

Statement of Verification

BREG EN EPD No.: 000204

Issue 01

This is to verify that the
Environmental Product Declaration
provided by:
Etex Building Performance Limited

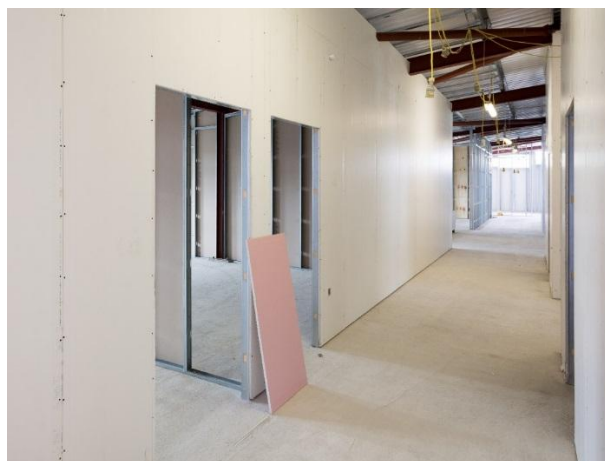


is in accordance with the requirements of:
EN 15804:2012+A1:2013
and
BRE Global Scheme Document SD207

This declaration is for:
GTEC Plasterboard

Company Address

Gordano House
Marsh Lane
Easton-in-Gordano
Bristol
BS20 0NE



Signed for BRE Global Ltd

Emma Baker
Operator

06 April 2018
Date of this Issue

06 April 2018
Date of First Issue

05 April 2023
Expiry Date



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

To check the validity of this statement of verification please, visit 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

Environmental Product Declaration

EPD Number: 000204

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
Etex Building Performance Limited Gordano House Marsh Lane Easton-in-Gordano BRISTOL BS20 0NE	BRE LINA v2.0.8
Declared/Functional Unit	Applicability/Coverage
1 m ² of plasterboard	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 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	
(Where appropriate ^b) Third party verifier: Fei Zhang	
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 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

This declaration covers all UK manufacturing, carried out at these 2 sites:

Etex Building Performance Ltd
 Redland Avenue
 Easton-in-Gordano
 BRISTOL
 BS20 0FB

Etex Building Performance Ltd
 Kirkhaw Lane
 Knottingley
 West Yorkshire
 WF11 8UL

Construction Product:

Product Description

Siniat GTEC Plasterboard to BS EN 520

Plasterboard comprises a gypsum core enclosed between two layers of paper liner. The core contains various additives to achieve the required technical performance of the product or of the drywall system within which it is assembled.

Typical plasterboard uses are as external wall linings, internal partitions or ceilings within residential or commercial buildings. Specialist products may also be used for floor systems, shaft lining or beam and column enclosure.

This declaration covers all types of plasterboard manufactured to BS EN520. It provides average results for an average product as described in the declared unit. The products covered by this declaration are listed below:

