



# BER Assessors – Dwellings Technical Bulletin

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## 1 Use of registered email address

BER Assessors are advised to regularly check their registered email address for communications from SEI. If the registered email address is incorrect or out of date, please contact us on 1890 252738 or email [registered@ber.sei.ie](mailto:registered@ber.sei.ie).

## 2 Guidance on DEAP data collection and data entry

### 2.1 Identifying a “maisonette”

For the purposes of DEAP assessments, an apartment which is part of a larger building but has its own external main entrance at ground level is defined as a maisonette. It may or may not have more than one storey.

### 2.2 Adequate description of roofs, walls and floors in BER assessments

When calculating a U-value for a new or existing dwelling roof, wall or floor in DEAP, Assessors should use the Description entry for that element in DEAP to briefly describe how the U-value was obtained. In other words, the known components of the building element should be listed in the description. While this is not a mandatory DEAP entry, this brief description (particularly providing type and thickness of insulation) greatly assists in providing clarity as to how the U-value was determined. The following examples illustrate the type of description which should be included:

- Render, 100mm block, 40mm air cavity, 60mm platinum insulation, 100mm block, light plaster
- 50mm screed, 100mm polystyrene, concrete slab on external ground
- Roof space, 100 mineral wool, 150mm mineral wool + joists, plasterboard

### 2.3 U-value defaults for existing dwellings

As per Table S2 in the DEAP manual, the default U-values for existing dwellings for age bands F, G, H, I and J are based on Building Regulations which were made available from 1976 onwards. Defaults for age bands prior to this generally assume insulation is not present. However, actual U-values must be calculated when the Assessor has evidence of the particular construction or makeup of the exposed element (as detailed in the DEAP Survey Guide). This is particularly important where:

- The actual U-value is less than the relevant default U-value.
- The actual U-value exceeds relevant default U-value. An example of this would be an uninsulated stud partition wall between a more recently constructed apartment and an unheated corridor. Rather than containing insulation, the partition may consist of plaster (internal and external), sheathing ply and air gaps between studs.

As can be seen from the tables of Appendix S in the DEAP manual, the dwelling age band can have a significant bearing on the default U-value. Consequently it is important that the guidance in the DEAP Survey Guide is followed when determining the dwelling (or extension) age band.

Note that the word of the homeowner on its own is not enough to provide proof of dwelling age. Where the knowledge of the homeowner is being used to determine dwelling age, then further evidence based on at least one of the following must be obtained:

- dwelling style;
- age plate or plaque indicating dwelling/development year of construction;
- electricity meter age;
- glazing age stamps.

## 2.4 Selecting the correct overshadowing category for windows in DEAP

Assessors are required to select the appropriate overshadowing category from Table 6d of the DEAP manual for each window in the dwelling. For existing dwellings, the overshadowing category must be entered in the appropriate location in the Survey Form.

### Excerpt from Table 6d:

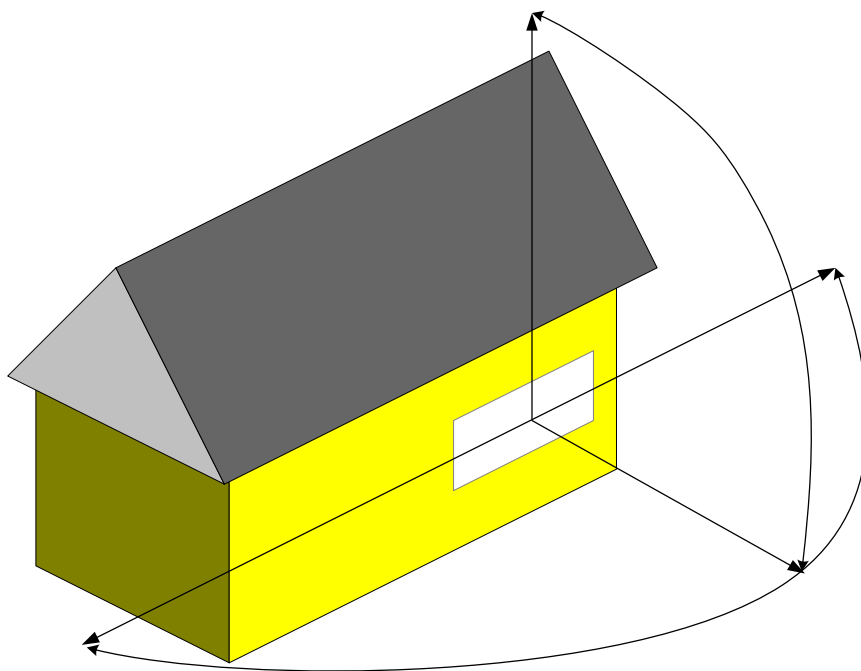
**Table 6d: Solar and light access factors**

Overshading	% of sky blocked by obstacles
Heavy	> 80%
More than average	> 60% - 80%
Average or unknown	20% - 60%
Very little	<20%

In borderline cases where the Assessor is unsure of the appropriate overshadowing category, then the more conservative option should be chosen. For example, if the overshadowing category lies between “Average” and “More than average”, and the Assessor is unsure which one is applicable, then “More than average” should be selected.

Overshading of a window is an **estimate** of the sky which is blocked when viewed outwards from the centre point of the window in question. The skyline to be considered is that which is in front of and above the window’s centre point, as illustrated in the following diagram. Objects obscuring the skyline below or behind the window centre point should be ignored. Objects obscuring the skyline may be close to the window, such as balconies and window reveals, or far away from the window, such as landmasses and other buildings.

