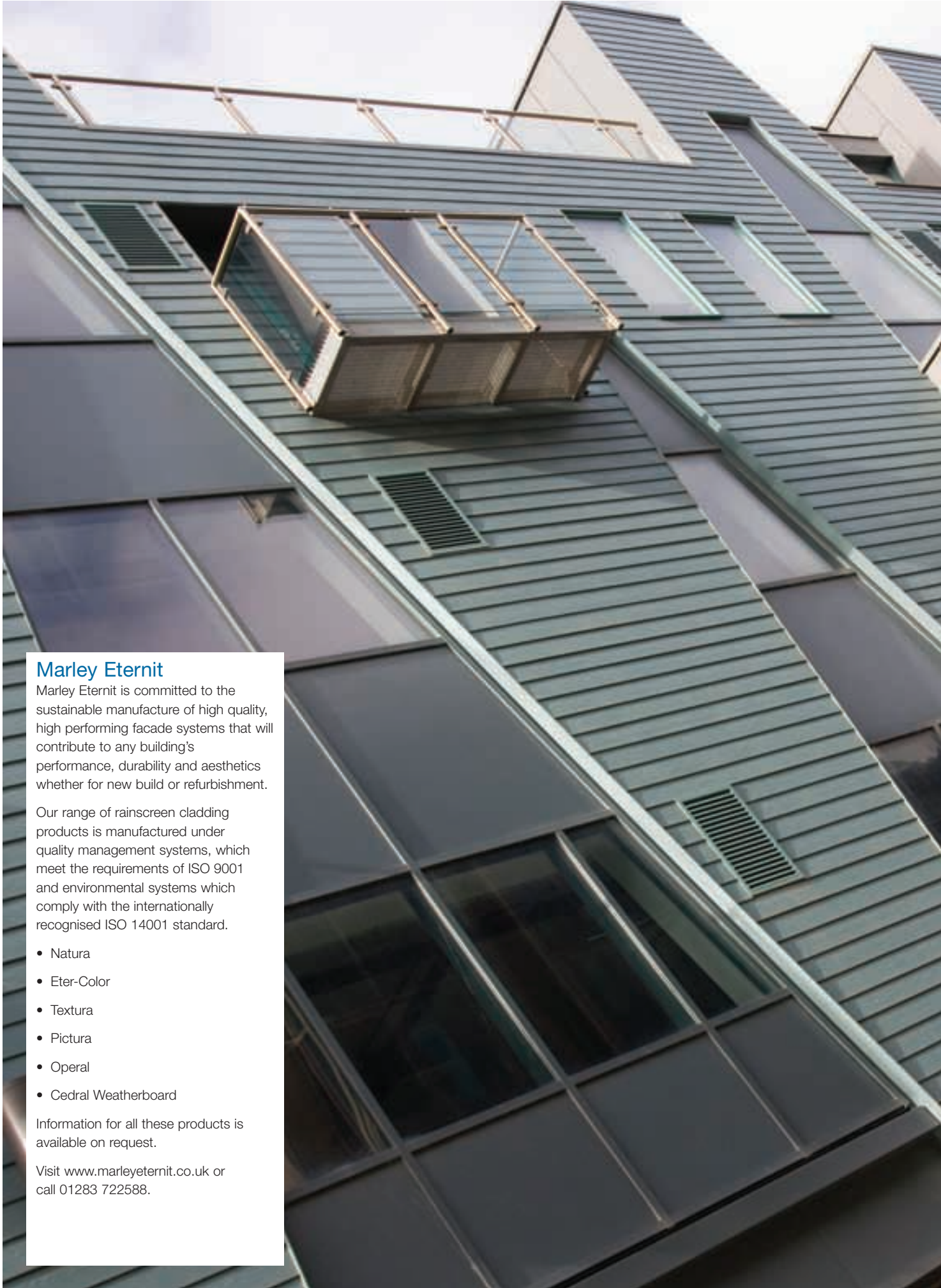




External wall insulation solutions with rainscreen cladding



Marley Eternit

Marley Eternit is committed to the sustainable manufacture of high quality, high performing facade systems that will contribute to any building's performance, durability and aesthetics whether for new build or refurbishment.

Our range of rainscreen cladding products is manufactured under quality management systems, which meet the requirements of ISO 9001 and environmental systems which comply with the internationally recognised ISO 14001 standard.