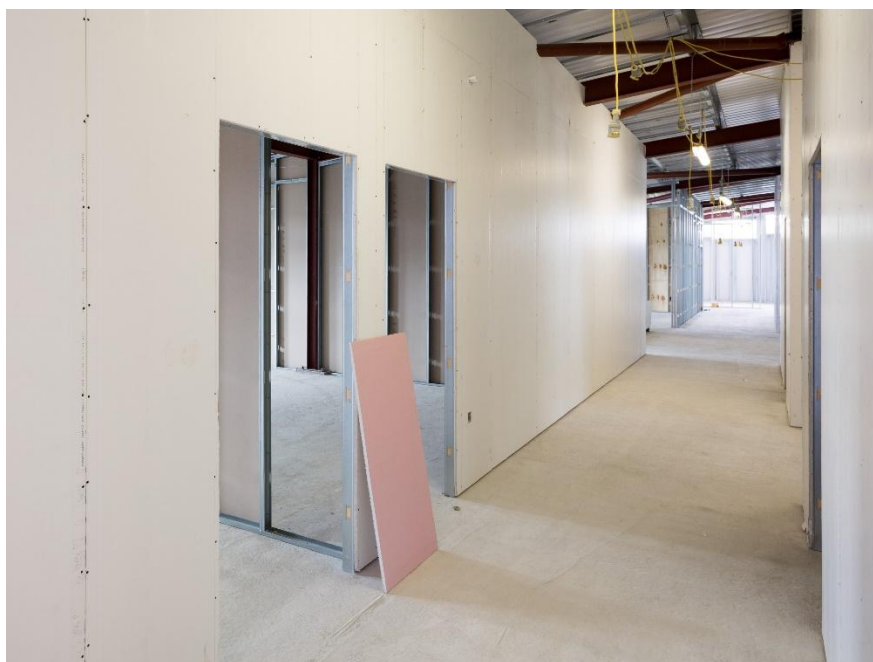
- GTEC Standard Board 9.5mm, 15mm, 12.5mm
- GTEC Base Board 9.5mm
- GTEC Plank 19mm
- GTEC Moisture Board 12.5mm, 15mm
- GTEC Fire Board 12.5mm, 15mm
- GTEC Fire MR Board 12.5mm, 15mm
- GTEC Fire Core Board 19mm
- GTEC E Board 12.5mm
- GTEC dB Board 12.5mm, 15mm

GTEC Acoustic Homespan Board 15mm
 GTEC Universal Board 12.5mm, 15mm
 GTEC Contour Board 6mm
 Megadeco 12.5mm, 15mm
 LaDura 15mm

An estimate of results for individual board types may be obtained via a pro-rata calculation using the weight of the declared unit and the dry weights listed under Technical Values. As a service to clients and users, Siniat intends to declare results for individual board types in due course.

Technical Information

Property	Value, Unit
Siniat GTEC Plasterboard is available 900 and 1200mm wide and with edges square or tapered. Exceptionally boards of 19mm thickness are available 600m wide. Core density varies according to required technical performance. The dry weight of products covered by this declaration vary with thickness and core density as listed below.	
GTEC Standard Board 9.5mm Type A	6.50 kg/m ²
GTEC Standard Board 12.5mm Type A	8.35 kg/m ²
GTEC Standard Board 15mm Type A	9.90 kg/m ²
GTEC Base Board 9.5mm Type P	6.65 kg/m ²
GTEC Plank 19mm Type A	13.80 kg/m ²
GTEC Moisture Board 12.5mm Type H1	8.35 kg/m ²
GTEC Moisture Board 15mm Type H1	9.80 kg/m ²
GTEC Fire Board 12.5mm Type D F	10.20 kg/m ²
GTEC Fire Board 15mm Type D F	12.40 kg/m ²
GTEC Fire MR Board 12.5mm Type D F H1	10.20 kg/m ²
GTEC Fire MR Board 15mm Type D F H1	12.40 kg/m ²
GTEC Fire Core Board 19mm Type D F H1 R	16.45 kg/m ²
GTEC E Board 12.5mm Type D	10.10 kg/m ²
GTEC dB Board 12.5mm Type D I	10.45 kg/m ²
GTEC dB Board 15mm Type D I	12.80 kg/m ²
GTEC Acoustic Homespan Board 15mm Type D	12.70 kg/m ²
GTEC Universal Board 12.5mm Type D F I R	12.50 kg/m ²
GTEC Universal Board 15mm Type D F I R	13.00 kg/m ²
GTEC Contour Board 6mm Type D	5.70 kg/m ²
Megadeco 12.5mm Type D F I R	11.00 kg/m ²
Megadeco 15mm Type D F I R	13.00 kg/m ²
LaDura 15mm Type D E F H1 I R	12.10 kg/m ²
BS EN520 board types Type A : Standard plasterboard Type D : Plasterboard with controlled density Type E : Gypsum sheathing board Type F : Plasterboard with improved core cohesion at high temperature Type H : Plasterboard with reduced water absorption Type I : Plasterboard with enhanced surface hardness Type P : Gypsum baseboard Type R : Plasterboard with enhanced strength	
All GTEC Plasterboards are CE marked to BS EN 520: 2004 + A1 : 2009	



Main Product Contents

Plasterboard is composed primarily of gypsum obtained as a mineral from quarrying, as a by-product from coal burning power stations and recovered from plasterboard waste arising from building construction and deconstruction. The relative proportions within this declaration are 36%, 60% and 4% respectively. Paper liner is manufactured by recycling fibre from high strength packaging (100% recycled content).

