An insulation product having an integral air vent channel is disclosed for use in attic and cathedral ceiling applications. The product includes an insulation blanket having at least a pair of raised strips formed on one side thereof. When installed, the blanket is fit up between a pair of roof rafters until the raised strips contact the undersurface of the roof. The strips ensure that a predetermined offset exists between the insulation blanket and the roof, thus forming an unobstructed ventilation path running from the soffit to the roof peak. The raised strips can be foamed polyurethane or other polymer material that is dispensed or laminated onto the insulation blanket after the blanket exits the curing oven. The blanket may be a foamed polymer insulation that is extruded as a blanket at the proper insulation height for installation or may be cut to size from an overthick bun of insulation. The blanket and strips may be formed by a mold that shapes a pour-in-place foam. The blanket, with attached strips, can then be compressed for packaging and shipping. When unpackaged at the work site, the insulation product can be installed between roof rafters without the need for a separate vent panel, thus simplifying the installation process.
INSULATION BATT WITH INTEGRAL AIR VENT

CROSS REFERENCE TO RELATED APPLICATIONS


FIELD OF THE INVENTION

[0002] This invention relates to insulation products installed between adjacent roof rafters of a structure, and particularly to an insulation batt having an integral air vent space to allow for air circulation adjacent to the roof.

BACKGROUND OF THE INVENTION

[0003] With an increasing emphasis on energy efficiency, attic insulation has often been supplemented by blown, loose-fill insulation, or by additional or thicker insulation batts to prevent heat loss in the winter and cool air loss in the summer. Unfortunately, thicker attic insulation can lead to poor air circulation when the spaces between the roof joists and the top wall plate of the building are closed or obstructed. These spaces must be left open to provide air flow between the sofit area and the attic space, for reducing excess humidity and heat, which have been known to deteriorate roofing and structural components. In order to keep this area open, attic vents have been used.

[0004] The purpose of an attic vent is to prevent installed insulation, such as fiberglass batts, blankets, fiberglass and cellulose loose fill, and polymer foam batts from blocking the natural air flow from the ventilated sofit up through to the roof ridge vent or gable vents in the attic. Several attic vents have been designed for this purpose. See, for example, U.S. Pat. No. 4,007,672 directed to a perforated block-style vent; U.S. Pat. No. 4,125,971 directed to a flat panel formed on site into an arch; U.S. Pat. No. 4,126,973 directed to a perforated block-style vent; U.S. Pat. No. 4,197,083 which is directed to the use of a vent board attached in the A-plane of a header board; U.S. Pat. No. 4,214,510 directed to a rolled sheet design; U.S. Pat. No. 5,341,612 directed to the use of a longitudinal ridge in a roof vent for compressive stiffness; U.S. Pat. No. 5,596,847 directed to a vent having an integral transverse stiffening element integrated in the bottom offset wall; U.S. Pat. No. 5,600,928, directed to a vent having stiffeners in the form of saddles in the longitudinal ridges of the roof plane and gussets between offset, bottom surface and the inclined walls of the channel; U.S. Pat. No. 6,347,991, directed to a vent having an integral hinge in a transverse direction, about 4-6 inches from one end; U.S. Pat. No. 6,346,040, directed to an integral vent and dam folded on-site from a flat sheet; and U.S. Pat. No. 6,357,185, directed to a vent having a scalable panel that prevents air infiltration except through the vent.

[0005] In addition, there are many commercial attic vents available for this purpose: PERMA-Vent® and PROVENT® from Owens-Corning; or CERTIVENT® from Diversifoam, Inc. A simple foam available from Apache Products; DUROVENT® and PROVENT®, available from ADO Products; and products available from Pactiv; AEROVENT® from Shelter Enterprises, Inc.; and POLYVENT PLUS® from Moore Products, LLC.

[0006] Most of the above mentioned patented or commercial vents are vacuumed-formed extruded polystyrene foam. These designs provide for an open air flow area required by most building codes, while providing the stiffness to resist collapsing when the insulation is installed.

