



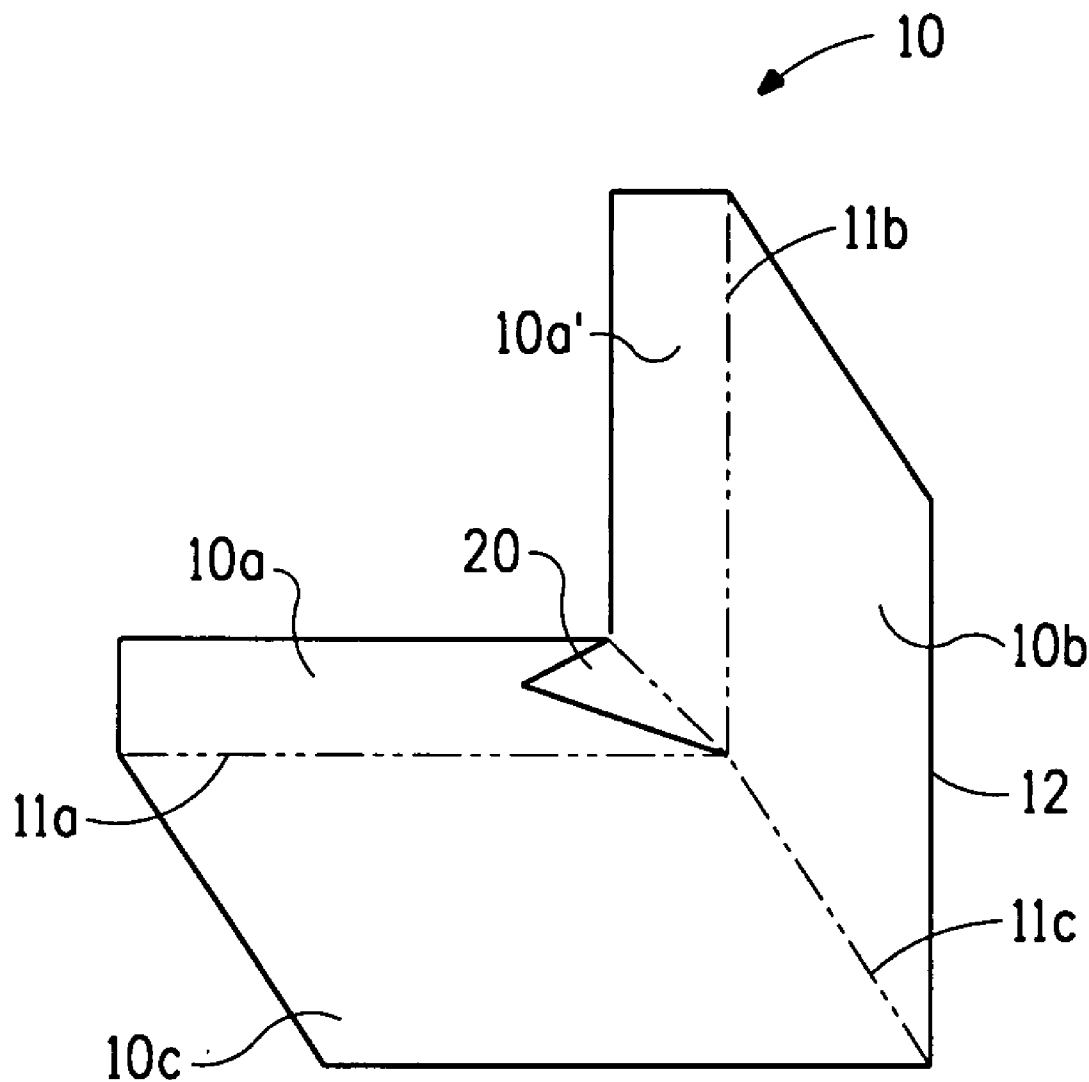
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(19) **United States**(12) **Patent Application Publication**
O'rourke(10) **Pub. No.: US 2009/0090068 A1**(43) **Pub. Date: Apr. 9, 2009**(54) **SELF-ADHESIVE CORNER FLASHING
MEMBER AND METHOD FOR MAKING AND
USING**(22) Filed: **Oct. 3, 2007****Publication Classification**(76) Inventor: **Barbara Klimowicz O'rourke,**
Newark, DE (US)(51) **Int. Cl.**
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WILMINGTON, DE 19805 (US)**(57) **ABSTRACT**

