



DOWN DISTRICT COUNCIL BUILDING CONTROL SERVICES



MAJOR CHANGES TO THE BUILDING REGULATIONS N.I. FROM 30TH NOVEMBER 06

THIS LEAFLET IS DESIGNED TO OFFER ADVICE TO MEET THE NEW BUILDING REGULATIONS PART F1, CONSERVATION OF FUEL AND POWER.

TECHNICAL BOOKLET F1, SECTION 3, GIVES PROVISION FOR **ALTERING OR EXTENDING AN EXISTING DWELLING OR CREATING A DWELLING THROUGH A MATERIAL CHANGE OF USE.**

RELEVANT SECTIONS THAT REQUIRE COMPLIANCE:

1) EXTENSIONS TO DWELLINGS

- Paragraphs 3.6-3.9 and 3.23-3.29

2) CREATING A DWELLING THROUGH MATERIAL CHANGE OF USE

- Paragraphs 3.30-3.36

3) PROVISION OR EXTENSION OF A CONTROLLED SERVICE

- Paragraphs 3.37-3.50

4) PROVISION OR EXTENSION OF A CONTROLLED FITTING

- Paragraphs 3.10-3.11

5) REPLACEMENT OR RENOVATION OF A THERMAL ELEMENT

- Paragraphs 3.12-3.22

SHOULD YOU REQUIRE FURTHER INFORMATION PLEASE CONTACT THE BUILDING CONTROL OFFICE ON 02844 610829

NOTE: The above requirements are in ADDITION to the existing legislation and should NOT be read in isolation.

PARAGRAPHS FOR COMPLIANCE

EXTENSIONS TO DWELLINGS

3.6 Three approaches to achieve compliance

1) STANDARDS BASED APPROACH

3.7 Fabric standards shall achieve the following performance standards:

- Controlled fittings to comply with paragraphs 3.10-3.11
- Newly constructed thermal elements to comply with paragraphs 3.12-3.17
- Existing opaque fabric that becomes part of the thermal envelope to comply with paragraphs 3.18-3.22

3.8 Area of openings, (doors, windows, roof lights), in an extension shall be limited to NOT exceed the sum of:

- 25% of the floor area of the extension; plus
- The area of any openings, as a result of the extension that no longer exist or are exposed.

3.9 Heating and lighting, where a fixed service is provided or extended with the extension, it shall comply with paragraphs 3.37-3.50

PROVISION OR EXTENSION OF A CONTROLLED FITTING

3.10 Controlled fittings

- Windows, rooflights and doors that are provided shall be draught-proofed units whose area weighted average performance is not greater than Table 3.1

Table 3.1 **Standards for controlled fittings Maximum U-values {W/(m².K)} or Window Energy Rating (WER)**

Fitting	(a) New fittings (in an extension or change of use)	(b) Replacement fittings (in an existing dwelling)
Windows, roof windows and rooflights	U-value = 1.8 or WER* = Band D or Centre-pane U-value = 1.2	U-value = 2.0 or WER' = Band E or Centre-pane U-value = 1.2
Doors with more than 50% of their internal face glazed	U-value = 2.2 or Centre-pane U-value = 1.2	U-value = 2.2 or Centre-pane U-value = 1.2
Other doors	U-value = 3.0	U-value = 3.0

NOTES: *See CE66, "Windows for new and existing housing".

3.11 Controlled fittings

- Standards to BR443
 - SAP Table 6e
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REPLACEMENT OR RENOVATION OF A THERMAL ELEMENT

3.12 Provision of thermal elements

New and replacement thermal elements to comply with Table 3.2

Table 3.2 **U-values for thermal elements {W/(m²·K)}**

Element	(a) New elements (in an extension or change of use)	(b) Replacement elements (in an existing dwelling)
Wall	0.30	0.35*
Pitched roof (horizontal insulation at ceiling level)	0.16	0.16
Pitched roof (inclined insulation at ceiling level)	0.20	0.20
Flat roof or roof with integral inclined insulation	0.20	0.25
Floors*	0.22	0.25*

NOTES: *Where meeting the above standards would cause a significant (5%) reduction in floor area or cause problems in relation to adjoining floor levels these values may be exceeded provided that compensating provisions are made.

3.13 Provision of thermal elements

No individual element or **part of**, in the extension shall have a U-value greater than Table 3.4 (b)

Table 3.4 **Limiting U-values {W/(m²·K)}**

Element	(a) Area-weighted average U-value	(b) Maximum U-value
Wall	0.35	0.70
Floor	0.25	0.70
Roof	0.25	0.35
Windows, roof windows*, rooflights* and doors	2.20	3.30

NOTES: * Where a roof window or rooflight has been assessed in a plane other than the vertical, the U-value shall be modified by making a U-value adjustment in accordance with BR443: "Conventions for U-value calculations".

