FLASHINGS FOR WINDOWS AND THE LIKE

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ABSTRACT

A flashing and method for installing a window or other portal in a wall opening is provided. The flashing includes a base member with first and second portions that are angled so that an outer surface of the first portion can be disposed against a sill of the opening and an outer surface of the second portion can be disposed against one of the jambs of the opening. A front face plate of the flashing extends perpendicularly from the first and second portions of the base member, and a plurality of channels in the base member are structured to direct water toward and through the front face plate.
FLASHINGS FOR WINDOWS AND THE LIKE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation-in-part of U.S. application Ser. No. 10/753,135, filed Jan. 7, 2004, which is hereby incorporated herein in its entirety by reference.

FIELD OF THE INVENTION

[0002] This invention relates to the installation of windows or other building members and, more particularly, relates to a flashing for directing water and preventing leakage of the water at a window or other portal.

BACKGROUND OF THE INVENTION

[0003] During a typical installation of a window in a building, a rough opening is first prepared in a wall of the building for receiving the window. The rough opening is defined by two jambs that extend vertically from a head at the top of the rough opening to a sill at the bottom of the opening. A weather resistant barrier material, such as a thin sheet of waterproof paper or plastic can be disposed over the outer surface of the wall, and the barrier material is cut at the rough opening and folded into the opening. The barrier material forms a moisture barrier extending over the outer surface, but due to the cuts in the barrier material does not normally provide a waterproof barrier on the inner surfaces of the rough opening. In particular, the barrier typically defines openings at the intersection of the jambs and the sill. A sill flashing is often installed across the sill. The sill flashing extends outward from the sill onto a portion of the outer surface of the wall and upward from the sill onto a portion of each jamb. Thus, the sill flashing, which is formed of a flexible sheet of material, is cut and bent to correspond to the sill, jambs, and outer wall surface. Typically, two cuts are made in the sill flashing, each cut extending from a respective corner of the sill and the jambs through the portion of the sill flashing that is disposed on the outer surface of the wall. Similarly, flashing can be installed on each of the jambs and the head of the rough opening before the window is secured in the opening.

[0004] The window can be structured to prevent rain or other water contacting the outer surface of the window from flowing to the sill of the rough opening. However, in some cases, the window can leak water to the sill. Water flowing to the sill of the rough opening can sometimes penetrate both the barrier material and the flashing, e.g., through the cuts that are made in the barrier material and the flashing during installation. Thus, the water can flow into the wall, i.e., between the inner and outer surfaces of the wall, causing damage to the wall.

[0005] Thus, there exists a need for a device and method for use in a window or other portal installation for preventing the flow of water to the rough opening in the wall and to the inside of the wall. The device should be compatible with conventional windows and other portals and installation methods. Preferably, the device should be relatively easy to install and economical to manufacture.

SUMMARY OF THE INVENTION

[0006] The present invention provides a corner flashing and method for use in installing a portal, such as a window, in an opening in a wall. The flashing defines channels for directing water out of the wall to an outer or inner surface of the wall, thereby restricting the passage of water into the wall around the portal.

[0007] According to one embodiment of the present invention, the wall is defined by a sill and jambs extending therefrom. The flashing includes a base member with first and second portions. The second portion is disposed at an angle relative to the first portion, such as a right angle, so that an outer surface of the first portion can be disposed against the sill of the opening and an outer surface of the second portion can be disposed against one of the jambs of the opening. The flashing also includes a front face plate that extends generally perpendicularly from the first and second portions of the base member. The first and second portions of the base member define the channels for directing water toward and through the front face plate. For example, the channels can be tapered to define an increased depth at the front face plate. Inner surfaces of the first and second portions of the base member can also have ridges between the channels for defining a surface substantially parallel to the outer surfaces and structured to support the window or other portal. The outer surfaces of the portions opposite the channels can be substantially planar. According to one aspect of the invention, the flashing, which can be made of plastic, is a unitary member. Further, the flashing can be a universal device that is structured to be selectively installed in either of two corners of the opening, i.e., with the outer surface of the first portion of the base member disposed toward either the sill or one of the jambs of the opening.

[0008] The present invention also provides an assembly in an opening of a wall, such as a window assembly, a shower door assembly, other portal assembly, or the like. The assembly includes a wall defining first and second opposite surfaces and an opening therethrough having a sill and jambs with corners at the intersections of the jambs and the sill. Flashings are disposed at the corners of the wall opening, with the channels of the flashings disposed in the base members of the flashings. In some cases, a window is disposed in the wall opening with corners of the window being received by the flashings so that the inner surfaces of the first and second portions of the base member of each flashing are disposed toward the window. Alternatively, a shower door or other portal can be disposed in the wall opening. In either case, the channels of the first portion of each flashing are structured to direct water toward the first surface of the wall and through the front face plate, i.e., typically out of the wall opening such as to the outside surface of an exterior wall in the case of a window assembly or to the inside surface of a wall of a shower stall. The flashings can be substantially similar so that each flashing is configured to be disposed at either of the wall corners.

