

Statement of Verification

BREG EN EPD No.: 000247

Issue 1

ECO EPD Ref. No. 0000823

This is to verify that the

Environmental Product Declaration

provided by:

Xtratherm UK Ltd



is in accordance with the requirements of:

EN 15804:2012+A1:2013

and

BRE Global Scheme Document SD207

This declaration is for:

Phenolic Insulation Product

Company Address

Park Road
Holmewood
Chesterfield
S42 5UY



Xtratherm[®]
More than insulation

Laura Critien

01 February 2019

Signed for BRE Global Ltd

Operator

Date of this Issue

01 February 2019

01 February 2023

Date of First Issue

Expiry Date



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Environmental Product Declaration

EPD Number: 000247

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
Xtratherm UK Ltd Park Road Holmewood Chesterfield S42 5UY United Kingdom	BRE LINA v2.0
Declared/Functional Unit	Applicability/Coverage
1m ² of faced phenolic insulation product	Manufacturer specific representative product
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	
<small>a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)</small>	
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
<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

Xtratherms phenolic insulation foam is made at one manufacturing site:

Holmewood Industrial Park Park Road Chesterfield Derbyshire S42 5UY United Kingdom	Click here to enter address.
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Construction Product:

Product Description

Xtratherm phenolic foam is a phenol based insulation foam for use in solid insulation products. It is not sold as a foam alone, but is faced with a range of facers to create insulation boards, to be sold under the product range name of Safe-R. The Safe-R range covers insulation products for use in a wide range of building applications including walling, cavity walls, roofing, framing, and solid and suspended flooring. The Xtratherm phenolic insulation boards are made in a range of foam thicknesses (40 - 160mm) and using various combinations of two types of facer, to make the products listed in the table below:

Products in the Safe-R range
Safe-R Cavity Wall (SR / CW)
Safe-R Underfloor (SF / UF)
Safe-R Pitched Roof (SR / PR)
Safe-R Framing Board (SF / FB)
Safe-R Soffit (SR / ST)
Safe-R Soffit Plus (SR / STP)
Safe-R Rainscreen (SR / RS)

NOTE: The LCA study modelled the highest thickness of foam sold within the products covered, of 160mm, plus facings (on both sides) of the facer type which was considered to be the worst in terms of its individual,

per m², LCA results. Therefore, the results for this product represent (for all impact, waste and reporting categories), the worst case scenario, and thus cover all products listed.

Technical Information

Technical properties of the Xtratherm insulation boards vary depending on the product type. For properties of each product covered by this EPD, please see the Xtratherm’s website: <http://www.xtratherm.com/products>
The below information covers the basic technical properties covered by the representative product in this EPD and the products it represents:

Property	Value, Unit
Core thickness	160 mm
Average density of foam	45 kg/m ³
Thermal conductivity (EN 12667)	0.020 W/mK (thickness ≥ 100 mm)
Fire performance (EN 13501-1)	D s1-d0*, B s1-d0

