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ROLLABLE RIDGE VENT

Abstract

A ridge vent includes an elongated flexible member having a central panel defined between a pair of lateral edges, a first end, and a second end, the central panel having top and bottom major surfaces; a pair of vent openings defining openings through the central panel with one each located inward of a corresponding lateral edge; and a plurality of flow projections extending from a central portion of the central panel to at least one of the pair of lateral edges.

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Background/Summary

FIELD OF THE DISCLOSURE

[0001] The present disclosure relates to ridge vents for covering an opening at a roof ridge. More specifically, the present disclosure relates to a rollable ridge vent assembly.

BACKGROUND

[0002] In the winter, household activities such as cooking, showering, and doing laundry, generate moisture that can migrate to the attic and damage insulation and building materials of a house's roof. In the summer, attic temperatures can rise to over 150° F., which can cause premature aging and cracking of wood and roofing materials. These elevated temperatures can also increase cooling costs for the home owner. In the construction of rooves, therefore, it is often desirable to provide a ventilation opening at the roof ridge and cover it with a vent. Ridge vents are passive ventilation systems that provide openings through which air can convectively flow to and from under the roof structure to provide attic ventilation.

[0003] Roof ridge ventilators typically cover over an elongated opening that is formed in a roof and that extends along the peak of the roof, with the opening typically being in the range of approximately 1.5-3 inches in width and running along a substantial portion of the roof peak. Such openings typically do not extend to the ends of the peak for various structural and functional reasons, as well as other reasons. Such roof ridge ventilators typically function in cooperation with air inlet openings that are typically formed in a lower region of the roof that is generally protected from precipitation, such as the eaves or soffits.

[0004] Many ridge vents have been developed that are made of polymeric materials that are flexible along a longitudinal axis in order to permit the ridge vent to conform to the sloped sides of a roof to cover the ridge opening. These ridge vents typically include a plurality of vent openings or projections and supporting structures that extend from a common panel and that serve the functions of resisting entry of precipitation, insects, and foreign matter, and providing supportive structures that space the panel away from the roof to allow air flow and provide crush resistance. It is further desirable that ridge vents are designed to create a “Venturi effect” or air draft to draw hot air outwardly from the underlying attic.

[0005] Prior art roof ridge vents are known that can be rolled for compact packaging and transport to an installation site. However, to make these ridge vents rollable requires some sacrificing in their features and resulting thermal efficiency in drawing hot air from the underlying attic, or costly modifications to the baffle structure in order to allow the ridge vent to be rolled in a spiral form.

[0006] Accordingly, there remains a need for a ridge vent, and particularly a rollable ridge vent that can be made cost-effectively, and that efficiently assists convection of heat and moisture laden air from beneath a roof.

SUMMARY

[0007] To overcome the problems described above, in an embodiment of the present disclosure a ridge vent, includes an elongated flexible member having a central panel defined between a pair of lateral edges, a first end, and a second end, the central panel having top and bottom major surfaces; a pair of vent openings defining openings through the central panel with one each located inward of a corresponding lateral edge; and a plurality of flow projections extending from a central portion of the central panel to at least one of the pair of lateral edges.

[0008] The ridge vent can further include an end internal gusset extending from the bottom major surface along the first end to support the central panel above a roof.

[0009] In an aspect, each of the plurality of flow projections has a convex cross-sectional shape.

[0010] In an aspect, the end gusset includes a corrugated portion.

[0011] In an aspect, each of the plurality of flow projections is thicker than the central panel.

[0012] In an aspect, the second end includes a pair of tabs extending perpendicularly from the central panel with one each located adjacent to a corresponding one of the pair of vent openings.

[0013] In an aspect, some of the plurality of flow projections extend from the central portion of the central panel to a first one of the pair of lateral edges.

[0014] In an aspect, some of the plurality of flow projections extend from the central portion of the central panel to a second one of the pair of lateral edges.

[0015] In another embodiment, a ridge vent includes an elongated flexible member having a central panel defined between a pair of lateral edges, a first end, and a second end, the central panel having

top and bottom major surfaces; a pair of vent openings defining openings through the central panel with one each located inward of a corresponding lateral edge; and a plurality of joining buttons of resin material protruding from the bottom major surface and aligned and spaced along the second end, wherein the second end has a sinusoidal-shaped portion and one of the plurality of joining buttons is located adjacent to a corresponding peak of the sinusoidal-shaped portion.