[0009] In addition, a third flashing can be disposed between the first portions of the first and second flashings. The third flashing can include a base member that is disposed between the first portions of the first and second flashings with an outer surface of the base member disposed toward the sill of the opening. A front face plate of the third flashing extends from the base member of the third flashing in a plane generally perpendicular to the base member of the third flashing and generally parallel to the outer surface of the wall, i.e., generally parallel to and between the front face plates of the first and second flashings at the corners of the
opening. A plurality of channels are disposed in the inner surface of the base member of the third flashing opposite the outer surface of the base member of the third flashing. The channels in the inner surface are structured to direct water out of the wall and through the front face plate of the third member, e.g., to an inside or outside surface of the wall. Thus, the third flashing can prevent water from contacting the sill of the opening between the first and second flashings. A membrane or other scaling material can be disposed over an interface that is defined between the base members of the first and third flashings and between the base members of the second and third flashings to prevent water from flowing through the interfaces.

[0010] A furring strip can be disposed at the lower jamb of the opening. A first portion of each furring strip can be positioned opposite each jamb from the second portion of one of the base members of the first and second flashings. A second portion of each furring strip, that is thicker than the first portion of the strip, can be disposed against the respective jamb above the respective flashing so that the furring defines a substantially planar surface directed away from the respective jambs. In some cases, such as where the assembly is a shower door assembly, the flashings and the furring strips can be covered with tile or other flooring or wall materials. The flashings can be formed of a material to which tile can be adhered, such as by mixing wood fibers in a polymer material to facilitate adherence thereto by grout or other tile adhesive.

[0011] In some embodiments of the flashing and the assembly, the channels of the corner flashings can be configured to direct the water in an angled direction relative to the front face plate. For example, each of the channels can be defined by sidewalls that are not perpendicular to the front face plate. In particular, the sidewall of each channel that is nearest the opposite portion of the base member can be disposed at an angle toward the front face plate and the opposite portion of the base member. More particularly, each channel can be tapered to define an increased width at the front face plate. In this way, when one of the portions of the base member is disposed vertically and the opposite portion is disposed horizontally, such as when one portion is disposed against the jamb of an opening in a wall and the opposite portion is disposed against the sill of the opening, the channels in the vertical portion will tend to drain water toward the front face plate and toward the opposite portion of the base member. That is, water in the channels of the portion disposed against the jamb will tend to flow toward and through the front face plate and thereby be drained out of the opening.

[0012] The first and second portions can also define an angled lead-in edge at the front face plate, e.g., to facilitate the entry of a window of other portal into the opening after the flashing has been disposed therein.

[0013] The configuration of the flashings of the present invention can correspond to the particular configuration of the opening and/or portal with which the flashings are to be used. For example, in the case of an inset opening, such as typically is formed in a wall for forming an inset window configuration, the flashings can correspond to the cross-sectional profile of the opening. In particular, corner and straight flashings of the present invention can define inner base members and outer base members that are joined by an intermediate face plate, and a front face plate can extend from the outer base member. The inner and outer base members are configured to be disposed against the inner and outer sill and/or jambs of the opening. Channels in the inner and outer base members can be structured to direct water outward through the front face plate, e.g., to an outer surface of the wall.

[0014] Additionally, the present invention provides a method of installing a window, shower door, or other portal in a wall opening. The method includes disposing first and second flashings at the corners of the wall opening and disposing a window, shower door, or other portal in the opening. The window or other portal has first and second corners that are received by the flashings so that the inner surfaces of the base members of each flashing are disposed toward the window or other portal. Channels in the first portion of each flashing are structured to direct water through the front face plate and toward a first surface of the wall, such as an outer surface of the wall in the case of a window assembly or an inner surface in the case of a shower door assembly. A laminar moisture barrier sheet can also be disposed against the outer surface of the wall, and each of the flashings can be disposed partially between the sheet and the wall and partially opposite the sheet from the wall.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The foregoing and other advantages and features of the invention, and the manner in which the same are accomplished, will become more readily apparent upon consideration of the following detailed description of the invention taken in conjunction with the accompanying drawings, which illustrate preferred and exemplary embodiments, but which are not necessarily drawn to scale, wherein:

[0016] FIG. 1 is a perspective view illustrating a corner flashing according to one embodiment of the present invention;

[0017] FIG. 2 is a section view illustrating the flashing of FIG. 1, as seen along line 2-2 of FIG. 1;

[0018] FIG. 3 is a section view illustrating the flashing of FIG. 1, as seen along line 3-3 of FIG. 1;

[0019] FIG. 4 is a section view illustrating the flashing of FIG. 1, as seen along line 4-4 of FIG. 3;

[0020] FIG. 5 is a perspective view illustrating two of the flashings of FIG. 1 installed in a wall opening during construction of a wall assembly according to one embodiment of the present invention;

[0021] FIG. 6 is a partial view of FIG. 5 illustrating one of the installed flashings;

[0022] FIG. 7 is a perspective view of a window assembly according to one embodiment of the present invention;

