

Technical performance and principles of system design

Sustainability

Sustainability

Our mission is to develop innovative products and services that help customers build better spaces to live, work and play. In every kind of building – from home to work, from the local supermarket to the local hospital – we help to create partitions, provide comfort, protect against fire and insulate against sound.

With over 80 years' experience in plaster, plasterboard and ceiling solutions, we have a multitude of high performance products and systems.

You'll find our plaster, plasterboard, metal and ceiling solutions in almost every kind of building in the country. Builders, tradesmen and specifiers choose our products because they offer the best acoustic, thermal insulation and fire protection performance.

Standards and legislation

There are many building standards and environmental assessment methods that apply to our industry such as:

- Building Regulations
- The BRE Environmental Assessment Method (BREEAM)
- Irish Green Building Council Home Performance Index (HPI)
- Leadership in Energy and Environmental Design (LEED)
- Green Guide Ratings

Construction Products Regulations

From 1st July 2013, under the Construction Products Regulation 2011 (CPR), it has been mandatory for manufacturers to draw up a declaration of performance (DoP) and apply CE marking to any of their construction products, which are covered by a harmonised European standard (hEN) or conforms to a European Technical Assessment (ETA), when they are placed on the market. A construction product is any product or 'kit' which is produced and placed on the market for use in a permanent manner in construction works, and the performance of which has an effect on the performance of the construction works.

The CPR builds upon the previous legislation and aims to break down technical barriers to trade in construction products within the European Economic Area (EEA).

To achieve this, the CPR provides for four main elements:

- 1 A system of harmonised technical specifications
 - Defines EEA-wide methods of assessing and declaring all the performance characteristics
 - Must meet seven basic requirements for construction works. These cover:
 - Mechanical resistance and stability
 - Safety in case of fire
 - Hygiene, health and environment
 - Safety and accessibility in use
 - Protection against noise
 - Energy economy and heat retention
 - Sustainable use of natural resources
- 2 An agreed system of conformity assessment for each product family
- 3 A framework of notified bodies
- 4 CE marking of products

CE marking

CE marking enables a product to be placed legally on the market in any Member State. However, this does not necessarily mean that the product will be suitable for all end uses in all Member States.

CE marking indicates that a product is consistent with its Declaration of Performance (DoP) as made by the manufacturer. The declaration varies according to the particular harmonised technical specification covering the product. As such, decision makers (e.g. designers and specifiers) should understand the relevant performance requirements for the product.

Declarations of Performance (DoP)

By making a DoP the manufacturer, importer or distributor is assuming legal responsibility for the conformity of the construction product with its declared performance. The information to be contained in them is detailed in Annex ZA of a hEN or in a section of the ETA. DoPs must be supplied either in paper form or by electronic means which includes permission to make them available on a website.

Together with the technical specification, the DoP should give all the information needed by specifiers and regulators to judge whether the product meets all relevant regulations in the Member State upon whose market it is to be placed.

Where applicable, the DoP should be accompanied by information on the content of hazardous substances in the construction product to improve the possibilities for sustainable construction and to facilitate the development of environment-friendly products.

Copies of DoPs are available on our website: gyproc.ie

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Certifications

ISO 14001:2004 – Environmental Management Systems: Requirements with guidance for use

ISO 14001 specifies the requirements for an environmental management system (EMS). It applies to those environmental aspects which the organization has control over and which it can be expected to have an influence. The standard applies to management systems which a site or organisation might employ, but does not directly relate to products. It is not a product certification system or label. The standard itself does not state specific environmental performance criteria; this is down to the site or organisation to do.

As part of our drive to continuously improve our performance, we have invested significant resource in developing environmental management systems certified to *ISO 14001:2004*.

In 2004, we achieved *ISO 14001:2004* certification across the whole of our manufacturing, mining and support functions in Ireland. This certification emphasises the stringent environmental standards maintained across the business and enables us to support customers through the delivery of sustainable construction products as advocated by BREEAM and the BRE Green Guide.

A copy of the certificate is available on our website: gyproc.ie

ISO 9001:2008 – Quality Management Systems: Requirements

ISO 9001 is an internationally recognised and well established quality framework, currently used by more than 897,000 organizations in 170 countries worldwide, and sets the standard for quality management systems.

We have been certified to *ISO 9001* across the whole business since 2003. The business has continuous assessment visits every 6 months, and the latest certificate was reissued under the revised *ISO 9001:2008* in January 2016.