The invention pertains to a self-adhesive corner-shaped flashing member for flashing a corner of a recessed window or other opening in a building and a method for making the member. The invention also pertains to a method for flashing recessed corners of recessed windows and the like.

(21) Appl. No.: **11/906,707**

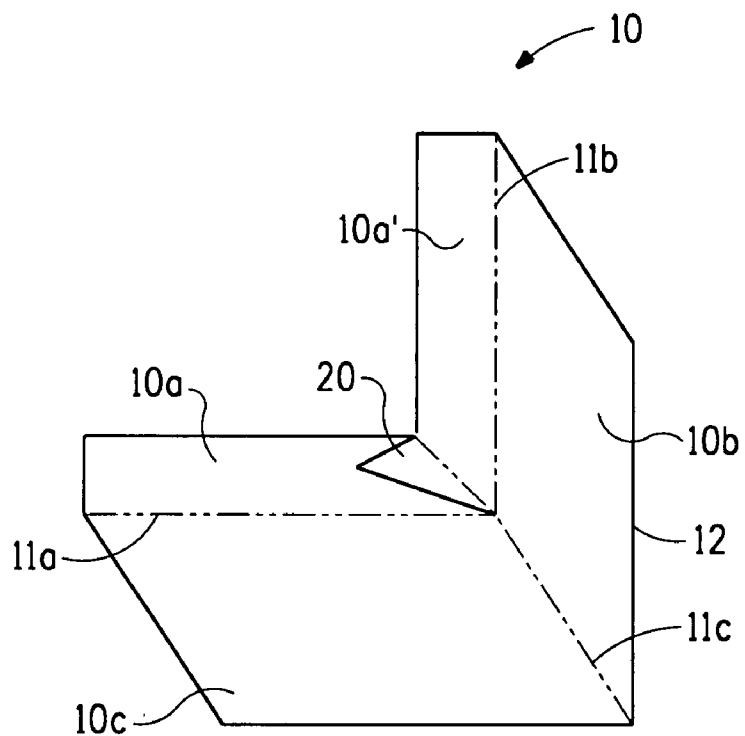


FIG. 1

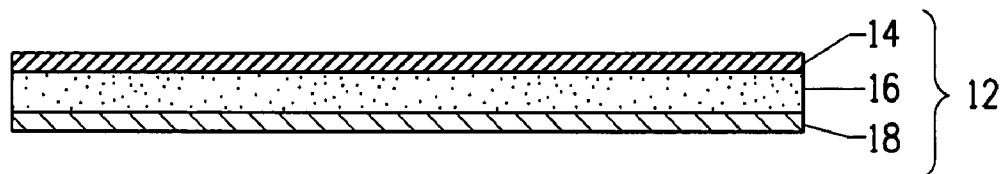


FIG. 2

FIG. 3

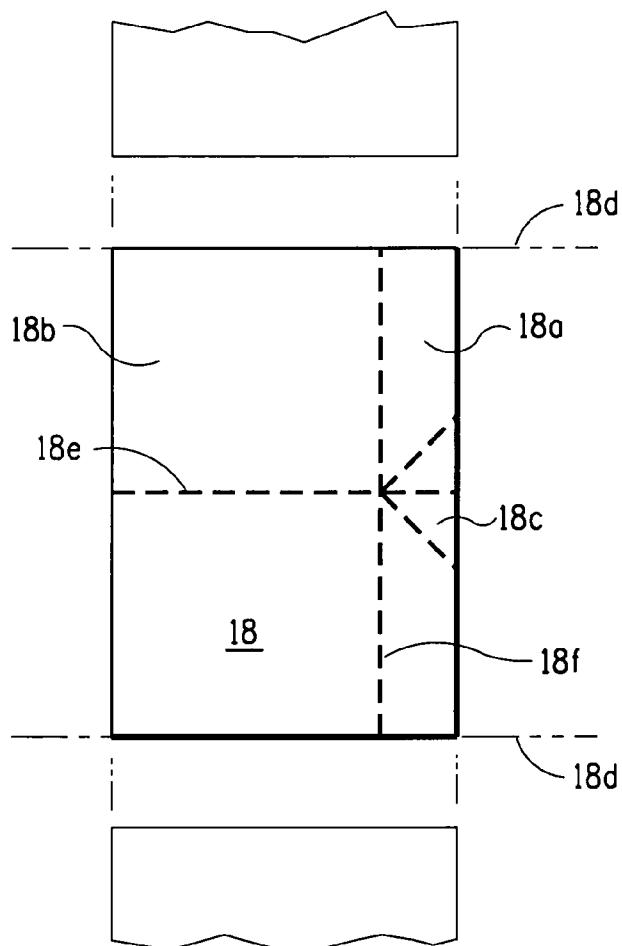
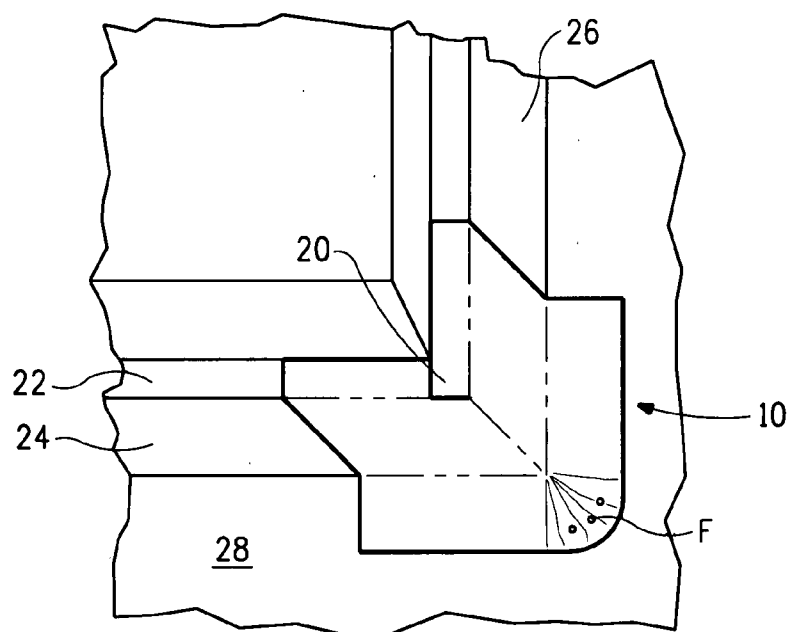


FIG. 4



SELF-ADHESIVE CORNER FLASHING MEMBER AND METHOD FOR MAKING AND USING

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The invention relates to a flashing member for waterproofing corners of recessed windows and other rough openings in buildings such as doorway openings, ductwork passages, and other types of openings that can be found in houses and other building structures.

[0003] 2. Description of the Prior Art

[0004] In building construction, it is important to provide a water-tight seal around any rough openings in exterior walls, including windows and doors. One specific challenge in many buildings is sealing recessed windows. Recessed windows include an outer wall opening that is flush with the exterior of the building, and an inner, recessed framed opening, that lies in a plane behind that of the exterior. Generally, the inner framed opening has a height and width less than that of the outer framed opening. When the window is finally installed, it lies within the inner framed opening.