[0007] The use of such pre-formed vents requires that the vent and insulation be provided as separate pieces, since the insulation batts are typically packaged compressed for packaging so as to reduce the insulation package size for shipping and storage. At the work site, the installer typically nails or staples the vent to the roof structure before the insulation is installed. As a result, there is a chance that the installer may inadvertently fail to install the vent or may install fewer vents than is desirable for optimal venting of the roof structure. Proper installation of vents is particularly important in cathedrals ceiling applications, in which every rafter bay is individually insulated, and where the insulation vents should be installed along the entire length of the roof.

[0008] Accordingly, there is a need for an attic air vent that needs no separate installation step apart from installing the insulation batt, such that an air space is automatically formed between the batt and the underside of the roof when the insulation batt is installed between adjacent roof rafters. Advantageously, the air vent should be formed with the insulation material during manufacture and compressed along with the insulation batt for packaging, shipping, storage and installation.

SUMMARY OF THE INVENTION

[0009] An insulating structure is disclosed for maintaining a ventilation space between insulation material and a roof structure. The insulating structure may comprise an insulating body portion having first and second major surfaces and a longitudinal axis, and a plurality of support members disposed on the first major surface. The support members may each have a length oriented substantially parallel to the longitudinal axis of the insulating body portion and a height which extends said support members outwardly from the first major surface. The plurality of support members further may be positioned in laterally spaced apart relation across a width of the first major surface to create at least one ventilation opening. The ventilation opening may be formed by the first major surface of the insulating body portion and opposing inner side surfaces of said the support members. The insulating body portion may be resilient and comprises a fibrous or foam insulation material, and the plurality of support members may comprise a stiffness substantially different from a stiffness of said insulating body portion.

[0010] A method for insulating a roof structure is disclosed, comprising providing an insulating body portion having first and second major surfaces and a longitudinal axis, a first major surface of the insulating body portion containing a plurality of support members disposed substantially parallel to the longitudinal axis of the insulating body portion, each of said support members further being disposed to extend outward from said first major surface and spaced laterally apart from one or more adjacent support members; and disposing the insulating body portion adjacent to a roof sheathing member such that said support members contact said roof sheathing member to thereby create a ventilation space between the
first major surface of the insulating body portion, opposing inner side surfaces of adjacent support members, and a surface of the roof sheathing member.

A method of manufacturing an insulation product is disclosed, comprising: providing a layer of insulation blanket material; moving the layer of insulation blanket material in a machine direction; and dispensing a strip(s) of foamed material on a surface of the layer of insulation blanket material.

A method of manufacturing an insulation product is disclosed, comprising: providing a layer of insulation blanket material; moving the layer of insulation blanket material in a machine direction; and laminating a strip(s) of foamed material on a surface of the layer of insulation blanket material.

An insulating structure is disclosed for maintaining a ventilation space between insulation material and a roof structure. The insulating structure may comprise an insulating body portion having first and second major surfaces and a longitudinal axis; and a plurality of support members disposed on the first major surface. The support members may each have a length oriented substantially parallel to the longitudinal axis of the insulating body portion and a height which extends said support members outward from said first major surface. The plurality of support members further may be positioned in laterally spaced apart relation across a width of the first major surface to create at least one ventilation opening. The ventilation opening may be formed by the first major surface of the insulating body portion and opposing inner side surfaces of said adjacent support members. The insulating body portion may be resilient, the insulation body portion and the plurality of support members further may comprise foam material, and the plurality of support members may have a stiffness substantially the same as a stiffness of the insulating body portion. In one embodiment, the foam material may be a pour in place foam.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings illustrate preferred embodiments of the invention so far devised for the practical application of the principles thereof, and in which:

FIG. 1 is an isometric view of the insulation assembly of the present invention;

FIG. 2 is a side cross-sectional view of a typical building construction showing the insulation assembly of FIG. 1 installed adjacent the building roof;

FIG. 3 is a right-side cross-sectional view of the installed insulation assembly of FIG. 2, taken along line 3-3 of FIG. 2;

FIG. 4 is a left-side partial cross-sectional view of the installed insulation assembly of FIG. 3, taken along line 4-4 of FIG. 3.