[0016] The ridge vent can further include a plurality of flow projections extending from a central portion of the central panel to at least one of the pair of lateral edges.

[0017] In an aspect, the second end includes a pair of tabs extending perpendicularly from the central panel with one each located adjacent to a corresponding one of the pair of vent openings.

[0018] In an aspect, each of the pair of tabs is located between a corresponding lateral edge and the sinusoidal-shaped portion.

[0019] The ridge vent can further include an end gusset extending along the first end to support the central panel above a roof.

[0020] In an aspect, each of the plurality of flow projections has a convex cross-sectional shape.

[0021] In another embodiment, a ridge vent system includes a plurality of ridge vents, wherein each of the plurality of ridge vents includes: an elongated flexible member having a central panel defined between a pair of lateral edges, a first end, and a second end, the central panel having top and bottom major surfaces; a pair of vent openings defining openings through the central panel with one each located inward of a corresponding lateral edge; a plurality of joining holes aligned and spaced along the first end; a plurality of joining buttons of resin material protruding from the central panel and aligned and spaced along the second end, wherein each of the plurality of ridge vents is bondable with another of the plurality of ridge vents such that the resin material of each of the joining buttons of each of the ridge vents is deformable to fit into a corresponding one of the plurality of joining holes of the another of the plurality of ridge vents to define a joint when the resin material is solidified.

[0022] In an aspect, each of the plurality of ridge vents further includes an end gusset extending along the first end to support the central panel above a roof.

[0023] In an aspect, each of the plurality of ridge vents further includes a plurality of flow projections extending from a central portion of the central panel to at least one of the pair of lateral edges.

[0024] In an aspect, each of the plurality of flow projections is thicker than the central panel.

[0025] In an aspect, each of the plurality of ridge vents further includes a pair of tabs extending perpendicularly from the central panel with one each located adjacent to a corresponding vent, and each of the plurality of ridge vents is bondable with another of the plurality of ridge vents such that resin material of each of the tabs of each of the ridge vents is deformable to fit into a corresponding one of the plurality of side holes of the another of the plurality of ridge vents to define a joint when the resin material is solidified.

[0026] As described, ridge vent features are configured to balance intake and exhaust of attic air, reduce debris and weather ingress, ease installation, and decrease job site waste while providing structural integrity. Manufacturability features provide increased production rate and robust joints between molded sections.

[0027] The above and other features, elements, characteristics, steps, and advantages of the present invention will become more apparent from the following detailed description of preferred embodiments of the present invention with reference to the attached drawings.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] FIG. **1** is a top perspective view of a ridge vent according to an embodiment.

[0029] FIG. **2** is a bottom perspective view of a ridge vent.
[0030] FIG. **3** is a side view of a ridge vent.
[0031] FIG. **4** is a bottom view of a portion of a second end of a ridge vent.
[0032] FIG. **5** and FIG. **6** are perspective views of a ridge vent roll according to embodiments.
[0033] FIG. **7** is a perspective view of a ridge vent resiliently deformed to define a roll and being unrolled at the peak of a roof during installation of a ridge.
[0034] FIG. **8** is a sectional view of a roof with a ridge vent in a relaxed position.
[0035] FIG. **9** shows a ridge vent in an installed position on a roof.
[0036] FIG. **10** is a bottom view of a portion of a first end of a ridge vent.
[0037] FIG. **11** is a cross section view of a flow projection of a ridge vent.
[0038] FIG. **12** is a top perspective view of a portion of a first end of a ridge vent.
[0039] FIG. **13** is a bottom perspective view of a portion of a second end of a ridge vent.
[0040] FIG. **14** is a top perspective view of a portion of a first end of a ridge vent.
[0041] FIG. **15** is a bottom view of a portion of two ridge vents joined together.
[0042] FIG. **16** and FIG. **17** are bottom perspective views of a portion of two ridge vents joined together.
[0043] FIG. **18** is a bottom view of a portion of two ridge vents joined together.
[0044] FIG. **19** is a top perspective view of a portion of two ridge vents joined together.

