

Through Wall Flashing Overview

1.a Through Wall Flashing (TWF) Defined :

Through wall flashing is **above grade waterproofing**. It protects specific areas within exterior wall assemblies and creates an impervious barrier for water to follow to the face of the exterior finish. It protects areas within the exterior wall assembly starting from:

The face of the backing wall to the face of the exterior finish, Fig. 1.a.1, and or;

The innermost face of the structural wythe to the exterior face of the wythe, Fig. 1.a.2, and or;

The innermost part of a windowsill or door threshold frame in a wall assembly to the exterior face of the sill or threshold, Fig. 1.a.3.

Flashing from the innermost face of a single wythe wall or windowsills, or threshold frames in a wall assembly is a variation of TWF called **pan flashing**.

TWF requires **dedicated openings** in the exterior finish for water passage. In exterior wall assemblies these openings are called **weeps**. Without functioning weeps, a TWF would be as ineffective as a gutter without a downspout. TWF also requires **end dams** to close discontinuous sections. Without end dams a discontinuous TWF would be as ineffective as a gutter without an end cap. Furthermore **cants** are used to transition flashing membranes from vertical to horizontal planes and maintain a continuity of slope to drain. Transitioning membrane flashing with a cant helps reduce the occurrence of bladder bubbles and fish mouth, which are a common cause of leaking walls.