DETAILED DESCRIPTION OF THE INVENTION

This invention is directed to attic air vents used under the roof of a building to ventilate air from a soffit area to an attic space. The invention is particularly advantageous for use in cathedral ceiling applications in which pre-formed insulation batts are placed between roof rafters. Pre-formed insulation batts can be self-retaining, meaning they are manufactured to have a width that is about ¼" to about ½" wider than the distance between adjacent roof rafters. The resulting friction-fit between the batts and roof rafters eliminates the need for stapling or other mechanical fastenings. One problem with such self-retaining insulation batts is that without careful installation they can be pressed up too close to the roof, thereby cutting off air flow from the soffit to the roof peak.

In accordance with the Figures, and particularly FIGS. 1 and 2, there is shown a preferred insulation batt 1 for ventilating air under a roof 2 between a soffit area 4 of the roof and a roof peak 6 of a building 7. The batt 1 comprises an insulation blanket 8 having a pair of raised strips 10 connected to an upper surface 13 of the blanket. The raised strips 10 are configured to engage the attic side 12 of the roof 2 when the batt 1 is inserted between a pair of adjacent roof rafters 16, to thereby maintain a desired offset distance between the upper surface 13 of the blanket and the attic side 12 of the roof 2. The height “H” of the raised strips 10 is selected to provide a predetermined offset height “H” between the insulation blanket 8 and the attic side 12 of the roof 2, resulting in a desired ventilation space (i.e. a duct) 14 between the blanket 8 and the roof once the batt 1 is installed.

Preferably, the raised strips 10 will be formed along with the insulation blanket 8 during the manufacturing process for the batt 1, and the assembly will be compressed for packaging, storage and shipment to the work site. The presence of the raised strips 10 simplifies proper installation of the batt 1, ensuring that the desired ventilation passage 14 is preserved without requiring the user to install a separate vent as with some prior art designs. With the present design, the user may simply un-package the insulation batt 1, cut it to length, and press it up between a pair of adjacent roof rafters 16 until a slight resistance is felt (indicating the strips 10 have made contact with the attic side 12 of the roof 2). The insulation batt 1 can be installed without special tools in new and existing structures, and the installation can be performed with a minimum of time and labor.

FIG. 2 shows the batt 1 of FIG. 1 installed between adjacent rafters 16 of a structure or building 7. Strips 10 are positioned to provide a ventilation passage 14 from the soffit area 4 of the roof to the roof peak 6 of the building 7. The building can be an industrial or a residential building, including a home, office, and like structures. Building 7 may have a generally horizontal ceiling 18 that extends inwardly from external wall 20 to create an attic space 19. Roof rafters 16 may extend upwardly from the wall 20 and ceiling 18 and support the roof sheathing or boards 22. The roof rafters 16 are, for example, on 12", 16" or 24" centers. The structure 7 may have conventional openings between the roof sheathing 22, the ceiling 18, the wall 20 and adjacent the roof rafters 16 which provide for the movement of air from soffit area 4 to the roof peak 6. Soffit area 4 may have a vent 24 for allowing air to move into the soffit area 4 from below the roof overhang.

Air flow from the soffit 4 is illustrated by flow arrows, and can be seen entering the soffit vent 24 beneath the eaves, and traveling upward along the attic side 12 of the roof 2, between the roof and the insulation batt 8 until it reaches the roof peak 6.

