

Building Regulation Failure at Cavity Reveals

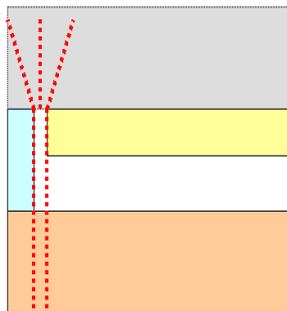
A weakness exists when constructing cavity walls where insulation batts are retained against the cavity face of the inner skin.

Insulation batts are introduced as the skins are raised and held in position using retainers that clip onto the wall ties.

The cutting of the batt insulation running into and running from an opening is often poorly executed. Consequently there are gaps - areas where the inner skin is visible because the batt (slab) insulation is unevenly cut, not vertically cut or simply stops short of the reveal arrangement.

Thermal spiking will occur where insulation is discontinuous resulting in the property failing to be uniformly insulated as intended.

This is contrary to Building Regulations Approved Document L1A 5.9 that states the building fabric should be constructed so that there are no reasonably avoidable thermal bridges in the insulation layers caused by gaps within various elements, at the joints between elements, and at the edges of elements such as those around window and door openings.



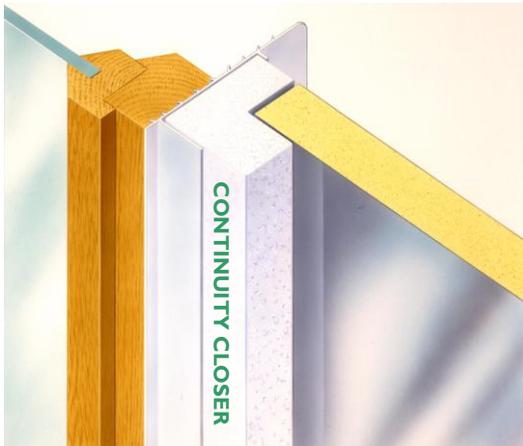
The extent of non-compliance and the degree of thermal spiking is dictated by the width of gap, and the committee responsible for re-examining ISO 6946 recently reported that the critical gap measurement remains around 10mm.

Given that examples photographed extend up to 27mm, it underlines that current building practices on site are inadequate. The extent of non-compliance might be demonstrated by comparing the u-value of a typical cavity wall incorporating partial insulation and the same wall with the partial insulation missing. (To demonstrate the effect of the omission resulting from the gaps) Calculated with a low-density outer skin, 100mm cavity with 50mm insulation within and an internal skin of low-density block finished with plasterboard on dabs, the u-value of the wall is 0.28 W/m²K.



The same wall without the batt insulation has a u-value of 0.85 W/m²K. (Calculations based on BS EN ISO 6946 wall procedures). It is reasonable to acknowledge that any cavity wall arrangement with insulation gaps cannot match the thermal integrity of a cavity wall arrangement as intended.

To construct to the correct standard first time is the objective – and that is now made possible with the introduction of the Continuity Closer. This is a second fix closer that can be introduced into a cavity wall reveal after the skins have been raised.



The Continuity Closer has a stepped insulating core. It closes the reveal cavity but additionally extends further inwardly, so it interfaces with the adjacent cavity insulation batt.

Typical gaps resulting from poorly fitted, badly cut or incorrectly positioned cavity insulation are masked. The Continuity Closer insulation core extends over and blankets where thermal spiking would otherwise occur.

It interrupts and closes the direct heat loss path that remains unaddressed with conventional closers.

The faceplate of the Continuity Closer spans both masonry skins and provides a rigid finish for reveal finishing of plasterboard on dabs or similar. A separate dpc is not required in standard applications as the Continuity Closer functions a vertical dpc. The Continuity Cavicloser may be used with our Type LTT Level Threshold Cavitrays to successfully form a thermally efficient and damp-protected opening within a cavity wall requiring level threshold access.