Material/Chemical Input	%
Gypsum (calcium sulphate), composition as noted above	94.8
Paper liner	3.6
Additives	1.6

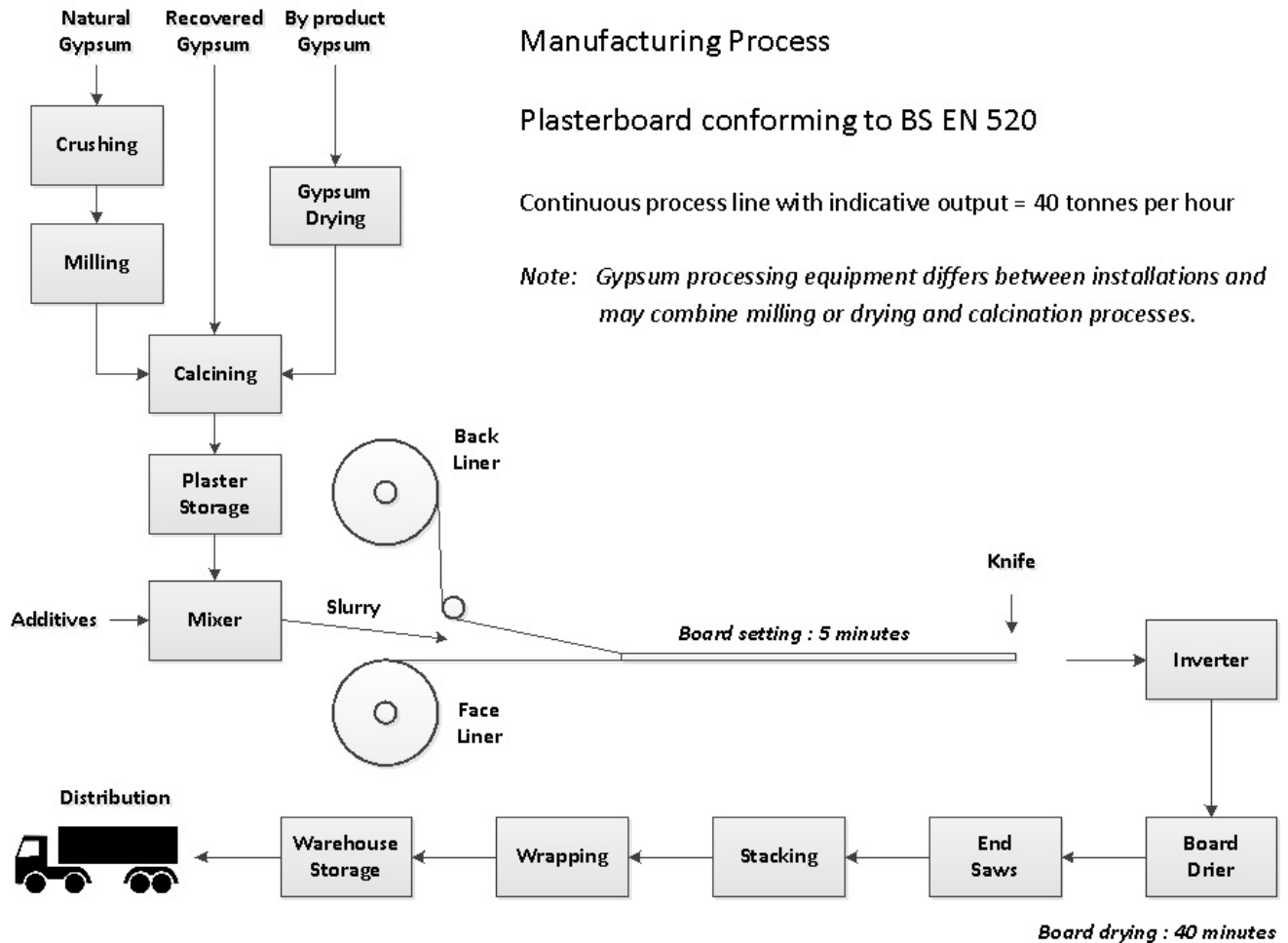
Manufacturing Process

Gypsum is first milled and calcined to plaster by heating to around 160 Celsius. The plaster is then mixed with additives and water to form a slurry in which the rehydration back to gypsum begins. The slurry is introduced between the face and back liners in a forming process which defines board thickness and width. During plaster setting over several minutes a high strength mechanical bond forms at the gypsum/ paper interface.

Excess water is removed from boards by passing them through a fan-assisted oven for around 40 minutes. During drying starch migrates to the surface of the gypsum core, adding further strength by means of a chemical bond. Dried boards are cut to size and then packed for storage and distribution.

Plasterboard is manufactured using state-of-the-art production equipment to rigorous quality assurance standards complying with the BS EN ISO 9001 standard. Environmental management of the manufacturing process is certified to BS EN ISO 14001. Responsible sourcing of all material supply chains and the production process is certified to the BES6001 Framework Standard (certificate held at "Very Good" level).

Process flow diagram



Construction Installation

The three most common installation uses for EN520 plasterboards are in metal framing partitions, external wall linings and in ceilings. In these applications plasterboards are used together with other components forming a drywall system capable of providing a required performance level within the building. Full details of Siniat GTEC systems, their performance and their installation can be found within the Siniat Drywall Manual or visit www.siniat.co.uk/en/products-and-systems

For further technical information relevant to installation and this decalaration please see the A5 scenario section below.

Use Information

No impacts have been declared for the use stage since the product will remain in situ for the duration of its service life with no requirements for maintenance, repair, replacement or refurbishment during this period.

End of Life

