The invention is directed to siding installation apparatus and methods of using such siding installation apparatus to install siding pieces on a structure. A siding installation apparatus includes a body having a first and second ends spaced apart from each other by a first dimension. The siding installation apparatus further includes a plurality of projections projecting outwardly from the body and spaced apart from each other along the first dimension of the body. Each of the projections is spaced apart from an adjacent projection by a first distance.
SIDING INSTALLATION APPARATUS AND
METHODS OF USING AND MAKING SAME

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims the benefit of U.S. Provisional Application No. 60/778,479, filed Mar. 1, 2006 (Perkins Coie Docket No. 31957.8018US00), and U.S. Provisional Application No. 60/792,809, filed Apr. 17, 2006 (Perkins Coie Docket No. 31957.8019US00).

TECHNICAL FIELD

[0002] This invention relates to siding installation apparatus for installing siding pieces on structures, such as houses or other buildings, methods of using such siding installation apparatus, and methods of manufacturing siding installation apparatus.

BACKGROUND

[0003] The exterior surfaces of houses and other structures are often protected by exterior siding products made from wood, vinyl, aluminum, bricks, stucco, fiber-cement, and other materials. Wood and fiber-cement siding products, for example, include panels, planks, and shakes that are “hung” on plywood or composite walls. Fiber-cement siding products offer several advantages over other types of siding materials. For example, fiber-cement siding does not rot, warp, or crack. Fiber-cement siding is a composite material that may be formed of cement, silica sand, and cellulose.

[0004] Properly installed siding pieces overlap an adjacent, underlying siding piece by a selected overlap to cover fasteners used to attach the lower siding piece to the wall. Correct installation requires the fasteners to be positioned sufficiently far from the top edge of the siding piece to hold the bottom edge of the siding piece flat against the underlying siding piece. However, it can be challenging to consistently install the siding pieces with the correct overlap. For example, when siding pieces are installed with insufficient overlap, the nails in the siding pieces may be visible. If the installer corrects this problem by nailing the pieces closer to the top edge, the nails can ruin the top edge and the back surface of the siding pieces may not lay flat against the front surface of the underlying pieces. Consequently, the overlapping siding piece may rattle in high winds or when windows or doors in the structure are closed. Very high winds, in fact, can lift the bottom edge of such high-nailed pieces causing the overlying siding piece to fail. Furthermore, water can pass between insufficiently overlapped siding pieces and damage the wall. Such improperly installed siding can accordingly void the warranty and be very costly for the installer and/or siding manufacturer to repair.

[0005] There are number of conventional installation techniques that are used to install and overlap siding with varying degrees of success. One conventional technique includes establishing a substantially level datum line on the wall. The first siding piece is attached to the wall using the datum line as a reference. Additional siding pieces may be installed using a variety of techniques to mark the installation location that will provide the desired amount of overlap with the underlying siding pieces based on the location of the first siding piece or the datum line. For example, in one conventional technique, a simple tape measure can be used to measure and mark the position from the datum line that another siding piece should be attached to the wall to provide the desired amount of overlap within the underlying siding piece. One problem with such a technique is that it is time consuming for the installer to repeatedly use a tape measure, and another problem is that it is prone to measurement errors.

[0006] Another conventional technique commonly used by installers is to use a block of wood inaccurately cut to have the length of the desired amount of overlap. After installing a siding piece, the block is used to mark a reference point on the installed siding piece to indicate the desired overlap of the next overlying siding piece. This technique typically produces overlaps that vary greatly from siding piece to siding piece across a wall. Yet another conventional technique includes measuring and marking multiple level references lines on a wall that are vertically spaced apart to mark the positions that siding pieces should be installed to provide a desired amount of overlap. Again, such a technique is extremely time consuming for an installer to use and also can increase the inaccuracy of the siding piece positioning due to the repeated measurements necessary to establish all of the reference lines. In yet another existing technique that is quite useful, pairs of siding installation apparatus disclosed in U.S. Patent Publication No. 20040237461 (‘461 Application) can be used to grip and position another siding piece to overlap an underlying siding piece a desired amount.

[0007] Installing siding pieces made from fiber-cement also poses additional problems because they are dense and relatively flexible. As such, it can be difficult for one person to install long heavy fiber cement planks and/or panels. Accordingly, installation generally requires one person to hold one end of a fiber-cement siding piece while another person holds and sets the other end of the siding piece, or siding installation apparatus such as those disclosed in the aforementioned ‘461 Application can replace a person to install pieces formed of fiber-cement.

[0008] Therefore, there is a need for a siding installation apparatus and method to assist an installer in properly attaching siding pieces with a selected amount of overlap to structures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a front view of a siding installation apparatus in accordance with one embodiment of the invention.

[0010] FIG. 2 is a side view of FIG. 1.

[0011] FIG. 3 is an enlarged side view of FIG. 2 showing the projections of the siding installation apparatus in more detail.

[0012] FIG. 4 is a front view of two siding pieces selectively positioned on a wall using the siding installation apparatus of FIGS. 1-3.

[0013] FIG. 5 is a partial side view of FIG. 4.

