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THERMALITE

Environmental guide

Building a sustainable future

THERMALITE

Building a sustainable future

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Environmental policy

In developing our business, products and services, we will pay particular attention to the following measures:

- comply promptly with all applicable laws and regulations concerning the environment
- develop operational procedures and manufacturing processes to minimise, as far as it is practicable, pollution risks to the environment
- take positive action to reduce the waste generated by our activities and encourage energy conservation, recycling and re-use, wherever practicable
- provide the necessary training and support to employees to enable them to maximise their contribution towards protection of the environment
- encourage suppliers, contractors and customers to share in our aims to promote excellence in environmental management
- consider the expectations of all interested parties

We recognise the benefits of continual improvement and are committed to the maintenance of Environmental Management Systems that comply with the requirements of BS EN ISO 14001.

Thermalite and the environment

The environment and the effect we have on it is a key issue confronting the construction industry. With heightened awareness comes a demand for construction solutions which minimise the consumption and use of natural resources. At Thermalite we recognise the impact that we can have on the environment, so we manage all activities to maximise our contribution towards the protection of the environment and the preservation of natural resources.

Thermalite and the environment

Sustainability

The Government's approach towards sustainable development is to ensure a better quality of life for everyone, now and for generations to come. To be environmentally sustainable, a product needs to be manufactured and used in such a way as to minimise its impact on the environment.

Thermalite's manufacturing processes, product ranges and services are all designed to promote sustainability, both before and after the product leaves the factory gate.

Reduction, re-use and recycling

These are the only really green solutions to the environmental impact of waste. Wherever possible, recycled materials are used in the manufacture of our products, thereby reducing the use of primary aggregates. In fact, Thermalite offers one of the most environmentally sound building blocks in the UK, made from up to 80% recycled materials.

Pulverised fuel ash

Over half the material used in Thermalite is pulverised fuel ash (PFA), a by-product from coal burning power stations, which is both stable and environmentally friendly.

Waste minimisation

A strict waste minimisation scheme is operated during manufacture and all waste from the process is either crushed and recycled into the next mix , used in other concrete products or as an aggregate bulk fill replacement in road construction.

Energy saving

The micro-cellular structure of Thermalite offers remarkably high thermal insulation and, consequently, lowers energy consumption for the heating of buildings.
The finished product also contributes to waste reduction – Thermalite is made to high dimensional tolerances and can be easily and accurately cut to reduce waste on site.

Contributing to energy efficiency

We also operate a modern transport fleet, which uses Volvo's latest clean-burn D12C engines to significantly reduce toxic emissions. When combined with the lightweight product, energy consumption during haulage is minimised.

No pollution

Our products provide no direct pollution risk to water or air and our stable and inert waste materials can be safely used as land infill where recycling is not feasible.

Ecopoints Rating

Thermalite is the first block manufacturer in the UK to receive a Certified Environmental Profile and Ecopoint score from the Building Research Establishment. When used in an external wall, Thermalite achieves an 'A' rating in the Green Guide to Specification.

'The potential savings from reducing consumption and increasing the re-use and recycling of materials are on a scale which could contribute significantly to national objectives on sustainable development'

Department of Transport, Local Government and the Regions

Environmental Profiles

For many years, the Building Research Establishment (BRE), through its Centre for Sustainable Construction, has been encouraging the use of Life Cycle Assessment (LCA), to allow architects, builders and clients to make informed environmental comparisons between construction products. LCA is an assessment method that measures the environmental impact of a product by assessing the energy and materials used and released to the environment over its full life cycle, from cradle to grave. LCA results are presented in the form of an Environmental Profile.

Thermalite was the first concrete block manufacturer to have its LCA data independently reviewed and to be awarded Certified Environmental Profiles by BRE Certification.

Embodied energy

Embodied energy is a measure of the total energy used in the manufacture of a product, from mineral extraction, manufacture, transport and maintenance, through to disposal. However, because different processes use different mixes of fuel and electricity and different types of energy have different environmental impacts, embodied energy is not always a good measure of overall environmental impact. In addition, many products with minimal energy use in their production can still have considerable impact in terms of mineral extraction, waste generation and water usage. The BRE has, therefore, used an Ecopoint rating which is based on weighting 13 environmental issues. This gives a much more accurate picture of overall environmental impact.