[0023] FIG. 8 is a partial section view of the window assembly of FIG. 7, as seen along line 8-8 of FIG. 7;

[0024] FIG. 9 is a perspective view illustrating a corner flashing according to another embodiment of the present invention, having channels of tapering width;

[0025] FIG. 10 is a section view illustrating the flashing of FIG. 9, as seen along line 10-10 of FIG. 9;
FIG. 11 is a perspective view illustrating two of the corner flashings of FIG. 9 installed in a wall opening during construction of a wall assembly according to one embodiment of the present invention, before a third straight flashing is installed;

FIG. 12 is a section view illustrating the third flashing of FIG. 9 as generally seen along line 12-12 of FIG. 11 after the third flashing is installed against the sill of the wall opening;

FIG. 13 is a perspective view illustrating an inset corner flashing according to another embodiment of the present invention, installed in an inset wall opening;

FIG. 14 is a perspective view illustrating a straight sill flashing, such as for use with the inset corner flashing of FIG. 13; and

FIG. 15 is a perspective view illustrating two of the flashings of FIG. 9 installed in a wall opening during construction of a wall assembly for a shower stall according to one embodiment of the present invention, before a third straight flashing is installed.

DETAILED DESCRIPTION OF THE INVENTION

The present invention now will be described more fully hereinafter with reference to the accompanying drawings, in which preferred embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Like numbers refer to like elements throughout.

Referring to the drawings and, in particular, to FIG. 1, there is shown a corner flashing 10 according to one embodiment of the present invention. The corner flashing 10 is structured to be installed in a wall opening 50 in connection with the installation of a window 60 (FIG. 5) or other portal in the opening 50 so that the flashing 10 directs water out of the opening 50, e.g., to the outside of a building. Accordingly, the flashing 10 is preferably formed of a waterproof material. For example, the flashing 10 can be formed of a variety of materials including polymers, metals, and the like. In one advantageous embodiment of the invention, the flashing 10 is formed as a unitary member of plastic, such as polypropylene, polyethylene, polystyrene, or polyvinyl chloride (PVC). For example, the flashing 10 can be formed by a conventional injection molding operation using one or more dies that cooperatively define a die cavity corresponding to the configuration of the flashing 10 so as to form the flashing as a unitary, relatively rigid, molded plastic member.

As shown in FIG. 1, the flashing 10 includes an L-shaped base member 12 and a front face plate 14. The base member 12 has substantially perpendicular first and second portions 20, 30, and the front face plate 14 extends in a plane that is generally perpendicular to both of the portions 20, 30 of the base member 12. Thus, as shown in FIG. 6, the flashing 10 can be installed in the opening 50 of a wall 52 so that the base member 12 is disposed against a sill 54 and jamb 56 of the wall 52 and the front face plate 14 is disposed against an outer surface 58 of the wall 52. In particular, outer surfaces 22, 32 of the first and second portions 20, 30 can be disposed against the sill 54 and jamb 56 of the wall 52 so that opposite inner surfaces 24, 34 of the base member portions 20, 30 are configured to receive corners 62 of the window 60.

The inner surfaces 24, 34 of the base member 12 define channels 26, 36 that extend to the front face plate 14 so that water received on the inner surfaces 24, 34 is directed by the channels 26, 36 through the front face plate 14. As shown in FIGS. 1 and 3, the channels 26, 36 are substantially parallel to each other and perpendicular to the front face plate 14, but in other embodiments of the invention, the channels 26, 36 can be angled relative to the front face plate 14. In either case, the channels 26, 36 preferably do not extend through the end edge 16 of the base member 12 opposite the front face plate 14. Further, as shown in FIG. 2, the channels 26, 36 are tapered in a direction away from the front face plate 14, i.e., each channel 26, 36 defines an increased depth at the front face plate 14. Thus, water in the channels 26, 36 generally flows toward the front face plate 14 and exits the channels 26, 36 through the front face plate 14. For example, each channel 26, 36 can define a maximum depth at the front face plate 14 and a minimum depth at the end of the channel 26, 36 distal to the front face plate 14. The minimum depth of each channel 26, 36 can be zero, such that the channel 26, 36 tapers from its maximum depth at the front face 14 plate to the same level as the top of ridges 28, 38 between the channels 26, 36. Alternatively, each channel 26, 36 can have a minimum depth that is greater than zero, e.g., so that the entire channel 26, 36 is deeper than the ridges 28, 38 and each channel 26, 36 defines a back dam distal to the front face plate 14 that prevents water from flowing toward the end edge 16.