[0014] FIG. 6 is a front view of a siding installation apparatus having first and second interconnect elements at
the ends thereof to enable interlocking siding installation apparatus in accordance with another embodiment of the invention.

[0015] FIG. 7 is a side view of a side installation apparatus in which the projections are reinforced in accordance with another embodiment of the invention.

[0016] FIG. 8 is a front view of one embodiment of a siding installation apparatus that may be used to assist with aligning siding pieces with corresponding projections of the siding installation apparatus of FIGS. 1-7.

[0017] FIG. 9 is a front view illustrating the positioning and alignment of the indium of the siding installation apparatus of FIG. 8 with the siding installation apparatus of FIG. 1.

[0018] FIG. 10 is a front view of another embodiment of a siding installation apparatus that may be used to assist with aligning siding pieces with corresponding projections of the siding installation apparatus of FIGS. 1-7.

[0019] FIG. 11 is an isometric view of another embodiment of a siding installation apparatus.

[0020] FIG. 12A is a top plan view of the embodiment of the siding installation apparatus of FIG. 11.

[0021] FIG. 12B is a side elevation view of the embodiment of the siding installation apparatus of FIG. 11.

DETAILED DESCRIPTION

[0022] Several embodiments of siding installation apparatus methods of installing siding pieces using siding installation apparatus, and methods of making siding installation apparatus are described below. Many specific details of certain embodiments are set forth in the following description and in FIGS. 1 through 12B in order to provide a thorough understanding of such embodiments. One skilled in the art, however, will understand that the invention may have additional embodiments, or that the invention may be practiced without several of the details described in the following description. For example, specific elements of any of the foregoing embodiments can be combined or substituted for elements in other embodiments. Additionally, where the context permits, singular or plural terms may also include plural or singular terms, respectively. Moreover, unless the word “or” is expressly limited to mean only a single item exclusive from the other items in reference to a list of two or more items, then the use of “or” in such a list means including (a) any single item in the list, (b) all of the items on the list, or (c) any combination of the items in the list. Additionally, the term “comprising” is used throughout the following disclosure to mean including at least the recited feature(s) such that any greater number of the same feature and/or additional types of features or components is not precluded. In the figures and description that follow, like elements and features are identified by like or similar reference numerals.

[0023] Several embodiments described below are directed to siding installation apparatus. In a specific embodiment, a siding installation apparatus includes a body having first and second ends spaced apart from each other by a first dimension. The siding installation apparatus further includes a plurality of projections projecting outwardly from the body and spaced apart from each other along the first dimension of the body. Individual projections are spaced apart from other projections by a first distance. In one embodiment, one of the projections may be spaced apart from the first end by a second distance and another of the projections may be spaced apart from the second end by the second distance as well; the second distance can be about half of the first distance. In another embodiment, at least one indium may be positioned on the siding installation apparatus to indicate an installation orientation. In yet another embodiment, the first end may have a first interconnect element and the second end may have a second interconnect element configured to vertically interlock multiple siding installation apparatus together.

[0024] Additional embodiments described below are directed to methods of installing siding pieces on a surface of a structure. A specific embodiment of such a method includes attaching a siding installation apparatus to a surface of the structure. The siding installation apparatus includes a body having a plurality of projections projecting outwardly from the body; individual projections are spaced apart from other projections along an extent of the body. Individual projections have an upper surface and an opposing abutment surface. The method further includes abutting an upper edge of a first siding piece against the abutment surface of one of the projections and subsequently driving one or more fasteners through the first siding piece and into the structure. After attaching the first siding piece, an upper edge of a second siding piece is abutted against the abutment surface of another one of the projections to overlap the first siding piece with the second siding piece. One or more fasteners are then driven through the second siding piece and into the structure while the second siding piece overlaps the first siding piece.

[0025] FIGS. 1 and 2 are front and side views, respectively, of a siding installation apparatus 100 in accordance with one embodiment of the invention. The siding installation apparatus 100 may be used for installing a variety of different types of siding pieces, such as shake panels, lap siding panels, drop siding panels, and other siding pieces, on a surface of a structure such as a wall or roof of a building. These siding pieces may be formed from a variety of materials such as, for example, wood, fiber-cement, or vinyl.

[0026] The siding installation apparatus 100 includes an elongated body 102 of length L having a first end 105 and an opposing second end 107. The body 102 further has a longitudinal axis 103, a width W (FIG. 1), and a thickness t (FIG. 2). The apparatus 100 further includes a plurality of uniformly spaced projections 104 projecting from the body 102. Individual projections 104 can have one or more protuberances, tabs, cogs or other members that project normal to the longitudinal axis 103 or at another transverse angle relative to the longitudinal axis 103 (e.g., non-parallel angle). The body 102 and projections 104 may be formed from a variety of different materials such as wood, metals, metal alloys, and polymeric materials. In one embodiment, the body 102 and projections 104 may be formed from a polymeric material, such as acrylonitrile-butadiene-styrene (ABS) either with or without calcium carbonate, or another suitable polymeric material so that it may be packaged and stored without breaking. The body 102 can be relatively rigid, or it can be flexible to be easily coiled for packaging/storing and then uncoiled at a job site for installing siding. One specific embodiment of the body 102 and projections
comprises ABS with at least approximately 20-25% calcium carbonate. In one embodiment, the body 102 and the projections 104 are integrally formed from a suitable polymeric material by injection molding or another suitable fabrication process. Representative dimensions for the width W is about 0.60 inches and the thickness t1 is about 0.040 inches, but in other embodiments the body 102 can have other widths and/or thicknesses.

