

THERMAL IMPLICATIONS OF DIFFERENT PLASTERING TECHNIQUES

Direct plaster, dot and dab, and plaster board on battens methods of finishing were compared by modelling them on a simple unvented partial fill masonry wall corner junction (Figure 1). The results are shown in Table 1, showing that there is little variation between the three alternatives. As a result of this, there is no need to model different methods of plastering separately. It is recommended that direct plaster with a depth of 10 - 15mm should be used to model junctions.

Table 1: Comparison of psi-values and planar U-values for different plastering techniques.

Plastering Method	Psi-Value W/mK	Planar U-Value W/mK	Total thickness, m	Difference to Direct Plaster	
				PSI value	U-value
Direct Plaster	0.0395	0.179	0.363	0%	0%
Dot & Dab	0.0387	0.172	0.375	-2%	-4%
Battens	0.0437	0.173	0.391	11%	-3%

This is an example of the effect of geometrical thermal bridging. In the case with plasterboard on battens, the wall is around 8% thicker, but the U-value is only 3% lower. Also, the neutral isotherm, the line of 10°C (assuming 0°C outside and 20°C inside) shifts out slightly compared to the geometrical center line of the wall.

There is no simple way of reducing these factors down to a rule of thumb, and the difference they can make it the psi value for what might be considered to be only a minor change in design, can be significant.

This is just one, fairly common example. It is unlikely that the exact method of finishing for any building will be selected on what results in the best psi values; there are many other more important factors to take into consideration. In this example, we would recommend that airtightness is carefully considered. Direct Wet Plastering is usually the best option for that reason alone, although consideration must be given to how the electrical installation could compromise this.

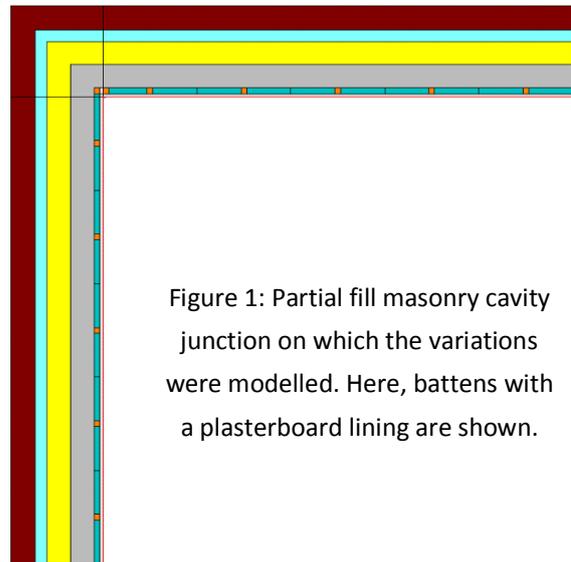


Figure 1: Partial fill masonry cavity junction on which the variations were modelled. Here, battens with a plasterboard lining are shown.