

In-roof PV



BMI

Redland

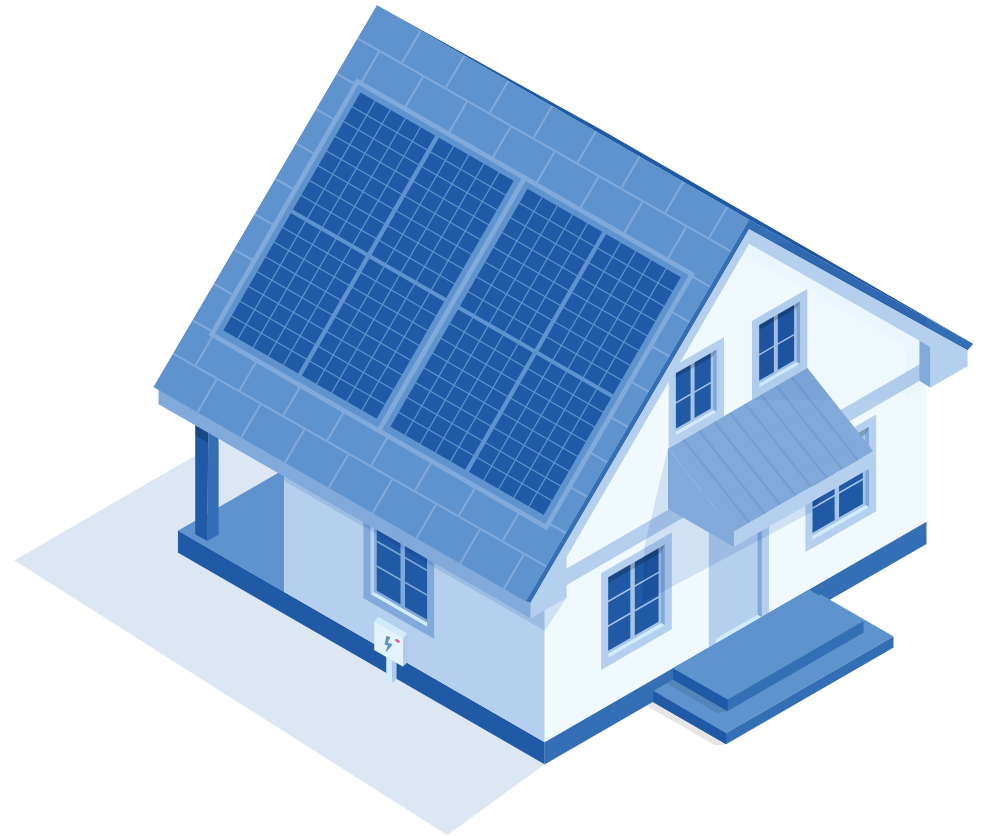
PV INDAX ADAPT

A roof can do so much more than offer protection from the elements.

The expanse of a roof provides one of the best locations to introduce solar technologies and take advantage of the benefits that integrated solar can bring.

An integrated solar PV solution can significantly reduce the carbon emissions of development when compared to other methods and technologies. Our comprehensive range of in-roof photovoltaic systems match performance with aesthetics and can be easily installed on new build or retrofit projects.

BMI Redland can help you see further, enabling you to create an integrated Solar PV roofing system that delivers real value to your project, from specialist support and designing the perfect fit to lifetime performance for your project, from a single trusted partner. Integrated in-roof solar PV InDaX Adapt. Brought to you by BMI Redland.

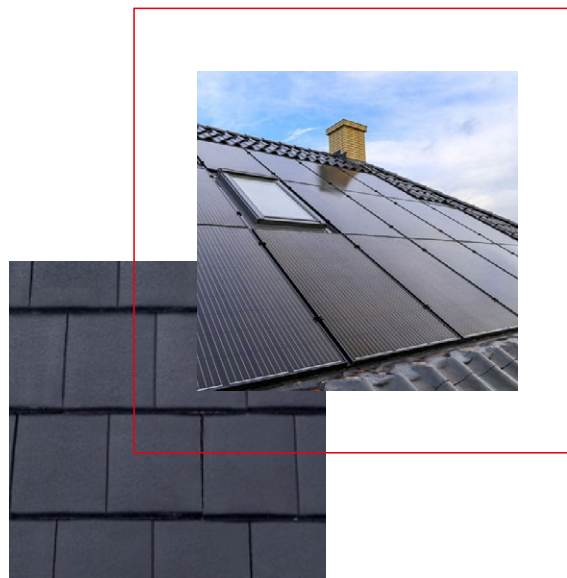


The perfect fit

With an increasing demand for energy-efficient and low carbon housing, why is specifying and installing a complete pitched roof system better than a mix-and-match component approach? Simple: certainty.

