test standards quoted in the Technical Data Sheets are available from the British Standards Institute website.
https://shop.bsigroup.com/

Warranties
Commercial warranty can be found on the Amtico website
https://www.amtico.com/commercial/technical/docs/first-collection

Installation and Aftercare
Installation, adhesives and aftercare instructions are available on the Amtico Website at
https://www.amtico.com/commercial/technical/docs/first-collection

Example of Amtico First

Fig1 Image of product

Amtico Logo

References

BSI. Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. BS EN 15804:2012+A1:2013. London, BSI, 2013.

BSI. Environmental labels and declarations – Type III Environmental declarations – Principles and procedures. BS EN ISO 14025:2010 (exactly identical to ISO 14025:2006). London, BSI, 2010.

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.