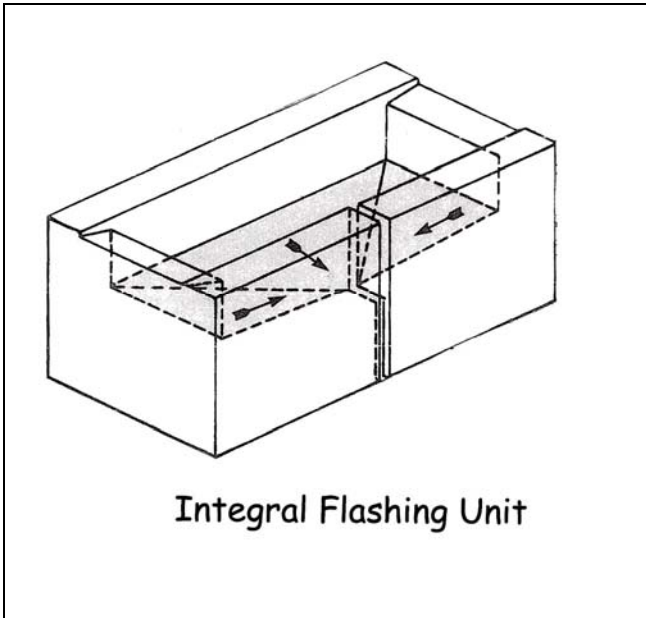


Integral Flashing System

A Simple Solution to Through-Wall Flashing

For years, through-wall flashing of single wythe walls has presented a problem to Architects, Engineers and contractors. Various flashing methods are used today but none effectively address the issues of performance, strength, or aesthetics like the Integral Flashing System. It offers an efficient, cost-effective system that solves the through-wall flashing dilemma without sacrificing anything.

Through wall flashing systems in exterior masonry walls are necessary components in weather resistant building envelope construction. Conventional flashing systems require detailed design and field fabrication, can reduce the flexural strength of a wall, and may not be durable or fully effective.



Integral Flashing Unit

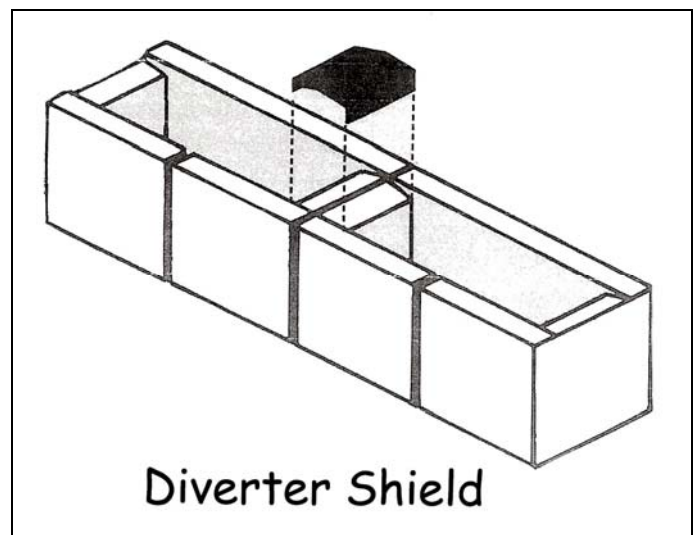
The Integral Flashing System (IFS) is based on a concrete masonry product which is easy to install and provides a durable, positive draining flashing system without compromising the strength of the wall and at lower cost than other flashing products available today.

Water penetrates masonry walls through the mortar that bonds units together and at the interface of the mortar and concrete masonry unit (CMU). Hollow cores of CMU interrupt the inward absorption of water as does the inside edge of the mortar joint at the face shell. Water penetrating the face shell is drawn by gravity downward along the inside surfaces of the CMU. Unless a drainage system has been provided for, moisture will accumulate at the bottom of the wall or at other horizontal obstructions. Here it will either flow outward or inward through the face shell of the CMU. Flashing and weep holes provided at these locations will

allow drainage to the exterior. The Integral Flashing System provides flashing and weep holes in one easy to install operation.

