

Flashing Installation: Cavity Walls

Scope

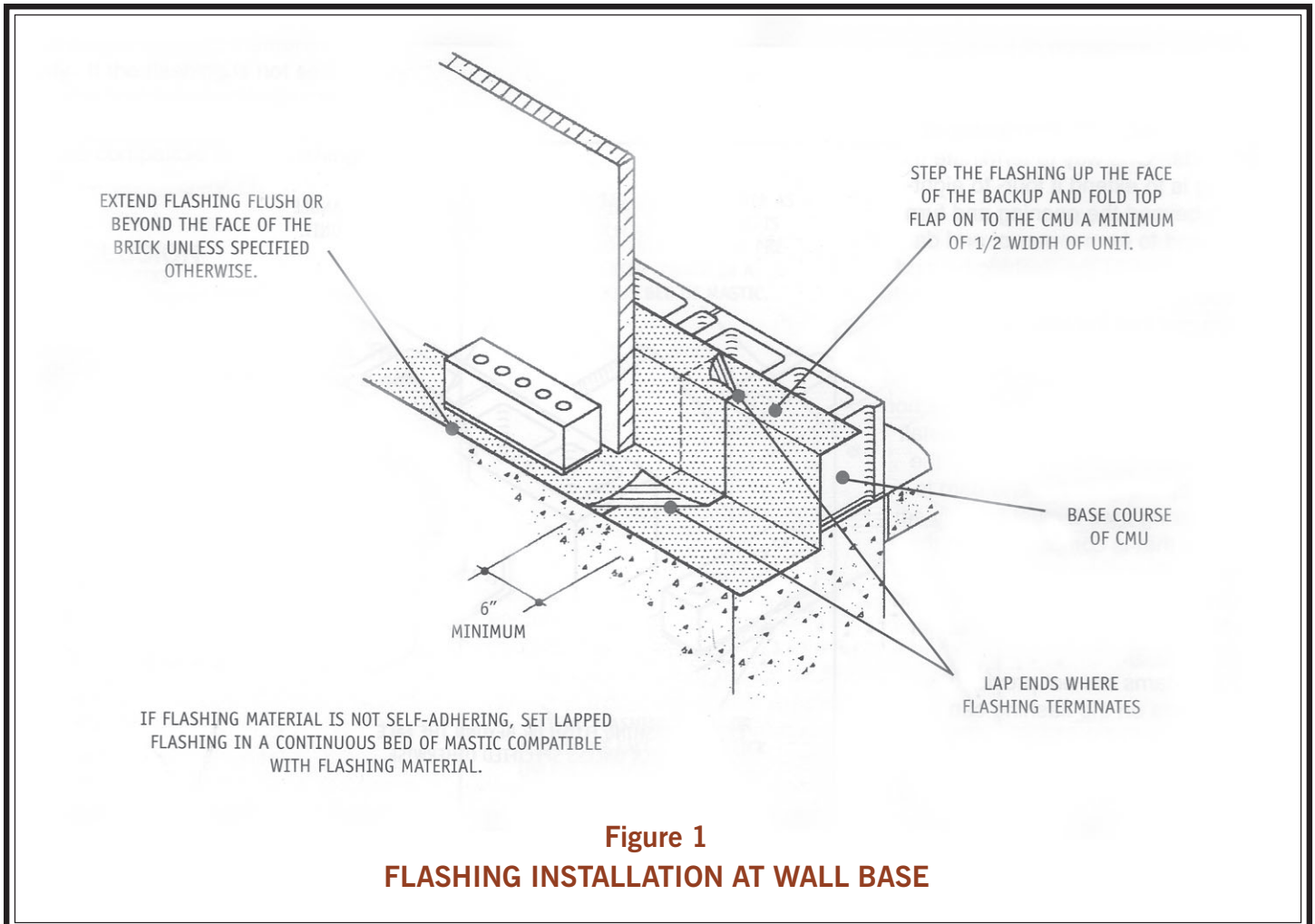
This construction guide presents general information on the installation of flashing. The intent of this guide is to provide instructional information on how to successfully install flashing for typical conditions encountered in brick and concrete masonry cavity wall construction. This guide does not preclude flashing details presented on architectural documents. This guide addresses the installation of flexible and semi-flexible flashing membranes and does not address the installation of rigid plastic or sheet metal materials.