- Natura
- Eter-Color
- Textura
- Pictura
- Operal
- Cedral Weatherboard

Information for all these products is available on request.

Visit www.marleyeternit.co.uk or call 01283 722588.



A+
Marley Eternit's fibre cement cladding can achieve an A+ rating for the lowest environmental impact in the BRE Green Guide to Specification*.

“Rainscreen cladding is a cost-effective, durable and aesthetically pleasing way of providing unique levels of thermal, acoustic and weather-resisting performance to buildings. Rainscreen overcladding of existing building stock brings the additional advantages of upgrading thermal performance and increasing building value and life, with minimal disruption to the building’s occupants.”

Rainscreen cladding

Marley Eternit fibre cement cladding systems offer an unparalleled blend of aesthetic and performance characteristics for all types of rainscreen applications across all sectors.

Insulation depths of up to 240mm can be accommodated, acoustics enhanced, thermal bridging minimised and weather resistance, as well as appearance and habitability, improved.

The high Green Guide ratings Marley Eternit claddings achieve will help to comply with the Building Regulations and the Code for Sustainable Homes, or attain a high BREEAM rating – essential in both the public and private sectors.

Cladding and overcladding is fast-track, and sustainable for both refurbishment and new build projects, with a dry construction process that aligns well with modern methods of construction, offering both contemporary and flexible design options.

Contents

| | |
|---|------------|
| Introduction | 2-3 |
| Refurbishment with rainscreen | 4-5 |
| Rainscreen cladding - principles and benefits | 6 |
| Thermal design details | 7 |
| Rainscreen cladding in application | 8-11 |
| With ME it's about you | back cover |



* Cedral Weatherboard based on generic rating for autoclaved fibre cement (calcium silicate) cladding (Element ref: 806220701, 806220675, 806220676)
Fibre Cement Cladding based on generic rating for autoclaved fibre cement single sheet (Element ref: 80623042, 806230422, 806230447, 806230450)

Front cover image: New North Road housing, Islington: Natura

Refurbishment with rainscreen

The aesthetic, remedial and thermal solution

One of the key ways in which rainscreen can benefit existing buildings is through overcladding. Fundamentally, this adds a high performing and beautiful new skin over the top of the existing structure.

Apartment and office blocks, retail, healthcare and commercial establishments may well require both remedial and aesthetic work to make them more weather resistant and thermally efficient, as well as to give dated buildings a modern and pleasing finish. On top of this, the thermal inefficiencies inherent in this legacy building stock will almost certainly need radically upgrading to meet today's exacting standards.

Overcladding with rainscreen cladding systems achieves all three key requirements:

- Remedial
- Aesthetic
- Thermal (with insulation)

Providing thermal insulation for walls

Rainscreen is a high-benefit, low-cost method of providing thermal insulation to external walls for both refurb (overclad) and new projects. It can also help minimise cold-bridging.

Adding insulation to the external surface of the loadbearing structure has three key benefits:

- Increased thermal efficiency (dependent on the fixing system used). Up to 240mm of insulation can be added using a Marley Eternit framing system
- No loss of internal space - insulation added to internal walls consumes valuable internal habitable space
- Light weight and easy to fix – insulation can be rapidly and easily fixed to the exterior substrate and adds very little loading to the existing envelope.

Key features for overcladding

- Restoration of existing facade
- Extending the life of the building
- Improving appearance and image
- Provide thermal insulation and weather-tightness
- Improve acoustical performance of the building
- Lower maintenance cost



Atkinson's Store, Retail, Sheffield: Natura



Assembly Square, Commercial, Cardiff: Natura



Beach House, Private residence, West Sussex: Cedral Weatherboard

Other benefits



Minimising disturbance

Overcladding is carried out entirely from the outside, so there is minimal disruption.



Vandalism

External wall surfaces prone to vandalism and graffiti – for instance, at ground floor level – can be clad with more robust material or one such as Natura with its UV coating offering good protection against graffiti.



Building life

Whilst overcladding will not reinstate structural integrity of a building, it will, if designed and installed correctly, extend its life by improving weather resistance.



Building value

A rejuvenated building with increased thermal and acoustic performance and extended lifespan will increase property value.



Maintenance

As a non-loadbearing extra 'skin', fixed to the substrate, maintenance or replacement of panels is straight-forward and non-invasive.



Balconies

Balconies and walkways can be fully enclosed to create buffer zones. If external wall insulation is not considered then enclosing the balconies etc. will also reduce the effect of the thermal bridges associated with them.