As discussed in more detail below, the projections 104 are spaced apart from one another lengthwise along the body 102 by a distance S that is chosen to provide a selected amount of overlap when siding pieces are positioned on a wall using the siding installation apparatus 100. In the embodiment shown in FIGS. 1 and 2, the upper- and lower-most projections 104 are spaced apart from their respective ends 105 and 107 by a distance S/2 so that when two of the siding installation apparatus 100 are positioned end-to-end, the spacing of the upper-most projection 104 of the lower siding installation apparatus 100 from the lower-most projection 104 of the upper siding installation apparatus 100 is approximately the distance S.

FIG. 3 is an enlarged side view of FIG. 2 that more clearly shows the structure of an embodiment of the projections 104. Individual projections 104 have an abutment surface 106 and an opposing upper surface 108, and the projections 104 are spaced apart from each other the distance S. The projections 104 have a thickness t2 and project from the body 102 by a distance d. Representative dimensions for the thickness t2 of the projections 104 may be about 0.080 inches and the distance d of the projections 104 maybe about 0.25 inches, but other embodiments the projections can have other dimensions for the thickness t2 and/or distance d.

The length L of the siding installation apparatus 100 and the spacing S of the projections 104 may be varied depending on the size of the siding piece being installed. In one embodiment suitable for installing siding pieces having a length of 12 feet and a width of 5 inches, the projections 104 are spaced apart a distance S of about 4.0 inches to provide an overlap X of 1/4 inch and the length of the siding installation apparatus 100 is about 28.0 inches. In another embodiment suitable for installing siding pieces having a length of 12 feet and a width of 6 1/4 inches, the projections 104 spaced apart a distance S of about 5.0 inches to provide an overlap X of 1 3/4 inch and the length of the siding installation apparatus 100 is about 36.0 inches. In another embodiment suitable for installing siding pieces having a length of 12 feet and a width of 7 1/4 inches, the projections 104 are spaced apart a distance S of about 6.0 inches to provide an overlap X of 1/2 inch and the length of the siding installation apparatus 100 is about 42.0 inches. In another embodiment suitable for installing siding pieces having a length of 12 feet and a width of 8 1/4 inches, the projections 104 are spaced apart a distance S of about 7.0 inches to provide an overlap X of 1 1/4 inch and the length of the siding installation apparatus 100 is about 49.0 inches. As such, several embodiments space the projections apart lengthwise along the body by a distance equal to the width of the siding piece less the desired amount of overlap (e.g., S=W-x). In yet another embodiment, the width of the body 102 of the siding installation apparatus 100 shown in FIG. 1 may be about 8.0 feet to about 10.0 feet. Accordingly, in such an embodiment, the siding installation apparatus 100 may cover a substantial portion of a wall on which the siding installation apparatus 100 is installed.

[0030] Turning now to FIGS. 4 and 5, the manner in which the siding installation apparatus 100 is used to install siding pieces will be better understood. In practice, a substantially horizontal datum line (not shown) may be established on a wall 110 using any one of a variety of techniques known to those of ordinary skill in the art. Siding installation apparatus 100A and 100B are mounted to the wall 104 using fasteners 109 such as staples, nails, or other suitable devices to position (a) their respective longitudinal axes 130 substantially perpendicular to the datum line, (b) the longitudinal axes 130 of each of the siding installation apparatus 100A and 100B substantially parallel to each other, and (c) so projections of apparatus 100A are generally aligned with corresponding projections of apparatus 100B to define projection sets. The two siding installation apparatus 100A and 100B may be spaced apart a distance D that is slightly less than the length of the siding pieces 112A and 112B being installed in order to conceal the siding installation apparatus 100A and 100B under the siding pieces being installed (e.g., slightly less than 12 feet when 12 foot long fiber-cement siding is being installed).

[0031] The first siding piece 112A is positioned so that an upper edge 114 abuts (a) an abutment surface 106 of one of the projections 104 of the siding installation apparatus 100A and (b) an abutment surface 106 of a corresponding one of the projections 104 on the siding installation apparatus 100B. The siding piece 112A can then be fastened to the wall 110 by driving one or more fasteners 120, such as nails, screws, or other suitable devices, through the siding piece 112A and into the wall 110. A second siding piece 112B is then positioned so that its upper edge 114 abuts the abutment surface 106 of the projections 104 on each of the siding installation apparatus 100A and 100B that are immediately above the projections 104 that the siding piece 112A abuts. The siding piece 112B is attached to the wall 110 in the same manner as the siding piece 112A by driving one or more fasteners 120 through the siding piece 112B and into the wall 110. By positioning the second siding piece 112B in this manner, the siding piece 112B overlaps the siding piece 112A by the selected overlap X. In general, the overlap X is sufficient to cover the fasteners 120 used to attach the first siding piece 112A to the wall 110. The overlap X is accordingly approximately the difference between the width W of the siding piece 112B and the projection 104 spacing distance S in many embodiments.