Failure through thermal spiking or thermal bypassing is likely to become more recognised as the standards for efficiently insulated structures increases and more completion testing is carried out. Gaps in insulation also support interstitial condensation that is an accompanying risk where insulation is punctuated, inconsistent or absent.

Currently available to suit cavity widths of 100mm - up to 130mm. State actual requirement.

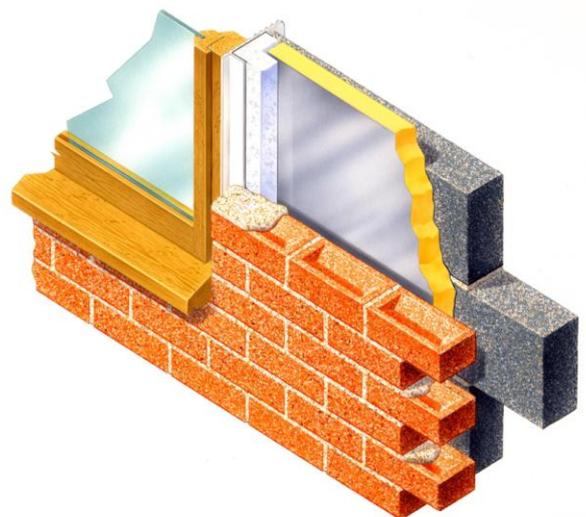
To suit partial fill insulation batts or boards of >50mm.

If you are using a thicker batt, state thickness so closer with appropriately dimensioned core is supplied.

Standard 2400mm lengths.

Additional cavity width sizes to be released during 2011.

Material PVCU + polystyrene core options 0.029W/mK to 0.033W/mK



The Continuity Closer is intended for second-fix application and is inserted into place after the reveal masonry has been completed.

Optional spike-ties are available for use where the closer is incorporated as the masonry is raised.

Continuity Closer Applications

- ✓ **Partial fill cavities** - closes cavity reveal and interfaces with insulation.
- ✓ **Open cavities** - closes cavity reveal and shaped core provides increased insulation presence.
- ✓ **Full fill cavities** – closes cavity reveal and shaped core is able to merge into most flexible fibre types.

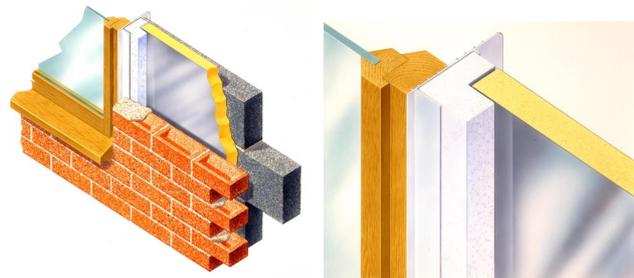
Further references

“Air gaps (*between sections of insulation*) are a serious issue with current forms of cavity construction and can affect all types of insulation products. In fact despite the superior thermal performance of foams (vs. full fill fibrous batts) it is likely that a far larger performance discrepancy is present with foam insulation, due to the potential occurrence of large air gaps.”

‘The 100mm Cavity Debate’ (Energy Saving Trust).

It is essential that cut pieces of board completely fill the spaces for which they were intended.

(BBA)



Insulation should be close butted with no gaps.

Gaps provide routes for dampness and condensation can form on the cold spots where insulation is missing.

(NHBC 6.1)

Summary

Practices can be seen in everyday construction that are contrary to the directions laid down by many mineral fibre and foam batt manufacturers’ literature, manufacturers BBA certificates and the relevant British Standards and Codes of Practice for the installation of insulation deployed to partially fill the cavity. Thermal requirement standards are being compromised where gaps are left adjacent to window and door openings. The correction of any opening once it has been built entails opening up the masonry reveal and carrying out reconstruction work which is time consuming and costly.

Walls with cavity insulation gaps cannot provide the thermal performance of a cavity wall arrangement as required under Building Regulations Approved Document L1A 5.9.

Costing no more than a conventional closer the Continuity Closer aids compliant construction and helps architect and contractor achieve the intended standards of thermal integrity.

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