Section 1.3

Building Regulations

Building Regulations

Building Regulations and guidance

Overview for England and Wales, Northern Ireland and Scotland

The Building Regulations for the UK are generally split into three:

- England and Wales
- Northern Ireland
- Scotland

Communities and Local Government

England and Wales

Governing body

The Department for Communities and Local Government (CLG) is responsible for Building Regulations.

Mode of operation

If building work is being carried out, the Building Regulations are likely to apply and will require certain standards to be met. The Building Regulations are made under powers in the Building Act (the primary legislation). Separate planning permission may also be required for the work.

Checking that the Building Regulations have been complied with is done by Building Control Bodies – either based in the Building Control department of the local authority or established as an Approved Inspector in the private sector.

Legislative framework

The legislative framework of the Building Regulations is principally made up of:

The Building Regulations 2000; and

The Building (Approved Inspectors etc.) Regulations 2000

Intent

To provide standards for most aspects of a building's construction, including its structure, fire safety, thermal performance, sound insulation, drainage, ventilation and electrical safety. Electrical safety was added in January 2005 to reduce the number of deaths, injuries and fires caused by faulty electrical installations.

To improve the energy efficiency of buildings.

The changes to the regulations on the conservation of fuel and power, which came into effect on 1st October 2010, are designed to save millions of tonnes of carbon during their lifetime and help to combat climate change.

To improve the health and safety of people in and around buildings, including those with disabilities.

For more information visit:

www.planningportal.gov.uk

Department of
Finance and Personnel

Northern Ireland

Governing body
The Department of Finance and Personnel (DFPNI) is responsible for Building Regulations in Northern Ireland.

Mode of operation
If building work is being carried out, the Building Regulations are likely to apply and will require certain standards to be met.

If you intend to erect, alter or extend a building, to install services, fittings or works to a building, or to materially change the use of a building, you must first seek approval to do so from your district council. This may involve the submission of plans or (for domestic applications) a building notice to your local Building Control Office.

Legislative framework
The enactment of the Building Regulations (Northern Ireland) Order was in 1972, which was subsequently amended in 1978, before being replaced by the Building Regulations (Northern Ireland) Order 1979 (as amended 1990).

The role of the Department
Under the 1979 Order, the Department is empowered to write Building Regulations for certain matters set out in the Order. The current regulations are the Building Regulations (NI) 2009.

Intent
Building Regulations set requirements and standards for building that can reasonably be attained, having regard for the health, safety, welfare and convenience of people in or around buildings and others affected by buildings or building matters. They also further the conservation of fuel and power, and make provision for access to buildings. In addition to its role in writing regulations, it is also the appeals body for all the current appeals procedures defined by the Order. It may also, on request from an applicant, decide to relax or dispense with certain requirements of the building regulations.

For more information, visit www.dfpni.gov.uk

sbsa
SCOTTISH BUILDING STANDARDS AGENCY

Scotland

Governing body
The Scottish Building Standards Agency (SBSA) is responsible for delivering the Scottish building standards system.

Mode of operation
The building standards system in Scotland is established by the Building (Scotland) Act 2003. The Act gives powers to Scottish Ministers to make building regulations, procedure regulations, fees regulations and other supporting legislation as necessary, to fulfil the purposes of the Act.

The purposes include setting building standards and dealing with dangerous and defective buildings. The various regulations are made by Scottish Ministers, but must be approved by the Scottish Parliament before coming into force.

The system is intended to ensure that building work on both new and existing buildings results in buildings that meet reasonable standards.

Legislative framework
The Building (Scotland) Act 2003 and the Building (Procedure) (Scotland) Regulations 2004.

The role of the Department
Advise Ministers on policy development, delivery and evaluation on the Building Standards system across Scotland;

Implement Ministers' policies on building standards;

Develop technical guidance for the standard of new buildings and the improvement of the existing stock;

Provide technical support on all Building Standards related work undertaken by the Executive;

Respond to references made to Scottish Ministers under Section 12 of the Building (Scotland) Act 2003;

Develop fees, regulations and procedures regulations to support the new building standards system;

Assist in the development and implementation of European standards and Directives relating to the standard of buildings;

Research to support and enhance the building standards system.

