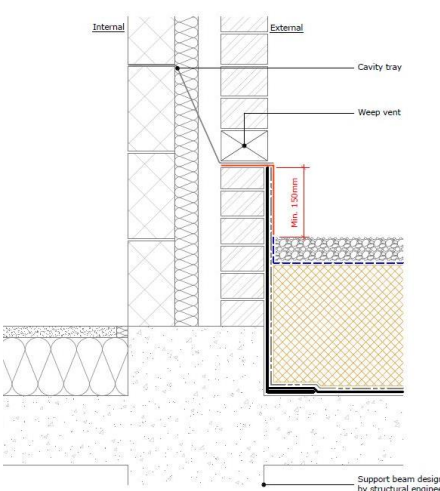


Contractor UPDATE

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Structural components built onto waterproofing systems

Following work done by a Working Group of the Liquid Roofing and Waterproofing Association and Bauder's own review, this update highlights the issue around building onto waterproofing systems and how the industry does not condone this practice.

The issue

Specifiers often request that the exposed, vertical, waterproofing wall flashings that seal under the damp proof course (DPC) of a wall be hidden by dressing the waterproofing at slab level. Either under both leaves of the wall or under the exposed leaf and then dressed in the cavity up the hidden leaf, thus building a wall directly off the waterproofing.

This request is usually driven by the aesthetic requirement not to see the waterproofing, especially on podiums, balconies and small roof terraces. However, this is totally in contravention of technical guidance provided in British Standard Codes of Practice, Specialist Trade Association's guidance and guidance from warranty organisations.

There are more aesthetically pleasing systems available to counter flash and hide the principal waterproofing upstand but having no upstand flashing is not an option.

If still continuing to dress the waterproof wall flashing vertically by the minimum 150mm above the finished roof level (the walking surface), there are also reasons not to build a wall off the waterproofing system.

The Consequences

Whether the driver is to hide the flashing and/or to dress the waterproofing under the exposed leaf (or both leaves) the following considerations should be made clear:

- Most waterproofing systems are not suitable for this application and are not certified or usually tested to be, in effect, a DPC. Hot Melt systems and Reinforced Bitumen Membranes with an applied torch-on or self-adhesive backing, or systems that are applied in a bitumen bonding compound are subject to "cold creep" (a deformation and type of crushing that would make the waterproofing thinner) which can affect their waterproofing performance whilst also causing issues for the wall itself.
- If the waterproofing is dressed under the wall (one or both leaves) then there is no access to the waterproofing for inspection or maintenance work. Should there be a need to inspect the integrity of the waterproofing there will be hugely disruptive and costly effects.

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- As the waterproofing is susceptible to cold deformation this brings the risk that the wall can move or slip horizontally and this instability can lead in the worst case to collapse, but otherwise to cracking.
- Should any moisture get into the cavity it will be trapped and the freeze/thaw cycle could damage the lower courses of masonry, though creating weepholes at deck level would allow water to flow both ways and run the risk of stagnant water in the void.

The Expert's Opinion

The Liquid Roofing and Waterproofing Association (**LRWA**) is adding guidance in their Hot Melt Code of Practice on “Structural Components Built onto Hot Melt Waterproofing Systems”, the guidance is in most cases relevant to all cold deformable roof waterproofing.

The Brick Development Association (**BDA**) when made aware of this topic commented “Essentially you need to have continuous waterproofing for the podium (or balcony) but avoid loading any brickwork on to the hot melt [waterproofing system]. Any compression of the waterproofing could result in the brickwork cracking”.

In the latest version of National House Building Council (**NHBC**) Standards 2021 Chapter 7.1 Flat roofs, terraces and balconies, section 7.1.17 Accessible thresholds and upstands states:

“Generally, where a flat roof or roof terrace abuts a wall, the waterproofing layer should extend up the wall to form a minimum 150mm upstand” and it goes on to say that “The waterproofing material forming an upstand should link directly under a cavity tray to ensure the cavity fully drains”. There is then this caution “Designs which continue the waterproofing layer horizontally through/under the outer leaf of a cavity wall and form an upstand against the inner leaf within the cavity are not acceptable”, it goes on to explain the reasons why it is not accepted by NHBC.

In Chapter 7.1 section 7.1.18 Parapets and guarding to terraces and balconies, there is also the following relevant comment “In balcony/roof terrace walls (especially long ones) the structural stability should be checked, as cavity trays and DPCs in the wall can create a slip plane that can seriously limit the ability of the wall to resist horizontal forces.”

Local Authority Building Control (**LABC**) Warranty published their own Technical Update – Podium Deck Guidance in November 2020 (and updated it in April 21) and whilst the heading refers to Podium Decks it is relatable to balconies and roof terraces. The guidance emphasises, like the NHBC, the importance of linking the waterproofing to the cavity tray, the requirement for the waterproofing to extend 150mm above the surface finished level and uniquely it recommends that

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structures (including planters) should be built off a 150mm monolithic kicker formed as part of the deck slab. It does appear (but is not annotated) in the LABC Warranty guidance drawings that they have also dressed the deck waterproofing under both leaves of the wall, so clearly the Industry need to speak to them about the issues of dressing the waterproofing under the walls, but the guidance on forming an integral kicker and dressing the flashing 150mm up the face of the exterior leaf is clear.

Perhaps obviously the guidance in BS6229: 2018 – Flat roofs with continuously supported flexible waterproof coverings – Code of Practice is mentioned in all guidance on this topic as they uphold the requirement to have a vertical upstand waterproof flashing finishing a minimum of 150mm above the finished roof level (where that level would be from the top of any landscaping).

Bauder Policy

Bauder are of the opinion that there is a risk of cold deformation substantial enough to cause slipping or cracking of a wall built directly off the RBM (torch-on or self-adhered) or Hot Melt, therefore it is not recommended.

Wall flashing waterproofing should be carried up the outer face of the wall and terminated under the DPC.

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