Sustainability

Under nearly all circumstances overcladding makes excellent environmental sense, not just in terms of physical improvement for the occupants, but by using fewer new materials and lower amounts of energy than required for new build.

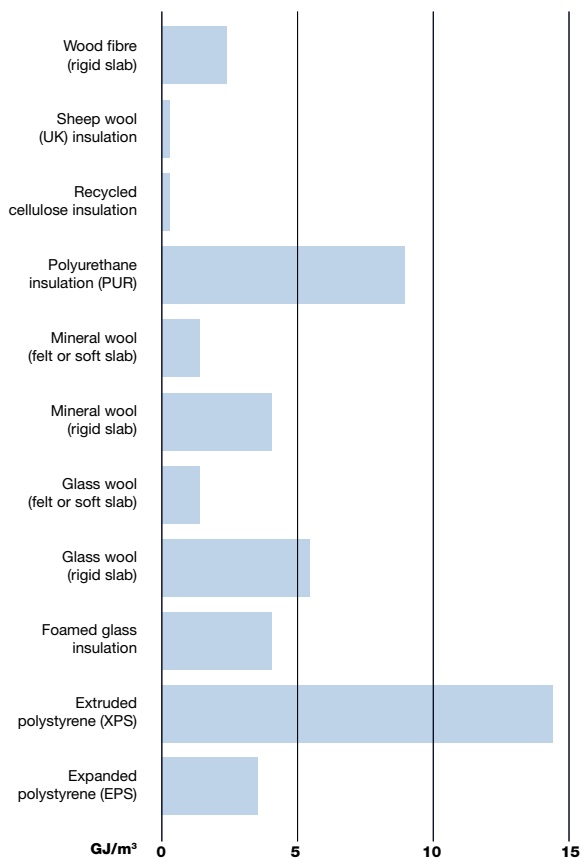


All weather installation

Fibre cement cladding can be installed in inclement weather, all year round - a major advantage over insulated render systems.

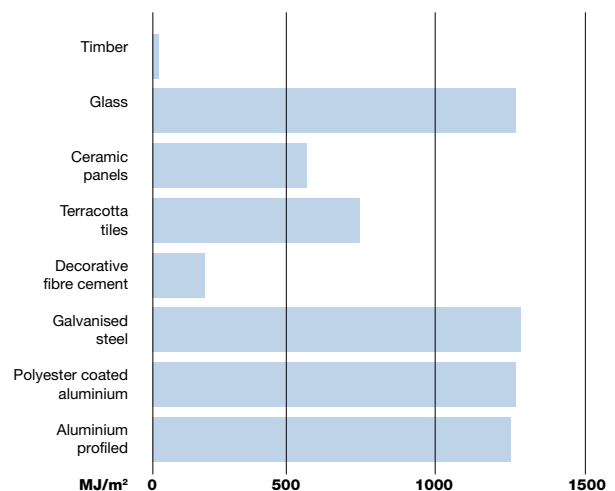
Embodied energy for insulation*

The table below shows embodied energy for various insulation products. Lower embodied energy will allow the designer to achieve a higher BREEAM rating.