Plasterboard can be recycled in a closed loop into new product without any loss in quality or performance. Plasterboard waste from deconstruction should be segregated from other materials and consigned to a recycling centre. The value of the recovered gypsum is greatly enhanced by minimising any contamination by other materials.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1 m² (square metre) of EN520 plasterboard, product average
Weight per declared unit : 8.985 kg/m²

System boundary

The system boundary for this project has been set so as to include all of the processes relevant at each stage of the life cycle. In summary, raw material supply includes paper manufacture, natural gypsum extraction, manufacture of synthetic gypsum and additives and the delivery of all materials to the production sites. The manufacturing phase covers the conversion of gypsum to stucco (plaster) and the production and packaging of plasterboard, including maintenance activities and the internal recycling of scrap.

Beyond the factory gate the project includes product delivery to the construction site, installation of the product together with the jointing materials used and finally the impact of product disposal or recycling at the end of the service life of the building. No impacts are associated with the deconstruction phase and the impacts of gypsum waste processing have been included within raw material supply.

Data sources, quality and allocation

The scope includes all plasterboard conforming to BS EN 520 (all types) and provides a declaration for an "average" product of dry weight equal to 8.985 kg/m². Data derives from all UK manufacture during 2016, Bristol & Ferrybridge plants.

The study period is 60 years and the reference service life of the product is 60 years.

All production data derives from manufacturing records and allocations have been made on a mass basis where manufacturing facilities produce more than one product. Wherever possible data verified by third parties has been used, such as for the consumption of energy and fuels. Full details on data sources and allocation methodologies have been provided to the verifier.

Life cycle inventory data has been drawn from BRE LINA version 2.0 and is based on Ecoinvent database version 3.2.

Cut-off criteria

No raw materials or processes have been excluded.

