

## Statement of Verification

BREG EN EPD No.: 000226  
ECO EPD Ref. No. 00000753

Issue 01

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**

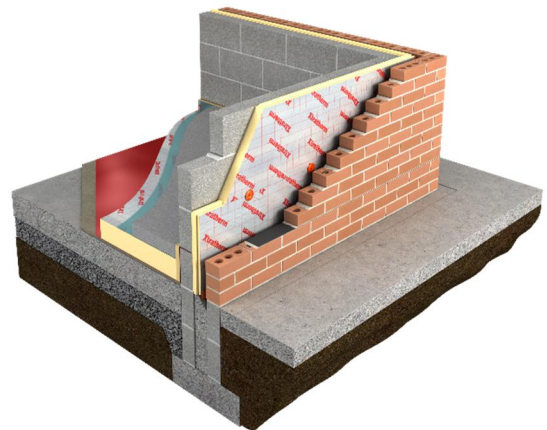
This declaration is for:

**PIR Insulation Board**



### Company Address

Park Road  
Holmewood  
Chesterfield  
S42 5UY



**Xtratherm**<sup>®</sup>  
More than insulation

Signed for BRE Global Ltd

Emma Baker  
Operator

17 September 2018  
Date of this Issue

17 September 2018  
Date of First Issue

16 September 2023  
Expiry Date



This Statement of Verification is issued subject to terms and conditions (for details visit [www.greenbooklive.com/terms](http://www.greenbooklive.com/terms)).

To check the validity of this statement of verification please, visit [www.greenbooklive.com/check](http://www.greenbooklive.com/check) or contact us.

BRE Global Ltd., Garston, Watford WD25 9XX.  
T: +44 (0)333 321 8811 F: +44 (0)1923 664603 E: [Enquiries@breglobal.com](mailto:Enquiries@breglobal.com)



## Environmental Product Declaration

EPD Number: 000226

### 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 <sup>2</sup> of faced PIR 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 <sup>a</sup>	
Independent verification of the declaration and data according to EN ISO 14025:2010 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	
(Where appropriate <sup>b</sup> ) 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
<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 sites

Xtratherm’s PIR insulation foam is made at two manufacturing sites:

Holmewood Industrial Park  
Park Road  
Chesterfield  
Derbyshire  
S42 5UY  
United Kingdom

Liscarton Industrial Estate  
Kells Road  
Navan  
Country Meath  
Ireland

## Construction Product

### Product Description

Xtratherm PIR foam is a polyisocyanate 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 names of Xtratherm Thin-R, Thin-R Plus and Xtroliner. These are insulation products for use in a wide range of building applications including walling, cavity walls, roofing, framing, and solid and suspended flooring. The Xtratherm PIR insulation boards are made in a range of foam thicknesses (25 - 160mm) and using various combinations of different facers, to make the products listed in the table below:

Product range	Product
Thin-R Pitched Roof (XT / PR)	Thin-R Flat Roof (FR / BGM)
Thin-R Cavity Wall (XT / CW)	Thin-R Plus Cavity Wall Plus (XT / CWP)
Thin-R Underfloor (XT / UF)	Thin-R Plus Cavity Therm (CT / PIR)
Thin-R Timber Frame (XT / TF)	Thin-R Plus Cavity Therm Flex (CT/Flex)
Thin-R Hyfloor (XT / HYF)	Xtroliner Cavity Wall (XO / CW)
Thin-R Sarking (XT / SK)	Xtroliner Floor (XO / UF)
Thin-R Thermal Liner (XT / TL)	Xtroliner Framing Board (XO / FB)
Thin-R Flat Roof (FR / ALU)	Xtroliner Pitched Roof (XO / PR)
Thin-R Flat Roof (FR / MG)	Xtroliner Soffit (XO / ST)

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 m<sup>2</sup>, LCA results. Therefore, the results for this product represent (for the majority of impact 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	32 kg/m <sup>3</sup>
Thermal conductivity (EN 12667)	0.021 – 0.022 W/mK