Composed of the Integral Flashing Unit (IFU) and companion rigid PVC Diverter Shield, the Integral Flashing System is designed to intercept and drain moisture out of masonry wall systems. The IFU utilizes a three dimensional outwardly sloping solid base with webs and face shells forming end dams to create a moisture collection void. Moisture which enters the masonry wall above travels downward through the cores of standard units. It is intercepted by the IFS and is directed out of the wall through built in weep slots. Absorption of the IFU is greatly reduced with addition of an integral water repellent admixture during CMU production.

Integral water repellent admixture in both the block and mortar are required in otherwise untreated exterior walls where the Integral Flashing System is specified. The enhanced run-down ability and reduced absorption of CMU treated with integral water repellents increases the effectiveness of the wall's drainage characteristics. Careful coordination of the final wall finishes and water repellent treatments is recommended. Full and properly tooled head and bed joints are required to further minimize water penetration.

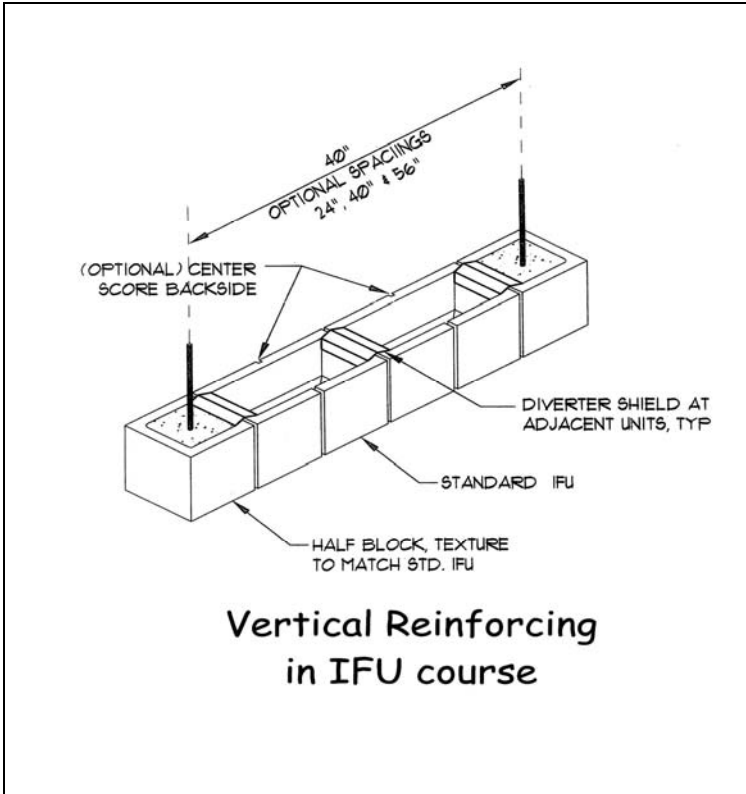


Diverter Shield

The IFU's built-in weep slot is 3/8" wide and runs nearly five inches from the bottom of the drainage cavity to the top of the unit. It is typically extended to the bottom of the unit to achieve the scored CMU appearance. This results in a

weep hole spacing of 16" on center. Weep hole blockage is practically eliminated due to the large area available for cavity drainage. It is recommended that the IFU be filled with washed gravel to keep the weep slot free of mortar accumulation.

Never again will weep holes be omitted from masonry construction when the Integral Flashing System is installed.



Structural continuity of CMU walls is maintained by the IFS. Conventional through wall flashing, to function properly, must completely penetrate both inside and outside face shells. This reduces the bond between adjacent masonry units. The IFU is placed in the wall using face shell bonding as with any typical CMU. Flexural strength of the wall is not compromised with the Integral Flashing System.