Having absolute confidence and certainty on the performance of the roof:

- System quality and testing
- Comprehensive technical support.
- Single point of contact
- Compatibility for design flexibility



“Working with BMI Redland provides a **fully integrated pitched roof solution** that is tested and validated to perform as a system. Compatible with BMI Redland concrete, clay and slate pitched roofing technologies, BMI Redland PV InDaX Adapt provides ultimate design flexibility.”



Single source

Complete BMI Redland pitched roofing system



Full system

BMI Redland pitched roof system, PV modules and framing system



Compatibility

Designed and validated compatibility with all BMI Redland tile technologies



Design flexibility

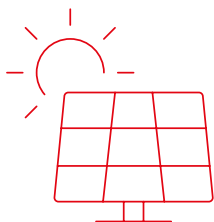
Achieve any desired configuration type in portrait format, without compromising performance



Specify with confidence

PV InDaX Adapt is tested and validated to the Redland standard providing confidence and certainty of full system performance

Specify with confidence



Do you need specification support?

Contact our team of experts today and benefit from the EcoMaster PV design and specification service.



EMAIL SALES TEAM

✓ System compatibility

The advantage of specifying and installing a complete BMI Redland roofing system is a simple fact of best fit. Every engineered component in the system, including tiles, fittings, components and accessories, is designed, tested and validated to complement each other, fixing with perfect strength, durability and compatibility. All elements of the system work together to form a roof that complies with all regulations, including BS 5534 and BS 8612.

✓ Roofing experience

Over a century of roofing experience stands behind you. We've been manufacturing pitched roofing systems for the UK's largest specifiers, housebuilders and developers for decades. Our integrated solar solutions, technical services and standards ensure that new developments meet sustainability targets in the most effective way.

✓ Integrated design

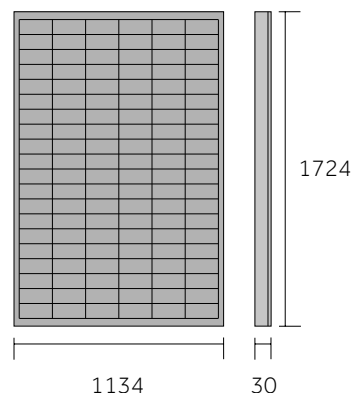
Our pitched roof solar solutions go far beyond simply adding panels to a roof. Designed to integrate with the BMI Redland tiles, fittings and components, BMI pitched in-roof solutions feature a special fixing system that allows the panels to sit harmoniously within the tile system to deliver an easy to design and install, cost-effective solution that helps you meet your energy targets.

✓ Certainty in testing

BMI Redland invests in additional stringent validation and testing processes. This provides housebuilders and developers with the evidence and reassurance that the specified BMI Redland roof provides best fit for the highest performance requirements.

Ultimate design flexibility

With its new PV InDaX Adapt system, BMI Redland provides an in-roof PV system that is compatible with its concrete, clay and slate tiles and can achieve any desired configuration type in portrait format, whilst boasting high output performance.



PV InDaX Adapt

Based on proven crystalline technology, the PV InDaX Adapt in-roof photovoltaic system offers high output performance in an attractive and weathertight roof covering. The panel sits in line with the surrounding tiles, creating an improved aesthetic and weathertight system.

Not only can the PV system provide flexibility in format and module specification, but the modules can also be installed to the edge of the roof, allowing the greatest flexibility in design to meet the required aesthetics for your project.