[0032] As shown in FIG. 5, which depicts another siding piece 112C attached to the wall 110, the process shown in FIG. 4 is repeated until a desired number of siding pieces have been installed on the wall 110. As such, although only two siding pieces 112A and 112B are shown in FIG. 4, more than two may be used to cover the wall 110. In general, the full height of a wall is often covered by repeatedly overlapping the previously installed siding piece with another siding piece.

[0033] Depending upon the size of the wall 110, additional siding installation apparatus 100 may be installed vertically, as shown with siding installation apparatus 100C and 100D attached to the wall. More specifically, the second ends 107 of the apparatus 100C and 100D can be positioned proximate to the first ends 105 of the siding installation apparatus.
100A and 100B, respectively. The second ends 107 of the upper siding installation apparatus, for example, can abut or overlap/underlie a portion of the first ends 107 of the lower siding installation apparatus. This accordingly increases the vertical coverage of the wall 110 with additional siding pieces 112. Additionally, a set of siding installation apparatus 100F/100H may be installed on the wall 110 with or without a lateral separation from the siding installation apparatus 100A/100C, and another set of siding installation apparatus 100G/100I may be installed on the wall 110 spaced apart from the siding installation apparatus 100E/100F by approximately the distance D. This accordingly increases the horizontal coverage of the wall 110 with additional siding pieces 112. Siding pieces 112 may be mounted on the siding installation apparatus 100E/100H in the same manner as described above with respect to the siding pieces 112A and 112B in order to increase the coverage of the wall 110 with the siding pieces 112. Accordingly, repetitively installing the siding installation apparatus 100 and siding pieces 112 enables covering the desired amount of surface area of the wall 110.

The use of the siding installation apparatus 100 also separates the backside of each of the siding pieces 112A and 112B from the wall 110 to allow moisture to run down the wall and/or evaporate. This helps prevent moisture build-up behind the siding pieces 112 to eliminate or reduce mold, mildew, rotting and other problems associated with moisture. Additionally, the various embodiments for siding installation apparatus disclosed herein enable a single person to install siding pieces 112 rapidly on a wall without the need to repetitively mark the wall with indicia.

Another embodiment of the siding installation apparatus 100 discussed above can have a much larger width W of, for example, 8.0 feet to 10.0 feet. In this embodiment, the siding pieces 112A-112C may be installed using only a single siding installation apparatus 100 instead of using two spaced apart as shown in FIG. 4. This embodiment is particularly useful for mounting shake panels on a roof. To assist the installer, the siding installation apparatus 100 may be formed of a flexible polymeric material so that it may be cooled for ease of carrying and uncoupled when the installer is standing on the roof prior to installation thereof. In practice, the installer attaches the siding installation apparatus 100 to the wall 110 or a roof of a structure using one or more suitable fasteners 109. The siding piece 112A is manually positioned so that the upper edge 114 thereof abuts the lower, siding abutment surface 106 of one of the projections 106. One or more fasteners are driven into the siding piece 112A and through the body 102 of the siding installation apparatus 100 into the wall 110 or roof. The siding piece 112B is then manually positioned so that the upper edge 114 thereof abuts the lower, siding abutment surface 106 of another one of the projections 106 to overlap the siding piece 112A, the desired overlap X and the siding piece 112B attached to the wall 110 or roof in the same manner. This process is repeated until a sufficient number of siding pieces 112 are mounted to the wall 110 or roof of the structure. Again, in this embodiment, more than one of the siding installation apparatus 100 may be mounted to the wall 110 or roof laterally or vertically adjacent to each other to enable covering the entire wall 110 or roof with siding pieces.

FIG. 6 shows another embodiment of a siding installation apparatus 200 configured to facilitate placing additional siding installation apparatus vertically above or below another siding installation apparatus end-to-end. The siding installation apparatus 200 also includes an elongated body 202 having an end 201 with a first interconnect element 206 and an opposing end 203 having a second interconnect element 208. The first interconnect element 206 can include a groove or slot 214, and the second interconnect element 208 can be a projection 212 or tongue configured to be received in the slot 214. The first and second interconnect elements 206 and 208 of the siding installation apparatus 200 can be female/male interconnect elements that mate together to attach siding installation apparatus 100 vertically and adjacent to each other end-to-end. In another embodiment, the first interconnect element 206 and the second interconnect element 208 can be at the second and first ends 203 and 201, respectively.

In another embodiment, the siding installation apparatus 200 may have one or more indicia 210 positioned on the body 202 of the siding installation apparatus 200 to indicate to the installer the direction to orient the siding installation apparatus 200 on a wall. In various embodiments, the indicia 210 may include an arrow that is stamped, printed, embossed, or integrally molded with the body 202 of the siding installation apparatus 200. In other embodiments, the indicia 210 may include a horizontal line that is stamped, printed, embossed, or integrally molded with the body 202 of the siding installation apparatus 200. In such an embodiment, the horizontal line may be aligned with a substantially horizontal datum line marked on a wall and used to orient a longitudinal axis 216 of the siding installation apparatus 200 substantially perpendicular to the substantially horizontal datum line in order to more easily install siding pieces. In yet another embodiment, one or more of the indicia 210 of the siding installation apparatus 200 may be a leveling device of conventional construction included in the body 202 (e.g., a bubble suspended in a liquid) or attached to the body 202 that provides an indication that the longitudinal axis 216 of the siding installation apparatus 200 is oriented substantially vertically when the leveling device indicates that it is positioned level.

