If you can't measure the heat...

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Accurate measurement of thermal performance is crucial if new government legislation aimed at producing dramatic reductions in CO_2 emissions is to be successful. The UK's National Physical Laboratory (NPL) is offering construction companies a way of meeting this mandate.

Two factors are making the need for accurate measurement of the thermal performance of building products ever more important. Firstly, the Code for Sustainable Homes published by the Department for Communities and Local Government in 2006 set a target of producing zero carbon homes by 2016.

The second is the draft Climate Change Bill with its declared intention of setting a legal framework for ensuring a specific reduction in CO_2 emissions by 2020 and a 60% reduction of 1990 levels by 2050. This will result in a constant stream of legislation and regulations aimed at minimising energy use in new buildings.

Approximately 45% of the United Kingdom's energy consumption goes on heating, cooling and lighting our buildings. The pressure to reduce the nation's carbon footprint will force a change in the current approach to building design. From now on, an accurate knowledge of the thermal performance (i.e. how efficiently they retain or lose heat) of building products and structures is going to be vital if the growing expectations of clients, consumers and the government are to be met.

Ray Williams, Principal Research Scientist at the National Physical

Laboratory (NPL) believes that accurate measurement of a product's thermal properties is crucial.

"These changes mean that anyone involved in construction, be they manufacturers of stand-alone building components such as doors, windows, roof windows and skylights or designers of masonry walls, curtain walls, roofs and floors need to prove that their products and designs meet stringent guidelines for thermal performance. If they cannot, they will not be able to sell their products," he says.

NPL has state of the art apparatus for measuring the thermal performance of insulation materials from 170 °C through room temperature and on up to 800 °C. It boasts the UK's only pipe insulation thermal performance measurement facility and one of very few 'HotBox' facilities for measuring the thermal performance of building structures ranging from masonry walls to windows, doors, roofs, wall and floor structures.

Source: National Physical Laboratory