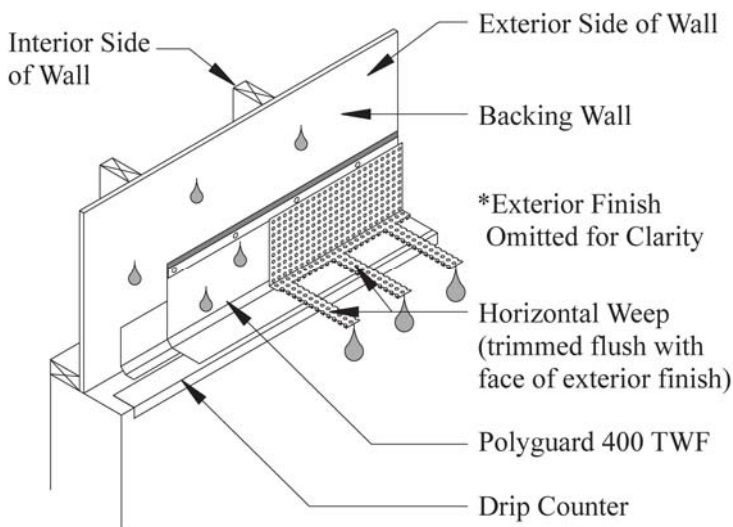


Figure 1.a.1 Exterior Wall Assembly

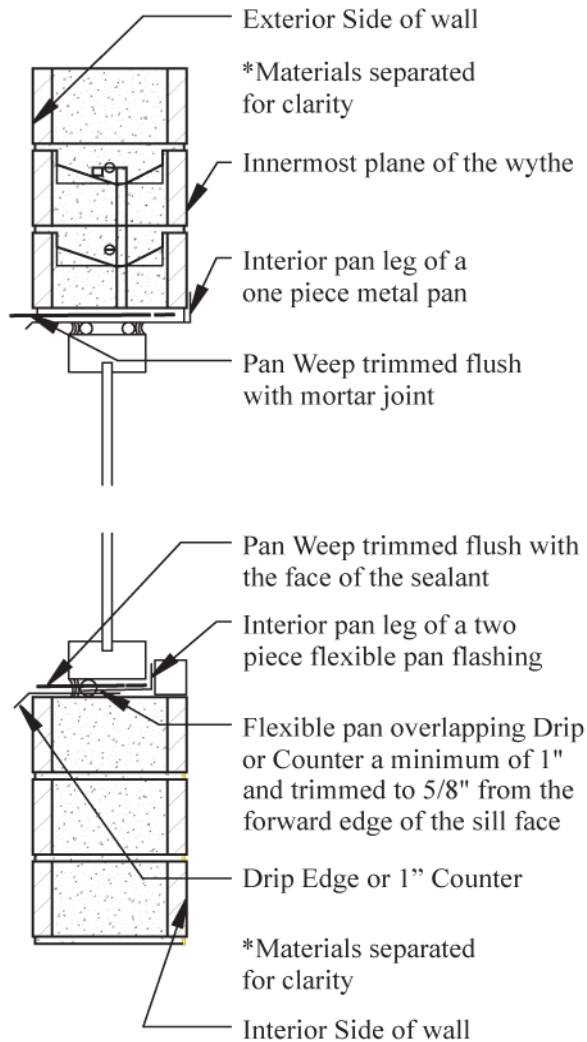


Figure 1.a.2 Single Wythe Wall

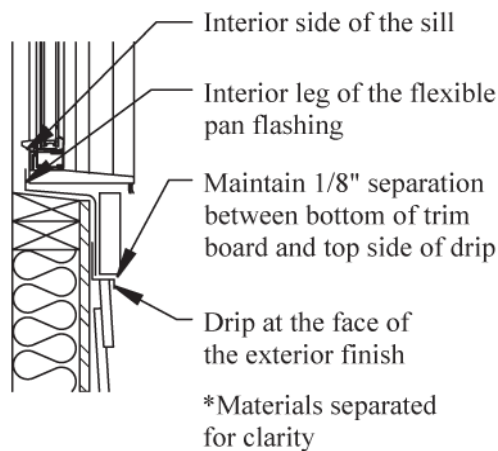


Figure 1.a.3 Sill Assembly in an Exterior Wall Assembly

Section 1.b Where to Locate Through Wall Flashings :

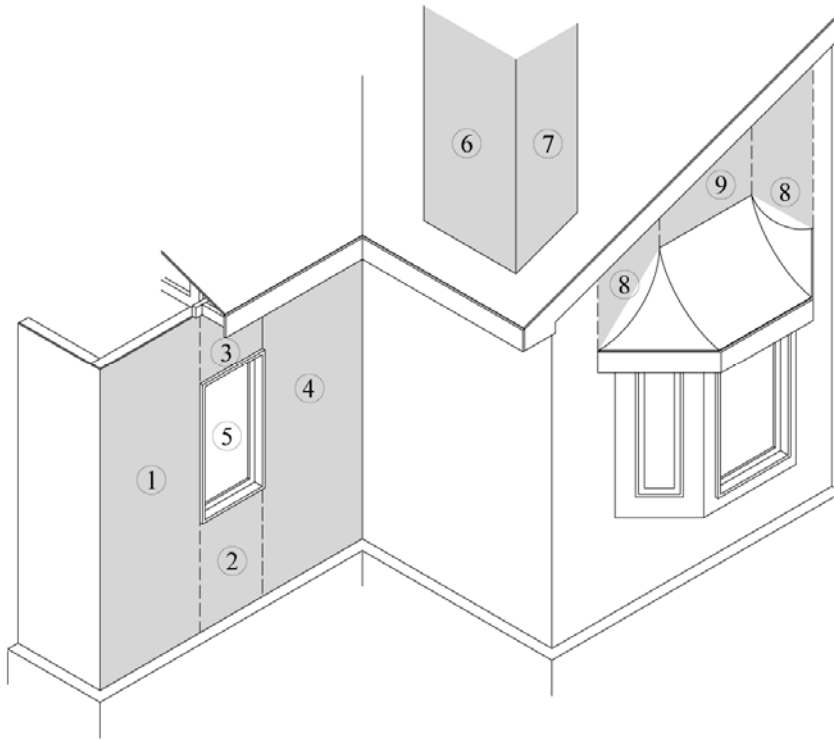


Figure 1.b.1 Flashing Locations in an Exterior Wall Assembly

Each of the numbered sections in Figure 1 is an example of a continuous above grade drainage plane, also known as a wall flashing section. The location of the TWF will vary for each section because the weeps should be above any blockage, i.e. snow load, that would interfere with draining them. The numbered sections are general in nature and are not intended to be inclusive of every wall possibility.

1. Left of the window
2. Under the window
3. Above the window
4. Right of the window
5. A window or door rough opening
6. A wall above an intersecting straight roofline
7. A wall above an intersecting sloped roofline
8. A wall above an intersecting sloped roofline
9. A wall above an intersecting straight roofline

Sections 1, 2, & 4 share a bottom elevation and therefore a common TWF.

Section 5 depicts a rough opening. That opening will receive a window, door, or fixture. Windows, doors, and fixtures typically have their own internal paths for water that direct water to a weep and then onto the face of the exterior finish. The sill in the rough opening of Section 5 is the location for a TWF that will drain the area between the window, door, or fixture frame and the rough opening.

