

Key Considerations

“GOOD INSULATION IS ESSENTIAL”

By Simon Storer, Chief Executive of the IMA

The UK government's plans for a Future Homes Standard by 2025 which ensures new-build homes are built without fossil fuel heating and to a world-leading energy efficiency standard, will go some way in helping the UK meet its net zero targets. Good insulation is essential if homes and buildings in the UK are to become more energy efficient, sustainable and off-set some of the increasing energy costs and climate change ambitions the country faces. Below, I'll look at the thermal efficiency and positive benefits of polyisocyanurate (PIR) and PU insulation, accurate specification through digitalisation and how this essential product can help the UK's housing stock adapt to the impacts of a changing climate.

If we are to create high quality, low carbon and climate resilient homes, then we must insulate more. A thermally insulated building envelope installed correctly will achieve high performance, low maintenance, reduced energy bills and provide long-term energy efficiency. The prioritisation of insulation within the building envelope will significantly restrict air leakage, which in turn prevents heat loss. This 'fit-and-forget' solution can ensure a home will perform as intended for decades, with little or no maintenance.

Lower U-values

A consistent and good level of fabric insulation will limit heat loss through the building envelope. The better or lower the U-values in walls, floors and roofs, the less heat that is lost resulting in enhanced thermal performance, which in turn will help to deliver the standards required. One of the best ways to achieve this is through PIR and PUR insulation products. Highly effective and incredibly versatile, these insulation solutions are available in a range of forms including boards and blocks, cavity injected, composite panels as well as a spray and panel insulation.

For designers, the growing popularity of PIR insulation has meant they can achieve the highest insulation values from the minimum thickness of material. With lambda values as low as 0.021 W/mK, PIR insulation performance can be achieved with less thickness than other commonly used insulation materials. Its exceptional insulating properties, high strength and light weight means it is used widely across residential, commercial and refurbishment projects.

The devil is in the detail

Taking time for the details will also make a difference and go some way to ensure homes perform to the standard intended. For example, ensuring junctions are appropriately designed and constructed, as this makes a significant contribution to reducing heat loss. All contractors need to make sure that, not only the levels of site supervision are of a good standard, but the manufacturer's installation instructions are followed and installation instructions around potential cold thermal bridges and awkward details are achieved. Once the high-quality building fabric has been completed, there should be no need to worry about it.

Digitalisation of products

The issue of product substitution also needs to be addressed. For example, if a PIR insulation product were to be substituted by a product of the same thickness with poorer insulation properties, it would have a significant impact over the lifetime of the building. This could result in the building not meeting its thermal performance as determined by building regulations, increase the lifetime energy costs for the building occupants and reduce the carbon savings, as well as potentially impact on the health and wellbeing of the occupants.

Therefore, digitalisation of construction products will



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provide some traceability of products across the supply chain and is seen by many as the best way to reduce the performance gap and increase performance certainty across the built environment.

Through the Building Information Modelling (BIM) Level 2 programme, building product manufacturers can provide a wealth of product information online, in an immediate and standardised accessible digital structure.

Future-proofing

In order to make our housing stock better for the long term, we must achieve more thermally-efficient building envelopes, which in turn will result in more comfortable buildings. Getting the fabric of the building properly insulated should always be the starting point and this includes insulation such as high-performance PIR. It will remain the most direct route to achieving the net zero target as well as compliance with the energy performance requirements of the revised Building Regulations Part L. Only then will we begin to have housing stock that is resilient to a changing climate.



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