FIGS. 3 and 4 show an exemplary batt 1 in position between a pair of adjacent rafters 16. The batt 1 is positioned so that the raised strips 10 are engaged with the attic side surface 12 of the roof 2, thus forming ventilation space 14 bounded by the upper surface 13 of the insulation blanket 8, the attic side surface 12 of the roof 2, and the inner side surfaces of the raised strips 10. In addition to this main ven-
tilation passage, a pair of smaller ventilation passages 15 are also formed between each of the raised strips 10 and the associated rafter 16.

[0025] Referring again to FIG. 1, strips 10 may be positioned on the insulation blanket 8 so that the longitudinal axis A-A of each strip is substantially parallel to the longitudinal axis B-B of the blanket. Additionally, as best viewed in FIG. 3, strips 10 may be laterally offset from the side edges of the blanket 8 by an offset distance “OD” to provide substantially even support to minimize sag in the center of the blanket 8, and to prevent over-compression of the batt against the attic side of the roof during installation, which could reduce the cross sectional area of the ventilation space 14 and undesirably choke air flow.

[0026] It is noted that although the illustrated embodiment describes a pair of strips 10 associated with the insulation blanket 8, a fewer or greater number of strips 10 may be provided along a length of insulation blanket 8, such as a “W-shaped” cross-sectional configuration. Additionally, although the strips 10 have been described as being continuous lengths of material, they could instead be formed from multiple discrete lengths of material laid out along the length of the insulation blanket 8 and separated by a desired distance.

[0027] The insulation blanket 8 may be formed from polymer foam, organic fibers such as polymeric fibers, or inorganic fibers such as rotary glass fibers, textile glass fibers, stone wool (also known as rockwool) or a combination thereof. Mineral fibers, such as glass, are preferred. The insulation blanket 8 is typically formed from glass fibers, often bound together with a heat cured binder, such as known resinous phenolic materials, like phenolic formaldehyde resins or phenol urea formaldehyde (PUFA). Melamine formaldehyde, urea formaldehyde, polyvinyl alcohol, acrylic, polyester, urethane and furan binder may also be utilized in some embodiments.

[0028] The insulation blanket 8 may also comprise a resilient polymer foam. Exemplary resilient polymer foams that may be used as the insulation blanket 8 include those specified in ASTM C1534 Standard Specification for Flexible Polymeric Foam Sheet Insulation Used as a Thermal and Sound Absorbing Liner for Duct Systems, those specified in ASTM C554 Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form, and other flexible resilient foams that may not be specified by ASTM C554 and C1534. Such polymer foams include, but are not limited to, polyethylene, polyolefin, natural rubber, PVC, EPDM, Nitrile/Buna N Rubber, melamine, urethane, neoprene, polyester, polyether, and EVA.

[0029] The blanket 8 may be a foamed polymer insulation that is extruded as a blanket at the desired insulation height for installation, or it may be cut to size from an overthick bunn of insulation.

[0030] In some embodiments, a water vapor retarder facing layer (not shown), may be provided on the bottom surface 11 of the insulation blanket 8. The water vapor retarder layer may be a cellulosic paper, typically formed from kraft paper, coated with a bituminous adhesive material, such as asphalt, or a smart water vapor retarder polymeric film, comprised of nylon and/or ethylene vinyl alcohol, or other construction that has water vapor transmission properties that adapt to changes in the surrounding relative humidity. The facing layer may have a water permeance of no more than about one perm when tested by ASTM E96 Method A test procedure.

[0031] The strips 10 may be manufactured from cellulosic materials, such as corrugated cardboard, compressed or molded portions of the batt 1 itself, or more preferably, any suitable foamed polymer, such as polyurethane or polyolefin foam. Other appropriate foams, such as PVC, natural rubber, EPDM, Nitrile/Buna N Rubber, melamine, neoprene, polyester, polyether, and EVA polysiocyanurate, and phenolic can be used. Thermoplastic foams such as polyurethane, polyethylene, and polypropylene can also be used. Foams may be applied in either monolithic form or in particular form bonded together by an adhesive. Additionally, foam layers, with, or without, adhesive backing layers, could be employed.