The channels 26, 36 are separated by the ridges 28, 38 therebetween. The ridges 28, 38 of each portion 20, 30 of the base member 12 define a support surface, which can be substantially parallel to the outer surface 22, 32 of the respective portion of the base member 12. That is, the support surface formed by the ridges 28 of the first portion 20 can be substantially parallel to the outer surface 22 of the first portion 20, and the support surface formed by the ridges 38 of the second portion 30 can be substantially parallel to the outer surface 32 of the second portion 30. Thus, when the outer surfaces 22, 32 of the portions 20, 30 are disposed against the sill 54 and jamb 56 of the wall opening 50, the ridges 28, 38 define support surfaces that are parallel to the sill and jamb 54, 56, respectively. The ridges 28, 38 can be uniform or non-uniform in width, e.g., so that each ridge 28, 38 is increasingly narrower in a direction away from the channels 26, 36. Thus, the tops of the ridges 28, 38, which define the support surface, can be relatively small in area to minimize the likelihood of water resting on the ridges 28, 38. In addition, the height of each ridge 28, 38 relative to the respective outer surfaces 22, 32 can be nonuniform along the length of each ridge. For example, each ridge 28, 38 can define a decreased height nearest the front face plate 14.

As shown in FIG. 5, the flashings 10 can be installed in each of the lower corners of the opening 50 in the wall 52. When used in connection with the installation of a typical rectangular window 60 in an upright configuration, the first portion 20 of each base member 12 is disposed horizontally against the sill 54 of the wall 52 and the second
portion 30 is disposed vertically against one of the jambs 56 of the wall 52. The inner surfaces 24 of the first portions 20 of the base members 12 thereby define a horizontal support surface for receiving and supporting the bottom of the window 60, and the inner surfaces 34 of the second portions 30 define vertical support surfaces for the sides of the window 60.

[0037] As is known in the art, the outer surface 58 of the wall 52 can be covered by a laminar sheet 40 of a moisture barrier material, and the sheet 40 can be folded into the opening 50 before the window 60 is installed. According to the present invention, the sheet 40 can be cut as indicated by reference numeral 42 in FIG. 6, so that part of the upright second portion 30 of the base member 12 and the front face plate 14 are inserted between the sheet 40 and the wall 52, while the rest of the flashing 10 is disposed opposite the sheet 40 from the wall 52. Thus, water flowing downward along the sheet 40 tends to flow onto the front face plate 14 or onto the inner surfaces 24, 34 of the base member 12 so that the channels 26, 36 thereby direct the water through the front face plate 14. The lower portion of the flashing 10 is disposed outside the sheet 40 of barrier material, i.e., with the sheet between the flashing 10 and the wall 52, so that water flowing downward from the flashing 10 is directed outside the sheet 40. Advantageously, the flashing 10 can cover any cuts or holes in the sheet 40 at the corner of the opening 50, e.g., cuts made to facilitate the folding of the sheet 40 into the opening 50 or cuts or holes resulting from wear.

[0038] FIGS. 7 and 8 illustrate a window assembly 80 in which the flashings 10 and window 60 are installed in the opening 50 of the wall 52. The wall 52 typically includes inner and outer wall members 82, 84 supported by framing members 86. For example, the inner wall member 82 can be formed of sheetrock plasterboard and the outer wall member 84 can be formed of sheets of plywood, both of which are nailed to and supported by an internal structure of the framing members 86 such as wooden beams. The laminar sheet of barrier material 40 can be provided on the outer surface 58 of the wall 52 and the sill 54. The flashings 10 are installed at each of the two lower corners of the wall opening 50 with the base member 12 of each flashing 10 adjacent to the corner so that the first portion 20 at least partially covers the sill 54 and the second portion 30 of the base member 12 at least partially covers the jambs 56. The front face plate 14 of each flashing 10 is disposed adjacent to the outer surface 58 of the wall 52, and nails 88 or other fasteners can be used to connect the flashings 10 to the wall 52. Siding 90 or other materials can then be disposed on the outer surface 58 of the wall 52, e.g., opposite the sheet 40 from the wall 52, so that the siding 90 covers the front face plate 14 and the wall 52 around the opening 50. For example, the siding 90 can be vinyl or aluminum siding strips, wood shingles, stucco, bricks, and the like.

[0039] Windows 60 having any of various configurations can be installed in the wall opening 50 according to the present invention. For example, as shown in FIG. 8, the window 60 includes a frame 64 having a bottom frame member, or sill member 66, that supports a sash 68. One or more glass panes 70 of the window 60 are supported by the sash 68, which fits within the frame 64 of the window. The frame 64 also can support a screen 72 and/or additional glass panes. An inner frame 74 can be provided on the inner wall member 82 to cover an interface between the inner wall member 82 and the window 60, thereby restricting air from passing between the two members 82, 60 and improving the aesthetic appeal of the window assembly 80. A windbreak 76 can also be disposed between the wall 52 and the window frame 64, e.g., proximate to the outer wall member 84, to restrict the passage of air between the window opening 50 and the window frame 64.

[0040] The frame 64, which can be formed of wood, wood composites, polymer coated wood, and the like, can be at least partially supported by the base members 12 of the flashings 10. For example, the sill member 66 of the frame 64 can be supported by the ridges 28 of the first portions 20 of the base members 12. The sill member 66 can also be disposed at an angle relative to the support surface defined by the ridges 28 so that water on the sill member 66 tends to drain outward toward the outer surface 58 of the wall 52. In any case, the channels 26 preferably are directed toward the outer surface 58 of the wall 52 and are not obstructed by the window 60 supported by the ridges 28 so that water received on the first portion 20 of the base member 12 of each flashing 10 is directed toward the outer surface 58 of the wall 52 by the channels 26. Thus, water is prevented from flowing onto the inner wall member 82, the framing members 86, or the outer wall member 84, e.g., through cuts in the barrier material sheet 40 at the corners of the wall opening 50.

