

masterblock.co.uk

SALES OFFICES

High Roads, Nether Kellet, Carnforth, Lancashire LA6 1EA

Tel: 01524 736636 Fax: 01524 736635

Marions Way, Croft, Leicester LE9 3GP

Tel: 01455 285670 Fax: 01455 285206

North End, Ashton Keynes, Wiltshire SN6 3QX

Tel: 01285 646900 Fax: 01285 646949

Melbur Blockworks, Summercourt, Newquay, Cornwall TR8 5UA

Tel: 01726 862222 Fax: 01726 862229

Kemnay Quarry, Aquithie Road, Kemnay, Scotland AB51 9PD

Tel: 01467 651000 Fax: 01467 642342

Technical Helpline: 01285 646800



Enviroblock

Sustainability Built In



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Introducing Enviroblock

A range of environmental issues now affects our world. As globalisation continues and the earth's natural processes transform local problems into international issues, few societies are being left untouched by major environmental change.

As a company that assigns high importance to social responsibility, Aggregate Industries continually works for the environment, looking for solutions across its operations. Significant improvements have been made to enhance its environmental performance, to develop community relations and to increase its commitment to Sustainable Development.

Sustainable Development

Sustainable development requires the balancing of environmental, economical and social performance. To create this balance we must minimise our impact on the environment, whilst at the same time providing goods and services which meet the needs and aspirations of today's society.

AGENDA 21

Agenda for the 21st Century

Agenda 21 is a comprehensive plan of action to be taken globally, nationally and locally by organisations of the United Nations, governments and major groups in every area in which human activities create an impact on the environment.

Established in 1992 at the United Nations Conference on Environment and Development (Earth Summit) in Rio de Janeiro, Brazil, Agenda 21 represents a global commitment to sustainable development.

Agenda 21 addresses the development of societies and economies by focussing on the conservation and preservation of our environments and natural resources.

Governments, NGOs, industry and the general public are encouraged to become involved and the Agenda provides a framework for tackling today's social and

environmental problems including air pollution, deforestation, biodiversity, energy consumption, waste production and transport issues.

Aggregate Industries Environmental Performance

Aggregate Industries is fully accountable for all the environmental and social impacts of its activities. The company continually strives to improve the performance of its products and operations to minimise their effect on the environment.

- All wholly owned Aggregate Industries UK sites are certified to ISO 14001 for environmental management systems.
- Aggregate Industries is a sponsor of the Civic Trust Sustainability Award.
- Aggregate Industries reports annually on the sustainability of its products and processes.
- Aggregate Industries has a Biodiversity Action Plan.
- Aggregate Industries has invested in a common electronic information system called 'ENVOY', a web-based intranet that allows corporate documentation to be broadcast to all site representatives and to analyse and review information regarding their site's performance. This has been successfully used in the UK to manage environmental, health and safety and quality issues.

Enviroblock - 'Sustainability Built In'

Masterblock's Enviroblock range is a new generation of environmentally engineered building block products designed to meet the needs of today's society.

Produced from selected waste raw materials, manufactured in ISO 14001 compliant factories and certified by the BRE Environmental Profile Scheme, this comprehensive range of products enables architects and specifiers to design sustainable buildings with confidence.

Technical Helpline: 01285 646800



BRE Sustainable Construction Tools

Masterblock are meeting head-on the growing concerns of resource depletion and degradation of the environment. These concerns have been highlighted in recent government policy to provide housing and industrial buildings constructed from sustainable building materials, in order to improve our quality of life, without affecting the functionality and quality of the housing.

CERTIFIED ENVIRONMENTAL PROFILES

As a means for the construction industry to meet these targets Masterblock has developed a new range of sustainable building blocks and using the Building Research Establishment (BRE) Environmental Profiles Scheme the environmental performance of the Enviroblock Range has been certified.

The Environmental Profiles Scheme is a standardised approach for applying the life cycle environmental assessment to construction products.

The full life-cycle assessment, cradle to grave, takes into account impacts derived from extracting raw materials, manufacture application, disposal as well as all the transport and energy concerns involved in the entire process.