FIG. 7 shows a side view of a siding installation apparatus 300 in accordance with another embodiment of the invention. The siding installation apparatus 300 is similar in structure and function to the siding installation apparatus 100 of FIG. 1. Therefore, only the differences in the structure of the projections are discussed in detail. The siding installation apparatus 300 includes projections 304 uniformly spaced apart from each other by a distance S and projecting outwardly from an elongated body 302. Each of the projections 304 has an upper surface 308 that forms a fillet 310 at the junction between the upper surface 308 and the body 302, and a downwardly facing abutment surface 306. The additional material provided by the fillet 310 provides structural reinforcement when a siding piece 112 is abutted against the abutment surface 306 of one of the projections 304 to stiffen and help prevent the projections 304 from deflecting upwardly a significant amount when a siding piece 112 is pushed upwardly against the abutment surface 306 during the installation process. Unlike the siding installation apparatus 100 of FIG. 1, the siding installation apparatus 300 is asymmetric and, thus, not reversible. However, the projections 304 of the siding installation apparatus 300 may be constructed to be more resistant to breaking during use compared to the siding installation apparatus 100.
FIGS. 8 and 9 show one embodiment of a siding installation apparatus 400 that may be used in conjunction with any of the aforementioned embodiments of siding installation apparatus 412. The siding installation apparatus 400 includes an elongated body 402 of length L and having a first end 405 and an opposing second end 407. The body 402 further has a longitudinal axis 403 and a width W. The body 402 includes a plurality of uniformly spaced indicia 404 spaced apart from each other by a distance s. Each of the indicia 404 may be a horizontal line or other suitable symbol that is stamped, printed, embossed, or integrally molded with the body 402 of the siding installation apparatus 400. The upper and lower most indicia 404 are spaced apart from their respective ends 405 and 407 by a distance S/2 so that when a first end of one siding installation apparatus 400 is positioned at a second end 407 of another installation apparatus, the spacing of the upper most indicia of one of the siding installation apparatus 400 from the lower most indicia of the other one of the siding installation apparatus 400 is at least approximately the same as the distance S. The siding installation apparatus 400 may be formed from the same materials as used for the siding installation apparatus 100. Similarly, the siding installation apparatus 400 may also have the same length L, width W, and thickness as the siding installation apparatus 100, and the indicium spacing S may be approximately the same as the aforementioned projection spacing. In some embodiments, the ends 405 and 407 may be structured with the same first and second interconnect elements that were discussed in FIG. 6.

As shown in FIG. 9, the siding installation apparatus 400 provides a further guide to the installer to more easily align one of the siding pieces 112 with the projections 104 of the siding installation apparatus 100. As discussed above, the indicia 404 are spaced apart from each other the distance S that is approximately the same as the distance S that the projections 104 are spaced apart from each other. In practice, siding installation apparatus 400A and 400B are mounted on the wall 110 in between the siding installation apparatus 100A/100C and 100B/100D using fasteners 109 in the same manner as employed for installing the siding installation apparatus 100A/100D. The individual indicium 404 of the siding installation apparatus 400A and 400B are aligned with corresponding projections 104 of the siding installation apparatus 100A-100D. The siding pieces 112 (only one siding piece 112 is shown in FIG. 9) are mounted on the wall 110 using the siding installation apparatus 100A-100D in the same manner as described in FIGS. 4 and 5, except that the installer may use a corresponding one of the indicia 404 to help align the upper edge 114 of one of the siding pieces 112 when the installer attempts to abut the upper edge 114 against the abutment surfaces 106 of a corresponding set of the projections 104. Of course, additional siding installation apparatus 400 may be installed so that more than one indicium 404 is provided for each set of the projections 104. Accordingly, the siding installation apparatus 400 can enhance the alignment of the siding pieces 112, and the apparatus 400 can also provide another standoff between the siding pieces 112 and the wall 110 to allow moisture to flow down the wall 110.

In another embodiment, the siding installation apparatus 400 may be used without the indicia 404. In such an embodiment, the siding installation apparatus will not assist with positioning of the siding pieces 112. However, in this embodiment, the siding installation apparatus 400 will still help provide the same beneficial standoff between the siding piece 112 and the wall 110 at the medial portion of the siding pieces 112.