[0005] The corners of recessed windows are particularly difficult to flash and seal adequately. US Patent Publication Number 2005/0055890A discloses a corner flashing system for sealing the corners of recessed window frames against moisture penetration. The system comprises double-flap members, a half-cube member, and caulking. The double-flap members and the half-cube member are preferably made of asphalt or petroleum based material. U.S. Pat. No. 6,401,402 also discloses a flashing system and method for controlling water and air intrusion around windows such as recessed windows, utilizing flashing material creased and folded to form a corner flashing component. However, both of these flashing systems includes seams and gaps through which water can infiltrate, and both systems rely on piercing fasteners to install the flashing, such as staples, providing further opportunity for water to infiltrate.

[0006] Therefore, there is a need for a corner flashing system that is well adapted to installation in recessed window frames.

SUMMARY OF THE INVENTION

[0007] In one aspect thin invention is directed to a method for flashing recessed corners in a building comprising:

[0008] providing a strip of flashing material comprising an elastic, conformable, flexible water resistant topsheet having an extension of at least about 150% at an applied stress no greater than 10 N/cm, a pressure-sensitive adhesive layer covering one surface of said topsheet having an equivalent extension as the top sheet at an equivalent applied stress; and a release sheet removably attached to said adhesive layer having a cross direction perforation dividing the release sheet into two major portions and a machine direction perforation dividing the release sheet into an edge portion and a bulk portion; removing a triangular portion of said release sheet wherein the triangular portion is in the shape of an isosceles triangle bisected by the cross direction perforation of said release sheet, wherein the triangle has a 90° angle at the intersection of the machine direction perforation and the cross direction perforation and to 45° angles along the edge of said edge portion of said release sheet, thereby exposing a triangular portion of said adhesive layer; folding said flashing

material along said cross direction perforation, thereby attaching the exposed adhesive layers on opposite sides of the fold line such that the exposed adhesive layers make continuous contact; folding said flashing material along said cross direction perforation to form a right angle between the top sheet surfaces and folding said flashing material along said machine direction perforation to form a right angle between the top sheet surfaces, thereby forming the corner-shaped flashing member; removing the remaining release sheet from said corner-shaped flashing member to expose the remaining adhesive layer; and

attaching said exposed remaining adhesive layer to the recessed corner surfaces, thereby affixing the corner-shaped flashing member in an installation position.

[0009] In one aspect, the invention is also directed to a flashing member, comprising a unitary self-adhering sheet conformable to a recessed corner in a building opening, wherein fasteners are not required to hold the member within the recessed corner.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a perspective illustration of the corner flashing member of the invention.

[0011] FIG. 2 illustrates the cross section of flashing material for forming the corner flashing member of the invention.

[0012] FIG. 3 is an illustration of the self-adhesive flashing material used to form the corner flashing member of the invention, illustrating the pattern of the release sheet covering the adhesive layer of the flashing material.

[0013] FIG. 4 is a perspective illustration of a recessed window with the corner flashing member of the invention installed.

DETAILED DESCRIPTION OF THE INVENTION

[0014] FIG. 1 illustrates a corner flashing member 10 according to the invention. Flashing material 12 has four faces in three planes, 10a, 10a' (it is noted that 10a and 10a' are coplanar), 10b and 10c, where the three planes are at right angles to each other in the shape of a recessed corner. The three planes share three common edges 11a, 11b and 11c. The corner flashing member is free of seams or holes through which water could infiltrate behind the flashing. The flashing material is elastic, conformable and flexible such that it can not only fit into the recessed corner of a recessed window, but it may also be extended and wrapped around the exterior wall. The length of the flashing material on either side of the corner is at least about 1 inch, and is typically about 6 inches.

[0015] FIG. 2 illustrates a cross section of the flashing material 12. Flashing material 12 has a topsheet 14, a pressure sensitive adhesive layer 16 on one surface of the top sheet and a release sheet 18 removably attached to said adhesive layer. The top sheet 14 is an elastic, conformable and flexible material. Suitable materials for use as the top sheet include elastic polymer films, elastic woven fabrics, elastic nonwovens, elastic knit fabrics, and laminates thereof. The top sheet has an extension of at least 150% when exposed to an applied stress no greater than 10 N/cm. Preferably, for durability the top sheet has tensile strength of greater than 1000 N/m when measured according to ASTM D1682, section 19.