This scheme enables the construction industry to make informed decisions when selecting construction materials, and also gives Masterblock the opportunity to present factual environmental information about its products.

Eco-Points

The resulting Environmental Profile contains an Ecopoint, a single score that describes relative environmental impacts based on a representative tonne of Enviroblock used, calculated over a 60-year life of a construction element. The Ecopoint is derived by combining different environmental impacts, which have each been compared with the day-to-day environmental impacts of one UK citizen.

Green Guides

The resulting Ecopoints are used to provide summary ratings for all elements reproduced in the Green Guide to Specification and The Green Guide to Housing Specification. These ratings start from 'A', which indicates an excellent environmental performance, followed by 'B' and 'C'.

These summary ratings are used alongside a number of schemes developed by BRE to assess the environmental performance of buildings.

BREEAM - Government Buildings

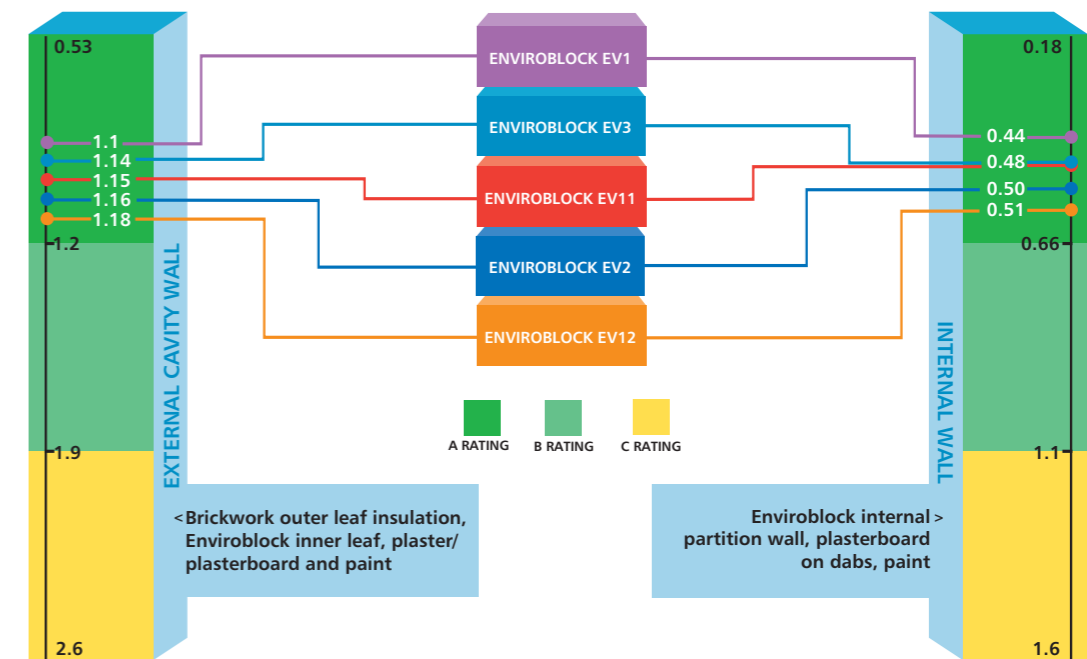
BREEAM (BRE Environmental Assessment Method) has been designed for developers and designers to assess the environmental performance of buildings, through assessing a number of criterion, ranging from, energy use, water and materials used in its construction. Credits are awarded in each area according to performance. A set of environmental weightings then enables the credits to be added together to produce a single overall score. The building is then rated on a scale of PASS, GOOD, VERY GOOD or EXCELLENT. By using building elements specified within the Green Guide to Specification, as with the Enviroblock, additional credits are gained.

EcoHomes - Social Housing

EcoHomes is an environmental assessment method for homes, and as with BREEAM, the environmental performance of the home is rated on a scale of PASS, GOOD, VERY GOOD or EXCELLENT. This assessment method rewards developers who improve environmental performance through good design and developers using building materials specified within the Green Guide to Housing Specification gain additional credits to the overall score.