FIG. 10 shows another siding installation apparatus 400' that is similar to the siding installation apparatus 400 shown in FIGS. 8 and 9. Therefore, in the interest of brevity, elements in both apparatus 400 and 400' that are identical to each other have been provided with the same reference numerals, and an explanation of their structure and function will not be repeated unless the elements function differently in the two apparatus 400 and 400'. The siding installation apparatus 400' includes at least two different sets of indicia (indicium 404a and 404b that correspond to different overlaps X. The indicia 404a are spaced apart from each other a distance Sx and the indicia 404b are spaced apart from each other another distance Sy. Also, as shown, the upper and lower most indicia 404a are spaced apart from the ends 405 and 407 a distance Sx/2, and the upper and lower most indicia 404b are spaced apart from the ends 405 and 407 by a distance Sy/2. When properly installed, one set of the indicia 404a and 404b will be aligned with the projections 104 of the siding installation apparatus 100. The installer may use the set of the indicia 404a and 404b that is aligned with the projections 104 of the siding installation apparatus 100 to assist with positioning the upper edge 114 of a siding piece 112. To assist the installer in distinguishing the indicia 404a and 404b from each other, the indicia 404a and 404b may have different visual appearances such as a different line thickness, color, or pattern. For example, the indicia 404a may be a dashed line and the indicia 404b may be a solid line. Moreover, more than two sets of indicia can be included on the apparatus 400 to accommodate more than two different overlaps. Accordingly, the siding installation apparatus 400' is very versatile because it can be used with any siding installation apparatus disclosed herein so long as it has a set of the indicia 404a and 404b that are spaced apart the same distance as the projections on the siding installation apparatus being used to align the siding pieces.

FIG. 11 is an isometric view of another embodiment of an installation apparatus 500 having a body 502 and a plurality of cogs or other types of projections 504 at intervals along the longitudinal dimension of the body 502. The projections 504 can have a spacing along the longitudinal dimension of the body 502 as described above with reference to FIGS. 1-10. In this particular embodiment, individual projections 504 have a pair of protuberances projecting from the body 502. The installation apparatus 500 further includes a first end 506 having a first interconnect element 507 and a second end 508 having a second interconnect element 509. The first end 506 also has a first step 510a, and the second end 508 has a second step 510b (FIG. 12B).

FIGS. 12A and 12B are top plan and side elevation views, respectively, illustrating the first and second ends 506 and 508 of the installation apparatus 500 in greater detail. The first interconnect element 507 at the first end 506 can be a boss or pin, and the second interconnect element 509 at the second end 508 can be a hole. In operation, the second end 508 of the identical installation apparatus can be overlaid with the first end 506 such that the first interconnect element 507 is received in a corresponding second interconnect element of the overlying installation apparatus. Additionally,
the step in the second end 508 of the overlying installation apparatus mates with the step 510a of the illustrated installation apparatus 500 so that the interlocking region is flush with the remainder of the body 502. In a specific embodiment, the boss at a first end of one installation apparatus 500 mates with the hole at the second end of another installation apparatus 500 in an end-to-end connection.

[0045] Referring to FIGS. 12A and 12B, the installation apparatus 500 can further include mounting holes 512 along the length of the body 502. In operation, nails or other types of fasteners can be driven through the mounting holes 512 to install the installation apparatus 500 on a wall. The mounting holes 512 are useful in cold environments in which the installation apparatus 500 can become so brittle that it breaks when fasteners are driven through the polymeric material of the body 502 itself. The mounting holes 512 can also be useful in other applications because the installation apparatus can be made quite thin without concern for breakage caused by nailing through the body 502.

[0046] Although the invention has been described with reference to the disclosed embodiments, persons skilled in the art will recognize that changes may be made in form and detail without departing from the spirit and scope of the invention. For example, any of the features of the foregoing embodiments can be combined, either in addition to, or in lieu of features of other embodiments to come up with still additional embodiments. Such modifications are well within the skill of those ordinarily skilled in the art. Accordingly, the invention is not limited except as by the appended claims.

1. A siding installation apparatus, comprising:
   a body having first and second ends spaced apart from each other by a first dimension; and
   a plurality of projections projecting outwardly from the body and spaced apart from each other along the first dimension of the body by a first distance, wherein one of the projections is spaced apart from the first end by a second distance approximately one-half the first distance and another one of the projections is spaced apart from the second end by the second distance.

2. The siding installation apparatus of claim 1 wherein the body comprises ABS.

3. The siding installation apparatus of claim 1 wherein the body further comprises a plurality of holes.

4. The siding installation apparatus, further comprising an indicium configured relative to the first dimension to indicate a vertical installation orientation.

5. The siding installation apparatus of claim 1 wherein the first end includes a first interconnect element and the second end includes a second interconnect element.

6. The siding installation apparatus of claim 5 wherein the first interconnect element is configured to mate with a second interconnect element of an identical installation apparatus.

7. The siding installation apparatus of claim 5 wherein the first interconnect element comprises a tongue and the second interconnect element comprises a groove.

8. The siding installation apparatus of claim 5 wherein the first interconnect element comprises a tongue and the second interconnect element comprises a groove.

9. The siding installation apparatus of claim 1 wherein the body and the projections are integrally formed with each other.

10. The siding installation apparatus of claim 1 wherein the body and the projections comprises a polymeric material.

11. The siding installation apparatus of claim 1 wherein the body comprises ABS and calcium carbonate.

12. The siding installation apparatus of claim 1 wherein the body comprises ABS.

13. The siding installation apparatus of claim 1 wherein the body and the projections have a second dimension that extends transversely to the first dimension, the second dimension being about 8.0 feet to about 10.0 feet.

