Building Control

LINCS BUILDING CONSULTANCY

Guidance Note No. 23

Cold Bridges – How to avoid the problems they cause

East Lindsey DISTRICT COUNCIL

What is a Cold Bridge?

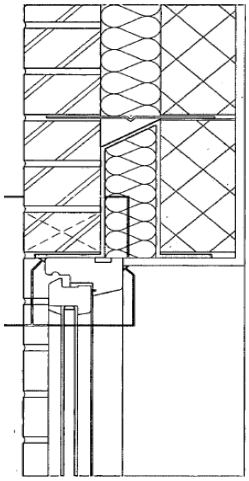
A Cold Bridge is an area in a building where a gap occurs in the insulation (e.g. the roof/wall junction and the wall/floor junction). As these areas will be colder than the main areas there is a greater risk of condensation forming. With condensation comes the added problem of mould.

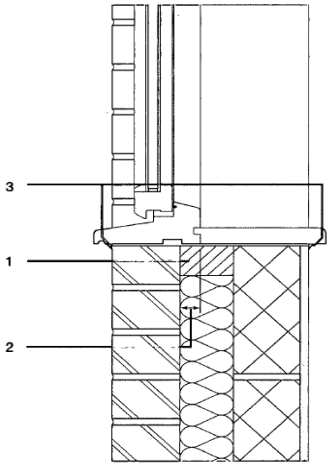
Window and Door Openings

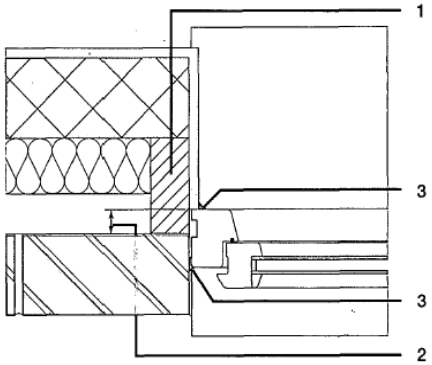
The Building Regulations 2000 (as amended) 2002 Edition now requires the building fabric to be constructed so that there are no significant thermal bridges or gaps in the insulation layer(s) within the various elements of the fabric, at the joints between elements, and at the edges of elements such as those around windows and door openings.

A way of meeting the requirements would be to adopt the recommendations in the report on robust construction details which gives examples of design details and construction practices that can deliver the required performance.

Full Cavity Fill

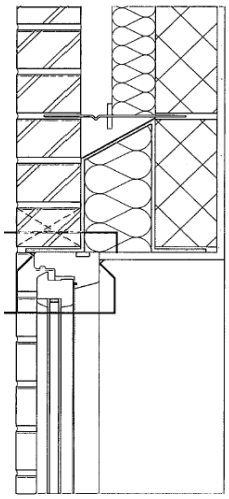


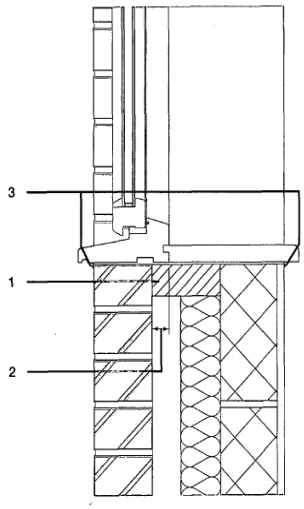


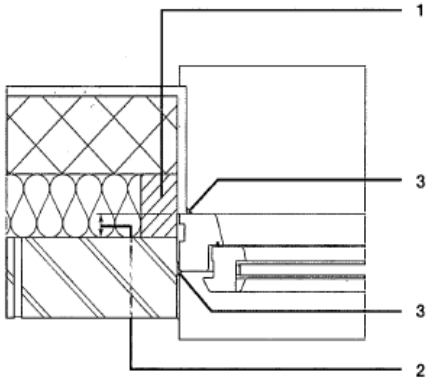


plan view

Partial Cavity Fill







plan view

Notes:-

1. Proprietary closer with minimum thermal resistance path of 0.45m²K/W (manufacturer's certified data)
2. Minimum frame/closer overlap:

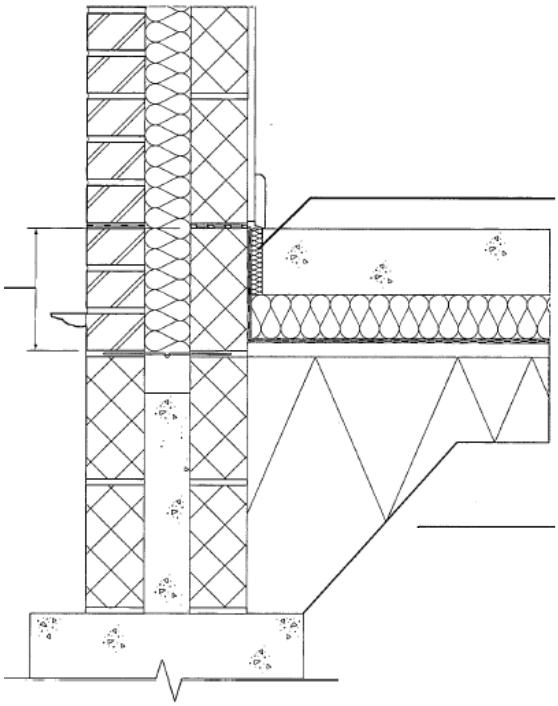
   Exposure zones Sheltered – moderate - 30mm.
3. Sealant to front and back of frame/sills.

The use of closers, minimum overlaps and sealants also apply to junctions between external walls and bay windows/conservatories.

Floors

Where the continuity of the insulation between the floor and external wall/lintel loadbearing walls is broken a thermal bridge is formed and there is a risk of condensation forming. To avoid this several methods are acceptable:-

1. Start the cavity insulation below the dpc level and to at least to the same level as the base of the floor slab.
2. Use insulating blockwork for the inner leaf of a cavity wall below dpc if structurally sound and suitable for the ground conditions.
3. Use a vertical strip of insulation at the perimeter of the slab to provide an overlap with the cavity insulation or, to link with the thermal wall insulation.
4. For internal walls use vertical insulation (1m from external wall) or use insulating blocks below dpc.



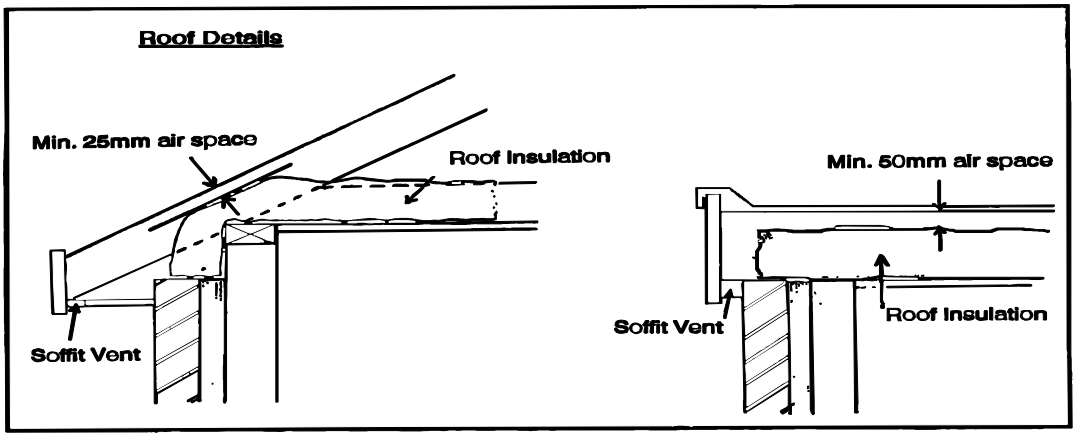
Roofs

Flat roofs

Ensure that the ceiling insulation is carried over the wall-plate to meet the wall insulation. A 50mm air space must be maintained over the flat roof insulation and a 25mm gap provided at opposite sides of the roof.

Pitched roofs

Carry the roof insulation down to meet the wall insulation. In order to maintain a 50mm air space at the eaves position use a purpose made spacer to leave a space under the sarking felt.



General Items

Can I leave out the sand blinding under floor insulation?

A. No. This levels out hollows under the insulation and prevents solid insulation breaking up

Q. Can I use bricks or clinker blocks to close the cavity?

A. No. they are too dense and will lead to condensation. Use a lightweight block or insulation.

Q. Can I completely fill a roof void with insulation?

A. Normally no, unless a 50mm air space is left over the insulation, condensation may form on the timber. There are special forms of construction which may allow you to do this, but please contact your Building Control Surveyor for advice.

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Please note that these guidance notes are for advice only and may not cover all situations. It is your responsibility to ensure that they are appropriate for use in your particular circumstances.