Ecopoints

To improve the usefulness of environmental data and make it easier to understand, BRE has developed Ecopoints – a method of ranking and scoring different environmental impacts.

Ecopoints allow a wide range of environmental impacts (e.g. energy use and mineral extraction) to be compared using the same measure. The lower the Ecopoints score, the lower the environmental impact. As a benchmark, it has been determined that 100 Ecopoints are equal to the impact of one UK citizen on the environment for one year. A tonne of Thermalite equates to just 1.9 Ecopoints.

Environmental Profiles

Putting Ecopoints in context

At its simplest level, the profiling method can assess the impact of a single building product, such as blocks. However, to make valid comparisons, designers need information about a building element, such as a wall. A building element is likely to be made up of several products (such as bricks, blocks and mortar), so Environmental Profiles take this into account by adding together the contribution of the component parts, allowing comparison between one construction element and another.

BRE's Certified Environmental Profiles enable manufacturers to demonstrate the credibility of their products. They also help designers and specifiers identify materials that will best fulfil a sustainable brief.

The pie chart below illustrates the relative significance of various components of a wall. The chart shows that Thermalite contributes less than 20% of the total environmental impact of a wall construction.

Certification

Thermalite was the first aircrete block manufacturer to receive the Environmental Management Standard ISO 14001.

It is also the first block manufacturer in the UK to receive a Certified Environmental Profile and Ecopoint score from BRE. The Ecopoint score translates into a 'Green Guide' rating of 'A' (when used within an external wall element). This can be used to obtain credits in BREEAM and EcoHomes. See page 6 for further details.

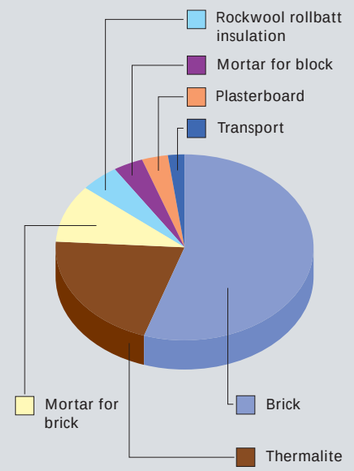
Below is a sample of a BRE certificate, detailing the 13 impact categories that are measured to arrive at an Ecopoint score.

A copy of the certificate is available by calling Thermalite on 08705 626500, or by visiting www.thermalite.co.uk/environmental

Continual improvement

As part of our commitment to minimise the environmental impact of our products, the outcome from the BRE study has helped Thermalite to focus on some key areas for continual improvement. These improvements are now linked to ISO 14001 annual objectives and targets at each factory.

› Thermalite - analysis of a square metre of wall element over a 60 year life (measured in Ecopoints)

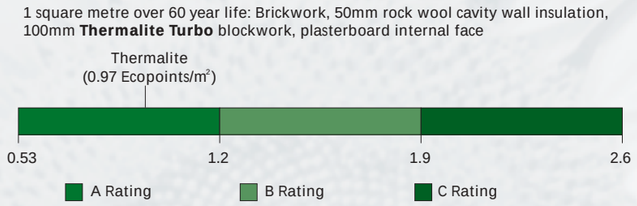


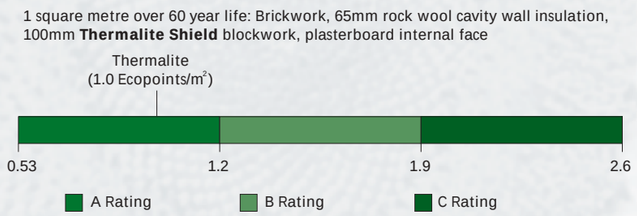
› BRE Approved Environmental Profile certificate

The Green Guide to Specification

The Green Guide to Specification

The third edition of the 'Green Guide to Specification' contains tables showing the summary ratings, measured in Ecopoints per m² for all the elements included in the Green Guide. The diagram, below, shows the Green Guide ratings for external walls. In both cases Thermalite achieves an 'A' rating.