Alternatively, think of the entire surroundings of the window as being a sphere. The areas behind and below the window are not relevant for overshadowing estimation, so only the quarter sphere above and in front of the window should be considered, again as illustrated in the diagram below.



### 3 Demonstrating compliance with Building Regulations TGD L

#### 3.1 Meeting TGD L U-value requirements for walls, roofs and floors

When determining if a new dwelling meets Building Regulations 2008 TGD L fabric heat loss limitation requirements a number of points must be taken into consideration in relation to walls, roofs and floors.

- (a) Referring to Table 1 of Building Regulations 2008 TGD L, Column 3, no individual heat loss roof element or section of a heat loss roof element should have a U-value greater than 0.3W/m<sup>2</sup>K. Similarly, wall and floor U-values should not exceed 0.6W/m<sup>2</sup>K. DEAP checks that the requirements of Table 1, Column 3 are met.
- (b) The area weighted average U-value of floors, walls and roofs must not exceed the appropriate value in Table 1, Column 2. For example, the average, area weighted U-value of all heat loss walls in the dwelling should not exceed 0.27W/m<sup>2</sup>K. DEAP checks that the requirements of Table 1, Column 2 are met.
- (c) Where the condition in (b) is not met then the following method may be used. As per Section 1.3.2.3 of Building Regulations 2008 TGD L, if any one of heat loss walls, roofs or floors do not meet the requirements of Table 1, Column 2, then the combined area weighted average U-value of all heat loss walls, roofs and floors should be calculated. Compliance can be achieved if this combined value does not exceed the combined area weighted average U-value of the heat loss walls, roofs and floors which would be the case if the U-value requirements in Table 1, Column 2 were met. This calculation is not currently performed in DEAP, but will be considered for addition to the DEAP software in a future revision. The following is a sample calculation for demonstration purposes:

Element type	Area (m <sup>2</sup> )	U-value required W/m <sup>2</sup> K (Table 1, Column 2)	Actual U-value W/m <sup>2</sup> K	Meets Table 1 Column 2 requirement?
Roof - insulated on ceiling	50	0.16	0.14	Yes
Walls	80	0.27	0.27	Yes
Floors	50	0.25	0.26	No
<b>Total</b>	<b>180</b>			
All walls, roofs, floors meet Table 1, Column 3 requirement, but floors do not meet Column 2 requirement				
<b>Calculate actual combined area weighted U-value:</b>	$[50 \times 0.14 + 80 \times 0.27 + 50 \times 0.26] / 180 = 0.2311$			
<b>Calculate combined area weighted U-value based on Table 1 Column 2 values:</b>	$[50 \times 0.16 + 80 \times 0.27 + 50 \times 0.25] / 180 = 0.2389$			
<b>Actual combined value &lt; Table 1 column 2 combined value. Therefore Table 1, Column 2 requirement is met</b>				

Until such time as this calculation is made available in the DEAP software, BER Assessors wishing to perform this calculation as an alternative to meeting condition (b) above should keep all records of this calculation on file to demonstrate conformance with Building Regulations 2008 TGD L.

**Note that all openings (windows and doors) cannot be included as part of this calculation. Openings must meet the requirement outlined 1.3.2.4 of Building Regulations 2008 TGD L as implemented in DEAP.**

## 3.2 Apartment walls – achieving TGD L compliance

As stated in Section 1.3.1.2 of Building Regulations TGD L 2008:

“Unheated areas which are wholly or largely within the building structure, do not have permanent ventilation openings and are not otherwise subject to excessive air-infiltration or ventilation, e.g. common areas such as stairwells, corridors in buildings containing flats, may be considered as within the insulated fabric. In that case, if the external fabric of these areas is insulated to the same level as that achieved by equivalent adjacent external elements, no particular requirement for insulation between a heated dwelling and unheated areas would arise. It should be noted that heat losses to such unheated areas are taken into account by the *DEAP methodology* in the calculation of the dwelling EPC and CPC (See Section 1.1).”

### **TGD-L Compliance:**

Based on the guidance from Section 1.3.1.2 from TGD L, the elements between the dwelling and unheated space may be ignored for the purposes of meeting TGD L fabric requirements provided the external fabric of the corridor is insulated as described above.

In Section 1.3.1.2, “Equivalent adjacent elements” is taken to mean the external elements of the dwelling in question. E.g. if the external, front wall of the apartment achieves a U-value of 0.27 W/m<sup>2</sup>K, then the “external fabric” of the unheated area (e.g. its external wall) would also be expected to have a U-value of 0.27 W/m<sup>2</sup>K for the unheated area to be considered “within the insulated fabric”.

This check is not currently performed in DEAP but will be considered for inclusion in a future revision of the software. If an Assessor is using this method as an alternative to meeting the dwelling fabric requirements for a particular semi-exposed element, then they should keep a record of the method used with their BER assessment records (and within the comments entry field in the DEAP assessment). The records should indicate how Building Regulations fabric U-value requirements were met in accordance with Section 1.3.1.2 of Building Regulations 2008 TGD L for any relevant semi-exposed elements.

Note that Assessors will still need to ensure that all other heat loss elements of the dwelling meet the fabric requirements of TGD L using DEAP. Any non-conformance with TGD L must be communicated to the client.

### **BER Calculation:**

All elements between the dwelling and unheated space should be included in the DEAP assessment as heat loss elements for the purposes of calculating the BER, EPC and CPC. The appropriate  $R_v$  factors from Table A4 of TGD-L 2008 may be used for new dwellings, or from Section S6.1 in the DEAP manual for existing dwellings.

For clarity, this element should be entered as a separate line under building elements in DEAP.