Introduction

The proper design and installation of flashing cannot be overemphasized. Many water-related problems in masonry construction can be attributed to flashing inadequacies. Architectural drawings may not thoroughly convey information on how flashing is to be installed at particular locations such as: inner and outer corners, horizontal laps, and flashing end terminations. Subsequently, flashing can be erroneously installed or deleted at these locations.

Flashing Installation at Wall Base and Shelf Angle

One of the most common locations where flashing is required is at the base of the wall. Since flashing is installed in sections it must be properly lapped and sealed where the ends terminate. In addition to the proper lapping of horizontal sections, the termination of the flashing ends within the CMU backup system is equally critical. The ends of the flashing should be lapped a minimum of six inches. If the flashing is



not self-adhering, the lap must be sealed with a mastic or adhesive that is compatible with the flashing material. The manufacturer of the flashing material usually recommends compatible adhesives. If the flashing is dry lapped without any adhesive, water that collects on the flashing can flow between the lap and into the building.

The end of the flashing that terminates within the CMU backup system should be stepped up vertically along the face of the CMU backup and sapped within the CMU backup a minimum of 1/2 the width of the unit. Extend the horizontal end of the flashing flush with or beyond the outer wythe of masonry unless otherwise specified by the designer (see Figure 1). Improper termination of the flashing within the wall can result in water flowing behind or under the flashing membrane and into the building. Installation of flashing at shelf angle locations is similar to installation at the base of the wall.

Flashing Installation at Horizontal Terminations

Horizontal termination of flashing commonly occurs above window openings. Flashing that is installed above a window opening usually terminates at both ends. One way to terminate the flashing is to extend it four to eight inches beyond the opening and turn up the end to form a pan or end dam. The extension of the flashing beyond the opening in increments of four inches assures that the flashing end can be neatly inserted into a head joint (see Figure 2).

An alternative to turning up the horizontal end of the flashing is to install prefabricated end dams beyond the window opening. If the end dam is not self-adhering then it must be fully set in mastic that is compatible with the material. End dams are commonly required below window openings and can be installed in a similar manner (see Figure 3).

If end dams are not provided, water that collects on the flashing can flow into the cores of the brick adjacent to the opening. Water can also flow down the window jambs and into the building.

