

Guidance on the Approved Document Conservation of Fuel and Power in Existing dwellings

L1B

Foreword

The approved document takes effect on the 1 October 2010 with the aim to provide guidance about compliance with specific aspects of the building regulations.

It is the author's view that the conservation of fuel and power by improving the energy efficiency of all buildings will continue to grow in importance. Understanding the requirements of such regulations will help to deliver the best possible service to clients and reduce conflict with regulatory building control and other regulatory bodies.

This approved document sets out the requirement for dwellings only. Where works are being undertaken to other forms of buildings, the regulation may vary.

This guidance note had been formulated by the Property Care Association in order to highlight the importance of the building regulation and approved document. It is important all members are aware of the document to ensure compliance.

The document that forms the basis of this guidance can be downloaded free from the internet by visiting:-

http://www.planningportal.gov.uk/uploads/br/BR_PDF_AD11B_2010.pdf

Alternatively, printed versions are available to order for a modest fee.

This guidance note must not be considered a substitute for the approved document. It will focus only on aspects of the document affecting damp control, timber preservation and below ground waterproofing in existing dwellings.

Introduction

The approved document L1B, reminds us that any building work to an existing dwelling must satisfy all the technical requirements set out in the building regulations. It also states the need for compliance with regulations governing fire safety, ventilation and various related standards. L1B then states "The adoption of any particular energy efficiency measure should not involve unacceptable technical risk, of for instance excessive condensation".

Information is provided on the scope and use of the approved document. The following note is also provided to give an indication of why compliance with building regulations is necessary.

"It is important to remember that if you are the person (e.g. designer, builder, installer) carrying out building work to which any requirement of building regulations applies, you have a responsibility to ensure that the work complies with any such requirement. The building owner may also have a responsibility for ensuring compliance with building regulation requirements and could be served with an enforcement notice in cases of non-compliance"

Key Terms

A number of "key terms" are set out in the text, however the following are probably the most important in understanding the context of the approved document:

Renovation - in relation to a thermal element means the provision of a new layer in the thermal element or the replacement of an existing layer, but excludes decorative finishes, and 'renovate' shall be constructed accordingly.

Simple payback -the amount of time it will take to recover the initial investment through energy savings. This is calculated by dividing the marginal additional cost of implementing the energy saving measure by the value of the annual energy savings achieved by that measure.

VAT should not be considered in the payback calculation and this should be based on labour and material costs only. The approved document states that costing and calculations should be "confirmed and signed by a suitably qualified person!"

Thermal Element is defined as "a wall, floor or roof (but does not include windows, doors, roof windows or roof-lights) which

separates a thermally conditioned part of the building ('the conditioned space') from:

A) The external environment (including the ground); or

B) In the case of floors and walls, another part of the building which is;

- a) Unconditioned;
- b) An extension falling into class VII in schedule 2; or
- c) Where this paragraph applies, conditioned to a different temperature,

and includes all parts of the element between the surface bonding, the conditioned space and the external environment or the part of the building as the case may be.

Works Covered and Exempt

It is clear from the guidance that the building regulation must be observed when undertaking works that result in a material change to the building's energy status. The example given in the approved document is a garage or loft conversion but could also include the conversion of an existing basement.

The regulations only apply to roofed buildings with walls that use energy to condition the indoor climate.

Dwellings that are exempt from the requirements may include;

- Buildings that are listed within section 1 of the (Listed Buildings and Conservation Areas) Act 1990,
- buildings within a conservation area as section 69 of the act
- scheduled ancient monument.

Exemption from the energy efficiency standards would only be granted if compliance would unacceptably alter the character or appearance of such dwellings.

Carports, covered yards, some conservatories and porches that are attached to dwellings may also be exempt from the requirements.

Section 3.8 on the approved document lists further classes of building that may require special considerations in making provision for the conservation of fuel and power.

- a) Buildings of architectural interest and listed on a local authority development plan.
- b) Buildings of architectural interest within a national park, area of outstanding beauty, registered historic park and garden, registered battlefield, the cartilages or scheduled ancient monuments or world heritage site.
- c) Buildings of traditional construction with permeable fabric that both absorbs and readily allows the evaporation of moisture.

Where works are to be undertaken in these types of structures, the approved document states that the aim should remain to improve the energy efficiency of the building without risking the character or long term stability of the structure or its fittings.

Material Change of Use and Energy Status

This section of the approved document (4.11) confirms the need for compliance when converting building or spaces within an existing building into occupied space. This would include the conversion of a commercial building into a dwelling or multiple dwellings or the conversion of a basement into a room to be used for occupation.