Specifications

Provide the Integral Flashing System (IFS) composed of the Integral Flashing Unit (IFU) with integral water repellent in the block mix design and diverter shields. The IFU shall be manufactured by a licensed IFU producer. Units shall conform to the requirements of ASTM C90 and have a minimum net area compressive strength of 2500 psi.

Installation

Unless shown otherwise on the drawings, install the IFU with the solid base down and the weep slot on the exterior face of the wall.

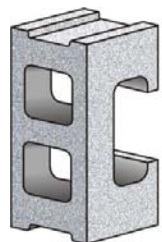
Lay out walls at the flashing elevation as much as possible to a 16" running bond module. Lay up the IFU with full head and bed joints. Tool joints concave and at the IFU weep slot, do not create an obstruction which will impede the free flow of cavity moisture away from the joint. Install the diverter shield across adjacent end webs so that water will shed into the drainage cavity of the IFU.

Vertically reinforced walls are easily accommodated by the Integral Flashing System. Half block manufactured to match the color and texture of the units above and below the IFU course should be used, unless a different color or texture is indicated on the project documents. Install vertical reinforcing at 24", 40" or 56" on center, as the design requires.

Do not cut the IFU to make up odd dimensions. Make up odd block lengths at the jambs of openings or at control joints by cutting a regular CMU and grouting it solid. Cap the grouted unit with a piece of flashing such as Flex-Flash Flashing from Hohmann & Barnard with 1/4" embedment on three sides into the mortar joint and a turned down edge into the IFU drainage cavity.

Do not drill through the base of the IFU or otherwise penetrate the base. Keep IFU weep slots and drainage cavities free of mortar accumulation. Fill the drainage void with washed gravel.

The IFU is available in virtually any architectural style including Split Face, Decro-Face®, Ground Face or Smooth Face.



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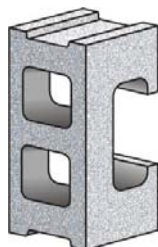
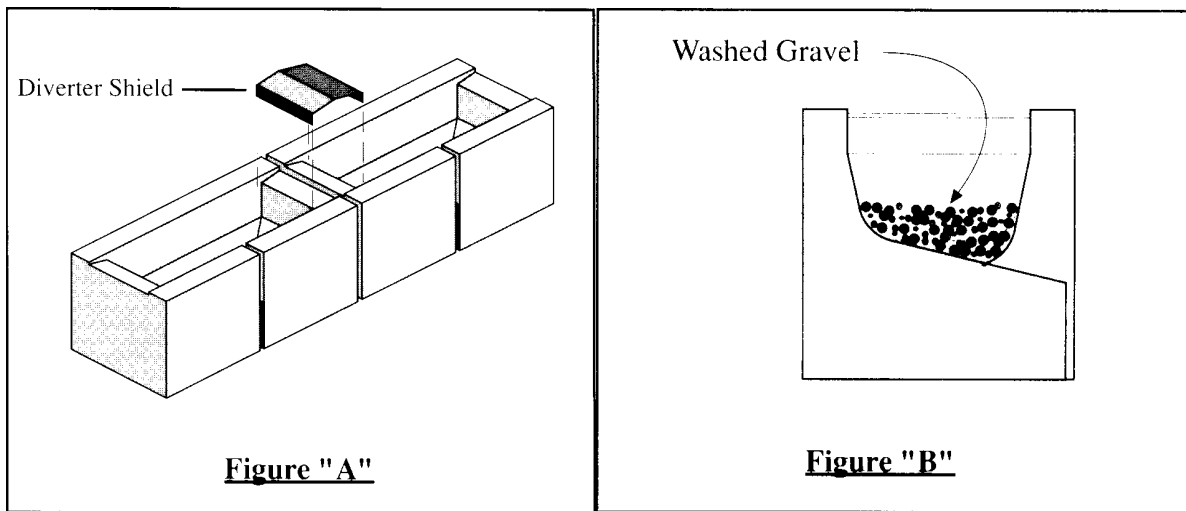
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Integral Flashing Unit Recommended Installation Procedures