THE GREEN GUIDE TO SPECIFICATION

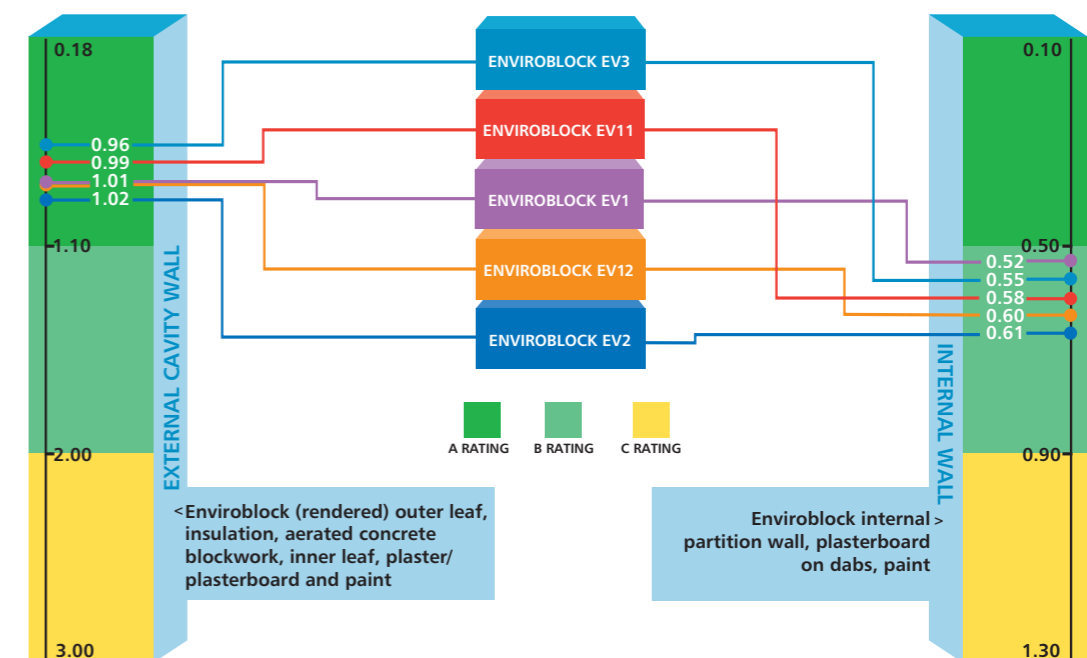
The diagram below shows the ratings for 1 square metre of a typical complete wall structure over a 60-year life. All of the Enviroblock Range products are Excellent rated and exceed the generic data used within the Green Guide to Specification.



"All Government buildings undertake a Building Research Establishment's Environmental Assessment Method (BREEAM) for all new buildings and major refurbishments. A high BREEAM rating should be included as a firm client requirement in the design team's brief." Sustainable Development In Government; Towards More Sustainable Construction

THE GREEN GUIDE TO HOUSING SPECIFICATION

Below illustrates the ratings of 1 square meter of a typical housing wall structure over a 60-year life. Again the Enviroblock range exceeds the generic housing specification data.



"English Partnerships is adopting the sustainability standards for all new homes, retail, office and industrial buildings built on its land and has stated that the rating of 'Very Good' must be achieved under the BRE's Environmental Assessment Method." English Partnerships



Enviroblock Data/Specification

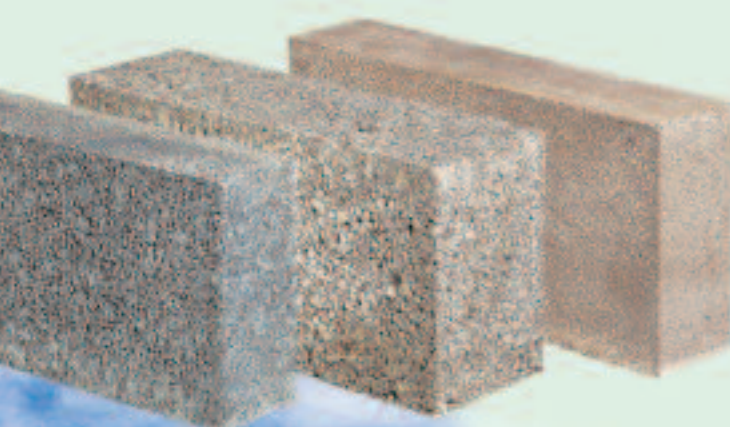
COMPOSITION & MANUFACTURE

The Enviroblock range is manufactured on modern automated plants and produced from specially selected recycled aggregates and secondary aggregate materials, maintaining quality throughout.

