



Flanking Sound Transmission – a clash of the Parts

Stephen Wise, Knauf Insulation's insulation academy manager, tells us his solution to a common query from those involved in building rooms-in-the-roof.

Late last year, Knauf insulation held a series of free seminars aimed at giving the industry some practical advice about Part E (Resistance to the Passage of Sound) of the Building Regulations that came into force in England and Wales on July 1st 2004. The 23 seminars were popular, well attended and attracted a broad cross-section of people whose views, questions and answers often ensured some lively debates!

Noise has become an increasingly intrusive feature in our lives and the tough new legislation introduced by Part E is designed to provide some measure of protection. The new regulations currently cover new-build construction in England and Wales and although intended to come into effect on July 1st 2003, their implementation was deferred for a year. The reason for the delay was to allow a new, and popular, feature – Robust Details (RDs) – to be developed. These high-performance construction details are known, from stringent testing, to give the level of acoustic insulation the regulations seek to provide, their use guaranteeing compliance with the regulations and overcoming the need for post-construction testing.

Not surprisingly, the RDs are very, very specific and, in offering a solution that complies with what is a new, sometimes difficult-to-understand subject, they occasionally demand a solution at odds with popularly accepted, widely used methods of construction.

How Do You Satisfy Parts L and E?

Such an example turned up at one of the seminars. How, a delegate asked, do you satisfy both Part L and Part E in warm, insulated roof constructions? At the heart of the delegate's question was the common practice of meeting Part L with foam insulation boards – whereas no less than seven of the 'newfangled' Robust Details (E-WM-1 through to 7) specified a 100mm layer of mineral wool had to be installed to meet Part E.

The reason for the layer of mineral wool being specified by the RD is to prevent the transmission of 'flanking sound'. This is noise that travels indirectly through structural elements or airways – an obvious example being that transmitted from one dwelling to another via a common external wall. Not so well known is that this route also applies to roofs: sound can be transmitted from one dwelling to an attached neighbour via the individual roof spaces and common roof structure.

Part L of the Building Regulations covers thermal insulation and its requirements for insulating pitched roofs in new-build construction are well known. For cold roofs, with an attic and insulation at ceiling-joist level, an elemental U-value of 0.16W/m²K has to be achieved, and for warm, insulated roofs, with the insulation in the pitch of the roof, the target is 0.20W/m²K. As the 'construction environments' at the two points-of-insulation are different, different methods of meeting the target have evolved and become common practice.