The scope of the *ISO 9001:2008* Certificate is the same as the *ISO 14001* certificate. A copy of the certificate is available on our website: gyproc.ie

OHSAS 18001:2007 – Occupational Health and Safety Management Systems: Requirements

OHSAS 18001:2007 is an internationally recognised assessment specification for occupational Health and Safety management systems. It was developed by a selection of leading trade bodies, international standards and certification bodies to address a gap where no third-party certifiable international standard exists.

Health and Safety is our core value. Our aim is to always be injury-free. We passionately believe that our employees, and other stakeholders, should go home in the same condition as they arrived. We set the target of zero accidents at work for employees, visitors and contractors.

Our culture is one where safety is everyone's responsibility. Our people are encouraged to lead from within, through a programme of employee engagement and safety awareness, which includes functional safety committees, safety initiative worker groups and leadership groups. The business uses tools such as SUSA (Safe and Unsafe Acts) discussions and SMAT (Safety Management Audit Tool) to highlight safety concerns and correct them.

Keeping employees fit, happy and healthy is crucial for us. Our in-house occupational health team provide periodic health surveillance and on-going assessments with lifestyle guidance.

As part of our drive to continuously improve our performance, we have invested significant resource in developing our safety management systems and certifying them to *OHSAS 18001:2007*

Copies of our certificates are available on our website: gyproc.ie

ISO 50001:2011 – Energy Management System

ISO 50001 is based on the management system model of continual improvement also used for other well-known standards such as *ISO 9001* or *ISO 14001*. This makes it easier for organisations to integrate energy management into their overall efforts to improve quality and environmental management.

ISO 50001:2011 provides a framework of requirements for organisations to:

- Develop a policy for more efficient use of energy
- Fix targets and objectives to meet the policy
- Use data to better understand and make decisions about energy use
- Measure the results
- Review how well the policy works
- Continually improve energy management

We have been carefully managing our energy consumption for a number of years, using the well-established tools and techniques familiar to our business. As a result of this our management systems have been certified to *ISO 50001: 2011*. This international standard is about implementing and maintaining systems and processes to manage our energy consumption.

One of the key elements in any work we do is training and awareness of our employees. In particular when it comes

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to energy, understanding reduction opportunities enables our employees to minimise the energy that we use. We use various communications, teams and courses to deliver this message.

As far as we are concerned, energy management should not be seen as special, or anything out of the ordinary, it is an integral part of what we do every day. Gaining certification of our established energy management systems will ensure an integrated approach to reducing the overall impact of our manufacturing process.

BES 6001 – Certified responsible sourcing

For Environmental Assessment Tools such as BREEAM it is becoming increasingly important for the building industry to be able to demonstrate responsible sourcing, and supply chain management.

Currently Chain of Custody and Responsible Sourcing is synonymous within the timber market, where there are internationally recognised standards and schemes such as the FSC and PEFC to work within.

Saint-Gobain have, through the Construction Products Association, been involved with the BRE since 2007 with work to develop a Responsible Sourcing Standard.

The standard, *BES 6001*, describes a framework for the organisational governance, supply chain management and environmental and social aspects that must be addressed in order to ensure the responsible sourcing of construction products.

Independent, third party assessment and certification against the requirements of *BES 6001* then give the organisation the ability to prove that an effective system for ensuring responsible sourcing exists and add credibility to any claims made.

Certification to *BES 6001* can contribute to points and credits under BREEAM. An 'Excellent' rating results in products being classified as Tier Two under Mat 03 in BREEAM 2011, providing 3.5 of a maximum 4 points and making it easier for customers to achieve a higher number of points towards credits at no additional cost.

Copies of the BRE standard are available from the BRE's Green Book Live website: greenbooklive.com

We recognise the importance of independently verified Responsible Sourcing Certification to provide assurance to our customers that they are sourcing materials responsibly and sustainably.

UK manufactured Gyproc plasterboards, Glasroc specialist boards, Hard Coat plaster, Gypframe metal and Gyproc Cove have all been awarded 'Excellent', the highest possible rating to *BES 6001*.

Products not manufactured by Gyproc

As previously stated, the ISO and OHSAS standards are not product certifications. They certify the management systems of companies within the supply chain. All products that are merchandised (i.e. bought in and not manufactured by us) and all processes conducted by us, i.e. purchasing and logistics management, are covered by our certifications as listed in Table 18.

