

Statement of Verification

BREG EN EPD No.: 000186 ECO EPD Ref. No. 00000656 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 Marine Luxury Vinyl Floor Tiles

Company Address

Kingsfield Road Coventry CV6 5AA UK



A MANNINGTON COMPANY

23 April 2018

Date of First Issue

Signed for BRE Global Ltd

Emma Baker

Operator

Date of this Issue

22 April 2023

06 October 2023

Issue 02

BRE/Global

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Environmental Product Declaration

EPD Number: 000186

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 Marine Luxury Vinyl Floor Tiles	Product Average.
EPD Type	Background database
Cradle to Gate with options	ecoinvent
Demonstra	ition of Verification
CEN standard EN 15	5804 serves as the core PCR ^a
Independent verification of the declara	ation and data according to EN ISO 14025:2010 ⊠ External
	riate ^b)Third party verifier: ligel 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			ruction				Use sta		Relat	ed to	End-of-life			Benefits and loads beyond the system	
					Rel	ated to	the bui	lding fa	ıbric		ıilding					boundary
A1	A2	А3	A4	A5	B1	B2	В3	B4	B5	В6	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
V	V	$\overline{\mathbf{Q}}$	$\overline{\mathbf{A}}$	\square		$\overline{\checkmark}$						$\overline{\mathbf{A}}$	\checkmark	$\overline{\mathbf{A}}$	$\overline{\checkmark}$	

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Amtico International Kingfield Road Coventry United Kingdom CV6 5AA

Construction Product:

Product Description

Amtico Marine is a design-led, high-performance luxury vinyl tile collection consisting of 69 products: 36 Woods, 21 Stones and 12 Abstract designs. Available in a range of embosses, tile/plank formats. Amtico Marine has been design to conform to the IMO requirements of Modules B and D of the Marine Equipment Directive (MED) and achieves the Wheelmark approval, issued by Lloyds Register Verification. Amtico Marine is a 2.0 mm product with a 0.55mm wear layer and is classified as per EN ISO 10874 for use in the following areas.

- 1. Class 33, Heavy Commercial
- 2. Class 42, General Light Industrial

Amtico Marine products are recommended for use over properly prepared sub floors in the same manner as would be applied to other resilient floors.

Amtico Marine 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 and meet the requirements of the MED for use on marine vessels.



Technical Information

Property	Value, Unit
Usage Classification (EN ISO 10874)	33,42
Manufacturing Standard (EN ISO 10582)	Pass
Total Thickness (EN ISO 24346)	2.0mm
Wear Layer Thickness (EN ISO 24340)	0.55mm
Weight (EN ISO 23997)	2851 g/m ²
Abrasion Resistance (EN ISO 10582)	Type 1
Residual Indentation (EN ISO 24343-1)	≤0.1mm
Dimensional Stability (EN ISO 23999)	≤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)	≥7
Flammability /Smoke Emissions (IMO MSC FTP Code 2010, Parts 2 & 5)	Pass Cert.YY/038
Castor Chair Resistance (Type W) (EN ISO 4918)	Pass
Impact Sound Reduction (EN ISO 717-2)	4dB
Amtico Marine Technical Data Sheet is available on the Amtico website. https://www.amtico.com/commercial/technical/docs/marine-collection/	

Main Product Contents

Material/Chemical Input	%
Urethane Lacquer	<0.5
Polymer Resins	39
Plasticisers	13
Print	<3.5
Filler	41
Stabilisers & Pigments	<3



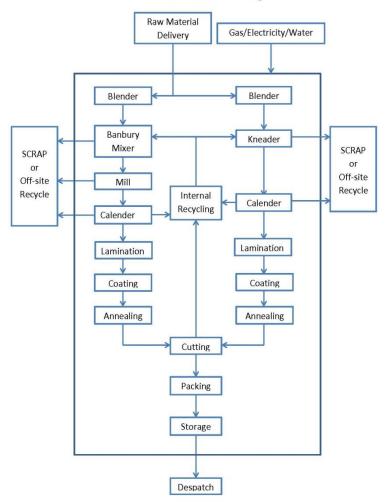
Manufacturing Process

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 in then coated with polyurethane, before being cut to size, boxed and dispatched to the customer.