- 1.) The Integral Flashing Unit (IFU) is designed to intercept the vertical flow of moisture from within singlewythe masonry walls and channel it back to the exterior. The IFU is intended for above-ground use only.
- 2.) Unless detailed otherwise, install the IFU with the solid base facing downward, and the slotted face on the exterior side of the wall. Install one Diverter Shield at the junction between two IFU's, as shown in Figure "A".
- 3.) The IFU utilizes an integral water repellent admixture and requires the use of an integral water repellent mortar additive in all mortar that comes in contact with the unit. Full and properly-formed head joints are recommended between adjacent units.
- 4.) To minimize the chances of clogging due to mortar droppings, fill the inside of each IFU with a 2" (minimum) layer of washed gravel as shown in Figure "B". Where granular insulation is to be used in portions of the wall above the IFU, fill each IFU completely with washed gravel to prevent insulation from escaping through weep slots.
- 5.) Where vertical reinforcing is required, install a half block and grout the unit.
- 6.) Inspect units prior to use - do not use damaged or cracked IFU's.
- 7.) After installation is complete, inspect weep slot to verify that it is not obstructed with mortar or other debris. Remove obstructions as necessary without damaging the IFU.



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IFU- Integral Flashing Units

Ease of installation, effective use

Effectively using IFU units is a straight forward way to ensure that single wythe exterior masonry walls achieve proper drainage. All single wythe exterior walls should be flashed at minimum at wall base, above doors, windows and openings, and at all interruptions in the vertical planes of the wall; such as sills, watertables, bond beams, etc. IFU's are an efficient way of achieving this.

Single wythe masonry walls have evolved with the needs outlined by building codes and seismic requirements. Whereas a few years ago single wythe CMU walls may have been built with minimal vertical reinforcement, today it is almost inconceivable to imagine a wall designed without it. Providing proper drainage in these situations is certainly achievable, but can, in certain situations, be challenging. Further, with the introduction of high slump grout into these walls, additional moisture is added when 8"-11" slump grout is installed in reinforced vertical cores. Proper drainage minimizes the chances of moisture related staining and freeze thaw damage, making it a priority for installing contractors.

The most challenging task to ensuring effective drainage is installation. Metal and or flexible flashings are an option, but require considerable time to layout. Great care must be used in the cutting and installation at grouted cores. Attention must be paid to the proper termination of the flashings at these areas. The IFU system can simplify the process. We recommend the installation of IFU using the following steps:

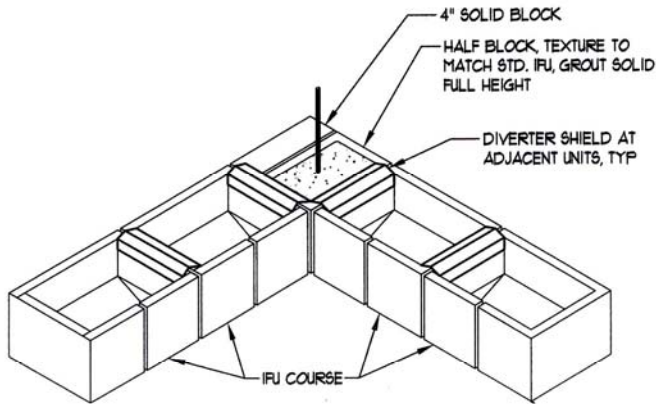
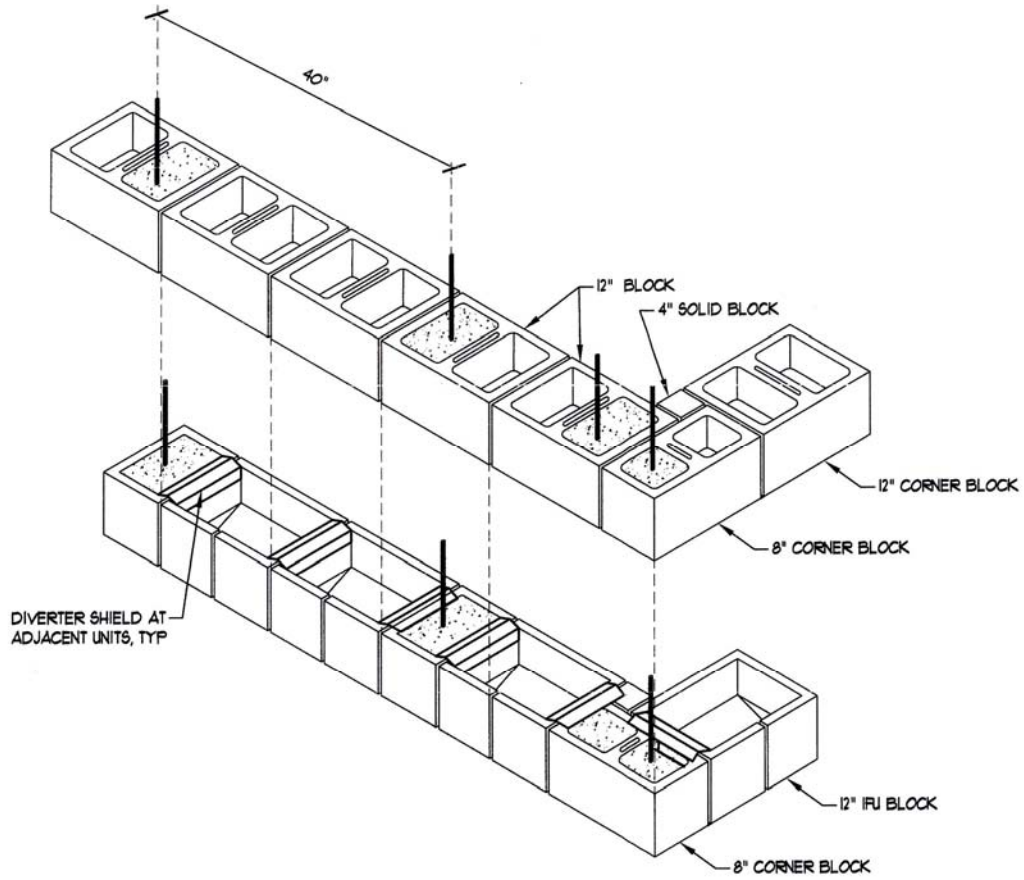
1. Layout masonry at grade and ensure the rebar spacing is in the 24", 40" or 56" O.C. rod spacing; this will ensure that the use of a double corner half will allow continuity of rebar placement.
2. Install IFU at areas where vertical reinforcing is absent. Ensure that diverter shields are installed at head joints between IFU units.
3. At locations of vertical reinforcement, install 8x8x8, 10x8x8 or 12x8x8 half length cored CMU matching the adjacent IFU color and texture. Install diverter shields at head joints between the 8" long CMU and the IFU units. If desired, the 8" long units can contain a cleanout for high-lift grouting.
4. Install drainage in the IFU units prior to installing the second course. Carefully cross web the bed joints at the reinforced cores to ensure core is sealed for grouting.
5. Construct wall and grout using approved methods.

The IFU unit's drainage slot gives the exterior appearance of an 8" x 8" module. Tooling the end joints of the 8" long unit will allow for visual continuity. The IFU units can be scored on the interior face to allow for consistency in appearance at the flashing course.