[0041] Each flashing 10 can be formed with the channels 26 defined by only the first portion 20 of the base member 12, the second portion 30 of the base member 12 being devoid of the channels 36, i.e., so that the channels 26 are disposed under the window 60 when installed but not between the window 60 and the jambs 56 of the opening 50. Preferably, however, the channels 26, 36 are defined by both the first and second portions 20, 30 of the base member 12 of the flashing 10. Further, each flashing 10 is preferably formed as a universal device that can be disposed in either corner of the wall opening 50, i.e., with the first portion 20 of the base member 12 disposed adjacent the sill 54 of the wall opening 50 and the second portion 30 adjacent the jamb 56 of the opening 50, or with the first portion 20 adjacent the jamb 56 of the opening 50 and the second portion 30 adjacent the sill 54. Thus, the flashing 10 can be structured with a single configuration that can be used in either of the corners of the window assembly 80.

[0042] According to another embodiment of the present invention, each of the channels 26, 36 can be angled or tapered to direct water from the opening 50 in which the flashing is disposed. In this regard, FIGS. 9 and 10 illustrate a corner flashing 10u structured to be disposed in a corner of an opening, similar to the embodiment of the flashing 10 that is shown in FIG. 1. However, as shown in FIGS. 9 and 10, the channels 26, 36 of the corner flashing 10u are configured to direct the water in an angled direction relative to the front face plate 14. In particular, each of the channels 26, 36 can be defined by sidewalls 27a, 27b, 37a, 37b that are not perpendicular to the front face plate 14. More particularly, a first sidewalk 27a, 37a of each channel 26, 36, which is nearest the opposite portion 20, 30 of the base member 12, is disposed to direct water in a direction that is angled toward the front face plate 14 and the opposite portion 20, 30 of the base member 12. That is, each channel 26 in the first portion 20 of the base member 12 has a first sidewalk
that directs water in a direction toward the front face plate 14 and the second portion 30 of the base member 12.

Similarly, each channel 36 in the second portion 30 of the base member 12 has a first sidewall 37a that directs water in a direction toward the front face plate 14 and the first portion 20 of the base member 12. The second sidewall 27b, 37b of each channel 26, 36 can be parallel to the first sidewall 27a, 37a, or the second sidewall 27b, 37b can be disposed at an angle relative to the first sidewall 27a, 37a.

For example, as shown in FIGS. 10, 12, the second portion 27b, 37b, 37b of each channel 26, 36 diverge in the direction of the front face plate 14. That is, each channel 26, 36 is tapered to define an increased width at the front face plate 14. In this way, when one of the portions 20, 30 of the base member 12 is disposed vertically and the opposite portion 30, 30 is disposed horizontally, as shown in FIG. 9, such as when the first portion 20 is disposed against the sill 54 of an opening 50 in a wall 52 and the second portion 30 is disposed against the jamb 56 of the opening 50, the channels 36 in the vertical portion 30 will tend to drain water toward the front face plate 14 and also toward the horizontal portion 20 of the base member 12, i.e., downward. That is, water in the channels 36 of the vertical portion 30 disposed against the jamb 56 will tend to flow by gravity toward and through the front face plate 14 and thereby be drained out of the opening 50.

In addition, the first and second portions 20, 30 of the base member 12 also define an angled lead-in edge 13 at the front face plate 14, e.g., to facilitate the entry of the window 60 of other portal into the opening 50 after the flashing(s) 10a have been disposed therein. For example, the angled lead-in edge 13 can be defined by a surface that is disposed at about a 45° angle relative to both the front face plate 14 and the top surface of the ridges 28, 38.

The flashing 100 can be formed in various lengths, according to the size of the opening 50. Further, the flashing 100 can be readily cut or otherwise trimmed to size so that the flashing 100 extends between the corner flashings 10a. Each end of the flashing 100 typically defines an interface 130 with one of the corner flashings 10a, and the interfaces 130, can be covered or otherwise sealed with a sealant material 132. For example, as illustrated in FIG. 11, the sealant material 132 can be a membrane such as a strip of tape that is to be disposed over each interface 130. Alternatively, each interface 130 can be sealed with caulk or other sealant. In either case, the sealant material 132 can prevent water from flowing through the interfaces 130. Before or after the window 60 or other portal is disposed, siding 90 or other materials are typically disposed on the outer surface 58 of the wall 52, e.g., opposite the sheet 40 from the wall 52, so that the siding 90 covers the front face plate 14 and the wall 52 around the opening 50, i.e., as shown in FIG. 8.