Intent
The Scottish Building Standards Agency will work on behalf of Scottish Ministers to:

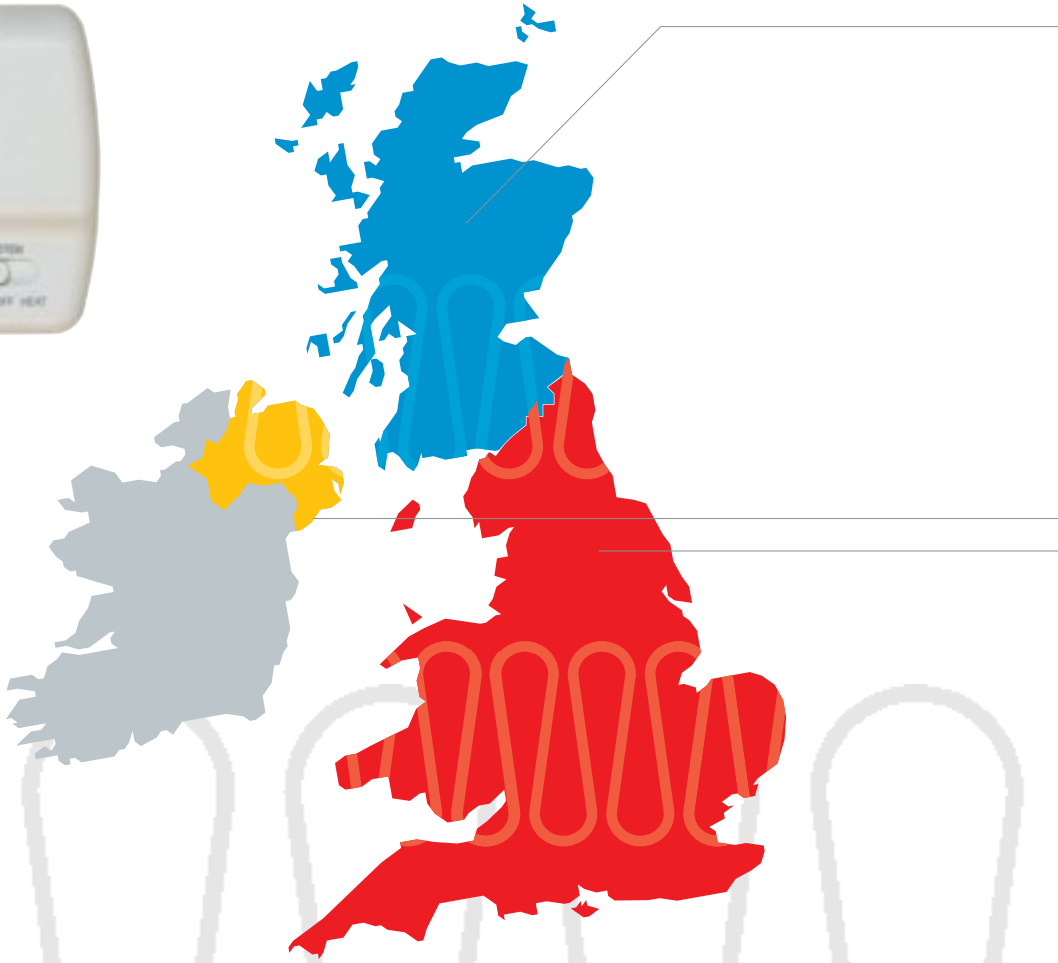
promote the health, safety, welfare and convenience of people in and around buildings;

further the conservation of fuel and power; and further the achievement of sustainable development.

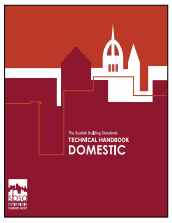
For more information, visit www.scotland.gov.uk/topics/built-environment/building/building-standards

Residential thermal regulations

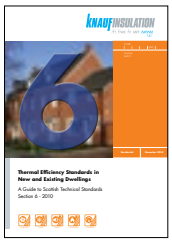
The conservation of fuel and power



Scotland



Technical Handbook: Domestic, Section 6 (May 2011)
This Handbook covers new build work and work to existing dwellings.



Thermal Efficiency Standards in New and Existing Dwellings - A Guide to Scottish Technical Standards Section 6 - 2010
knaufinsulation.co.uk

Northern Ireland

These documents are designed to mirror the requirements of England and Wales.

Technical Standard F1 (2006)
Section 2 covers the conservation of fuel and power for new build dwellings.

Section 3 covers the regulations for existing dwellings.

England and Wales

Approved Document L1A (2010)
This document covers the conservation of fuel and power for new dwellings.

Approved Document L1B (2010)
This document covers the conservation of fuel and power for existing dwellings.