A great deal of section 4 of the approved document is regarding the installation and commissioning of fixed building services and controlled fittings such as windows and roof lights. This may be of essential information for a small number of members

but is not covered within this guidance document.

Guidance on Thermal Elements

The approved document states that the renovation of a thermal element can be achieved by either of the following activities-

The provision of a new layer means either by

- a) Cladding or rendering the external surface of the thermal element; or
- b) Dry-lining the internal surface of a thermal element.

The replacement of an existing layer means either of the following;

- a) Stripping down the element to expose the basic structural components (brick/ block work, timber etc) and then rebuilding to achieve all the necessary performance requirements.
- b) Replacing the waterproof membrane on a flat roof.

Section 5.8 of the approved document is of particular importance to those involved in damp proofing work of repairs associated with decay or water ingress. This section of the approved document has been quoted directly.

"Where a thermal element is subject to a renovation through undertaking an activity listed in 5.7 or 5.7b (as abridged above), the performance of the whole element should be improved to achieve or better the U-values set out in column (b) of table 3, provided that the area to be renovated is greater than 50% of the surface of the individual element or 25% of the total building envelope. When assessing the area proportion, the area of the element should be taken as that of the individual element, not all the elements of that type in the building.-

As we understand things – if over 50% of the wall plaster is removed from the internal section of a thermal element then the whole of the thermal element must be upgraded. Similarly, the whole of that thermal element must be upgraded if renovation involves

more than 25% of the total building envelope.

The above paragraph continues- *"The area of the element should also be interpreted in the context of whether the element is being renovated from inside or outside, e.g. If removing all the plaster from the inside of a solid wall, the area of the element is the area of external render, it is the area of the elevation in which that wall sits"*

This suggests that if more than 50% of the wall plaster is removed from the external wall of one room, then all of the wall within this room should be upgraded. This is the case even when the area to be upgraded constitutes less than 50% of the total wall area of the elevation.

If achievement of the relevant U-value set out in the table below is not technically or functionally feasible or would not achieve a simple pay back of 15 years or less, then it is acceptable for the thermal element to be upgraded to the best standard that is technically or functionally feasible and that will deliver simple payback within 15 years.

Table – see page 4

It is the author's view that this section of the approved document may remain open to some interpretation. Where doubt remains as to the scope and interpretation of the approved document or building regulation, guidance should be sought from local Building Control offices.

Retained Thermal Elements

The approved document advises that an existing element that is subject to a change of use or an existing thermal element becomes part of the thermal envelope (garage loft or basement conversions). These then should be subject to the same targets or insulation and energy efficiency as any existing thermal element.

An example where a lesser provision of thermal insulation might apply is where the introduction of insulation may reduce the usable area of the proposed room by more than 5% or create difficulties with adjoining floor levels.

Appendix A

The approved document sets out the levels of performance that would be considered reasonable provision in most circumstances. This is set out in detail within Table 1A of the approved document.

The table in appendix A is too large to reproduce in this guidance sheet so should be referred to directly.

Further Information

The information contained in this leaflet is given in good faith and is believed to be correct. The precise condition may alter in each individual case and the Association is therefore unable to accept responsibility for any loss howsoever arising from the use of the information contained therein.

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Table 3 Upgrading retained thermal elements

Element ¹	(a) Threshold U-value W/m ² K	(b) Improved U-value W/m ² K
Wall – cavity insulation ²	0.70	0.55
Wall – external or internal insulation ³	0.70	0.30
Floor ^{4,5}	0.70	0.25
Pitched roof – insulation at ceiling level	0.35	0.16
Pitched roof – insulation between rafters ⁶	0.35	0.18
Flat roof or roof with integral insulation ⁷	0.35	0.18

1. 'Roof' includes the roof parts of dormer windows and 'wall' includes the wall parts (cheeks) of dormer windows.
2. This applies only in the case of a wall suitable for the installation of cavity insulation. Where this is not the case, it should be treated as 'wall – external or internal insulations'.
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 of an extension can be calculated using the exposed perimeter and floor area of the whole enlarged building.
5. A lesser provision may be appropriate where meeting such a standard would create significant problems in relation to adjoining floor levels.
6. A lesser provision may be appropriate where meeting such a standard would create limitations on head room. In such cases, the depth of the insulation plus any required air gap should be at least to the depth of the rafters, and the thermal performance of the chosen insulant should be such as to achieve the best practicable U-value.
7. A lesser provision may be appropriate if there are particular problems associated with the load-bearing capacity of the frame or the upstand height.