FIG. 13 illustrates a corner flashing 200 according to another embodiment of the present invention, which can be used for an inset window or other inset portal. The corner flashing 200 is typically installed in an inset opening that defines inner and outer sills 54a, 54b and inner and outer jambs 56a, 56b. In a conventional inset window assembly, the inner sill and jambs 54a, 56a typically receive a window 60 or other portal such that the window 60 or other portal is recessed into the wall 52 from the outer surface 58 thereof. The outer sill and jambs 54b, 56b are typically covered with siding, shingles, stucco, bricks, tiles, or the like. According to the present invention, the flashing 200 includes an inner base member 202 with first and second angled portions 204, 206 similar to the base members 12 of the corner flashings 10, 10a described above. An intermediate face plate 208 extends from the first and second portions 204, 206 of the inner base member 202 in a plane generally perpendicular to the first and second portions 204, 206 of the inner base member 202. An outer base member 210 with first and second angled portions 212, 214 extends from the intermediate face plate 208, and a front face plate 216 extends from the first and second portions 212, 214 of the outer base member 210 in a plane generally perpendicular to the outer base member 210. Thus, as shown in FIG. 13, the inner base member 202 can be disposed against the inner sill and jambs 54a, 56a, the outer base member 210 can be disposed against the outer sill and jamb 54b, 56b, and the front face plate 216 can be disposed against the outer surface 58 of the wall 52 around the opening 50. Channels 220 are disposed in the first and second portions 204, 206 of the inner base member 202 to direct water toward and through the intermediate face plate 208, and channels 222 are disposed in the first and second portions 212, 214 of the outer base member 210 to direct water toward and through the front face plate 216. The channels 220, 222, which are defined between ridges 224, 226, can be tapered or otherwise angled, e.g., to define increasing width and depth in a direction toward the front face plate 216. For example, as described above in connection with the corner flashings 10, 10a, the channels 220, 222 of the flashing 200 can define sidewalls that are not perpendicular to the front face plate 216 and/or the depth of each of the channels 220, 222 can be nonuniform along its length.

Each ridge 224, 226 on the inner and outer base members
202, 120 can define an angled lead-in edge 213 to facilitate the insertion of the window 60 or other portal.  

[0047] The window 60 or other portal can be disposed against the inner base member 202, i.e., against the ridges 224. The outer base member 210, as well as the intermediate face plate 208 and the outer face plate 216, can be covered with siding, shingles, stucco, bricks, tiles, or the like. Thus, any water that is disposed on the base members 202, 210, e.g., water that leaks through the bottom of the window 60 or water that flows through the siding or other materials on the outer base member 210, is directed toward the outer surface 58 of the wall 52 and out of the opening 50. As described above in connection with the flashings 10, the flashing 200 can be structured as a universal member, i.e., a member which can be configured in different orientations with either of the portions 204, 206, 212, 214 of the base members 202, 210 disposed against either a sill or a jamb.  

[0048] FIG. 14 illustrates a straight flashing 240, which can be used as a third flashing in an assembly with two of the corner flashings 200. For example, the straight flashing 240 can be disposed against the inner and outer sills 54a, 54b between two of the corner flashings 200, similar to the configuration of the straight flashing 100 described above in connection with FIGS. 11 and 12. The straight flashing 240 defines a cross-sectional shape that is similar to that of the corner flashings 200. That is, the straight flashing 240 includes inner and outer base members 242, 244, each of which defines channels 246, 248 that are separated by ridges 250, 252. A perpendicular intermediate face plate 254 extends between the inner and outer base members 242, 244, and a front face plate 256 extends from the outer base member 244. The inner base member 242 can be disposed between the first portions 204 of the inner base members 202 of two corner flashings 200, with the intermediate face plate 254 between the intermediate faceplates 208 of the corner flashings 200, the outer base member 244 disposed between the outer base members 210 of the corner flashings 200, and the front face plate 254 between the front face plates 216 of the corner flashings 200. The straight flashing 240 can be trimmed to length and sealed with the corner flashings 200, as described in connection with the straight flashing 100 of FIG. 11.  

[0049] The flashings of the present invention can be used in connection with the installation of various portals, such as windows, doors, doorways, and the like. In one particular embodiment of the present invention, the flashings are installed in an opening of a shower stall. In this regard, FIG. 15 illustrates an opening 50 that defines the inside 51a of the shower stall on one side and the outside 51b of the shower stall on the opposite side of the opening 50. Two of the corner flashings 10a and one straight flashing 100 are installed to form an assembly similar to that shown in FIG. 11. However, while the flashings 10a, 100 are typically configured to direct water to the outer surface 58 of a wall 52 surrounding a window 60, the flashings 10a, 100 of the embodiment of FIG. 11 are instead used to direct water toward the inside 51a of the shower stall. The corner flashings 10a are installed as described above with the base members 12 disposed at the corners of the sill 54 and jambs 56. For illustrative clarity, the straight flange 100 is shown before installation against the sill 54, and it is understood that the straight flange 100 can extend between the two corner flashings 10a, with tape or other sealant material 132 disposed at the interfaces 130 of the straight flange 100 and each corner flange 10a. In addition, furring strips 260 are shown in installed and uninstalled configurations. Each furring strip 260 defines first and second portions 262, 264 of dissimilar thickness. The first portion 262 is disposed opposite a respective one of the jambs 56 from the second portion 30 of the base member 12 of one of the corner flashings 10a. The second portion 264 of each furring strip 260 is disposed against the respective jamb 56 above the corner flashing 10a. The second portion 264 can be thicker than the first portion 262 so that each furring strip 260 defines a substantially planar surface 266 directed away from the respective jamb 56. That is, the thickness of the second portion 264 can be about equal to the thickness of the combination of the first portion 262 and the base member 12 of the corner flashing 10a. Further, the thickness of the second portion 264 can be equal to the thickness of a wall lining material 270, such as drywall, that is to be installed against the jambs 56 of the opening 50 above the furring strips 260. For example, the second portion 264 can be about ¼ inch thick so that each furring strip 260 adapts the thickness of the corner flashing 10a to a standard thickness of the drywall or other wall material 270.  