[0032] The material used to form the strips 10 may be resilient or may be rigid. In one embodiment, the strips 10 are formed from a resilient, flexible urethane foam that may be compressed in thickness in the mineral fiber batt packaging process where several layers of batts are compressed to the thickness of one layer and packaged in a plastic bag. In another embodiment, the strips 10 are formed from a rigid foam that is not compressed in thickness in the mineral fiber batt packaging process. The foam strips applied to the mineral fiber insulation have a higher resistance to compression than the mineral fiber insulation. Strips laminated to a foam insulation batt may have equal to or greater stiffness and resistance to compression than the foam insulation. For a pour in place foam insulation batt, the foam strips are formed by the mold that forms the batt and are the same composition as the body of the batt.

[0033] As noted, the batt 1 may be compressed for packaging. Since the batt 1 may be in this compressed state for an extended period of time, it is expected that the batt 1 will experience a degree of compression set, such that the thickness of the batt 1 when unpackaged at the work site will be somewhat less than the thickness of the batt 1 prior to packaging. In one embodiment, the thickness of the batt 1 prior to packaging may be greater than the thickness of the batt 1 when unpackaged at the work site. Preferably, the thickness of the batt prior to packaging will be from about 105% to 130% of the thickness of the batt 1 when unpackaged at the work site. More preferably, the thickness of the batt 1 prior to packaging will be about 110% to about 125% of the thickness of the batt 1 when unpackaged at the work site. Most preferably, the thickness of the batt 1 prior to packaging will be about 110% of the thickness of the batt 1 when unpackaged at the work site.

[0034] In one embodiment, the insulation blanket 8 comprises a 15-inch or 23-inch wide by 48-inch long cathedral ceiling batt of mineral fiber insulation material. The strips 10 may be about 1-inch wide by 1-inch high (“H”), and may comprise a foamed-in-place urethane foam material. Urethane foam dispensing equipment may be used to dispense two continuous strips 10 about 8-inches apart on the top surface 13 of one or more lanes of a mineral fiber insulation blanket 8 after the insulation exits the curing oven. Dispensing the strips onto the top surface 13 of the insulation blanket 8 in this manner ensures that the strips 10 will be tightly adherent to the blanket 8. Exemplary urethane foam dispensing equipment and polyurethane foam materials are Sealed Air Corporation’s Instapak® Model 901 foam dispenser and InstaFlex™ High-Performance Resilient Cushioning Foam and UCSC of Phoenix, Ariz. Durafoam closed cell polyurethane foam.

[0035] Alternatively, the raised strips 10 may be formed, and adhere to, the insulation blanket 8 in separate steps. In a
further alternative embodiment, the strips 10 may be pre-formed, cut or stamped from a sheet of material which may then be adhered to the insulation blanket 8 using a suitable adhesive. The square foam strips may also be cut from rolls of resilient foam such as Durkee International of Wuhhan, China EPDM foam, Crestfoam of Moonachie, N.J. flexible urethane foam, thermo-cell closed cell polyethylene from Nomaco K-flex of Youngsville, N.C., or Armaflex flexible foam from Armacell L.L.C. of Melborne, N.C. In a continuous mineral fiber batt manufacturing process, a 12 inch wide continuous roll of foam is cut into 1" wide continuous strips that are guided on to the surface of six lanes of 15" wide mineral fiber insulation with two strips per lane. The foam strips are bonded to the mineral fiber insulation with a strip of hot melt adhesive that is applied to the surface of the mineral fiber insulation. The foam strips applied to the mineral fiber insulation are stiffer and have a higher resistance to compression than the mineral fiber insulation.


[0037] Strips 10 may have a height “H” of about 1-inch to provide a desired ventilation passage 14 of a desired size between the roof 2 and the blanket 8.