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Table 18 – Gyproc products and certifications at a glance

Product Group	ISO 9001	ISO 14001	OHSAS 18001	BES 6001	ISO 50001
Gyproc standard performance plasterboards	✓	✓	✓	-	✓
Gyproc acoustic performance plasterboards	✓	✓	✓	-	✓
Gyproc fire performance plasterboards	✓	✓	✓	-	✓
Gyproc impact performance plasterboards	✓	✓	✓	-	✓
Gyproc moisture resistant plasterboards	✓	✓	✓	-	✓
Gyproc thermal performance plasterboards	✓	✓	✓	✓	✓
Gyproc fixings	-	-	-	-	✓
Gyproc decorative products – Cove / Cornice	✓	✓	✓	✓	✓
Gyproc decorative products – Styletrims	-	-	-	-	✓
Gyproc beads	-	-	-	-	✓
Gyproc accessories	✓	✓	-	-	✓
Gyproc accessories – Tape	-	-	-	-	-
Gyproc accessories – Sealant	-	-	-	-	-
Gyproc accessories – Control Joint	-	-	-	-	✓
Gyproc accessories – FireStrip	-	-	-	-	-
Gypframe studs	✓	✓	-	✓	✓
Gypframe channels	✓	✓	-	✓	✓
Gypframe steel angles	✓	✓	-	✓	✓
Gypframe specialist profiles	✓	✓	-	✓	✓
Gypframe clip, brackets & accessories	✓	✓	-	✓	✓
Rigitone tiles	✓	-	-	-	-
Gyptone boards – QUATTRO	-	-	-	-	-
Gyptone boards – SIXTO	✓	-	-	-	-
Gyptone Tiles and Planks	-	-	-	-	-
Gyprex	✓	✓	-	✓	-
Gyproc beads for solid plastering	-	-	-	-	✓
Gyproc plaster bonding agents	✓	-	-	-	-
Gyproc Hard Coat plaster	✓	✓	✓	✓	✓
Gyproc undercoat plasters	✓	✓	✓	-	✓
Gyproc finish coat plasters	✓	✓	✓	-	✓
Glasroc F fire protection boards	✓	✓	✓	✓	✓

Table 19 – Gyproc’s raw materials

Type	Description
Natural/Mined gypsum	The main raw material for most types of plaster and plasterboard is natural gypsum from our own mines. Gypsum mining is well established on a professional and environmentally sound basis as recycling optimises the use of limited natural resources and extends the life of mineral reserves. Our mines are certified to <i>ISO 14001:2004</i> and <i>ISO 9001:2008</i> . Our objective is to maintain 20 year reserve life for the Company and we have a rolling programme of investment to maintain this level of gypsum reserves.
DSG – Desulphogypsum	The main raw material for our UK manufactured plaster and plasterboard products is a recycled gypsum by-product formed during the ‘desulphurisation’ of flue gases at fossil fuel fired power stations (Drax and Ratcliffe on Soar, for example). This is known as DSG (desulphogypsum) or FGD (Flue Gas Desulphogypsum).
Recycled Plasterboard Off-Cuts	We are the only manufacturer in Ireland to offer a plasterboard off-cut recycling service. We will provide a Gyproc waste movement document to prove your plasterboard off-cuts are 100% recycled back into our plasterboard manufacturing process. For more information on this service please contact our Plasterboard Recycling Service (PRS) team at PRS.customerservice@saint-gobain.com or call +353 (0)1 6298444.
Plasterboard liner	The liner used to sandwich gypsum to make plasterboard is made from various grades of paper, all of which is 100% post-consumer recycled material.

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Recycled content of our products

All recycled content figures are indicative, and give a fair statement of the normal situation but there is a certain amount of variation depending on demand for products and availability of feedstock at any given time. For the most up to date information please contact the Plasterboard Recycling Service (PRS) team:
Email: PRS.customerservice@saint-gobain.com
Tel: +353 (0) 1 6298444