14. The siding installation apparatus of claim 1 wherein:
   the body comprises an elongated body having a longitudinal axis and the first dimension extends along the longitudinal axis; and
   the projections project substantially perpendicular to the longitudinal axis of the elongated body.

15. The siding installation apparatus of claim 1:
   wherein each of the projections comprises a first surface and an opposing second surface; and
   further comprising a fillet formed at the junction between the body and each of the first surfaces.

16. A siding installation apparatus, comprising:
   an elongated body having first and second ends spaced apart from each other by a first dimension, a first interconnect element at least proximate to the first end, and a second interconnect element at least proximate to the second end, wherein the first interconnect element is configured to mate with a second interconnect element of another siding installation apparatus; and
   a plurality of projections projecting outwardly from the body and spaced apart from each other along the first dimension of the elongated body by a first distance.

17. The apparatus of claim 16 wherein the body further comprises a plurality of holes.

18. The apparatus of claim 1 wherein a first end projection is spaced apart from the first end by a second distance approximately one-half the first distance and a second end projection is spaced apart from the second end by the second distance.

19. The apparatus of claim 16 wherein the body comprises ABS and calcium carbonate.

20. The apparatus of claim 19 wherein the body comprises approximately 20-25% calcium carbonate.

21. The apparatus of claim 16, further comprising an indicium configured relative to the first dimension to indicate a vertical installation orientation.

22. The apparatus of claim 16 wherein the first interconnect element comprises a boss and the second interconnect element comprises a hole.

23. The apparatus of claim 16 wherein the first interconnect element comprises a pin and the second interconnect element comprises a cavity.

24. The apparatus of claim 16 wherein the first interconnect element comprises a tongue and the second interconnect element comprises a groove.
25. A siding installation system, comprising:

a first siding installation apparatus having a body with first and second ends spaced apart from each other by a first dimension, and a plurality of projections projecting from the body and spaced apart from each other along the longitudinal dimension of the body by a first distance, a first interconnect element proximate to the first end of the body, and a second interconnect element proximate to the second end of the body; and

a second siding installation apparatus having a body with first and second ends spaced apart from each other by a longitudinal dimension, a plurality of projections projecting from the body and spaced apart from each other along the longitudinal dimension by a first distance, a first interconnect element proximate to the first end, and a second interconnect element proximate to the second end, wherein the first interconnect element of the first installation apparatus is configured to mate with the second interconnect element of the second installation apparatus.

26. The system of claim 25 wherein the bodies of the first and second siding installation apparatus comprises ABS.

27. The system of claim 26 wherein the bodies of the first and second siding installation apparatus further comprise 20-25% calcium carbonate.

28. The system of claim 25 wherein the bodies of the first and second siding installation apparatus further comprise a plurality of holes.

29. A method of installing siding pieces on a structure, comprising:

attaching at least one siding installation apparatus to a surface of the structure, the at least one siding installation apparatus comprising a body having a plurality of projections projecting outwardly from the body and spaced apart from each other along an extent of the body, wherein individual projections have an upper surface and an opposing lower abutment surface;

abutting an upper edge of a first siding piece against the abutment surface of one of the projections;

driving at least one fastener through the first siding piece and into the structure;

abutting an upper edge of a second siding piece against the abutment surface of another one of the projections to overlap at least an upper portion of the first siding piece with the second siding piece; and

driving at least another fastener through the second siding piece and into the structure while the second siding piece is overlapped with the first siding piece.

30. The method of claim 29:

wherein the at least one siding installation apparatus comprises first and second siding installation apparatus spaced apart from each other, further wherein the body comprises a first elongated body associated with the first siding installation apparatus and a second elongated body associated with the second siding installation apparatus, further wherein the projections comprise a plurality of projections projecting from the first elongated body and spaced apart from each other along the length of the first body by a first distance and a second plurality of projections projecting from the second elongated body and spaced apart from each other along the length of the second body by the first distance, longitudinal axes of each of the first and second bodies being oriented substantially parallel to each other and the projections of each of the first and second siding installation apparatus being generally aligned with each other to at least partially define projection sets;

wherein the act of abutting an upper edge of a first siding piece against the abutment surface of one of the projections comprises abutting the upper edge of the first siding piece against the abutment surfaces of one of the projection sets; and

wherein the act of abutting an upper edge of a second siding piece against the abutment surface of another one of the projections comprises abutting the upper edge of the second siding piece against the abutment surfaces of another one of the projection sets.

31. The method of claim 29, further comprising:

providing an additional siding installation apparatus comprising a body having a plurality of projections projecting outwardly from the body and spaced apart from each other along an extent of the body, each of the projections having an upper surface and an opposing lower abutment surface; and

attaching the additional siding installation apparatus to the structure such that an end of the at least one siding installation apparatus abuts and/or is proximate to an end of the additional siding installation apparatus.

32. The method of claim 29, further comprising:

providing an additional siding installation apparatus comprising a body having a plurality of projections projecting outwardly from the body and spaced apart from each other along an extent of the body, individual projections having an upper surface and an opposing lower abutment surface; and

attaching the additional siding installation apparatus to the structure such that the at least one siding installation apparatus is located laterally adjacent to the additional siding installation apparatus.