DETAILED DESCRIPTION

[0045] Reference will now be made in detail to embodiments of the present disclosure, examples of which are illustrated in the accompanying drawings. Whenever possible, the same reference numerals will be used throughout the drawings to refer to the same or like parts. However, this disclosure may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein.
[0046] Ranges can be expressed herein as from “about” one particular value, and/or to “about” another particular value. When such a range is expressed, another embodiment includes from the one particular value and/or to the other particular value. Similarly, when values are expressed as approximations, by use of the antecedent “about,” it will be understood that the particular value forms another embodiment. It will be further understood that the endpoints of each of the ranges are significant both in relation to the other endpoint, and independently of the other endpoint.
[0047] Directional terms as used herein—for example up, down, right, left, front, back, top, bottom, vertical, horizontal—are made only with reference to the figures as drawn and are not intended to imply absolute orientation.
[0048] As used herein, the singular forms “a,” “an,” and “the” include plural references unless the context clearly dictates otherwise. Thus, for example, reference to “a” component includes aspects having two or more such components, unless the context clearly indicates otherwise.
[0049] In the following description, reference is made to the accompanying drawings that form a part thereof, and in which is shown by way of illustrating specific exemplary embodiments in which the disclosure may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice the concepts disclosed herein, and it is to be understood that modifications to the various disclosed embodiments may be made, and other embodiments may be utilized, without departing from the scope of the present disclosure. The following detailed description is, therefore, not to be taken in a limiting sense.
[0050] This disclosure describes a ridge vent and rollable ridge vent system that can be used in shingle-over roof vent applications, roll-out shingle over roof ridge vent applications, and in applications where shingles are not used over the ridge vent. The rollable ridge vents of this disclosure can be designed for ridge and hip roof applications, they can have a low profile for a minimum accented ridge line. The vent openings or louver openings in the ridge vent are designed to keep out insects and weather infiltration, and the side baffles are structured to deflect wind and rain and create negative air pressure (i.e., a Venturi effect). The side baffles are desirably molded

into the roof vent in such a way that they can be readily rolled into a coil, laid out over an opening in a roof vent, and positioned in their final form easily, and without significant additional cost to the installer.

[0051] FIGS. **1-4** show a ridge vent **101** to cover an opening at a roof ridge. The ridge vent **101** can be molded and combined with other ridge vents **101** into a lengthened structure that can be rolled into a spiral coil as a rollable ridge vent **1010**, as shown in a representative FIG. **5**, but can also be provided in a straight or rigid form.

[0052] The ridge vent **101** can include an elongated flexible member having a generally planar central panel portion **10** defined between lateral edges **16**, a pair of lateral side portions defining a pair of side baffles **18**, and a pair of transverse ends, a first end and a second end. The central panel portion **10**, which is preferably bi-axially flexible, can include a plurality of support ribs **12** for supporting and spacing the central panel portion **10** when installed above a roof. The ridge vent **101** can include a pair of air vents with one each extending along a corresponding lateral edge **16**. Each air vent can include a plurality of slotted vent openings **14** (best seen in FIG. **4**) defined therethrough and separated by slats **24**, along the lateral edges **16** of the central panel portion **10**. The slats **24** define a portion of, and can be planar with at least one of the major surfaces of the central panel portion **10**. For example, the slats **24** can be planar with the rear major surface of the central panel portion **10** shown in FIG. **1** but can be thicker than the major surface **10** such that a thickness of the slats **24** extends above the bottom or underside major surface the central panel portion **10** shown in FIG. **2**. The added thickness of the slats **24** can increase structural integrity of the vent openings **14**.

[0053] The ridge vent **101** can include side baffles **18** defined integrally with and extending from the bottom of the central panel portion **10** proximate to the lateral edges **16** and between a corresponding lateral edge **16** and the air vent openings **14** on that side. The side baffles **18** can extend substantially perpendicular (90°±30°) from the bottom major surface of the central panel portion **10** (shown in FIGS. **2** and **4**) and can be substantially sinusoidal shaped. The side baffles **18** can extend an entire length of the lateral edge **16**.

[0054] As shown in FIGS. **2** and **4**, the ridge vent **101** can include support ribs **12** that extend from the bottom major surface of the central panel portion **10** and can connect with a side baffle **18**. These support ribs **12** extend inboard beyond the air vent openings and help to prevent insects, debris, water, and other undesirable materials from entering through the lateral portions of the ridge vent **101**.

[0055] An internal baffle **13** can be located at an interior end of each support rib **12**. The internal baffle **13** can be arch shaped and used to manage airflow from the opening in the roof ridge to the vent openings **14**. Additional, internal baffles **13** can be included that extend from the bottom major surface of the central panel portion **10** but are not connected to a support rib **12**.