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	5.27e-2	2.28e-8	1.10e-3	5.45e-4	1.00e-4	3.03e-5	2.40
	Transport	A2	0.234	3.86e-8	2.60e-3	4.12e-4	2.30e-4	3.66e-7	3.43
	Manufacturing	A3	1.15	1.52e-7	3.23e-3	7.44e-4	3.7e-4	9.73e-7	20.4
	Total (of product stage)	A1-3	1.44	2.14e-7	6.93e-3	1.70e-3	7.00e-4	3.17e-5	26.2
Construction process stage	Transport	A4	0.291	5.36e-8	9.75e-4	2.57e-4	1.70e-4	7.68e-7	4.40
	Construction	A5	0.309	4.50e-8	2.02e-3	6.06e-4	2.25e-4	9.92e-6	5.96
End of life	Transport	C2	7.51e-2	1.38e-8	2.51e-4	6.63e-5	4.38e-5	1.98e-7	1.13
	Disposal	C4	0	0	0	0	0	0	0

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	0.949	1.42e-6	0.949	6.98	0	6.98
	Transport	A2	0.111	1.66e-7	0.111	3.58	0	3.58
	Manufacturing	A3	1.08	1.42e-6	1.08	20.9	0	20.9
	Total (of product stage)	A1-3	2.14	3.01e-6	2.14	31.5	0	31.5
Construction process stage	Transport	A4	5.84e-2	2.18e-7	5.84e-2	4.37	0	4.37
	Construction	A5	1.28	2.52e-6	1.28	6.68	0	6.68
End of life	Transport	C2	1.51e-2	5.61e-8	1.51e-2	1.13	0	1.13
	Disposal	C4	0	0	0	0	0	0

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	0.399	0	0	1.34e-2
	Transport	A2	0	0	0	1.04e-3
	Manufacturing	A3	0	0	0	1.04e-2
	Total (of product stage)	A1-3	0.399	0	0	2.49e-2
Construction process stage	Transport	A4	0	0	0	9.54e-4
	Construction	A5	3.99e-2	0	0	6.06e-3
End of life	Transport	C2	0	0	0	2.46e-4
	Disposal	C4	0	0	0	0

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	3.26e-3	2.69e-2	1.50e-4	
	Transport	A2	2.21e-3	8.06e-2	2.36e-5	
	Manufacturing	A3	3.42e-3	2.13e-2	5.37e-5	
	Total (of product stage)	A1-3	8.89e-3	0.129	2.27e-4	
Construction process stage	Transport	A4	1.84e-3	0.205	3.04e-5	
	Construction	A5	1.49e-2	5.97e-2	3.59e-5	
End of life	Transport	C2	4.75e-4	5.29e-2	7.82e-6	
	Disposal	C4	0	0	0	

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	0	0	0	0
	Transport	A2	0	0	0	0
	Manufacturing	A3	2.43e-2	0.146	4.66e-3	0
	Total (of product stage)	A1-3	2.43e-2	0.146	4.66e-3	0
Construction process stage	Transport	A4	0	0	0	0
	Construction	A5	2.43e-3	0.969	4.84e-2	0
End of life	Transport	C2	0	0	0	0
	Disposal	C4	7.46	1.53	0	0