Code for Sustainable Homes
The key driver for energy efficiency in new build dwellings

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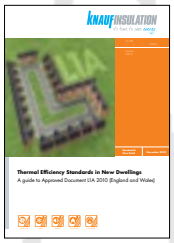
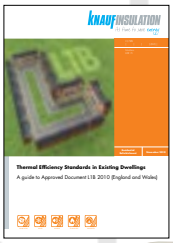


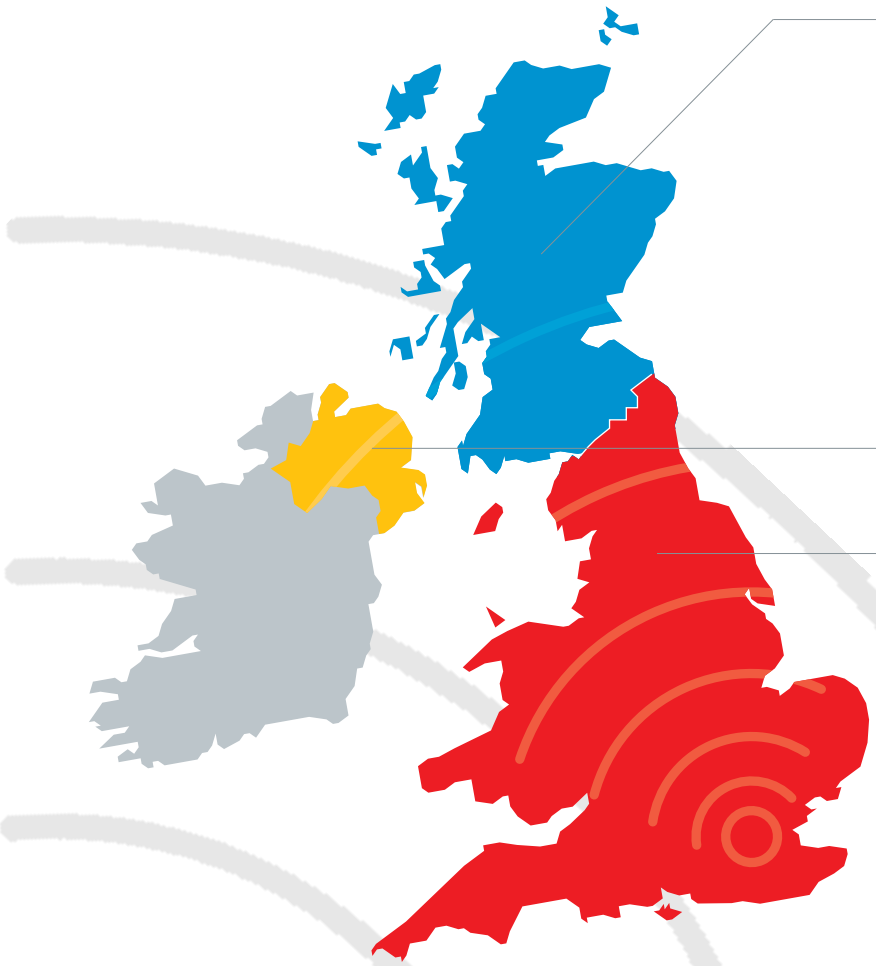
L1A: Thermal Efficiency Standards in New Dwellings - A guide to Approved Document L1A 2010 (England and Wales)
knaufinsulation.co.uk



L1B: Thermal Efficiency Standards in Existing Dwellings - A guide to Approved Document L1B 2010 (England and Wales)
knaufinsulation.co.uk

Residential acoustic regulations

Resistance to the passage of sound



Noise and the need to improve standards

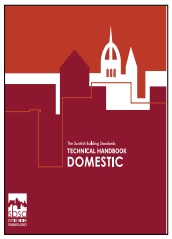
Noise transmitted to dwellings can detract from people's quality of life by disrupting sleep, causing annoyance, or disturbing everyday activities. In particular, sleep deprivation can lead to stress-related illnesses and affect performance at school or work.

With increased housing density, the Government is aiming to improve standards of sound insulation and significantly improve compliance via post-construction testing and Robust Details.

In the Code for Sustainable Homes Health and Well Being category, improving the acoustic performance of separating walls is rewarded with extra credits.

Note: Glass mineral wool and rock mineral wool can help provide points for CfSH`s compliance in both the 'Energy' and 'Health and well-being' categories.

Scotland



Technical Handbook: Domestic, Section 5 (May 2011)
This handbook covers new build work and work to existing buildings.

Northern Ireland

Technical booklet G (1990) 'Sound'
This document covers the reduction of sound transmission and reverberation in new dwellings.

Technical booklet G1 (1994) 'Sound conversions'
This document covers the reduction of sound transmission and reverberation in conversions.

England and Wales

Approved Document E (2003)
This document covers the requirements for the resistance to sound coming from other parts of the building or other buildings, both in terms of reverberation and transmission.