Masterblock is a member of both the British Precast Concrete Federation and the Concrete Block Association.

All Masterblock products are manufactured under the quality procedures of BS EN ISO 9001 2000. The high level of quality control exercised at all stages of production ensures compliance with BS 6073: Part 1. (BS EN 771-3:2003)

The blocks also satisfy the special category requirements as laid down in BS 5628: Part 1 and in BS 6073: Part 2.



ENVIROBLOCK RANGE	
Lightweight – 1450Kg/m3	Dense – 1950Kg/m3
440x215x100mm	440x215x100mm
Enviroblock EV1 100% Recycled Aggregate(3.5N)	Enviroblock EV11 100% Recycled Aggregate (7N)
Enviroblock EV2 Consisting of lightweight and dense recycled materials (3.5N)	Enviroblock EV12 100% Secondary Aggregate(7N) China Clay bi-product
Enviroblock EV3 Consisting of lightweight and dense recycled materials (3.5N)	

CERTIFIED ENVIRONMENTAL PROFILES								
Format	Enviroblock Range	Ecopoint		Green Guide to Specification Rating	Ecopoint		Green Guide to Housing Specification Rating	
		Internal Partition Wall*	External Cavity Wall**		Internal Wall•	External Wall••	Int	Ext
Lightweight	Enviroblock EV1	0.44	1.10	A - Excellent	0.52	1.01	B	A
	Enviroblock EV2	0.50	1.16	A - Excellent	0.61	1.02	B	A
	Enviroblock EV3	0.48	1.14	A - Excellent	0.55	0.96	B	A
Dense	Enviroblock EV11	0.48	1.15	A - Excellent	0.58	0.99	B	A
	Enviroblock EV12	0.51	1.18	A - Excellent	0.60	1.01	B	A

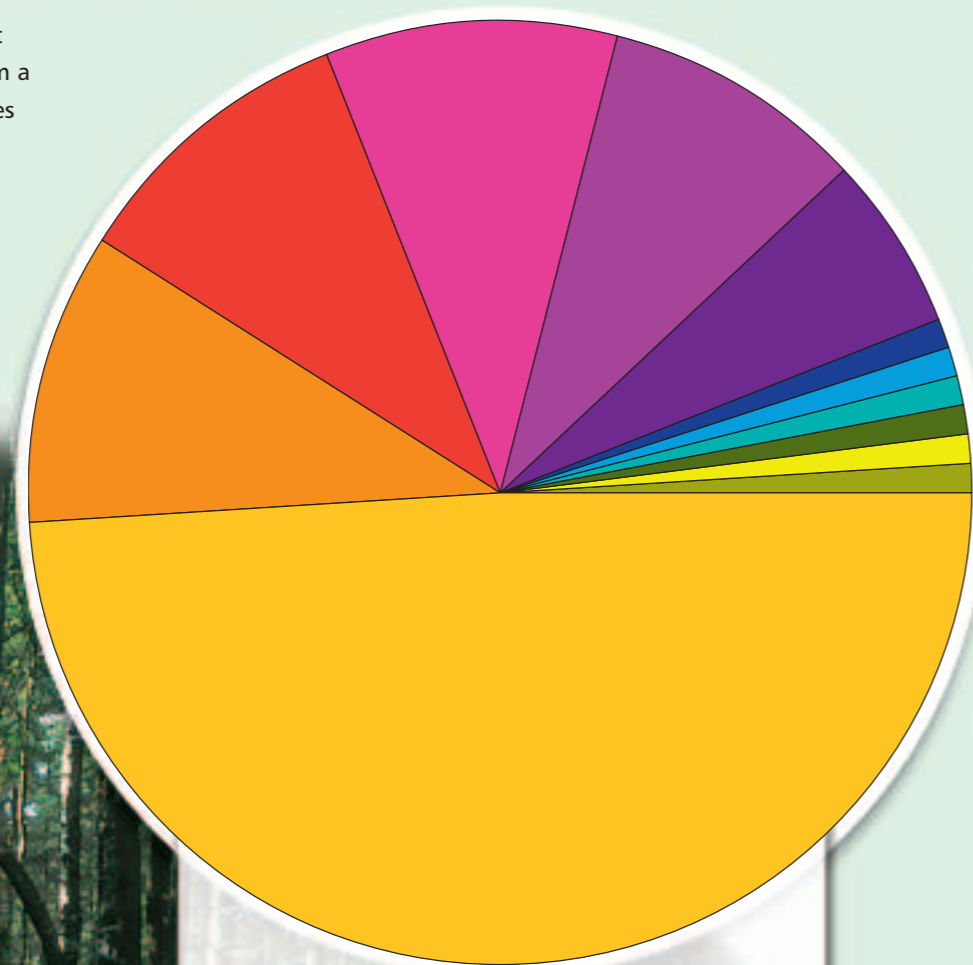
*Enviroblock internal partition wall, plasterboard on dabs, paint
 **Brickwork outer leaf, insulation, Enviroblock inner leaf, plaster/plasterboard & paint