[0056] The ridge vent **101** can also include internal gussets **20** that extends from the bottom major surface of the central panel portion **10** to provide strength to and support for the central region of the central panel portion **10**. At least one of the internal gussets **20** can extend across the width of the central panel portion **10** between the two side baffles **18**. An end gusset **21** located at a first end of the ridge vent **101** can also extend across the width of the central panel portion **10** between the two side baffles **18**. A central portion of the internal gussets **20** and end gusset **21** can be corrugated or have an accordion or triangular shaped structure to allow the central portion of the ridge vent **101** to bend over the opening in a roof ridge while providing spacing from the roof and structural support. Once the ridge vent **101** is installed, internal gussets **20** will allow the ridge vent **101** to form and retain a curved or peak shape and not flatten, for example, as shown in FIG. **9**. In some embodiments, the ridge vent **101** can include an end gusset **21** at both ends.

[0057] The ridge vent **101** can also include reinforced nail holes **19**. The nail holes **19** can be openings located at periodic intervals extending along the two lateral edges **16**. The nails holes **19** can have a diameter that approximates a diameter of a roofing nail **191** (shown in FIG. **9**) that

extends through the ridge vent **101** and meant to be used to nail the ridge vent **101** to a roof. The nail holes **19** can be reinforced with a boss that can be included and extend from the underside of the central panel portion **10** to define a corresponding nail hole **19**. An internal baffle **13** can also be defined with the boss to add air deflection and structural support. In some embodiments, the rollable ridge vent **1010** can be included with nails that have been force fit and retained into the nail holes **19** to speed installation.

[0058] The ridge vent **101** can be injection molded as one piece and constructed from a polymer material, such as polypropylene, polyvinylchloride, polyethylene, thermoplastic polyolefin, and a high impact copolymer polypropylene. The ridge vent **101** can be made in a three-foot long section and indexed or slid in one direction and then overmolded with another subsequently molded ridge vent **101** to join the two ridge vents **101**. The length of the ridge vent **101** can be a function of or limited by a molding machine. This overmolding joining process can be repeated to create a one-piece, for example 30-foot long, strip that can be rolled for storage, shipment, and handling at a work site, e.g., like the rollable ridge vent **1010** shown in representative FIGS. **5** and **6**.

[0059] In application, the ridge vent **101** can be laid over or unrolled over the opening in a roof ridge and is supported by the ribs **12**, the edge baffles **18**, the internal gussets **20**, and the end gusset **21**. The ridge vent **101** can be tacked into place by nails through any of the nail holes **19**. In a shingle-over ridge vent installation method, a plurality of shingles can be laid over a portion of the ridge vent **101** and both the ridge vent **101** and the shingles can be simultaneously nailed to a roof substrate, such as plywood, studs, tongue and groove planks, or the like, to secure both the ridge vent **101** and shingles in place. The shingles can be layered over the fasteners of the adjacent shingle, to minimize water penetration. The shingles are preferably layered to leave the vent openings **14** open. This arrangement should also not interfere with the Venturi action of air flow from the attic through the vents. After installation, the edge baffles **18** can be seated generally perpendicular to (±30°) or upright in relation to the roof when the ridge vent **101** is installed. The ridge vent **101** can provide a net free area of 12 square-inches per linear foot.

[0060] As mentioned, the ridge vent **101** is configured to be mounted over an opening **52** that is formed in the peak of a roof **12** of a building, as shown in FIG. **7**. The ridge vent **101** can be configured to be resiliently deformed or rolled lengthwise into a roll **1010**, which facilitates handling, transportation, and installation of the ridge vent **101** on the roof **12**. The ability of the ridge vent **101** to be resiliently deformed or flexed is due both to the advantageous design thereof as well as the selection of the material out of which the ridge vent **101** is manufactured. Moreover, the ability of the ridge vent **101** to be resiliently deformed or rolled lengthwise into the roll **1010** results from the specific material of the ridge vent **101**, but also advantageously results from configuring the ridge vent **101** such that a plurality of projections that extend from a panel of the ridge vent **101** each extend only a short longitudinal distance along the panel, and thus do not resist lengthwise resilient deformation of the ridge vent **101** to as great an extent as would smaller numbers of projections that each extend a relatively greater longitudinal distance along the ridge vent **101**. The ridge vent **101** can be resiliently deformed or flexed about a longitudinal axis thereof between a relaxed position (shown in FIG. **8**) in which the ridge vent **101** is substantially flat across an axis transverse to the longitudinal axis and an installed position (shown in FIG. **9**) in which the ridge vent **101** is angled to conform substantially to the sloped sides of the roof **50**.