Fabric First

Why exceed minimum requirements

Building Regulations set out minimum standards for the thermal performance of the building fabric elements (roof, wall, floor, windows and doors) by reference to limiting U-values. However, it should be remembered that this is the minimum level of performance required.

Why settle for this when a much more efficient insulated fabric can quite easily be achieved to deliver many long term associated benefits such as:

- reduced energy bills
- reduced CO_2 emissions
- reduced reliance on renewable technologies
- more comfortable internal environment with less temperature fluctuations

By adopting a 'Fabric First' approach, house builders and developers can 'future proof' their designs making them applicable to future Building Regulation changes as we approach the requirement for zero carbon homes.

Forward thinking developers could take the approach of amending their designs now and adopting a highly insulated fabric which would result in future requirements being met by renewable technologies being simply 'bolted on' to their existing designs.

It is worth remembering that if the renewable technologies fail, are not adequately maintained or suffer from reduced performance over time, a well insulated dwelling will still provide a highly efficient fabric which requires no maintenance in order to deliver its thermal performance – and for the lifetime of the dwelling.

Code for Sustainable Homes

The Code for Sustainable Homes is intended as a single national standard used in England and Wales to guide industry in the design and construction of sustainable homes. It is a means of driving continuous improvement, greater innovation and exemplary achievement as it goes further than the current building regulations, and is intended to help promote even higher standards of sustainable design.

The Code uses a one to six star rating system to communicate the overall sustainability performance of a new home against nine categories - energy, water, materials, surface water runoff (flooding and flood prevention), waste, pollution, health and well-being, management and ecology. Knauf Insulation solutions can help to achieve credits in a number of categories including energy, materials and waste.

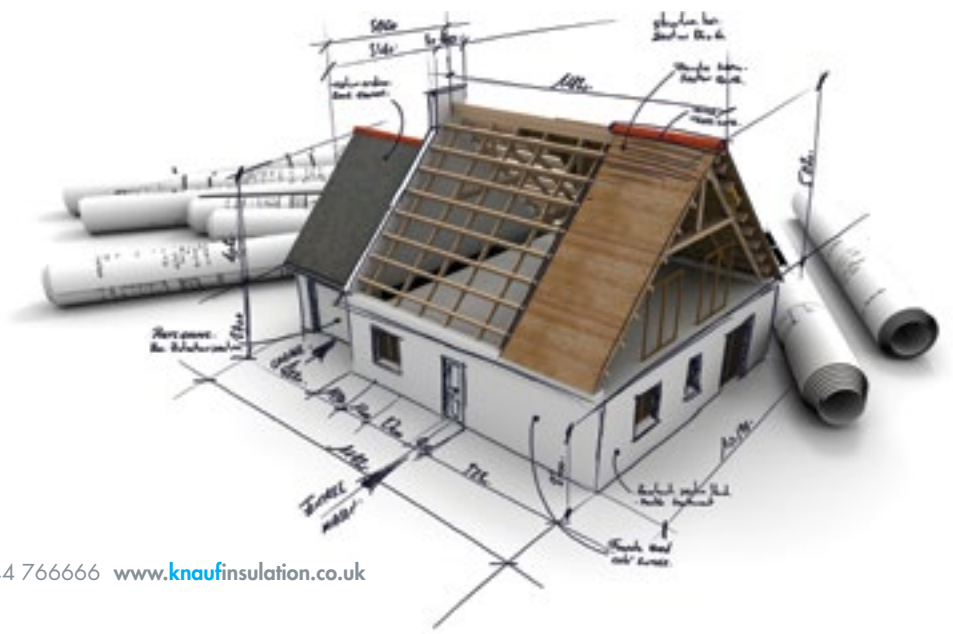
Within the energy section there are 9 sub-sections for which credits are awarded with the majority of credits being apportioned to the Dwelling Emission Rate of the home (Ene1) and the Fabric Energy Efficiency of the home (Ene2). Table 3 shows the minimum requirements of the Ene1 section. Table 4 shows the increased focus on improving the fabric of a dwelling since the Code was updated in November 2010 in order to incentivise a 'fabric first' approach to deliver long term carbon savings and to improve fabric energy efficiency, thus future-proofing reductions in CO_2 for the life of the dwelling.

Table 3 - Mandatory Energy Level Requirements

Code level	Minimum improvement over Approved Document L 2010 TER
Level 1	0%
Level 2	0%
Level 3	0%
Level 4	25%
Level 5	100%
Level 6	Net Zero

Table 4 - Focus on fabric energy

Energy Section		Pre Nov' 2010	Post Nov' 2010
		Available Credits	Available Credits
Ene1	Dwelling Emission Rate	15	10
Ene2	Fabric Energy	2	9



Scottish Building Standards Section 7 – Sustainability

Section 7 - Sustainability – was introduced to the Scottish Building Standards on 1st of May 2011.

