

Table 4.2 Limiting U-values for new fabric elements in existing dwellings

Element type	Maximum U-value ⁽¹⁾ W/(m ² ·K)
Roof ⁽²⁾	0.15
Wall ⁽²⁾⁽³⁾	0.18
Floor ⁽⁴⁾⁽⁵⁾	0.18
Swimming pool basin ⁽⁶⁾	0.25
Window ⁽⁷⁾⁽⁸⁾⁽⁹⁾	1.4 or Window Energy Rating ⁽¹⁰⁾ Band B minimum
Rooflight ⁽¹¹⁾⁽¹²⁾	2.2
Doors with >60% of internal face glazed ⁽¹³⁾	1.4 or Doorset Energy Rating ⁽¹⁰⁾ Band C minimum
Other doors ⁽¹³⁾⁽¹⁴⁾	1.4 or Doorset Energy Rating ⁽¹⁰⁾ Band B minimum

NOTES:

1. Area-weighted average values, except for windows, doors, roof windows and rooflights.
2. For dormer windows, ‘roof’ includes the roof parts of the windows and ‘wall’ includes the wall parts (cheeks).
3. If meeting such a standard would reduce the internal floor area of the room bounded by the wall by more than 5%, a lesser provision may be appropriate.
4. If meeting such a standard would create significant problems in relation to adjoining floor levels, a lesser provision may be appropriate.
5. The U-value of the floor of an extension may be calculated using the exposed perimeter and floor area of the whole enlarged dwelling.
6. The U-value of a swimming pool basin (walls and floor) calculated according to **BS EN ISO 13370**.
7. If other performance (e.g. wind load, safety, security or acoustic attenuation) requires thicker glass to be used, an equivalent window unit with standard thickness (6mm) glazing should be shown to meet the required standard.
8. Including roof windows and curtain walling.
9. For timber windows, a maximum U-value of 1.6 W/(m²·K) or Window Energy Rating Band C is permissible until 14 June 2023. This is to give manufacturers time to transition to the standard in this Table 4.2. From 15 June 2023 the full standard of 1.4 W/(m²·K) or Window Energy Rating Band B applies.
10. The methods for calculating Window Energy Rating and Doorset Energy Rating are set out in the Glass and Glazing Federation’s Glazing Manual Data Sheet 2.3, Guide to the Calculation of Energy Ratings for Windows, Roof Windows and Doors.
11. U-values for rooflights or rooflight-and-kerb assemblies should be based on the outer developed surface area, which is often greater than the area of the roof opening. Further guidance on U_d-values is given in the Building Research Establishment’s BR 443 and the National Association of Rooflight Manufacturers’ Technical Document NTD02.
12. The limiting value for rooflights also applies to kerbs that are supplied as part of a single rooflight-and-kerb assembly sourced from the same supplier and for which the supplier can provide a combined U_d-value for the assembly. An upstand built on site should have a maximum U-value of 0.35W/(m²·K).
13. For timber doors, a maximum U-value of 1.8 W/(m²·K) or Doorset Energy Rating Band E is permissible until 14 June 2023. This is to give manufacturers time to transition to the standard in this Table 4.2. From 15 June 2023 the full standard of 1.4 W/(m²·K) applies.
14. For external fire doorsets, as defined in Appendix A of Approved Document B, Volume 1, a maximum U-value of 1.8W/(m²·K) is permissible.

Renovated and retained elements

4.11 The U-value of an existing thermal element that is being renovated should both:

- a. be no worse than that of the element before it was renovated
- b. meet the limiting standards in Table 4.3.

4.12 Guidance on when an existing element should meet the standards in Table 4.3 is given in Section 11. Elements that should meet the standards include both of the following.

- a. Thermal elements being renovated in existing dwellings. Renovated elements should achieve the U-values in Table 4.3, column (b).

- b. Elements being retained in existing dwellings, for example through a loft or garage conversion. Retained elements with a U-value that is higher than the threshold value in Table 4.3, column (a) should be upgraded to achieve the U-values in Table 4.3, column (b).

4.13 If achieving the U-value in Table 4.3, column (b) either:

- a. is not technically or functionally feasible or
b. would not achieve a simple payback of 15 years or less

then the element should be upgraded to the lowest U-value that both:

- a. is technically and functionally feasible and
b. can achieve a simple payback not exceeding 15 years.

Generally, a thermal element once upgraded should not have a U-value greater than $0.7\text{W}/(\text{m}^2\cdot\text{K})$. A lesser standard for the thermal element may be acceptable where work complies with Part C of the Building Regulations on protection from the harmful effects of interstitial and surface condensation.

NOTE: Examples are given in Appendix C.

NOTE: When renovating thermal elements, the work should comply with all the requirements in Schedule 1, but particular attention should be paid to Parts B, C, F and J.

Table 4.3 Limiting U-values for existing elements in existing dwellings

Element	U-value ⁽¹⁾ W/(m ² ·K)	
	(a) Threshold	(b) Improved
Roof ⁽²⁾⁽³⁾⁽⁴⁾	0.35	0.16
Wall – cavity insulation ⁽²⁾⁽⁵⁾	0.70	0.55
Wall – internal or external insulation ⁽²⁾⁽⁶⁾	0.70	0.30
Floor ⁽⁷⁾⁽⁸⁾	0.70	0.25

NOTES:

1. Area-weighted average values.
2. For dormer windows, 'roof' includes the roof parts of the windows and 'wall' includes the wall parts (cheeks).
3. If meeting such a standard would limit head room, a lesser standard may be appropriate. In such cases, both of the following should be achieved.
 - a. The depth of the insulation plus any required air gap should be at least to the depth of the rafters.
 - b. The insulant should be chosen to achieve the lowest practicable U-value.
4. If there are problems with the load-bearing capacity of the frame or height of the upstand, for a flat roof or roof with integral insulation, a lesser standard may be appropriate.
5. This applies only to a wall that is suitable for cavity insulation. Where this is not the case, it should be treated as 'wall – internal or external insulation'.
6. If meeting such a standard would reduce the internal floor area of the room bounded by the wall by more than 5%, a lesser standard may be appropriate.
7. The U-value of the floor of an extension may be calculated using the exposed perimeter and floor area of the whole enlarged dwelling.
8. If meeting such a standard would create significant problems in relation to adjoining floor levels, a lesser standard may be appropriate.