•Enviroblock internal partition wall, plasterboard on dabs, paint
 ••Enviroblock (rendered) outer leaf, insulation, aerated concrete blockwork, inner leaf, plaster/ plasterboard & paint

PHYSICAL CHARACTERISTICS									
Enviroblock	Number/m2 as laid	Vapour Resistivity MNs/gm	Average drying shrinkage	Thermal conductivity moisture content @ W/moC		Thermal resistance m2/K/W		Dry block weight Kg	Weight laid Kg/m2
				3%	5%	3%int	5%ext		
Lightweight	9.88	50	0.03-0.05	0.49	0.51	0.200	0.196	13.65	153
Dense	9.88	90 to 120	0.03%	1.074	1.180	0.069	0.063	18.50	200

Environmental Profiles

The BRE have provided a chart using the Ecopoint scores from a range of environmental profiles which is shown below.



ENVIROBLOCK EV1:
Breakdown of environmental impact by issue

- Climate Change - 49.25%
- Pollution to Air: Human Toxicity - 12.96%
- Acid Deposition - 10.50%
- Minerals Extraction - 10.37%
- Fossil Fuel Depletion - 9.20%
- Pollution to Water: Eutrophication - 6.22%
- Pollution to Air: Photochemical Ozone Creation Potential - 0.67%
- Waste Disposal - 0.57%
- Water Extraction - 0.26%
- Pollution to Water: Human Toxicity - 0.0011%
- Pollution to Water: Human Ecotoxicity - 0.0002%
- Ozone Depletion - 0.0000%

Construction accounts for 7% of the total carbon emission in the UK, the largest impact from the production of Enviroblock EV1 is from climate change (49%).