Embodied energy for cladding materials*

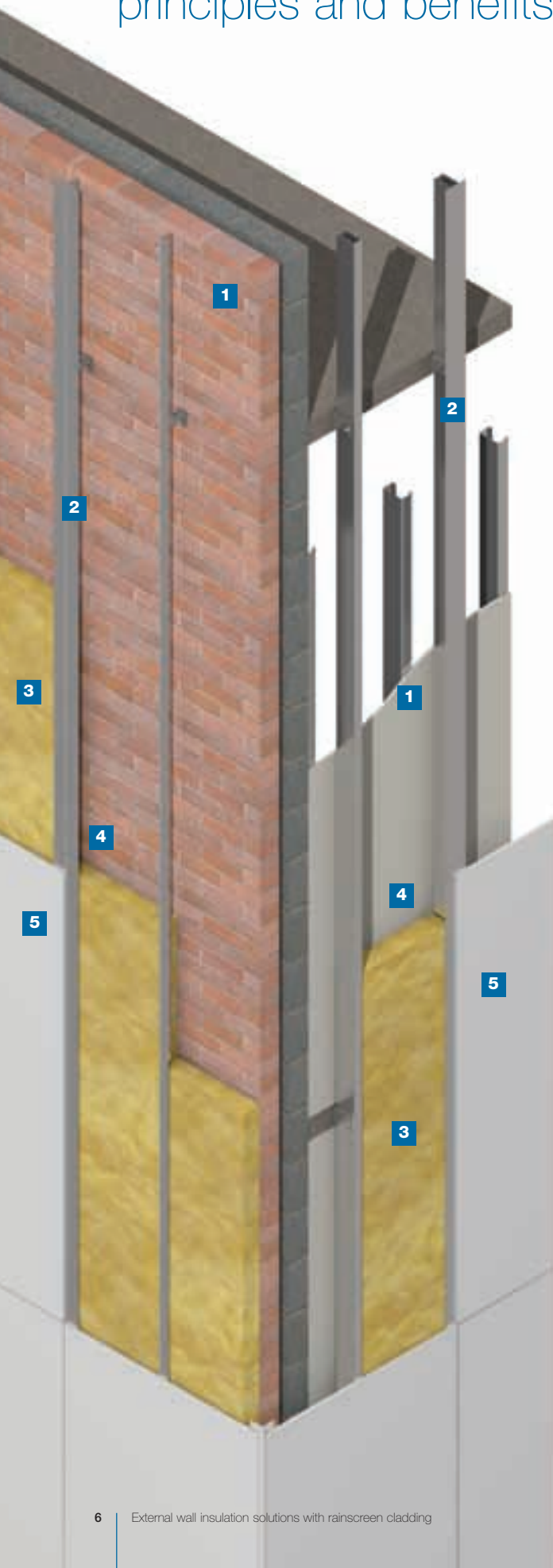
The table below shows embodied energy for various cladding materials. Lower embodied energy will allow the designer to achieve a higher BREEAM rating.



*Data from www.sustainingtowers.org/WALLSa.htm

Rainscreen cladding

principles and benefits



Rainscreen cladding and overcladding brings a range of thermal, acoustic and durability benefits to buildings as well as the regenerative and aesthetic enhancements that fibre cement cladding automatically offers. The cladding itself and the fixing systems are easy to work with and install and there are a variety of fixing options to choose from.

Existing wall

1 This could be block and brick, block and render, timber frame or any other type of legacy load-bearing (or infill) wall that is either under-performing or being physically or aesthetically degraded by weather and time – or a structure suffering from all of these.

Fixing systems

2 These usually comprise of aluminium rail and bracket systems fixed to the load bearing structure. They are simple to install, robust and can be adjusted for unevenness of substrate below.

They allow for a range of thicknesses of insulation to be fixed externally to the building and help minimise cold bridging, with the added benefit of maintaining living or working space within the structure.

Insulation

3 Insulation of all types – from rigid PUR to mineral wool – up to 240mm thickness can be accommodated using a Marley Eternit framing system. The insulation is positioned against the substrate to maximise heat retention and minimise condensation issues and cold bridging.

Mineral wool insulation allows moisture to pass through to the cavity where passage of air evaporates it.

Air gap

4 Also called 'rear ventilation', this prevents rainwater from reaching the insulation and structural substrate. The air gap provides ventilation so that any water that penetrates the joints of the rainscreen is evaporated or drains away at the base.

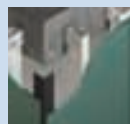
Rainscreen system

5 This forms the main barrier to the elements – especially rain. Open joints are designed to allow the passage of air into the cavity, keeping the insulation and substrate ventilated and largely dry. Any rainwater that does pass through and which is not evaporated, runs down the inside of cladding skin and passes out through the base of the system.

A special characteristic of the rear ventilated cladding system is its guaranteed performance. The system's effectiveness is maintained even when unfavourable internal or external atmospheric conditions are experienced, e.g. in the textile industry, swimming pools, breweries etc. No other wall construction is currently able to fulfil the growing requirements for heat, moisture, noise insulation, and fire protection.

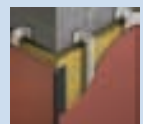
Ventispan

Ventispan is a framework for the cladding of both concrete and steel framed structures, anchored to the structure at each floor level, with vertical profiles spanning from floor to floor.



Ventisol

A highly engineered system of top quality components specially developed for fixing to new or existing structures. The adjustment within the components allows a true plane to be easily achieved for the new cladding facade.



