Building Regulations and Standards.

Building Regulations and Standards have been introduced in order to protect the health, safety and welfare of people in and around buildings, and to improve the energy efficiency of buildings.

In England the current regulations, made under Building Act 1984, are the Building Regulations 2010. The Regulations, which have been amended several times since they came into force, set out the processes for the control of building work. Schedule 1 to the Regulations sets out the standards for building work in 16 parts, from A to R. Guidance on meeting those standards is contained in a number of Approved Documents.

Building work in Wales is also subject to the Building Regulations 2010 and the same basic structure of Regulations, Requirements and Approved Documents. However, on 31st December 2011, control of Building Regulations in Wales was transferred to the Welsh Government. The Regulations in Wales are therefore slowly diverging from those in England as changes made to the Regulations in England from 2012 onward do not apply to Wales, while the Welsh Government has issued amended Requirements.

In Scotland the Building (Scotland) Act gives ministers the power to make building regulations. The current regulations, the Building (Scotland) Regulations 2004, set out the processes of building control and, in Schedule 5 to Regulation 9, define the functional standards for design and construction. These Technical Standards, together with associated technical guidance, are set out in two technical handbooks, one for domestic and one for non-domestic buildings.

Each jurisdiction has comparable standards for the main performance requirements for new buildings.

Fire (England, Wales, Part B; Scotland, section 2)

The overriding aim of fire safety requirements is to ensure building occupants have adequate warning in the event of a fire, and are able to escape safely. The standards address means of escape, internal and external spread of fire, structural integrity and access and facilities for fire services. The provisions are not directly concerned with the protection of property.

Noise (England, Wales, Part E; Scotland, section 5)

Intrusive noise transmitted between different parts of buildings can affect the wellbeing of building occupants, as well as being a nuisance. Building Regulations and Standards require building elements which separate dwellings – party walls and party floors – to resist the passage of airborne sound, and, in the case of party floors, resist the transmission of impact sound.

There are two routes to demonstrating compliance: pre-completion performance testing, which allows the use of any solution, but brings a risk that poor workmanship could result in failure. Alternatively, it is possible to avoid pre-completion testing by using Robust Details which have been tested and accredited by Robust Details Ltd (see Superglass Robust Details Solutions on pages 32–34).

Condensation (England, Wales, Parts C and F; Scotland, section 3)

Surface and interstitial condensation can affect the well-being of building occupants and damage the building fabric. Preventing condensation requires well-insulated fabric and adequate ventilation provision to extract moisture at the point of generation.

Energy efficiency (England, Wales, Part L; Scotland, section 6)

The UK is committed under the Climate Change Act to reduce carbon dioxide emissions to less than 80% of 1995 levels by 2050. As the operation of buildings accounts for more than 30% of the UK's CO_2 emissions, it is vital that new buildings are designed to be energy efficient and minimise emissions.

For new dwellings, the rate of carbon dioxide emissions from the dwelling (known as the Dwelling Emission Rate, DER) must not exceed the Target Emission Rate (TER), which is based on the emissions from a notional dwelling. Both the DER and TER are calculated using Standard Assessment Procedure (SAP). The results of DER and TER calculations must be submitted to the building control body before and after construction.

In England there is a further compliance test: the fabric energy efficiency of the dwelling – the DFEE – must not exceed the Target Fabric Energy Efficiency, which is based on the fabric energy efficiency of the notional dwelling.

In England, Wales and Scotland the U-Values of building elements must not exceed specified limits, and the building services must also meet minimum performance standards.

Definitions

Fabric Energy Efficiency (FEE): a measure of the amount of energy required to heat a dwelling, calculated from fabric and ventilation heat loss, thermal mass, solar gains and heat gains from equipment and people in the dwelling.

Notional dwelling: a theoretical dwelling used to establish performance standards for proposed dwellings. The notional dwelling has the same dimensions as the proposed dwelling, but the performance of the building fabric and services are taken from standard specifications. In England and in Wales there is only one notional dwelling specification based on gas-fired heating. In Scotland there are five notional dwelling 'packages', each matched to the heating type of the proposed dwelling.

Psi-value: a measure of the rate of heat transfer through junctions between building elements (e.g. wall to floor or wall to eaves) and at the perimeter of openings (e.g. window lintels, jambs and sills); they are expressed in W/mK. The use of accredited construction details – which have lower psi-values – can substantially reduce heat loss at junctions.

Robust Details: construction details which, in testing, have been shown to provide excellent levels of sound insulation. Each detail is accompanied by a check list which must be completed during construction.

Standard Assessment Procedure (SAP): the Government's approved methodology for assessing the energy efficiency and CO_2 omission rates of dwellings. It is used for demonstrating compliance with Building Regulations and Standards, and for issuing Energy Performance Certificates (EPCs) for new dwellings. SAP is a comparative tool which considers fabric heat loss (based on U-Values and psi-values), ventilation heat loss, solar gain, the efficiency of building services, the use of renewables and either the cost or the carbon dioxide emission factor of fuels.

Target Emission Rate (TER): the maximum permitted emission rate for the dwelling, calculated from the emission rate of the notional dwelling. In England and Wales the rate of emissions for space and water heating in the notional dwelling is adjusted to allow for fuels with a higher emission rate than mains gas. In Scotland, the TER is simply the emission rate for the notional dwelling.

Target Fabric Energy Efficiency (TFEE): the maximum permitted fabric energy efficiency for a dwelling. It is the fabric energy efficiency of the notional dwelling, increased by 15%. Applicable only to new dwellings in England.

U-Value: a U-Value measures the rate of heat transfer through an element of the building fabric (floor, wall, roof, window or door); they are expressed in W/m²K. Better insulated elements will have lower U-Values. The Superglass Technical Team can supply free U-Value calculations on request, email: **technical@superglass.co.uk.**

Product applications:

The right insulation in the right place.

Whatever the structure, whatever you're looking to achieve, **Superglass has the product you need.** Our Teamworks ethos means we'll work closely with you, using our expertise to make sure you also get the most effective solution for your building.

Roofs

(See Pages 43 – 50)

Roof constructions can vary enormously, as can the materials used. From simple loft insulation to options for timber frame, warm roof applications and metal clad roofs. Our range can meet every requirement.

Internal partition walls

(See Pages 39 – 42)

Internal partitions can follow a variety of construction methods: including metal stud or simple timber stud partitions. At Superglass, you'll find insulation options to suit each.

External walls

(See Pages 17 – 30)

Superglass has a wide range of glass wool insulation products to suit different types of wall constructions – masonry, timber frame and metal clad.

Floors

(See Pages 51 – 54)

Insulating floors correctly is crucial, not just from the perspective of keeping heat in but also to limit sound intrusion. Whether the floor is a simple suspended timber design for ground floors or an internal floor, Superglass can provide the ideal insulation.

Party & Separating walls

(See Pages 31 – 36)

Whether of timber frame or masonry construction, you'll find insulation options ideal for meeting the relevant regulations – and we also offer Robust Details solutions designed to make doing that even simpler.