33. The method of claim 29, further comprising:

providing an additional siding installation apparatus comprising a body having a plurality of projections projecting outwardly from the body and spaced apart from each other along an extent of the body, individual projections having an upper surface and an opposing lower abutment surface;

interlocking a portion of the at least one siding installation apparatus with a portion of the additional siding installation apparatus; and

attaching the additional siding installation apparatus to the structure.

34. The method of claim 33 wherein the act of interlocking a portion of the at least one siding installation apparatus with a portion of the additional siding installation apparatus comprises interlocking a first interconnect element of the at least one siding installation apparatus with a second interconnect element of the additional siding installation apparatus.

35. The method of claim 33 wherein the act of interlocking a portion of the at least one siding installation apparatus with a portion of the additional siding installation apparatus
comprises interlocking a boss of the at least one siding installation apparatus with a hole of the additional siding installation apparatus.

36. The method of claim 29, further comprising: prior to the act of attaching at least one siding installation apparatus to a surface of the structure, uncoiling the at least one siding installation apparatus.

37. The method of claim 29 wherein:

the first and second siding pieces each have a longitudinal dimension and a width;

the plurality of projections are spaced from an adjacent projection by a first distance; and

the act of abutting an upper edge of a second siding piece against the abutment surface of another one of the projections to overlap the first siding piece comprises abutting the upper edge of the second siding piece against the abutment surface of another one of the projections to overlap the first siding piece by a distance approximately equal to the difference between the width of the second siding piece and the first distance.

38. The method of claim 29 wherein the surface comprises a wall of the structure.

39. The method of claim 29 wherein the surface comprises a roof of the structure.

40. A method of installing siding pieces on a structure, comprising:

attaching a first siding installation apparatus to the structure, the first siding installation apparatus comprising a first elongated body having a first longitudinal axis and a plurality of first projections projecting outwardly from the first body, the first projections being spaced apart from each other along the length of the first body, and individual first projections having an upper surface and an opposing lower abutment surface;

attaching a second siding installation apparatus spaced laterally apart from the first siding installation apparatus by a distance, the second siding installation apparatus comprising a second elongated body having a second longitudinal axis and a plurality of second projections projecting outwardly from the second body, the second projections being spaced apart from each other along the length of the second body, and individual second projections having an upper surface and an opposing lower abutment surface, wherein the second longitudinal axis is oriented at least substantially parallel to the first longitudinal axis and individual second projections of the second body are at least generally aligned with corresponding individual first projections of the first body to at least partially define projection sets;

abutting an upper edge of a first siding piece against the first and second projections of one of the projection sets;

driving at least one fastener through the first siding piece and into the structure;

abutting an upper edge of a second siding piece against the first and second projections of another one of the projection sets to overlap at least a portion of the first siding piece with the second siding piece; and

driving at least another fastener through the second siding piece and into the structure while the second siding piece overlaps at least a portion of the first siding piece;

41. The method of claim 40, further comprising:

providing a third installation apparatus having a third body and a plurality of third projections spaced apart from each other along the third body and a fourth siding installation apparatus, having a fourth body and a plurality of fourth projections spaced apart from each other along the fourth body;

attaching the third siding installation apparatus to the structure such that a lower portion of the third siding installation apparatus interlocks with an upper portion of the first siding installation apparatus; and

attaching the fourth siding installation apparatus to the structure such that a lower portion of the second siding installation apparatus interlocks with an upper portion of the fourth siding installation apparatus.

42. The method of claim 41, wherein:

attaching the third and fourth siding installation apparatus to the structure comprises positioning the third siding installation apparatus laterally apart from the fourth siding installation apparatus by the distance that the first and second siding installation apparatus are spaced apart; and

aligning individual third projections with corresponding individual fourth projections to projection pairs of the third and fourth installation apparatus.

43. The method of claim 41 wherein interlocking the third siding installation apparatus and the first siding installation apparatus comprises interlocking a male interconnect element of the first siding installation apparatus with the female interconnect element of the third siding installation apparatus.

44. The method of claim 41 wherein interlocking the fourth siding installation apparatus and the second siding installation apparatus comprises interlocking a male interconnect element of the fourth siding installation apparatus with the female interconnect element of the second siding installation apparatus.

45. The method of claim 40 wherein the surface comprises a roof of the structure.

46. The method of claim 40, further comprising attaching a third siding installation apparatus to the structure located between the first and second siding installation apparatus, the third siding installation apparatus comprising a third elongated body having a third longitudinal axis and a plurality of indicia spaced apart from each other along the length of the third elongated body, at least some of the indicia aligned with one of the projection sets.

47. A siding installation apparatus, comprising:

a body having first and second ends spaced apart from each other by a first dimension;

a plurality of projections projecting outwardly from the body and spaced apart from each other along the first dimension of the body by a first distance; and

at least one indicium positioned on a portion of the body to indicate an installation orientation.

48. The siding installation apparatus of claim 47 wherein the indicium comprises at least one alignment mark located on the body.

49. The siding installation apparatus of claim 47 wherein the indicium comprises a leveling apparatus.