

Statement of Verification

BREG EN EPD No.: 000411

Issue 02

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



is in accordance with the requirements of:
EN 15804:2012+A1:2013
and
BRE Global Scheme Document SD207

This declaration is for:
1 m² of Array Fibrebonded Carpet Tile

Company Address

Wellington Mills
Liversedge
West Yorkshire
WF15 7FH



HECKMONDWIKE

MANUFACTURERS OF FIBRE BONDED CARPETS

Emma Baker
Operator

05 October 2023
Date of this Issue

25 March 2022
Date of First Issue

24 March 2027
Expiry Date



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Environmental Product Declaration

EPD Number: 000411

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
Heckmondwike FB, Division of National Floorcoverings Ltd Wellington Mills Liversedge, West Yorkshire, WF15 7FH	Andrew Dutfield/ BRE LINA 2.0
Declared/Functional Unit	Applicability/Coverage
1 m ² of Array fibrebonded tile, product weight 4.075 kg/m ²	Product Average.
EPD Type	Background database
Cradle to Gate	Ecoinvent v3.2
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 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> 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
A1	A2	A3	A4	A5	Related to the building fabric					Related to the building		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
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Heckmondwike FB, Division of National Floorcoverings Ltd
Wellington Mills
Liversedge, West Yorkshire, WF15 7FH

Construction Product:

Product Description

Heavy contract fibrebonded tile floorcovering for indoor commercial use. This EPD refers to Array fibrebonded tile only.

Technical Information

Property	Value, Unit
Colour Fastness Light (BS EN ISO 105:B02)	>6
Colour Fastness Wet Rubbing (BS EN ISO 105:BO1)	4-5
Colour Fastness Dry Rubbing (BS EN ISO 105:X12)	4-5
Flammability BS5287 Assessment and Labelling of Textile Floorcoverings tested to BS4790 (Hot Metal Nut Test)	Low Radius of Char
BS EN 13501	Class Bfl-s1 (Tile)
Reduction in Impact Noise BS EN ISO 140-8	22 dB (Tile)



Main Product Contents

Material/Chemical Input	%
Polypropylene fibre	17.9
Nylon 6 fibre	3.2
Recycled polyester fibre	0
SBR Latex	5.3
Bitumen backing	73.6
Total	100

Manufacturing Process

Staple fibres are blended, carded, and layered before being needle-punched by barbed needles to produce a consolidated flat felt. The surface layer is then fed through a structuring loom where forked needles punch through to create a ribbed appearance. This is then tacked to a separate flat needlepunched layer before being presented to another structuring loom which allows selected sections of the flat layer to be punched through the ribbed layer, giving the striking colour effect. The next stage is to fully impregnate the material with SBR latex, after which the rolls are bitumen-backed and cut to 50cm x 50cm tiles.

Process flow diagram



Construction Installation

The method of installation should conform to BS5325. Tiles should be allowed to condition for 24 hrs at the expected temperature and humidity levels.

Use Information

Daily vacuum cleaning with a twin motored upright vacuum cleaner, preferably with an adjustable head, is recommended. Please note that Heckmondwike’s fibre bonded carpets can be vacuumed immediately after installation. It is essential to remove all loose soil daily because if left to build up, the particles of dirt are more damaging to the fibre structure, thereby decreasing the life of the carpet. Attention should be given to areas where there is extra traffic and in entrances to buildings where extra vacuuming is necessary.

The carpet should be periodically deep cleaned by hot water extraction using a good quality carpet detergent. It is important that carpet is cleaned at least once a year, depending on traffic levels.

End of Life

At present the most practical, current alternative to landfill is energy recovery where the uplifted product is used as a fuel. Polypropylene carpet has a high calorific value and the energy produced reduces the amount of fossil fuel required thus protecting our natural resources.

Life Cycle Assessment Calculation Rules

Declared unit description

1 m² of Array fibrebonded tile carpet, product weight 4.075 kg/m²

System boundary

This is a cradle-to-gate LCA, reporting all production life cycle stages of modules A1 to A3 in accordance with EN 15804:2012+A1:2013.

Data sources, quality and allocation

Heckmondwike Array tile declared unit is 1 m² of product with a weight of 4.075 kg/m². The fibrebonding and latexing data supplied relates to the Liversedge site and covers the working period 2nd January 2019 to 19th December 2019. The site manufactures other products in addition to Array. Allocations have been made according to the following table:

Raw materials	Production by mass x % of recipe
Packaging	Production by mass x standard quantity per product
Energy, water, general waste	% of total production by mass
Lubricant, solid production waste	% of fibrebond and tufted production by mass

The Paragon tile backing data covers the period 1st March 2017 to 31st December 2017. The site manufactures other products in addition to Array. Raw materials have been allocated by the product specification and the square metres produced. Utilities, emissions and waste have been allocated by percentage of total production by mass. Allocations at both sites have been made according to the provisions of the BRE PCR PN514 and EN 15804.

Secondary data have been drawn from the BRE LINA database v2.0.82 and the background LCI datasets are based on ecoinvent v3.2 (2015).

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)	n/a
Fair	n/a	n/a	Less than 10 years of difference between the reference year according to the documentation, and the time period for which data are representative

The quality level of geographical and technical representativeness is Very Good. The quality level of time representativeness is Fair as the background LCI datasets are based on ecoinvent v3.2 which was compiled in 2015 and so there is less than 10 years between the reference year according to the documentation, and the time period for which data are representative.

Cut-off criteria

All raw materials and energy input to the manufacturing process have been included, except for direct emissions to air, water and soil, which are not measured. The inventory process in this LCA includes all data related to raw material, packaging material, ancillary and consumable items. Process energy, water use, water discharge and waste are included.

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 ₂ H ₄ equiv.	kg Sb equiv.	MJ, net calorific value.
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	8.40E+00	6.05E-07	4.61E-02	1.29E-02	5.98E-03	4.76E-05	1.93E+02

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 resource use, primary energy			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	1.11E+01	1.71E-02	1.12E+01	1.57E+02	4.42E+01	2.01E+02

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	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	0.00E+00	0.00E+00	0.00E+00	1.32E-01

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 environmental information describing waste categories						
			HWD	NHWD	RWD	
			kg	kg	kg	
Product stage	Raw material supply	A1	AGG	AGG	AGG	
	Transport	A2	AGG	AGG	AGG	
	Manufacturing	A3	AGG	AGG	AGG	
	Total (of product stage)	A1-3	8.21E-02	3.61E-01	4.69E-04	

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

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	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	0.00E+00	9.32E-02	1.23E-01	0.00E+00

CRU = Components for reuse;
MFR = Materials for recycling

MER = Materials for energy recovery;
EE = Exported Energy

Interpretation

Analysis of the results shows that the following raw materials have the highest and second highest impacts for the selected indicators:

Indicator	Highest impact	2nd highest impact
GWP	Polypropylene (53.0%)	Nylon 6 (22.5%)
ODP	Bitumen (47.0%)	Polypropylene (17.6%)
AP	Polypropylene (54.8%)	Nylon 6 (18.0%)
EP	Polypropylene (54.3%)	Nylon 6 (17.3%)
POCP	Polypropylene (50.3%)	Nylon 6 (17.4%)
ADPE	SBR latex (50.3%)	Nylon 6 (24.0%)
ADPF	Polypropylene (50.7%)	Bitumen (15.6%)

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.

Pre Consultants bv. SimaPro 8 LCA Software 2013. <http://www.pre-sustainability.com>

ecoinvent Centre. Swiss Centre for life Cycle Inventories. <http://www.ecoinvent.org>