HIGH-PERFORMANCE PIR INSULATON STANDS THE TEST OF TIME

Simon Storer, Chief Executive of Insulation Manufacturers Association - the representative body for the PIR and PUR insulation industry in the UK and Ireland - outlines the various insulation options and sheds light on the importance of adopting a fabric-first approach.

The Committee on Climate Change report, 'Net Zero: The UK's contribution to stopping global warming', makes a strong case for combatting inefficiencies in the UK's new and existing building stock. If homes and buildings are to become more energy efficient, good insulation is the key to off-setting increasing energy costs.

To meet net zero carbon emissions, it is crucial that a new-build is developed sustainably and is kind to the environment throughout its lifecycle.

A thermally insulated building envelope installed correctly will help to tick these boxes. Not only will it achieve high performance, it is low maintenance, reduces energy bills and improves long-term energy efficiency.

Tighter U-values in walls, floors and roofs is the distinguishing aspect when it comes to creating an energy efficient, high-performance building envelope.

Available in a variety of forms such as cavity-injected composite panels, PIR and PUR insulation is a highly effective solution, achieving the thermal performance that is integral to a thermally-efficient, sustainable build.

With lambda values as low as 0.021 W/mK, this type of insulation ensures designers can achieve the highest insulation values from a material with minimal thickness.

INSTALLATION MATTERS

On installation, attention must be paid to airtightness, cold bridging and, most of all, competency. If a high performing product such as PIR/PUR is installed incorrectly, it could compromise not only the performance, but a building's thermal efficiency. Moreover, the responsibility lies with the contractor who needs to make sure levels of site supervision are of a good standard and installation instructions are adhered to.

It is no wonder PIR and PUR insulation has become a mainstay in residential, commercial and refurbishment projects as a result of its exceptional performance.

ALWAYS TAKE A FABRIC-FIRST APPROACH

Building efficient and sustainable buildings is at the heart of good building practice. A fabric-first approach can be applied to projects of any size, whether it is the largest public building or the smallest domestic extension.

Specifiers can future-proof their designs by employing a fabric-first approach when sourcing the right products for each project. A more energy efficient fabric from the outset reduces operational costs and carbon emissions, and can always be upgraded later on through improved services, ventilation measures or the addition of renewable technologies.

With a fabric-first approach, attention can be paid to ensure continuous insulation, minimal thermal bridging and higher levels of airtightness.

By addressing these aspects of construction, Building Regulation's thermal targets can be achieved plus performance levels can be incorporated into the finished building's performance targets.

Many insulation manufacturers, from individual companies to trade bodies, are fully committed to adopting sustainable design and installation methods, in order to meet the UK's net zero climate change targets.

When it comes to installation, it helps that initiatives such as good practice guides, which are available from IMA, and practical advice from manufacturers are available to all stakeholders.

Key initiatives such as these ensure that when PIR/PUR materials are used the theoretical performance is translated into reality on site.

A fabric-first approach, which includes insulation such as high-performance PIR, is the secret to achieving more thermally-efficient building envelopes.

Not only will the approach remain the best route to meeting the net zero targets, it will assure construction companies comply with, or exceed, the energy performance requirements outlined in the Building Regulations and codes. ■

THE SOLAR POWER

Julian Gomez, Director of Marketing at CUPA PIZARRAS, discusses how merchants can capitalise on the advancing technology behind natural slate solar collectors by helping to communicate the product's key benefits.

Natural slate is a popular option for both retrofits and new-builds, due to its eco-friendly qualities and aesthetic.

A natural slate roof adds character to both modern and heritage style builds and can provide almost identical replication of original roofing on older properties.

Furthermore, natural slate is the most sustainable roofing material on the market today. With very little environmental impact, it is extremely weather resistant due to its high density and requires little to no maintenance - with a life span of up to 100 years.

A key ecological advantage of natural slate is that it has solar absorption and diffusion properties allowing it to store thermal power and deliver optimum energy efficiency. Due to the dark colour of natural slate, the sun increases the temperature of the product to several degrees above air temperature; creating a natural heat source.

The introduction of government initiatives such as the 2050 zero carbon emissions target means that merchants can expect an increase in popularity and more customers looking for domestic solar installations. In fact, 709,000 solar systems were installed across the country in 2018, and it is predicted that 10 million homes will be equipped by 2020, meaning that more than one third of households will be utilising solar energy.

Although solar technology provides a wealth of performance benefits, these products often face certain challenges. Manufacturers have tried to overcome hesitancy around the solar panel aesthetic by developing discreet black solar panels that sit on top of the roof. However, this still is not enough to meet certain design requirements - especially for older properties in historic locations. Moreover, from the roofing contractor's perspective, solar panels are an extra component for installation, lengthening the overall build time.

Therefore, natural slate solar collectors provide an excellent solution. The slates absorb the sun's radiation, converting it into heat energy and conducting that heat to a heat transfer fluid, which is then used to warm a property's water. By installing solar collectors, heat that is usually trapped within the roof slates can be used to provide heating, hot water or even heat an onsite swimming pool.

A key feature of natural slate solar collectors is that they are installed beneath the slate, offering an invisible solution and integrating completely with the roof or façade.

There are products that offer an ideal solution for the refurbishment of heritage buildings in protected areas or for private contemporary projects where the look of the building must meet specific guidelines or design ambitions.

Some of the latest innovations can also help to overcome environmental issues in the construction industry. UK councils are becoming more eco-conscious – for example, in Bristol and Worcestershire, it is essential that 20% of energy required by any building is achieved by renewables.

For roofing contractors, it is valuable to know that natural slate solar collectors are also easy to integrate on a natural slate roof and can be installed in just under three hours.

Merchants looking to increase sales through solar installations would be well advised to understand and communicate the benefits natural slate solar collection products.

Discreet, with the ability to help achieve a stunning aesthetic, systems are easy to install, and can contribute towards a building's overall energy efficiency. ■