Thermal design details

upgrading existing structures with overcladding

Brickwork wall

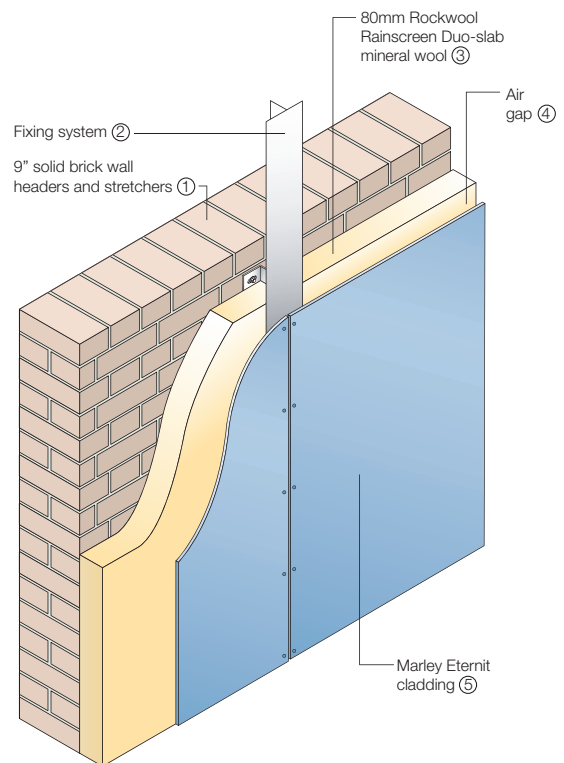
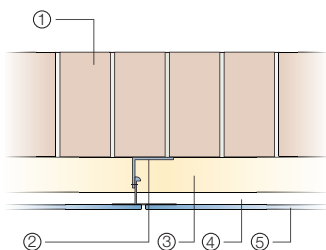
- Marley Eternit external cladding
- Ventisol fixing system
- Air gap
- 80mm Rockwool Rainscreen Duo-slab mineral wool
- 9" solid brick wall (laid as headers and stretchers)

Notes:

- 9" solid walls are common in pre-1930 house construction and the brick bonding can be in a number of configurations
- U-values of these types of wall are typically 1.9-2.2 W/m²K
- Other fixing systems can also be used
- Greater (or lesser) depths of insulant can be accommodated

0.35
u-value

↑
upgrade
2.00
u-value



Block and brickwork wall

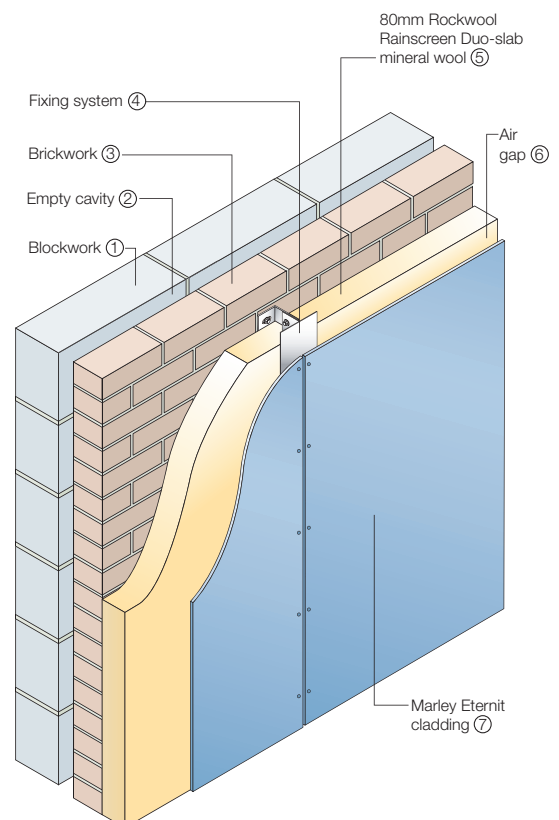
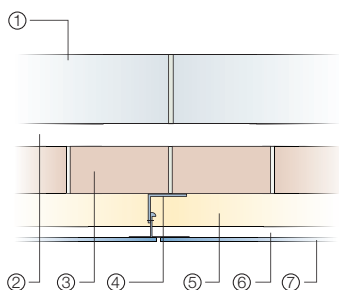
- Marley Eternit external cladding
- Ventisol fixing system
- Air gap
- 80mm Rockwool Rainscreen Duo-slab mineral wool
- Brick outer skin
- Cavity not insulated
- Brick inner skin

Notes:

- U-values of these types of un-insulated wall are typically 1.0-1.6 W/m²k
- Other fixing systems can also be used
- Greater (or lesser) depths of insulant can be accommodated

0.33
u-value

↑
upgrade
1.50
u-value



Rainscreen cladding in application

Wansey Street



| | |
|----------------------|-------------------------------|
| Location: | London |
| Client: | Southern Housing Group |
| Application: | Residential |
| Product: | Cedral Weatherboard |
| Colour: | Various |
| Project size: | 31 apartments |
| Specifier: | de Rijke Marsh Morgan |

A sunrise-coloured barcode apartment complex of fibre cement Cedral Weatherboard, which is fire-resistant and low-maintenance, has been installed to blend in with the existing buildings and graduates from canary yellow at the end where it blends with a buff-coloured Victorian terrace, to vermilion at the other where the red brick former town hall sits.

Rainscreen cladding in application

Rock Grove



| | |
|----------------------|--|
| Location: | Liverpool |
| Client: | Liverpool Mutual Homes |
| Application: | Housing Association |
| Product: | Natura |
| Colour: | Anthracite |
| Project size: | 52 apartments |
| Specifier: | Pollard Thomas Edwards Architects |
| Contractor: | Mitie |

A refurbishment project at Rock Grove, Liverpool, has used Natura fibre cement cladding as an overlaid solution to visually transform the tired looking buildings with a low maintenance decorative rainscreen facade.



Rainscreen cladding in application

New North Road

Location: New North Road, Islington

Client: ROCK Investment Holdings

Application: Residential

Product: Natura

Colour: Anthracite

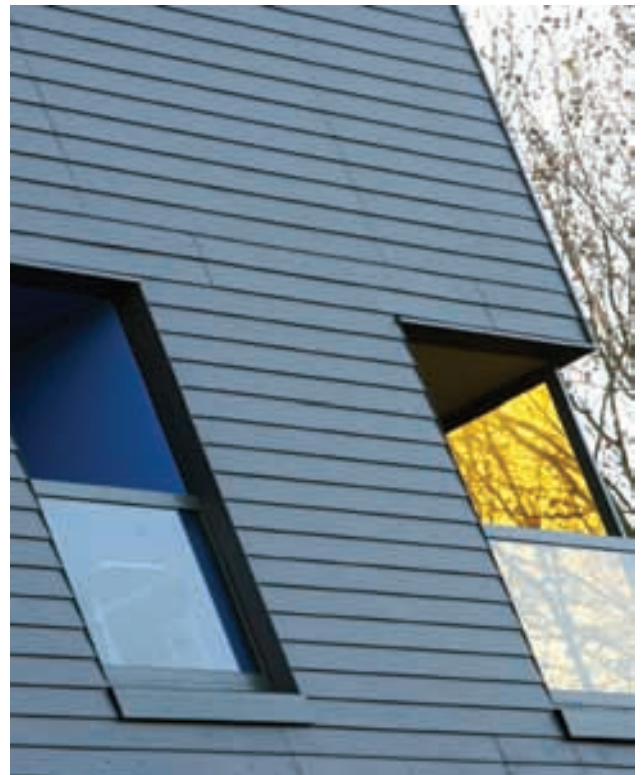
Project size: 14 apartments

Specifier: Loates-Taylor Shannon

Contractor: BASE

Innovative use of Natura fibre cement rainscreen cladding panels has helped to turn the brownfield site of a derelict cinema into a contemporary landmark on a busy road in north London.

Architects and designers Loates-Taylor Shannon worked closely with Marley Eternit's technical department to design shiplap details using Anthracite Natura cladding for the apartment block located on the corner of New North Road, Islington.



Rainscreen cladding in application

The effectiveness of overcladding in Lithuania



This apartment complex in Lithuania clearly demonstrates the effectiveness of overcladding. The apartment block on the left has been overclad with Marley Eternit Textura rainscreen cladding: to the right, the building's original and uninsulated brick and block construction has been left untouched. Data on the heating expenditure for both buildings show that the renovated and overclad side of the block made more than 40% fuel savings compared to the non-renovated side. The measurements were taken during the winter of 2009-2010 which was the coldest in 10 years. During the heating period of 2009-2010, total savings of renovated section over the non-renovated section, were 42.2%. These excellent results were reached despite ineffective insulation around windows.