3.14 Continuity to limit thermal bridging and air leakage

- Building fabric constructed to avoid thermal bridges and gaps
- Building fabric constructed to minimise air leakage through thermal elements
- Building fabric constructed in accordance with DCLG, "Accredited construction details for Part L, or BRE IP/06, "Assessing the effects of thermal bridging at junctions and around openings in the external elements of a building".
- The builder to demonstrate compliance in the form of accredited design details, site inspections and written checklists that will be provided to Building Control.

3.18 Renovation of thermal elements, where more than 25% of the surface area of a thermal element is being renovated, the whole of the element shall be upgraded to comply with Table 3.3 (b)

Table 3.3 **U-values for retained thermal elements {W/(m²·K)}**

Element ¹	(a) Threshold U-value	(b) Improved U-value
Cavity Wall ²	0.70	0.55 ³
Other wall types	0.70	0.35
Pitched roof – insulation at ceiling level	0.35	0.16
Pitched roof – insulation at rafter level	0.35	0.20
Pitched roof with integral insulation or flat roof	0.35	0.25
Floor ⁴	0.70	0.25 ⁵

NOTES:

- 1 "Roof" includes the roof parts of dormer windows and "wall" includes the cheeks of dormer windows
- 2 Where a cavity wall is unsuitable for cavity insulation it shall be treated as "Other wall type".
- 3 A lesser provision may be appropriate where meeting such a standard would result in a reduction of more than 5% in the internal floor area of the room bounded by the wall.
- 4 The U-value of the floor may be calculated using the exposed perimeter and floor area of the enlarged building.
- 5 A lesser provision may be appropriate where meeting the standard would create significant problems in relation to adjoining floors.

3.19 Renovation of thermal elements, if the provisions of 3.18 are not technically or functionally feasible, the element shall be upgraded to the best standard possible within the 15 year payback period.

3.20–3.22 Retained thermal elements, where an existing thermal element becomes part of a dwelling because of a material change of use or an existing element becomes part of the thermal envelope where previously it was not, and it has a U-value greater than Table 3.3 (a), it shall:

- be upgraded to comply with Table 3.3 (b).
- if the provisions of 3.18 are not technically or functionally feasible, the element shall be upgraded to the best standard possible within the 15 year payback period.

Examples of lesser provision are the reduction in usable floor area of over 5% etc.

EXTENSIONS TO DWELLINGS

3.23 Conservatories and highly glazed extensions, where it is not exempt from the regulations, it shall have:

- Effective thermal separation from the dwelling
- Glazed elements complying with Table 3.1 (b)
- Thermal elements complying with Table 3.2 (b)
- Heating system to have independent controls and comply with paragraphs 3.37-3.40
- A highly glazed extension without thermal separation MUST fully comply with paragraphs 3.6-3.9 and 3.26-3.29

2) CALCULATED TRADE-OFF APPROACH

3.26 Fabric standards and opening areas, referred to in 3.7-3.8 above, may be varied provided that:

- The area-weighted U value of all the elements is no greater than that of an extension (same shape & size) that complies with the U-value standards.
- The area-weighted U-value for each element complies with Table 3.4 (a)
- The max U-value of an individual element or part complies with Table 3.4 (b)

3) EQUIVALENT CARBON TARGET APPROACH

3.28 SAP required, to demonstrate:

- That the calculated carbon dioxide emission rate from the dwelling and extension complies
 - Upgrades to existing dwelling complies with Table 3.3 (b)
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CREATING A DWELLING THROUGH MATERIAL CHANGE OF USE

3.30 Two approaches to achieve compliance

1) STANDARDS BASED APPROACH

3.31 Controlled services or fittings, to comply with paragraphs 3.37-3.50

3.32 Provision of thermal elements, new elements shall comply with paragraphs 3.12-3.17

3.33 Renovation of thermal elements, where more than 25% of the surface area of a thermal element is being renovated, the renovation shall comply with paragraphs 3.18-3.19

3.34 Retained thermal elements, where an existing thermal element becomes part of a dwelling because of a material change of use or an existing element becomes part of the thermal envelope where previously it was not, it shall comply with paragraphs 3.20-3.22

3.35 Separation, of conditioned and unconditioned spaces, by an existing window or door states that that window or door must be replaced if the U-value exceeds 3.3 W/(m²K) and comply with paragraphs 3.10-3.11

2) EQUIVALENT CARBON TARGET APPROACH

3.36 SAP required, demonstrate:

- That the calculated carbon dioxide emission rate from the dwelling and extension complies
 - Upgrades to existing dwelling complies with Table 3.3 (b)
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PROVISION OR EXTENSION OF A CONTROLLED SERVICE