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	Plasterboard products are delivered by road from our 2 plants to construction sites and stockists across the UK. The haulier reported an average delivery distance in 2016 of 103 miles (166km). 88% of deliveries were to stockists for which there was an additional delivery journey to site. This is estimated to be 20 miles (32km) on average. The overall mean delivery distance is therefore $166 + 0.88 \times 32 = 194\text{km}$. The haulier also reported an average load size of 25.88 tonnes. Return loads are usually transported for other parties.		
	Lorry (diesel)	kg/tkm	0.037
	Distance	km	194
	Capacity utilisation	%	37
	Bulk density of transported products	kg/m ²	9.89
A5 – Installation in the building	The three most common installation uses for EN520 plasterboards are in metal framing partitions, external wall linings and in ceilings. There are a variety of building systems and components used to deliver the required performance characteristics and which are outside the scope of this declaration. However the use of screw fixings and jointing materials is common to all applications and the consumption of these are declared within this section as ancillary materials. A small quantity of water is also consumed in the mixing of jointing materials. No fuels or energy are consumed during installation and the process does not produce any emissions apart from solid wastes. For both plasterboard and jointing materials a site wastage rate of 10% is assumed, as per the sector "Ashdown Agreement" in place 2008-2015. During the Agreement the installation sector was not able to validate a more accurate or definitive figure. 46% of this waste is assumed to be recycled as per the final Ashdown Agreement report published in 2016. The remainder is downcycled for other uses. The life cycle model assumes no landfilling of plasterboard waste arising from installation.		
	Ancillary Materials used at installation, per declared unit		
	Gypsum based jointing compound	kg	0.556
	Paper jointing tape	kg	0.0113
	Self tapping drywall screws	kg	0.0197
	Water	kg	0.333
Reference service life	Plasterboard has a reference service life of 60 years. During this period of installation within a building there are no requirements for maintenance, repair, replacement or refurbishment. Siniat, as manufacturer and supplier, is confident of the continuing performance of the product during this period and therefore offers a Lifetime System warranty. This warranty gives the confidence that the installed system will perform as intended throughout the life of the building. 60 years was used as the reference service life for plasterboard when BRE prepared a generic environmental profile for the 4 th Edition of the Green Guide in 2008.		
	Reference Service Life	Years	60

Scenarios and additional technical information

Scenario	Parameter	Units	Results	
C2 - Transport & C4 - Disposal	<p>The most authoritative source of information on the fate of end of life plasterboard in the UK is the Environment Agency's draft report "An investigation into the disposal and recovery of gypsum waste" (2012). This declares that 83% of construction and demolition waste is sent to landfill with the remaining 17% being recycled. The scenario for gypsum waste in the UK is less clear since disposal is only legally permitted in monocell landfill sites. There are very few of these and no significant volumes are being recorded. It must therefore be assumed that the non-recycled portion is going to re-use, for example in agriculture. The figures adopted for the end of life scenario are therefore 17% recycling and 83% re-use.</p> <p>Nationally there are around 8 major recycling sites for plasterboard demolition and deconstruction waste in the UK. These are generally located near to the main urban centres. On this basis it is reasonable to assume a weighted mean transport distance from the demolition/ deconstruction site to the centre receiving the waste of 50km.</p>			
	End of life scenarios, per declared unit			
	Gypsum waste to reuse	kg	7.46	
	Gypsum waste to recycling	kg	1.53	
	Mean transport distance	km	50	

Summary, comments and additional information

Technical Information

For technical information on the selection, installation and use of Siniat products and systems please consult the Siniat Drywall Manual, available from the Knowledge Centre on our website:

<https://www.siniat.co.uk/en/knowledge-centre>

For additional support please contact our Technical Services team:

Tel 0800 145 6033 or 01275 377789, technical.services@siniat.co.uk

BIM

To download BIM Objects for Siniat products please visit our BIM portal:

<https://www.siniat.co.uk/en/knowledge-centre/bim>

Certificates & Compliance

For Declarations of Performance (DOP), ISO Certificates, Siniat policies and other resources required to support the sustainability assessment of your project:

<https://www.siniat.co.uk/en/knowledge-centre/policies-and-compliance>

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.

BSI. Quality Management Systems – Requirements. BS EN ISO 9001: 2015. London, BSI, 2015

BSI. Environmental management systems – Requirements with guidance for use. BS EN ISO14001: 2015. London, BSI, 2015

BSI. Gypsum plasterboards: Definitions, requirements and test methods. BS EN 520: 2004 + A1:2009. London, BSI, 2009.

BRE. Framework Standard for Responsible Sourcing BES6001 version 3.1, BRE Global Ltd, Watford, 2016.


Etex Building Performance

A leading provider of lightweight construction solutions


With a UK turnover in excess of £200 million, Etex Building Performance combines the products, solutions and expertise of three leading lightweight construction brands – Siniat, Promat and EOS Façades – all under one roof.




Leading manufacturer of plasterboard and drywall solutions.




UK leader in passive fire protection.




Steel frame specialists.



We are part of the global Etex Group of Companies, which in the UK includes the Marley Eternit and Equitone brands.