The section includes a labelling system which has been designed to reward the achievement of meeting 2010 standards and also of opting to meet higher levels of performance.

The section includes a number of categories which are assessed focussing on energy and carbon emissions targets, but also broader issues such as water efficiency and flexibility in design.

The labelling system rewards new buildings that meet the 2010 building standards with a Bronze level label. Further optional levels of sustainability are defined by Silver, Gold and Platinum labels. Table 5 shows the requirements in terms of energy and fabric performance for each level.

Table 5 - Section 7 - Sustainability

	Minimum Improvement over TER	Maximum Space Heating Requirement
Bronze	0%	n/a
Silver	21.4%	40kWh/m² for houses; or 30kWh/m² for flats or maisonettes
Gold	42.8%	30kWh/m² for houses; or 20kWh/m² for flats or maisonettes
Platinum	100% *	Not currently defined in regulation

*(DER should not exceed zero)

Zero Carbon

The Zero Carbon Hub has developed both a definition, and recommended performance levels for zero carbon homes.

The recommendations include minimum carbon compliance levels for various house types (see Table 6), in addition to a range of allowable solutions which can be used to 'plug the gap' between these carbon compliance levels and zero regulated emissions.

Whilst these levels may change as we move towards the target date of 2016, the focus will remain on providing a high level of thermal performance for the building fabric.

Focusing efforts on the comparatively long-lived building fabric helps to 'future proof' homes meaning they will be less likely to require difficult and expensive refurbishment upgrades at a later date. This supports the Government's parallel agendas of carbon reduction, long term energy security and reducing fuel poverty.

Table 6 - Carbon Compliance Levels for Various House Types

House Type	Carbon Emissions ($kgCO_2/m^2/yr$)
Low rise apartments	14
Attached houses	11
Detached houses	10

Passivhaus

The Passivhaus Standard was developed in Germany in the early 1990s with the primary objective of drastically reducing the requirement for space heating and cooling, whilst also creating excellent indoor comfort levels.

"A Passivhaus is a building, for which thermal comfort can be achieved solely by post-heating or post-cooling of the fresh air mass, which is required to achieve sufficient indoor air quality conditions – without the need for additional recirculation of air."
(Passivhaus Institut)

Passivhaus requirements are achieved primarily by adopting a fabric first approach to the design, specifying high levels of insulation to the thermal envelope with exceptional levels of airtightness and the use of whole house mechanical ventilation.

Passivhaus buildings achieve a 75% reduction in space heating requirements, compared to standard practice for UK new build.

The Passivhaus Standard requires:

- a maximum space heating and cooling demand of less than 15 kWh/m² year
- a maximum total primary energy demand of 120 kWh/m²/year
- an air change rate of no more than 0.6 air changes per hour @ 50 Pa

To achieve the Passivhaus Standard in the UK typically involves:

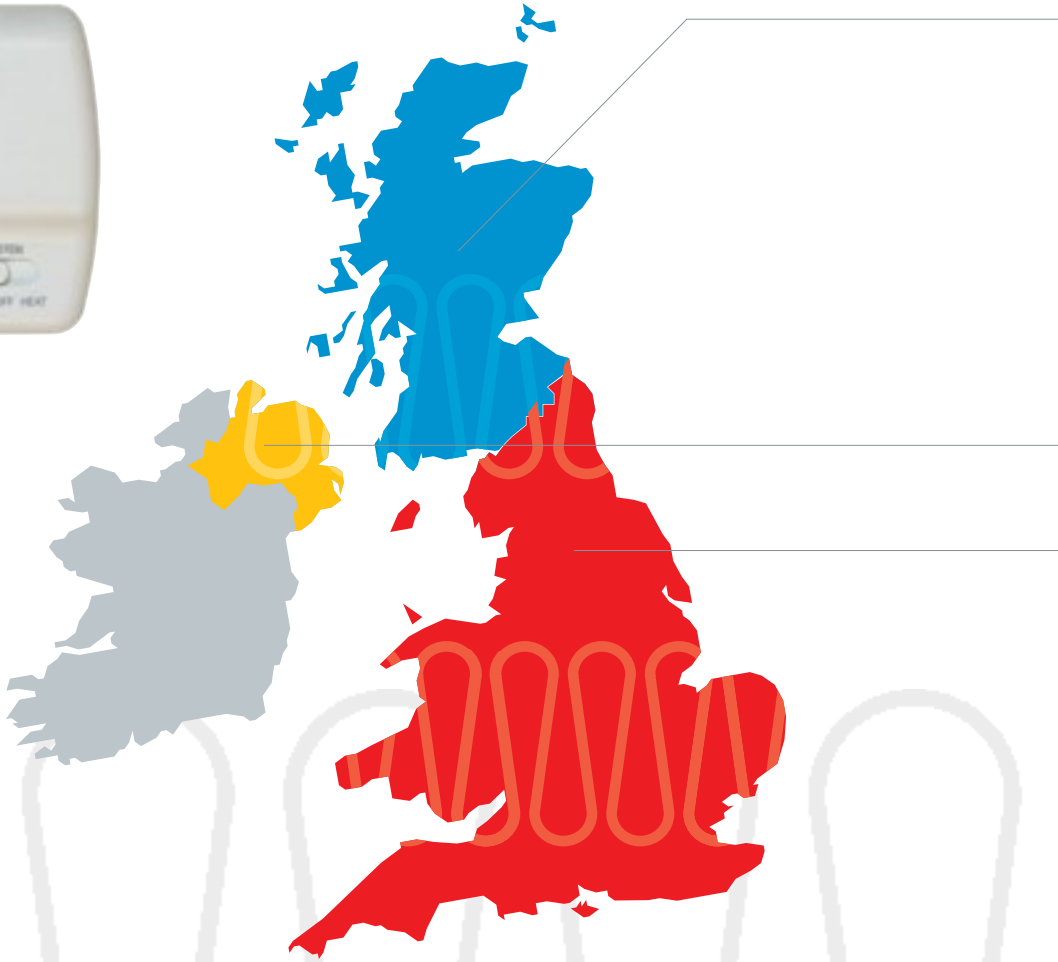
- very high levels of insulation
- extremely high performance windows with insulated frames
- airtight building fabric
- 'thermal bridge free' construction
- a mechanical ventilation system with highly efficient heat recovery

Knauf Insulation is a founder member of the UK Passivhaus Trust and can provide guidance on insulation levels and detailing required when designing to Passivhaus levels.

Passivhaus Trust FOUNDER

Non-residential thermal regulations

The conservation of fuel and power



Scotland

Technical Handbook: Non-Domestic, Section 6 (May 2011)
This Handbook covers new build work and work to existing buildings other than dwellings.

Northern Ireland

These documents are designed to mirror the requirements of England and Wales.

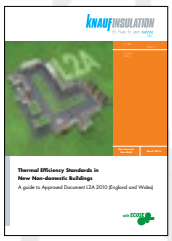
Technical Standard F2 (2006)
Section 2 covers the regulations for new buildings other than dwellings.

Section 3 covers the regulations for existing buildings other than dwellings.

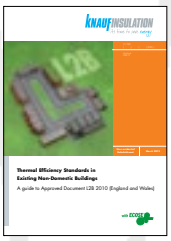
England and Wales

Approved Document L2A (2010)
This document covers the conservation of fuel and power for new buildings other than dwellings.

Approved Document L2B (2010)
This document covers the conservation of fuel and power for existing buildings other than dwellings.



A guide to Approved Document L2A 2010 (England and Wales)
knaufinsulation.co.uk



A guide to Approved Document L2B 2010 (England and Wales)
knaufinsulation.co.uk

Non-residential acoustic regulations

Resistance to the passage of sound

Noise and the need to improve standards

Noise transmitted in non-residential buildings should follow the Government's resolve to improve standards of sound insulation. These are outlined on the following page for schools – Building Bulletin 93 (BB93) and hospitals – Acoustics: Technical Design Manual - 2011.

Scotland

Technical Handbook:
Non-Domestic, Section 5 (May 2011)
This Handbook covers new build work and work to existing buildings other than dwellings.

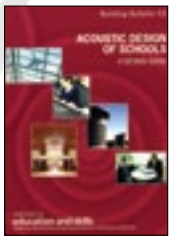
Northern Ireland

Technical booklet G (1990) 'Sound'
This document covers the reduction of sound transmission and reverberation in new dwellings

Technical booklet G1 (1994) 'Sound conversions'
This document covers the reduction of sound transmission and reverberation in conversions