Applying the Green Guide to Specification

Whilst all specification choices are important, designers may wish to pay particular attention to the selection for the building elements which have the potential for the least environmental impact.

BREEAM for Offices and the Green Guide to Specification

The BRE's Environmental Assessment Method (BREEAM) is a design and management stage assessment tool that provides an environmental label for buildings, based on good practice. BREEAM is widely used to specify overall environmental performance. One of the aims of BREEAM is to encourage the use of materials that have lower impact on the environment, taking account of the full life cycle of the materials in question.

The Green Guide to Specification provides a quick and easy way to assess the environmental performance of over 250 construction specifications. Each entry is ranked on a scale of A to C (with A representing the least environmental impact and C the highest). Credits for the materials section of BREEAM are awarded for choosing a specified proportion of major building elements that achieve an A rating in the Green Guide to Specification.

EcoHomes and the Green Guide to Housing Specification

EcoHomes is the housing version of BREEAM. As with BREEAM, one of the aims of EcoHomes is to encourage the use of materials with the lowest environmental impact, taking into account their full life cycle.

The Green Guide to Housing Specification provides guidance to designers and specifiers on the environmental impacts of common specifications used in housing. A simple A, B or C ranking scale is used, where A represents the best environmental performance. EcoHomes includes credits for selecting A-rated specifications for key building elements using the Green Guide to Housing Specification.

For further information on BREEAM and EcoHomes please visit **www.bre.co.uk/breeam**

For further information on Environmental Profiles please visit **www.bre.co.uk/envprofiles**

Environmental policy in action

One of the most recent examples of Thermalite's involvement in building a sustainable future is Stella House on the banks of the River Tyne, a brand new office construction situated in the Newburn Riverside development park. Constructed on behalf of One NorthEast, the North East Regional Development Agency, by main contractors, Mowlem, the building provides 63,000 sq feet of office space and has made extensive use of Thermalite aircrete blocks for the external walls.

The entire project was constructed on the basis that Stella House was an environmentally sound development.

The Environmental Profiles Scheme provided Mowlems and One NorthEast with the environmental information they needed to make informed decisions regarding construction materials and accurately assess the environmental impact of their product specification.

Thermalite's sustainable blocks were an integral element in the wall build process of the two-storey office development. Over 4,500m² of Hi-Strength blocks were used together with Hi-Strength Smooth and Shield, all specified for their excellent environmental credentials.

The low environmental impact of Thermalite products gave Mowlems a clear choice for the blockwork elements of Stella House and helped the construction achieve the following:

- Attainment of a Green Guide 'A' rated external wall specification, which allowed the specifiers to achieve credits within BREEAM.
- Low maintenance costs during the service life of the products.
- One of the most environmentally sound developments undertaken in Newcastle in recent years.
- The achievement of an 'Excellent' rating under BREEAM for Offices 2002.

Transport

The transport division has instituted a number of initiatives, which demonstrate excellent environmental practice. For example, eco-friendly tractor units used within the fleet produce low emissions and are fuel-efficient. We have in-house servicing facilities, which ensure the fleet is kept in an excellent state of repair. Journey efficiency is also measured to make sure that return loads are used to optimise transport efficiency and keep emissions to a minimum.

Aggregate replacement

Since the mid 1990s, initiatives have been in place to make sure that most of the waste aircrete from production is crushed and put back into the process.

In 2002, Thermalite were able to substitute between 5–10% of material with crushed aircrete. This initiative not only saves resources, but also avoids landfill disposal of waste and reduces the impact from transport of material deliveries.

Reduced packaging

Thermalite is continually looking at ways in which to reduce the amount of packaging material needed. It was one of the first building materials manufacturers to introduce the recycling of pallets over 20 years ago and many packs are now supplied without the requirement for pallets at all.

Blocks are shrink wrapped for protection and to ensure that the customer receives a quality product.

The amount of polythene used has also been reduced over the years and all waste polythene from our factories is now recycled.