Process flow diagram

Amtico Production Process Flow Diagram





Construction Installation

Amtico Marine should be bonded with a suitably low emissions, marine use approved adhesives to an appropriately prepared subfloor. Full details on installation can be found at

https://www.amtico.com/media/606925/amtico-marine-installation-guidelines-20140522.pdf

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

Use Information

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 to a disposal site will be 200km.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1m² Amtico Marine 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 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

Amtico manufactures 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 Marine Luxury Vinyl Floor Tiles product. 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 Marine, based 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. No manufacturing site water discharge volume data was available. Historical data indicated that 25% of the input water is discharge to the drain. The other 75% is lost through steam leaks, evaporation from cooling towers and quench water going to surface drains.
- 2. Transport distances to site were not calculated for Sales Business Units with <1% of product sales.
- 3. The product life was based on the commercial 10 years warranty.
- 4. Due to the lack of LCI information three compounds were omitted from the raw materials input. These three compounds accounted for 3.85% of the formulation. None of these compounds are present on the ECHA SVHC list.



LCA Results

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

Parameters	describing e	nviro	nmental i	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 C₂H₄ equiv.	kg Sb equiv.	MJ, net calorific value.
	Raw material supply	A1	7.17e+0	1.67e-7	3.55e-2	6.34e-3	8.44e-3	3.19e-5	1.36e+2
Product stage	Transport	A2	3.80e-1	6.86e-8	2.42e-3	4.28e-4	2.78e-4	8.53e-7	5.69e+0
1 Toddet Stage	Manufacturing	А3	5.12e-1	9.70e-8	6.15e-3	2.15e-3	6.13e-4	2.21e-6	1.92e+1
	Total (of product stage)	A1-3	8.06e+0	3.33e-7	4.41e-2	8.91e-3	9.34e-3	3.50e-5	1.61e+2
Construction	Transport	A4	8.65e-1	1.55e-7	4.60e-3	9.92e-4	6.83e-4	2.26e-6	1.29e+1
process stage	Construction	A5	9.41e-1	1.11e-7	5.60e-3	1.69e-3	1.16e-3	5.32e-6	2.25e+1
	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	В3	MND	MND	MND	MND	MND	MND	MND
Use stage	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
	Deconstruction, demolition	C1	1.80e-2	1.17e-9	9.77e-5	2.24e-5	5.56e-6	2.18e-8	2.78e-1
End of life	Transport	C2	9.53e-2	1.75e-8	3.19e-4	8.41e-5	5.56e-5	2.51e-7	1.44e+0
LIIG OF IIIE	Waste processing	СЗ	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Disposal	C4	1.46e-1	6.26e-9	4.65e-4	8.63e-3	5.09e-5	3.41e-8	5.80e-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;



Parameters	describing r	esour	ce use, pri	imary ener	gy			
			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
	Raw material supply	A1	4.11e+0	1.08e-3	4.11e+0	1.47e+2	0.00e+0	1.47e+2
Product stage	Transport	A2	8.62e-2	2.59e-7	8.62e-2	5.68e+0	0.00e+0	5.68e+0
Froduct stage	Manufacturing	А3	1.13e+1	2.98e-6	1.13e+1	2.35e+1	0.00e+0	2.35e+1
	Total (of product stage)	A1-3	1.55e+1	1.08e-3	1.55e+1	1.76e+2	0.00e+0	1.76e+2
Construction	Transport	A4	2.23e-1	1.14e-6	2.23e-1	1.29e+1	0.00e+0	1.29e+1
process stage	Construction	A5	2.87e+0	5.86e-5	2.87e+0	2.37e+1	0.00e+0	2.37e+1
	Use	B1	MND	MND	MND	MND	MND	MND
	Maintenance	B2	1.41e+1	3.56e5	1.41e+1	2.40e+2	0.00e+0	2.40e+2
	Repair	В3	MND	MND	MND	MND	MND	MND
Use stage	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
	Deconstruction, demolition	C1	2.40e-2	4.33e-8	2.40e-2	3.70e-1	0.00e+0	3.70e-1
End of life	Transport	C2	1.91e-2	7.12e-8	1.91e-2	1.43e+0	0.00e+0	1.43e+0
LING OF THE	Waste processing	С3	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Disposal	C4	1.86e-2	5.11e-8	1.86e-2	5.87e-1	0.00e+0	5.87e-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