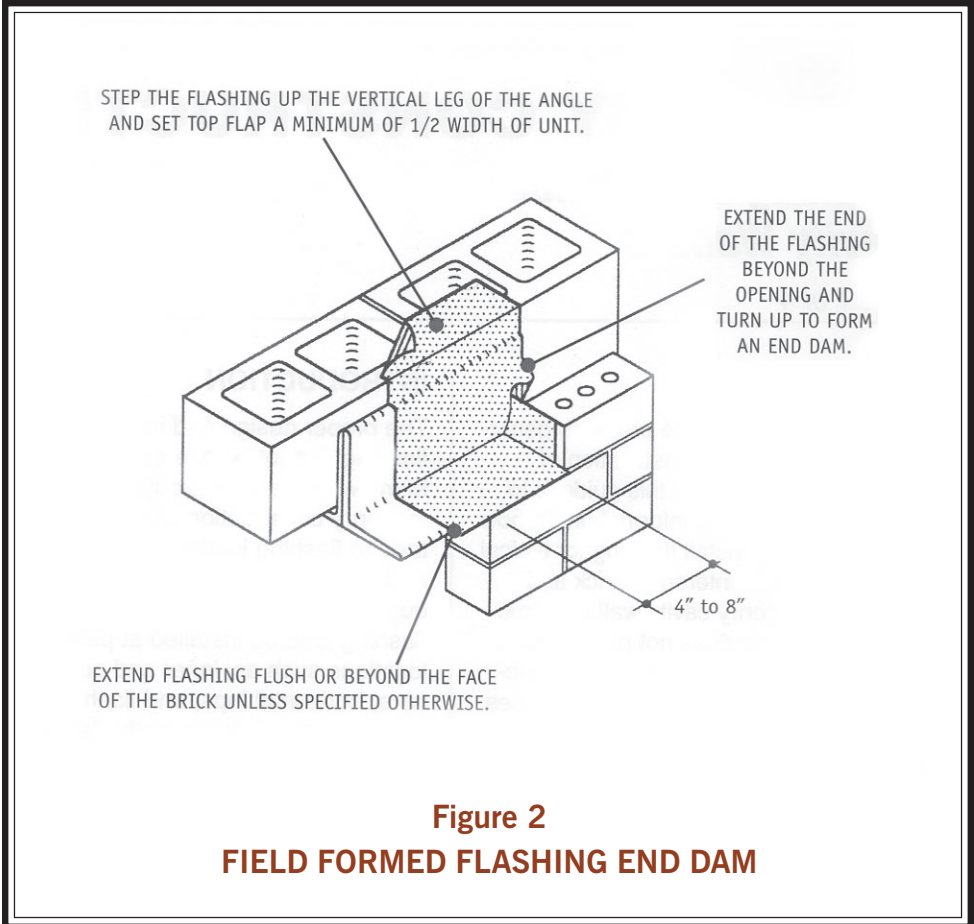


Figure 2
FIELD FORMED FLASHING END DAM

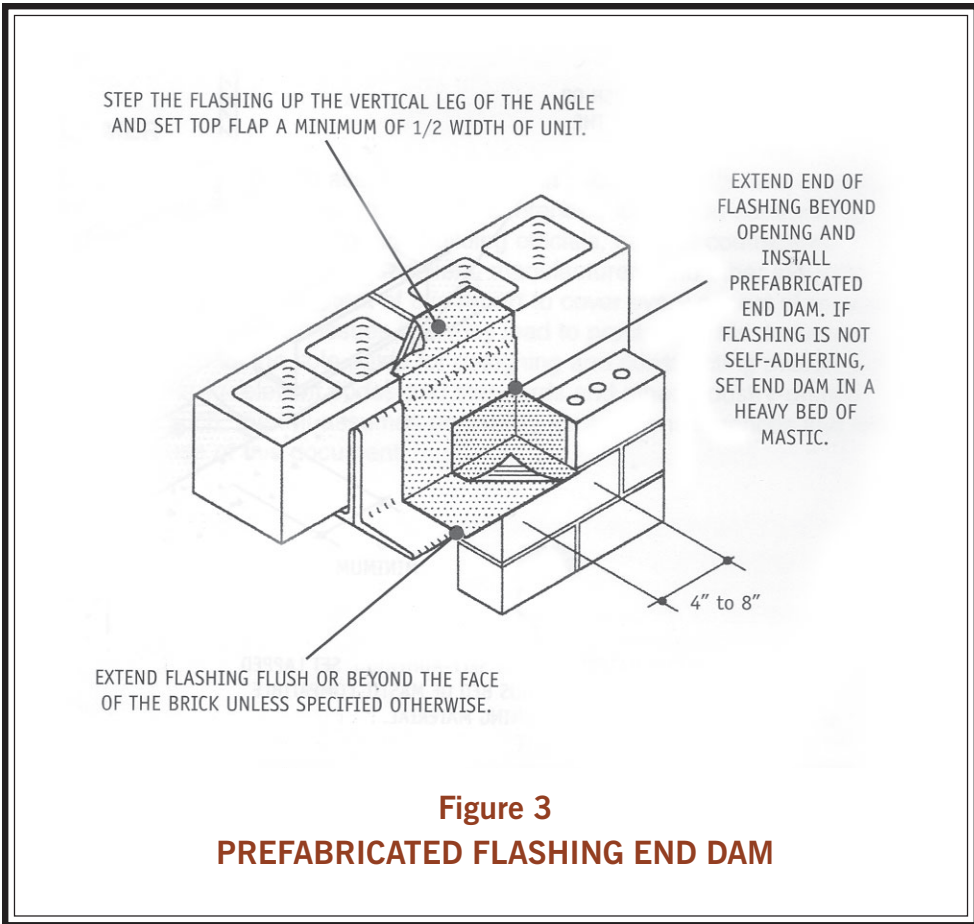


Figure 3
PREFABRICATED FLASHING END DAM

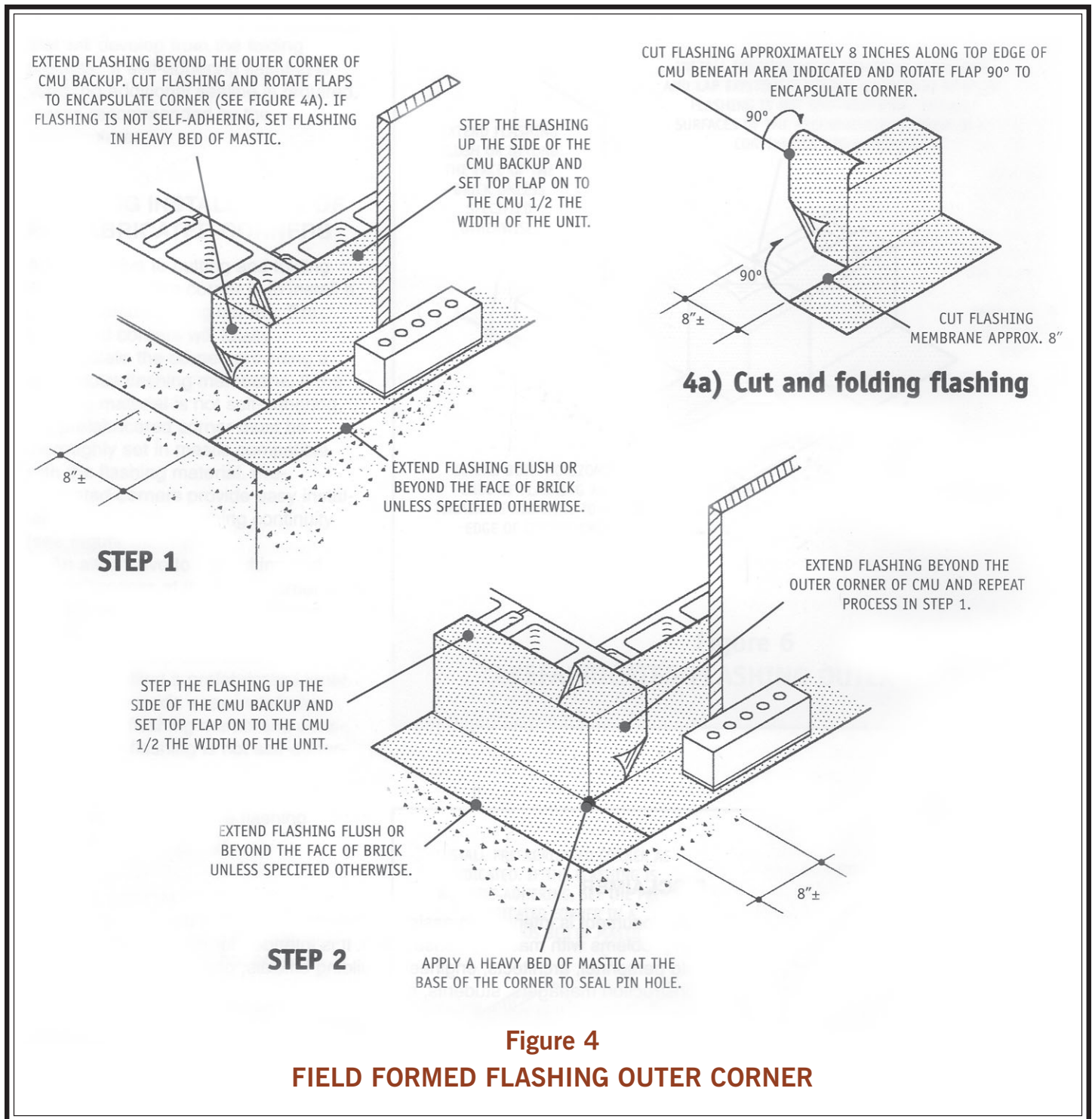


Figure 4
FIELD FORMED FLASHING OUTER CORNER

Flashing Installation at Outer Corners

Corners are one of the most vulnerable areas for water