- Low overall system height with modules mounted in attractive black coated aluminium framing
- Safe, flexible and quick assembly
- Wide pitch range capability
- Maximum energy yield
- Weathertight and resistant to high wind uplift
- Fully MCS and BBA certified
- 25-year power output guarantee

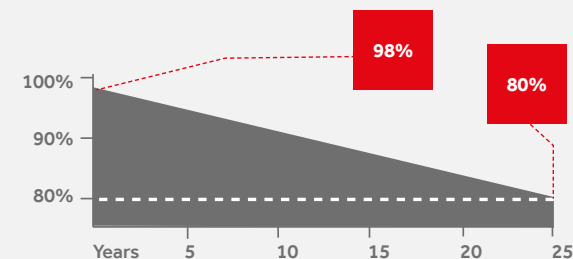
PRODUCT DATA

Power Output	415Wp
Solar Cells per Module	108
Cell Type	Monocrystalline
Front Panel	AR Coated Heat Strengthened Glass
Backside Panel	Laminated Thermoplastic
Framing	Black Polypropylene
Module Dimensions	1724 x 1134mm
Module Thickness	30mm (approx)
Weight	21.5kg (approx)
Format	Available in Portrait format

PERFORMANCE

10-year product warranty

25-year power output guarantee



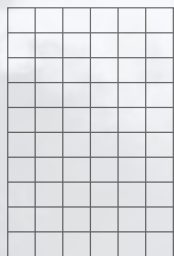
From the 2nd year to the 25th year, the average annual power decline will be no more than 0.6%

The technology explained

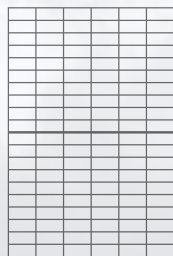
The PV InDaX Adapt system utilises half-cut cell module technology. Half-cut cell modules provide improved performance and are even more reliable than traditional solar modules. Overall cost efficiency is improved; with higher outputs per square metre of solar, installation times and component quantities can be reduced.



TALK TO OUR TECH TEAM



Full Cell



Half Cell

Half-cut cell technology

means the solar cells are laser cut in half, this not only improves performance but durability too.



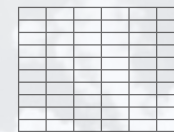
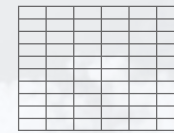
Less
resistance



More
Power



When solar cells are halved, their current is also halved, meaning resistive losses are also halved and the cells are able to **produce more power**.



The cells are smaller so the inter-cell spacing can be reduced and the cells placed closer together. This enables the panels themselves to be split into two halves; providing **improved performance**. For example, if the bottom of the module is shaded, the top half can still perform to its full potential.

Full System, full support

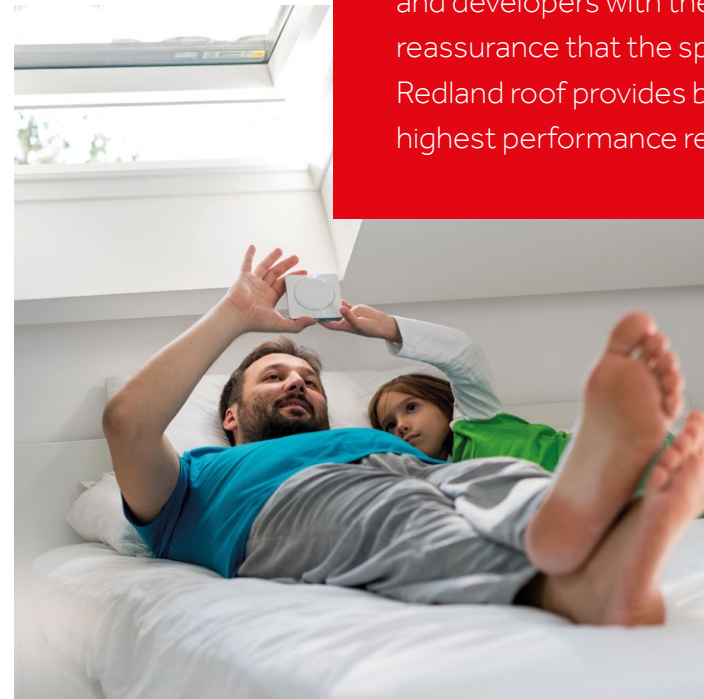
We provide a complete and fully integrated solar PV, pitched roofing system design service, to help you build zero carbon ready homes that fulfil your carbon reduction targets.

