Amendment No. 1 to BR497

Page 17

The lesser thermally resistive layer requires to be defined. The text of the second bullet point at the foot of the page should be replaced with -

"where this is not the case, the bridging element does not bridge the primary insulation layer but bridges instead a lesser thermally resistive layer whose thermal resistance is no greater than 0.2 x the thermal resistance of the primary insulation layer."

Page 28

4.3 The existing text should continue with:-

'In 4.3.1 and 4.3.2, when calculating U'_f of the ground floor, if the floor construction has horizontal all-over insulation then any edge insulation (vertical or horizontal) is ignored in the calculation of U'_f. If the floor is insulated using edge insulation alone, the edge insulation is included in the calculation of U'_f. Note, in both cases, any edge insulation is still included in the model.'

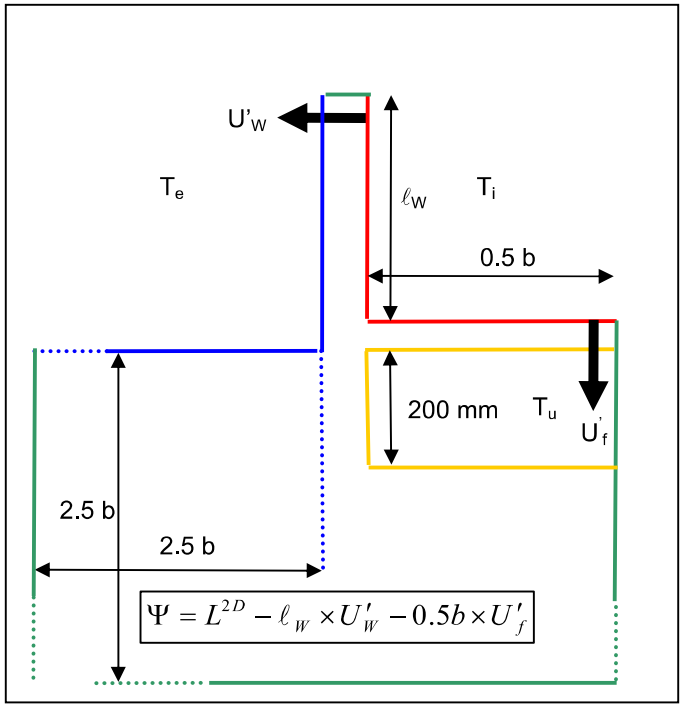
4.3.1 – the last sentence should be replaced with :-
'In the model and when calculating U'_f (see 3.1.2) in accordance with BS EN ISO 13370, b should be set at 8 m (equivalent to P/A = 0.25) and the level of the external soil should be set 150 mm below that of the internal floor finish.'

Page 29

4.3.2 – an amended diagram and revised text is required to better define the treatment of the suspended ground floor and the calculation of its U-value in accordance with BS EN ISO 13370.

The following replaces the diagram and text of 4.3.2 in the published BR 497:-

4.3.2 Suspended ground floor



The underfloor space is at an intermediate temperature, T_u, between T_i and T_e. T_u should be calculated from the heat balance in accordance with Annex E of BS EN ISO 13370. U'_f is calculated in accordance with BS EN ISO 13370. The dimension b, from BS EN ISO 13370, is the characteristic dimension of the floor. In the model and when calculating U'_f (see 3.1.2) in accordance with BS EN ISO 13370, b should be set at 8 m (equivalent to P/A = 0.25), the level of the external soil should be set 150 mm below that of the internal floor finish and the depth of the underfloor space (i.e. the distance from the underside of the floor deck to

the solum) should be set at 200 mm. T_u and U'_f (above) can be calculated using the BRE U-value calculator. Note, when calculating T_u and U'_f, the ventilation of the underfloor space should be determined in accordance with Annex E of BS EN ISO 13370 assuming a wind speed of 5m/s, a shielding factor of 0.05 and ventilation openings equivalent to 0.0015 m² per metre length of the floor perimeter.

BR497 Errata

Pages 22 and 23

A.) **4.1.1 and 4.1.2 –** correction of the equation for calculating Ψ.

The roof for these two junction types is a cold roof insulated at ceiling level, where the loft temperature is taken to be 1º C when the internal temperature is 20 ºC and the external temperature is 0 ºC. The sloping part of the roof is not included in the model, but we have nevertheless three environments at different temperatures. Consequently, to obtain the correct subtraction of heat flow per degree when determining Ψ, the U-value between the internal environment and the external environment needs to be adjusted by multiplying by the ratio of the temperature difference between the internal environment and the cold loft space and that between the internal environment and the external environment. Thus for both junction types 4.1.1 and 4.1.2 the equation for calculating Ψ should be corrected to :-

$$\Psi = L^{2D} - \ell_W \times U'_W - \ell_C \times U'_C \times \frac{(T_i - T_L)}{(T_i - T_e)}$$

Page 44

B.) **Table B.2 –** consequence of correction *A.)* above

As a consequence of correction *A.),* in Table B.2 and for Validation Example 2, Ψ should be 0.055 ± 0.005 (W/m·K).

Tim Ward, BRE Scotland and Chris Sanders, GCU

(28 September 2010)