Table 20 – Gyproc products and recycled content at a glance

Product group	Percentage post consumer	Percentage post industrial	Manufactured w/in 500 miles?	Contains raw materials extracted w/in 500 miles?	Material is recyclable?
Gyproc plasterboards	5.00% ¹	0.00%	Y	Y	100%
Gyproc fixings	25.00%	35.00%	N	N	100%
Gyproc beads	55.00%	0.00%	N	N	Y
Gyproc accessories	0.00%	0.00%	Y	Y	Y
Gypframe studs	55.00%	0.00%	Y	N	100%
Gypframe channels	55.00%	0.00%	Y	N	100%
Gypframe steel angles	55.00%	0.00%	Y	N	100%
Gypframe specialist profiles	55.00%	0.00%	Y	N	100%
Gypframe clip, brackets & accessories	55.00%	0.00%	Y	N	100%
Rigitone tiles	3.50%	84.00%	N	Y	100%
Gyptone boards	0.00%	75.00%	N	Y	100%
Gyptone Tiles and Planks	0.00%	75.00%	N	Y	100%
Gyprex	4.14%	95.86%	Y	Y	100%
Gyproc beads for solid plastering	55.00%	0.00%	Y	N	Y
Gyproc Finish Coat plasters	0.00%	0.00%	Y	Y	100%
Gyproc Undercoat plasters	0.00%	0.00%	Y	Y	100%
Gyproc Hard Coat plasters	0.00%	0.00%	Y	Y	100%
Glasroc F fire protection boards	1.30%	97.90%	Y	Y	100%
Glasroc F MULTIBOARD	0.00%	94.80%	Y	Y	100%
Rigidur	16.00%	20.00%	N	Y	100%
Glasroc H TILEBACKER	0.00%	94.10%	Y	Y	100%

Explanatory Notes

Post-consumer recycled content: Portion of material or product which derives from discarded consumer waste that has been recovered for use as a raw material.

Post-industrial recycled content: Portion of material or product which derives from recovered industrial and manufacturing processes.

Manufacture location: If site is within the Republic of Ireland, this is typically an automatic YES. Note requirements for LEED v.4 have a 160km limit. Please verify your project location with the Gyproc Technical Department.

Extraction location: This is relative to the manufacture location, and is based on the majority of raw materials.

¹Standard plasterboard

NB Some raw materials are imported; % addition rates fluctuate in accordance with availability and quality requirements. Metal recycled content is an average overall recycled content as received from the supplier.

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Indoor air quality

The current BREEAM schemes do not include plasterboard as a product category; there is no specific requirement to provide VOC content data. However, it can be relevant for post-construction testing requirements, as clients/specifiers may request this information from us. The standards used widely in Europe to evaluate VOC levels in plasterboard products are *EN 13419* and *ISO 16000*.

Table 21 – Summary of indoor air quality parameters

Product	VOCs	CFC & HCFC	GWP ¹	Comment
Gyproc plasterboard	-	Zero	Zero	Based upon indicative testing of a sample of plasterboard products, Gyproc plasterboard is estimated not to contain a VOC content or formaldehyde content which exceeds the requirements of European voluntary labelling schemes connected with indoor air quality.
Rigidur gypsum fibre boards	≤ 10 mg/m ³	Zero	Zero	Emission test in compliance with the requirements following the testing scheme of the AgBB-version 2008 regarding all <i>DIN EN ISO 16000-9/-11</i> existing test points are met.
Gyproc Thermal laminate plasterboard	-	Zero	<5	
Gyproc plaster	-	Zero	Zero	None of the ingredients contained in the Gyproc range of undercoat and finishing plaster contain VOCs or formaldehyde which exceeds the requirements of European voluntary labelling schemes connected to indoor air quality.
ThistleBond-it	<5 g/l	Zero	Zero	
GypPrime	<3 g/l	Zero	Zero	
Gyproc Joint Filler	-	Zero	Zero	None of the ingredients contained in the Gyproc range of jointing materials contain VOCs or formaldehyde which exceeds the requirements of European voluntary labelling schemes connected to indoor air quality.
Gyproc Joint Cement	-	Zero	Zero	None of the ingredients contained in the Gyproc range of jointing materials contain VOCs or formaldehyde which exceeds the requirements of European voluntary labelling schemes connected to indoor air quality.
Gyproc Ready Mix Joint Cement	-	Zero	Zero	None of the ingredients contained in the Gyproc range of jointing materials contain VOCs or formaldehyde which exceeds the requirements of European voluntary labelling schemes connected to indoor air quality.
Gyproc Airtite Quiet	-	Zero	Zero	None of the ingredients contained in the Gyproc Airtite Quiet contain VOCs or formaldehyde which exceeds the requirements of European voluntary labelling schemes connected to indoor air quality.
Gyproc Plasterboard Compound	-	Zero	Zero	None of the ingredients contained in the Gyproc range of jointing materials contain VOCs or formaldehyde which exceeds the requirements of European voluntary labelling schemes connected to indoor air quality.
Gyproc Easi-Fill	-	Zero	Zero	Some of the ingredients for the product are known to contain trace elements of VOCs which are below the requirements of European voluntary labelling schemes connected to indoor air quality.
Gyproc Sealant	153.4 g/l	Zero	Zero	Gyproc Sealant contains VOCs. The 600ml cartridge contain 92.1 grams.
Gyproc Drywall Primer	<1g/l	Zero	Zero	-
Gyptone ceiling tiles	<1000µg/m ³	Zero	Zero	Tested to <i>EN 13419-1 EN 13419-3</i> and <i>ISO16000-3</i> .
Gyprex SATINSPAR	-	Zero	Zero	None of the main components used in the manufacture of Gyprex SATINSPAR contain VOCs or formaldehyde which exceeds the requirements of European voluntary labelling schemes connected to indoor air quality.
Gyproc FireStrip	-	Zero	Zero	None of the main components used in the manufacture of Gyproc FireStrip contain VOCs or formaldehyde which exceeds the requirements of European voluntary labelling schemes connected to indoor air quality.
Gypframe	-	Zero	Zero	We currently do not have specific certification on the VOC content of our Gypframe product range. As far as we are aware our Gypframe products do not contain VOCs. The need for information on VOC content within BREEAM generally relates to surface finish products such as wall coverings and paints etc. and wood based products, and not the underlying drylining product / system.