England and Wales

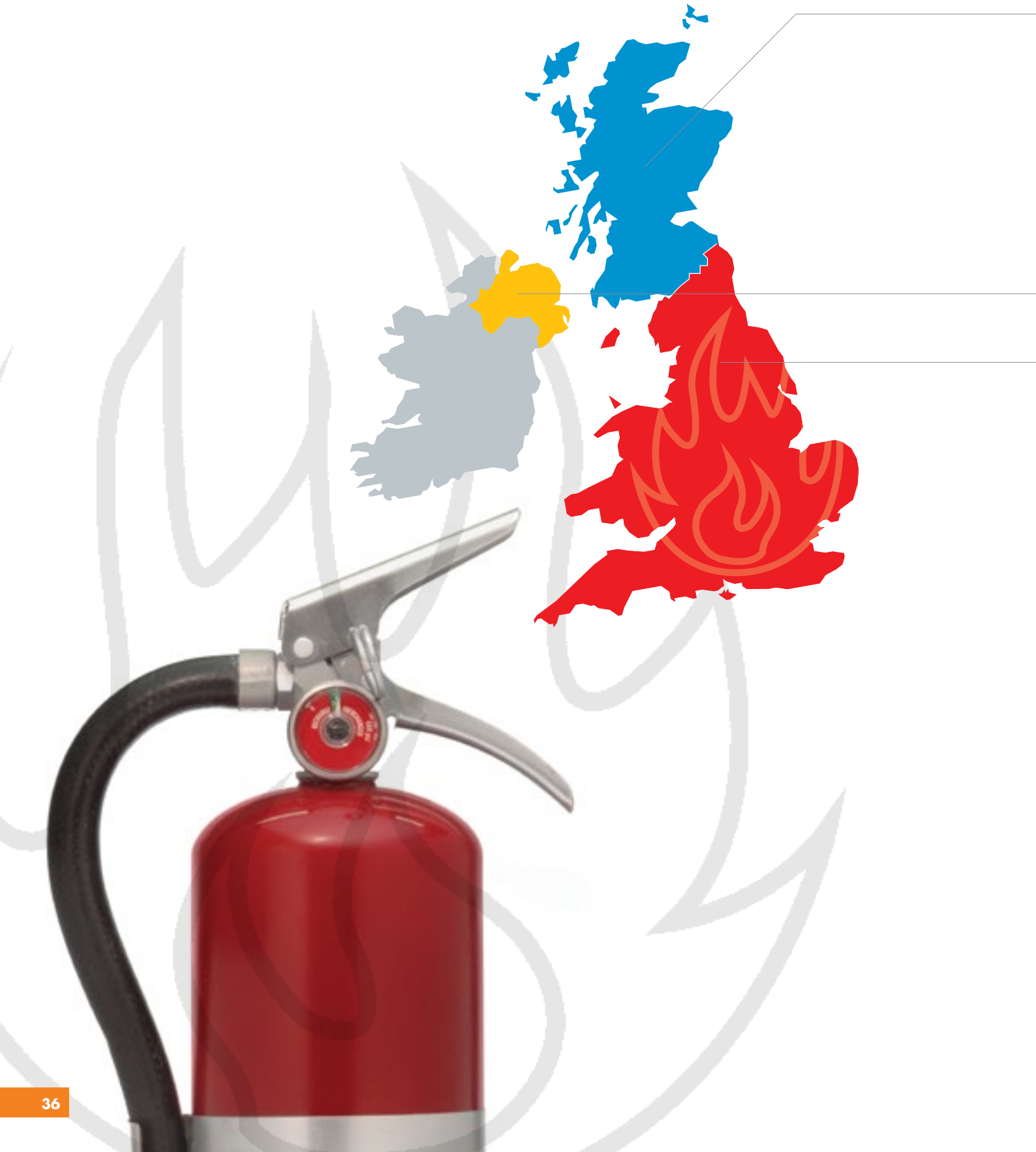
Department of Health - Acoustics:
Technical Design Manual 2011
Sets out the overall requirements and considerations for noise control in healthcare premises.



Building Bulletin 93 (BB93)
'The Acoustic design of Schools'
Sets out the acoustic performance requirements for new schools and describes the normal means of demonstrating compliance with the Building Regulations.

Fire safety

Residential and non-residential



Scotland

Technical Handbook:
Domestic, Section 2 Fire (Oct 2011)
Non-domestic, Section 2 Fire (May 2007)
This Handbook covers new build work and work to existing buildings.

Northern Ireland

These documents are designed to mirror the requirements of England and Wales.