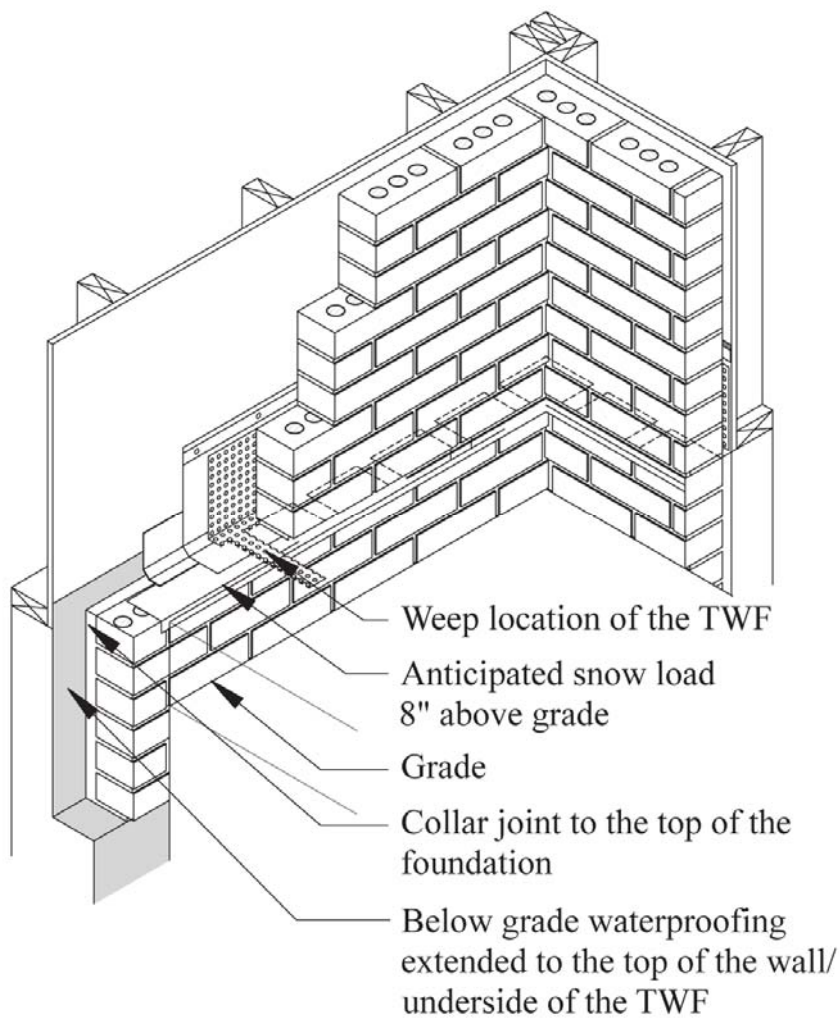


Figure 1.b.2 Correct Location and Elevation of TWF

Figure 1.B.2 depicts the correct location and elevation of a TWF in a region anticipating an 8-inch snow load with a corresponding grade established at 8-inches below the top of the foundation. It also depicts a conceptual way to conceal and continue the below grade waterproofing to protect the structure from the snow load while providing a weeping mechanism for the TWF.

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Section 1.c Preparing Surfaces to Receive Adhesive Flashings :

Prepare substrates that will receive a TWF as follows:

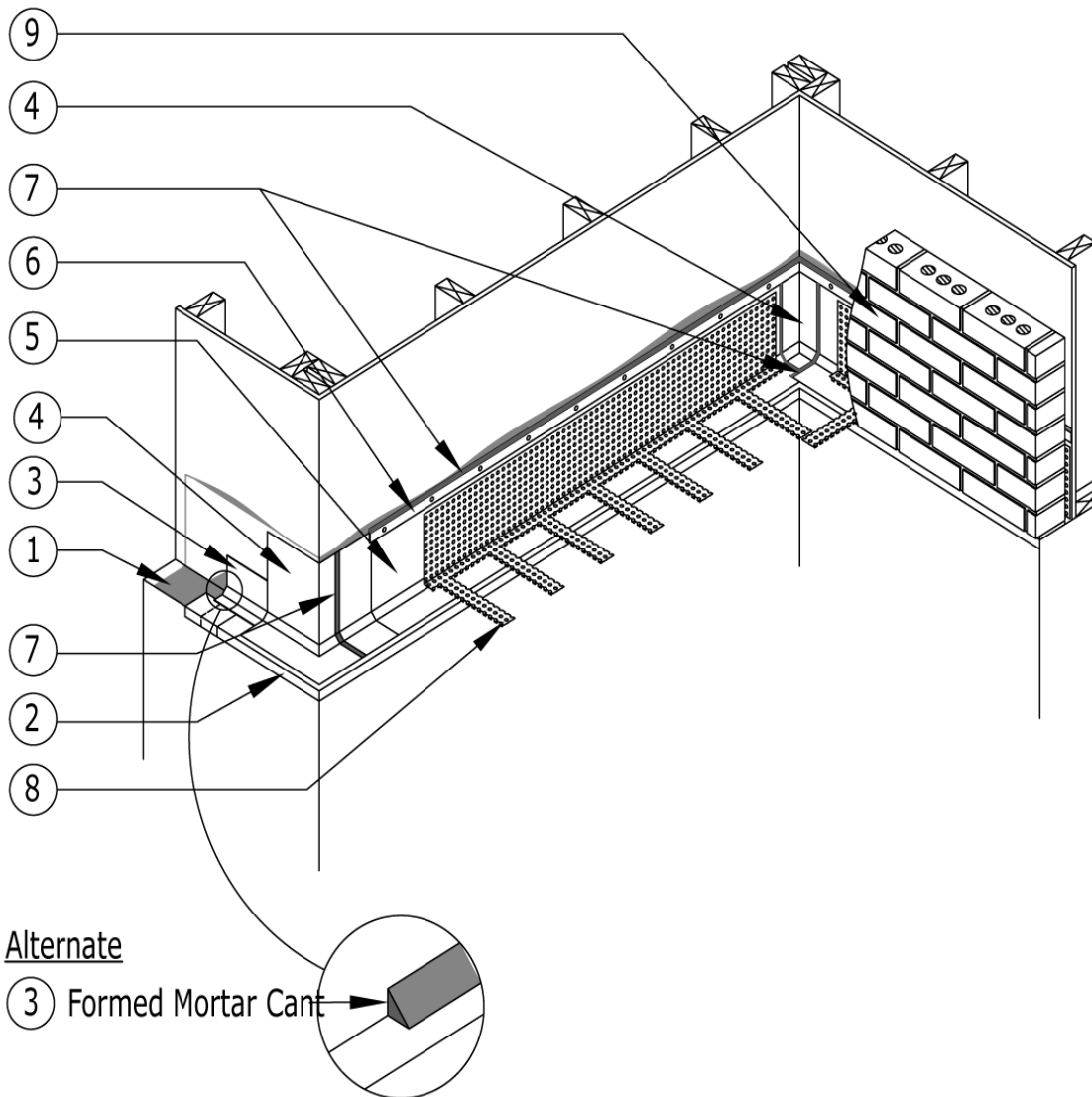
- Fill gaps in and along the flashing support area that are greater than 1/8-inch.
- Establish a positive pitched plane for water to drain.
- Free supporting substrates from materials and irregularities that would interfere with bond or pose a puncture hazard to the membrane;
- Dry the substrates when needed;
- Based on VOC requirements and substrate compatibility select and apply one of these Polyguard [Liquid or Spray Adhesives](#). If a [PolyWall fluid applied air barrier](#) has been applied to the substrates to be flashed, wipe the substrates clean with a 30% solution of isopropyl alcohol in lieu of applying a prescribed liquid or spray adhesive.

Section 1.d NOTE on Use of Metal Drip Edges and 1-inch Counters with TWF:

The IBC dictates the use of projecting flanges when constructing Through Wall Flashings. The BIA supports the IBC position and use of “Drip Edges” following the reasoning that they help deter water from re-entering a wall. For aesthetic and other reasons, a population of the architectural community would prefer not to use projecting flanges or Drip Edges anywhere in a building.

At Polyguard, we believe that the IBC and BIA positions are a best practice. Our company data reveals that, when Polyguard flashings, sans projecting flanges or Drip Edges, have been fully adhered to a smooth and continuous substrate that has been coated with one of our Liquid or Spray Adhesives there has not been a reported event of water reentering a wall assembly from the forward edge. Recognizing that the private and public sectors have different objectives and risk tolerances concerning moisture management, we believe it is wise to follow the IBC position for public sector work and justifiable to let architects, engineers and private sector clients evaluate their individual needs. **The body of this document is written from a public sector viewpoint.**

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Section 1.e Overview of Masonry Cavity Wall Construction and Materials :**Figure 1.e.1 Installation Sequence of Cavity Wall Construction**

1. Surface preparation.
2. [Drip Edge and Fittings](#) on ledges 7-feet or more above a pedestrian traffic zone.
[1-inch Counter and Fittings](#) on ledges within a pedestrian traffic zone.
3. Polyguard [TWF Cant](#) or formed mortar cant.
4. Polyguard Preformed or Field Formed [TWF Inside](#) and [Outside Corner Flashing](#).
5. Polyguard [400 TWF](#) membrane.
6. Polyguard [Flared Termination Strips](#).
7. Polyguard [Detailing Sealant](#) or [650 Mastic](#).
8. Polyguard [Horizontal Weep](#).
9. Masonry, brick shown.