We understand that not every development is the same and there is no one-size-fits-all approach: From initial site assessment and design through to completion, our technical services team will work with your architects, designers and energy assessors to develop the right pitched in-roof solar PV system for your development, according to your targets and development needs.

Ultimately – helping your team specify and fit a better roof, getting the job right the first time. Everything works better when it fits together: products and people. That's why we make sure every system and every customer can enjoy the certainty, confidence and benefits of the perfect fit.



BMI Redland invests in additional **stringent validation and testing processes**. This provides housebuilders and developers with the evidence and reassurance that the specified BMI Redland roof provides best fit for the highest performance requirements.



Specialised support

EcoMaster is BMI Redland's free-of-charge PV design and specification service. It correctly specifies all the Redland Solar Range components needed for your Solar PV project. Solar PV systems specified, installed, commissioned and maintained in accordance with Redland instructions are covered by a Power Output Guarantee for the Solar Panel(s). An initial feasibility study can be carried out for your project by completing the BMI Redland EcoMaster Form on bmigroup.com/uk/ecomaster.



ECOMASTER FORM



Full system certainty

Our in-roof PV systems have been rigorously tested to verify performance for UK projects in compliance with MCS 005 AND MCS 012 certification. The fixing system and the solar module have been tested together and conform to the UK specific regulation via a UK-specific fire performance test -BS EN 13501-5:2016 (B_{ROOF}(t4)). BMI Redland in-roof systems demonstrate compliance to:

BS EN 14437:2004 – Determination of the uplift resistance of installed clay or concrete tiles for roofing – Roof system method.

BS 476-3:2004 – Fire tests on building materials and structures.

Non-combustibility test for materials or **BS EN 13501-5:2016 (B_{ROOF}(t4))**

– Fire classification of construction products and building elements.

Classification using data from external fire exposure to roof tests.

PD CEN/TR 15601:2012 – Hygrothermal performance of buildings.

Resistance to wind-driven rain of roof coverings with discontinuously laid small elements.

Certifications

- System quality and testing
- TÜV approved
- MCS 005 and MCS 012 approved
- Climate and aging tests approved
- 10-year warranty
- 25-year power output guarantee

Technical information

Data at standard test conditions (STC)

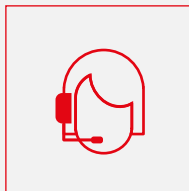
Nominal power [Wp] P _{mpp}	415
Voltage at nominal power [V] U _{mpp}	31.61
Current at nominal power [A] I _{mpp}	13.13
Open circuit voltage [V] V _{oc}	37.45
Short-circuit current [A] I _{sc}	14.02
Module efficiency (%) E	21.23

Temperature coefficients

Power [%/K] P _{max}	-0.35
Open-circuit voltage [%/K] V _{oc}	-0.275
Short-circuit [%/K] I _{sc}	0.045

Data at normal operating temperature (NOCT)

Nominal power [Wp] P _{mpp}	313.85
Voltage at nominal power [V] U _{mpp}	29.89
Open circuit voltage [V] V _{oc}	35.37
Short-circuit current [A] I _{sc}	11.22
Temperature [degree C] T _{NOCT}	45 (+-2)



REDLAND TECHNICAL SERVICES

Email: technical.redland@bmigroup.com

Tel: 0330 123 4585

Web: bmigroup.com/uk/index

CUSTOMER SERVICE

Email: sales.redland@bmigroup.com

Tel: 0370 560 1000

BMI UK & Ireland

BMI House,
2 Pitfield, Kiln Farm,
Milton Keynes,
MK11 3LW

BMI UK & Ireland is part of the world's largest roofing and waterproofing manufacturer. A global business specialising in building materials for today's and tomorrow's needs. BMI is a new name, backed-up with over 180 years of experience and knowledge. Bringing together the roofing expertise of industry leading Icopal and Redland and their experience in the specification, manufacture and supply of flat and pitched roofing solutions. United to deliver excellence for our customers.

bmigroup.com/uk