3.37-3.42 Heating and hot water systems, storage and insulation

INSTALLATION, REPLACEMENT OF, OR CHANGE TO HEATING APPLIANCE IN AN EXISTING DWELLING

1) NEW OIL APPLIANCE TO HAVE:

- Efficiency of 85% (installed before 1st April 2007)
- Efficiency of 86% Condensing Type (installed after 1st April 2007)
- Not less than 2% lower than that being replaced
- If a change of fuel type the efficiency of the new appliance shall be multiplied by the ratio of the CO₂ emission factor of the fuel used in the appliance being replaced to that of the fuel used in the replacement appliance. The CO₂ emissions factor shall be taken from Table 12 of SAP2005.

2) NEW GAS APPLIANCE TO HAVE:

- Efficiency of 86%
- Not less than 2% lower than that being replaced
- Exceptional circumstances and dwelling design approval pre 1st April 05, there may be a case for as low as 78%. (assessment has to be carried out and submitted to Building Control)
- If a change of fuel type, the efficiency of the new appliance shall be multiplied by the ratio of the CO₂ emission factor of the fuel used in the appliance being replaced to that of the fuel used in the replacement appliance. The CO₂ emissions factor shall be taken from Table 12 of SAP2005.

ADDITIONAL FOR THE INSTALLATION, REPLACEMENT OF, OR CHANGE OF FUEL TO HEATING SYSTEM IN AN EXISTING DWELLING.

3) SYSTEM CONTROLS REQUIRED:

- Require boiler interlock
- Space heating zones
 - Floor area $\leq 150\text{m}^2$ - requires two space heating zones with independent temperature controls
 - Floor area $\geq 150\text{m}^2$ - requires two space heating zones with separate timers and temperature controls
 - Do not sub-zone temperature controls for single storey open plan where living area is $\geq 70\%$ of total floor area
- Separate hot water controls and cylinder thermostat
- Full programmable timer for system

4) DESIGN & COMMISSIONING OF SYSTEM REQUIRED:

- Boiler, hot water system and all equipment to be commissioned in accordance with manufacturers instructions with notice of commission to owner and Building Control
- Instruction & operating manuals to user
- Installation should be by a competent person e.g. OFTEC or CORGI and notification of commencement to Building Control.

5) THERMAL INSULATION OF SYSTEM REQUIRED:

- Primary circulation pipes for heating and hot water circuits should be insulated when outside the heated dwelling envelope
- Primary circulation pipes for domestic hot water circuits should be insulated throughout their length

6) OIL STORAGE INSTALLATIONS, (Technical Booklet L):

- Oil tank to BS 799-5: 1987 for steel and OFS T 100: 1995 for plastic
- Placed on hard surface not less than 42mm thick
- Hard surface to extend 300mm horizontally beyond storage tank
- Fire protection at boundary to Table 5.1, including distances and fire walls
- Fire valve system to be fitted where fuel pipework enters building, to BS 5410 pt1: 1997.
- Control of pollution, by using integrally banded prefabricated tank

3.43 Mechanical ventilation systems, designed and installed to GPG 268 “Energy efficient ventilation in dwellings, a guide to specifiers”

3.44 Mechanical cooling systems, have an efficiency classification of not less than Class C, Schedule 3 of “The Energy Information (Household Air Conditioners) (no2) Regulations 2005”.

3.45 Fixed internal lighting, applying to extension to existing dwelling, a dwelling created by material change of use or a replacement lighting system which forms part of rewiring works.

- Fixed energy efficient light fittings installed in most frequented areas, the greater of:
 - One per 25m² of dwelling floor area or
 - One per 4 light fittings
- Light fittings in cupboards & storage areas does not count towards the numbers above
- Energy efficient light fitting is a fitting that can only be fitted with lamps having a luminous efficacy greater than 40 lumens per circuit-Watt

3.46 Fixed external lighting, applying to lighting permanently fixed to an external surface of the dwelling and controlled by electrical supply from the dwelling.

- Have a maximum output of 150W per fitting and automatically switch off in daylight or when not required
 - Have sockets solely for lamps having a luminous efficacy greater than 40 lumens per circuit-Watt
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3.51-3.53 Operating and maintenance instruction, the building owner shall be supplied with sufficient information to enable the dwelling to be run in an energy efficient manner.

- Instruction on time and temperature settings
- Instruction on routine maintenance
- Energy rating for material change of use

DISCLAIMER:

This document has been prepared by Down District Council, Building Control Services, as an aid in compliance with the new Part F1 Regulations. It should be used solely as guidance and should not be treated as a “Deemed to Satisfy” document.

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