Parameters describing resource use, secondary materials and fuels, use of water								
			SM	RSF	NRSF	FW		
			kg	MJ net calorific value	MJ net calorific value	m³		
	Raw material supply	A1	0.00e+0	0.00e+0	0.00e+0	1.90e-1		
Draduat atoma	Transport	A2	0.00e+0	0.00e+0	0.00e+0	1.26e-3		
Product stage	Manufacturing	А3	0.00e+0	0.00e+0	0.00e+0	8.81e-3		
	Total (of product stage)	A1-3	0.00e+0	0.00e+0	0.00e+0	2.00e-1		
Construction	Transport	A4	0.00e+0	0.00e+0	0.00e+0	3.09e-3		
process stage	Construction	A5	0.00e+0	0.00e+0	0.00e+0	4.34e-2		
	Use	B1	MND	MND	MND	MND		
	Maintenance	B2	0.00e+0	0.00e+0	0.00e+0	7.99e-2		
	Repair	В3	MND	MND	MND	MND		
Jse stage	Replacement	B4	MND	MND	MND	MND		
	Refurbishment	B5	MND	MND	MND	MND		
	Operational energy use	B6	MND	MND	MND	MND		
	Operational water use	В7	MND	MND	MND	MND		
	Deconstruction, demolition	C1	0.00e+0	0.00e+0	0.00e+0	7.39e-5		
Tad of life	Transport	C2	0.00e+0	0.00e+0	0.00e+0	3.12e-4		
End of life	Waste processing	СЗ	0.00e+0	0.00e+0	0.00e+0	0.00e+0		
	Disposal	C4	0.00e+0	0.00e+0	0.00e+0	6.56e-4		
Potential benefits and oads 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



Other enviro	nmental infor	matio	n describing waste cate	egories	
			HWD	NHWD	RWD
			kg	kg	kg
	Raw material supply	A1	7.78e-1	8.63e-2	5.71e-5
Due dont ete se	Transport	A2	2.39e-3	2.23e-1	3.91e-5
Product stage	Manufacturing	А3	1.12e-2	4.77e-2	1.14e-4
	Total (of product stage)	A1-3	7.92e-1	3.57e-1	2.10e-4
Construction	Transport	A4	7.15e-3	4.84e-1	8.81e-5
process stage	Construction	A5	5.24e-2	1.22e-1	5.26e-5
	Use	B1	MND	MND	MND
	Maintenance	B2	6.00e-2	4.57e-1	1.15e-3
	Repair	В3	MND	MND	MND
Use stage	Replacement	B4	MND	MND	MND
	Refurbishment	B5	MND	MND	MND
	Operational energy use	В6	MND	MND	MND
	Operational water use	В7	MND	MND	MND
	Deconstruction, demolition	C1	4.22e-5	4.49e-4	2.04e-6
	Transport	C2	6.03e-4	6.71e-2	9.93e-6
End of life	Waste processing	СЗ	0.00e+0	0.00e+0	0.00e+0
	Disposal	C4	4.41e-4	2.28e+0	3.64e-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