[0038] Although the embodiment described in relation to FIG. 1 shows a pair of strips 10, it will be appreciated that any appropriate number of strips may be provided, as desired. Thus, where wider insulation batts 8 are used, such as those having 23-inch widths, it may be appropriate to provide a third support strip between the pair of strips 10. In one embodiment, all three strips 8 are parallel to each other, and the third strip 10 is disposed at about the longitudinal centerline of the insulation blanket 8.

[0039] It is noted that both the strips 10 and the insulation blanket 8 may be made from substantially compressible materials such as sponge-like, fibrous or foam materials, thus allowing them to be compacted for packaging and storage. When they are removed from the package at the work site, they may quickly return to substantially their original shape and size, e.g., by resiliently returning to their prepackaged shape and size.

[0040] As will be appreciated, the present design simplifies manufacture and packaging/shipping as compared to standard pre-formed molded vents. Since the insulation blanket 8 engages the inside of the associated rafters, additional means for securing the strips 10 are unnecessary. In use, the installer can simply unpack the batt 1, allow the blanket 8 and the strips 10 to regain their shape, place the batt 1 between a targeted pair of rafters and press upward until a slight resistance is felt when the strips 10 have engaged the attic side 12 of the roof. The upper surface 13 of the insulation blanket 8, thus installed, forms a ventilation passage 14 between the attic side 12 of the roof 2 and the upper surface 13 of the blanket 8 to provide the desired ventilation path.

[0041] As an additional advantage, the present design will not cause moisture buildup in the insulation blanket 8 as some current solid vent panels can. In normal use, moisture from the attic space 19 can pass through the attic drywall and accumulate in the insulation blanket 8. Current solid vent panels may cover a large portion of the upper surface 13 of the insulation blanket 8, thus hindering the passage of moisture from the blanket into the ventilation passage 14. By contrast, the strips 10 of the present design cover only a small portion of the upper surface 13 of the blanket 8, and thus moisture can freely move from the blanket 8 into the ventilation passage 14 where it can then be carried out the roof vent or attic roof fan at the peak 16 of the roof.

[0042] Accordingly, it should be understood that the embodiments disclosed herein are merely illustrative of the principles of the invention. Various other modifications may be made by those skilled in the art which will embody the principles of the invention and fall within the spirit and the scope thereof.

What is claimed is:

1. An insulating structure for maintaining a ventilation space between insulation material and a roof structure, the insulating structure comprising:
   - an insulating body portion having first and second major surfaces and a longitudinal axis; and
   - a plurality of support members disposed on the first major surface, said support members each having a length oriented substantially parallel to the longitudinal axis of the insulating body portion and a height which extends beyond said support members outwardly from said first major surface;
   - wherein the plurality of support members are positioned in a laterally spaced apart relation across a width of the first major surface to create at least one ventilation opening, said ventilation opening formed by the first major surface of the insulating body portion and opposing inner side surfaces of said adjacent support members; and
   - wherein the insulating body portion is resilient and comprises a fibrous or foam insulation material, and the plurality of support members comprise a stiffness that is substantially different from a stiffness of said insulating body portion.

2. The structure of claim 1, wherein the insulating body portion comprises glass fibers and the plurality of support members comprise a foamed polymer.

3. The structure of claim 1, wherein the insulating body portion comprise a foamed polymer and the plurality of support members comprise foam polymer.

4. The structure of claim 1, wherein each of the plurality of support members has a height as measured from the first major surface of the insulating body portion, the height being predetermined to provide the ventilation opening with a predetermined cross-sectional area.

5. The structure of claim 1, wherein each of the plurality of support members is offset from a respective lateral side of the insulating body portion by a predetermined offset distance.

6. The structure of claim 5, wherein a width of the insulating body portion is about 15 or 23 inches and the offset distance is about 2½ inches.

7. The structure of claim 6, wherein the width of the insulating body portion is about 23 inches, and the plurality of support members comprises at least three longitudinal strips spaced apart from each other across the width.

8. The structure of claim 5, wherein the plurality of support members form peripheral ventilation openings defined by the first major surface of the insulating body portion and respective side surfaces of the support members.
9. The structure of claim 1, the insulating structure further being configurable into a compressed state upon application of a compression force.