[0050] The furring strips 260 can then be covered with tile or other flooring or wall surfacing materials. Tile or other surfacing materials are also typically disposed over sill 54 of the opening, i.e., over the straight flashing 100 and the portion 20 of the base member 12 of each corner flashing 10a that is disposed against the sill 54. For example, grout or other adhesive materials can be disposed between the tile and the flashings 10a, 100. It is appreciated that the grout or other adhesive may partially fill the channels 26, 126 but the channels 26, 126 can remain at least partially unobstructed. Further, even if some or all of the channels 26, 126 are obstructed by the grout, it is appreciated that the channels 26, 126 can continue to operate as draining devices by virtue of the permeability of the grout. That is, if grout in the channels 26, 126 absorbs water, the water can be directed into the inside 51a of the shower stall through the channels 26, 126. Alternatively, a layer of backing board can be provided over the flashings 100, 10a so that the backing board is disposed between the wall and the tiles or other floor or wall surfacing materials. The backing board can be a cement board, drywall, or the like. In any case, the floor and lower portions of the walls in a shower stall are typically lined with a waterproof membrane, and the waterproof membrane can be cut and folded at the opening 50, generally similar to the configuration of the moisture barrier sheet 40 described above in connection with FIG. 6. It is appreciated that such a waterproof membrane can be used in combination with the flashings 10a, 100 of the present invention. The flashings 10a, 100, can be disposed over the waterproof membrane so that water directed by the flashings 10a, 100 flows above the membrane and into the shower stall, where the water can be received by a drain.  

[0051] In some cases, the various flashings of the present invention can be formed of materials that are especially suited for the particular application for which the flashings are to be used. For example, if the flashings are to be used in an application in which grout and/or tiles are to be disposed directly against the flashings, such as in the shower assembly of FIG. 15, the flashings can be formed of a material to which grout or other adhesives can easily be adhered. In some cases, the flashings can be formed of a
polymer, such as polystyrene, to which various grouts, adhesives, and the like can be adhered. Alternatively, the various flashings of the present invention can be formed of a polymer or other moldable material in which fibers are disposed. For example, wood fibers can be included in the polymer material of the flashings to increase the adherence between the flashings and grout or other adhesives.

Many modifications and other embodiments of the invention will come to mind to one skilled in the art to which this invention pertains having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is to be understood that the invention is not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation.

That which is claimed:

1. A flashing for use in a portal installation in an opening defined by a sill and jambs extending therefrom, the flashing comprising:

   a base member having first and second portions, the second portion being disposed at an angle relative to the first portion such that an outer surface of the first portion is configured to be disposed against the sill of the opening and an outer surface of the second portion is configured to be disposed against one of the jambs of the opening;

   a front face plate extending from each of the first and second portions of the base member in a plane generally perpendicular to the first and second portions; and

   a first plurality of channels disposed in the first portion of the base member to direct water toward and through the front face plate and a second plurality of channels disposed in the second portion of the base member to direct water toward and through the front face plate, wherein each channel is at least partially defined by a sidewall that is angled toward the front face plate and the opposite portion of the base member, such that each channel is configured to direct water in a downward direction toward the front face plate.

2. A flashing according to claim 1 wherein each channel tapers to define an increased width at the front face plate, the width of the channels being defined in a direction parallel to the first and second portions and substantially parallel to the front face plate.

3. A flashing according to claim 1 wherein each of the first and second portions defines an angled lead-in edge at the front face plate.

4. A flashing according to claim 1 wherein each channel is tapered to define an increased depth at the front face plate.

5. A flashing according to claim 1 wherein the flashing is formed of a unitary molded plastic member.

6. A flashing according to claim 1 wherein the flashing is formed of plastic with fibers disposed therein.

7. A flashing according to claim 1 wherein the flashing is structured to be configured with the outer surface of the first portion of the base member disposed toward one of the jambs of the opening and the outer surface of the second portion disposed toward the sill of the opening such that the flashing can be selectively installed in either of two corners of the opening.

