

While the shape of Part L 2013 is undecided, there are door and window systems available to help housebuilders achieve higher levels of thermal performance. **Tim Palmer** reports

Windows and doors are fundamental to creating character in a building and many manufacturers have risen to the challenge of maintaining a high visual appeal while maximising energy efficiency. Gary Hutton, general manager at Black Millwork says the key is to develop an aesthetically pleasing product that makes use of new technology to improve thermal performance.

"For example, timber has long been seen as an aspirational choice for windows and doors but it is also widely recognised as one of the most efficient natural insulators available so when combined with technologically advanced glass products it provides an excellent solution."

argon filled glass

Hutton says that in terms of glass there are various options including 90% argon filled glass which reduces heat loss by slowing convection within the glass. "Low-E glass coating is also an essential tool when it comes to a window's energy efficiency; in summer it allows the sun's rays into a property while preventing heat build-up. In winter the coating reflects central heating back into the room. Products combining these benefits,

New triple glazed windows capable of achieving U-values as low as 0.8 from Epwin Group's Profile 22

Open for business

such as the Anderson 400 series casement window, deliver impressive energy efficiency performance resulting in U-values of 1.4 being achieved."

Epwin Group's Profile 22 launched its new triple glazed window option capable of achieving U-values as low as 0.8 recently which Andrew Reid, commercial sales director, says extends the reach of the window system specialist to Code level six.

"The impact of the 2013 Part L revision should cause

little headache for housebuilders," Reid claims. "The majority of windows currently supplied to housebuilders will still meet regulatory requirements after any short term revision of Part L. Developers have traditionally exhibited a tendency to lower U-values for windows and doors in their specifications well beyond the current regulation to achieve a better SAP and ultimately Code rating.

continued on page 60 ▶





GaraRoll insulated roller garage door solves the problem of restricted overhead space preventing the fitting of sectional doors

Garage doors

"When it comes to improving thermal efficiency, a garage door can have a significant impact, particularly with an integral garage," says Hörmann sales director David Newcombe. "Of the wide number of styles and types available today the only type that is truly insulating is the sectional garage door."

Hörmann produces this type of door with three levels of insulation up to the LPU, featuring 42mm-thick insulation throughout. "The key factor for thermal insulation is not the U-value of a single panel or even the complete door leaf but the value of the fitted door."

"For a fitted double garage door with a surface

area of 10m² the LPU sectional has a U-value of only 1.3. This thermal efficiency can be further improved by up to 15% if the Hörmann ThermoFrame which creates a thermal break between the door frame and fabric of the building is fitted."

Velux selected an LPU automatic option for its CarbonLight homes in Rothwell, Kettering which are designed to show that it is possible to build energy efficient, sustainable housing which appeals to home owners and is easy and affordable for housebuilders to replicate.

Garador md Simon Hipgrave says it is likely that integrated garage doors will be included in calculations for thermal efficiency under Part L 2013. "Up-and-over garage doors offer little thermal insulation, so it's likely that housebuilders will do one of three things: not build garages; build stand-alone garages with up-and-over doors which are around 40% cheaper than alternative doors, or use roller or sectional doors which do offer some thermal insulation but their expense means that they will most likely be used on prestige developments."

Hipgrave says that the company's new GaraRoll insulated roller garage door solves the problem of restricted overhead space preventing the fitting of sectional doors. "With GaraRoll the customer does not have to compromise on practicality, quality or style as everything is tucked away in a neat box on the front wall of the garage."



Anderson 400 series windows from Black Millwork were used in the prestigious Spring Lake scheme in Gloucester

4 continued from page 59

"While it's difficult to be absolutely certain, the new minimum performance measure will be set at 1.4 which can comfortably be achieved with double-glazing. Any decision to go beyond will be driven much more by the client or housebuilder than regulation and it's testimony to this that we have developed the triple-glazed range. There are projects being delivered to Code five and Code six levels and it's important that we have the capability and technical performance built in to our product offerings to supply them."

range of products

Mumford & Wood sales and marketing director Chris Wood says that the company already has a range of products to meet even the anticipated 2016 requirements but warns that standards are not uniformly applied throughout the UK. "We're constantly coming up against conservation and building regulation departments actively involved in the specification of sub-standard products. A specific area of concern currently is the use of 'slimline double-glazed units' and while conservation officers appear to welcome this option, the Glass and Glazing Federation and Historic Scotland have questioned their performance. This new area of double-glazing does not meet industry standards and relies on technology that appears to lead to a failure in unit's performance."