penetration. Therefore, flashing continuity must be maintained around corners. Flashing corners successfully is difficult to achieve and requires additional time and care by the mason.

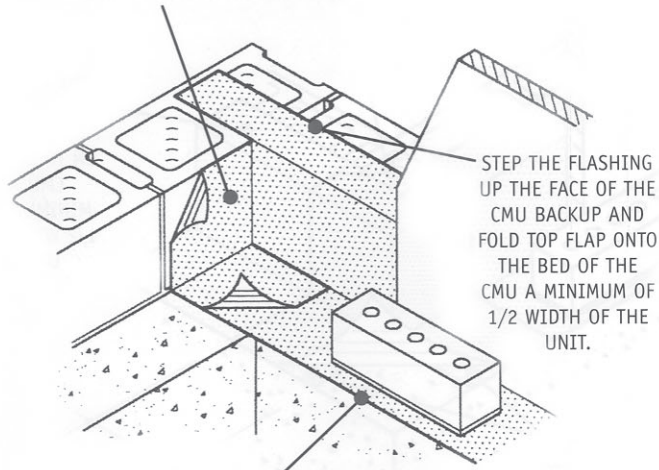
Flashing corners is basically a two-step process (see Figure 4). First the flashing must be extended eight or nine inches beyond the corner of the CMU