10. The structure of claim 9, the insulating structure further having an uncompressed state and an uncompressed thickness greater than a thickness of the structure in the compressed state, wherein the insulating structure is capable of self-expanding from the compressed state to the uncompressed state upon removal of said compression force.

11. The structure of claim 10, wherein the insulating structure is configured in the compressed state for packaging, and is configured in the uncompressed state prior to installation between a pair of roof rafters.

12. The structure of claim 9, wherein a thickness of the insulating structure prior to application of the compression force is about 105% to about 130% of the thickness of the insulating structure subsequent to release of the compression force.

13. The structure of claim 9, wherein a thickness of the insulating structure prior to application of the compression force is about 110% of the thickness of the insulating structure subsequent to release of the compression force.

14. The structure of claim 1, wherein the plurality of support members are resilient.

15. The structure of claim 1, wherein the plurality of support members are rigid.

16. A method for insulating a roof structure, comprising: providing an insulating body portion having first and second major surfaces and a longitudinal axis, a first major surface of the insulating body portion containing a plurality of support members disposed substantially parallel to the longitudinal axis of the insulating body portion, each of said support members further being disposed to extend outward from said first major surface and spaced laterally apart from one or more adjacent support members; and disposing the insulating body portion adjacent to a roof sheathing member such that said support members contact said roof sheathing member to thereby create a ventilation space between the first major surface of the insulating body portion, opposing inner side surfaces of adjacent support members, and a surface of the roof sheathing member.

17. The method of claim 16, wherein the insulating body portion and the plurality of support members are resilient.

18. The method of claim 16, wherein either the insulating body portion or the plurality of support members are rigid.

19. The method of claim 16, wherein the step of disposing the insulating body portion adjacent the roof sheathing member further creates peripheral ventilation spaces between the first major surface of the insulating body portion, outer side surfaces of respective support members, inner side surfaces of adjacent roof rafters, and a surface of the roof sheathing member.

20. The method of claim 16, wherein the providing step comprises dispensing a foamed material onto said first major surface to form said plurality of support members.

21. The method of claim 16, wherein the providing step comprises laminating strips of a foamed polymer material onto said first major surface to form said plurality of support members.

22. The method of claim 21, wherein the foamed insulation material comprises polyurethane foam and the insulating body portion comprises glass fibers.

23. The method of claim 22, wherein the dispensing step is performed after the insulating body portion exits a curing oven.

24. The method of claim 23, wherein the dispensing step fixes the foamed insulation material in at least two longitudinal strips along the first major surface of the insulating body portion.

25. The method of claim 16, wherein after the dispensing step the insulating body portion and the plurality of support members are configured to a compressed state, packaged, shipped to a work site, and configured to an uncompressed state prior to disposing the insulating body portion adjacent to the roof sheathing member.

26. The method of claim 25, wherein the insulating body portion has a thickness prior to being configured to the compressed state that is about 105% to about 130% of the thickness of the insulating body portion subsequent to being configured to the uncompressed state.

27. The method of claim 25, wherein the insulating body portion has a thickness prior to being configured to the compressed state that is about 110% of the thickness of the insulating body portion subsequent to being configured to the uncompressed state.

28. The method of claim 25, wherein the plurality of support members have a thickness prior to being configured to the compressed state that is about 105% to about 130% of the thickness of the plurality of support members subsequent to being configured to the uncompressed state.

29. The method of claim 25, wherein the plurality of support members have a thickness prior to being configured to the compressed state that is about 110% of the thickness of the plurality of support members subsequent to being configured to the uncompressed state.

30. A method of manufacturing an insulation product, comprising:
   providing a layer of insulation blanket material;
   moving the layer of insulation blanket material in a machine direction;
   dispensing a strip of foamed material on a surface of the layer of insulation blanket material.