[0061] In some embodiments, a foam insert or another end cap (not shown) can be used to close an end of the ridge vent **101** prior to completion of the installation. More preferably, a length of the ridge vent **101** can be cut and joined with an adjacent piece on the roof such that one of the internal gussets **20** or end gusset **21** that extends the width of the ridge vent **101**, which are located at intervals across the ridge vent **101**, can be located at an end of the ridge to close an end of the ridge vent spanning the opening of the roof. In some embodiments, any combination of the internal gussets **20** and the end gussets **21** can be located at **6** inch intervals across the ridge vent **101**. This provides for a more efficient installation as no additional inserts, end caps, or separate pieces are

needed to close off the ends, thereby reducing jobsite waste.
[0062] In some embodiments, an internal filter **60** can be coupled to the rollable ridge vent **1010**, as shown in representative FIG. **6**. An exemplary filter **60** can be made of an untreated, unwoven fiberglass mesh. The filter **60** can be attached to the rollable ridge vent **1010** using an adhesive or by a heat staking process by which the support ribs **12** are melted into the filter material along the full length of the product. The filter, of fiberglass mesh construction or the like, can be provided beneath the central panel portion **10** for filtering out insects, snow, rain, debris, etc., while allowing sufficient air flow therethrough to accomplish the purposes of the rollable ridge vent **1010**.
[0063] The ridge vent **101** can further include manufacturability features that increase production rate, facilitate joining of two ridge vents **101** during molding, and create strong and robust joints between two ridge vents **101**. FIGS. **10** to **19** are used to describe such manufacturability features.
[0064] FIG. **10** is a bottom or underside view of a portion of the ridge vent **101** that shows features provided to increase manufacturability. One feature is a series of flow projections **70**. The flow projections **70** protrude from and are raised above other portions of the central panel portion **10**. As such, the thickness differences of the flow projections **70** are visible. As shown, a grouping of the flow projections **70** can extend from a central location **72** such that the grouping defines a spider like-shaped pattern where the central location **72** corresponds to a spider body and the flow projections **70** correspond to spider legs connected at one end to the body. FIG. **11** shows that a cross section of the flow projections **70** can be convex such that a center of a flow projection **70** is the thickest portion and a thickness of the flow projection **70** tapers away from the center until the cross section of the flow projection **70** terminates at an edge **71** having a thickness of the central panel portion **10**. The cross section of each of the flow projections **70** can be substantially uniform throughout their length.
[0065] The flow projections **70** in the ridge vent **101** result from a specific corresponding mold flow channel shape provided to allow better resin distribution and complete fill throughout the molded part during the injection molding process. Including the flow channels in a mold resulting in the flow projections **70** increases the efficiency of molding the ridge vent **101**. A larger molding machine would be required to push the resin to the outer edges of the mold to fabricate a comparable ridge vent that does not include the flow projections **70**. Providing the flow projections **70** optimizes the molding process to use the least amount of resin at a desired viscosity to flow to the outer edges in a uniform manner to minimize the time needed to mold a ridge vent **101**. Flow projections **70** allow for better resin distribution throughout the molded part during the injection molding process. With flow projections **70**, resin travels easier through the mold tool, thus reducing the flow time and increases the roll production. The variance in the thickness from the flow projections **70** allows for a reduction of the material and reduced injection tonnage needed to manufacture the rolls, improve rollback, and maintain structural integrity when nail gun applicators are used to install the ridge vent **101**.
[0066] During injection molding, resin can be provided via valve gates to the central locations **72** as the resin flows and is distributed to outer portions of the mold. After the resin sufficiently cools, the ridge vent **101** can be ejected from the mold as one piece that is about three feet long. A robotic arm can slide the ejected ridge vent **101** to a side in indexing. The ejected ridge vent **101** can be joined with a subsequently molded ridge vent **101**. These steps can be repeated until ten ridge vents **101** are produced and joined together to define a length of a strip, e.g., a 30-foot strip, which can then be rolled into a product like **1010**.
[0067] The ridge vent **101** can be manufactured in any of a wide variety of fashions such as various types of molding, casting, and other methodologies. The ridge vent **101** is particularly appropriately manufactured via injection molding, although other and additional manufacturing processes may be employed without departing from the concept of the present invention. This disclosure contemplates an efficient manufacturing process for making ridge vents **101** including a forming operation employing polymeric materials. The forming operation can include injection molding,