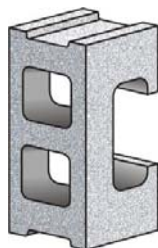


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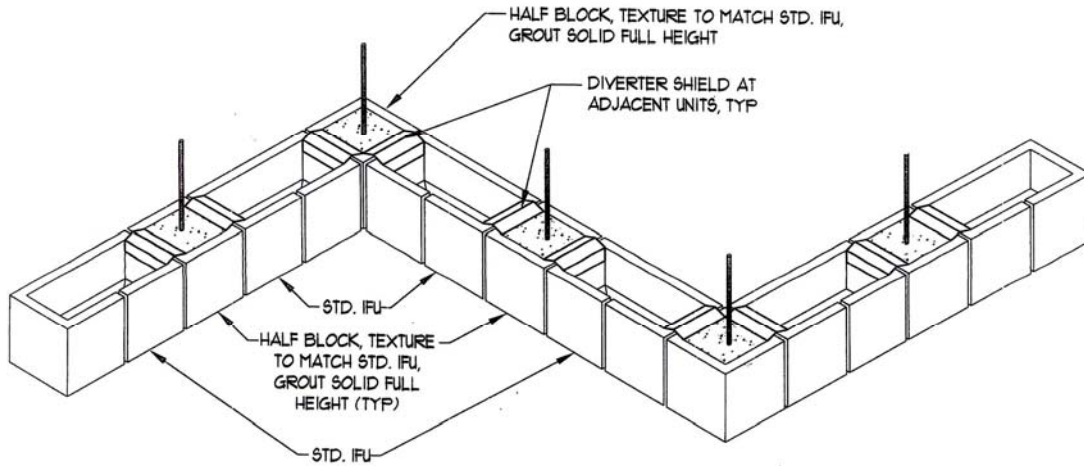
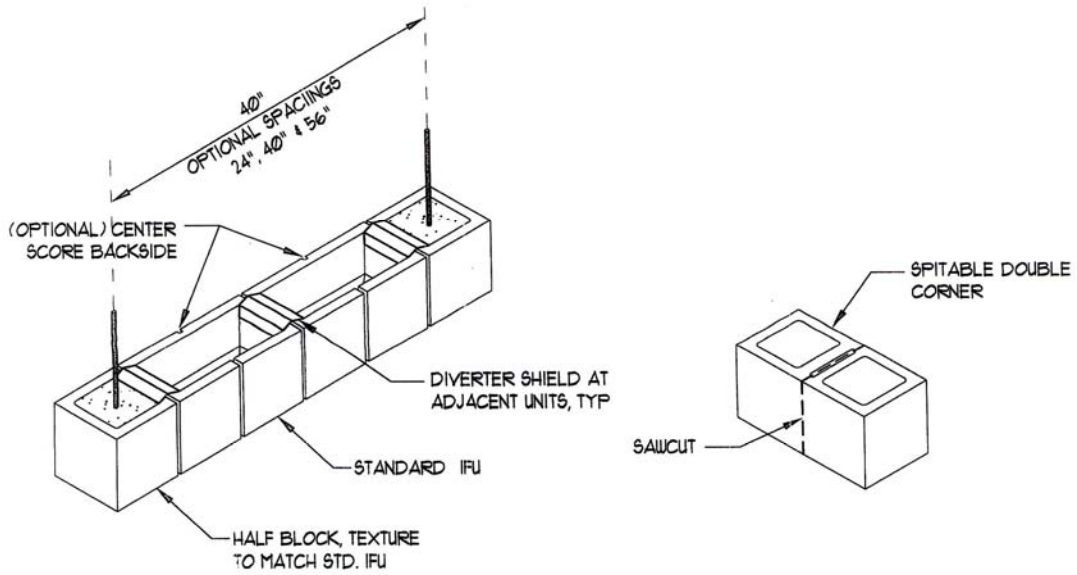
12" Wall Layout with IFU



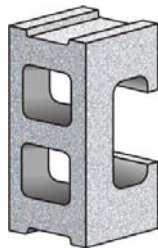
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8" Wall Layout with IFU



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