[0016] The adhesive layer 16 is an elastic, conformable and flexible adhesive. Suitable adhesives include materials conventionally used in the waterproofing art, such as rubber-modified asphaltic or butyl adhesive. The adhesive layer

extends an equivalent amount as the top sheet when exposed to an equivalent level of stress. The average thickness of the adhesive layer 16 can be 5-100 mils. The minimum thickness of the adhesive layer depends on what is needed to provide good adhesion and, optionally, if desired, nail sealability given the adhesive composition used. For instance, a 10-60 mils thick layer of butyl adhesive has been found to be sufficient.

[0017] The release sheet 18 can be any known material suitable for use as a release liner on rubberized asphalt and butyl adhesive.

[0018] An inventive method for forming the corner flashing member 10 will now be described. A discrete section of an elongated strip of flashing material 12 is provided. FIG. 3 illustrates the pattern of perforations in the release sheet 18. For each corner flashing member, perforations 18e extending in the cross direction (XD) divide the release sheet into two roughly equal major portions along the machine direction and perforations 18f extending in the machine direction (MD) divide the release sheet into two unequal portions along the cross direction, a narrower edge portion 18a and a wider bulk portion 18b. A plurality of corner flashing members 10 can be formed from an elongated strip of flashing material 12. A cut line 18d represents where a cut is made in the flashing material in order to divide the elongated strip of the flashing material into individual sections of the flashing material, each forming a single corner flashing member.

[0019] A triangular portion 18c of the release sheet is removed from the flashing material 12, thereby exposing a triangular portion of the underlying adhesive layer. The triangle is defined by the perforations in the release sheet and the edge of the strip of flashing material. The tip of the triangle is located at the intersection of the machine direction perforation 18f and the cross direction perforation 18e, where the triangle has a 90° angle, and the base of the triangle is the edge of the strip where the triangle has two 45° angles. The triangular portion is bisected by the cross direction perforation 18e. For embodiments in which the triangular portion 18c of the release sheet is removed at the building site just prior to installation, the triangular portion 18c of the release sheet can be perforated for removal at the building site; alternatively the triangular portion can be scored and removed using a knife or box cutter.

[0020] The strip of flashing material 12 is folded along the cross direction perforation, thereby attaching the exposed adhesive layers on opposite sides of the fold line such that the exposed adhesive layers make continuous contact. The resulting adhesive-to-adhesive layer effectively becomes one continuous adhesive layer with no space between the original adhesive layers. This provides no seam or hole for water to infiltrate. When the flashing material is folded, the resulting adhesive-to-adhesive layer forms a strong, durable dog-eared seal 20 as shown in FIG. 1. In both FIGS. 1 and 4, the corner flashing member 10 is depicted in a right hand corner, however the flashing material can be folded such that the corner flashing member fits into either a right hand corner or a left hand corner.

[0021] It is common in some recessed windows to install a second framing member within the framing member in which the window is installed. In order to accommodate this type of construction, the edge portion of the release sheet of the flashing material is made wider in order to cover the nailing fin of the window. Multiple perforations can be made in the

machine direction on the flashing material in anticipation that the corner flashing members could be used on multiple types of window construction.

[0022] Once the seal 20 is formed, the flashing material is folded along the cross direction perforation in the direction opposite the direction it was folded to form the seal 20, to form a right angle between topsheet surfaces. The flashing material is also folded along the machine direction perforation to form a right angle between topsheet surfaces, such that the corner-shaped flashing member 10 is formed.