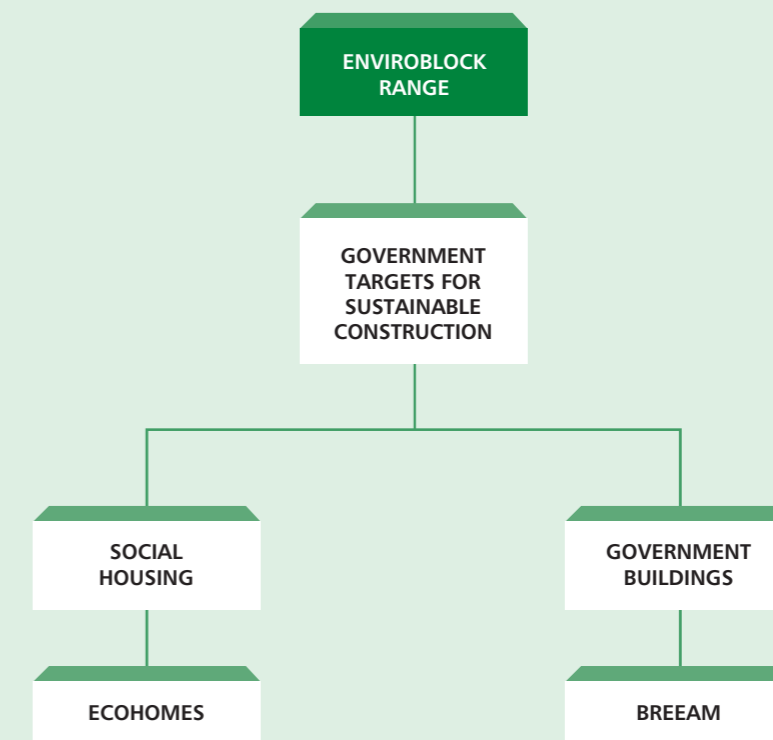
Key Features

Through the Environmental Profiles Scheme Masterblock are the first lightweight and dense block manufacturer to be certified and listed in the List of Approved Companies and Approved Construction Products, Red Book Volume 2.

- Enviroblock surpasses the generic product data within the Green Guide to Specification. Enviroblock is therefore setting new standards within the construction industry.
- The Enviroblock range has exceeded the generic data within the Green Guide to Housing Specification, achieving an A rating for its traditional cavity wall specification.
- The Enviroblock range can give additional credits towards both BREEAM and EcoHomes schemes.

- The raw materials used within the product are specially selected for their environmental performance and the products comply with all European and UK technical standards.
- Enviroblock provides a complete range of sustainable products assisting the specifier to achieve the highest rating in sustainable construction, without requiring any change in construction technique.
- Enviroblock is manufactured by the Masterblock division of Aggregate Industries UK Ltd, to environmental standard ISO14001 and quality assurance ISO9001.
- Further information can be obtained from the Masterblock Technical Helpline: 01285 646800

ENVIROBLOCK RANGE ENABLES GOVERNMENT TARGETS TO BE MET



Reference Publications

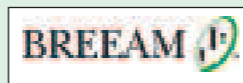
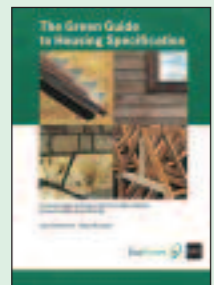
Further information on the following can be found at www.bre.co.uk

1 The Green Guide to Specification indicates the environmental performance for building materials and components for common building elements, indicated on an A-B-C rating system. An important part of BREEAM, The Green Guide to Specification is an essential tool for architects, surveyors, and building managers who are aiming to reduce the environmental impacts of building materials through informed choice.

2 The Green Guide to Housing Specification provides guidance to designers and specifiers on the environmental impacts of the main fabric elements commonly used in housing.

The environmental performance of materials and components and indicated on an environmental scale A-B-C scale, allowing material selection based on its environmental performance over a buildings life.

3 The List of Approved Companies and Approved Construction Products; Red Book, Volume 2, and the Red Book Live are the authoritative guides to those companies whose operations, products and services achieve compliance with the quality assurance, product approval and certification schemes BRE Certification operates.



4 Invest 2 is a web based software tool that simplifies the process of designing buildings with low environmental impact and whole life costs. Designers input their building designs and choices of elements. Invest identifies those elements with the most influence on the building's environmental impact, and shows the effects of selecting different materials and manufactures.

5 EcoHomes, sponsored by the NHBC, is the homes version of BREEAM. It is a voluntary scheme for the environmental labelling of new and renovated homes. It rewards developers who improve environmental performance through good design. EcoHomes includes credits for selecting high performance specifications for key building elements using the Green Guide to Housing Specification.

6 The BRE's Environmental Assessment Method (BREEAM) is a voluntary scheme for the environmental labelling of buildings, developed by BRE with private sector partners and sponsors. The basis of the scheme is a certificate awarded to the individual buildings stating clearly – and in a way that can be made visible to clients and users alike – the performance of the building against a set of defined environmental criteria. 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. Credits are awarded for selecting high performance specifications for key building elements using the Green Guide to Specification.



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