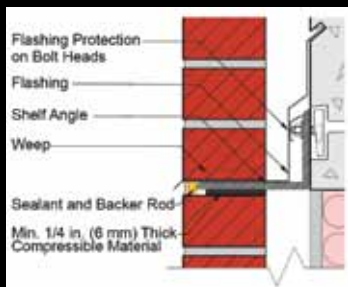


# JUST THE FAQs

questions we made up  
about... MASONRY

## Flashing Steel Lintels and Shelf Angles

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Typical flashing detail at steel angle. (from BIA Technical Note 18A Accommodating Expansion of Brickwork)



We see many different ways of flashing steel lintels and relieving angles, and would like to know the Brick Industry Association (BIA) recommendations on the following questions:

**Question:** How high above the angle should the first veneer tie be located?

### Answer

According to TMS 402 *Building Code Requirements for Masonry Structures*, wall ties should be placed within 12 inches of any opening. However, some general information: flashing and weeps are necessary anytime you have a window or door opening. They are also necessary at SHELF angles (see May 2009 STRUCTURE article *Do Relieving Angles Really Relieve?*). The minimum requirements are that the flashing comes out to the outside face of the masonry wall; continue back to the backing and up the wall at least 8 inches. This height is recommended to capture as much water as possible if it were to back up due to mortar droppings, so it doesn't leak into the building. If you are using a mortar collection device

(the height of the most popular one is 10 inches) the flashing should extend above that. Of course, that also makes it more difficult to install a wall tie within the first 10 inches or so of the bottom of the veneer. That doesn't leave much room for the first wall tie to be placed. A shelf angle is not really an opening, but the same recommendations would hold true for that application. Putting a wall tie and flashing in the same mortar bed joint of the CMU backing is not recommended because the wall tie loses some embedment strength. In many cases, that puts the first tie 16 inches above the steel angle. Instead of tucking flashing into a bed joint of the CMU backing mortar joint, the top edge of flashing can be attached to the backing with a termination bar. That may allow the first wall tie to be placed closer to the support.

**Question:** Is it necessary to have a flashing drip? If so, how is it created?

### Answer

A drip edge is a beneficial flashing feature that reduces staining by forcing water out away from a wall as it comes out of the weeps. There are other reasons for drip edge use, but they are often trumped by aesthetics. The drip edge at a window or door head doesn't have masonry below it, so it may not provide as much benefit as at a shelf angle or sill where masonry is constructed below the drip edge. The drip edge will protect the masonry and any sealant beneath it. Although the

BIA *Technical Notes* do not require a specific size, the drip edge only has to extend approximately  $\frac{3}{8}$  inches beyond the wall face and be bent down at a 45 degree angle (see *Figure*). In many cases using stainless steel or copper flashing is cost prohibitive. However, using a stainless steel drip edge in combination with flexible flashing that is lapped and sealed properly can be a more cost effective means of providing a drip edge. If a drip edge is not used, it may increase the potential for water penetration and staining.

**Question:** Should the course of brick sitting on the flashing of the lintel angle be set in a bed of mortar?

### Answer

Let's look at field practice to see what happens when flashing is placed on a steel angle. Using mortar beneath the first course of brick is optional. There is no structural reason that mortar is placed at this location since it is assumed that no bonding occurs, just friction. The mason determines whether to place mortar under the brick or not, and bases this decision on the need to level the brick. Since tolerances on steel erection are large compared to masonry tolerances, there needs to be some mechanism for the mason to start the brickwork at the proper height. It is much easier to lay the flashing on the angle; the mason can then apply a thin bed of mortar if necessary to level the brick. Remember that masons lay to a line and that line is the top edge of the brick, not the bottom. So the mortar helps start things off right.

**Question:** Should membrane flashing be adhered to the top of a steel angle lintel?

### Answer

Since the flashing is laid directly on the steel, it may make sense to bed the flashing in some form of compatible mastic, but it is not necessary. This decision may depend on whether the steel angle has any type of corrosion protection. Painted steel angles are the norm, with galvanized angles being used more and more. Placing mastic beneath the flashing and adhering it to the angle could eliminate wind-driven rain from blowing underneath. Of course, the weight of the brickwork should keep this location pretty well sealed. At shelf angle locations, the sealant used beneath the angle provides a seal to keep water out.

These are common questions that we receive at BIA all the time. Most answers can be found in BIA's *Technical Notes* ([www.bia.org](http://www.bia.org)), but more job-specific questions need to be balanced with the technical knowledge and real world methods used in the field. ■