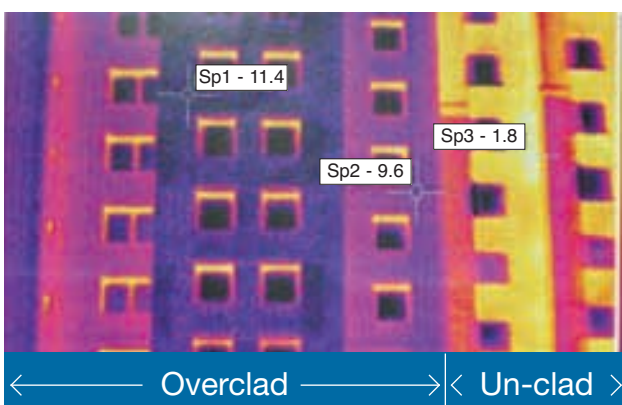
| | |
|----------------------|--------------------------|
| Location: | Lithuania |
| Application: | Residential |
| Product: | Textura |
| Project size: | 2200m² |

Technical data

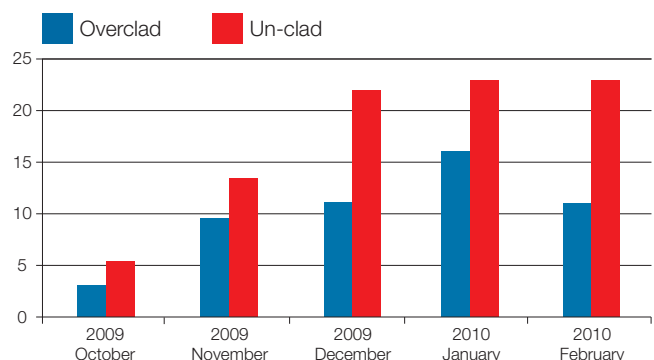
Fixing system: Aluminium section, wall bracket with thermal break element, T- and L- sections

Insulation: Mineral wool

Average energy saving: More than 40%



Heating energy requirement per month (kWh/m²)



Services

Let **ME** lighten your load

At times roofing and cladding specification can be complex and heavy going. That's why we're on hand to offer practical, experienced support in a host of useful ways. From creating bespoke NBS, BIM or CAD details, to answering questions on any aspect of your roofing or cladding project. We will deliver urgent samples where and when they're needed and provide products that help you achieve an A+ rating. We're always happy to take the weight off your shoulders. Because with **ME**, it's all about you.

Trust **ME** to take the hassle out of specification. If you ever need advice on any cladding or roofing related issue, you can rely on our team to give you a helping hand.

Call **ME** on 01283 722588
Email **ME** at info@marleyeternit.co.uk
Or visit **ME** www.marleyeternit.co.uk/cladding



Customer Services

Marley Eternit is committed to providing outstanding customer care and is staffed by experienced personnel in departments dedicated to providing the following services:

Advice, literature and samples

→ All current product and technical literature can be downloaded from www.marleyeternit.co.uk/downloads

To request samples and advice:

→ **T** 01283 722588 **E** info@marleyeternit.co.uk

Quotations and ordering information

→ **T** 01283 722588 **E** info@marleyeternit.co.uk

Stockist information

To find details for stockists of Marley Eternit products:

→ **T** 01283 722588 **E** info@marleyeternit.co.uk



Technical Advisory Service

Marley Eternit provides a free Technical Advisory Service which is staffed by personnel with specialist knowledge of the use of all Marley Eternit products and systems.

To request Technical Advice:

→ **T** 01283 722588
E info@marleyeternit.co.uk

Marley Eternit is committed to the cost effective and sustainable manufacture of high quality, high performing cladding systems

Marley Eternit's range of cladding products are manufactured under quality management systems, which meet the requirements of ISO 9001 and environmental systems which comply with the internationally recognised ISO 14001 standard.

To find out more about our comprehensive cladding range:

→ www.marleyeternit.co.uk **T** 01283 722588

Marley Eternit offer a comprehensive range of products, including:

- ✓ Clay and concrete plain and interlocking tiles
- ✓ Fibre cement slates
- ✓ Interlocking slates
- ✓ Ventilation and dry fix accessories
- ✓ Decorative cladding
- ✓ Profiled sheeting
- ✓ High performing interior and exterior building boards

Information for all these products is available on request.

→ www.marleyeternit.co.uk **T** 01283 722588

For further information, please contact

Tel 01283 722588 Fax 01283 722219 E-mail info@marleyeternit.co.uk

www.marleyeternit.co.uk