backup. Then the flashing membrane should be cut at two locations: at the horizontal plane along the base and perpendicularly along the horizontal plane at the top of the CMU course. This will form a flap that can be rotated 90° to snugly fit the corner (see Figure 4a). All flashing flaps must be thoroughly set in mastic that is compatible with the flashing membrane if a self-adhering flashing is not in use.

The second step is similar to the first. The flashing should be cut and lapped exactly as the first step. It is important

to seal the flashing to all surfaces to avoid any openings at the laps through which water can penetrate. If self-adhering flashing is not used, all flaps must be set in mastic that is compatible with the flashing material. Also, a heavy bead of mastic must be applied at the base of the corner to seal a small opening that develops from the folding process. If self-adhering flashing is used, the opening can be sealed by cutting a piece of the flashing and adhering it over the opening.

EXTEND FLASHING BEYOND THE INNER CORNER OF CMU. CUT FLASHING AND ROTATE INWARD AS INDICATED IN FIGURE 5A. IF FLASHING IS NOT SELF-ADHERING, SET FLAP IN HEAVY BED OF MASTIC.

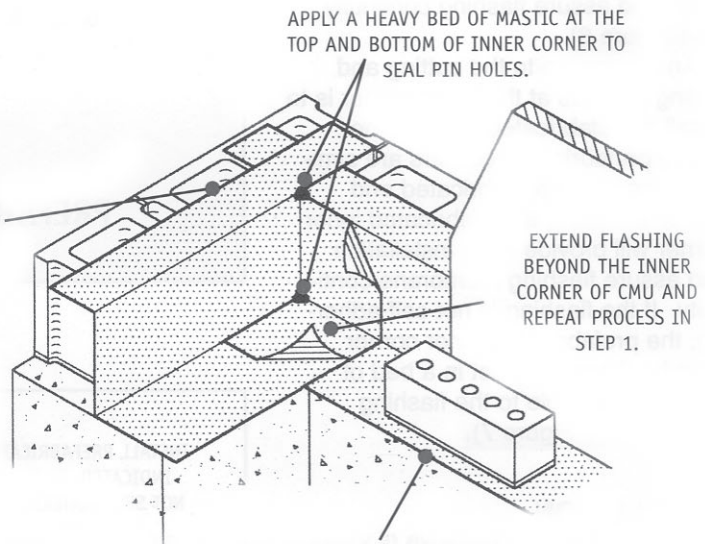


STEP THE FLASHING UP THE FACE OF THE CMU BACKUP AND FOLD TOP FLAP ONTO THE BED OF THE CMU A MINIMUM OF 1/2 WIDTH OF THE UNIT.

EXTEND FLASHING FLUSH OR BEYOND THE FACE OF THE BRICK UNLESS SPECIFIED OR INDICATED OTHERWISE.

STEP 1

STEP THE FLASHING UP THE FACE OF THE CMU BACKUP AND FOLD TOP FLAP ONTO THE BED OF THE CMU A MINIMUM OF 1/2 WIDTH OF THE UNIT.

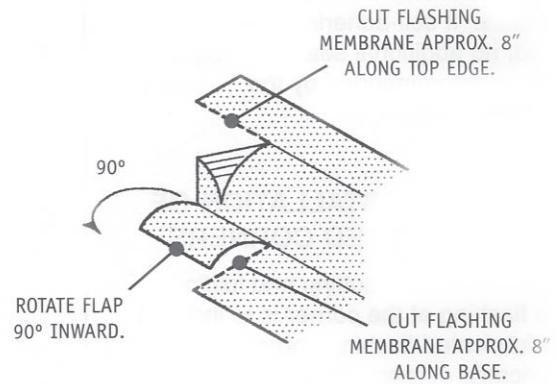


APPLY A HEAVY BED OF MASTIC AT THE TOP AND BOTTOM OF INNER CORNER TO SEAL PIN HOLES.

EXTEND FLASHING BEYOND THE INNER CORNER OF CMU AND REPEAT PROCESS IN STEP 1.