*Refers to Safe-R Cavity Wall and Safe-R Underfloor products only

Main Product Contents

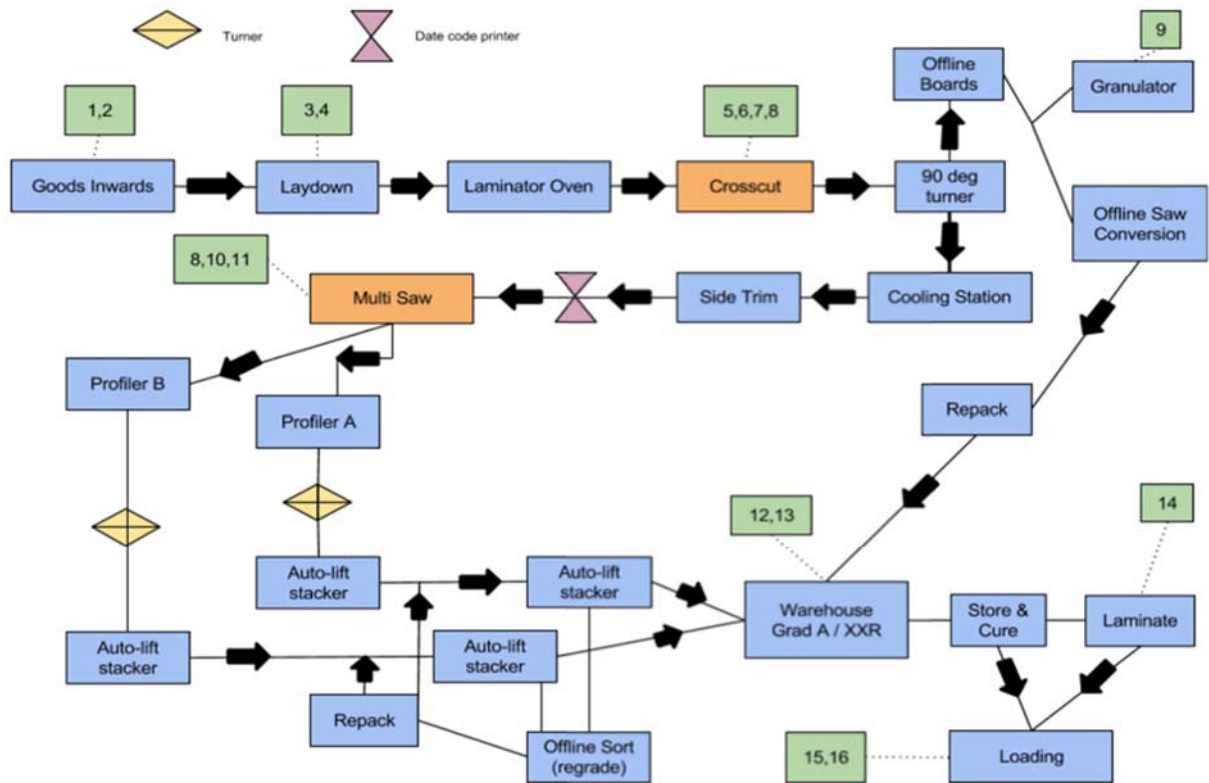
The composition of 1m² of the representative Xtratherm phenolic insulation product as modelled for this EPD is shown below:

Material/Chemical Input	Mass (kg)
Xtratherm phenolic insulation foam	7.2
Aluminium foil based facer	0.356

Manufacturing Process

Raw materials for the phenolic foam are measured out and then injected onto a selected lower facer on a conveyor belt. The exothermic reaction expands the foam, which then comes into contact with the selected upper facer. An automated process cures and cuts the product to the required size. Products are then packaged, and sent to customers or stored.

Process flow diagram



Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1m² of Xtratherm phenolic insulation product modelled to represent a product of 160 mm Xtratherm phenolic insulation (45 kg/m³) faced on both sides with an aluminium foil based facer.

System boundary

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

Data sources, quality and allocation

The supporting LCA study was carried out using BRE LINA v2.0 using manufacturer specific data provided by Xtratherm for their UK production site for the period of the 12 months of 2016.

The UK Xtratherm site produced other insulation products in addition to their phenolic insulation products so allocation was applied to site wide values for energy, packaging, water, non-production waste, and wastewater, on a volume of foam production basis. No allocation of production waste was required as this is recorded for individual foam types. No allocation of raw material inputs was required as total site raw material usage for all phenolic foam made over the production period was used.

Secondary data has been drawn from the BRE LINA database v2.0.31 and the background LCI datasets are based on ecoinvent v3.2.

Cut-off criteria

No inputs or outputs have been excluded. All raw materials and packaging inputs, plus their transport, process and general energy and water use, production and non-production waste, and emissions to air have been included.

LCA Results

Results for 1m² of 160 mm thick phenolic foam with two facers of 178 gsm aluminium-based foil facer, are shown below for the aggregated declared modules A1 to A3.

(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	34.3	2.53e-6	0.168	0.0606	0.0495	1.26e-4	865

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	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	31.3	2.91e-04	31.3	891	0	891

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	0	0	1.28

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	0.929	1.91	1.21e-3	

HWD = Hazardous waste disposed;
RWD = Radioactive waste disposed

NHWD = Non-hazardous 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	0.0261	0	0

CRU = Components for reuse;
MFR = Materials for recycling

MER = Materials for energy recovery;
EE = Exported Energy

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 (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.

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BSI. Thermal performance of building materials and product. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Products of high and medium thermal resistance. BS EN 12667:2001. London, BSI, 2001.

BSI. Fire classification of construction products and building elements. Classification using test data from reaction to fire tests. BS EN 13501-1:2007+A1:2009. London, BSI, 2007.