

THERMAL PARTY WALLS

A GUIDE TO *U-VALUES* PROVIDED BY MERRONBROOK TIMBER FRAMED UNITS

INTRODUCTION

In accordance with **Building Regulations Approved Document Part L 2013**, (applicable from April 2014) the **Standard Assessment Procedure (SAP)** for new homes in England & Wales currently requires the thermal envelope to be modelled and evaluated for overall quality by a registered **On-Construction Domestic Energy Assessor**. That process involves simplifying the designed structure into distinct categories, based on the way energy is lost from the structure. These can be best summarised as follows:



Thermal Perimeter Losses

- These are the elements measurable as areas, where the flat plane area of the element is multiplied by the ***U-Value***, to arrive at a total amount of energy lost through the flat-panel items such as walls, floors, roofs, windows etc.
- Your Energy Assessor will produce a U-Value calculation for each of the building's elements, and obviously we can assist in provision of data for the wall elements.



Party Wall Losses

- These are the same as the Thermal Perimeter losses, but are a special case, where the U-value is not measured by assessment of the build-up of the fabric, but rather summarised from one of 3 build-type categories.
- If a party-wall is present we can offer to **insulate the cavity** in a way that gives this loss perimeter 'Zero Value'. You should confirm with your Assessor whether you have ordered this service from us.



Thermal Bridging Losses

- These are the losses that occur through the junctions in the structure. They are measured as linear items, such as vertical corners and horizontal wall-to-floor junction lines. The quality of the junction is assigned a ***ψ-Value***, which is applied as a multiple of the length of the measured item.
- Your Energy Assessor should use the appropriate ψ -Values from the lists overleaf, according to your chosen method of construction, but all the Merronbrook Special Details apply to our structures in all cases. Your Assessor will require you to fill-in a checklist to confirm compliance with either the ACD or MSD approach.

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NON-ASSESSED U-VALUES

When your appointed **Energy Assessor** is producing **SAP Calculations** for your project, we will liaise with them at all times to establish the correct thermal values to apply, where it's appropriate for us to make comment.

With specific regard to the **Wall U-Values**, this is increasingly becoming an area of intense scrutiny, as energy performance requirements become more and more challenging.

Since April of 2014 it has been necessary to apply a U-Value to the area of wall between two adjoining units, which had previously been considered as a non-loss perimeter.

Merronbrook are proud to provide support and assistance to clients looking to achieve the very best in fabric efficiency, and we currently offer a

service to fit insulation BETWEEN the party wall panels in order to deal with the **Part L** requirement for this wall area.

NB: External Wall envelopes are dealt with in our document "Energy 01 – Thermal Perimeters".

*Also, this is not to be confused with the acoustic insulation & dry-lining required in the room side of each unit in order to meet **Part E**, or for **Robust Details**.*

These walls are considered as a non-assessed panel as they are not 'measured' in the same way as external fabric walls. The wall area is assessed in a form of 'classification', where a U-Value is assumed, based on the build approach, regardless of the actual thermal value of the wall and insulants applied in each case.

In the Regulations, the wall area deemed to be "Party-Wall" can be classified as follows:

PARTY-WALL CLASSIFICATIONS (FOR TIMBER FRAMED BUILDINGS)¹

Unfilled Cavity with No Effective Edge Sealing

This is the traditional build approach for timber framed party-walls, where the cavity between the two sheathed surfaces is left free to the movement of air inside. Fire-stopping will have been provided to the top and sides but nothing to the bottom edge. This is in fact not acceptable by *Part L1A:2010* being over 0.20.

Applied U-Value = 0.50

Unfilled Cavity with Effective Edge Sealing

This is where additional effort is made to seal ALL the edges of the cavity area, and is considered as the bare minimum.

Applied U-Value = 0.20

Fully Filled Cavity

This is the 'Extra-Over' service we offer, where an insulation is sandwiched between the two panels' sheathing in order to form a non-air blanket between the units. This reverts the party-wall back to being an area of zero heat loss.

Applied U-Value = 0.00

¹ For specific definitions of what is meant by "filled" etc., please refer to Building Control Part L. There is also specific guidance in this document: <http://www.mima.info/pdf/MIMA-Party-Wall-Bypass-Guide.pdf>

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SPECIFICATION OF OUR PARTY-WALL CAVITY-FILLING SERVICE

If we are contracted to fit insulation between our party-wall panels, this will be whichever product we choose at the time based on stock, and will be fitted wherever practical between all wall panels that are appropriate to forming this envelope. This will likely be a semi-rigid glass-fibre or mineral wool product, sized to fill the cavity width completely, but without deforming so as to apply pressure to the wall panels.

Examples of exclusions to fitting are:

It is likely that in simply-adjointing terraces our erectors will fill this cavity in its entirety (applying fire-stop products and TCBs to the external-wall junctions in accordance with Regulations), but where the wall area interacts with changes in room-use and cold-spaces from one unit to the next, the insulation may be stopped and started as deemed appropriate.

It is not necessary, for example, to fit insulation in the cavity *above* the level at which loft-insulation will be installed, as there is no requirement to fill the cavity in walls between cold spaces. The protection required here is only for Fire in accordance with **Part B**.

Your Energy Assessor should be made aware of this specification to enable them to assess the U-Value of the panels correctly.

Thermal vs Acoustic.

It is very important to note that the service we provide for filling the cavity is to enhance the THERMAL performance of the unit in accordance with **Part L1A**.

This additional insulation does NOT contribute to the acoustic requirements of **Part E**, or the Fire separation requirements of **Part B**. These elements are fitted into and onto the panels themselves, from the room side after erection, and this is normally carried out by the dry-lining sub-contractor, in accordance with *Robust Standard Details*. Our panels form the physical basis of the detail “E-WT-2”, but many of the components required by this detail are not in our remit.

IF YOU ANY QUERIES ABOUT HOW TO APPLY ANY OF THE INFORMATION CONTAINED HERE, PLEASE CALL OUR DESIGN TEAM AT OUR OFFICES

01252 844747

OR EMAIL THE TIMBER FRAME OPERATIONS MANAGER, ANDY GIBSON

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Energy 01 – Thermal Perimeters – 2014.12.19