STEP 2

EXTEND FLASHING FLUSH OR BEYOND THE FACE OF THE BRICK UNLESS SPECIFIED OR INDICATED OTHERWISE.



5a) Cut and folding flashing

Figure 5
FIELD FORMED FLASHING INNER CORNER

Flashing Installation at Inner Corners

Like outer corners, flashing continuity must be maintained at inner corners. Inner corners are also vulnerable to water penetration. Although not as complex as outer corners, the proper flashing of inner corners can be tedious and time consuming.

Flashing inner corners is a two step process (see Figure 5). The flashing should be extended approximately

eight to nine inches beyond the inner corner. The membrane should then be cut at the base along the horizontal plane. The cut should be made eight to nine inches in from the end of the flashing. An additional cut is made along the upper horizontal plane of the flashing. The cuts will form two flaps that can be rotated 90° to straddle the inner face of the CMU backup (see Figure 5a). If the flashing material is not self-adhering, then the flaps must be thoroughly sealed in mastic that

is compatible with the flashing material. The flaps should be set flush with the surface of the CMU backup. The second step is similar to the first. The flashing is extended and cut in the same manner as the first step. The flaps are rotated over the existing flashing and set flush to all surfaces to avoid any openings in which water can penetrate under the flashing and into the building. If self-adhering flashing is not used, the flaps should be thoroughly sealed with mastic that is compatible

with the flashing material. Also, a heavy bead of mastic must be applied at the base and at the top of the inner corner to seal small openings that will develop from the folding process. If self-adhering flashing is used, no additional sealing is required, unless recommended by the manufacturer.

Flashing Installation of Prefabricated Corners

An alternative to cutting and folding the flashing at the corner is to install a prefabricated flashing corner. Prefabricated corners will totally encapsulate the corner, providing a continuous flashing membrane. If the flashing material is not self-adhering, the prefabricated corner must be thoroughly set in mastic that's compatible with the flashing material. Prefabricated corners provide easy installation and assure flashing continuity (see Figure 6).

An alternative to the cutting and folding process at the inner corner is to install a prefabricated inner corner. These prefabricated corners are similar to oversized prefabricated end dams. Installing a prefabricated inner corner will provide easy installation and assure flashing membrane continuity. If the flashing is not self-adhering, the prefabricated inner corner must be thoroughly set in a bed of mastic that's compatible to the flashing material (see Figure 7).

Conclusion

The details shown here are solutions to common situations that occur in masonry cavity wall construction. The intent is to show one solution for a certain condition, but not to preclude other solutions put forth by the contractor or the architect. Often field conditions demand adjustments be made to details shown on project drawings.