### Main Product Contents

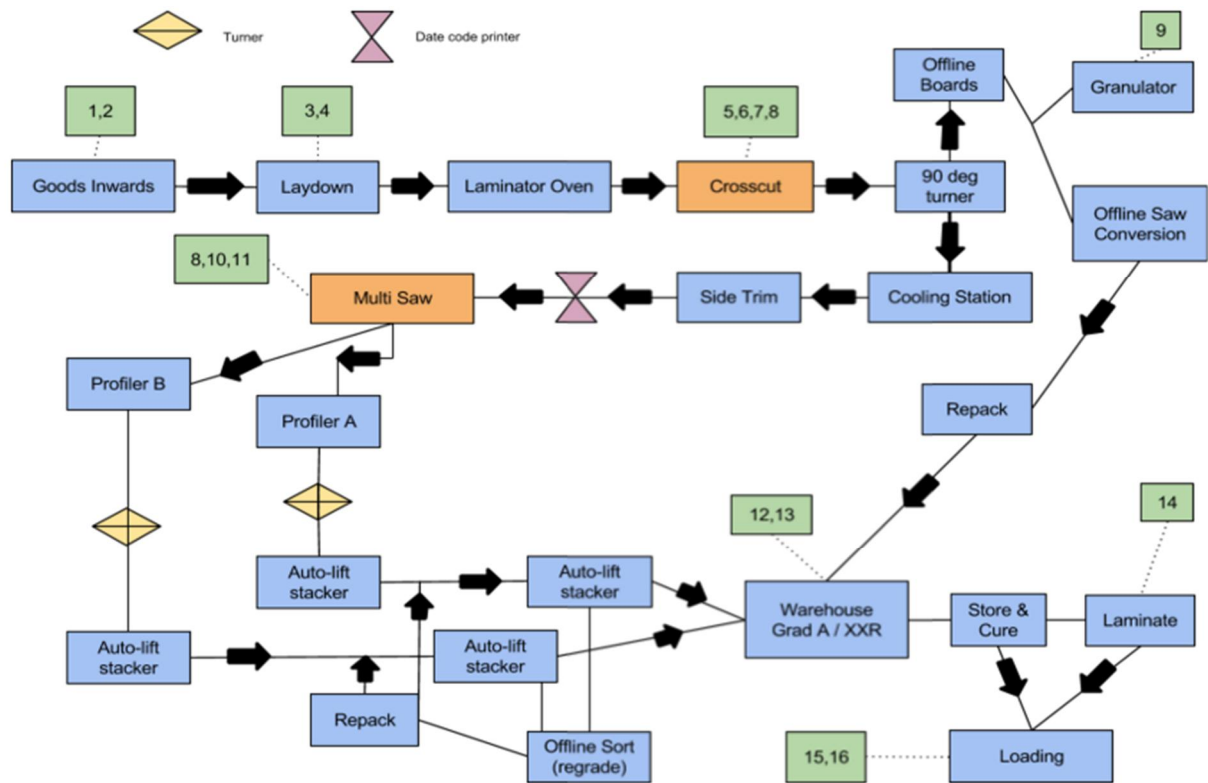
The composition of 1m<sup>2</sup> of the representative Xtratherm PIR insulation product as modelled for this EPD is shown below:

Material/Chemical Input	Mass (kg)
Xtratherm PIR insulation foam	5.12
Aluminium foil based facer	0.33

### Manufacturing Process

Raw materials for the PIR 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

1m<sup>2</sup> of Xtratherm PIR insulation product modelled to represent a product of 160 mm Xtratherm PIR insulation (32 kg/m<sup>3</sup>) 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 the production period of the 12 months of 2016. Both the UK and Irish production sites' data was used to model the Xtratherm PIR foam and the weighted average (based on production output) was carried forwards to model the representative faced product.

Both Xtratherm sites produced other insulation products in addition to their PIR 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 PIR 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 per declared unit (1m<sup>2</sup>) of the Xtratherm PIR representative insulation board, for the declared modules can be found in the following tables.

(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 <sub>2</sub> equiv.	kg CFC 11 equiv.	kg SO <sub>2</sub> equiv.	kg (PO <sub>4</sub> ) <sup>3-</sup> equiv.	kg C <sub>2</sub> H <sub>4</sub> 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	27.1	5.94e-7	0.130	0.0244	0.0168	8.70e-5	518

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	18.5	0.0574	18.6	545	0	545

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 <sup>3</sup>
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	0.619

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	1.05	0.445	2.28e-4	

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	0.0349	0.228	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.

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

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.