			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
	Raw material supply	A1	0.00e+0	0.00e+0	0.00e+0	0.00e+0
Product stage	Transport	A2	0.00e+0	0.00e+0	0.00e+0	0.00e+0
r roddot stago	Manufacturing	А3	0.00e+0	9.31e-2	2.00e-2	0.00e+0
	Total (of product stage)	A1-3	0.00e+0	9.31e-2	2.00e-2	0.00e+0
Construction	Transport	A4	0.00e+0	0.00e+0	0.00e+0	0.00e+0
process stage	Construction	A5	0.00e+0	4.70e-1	1.44e-1	0.00e+0
	Use	B1	MND	MND	MND	MND
	Maintenance	B2	0.00e+0	0.00e+0	6.24e-2	0.00e+0
	Repair	В3	MND	MND	MND	MND
Use stage	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
	Deconstruction, demolition	C1	0.00e+0	0.00e+0	0.00e+0	0.00e+0
End of life	Transport	C2	0.00e+0	0.00e+0	0.00e+0	0.00e+0
LING OF INC	Waste processing	СЗ	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Disposal	C4	0.00e+0	0.00e+0	5.70e-1	0.00e+0
Potential benefits and coads 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								
	Products manufactured at Coventry are 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 per square meter. The sales volumes were those in 2016. The transportation data is taken from Ecoinvent datasets										
	UK Direct Delivery: Diesel / Vehicle Van	Litre of fuel type per distance or vehicle type	0.32l/km								
	Distance:	km	42								
	Capacity utilisation (incl. empty returns)	%	Not stated								
A 4	Bulk density of transported products	kg/m³	1426								
A4 – Transport to the building	Worldwide: Diesel / 16-32 tonne Lorry	Litre of fuel type per distance or vehicle type	0.032l/km								
site	Distance:	km	1164								
	Capacity utilisation (incl. empty returns)	%	35								
	Bulk density of transported productskg/m3	kg/m³	1426								
	Worldwide: Ship	Litre of fuel type per distance or vehicle type	l/km								
	Distance:	km	2528								
	Capacity utilisation (incl. empty returns)	%	65								
	Bulk density of transported productskg/m3	kg/m³	1426								



Scenario	Parameter	Units	Results					
	Amtico Marine should be bonded with a suitably low emissions, m appropriately prepared subfloor.	arine use approved a	adhesives to ar					
	Installation Wastage	% Installation Wastage Rate	5					
	Post installation Cleaning	I/m²	0.02					
	Ancillary Materials	Mass per unit area of product installed kg/m²	0.288					
A5 – nstallation in he building	Material Waste	Installation off cuts mass per unit area of product installed kg/m ²	0.143					
	Cardboard Packaging	Mass per unit area of product installed kg/m ²	0.19					
	Wood Packaging	Mass per unit area of product installed kg/m²	0.273					
	Shrink Wrap	Mass per unit area of product installed kg/m²	0.002					
	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.							
32 –	Dry cleaning may be performed with a dust mop or with a vacuum performed with a mop, detergent and water. Power cleaning is als etc. The calculations are assumed for 1m ² per year.							
Maintenance	52 Powered Cleaning operations a year, 1.5kW machine	kWh/m²	0.27					
	52 Wet Cleans per year (Water use)	l/yr/m ²	3.224					
	Detergent usage	kg/yr/m²	0.0416					
Reference service life	Amtico International (hereinafter referred to as the Company) here the Amtico Marine flooring supplied to the original purchaser unde replacement due to 'Wear-out' from normal foot traffic within ten ye floor will be repaired or replaced with the same or similar material removal of pattern and colour from the Amtico Marine floor caused wear layer. The LCA was determined using the commercial warranty	r this agreement, req ears from the date of free of charge. 'Wear	uiring purchase, the r-out' means tl					
	Commercial Product Warranty	Years	10					



Scenarios and additional technical information									
Scenario	Parameter	Parameter Units Results							
C1 to C4 End of life,	Description of scenario	Description of scenario							
C1	At the end of the product's life, the flooring is mechanically disposed of by landfill or Incineration/energy recovery.	removed from the s	subfloor and						
O1	Electricity for power tools kWh/m² 0.0								
C2	It is assumed that 80% of the dismantled flooring goes to incinerated for energy recovery or recycled; that the dispodemolition site								
C3	The floor is mechanically removed from the installation an Landfill 80%. No further processing required. Incineration/energy recovery 20%. No further processing	·	as follows,						
	Final disposal								
C4	Polyvinyl chloride Waste to Energy recovery	kg	0.57						
	Polyvinyl chloride Waste to Landfill	kg	2.28						



Summary, comments and additional information

Product Brochures

Amtico Marine brochure is available at https://www.amtico.com/commercial/brochures/

Technical Product Information

Amtico Marine Technical Data Sheet, EC Certificate Type Examination (Modules B & D) and Certificate of Fire Approval reports are available on the Amtico website.

https://www.amtico.com/commercial/technical/docs/marine-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/marine-collection/

Installation and Aftercare

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



Example of Amtico Marine

Fig1 Image of product





Amtico Logo

antico A MANNINGTON COMPANY

Figure 2

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.