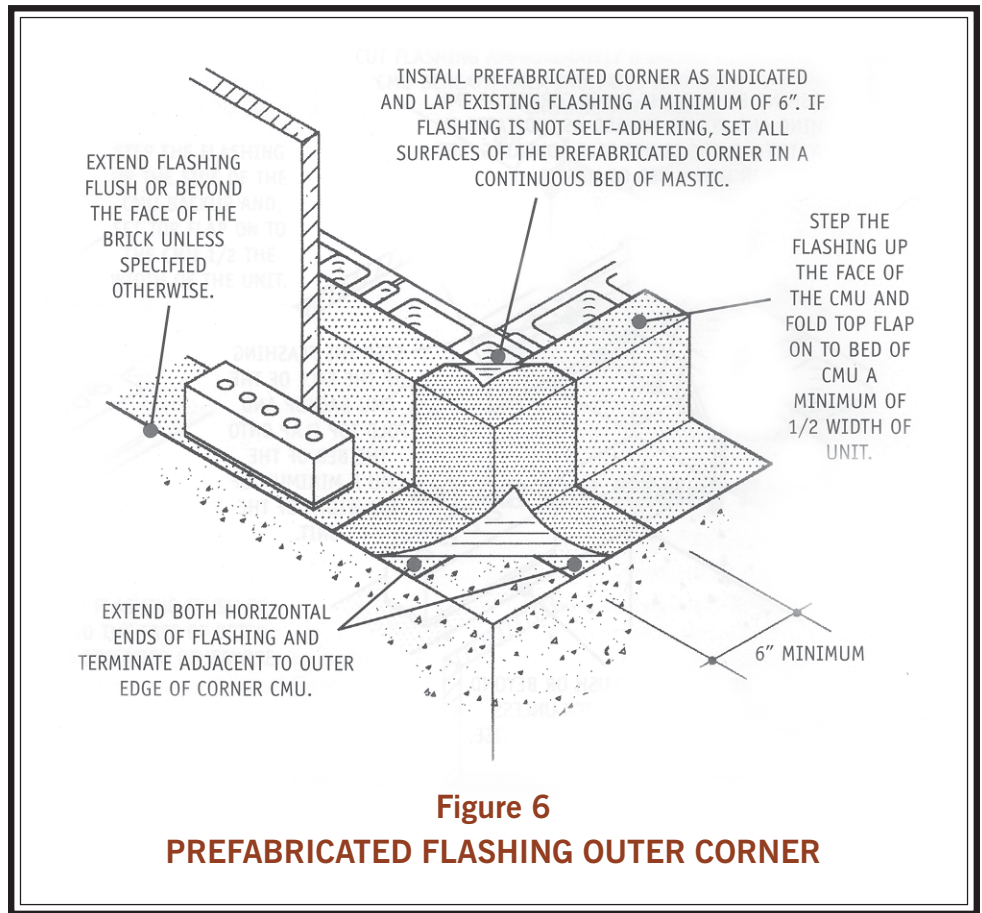


Figure 6
PREFABRICATED FLASHING OUTER CORNER

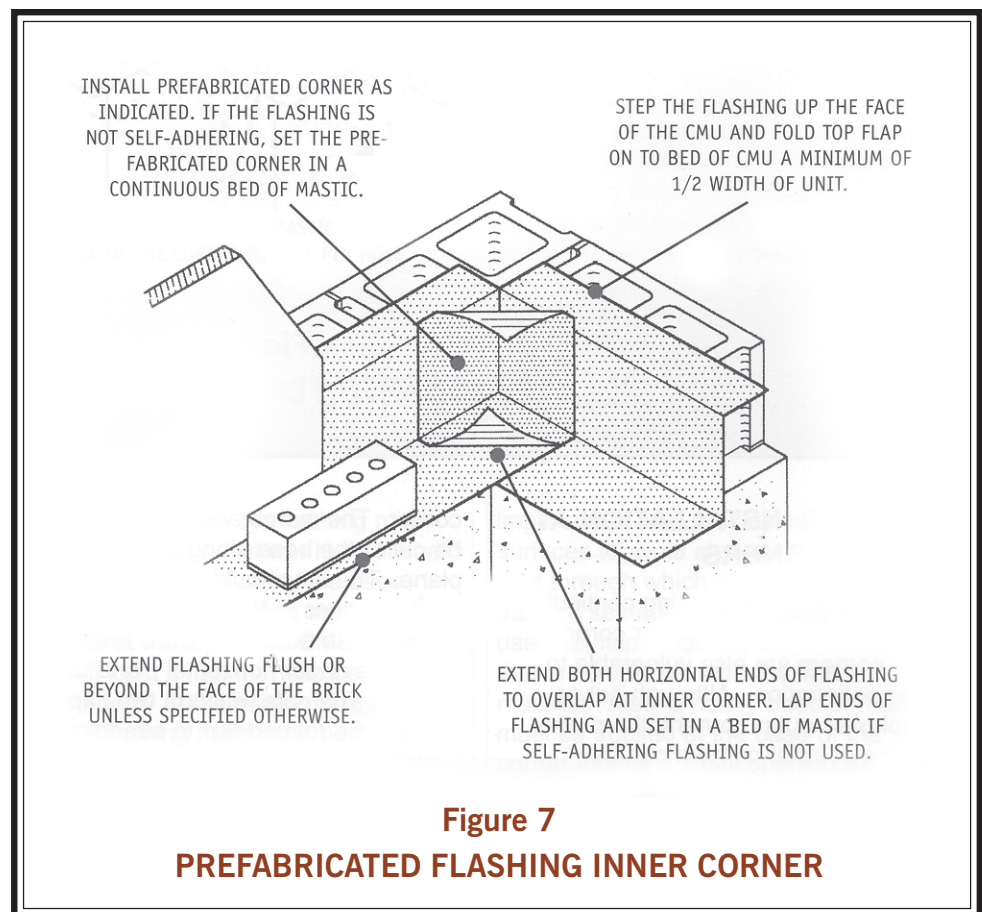


Figure 7
PREFABRICATED FLASHING INNER CORNER

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