Kawneer technical consultant John Stamp says there has had to be a reconciliation between the conflicting requirements of energy conservation and natural ventilation. "Today, Parts F and L recognise the age-old benefits of using the 'stack' effect to exhaust stale air from a building and draw fresh air in from outside. The most recent Part L revision is mandatory air pressure testing of buildings to ensure a minimum level of airtightness so the challenge is instantly apparent: how to address the need for airtightness in a building relying on natural ventilation for air quality."

Stamp says that Kawneer's response to the growing requirement for windows that open has been the development of a range of modern vertical and horizontal sliding and pivoting windows designed to meet the needs of building designers and Part F and L requirements.

"One window in particular, the AA3610 vertical sliding window, has been developed specifically with the latest Part F in mind. An aluminium-framed window designed for double-sliding, single-sliding and fixed lights in any combination, the unit is thermally broken to minimise heat loss and effectively sealed to ensure optimum airtightness when closed."

Utilising the same principle employed by traditional Victorian vertical sliding sash windows, the AA3610

continued on page 62 ▶



Kawneer's new windows meet the needs of building designers and Part F and L requirements

◀ continued from page 60

uses the stack effect by which warm stale air rises and exhausts via the top window opening and cool fresh air is drawn in via the bottom, he explains.

Jeld-Wen's product manager Chris Millier says that the company's new DreamVu 68 composite doorset range will help housebuilders achieve greater energy

windows and doors, garage doors

KEY CONTACTS

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Iso Chemie	www.iso-chemie.com	E0570
Jeld-Wen	www.jeld-wen.co.uk	E0262
Kawneer	www.kawneer.co.uk	E0709
Mumford & Wood	www.mumfordwood.com	E0128
PC Henderson	www.pchenderson.com	E0401
Profile 22	www.profile22.co.uk	E0387

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efficiency and enable them to meet higher Code levels by delivering U-values down to 0.8. Doors are available in glazed and unglazed versions with styles featuring triple-glazed argon filled units to further enhance thermal performance. "We're expecting interest from specifiers and developers, especially those building to higher Code levels or projects such as 'retrofit for the future'."

Hörmann's KSI Thermo and MZ Thermo offer high

insulation levels for external doors installed in heated lobby areas or outbuildings. The KSI Thermo (achieving a U-value of 1.2) comes with security bolts and heavy-duty guide rollers to prevent forced opening while the MZThermo comes with glazing. These thermal insulation figures are achieved by a consistent thermal break between the frame and door leaf, filled with insulating polyurethane foam.

continued on page 65 ▶

Window sealing

Iso Chemie, manufacturer of impregnated foam sealants, says that currently in the UK, there are no regulations or proper recommendations for the installation and sealing of fenestration. But in mainland Europe there are the RAL Window Installation Principals, which stipulate that windows should have three levels of sealing.

Peter Thompson, Iso Chemie's UK general manager, explains the requirements: "The outside should be weatherproof but at the same time breathable to allow potentially trapped moisture from other ingress areas to escape outwards. The inside should supply an airtight and vapour control seal while the middle area between these should have additional thermal and acoustic insulating properties."

The system has "excelled" in Europe for many years and correctly done complies with the high standards demanded by, for example, the Passivhaus Institute, Thompson says.

As for the products that are available here: "Various manufacturers supply products that can be mixed and matched to produce the three level sealing systems based upon the RAL principals. Others supply an 'all-in-one' systems. These fit-and-forget products and systems not only exceed the requirements of the UK Building Regulations, but importantly, some save time and money."



Jeld-Wen's Dream-Vu doors are available in glazed and unglazed versions

windows and doors, garage doors

◀ continued from page 62

Looking at other issues, housebuilders can use sliding door specialist PC Henderson's Securefold-Ultra to create an indoor-outdoor use which maximises flexibility and space without compromising security, says commercial director Andrew Royale. "The door has been tested to latest EN-norms for air and water tightness and resistance against wind force. It also has, after extensive trials, achieved HAS ENV 1627 European security certification due to components which include attack-resistant hinges, flush bolts and three points of locking on every door seam." **hb**

Testing

The TTL Chiltern Group aims to provide a comprehensive range of testing certification and consultancy services for the window and glazing industries. Chiltern Fire and Chiltern Dynamics provide fire resistance, weather tightness and security testing as well as general performance testing. Chiltern Dynamics also offers a thermal simulation service to enable window manufacturers to prove that their products meet new thermal requirements of the Building

Regulations. TRADA Technology provides specialist design advice on timber windows for designers and manufacturers.

The BM TRADA Q-Mark High Performance Timber Window Scheme has been developed in association with TRADA Technology, drawing on their extensive knowledge of timber. The scheme was introduced to enable manufacturers of timber windows to demonstrate that their products perform at a higher level than those covered under the entry level General Performance Scheme.