extrusion or compression molding, for example. In an embodiment, the ridge vent **101** is made by index injection molding. In such an embodiment, a mold having upper and lower mold sections is provided for forming a mold cavity. A quantity of polymeric material is injected into the mold cavity and a first ridge vent section **101** is formed in the mold cavity. Next, the first ridge vent section **101** is indexed so that it is substantially moved beyond the mold cavity but remains in contact with the mold. A small stepped extension can remain in the mold. A second quantity of polymer is injected between the mold sections of mold and a second ridge vent **101** section is formed which is connected to the first ridge vent section **101**. The cooled first ridge vent section **101** can then be rolled up in lengths containing about 20-50 feet of vent material, which is then packaged for storage and shipping. For example, a rolled length can be about 30 feet.

[0068] The ridge vent **101** can include additional manufacturability features that increase production rate such as overmolding features at the ends of the ridge vent **101** that facilitate joining with another ridge vent **101** with a robust bond. For example, FIG. **10** shows that the ridge vent **101** can include a step or flange **74** extending across a first end. The flange **74** can include a strip of resin material with increased thickness than the central panel portion **10** and that extends a width of the ridge vent **101** between the slats **24** along both edges of the ridge vent **101**. The flange **74** can include a series of joining holes **76** that are through flange **74** and aligned and spaced periodically along the flange **74**.

[0069] FIG. **12** is a perspective view of an opposite side of a portion of the ridge vent **101** at the first end that includes the joining holes **76**. This side of the ridge vent **101** can include recesses **80** with one each around a corresponding joining hole **76**. The thickness of the recesses **80** is reduced compared to the central panel portion **10**. As shown, the recesses **80** defined at most of the joining holes **76** create a sinusoidal or scalloped pattern whereas recesses **80** at outermost joining holes **76** can have a different shape. The joining holes **76** and the recesses **80** are defined and oriented to mate with corresponding features on the opposite (second) end of another ridge vent **101**.

[0070] FIG. **13** is a perspective bottom or underside view of a portion of the ridge vent **101** at the second end opposite to the first end shown in FIGS. **10** and **12**. As shown in FIG. **13** and also FIG. **4**, the second end of the ridge vent **101** can include features that are configured to join with corresponding features at the first end of another ridge vent **101**. The second end can include a series of joining buttons **96** that are defined of resin material protruding from the central panel portion **10** and are aligned and spaced periodically along the second end. As shown, most of the joining buttons **96** are adjacent to an edge **90** having a sinusoidal or scalloped pattern whereas the edge **90** at the outermost joining buttons **96** can have a different shape. The second end also can include tabs **110**, one at each end used for joining.

[0071] During joining of two ridge vents **101** to define a strip, the first end of one ridge vent **101** is aligned with the second end of another ridge vent **101** such that the two ridge vents **101** fit together. The sinusoidal pattern of the edge **90** along the second end can fit into the sinusoidal recesses **80** along the first end. The locations of the joining buttons **96** along the second end align with corresponding joining holes **76** along the first end. The resin defining the joining buttons **96** can flow through the joining holes **76** and the resin at the edge **90** can flow with the resin in the recesses **80** to define a robust seam **1400**, as shown in FIGS. **18** and **19**.

[0072] The ridge vent **101** can include additional manufacturability features that facilitate joining with another ridge vent **101** with a robust bond. FIG. **14** is a perspective view of a portion of the first end showing that the end gusset **21** that extends across the width of the ridge vent **101** can include side holes **100** (also visible in FIG. **12**) through the end gusset **21**. As shown, the side holes **100** can be located on the end gusset **21** adjacent to the edges **16**. When two ridge vents **101** are joined, the side holes **100** adjacent to one edge **16** are aligned with a tab **110** on the other ridge vent **101**. While being joined, resin material flows from the tab **110** and through the side holes **100** to create a side joint **1100** shown in FIG. **15**. The side joint **1100** provides bonding forces in a direction perpendicular to the bonding forces of the joining buttons **96** with the joining holes **76** to

add strength to the bonded portion. FIGS. **16** and **17** provide alternative views of the side joint **1100**.