31. The method of claim 30, wherein the strip of foamed material comprises a pair of substantially parallel lanes of said foamed material on the surface of the layer of insulation blanket material.

32. The method of claim 30, wherein the layer of insulation blanket material has a width of about 15 inches or about 23 inches.

33. The method of claim 32, wherein the width of the insulating body portion is about 23 inches, and dispensing step comprises dispensing three substantially parallel strips of foamed material on a surface of the layer of insulation blanket material.

34. The method of claim 33, wherein the dispensing step comprises dispensing a thickness of foamed material to thereby provide a strip with a predetermined height as measured from the surface of the layer of insulation blanket material.

35. The method of claim 33, wherein the dispensing step is performed after the layer of insulation blanket material exists a curing oven.

36. The method of claim 33, wherein the layer of insulation blanket material is resilient, the foamed material is either
resilient or rigid, and the foamed material has a stiffness that is greater than a stiffness of the layer of insulation blanket material.

37. The method of claim 33, further comprising the steps of:
   cutting the insulation product to length;
   compressing the insulation product so that the insulation product assumes a compressed state in which a compressed thickness of the insulation product is less than an uncompressed thickness of the insulation product; and
   packaging the insulation product in the compressed state.

38. The method of claim 33, wherein the layer of insulation blanket material comprises mineral wool, and the foamed material comprises polyurethane.

39. The method of claim 33, wherein the dispensing step fixes the foamed material to the insulation blanket material.

40. The method of claim 33, wherein the strip of foamed material is offset by a first distance from a lateral side edge of the layer of insulation blanket material.

41. A method of manufacturing an insulation product, comprising:
   providing a layer of insulation blanket material;
   moving the layer of insulation blanket material in a machine direction; and
   laminating a strip of foamed material on a surface of the layer of insulation blanket material.

42. The method of claim 41, wherein the insulation blanket has a width of about 15 inches or about 23 inches, and the step of laminating a strip of foamed material further comprises laminating a pair of substantially parallel lanes of said foamed material on the surface of the layer of insulation blanket material.

43. The method of claim 42, wherein the width of the insulation blanket is about 23 inches, and the step of laminating a strip of foamed material further comprises laminating a third strip of foamed material between said pair of substantially parallel lanes, said third strip being substantially parallel to said pair of substantially parallel lanes.

44. An insulating structure for maintaining a ventilation space between insulation material and a roof structure, the insulating structure comprising:
   an insulating body portion having first and second major surfaces and a longitudinal axis; and
   a plurality of support members disposed on the first major surface, said support members each having a length oriented substantially parallel to the longitudinal axis of the insulating body portion and a height which extends said support members outwardly from said first major surface;

45. The structure of claim 44, wherein the insulating body portion and the plurality of support members comprise a foamed polymer.

46. The structure of claim 45, wherein the insulating body portion and the plurality of support members comprise a polyurethane foam.

47. The structure of claim 44, wherein the plurality of support members each has a height as measured from the first major surface of the insulating body portion, the height being predetermined to provide the ventilation opening with a predetermined cross-sectional area.

48. The structure of claim 44, wherein each of the plurality of support members is offset from a respective lateral side of the insulating body portion by a predetermined offset distance.

49. The structure of claim 48, wherein a width of the insulating body portion is about 15 or 23 inches and the offset distance is about 2½ inches.

50. The structure of claim 49, wherein the width of the insulating body portion is about 23 inches, and the plurality of support members comprises at least three longitudinal strips spaced apart from each other across the width.

51. The structure of claim 48, wherein the plurality of support members form peripheral ventilation openings defined by the first major surface of the insulating body portion and respective outer side surfaces of the support members.

52. The structure of claim 44, the insulating structure further being configurable into a compressed state upon application of a compression force.

53. The structure of claim 52, the insulating structure further having an un compressed state and an un compressed thickness greater than a thickness of the structure in the compressed state, wherein the insulating structure is capable of self-expanding from the compressed state to the uncompressed state upon removal of said compression force.

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