¹ Global Warming Potential

Assess for further locally supplied products

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Life Cycle Assessment (LCA)

Across the construction industry there are many claims made regarding the environmental performance of products, and as such, it can be hard for specifiers to get a genuine picture of how sustainable a solution really is. LCA (Life Cycle Assessment) considers the entire life cycle of a product solution throughout its lifetime. As part of the assessment, a comprehensive range of factors are considered, including the potential environmental effects of raw materials, the manufacturing process, logistics, installation, performance in use and finally the product at the end of its life.

An Environmental Product Declaration (EPD) is a verified document that reports on the environmental data of products based on an LCA, as well as other relevant information in accordance with international standards such as *ISO 14025:2006 Type III Environmental Declarations* and *BS EN 15804: 2012 Sustainability of Construction Works. Environmental product declaration core rates for the product category of construction products*. Information such as raw material use, energy use and efficiency, content of materials and chemical substances, emissions to air, soil and water and waste generation can be viewed in an EPD.

The EPD results also enable us to understand at which stage our products have the greatest impact on the environment. We can therefore make better informed decisions on processes involved in the production of current and new products, as well as taking steps to minimise the environmental impact of our products across their lifecycle.

EPD also provide clear evidence for environmental building certification schemes, meeting credit requirements in BREEAM, for example.

Generic LCA have been carried out in the past for plasterboard products – including, one carried out by the Building Research Establishment (BRE), on which the current Green Guide rankings are based and another was conducted by Waste and Resources Action Programme (WRAP) and is available to download from their website: wrap.org.uk

Professor Geoffrey Hammond and Craig Jones from the Department of Mechanical Engineering at the University of Bath have developed an 'Inventory of Carbon & Energy' (ICE) – a database for embodied energy and carbon emissions associated with a wide range of materials. This can be found online at: www.circularecology.com/embodied-energy-and-carbon-footprint-database.html

We want to make the selection of sustainable solutions simpler for our customers. In order to do this we have begun developing Life Cycle Assessments (LCA) for our product ranges. The independently verified EPD, which are the result of the Life Cycle Assessment (LCA) process, are designed to

give users information on the environmental performance of our products across numerous impact categories.

Our current completed EPDs are for:

- Gyproc Finish Plaster
- Gyproc Hard Coat
- 12.5mm WallBoard
- 12.5mm FireLine
- 6mm Glasroc F MULTIBOARD
- 15mm Glasroc F FIRECASE
- 12.5mm Glasroc H TILEBACKER
- 12.5mm Gyptone Big Activ'Air®
- 10mm Gyptone Ceiling Tiles Activ'Air®
- Gypframe Metal Components

This is just the beginning of the journey. We are developing further EPD for our solutions and these will be rolled out in due course. All current EPD can be found on our website gyproc.ie

Our sister company Rigips, located in Germany have had assessments carried out on our Rigidur product. The EPD for this product can be found on the Rigips website rigips.de/download/Environmental_Product_Declaration_Rigidur.pdf

Useful links

Gyproc – sustainability

www.gyproc.ie/about-gyproc/sustainability
www.gyproc.ie/resources

Building Regulations

www.environ.ie/housing/building-standards/building-standards
www.buildingcontrol-ni.com/regulations/technical-booklets

BREEAM

breeam.org

Irish Green Building Council Home Performance Index

www.igbc.ie/certification/home-quality-rating/

Green Guide

bre.co.uk/greenguide

LEED

usgbc.org/leed