[0073] It should be understood that the foregoing description is only illustrative of the present invention. Various alternatives and modifications can be devised by those skilled in the art without departing from the present invention. Accordingly, the present invention is intended to embrace all such alternatives, modifications, and variances that fall within the scope of the appended claims.

Claims

1. A ridge vent, comprising: an elongated flexible member having a central panel defined between a pair of lateral edges, a first end, and a second end, the central panel having top and bottom major surfaces; a pair of vent openings defining openings through the central panel with one each located inward of a corresponding lateral edge; and a plurality of flow projections extending from a central portion of the central panel to at least one of the pair of lateral edges.

2. The ridge vent of claim 1, further comprising an end internal gusset extending from the bottom major surface along the first end to support the central panel above a roof.

3. The ridge vent of claim 1, wherein each of the plurality of flow projections has a convex cross-sectional shape.

4. The ridge vent of claim 2, wherein the end gusset includes a corrugated portion.

5. The ridge vent of claim 1, wherein each of the plurality of flow projections is thicker than the central panel.

6. The ridge vent of claim 1, wherein the second end includes a pair of tabs extending perpendicularly from the central panel with one each located adjacent to a corresponding one of the pair of vent opening.

7. The ridge vent of claim 1, wherein some of the plurality of flow projections extend from the central portion of the central panel to a first one of the pair of lateral edges.

8. The ridge vent of claim 7, wherein some of the plurality of flow projections extend from the central portion of the central panel to a second one of the pair of lateral edges.

9. A ridge vent, comprising: an elongated flexible member having a central panel defined between a pair of lateral edges, a first end, and a second end, the central panel having top and bottom major surfaces; a pair of vent openings defining openings through the central panel with one each located inward of a corresponding lateral edge; and a plurality of joining buttons of resin material protruding from the bottom major surface and aligned and spaced along the second end, wherein the second end has a sinusoidal-shaped portion and one of the plurality of joining buttons is located adjacent to a corresponding peak of the sinusoidal-shaped portion.

10. The ridge vent of claim 9, further comprising a plurality of flow projections extending from a central portion of the central panel to at least one of the pair of lateral edges.

11. The ridge vent of claim 9, wherein the second end includes a pair of tabs extending perpendicularly from the central panel with one each located adjacent to a corresponding one of the pair of vent opening.

12. The ridge vent of claim 11, wherein each of the pair of tabs is located between a corresponding lateral edge and the sinusoidal-shaped portion.

13. The ridge vent of claim 9, further comprising an end gusset extending along the first end to support the central panel above a roof.

14. The ridge vent of claim 9, wherein each of the plurality of flow projections is thicker than the central panel.

15. The ridge vent of claim 14, wherein each of the plurality of flow projections has a convex cross-sectional shape.

16. A ridge vent system, comprising a plurality of ridge vents, wherein each of the plurality of ridge vents includes: an elongated flexible member having a central panel defined between a pair of

lateral edges, a first end, and a second end, the central panel having top and bottom major surfaces; a pair of vent openings defining openings through the central panel with one each located inward of a corresponding lateral edge; a plurality of joining holes aligned and spaced along the first end; and a plurality of joining buttons of resin material protruding from the central panel and aligned and spaced along the second end, wherein each of the plurality of ridge vents is bondable with another of the plurality of ridge vents such that the resin material of each of the joining buttons of each of the ridge vents is deformable to fit into a corresponding one of the plurality of joining holes of the another of the plurality of ridge vents to define a joint when the resin material is solidified.

17. The ridge vent system of claim 16, wherein each of the plurality of ridge vents further includes an end gusset extending along the first end to support the central panel above a roof.

18. The ridge vent system of claim 16, wherein each of the plurality of ridge vents further includes a plurality of flow projections extending from a central portion of the central panel to at least one of the pair of lateral edges.

19. The ridge vent system of claim 17, wherein each of the plurality of flow projections is thicker than the central panel.

20. The ridge vent system of claim 19, wherein each of the plurality of ridge vents further includes a pair of tabs extending perpendicularly from the central panel with one each located adjacent to a corresponding one of the pair of vent openings, and each of the plurality of ridge vents is bondable with another of the plurality of ridge vents such that resin material of each of the tabs of each of the ridge vents is deformable to fit into a corresponding one of the plurality of side holes of the another of the plurality of ridge vents to define a joint when the resin material is solidified.