[0023] The method for forming the flashing member can be carried out at the time of installation starting with a strip of flashing material. Alternatively, the corner members can be preformed and delivered to the building site for subsequent installation. According to one preferred embodiment, a length of flashing material having the above described pattern of perforations in the release sheet is formed and the triangular portions 18c of the release sheet are removed to expose the underlying butyl adhesive. The length of flashing material is then folded in a "fanfold" manner such that the material is folded in alternating directions at each cross direction perforation, and such that the exposed butyl adhesive is folded on itself to form the seal 20. The thus folded material can be packaged for delivery to installation sites. At the installation site, the installer can complete the formation of the corner member just prior to installation, by cutting along perforation 18d to form individual corner flashing members which are folded onto themselves, and subsequently inverting or turning the corner "inside out" to form the shape of a right angle corner for installation.

[0024] In order to install the corner flashing member, the release sheet is removed from the outer surfaces of the flashing member to expose the adhesive layer on the outer surfaces. The exposed adhesive can then be attached directly to the interior surfaces of the recessed window, thereby affixing the flashing member in an installation position, as illustrated in FIG. 4. In order to ensure that the corner flashing member is affixed securely in the corner of the window, preferably only one piece of the release sheet is removed at a time, so that the corner flashing member can be first affixed to the framing members 22 forming the window opening. Once the flashing member is adhered to the framing members and/or nailing fin of the windows, the remaining pieces of release sheet are removed, so that the corner flashing member can be affixed to recessed sill 24 and window jamb 26 surfaces. As can be seen from FIG. 3, the flashing material can also be extended and wrapped around the corner of the recessed sill and window jamb surfaces to cover a portion of the exterior wall 28. Typically, fasteners F such as nails or staples are installed through the flashing material to secure it to the exterior wall. Also typically, the flashing material on the exterior wall extends at least 2 inches from the recessed sill and jamb surfaces of the recessed window opening. As depicted in FIG. 1, the seal 20 extends outward in a dog-eared manner, but for convenience purposes can be attached to surface 10a (or 10a') as shown in FIG. 4.

What is claimed is:

1. A method for flashing recessed corners in a building comprising: providing a strip of flashing material comprising an elastic, conformable, flexible water resistant topsheet having an extension of at least about 150% at an applied stress no greater than 10 N/cm, a pressure-sensitive adhesive layer covering one surface of said topsheet having an equivalent extension as the top sheet at an equivalent applied stress; and

a release sheet removably attached to said adhesive layer having a cross direction perforation dividing the release sheet into two major portions and a machine direction perforation dividing the release sheet into an edge portion and a bulk portion; removing a triangular portion of said release sheet wherein the triangular portion is in the shape of an isosceles triangle bisected by the cross direction perforation of said release sheet, wherein the triangle has a 90° angle at the intersection of the machine direction perforation and the cross direction perforation and to 45° angles along the edge of said edge portion of said release sheet, thereby exposing a triangular portion of said adhesive layer; folding said flashing material along said cross direction perforation, thereby attaching the exposed adhesive layers on opposite sides of the fold line such that the exposed adhesive layers make continuous contact; folding said flashing material along said cross direction perforation to form a right angle between the top sheet surfaces and folding said flashing material along said machine direction perforation to form a right angle between the top sheet surfaces, thereby forming the corner-shaped flashing member; removing the remaining release sheet from

said corner-shaped flashing member to expose the remaining adhesive layer; and attaching said exposed remaining adhesive layer to the recessed corner surfaces, thereby affixing the corner-shaped flashing member in an installation position.

2. The method of claim 1 wherein said adhesive is a rubberized asphalt or butyl adhesive.

3. The method of claim 1 wherein said topsheet is a continuous film, a woven fabric, a nonwoven, or a laminate thereof.

4. A flashing member, comprising a unitary self-adhering sheet conformable to a recessed corner in a building opening, wherein fasteners are not required to hold the member within the recessed corner.

5. The flashing member of claim 4, comprising an elastic, conformable, flexible water resistant topsheet and a pressure-sensitive adhesive layer.

6. The flashing member of claim 5, comprising a release layer attached to the pressure sensitive layer on the surface opposite the topsheet.

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