8. A flashing assembly in an opening extending between first and second surfaces of a wall, the flashing assembly comprising:

   a wall defining first and second opposite surfaces and a wall opening therebetween, the wall opening being at least partially defined by a sill and jambs extending from the sill, and the wall opening defining first and second corners at intersections of the jambs and the sill;

   first and second flashings disposed at the corners of the wall opening, each flashing comprising:

   a base member having first and second portions, each of the first and second portions defining an outer surface and an opposite inner surface, the outer surface of the first portion being disposed toward the sill of the opening, the outer surface of the second portion being disposed toward one of the jambs of the opening, and the inner surfaces defining a corner of the flashing; and

   a plurality of channels disposed in the first and second portions of the base member;

   wherein each channel in the second portion of the base member is at least partially defined by a sidewall that is angled toward the front face plate and the first portion of the base member, such that each channel is configured to direct water in a downward direction toward the first surface of the wall and through the front face plate.

9. A flashing assembly according to claim 8 wherein each channel tapers to define an increased width at the front face plate, the width of the channels being parallel to the front face plate.

10. A flashing assembly according to claim 8 wherein the first and second portions of each flashing define an angled lead-in edge at the front face plate.

11. A flashing assembly according to claim 8, further comprising a third flashing disposed between the first portions of the first and second flashings, the third flashing comprising:

   a base member being disposed between the first portions of the first and second flashings, the base member of the third flashing defining an outer surface disposed toward the sill of the opening and an inner surface opposite the outer surface;

   a front face plate extending from the base member of the third flashing in a plane generally perpendicular to the base member of the third flashing and generally parallel to the first surface of the wall; and

   a plurality of channels disposed in the inner surface of the base member of the third flashing, such that the channels of the third flashing are structured to direct water toward the first surface of the wall and through the front face plate.
12. A flashing assembly according to claim 11, further comprising a sealant disposed at an interface defined between the base members of the first and third flashings and an interface defined between the base members of the second and third flashings, the sealant thereby preventing water from flowing through the interfaces.

13. A flashing assembly according to claim 8 wherein each channel of each flashing is tapered to define an increased depth at the front face plate.

14. A flashing assembly according to claim 8 wherein each flashing is formed of plastic with fibers disposed therein.

15. A flashing assembly according to claim 8 wherein each flashing is a unitary member formed of molded plastic.

16. A flashing assembly according to claim 8 wherein each of the flashings is substantially similar such that each flashing is configured to be disposed at each of the corners of the wall opening.

17. A flashing assembly according to claim 8 further comprising first and second furring strips, each furring strip defining first and second portions, the first portion of each furring strip being disposed opposite a respective one of the jams from the second portion of the base member of a respective one of the flashings, and the second portion of each furring strip being disposed against the respective jamb above the respective flashing, the second portion of each furring strip being thicker than the first portion such that each furring strip defines a substantially planar surface directed away from the respective jamb.

18. A flashing for use in an inset portal installation in an opening defined by an inner sill and inner jambs extending therefrom and an outer sill and outer jambs extending therefrom, the flashing comprising:

   an inner base member having first and second portions, the second portion being disposed at an angle relative to the first portion such that an outer surface of the first portion is configured to be disposed against the inner sill of the opening and an outer surface of the second portion is configured to be disposed against one of the inner jambs of the opening;

   an intermediate face plate extending from each of the first and second portions of the inner base member in a plane generally perpendicular to the first and second portions of the inner base member;

   an outer base member having first and second portions disposed at an angle corresponding to the angle between the portions of the inner base member such that an outer surface of the first portion of the outer base member is configured to be disposed against the outer sill of the opening and an outer surface of the second portion of the outer base member is configured to be disposed against one of the outer jambs of the opening;

   a front face plate extending from each of the first and second portions of the outer base member in a plane generally perpendicular to the first and second portions of the outer base member; and

   a plurality of channels disposed in the first and second portions of the inner base member to direct water toward and through the intermediate face plate and a plurality of channels disposed in the first and second portions of the outer base member to direct water toward and through the front face plate.

19. A flashing according to claim 18 wherein each channel is at least partially defined by a sidewall that is angled toward the front face plate and the opposite portion of the base member, such that each channel is configured to direct water in a direction toward the front face plate and the opposite portion of the base member.

20. A flashing according to claim 18 wherein each channel tapers to define an increased width at an end nearest the front face plate, the width of each channel being defined in a direction parallel to the portion of the base member in which the channel is disposed and substantially parallel to the front face plate.

21. A flashing according to claim 18 wherein each of the first and second portions of at least one of the inner and outer base members defines an angled lead-in edge nearest the front face plate.

22. A flashing according to claim 18 wherein each channel is tapered to define an increased depth at the end nearest the front face plate.

23. A flashing according to claim 18 wherein the flashing is formed of a unitary molded plastic member.

24. A flashing according to claim 18 wherein the flashing is structured to be configured with the outer surfaces of the first portions of the inner and outer base members disposed toward one of the inner and outer jambs of the opening, and the outer surface of the second portions of the inner and outer base members disposed toward one of the inner and outer sills of the opening such that the flashing can be selectively installed in either of two corners of the opening.

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