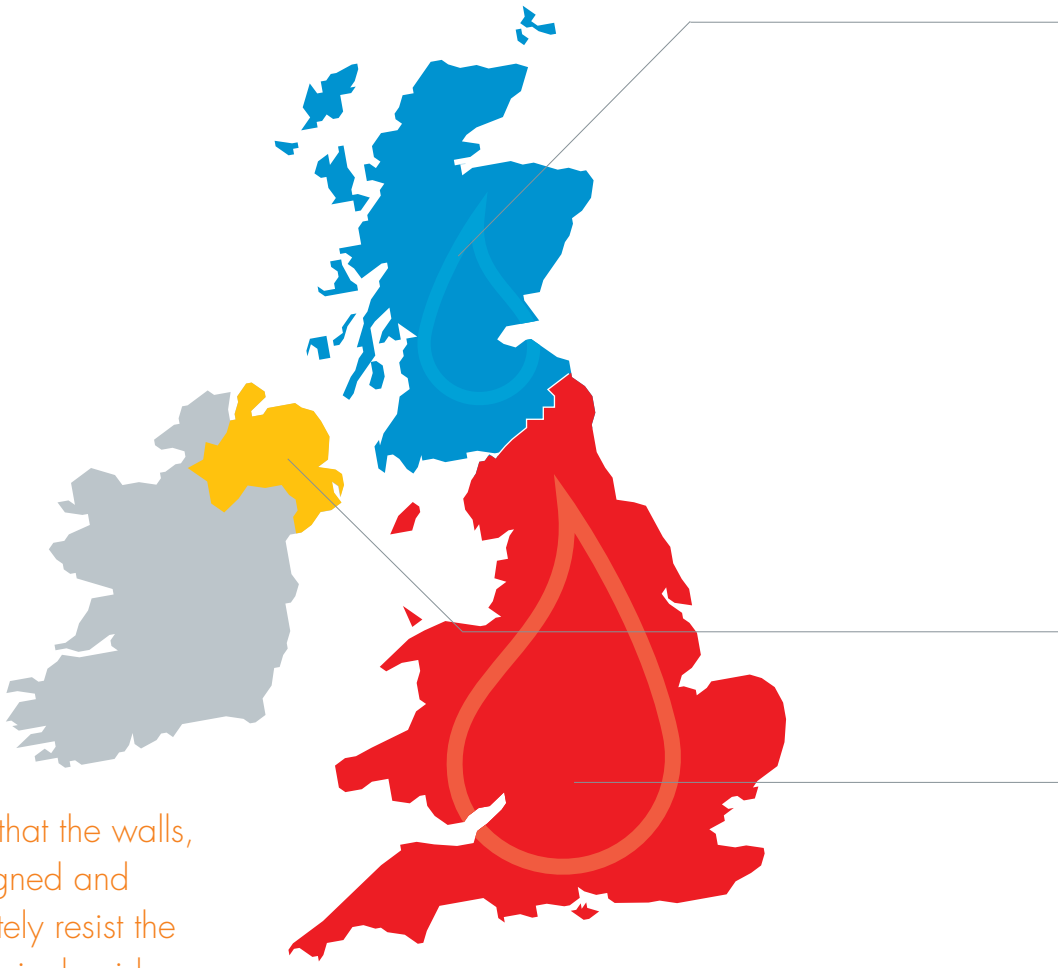
Technical Booklet E Fire Safety (2005)
This document covers both dwellings and non-dwellings. Sections 2 and 3 deal with internal fire spread to linings and structure, respectively.

England and Wales

Approved Document B Fire safety (2006)
volume 1 'dwellinghouses' and
volume 2 ' buildings other than dwellings'
This document covers both dwelling and non-dwellings. Parts B2 'Internal fire spread (linings)' and B3 'Internal fire spread (structure)' are relevant to Knauf Insulation products.

Resistance to moisture

Residential and non-residential



In all buildings it is essential that the walls, floors and roof must be designed and constructed so as to adequately resist the penetration of moisture. Technical guidance and statutory requirements can be found in Approved Document C for England and Wales, Technical Booklet C for Northern Ireland and Technical Handbook 3 for Scotland.

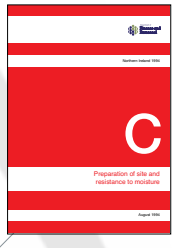
One consequence of climate change is the expectancy that the UK will experience an increased risk of intense and torrential downpours followed by devastating flooding. With this in mind, it is imperative that all building elements are constructed to ensure that they are robust enough to prevent problems being caused by moisture ingress and are also designed and built to prevent problems associated with surface and interstitial condensation.

Scotland

Technical Handbook:
Domestic, Section 3 Environment (Oct 2011)
Non-Domestic, Section 3 Environment (May 2011)
This Handbook covers new build work and work to existing buildings.

Northern Ireland

This document is designed to mirror the requirements of England and Wales.



Technical Booklet C 'Site preparation and resistance to moisture' (1994)
Sections 1 and 2 cover resistance to ground moisture and resistance to weather respectively. Booklet C covers both residential and non residential buildings.

England and Wales

Approved Document C 'Site preparation and resistance to contaminants and water' (2006)
This document covers contamination clearance and treatment of unsuitable material.

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