Exterior building siding for aesthetic and protection of the building against wind, rain and solar energy that includes attaching each horizontal plank from the top of the wall downwardly that includes a starting strip where each plank is interlocked to the plank above it. Each of the horizontal planks includes a top wall portion that fits snugly into an “L-shaped” groove above it so that the panels can be firmly locked together vertically in a downwardly fashion to prevent any wind uplift against the siding or moisture intrusion.
FIG. 8
BUILDING EXTERIOR PANELS AND
METHOD

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention
[0002] This invention relates generally to a building protective and aesthetic siding that is used to cover the exterior of a building and, specifically, to a building siding that includes horizontal planks that are interlocked together on top and bottom and that are installed from the top of a building wall in a downward direction.

[0003] 2. Description of Related Art
[0004] Many buildings, residential dwellings and office buildings, use building siding on the exterior of the building for protecting the building from the elements and for aesthetic purposes. Typical building siding is constructed of a plurality of elongated, horizontal panels, planks, or strips that are typically overlapped from the wall bottom upwardly, with each next piece added that overlaps the piece below it. Such overlapping panels are used to protect the building from rain, solar and wind damage. The siding used on many residential and commercial buildings for the exterior is typically made of wooden planks that are overlapped, typically from the wall bottom upwardly. Plastic, polyvinyl chloride (PVC), and aluminum sheets have also been used. Many of these materials are also sloped to aesthetically look like wood planks that are overlapped, one on top of the other giving each plank a slight incline instead of a substantially flat surface.

[0005] One of the problems with conventional siding that is constricted with panels or planks from the wall bottom up, is that high winds can lift a plank reducing the siding durability.

[0006] The siding described herein adds durability and protection from wind and rain because the siding planks are placed on the building from the top down. Each of the individual horizontal planks are more securely held in place because of the top and bottom interlock connections.

SUMMARY OF THE INVENTION

[0007] Exterior building siding which may be constructed of several types of materials including aluminum, polyvinyl chloride (PVC), wood, steel, concrete, hard foam or other synthetic materials having essentially two components which include: (1) a top starting strip that is affixed to the building at a selected upper beginning point of a building wall or structure and (2) a plurality of planks of the same or variable lengths that are affixed to the starting strip and to the building itself, usually to vertical studs forming the building exterior wall.

[0008] The starting strip is the uppermost horizontal strip and has an inverted “J-shaped” cross section. The strip body inverted “J-shaped” cross sectional configuration provides for a substantially upside down deep recess or groove that is disposed vertically and is tapered to receive the upper “L-shaped” lip portion of the first horizontal mounting plank. The starting strip may have a plurality of small circular recessed dimples that provide visual alignment for fasteners such as screws, nails or staples to be driven through the strip in such a manner that the head of the screw or nail is flush or countersunk below the level of the exterior surface. The strip can also be attached by glue. After the top starting strip has been fastened to the selected upper position on the building exterior wall, the horizontal siding planks are attached sequentially downwardly from the starting strip. The planks may be rectangular in shape of the same or different lengths that can be cut to make each horizontal row equal to the building wall width. Each plank has a cross section that includes a top tapered “L-shaped” area that is upright and a bottom “J-shaped” area that is inverted forming a groove. In one embodiment, the upper length of the “L-shaped” area leg of each plank is longer that the bottom portion of the “J-shaped” leg as described below.

[0009] The planks used in the siding are joined and interlocked vertically on top and bottom in horizontal rows, and are arranged in end to end abutments. The planks can be manufactured in various dimensions in terms of width and height and thickness and can be of different lengths depending on the nature of the building to be covered with siding. Each plank can be cut in length and width to fit any wall size.

[0010] The starting strip inverted “J-shaped” cross section area has a continuous groove from end to end that may be tapered and is sized to snugly fit with the upper “L-shaped” projection of the top edge of the siding plank. Thus, when the first plank is inserted snugly into the starting strip, there is a tight fit between both the starting strip groove and the first plank projection.

[0011] At the bottom of the every plank, there is an inverted “J-shaped” area with a groove similar to the groove inverted “J-shaped” groove in the starting strip. This plank lower groove is interlocked with the top edge of the next horizontal plank added downwardly.

[0012] The starting strip and each plank are attached to the building exterior wall surface or studs by nails, screws, staples or glue. The heads of the nail and screw fasteners may be countersunk in preformed recessed areas. Assembly of an exterior wall of siding begins with the attachment of the starting strip at a location that denotes the horizontal upper starting line of the siding. The starting strip is nailed, screwed, stapled or glued to the building horizontally.

[0013] A first series of planks are horizontally pushed into firm engagement in the starting strip groove and each plank is nailed, screwed, stapled or glued into place along the bottom area of each plank forming the first row of planks.

[0014] Each additional row of planks is engaged to the fastened planks downwardly, one row at a time. The fasteners securing the previous planks are covered by the next row of planks.

[0015] The planks forming the very bottom row may have to be cut longitudinally for a perfect fit to reduce their height to conform to the remaining space to be covered. These planks may be glued to the building exterior wall or studs.

[0016] In one embodiment, the inside (back) surfaces of the starting strip and all planks are flat and form a flat plane flush with the building wall or studs.

[0017] In an alternate embodiment, the back wall surface of each plank and the starting ship can include one or more vertical recessed channels (curved or rectangular in shape) that form vertical moisture or fluid conduits that allow drainage of moisture that accumulates on the outside exterior surface of the building but on the inside of the planks to dissipate moisture in the vertical channels by gravity.

[0018] Also in an alternate embodiment, the plank end faces that are placed side by side for each plank, instead of being flush, could include a groove flange overlap such that the outer surface edge of one plank overlaps the inner side edge of the adjacent planks. Between each overlap structure a small vertical space can be made as a moisture channel.
In a further alternate embodiment, the starting strip and planks can be installed onto the roof of a building as well as the soffits of a building. In this alternate embodiment, the starting strip and planks are installed in the same top-down manner as described when used for siding.

Using the present invention as described, it is noted how secure each of the individual planks are, both at the top and at the bottom, which greatly increases its durability against harsh weather elements such as wind and rain for greater strength and longer preservation.

It is an object of this invention to provide a building exterior siding that is affixed from the top down with an interlock cross sectional pattern between adjacent vertical panels to give the siding more strength and durability in use.

It is another object of this invention to provide an improved exterior panel that can be easily assembled and mounted on the exterior of a building in a top down progression for increased strength and durability of the siding.

In accordance with these and other objects which will become apparent hereinafter, the instant invention will now be described with particular reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a side elevational view of the top starter strip.

FIG. 2 shows a side elevational view of a typical horizontal plank.

FIG. 3 shows a perspective view partially cut away of the exterior siding including the starting strip and two planks installed on the exterior of a building.

FIG. 4 shows a side elevational view partially in cross section of the building siding attached to a portion of a building wall.

FIG. 5 shows an alternate embodiment of the invention in a perspective view with two planks joined side by side.

FIG. 6 shows the alternate embodiment of FIG. 5 from a top plan view.

FIG. 7A shows a side elevational view of an alternate embodiment of the bottom starter strip.

FIG. 7B shows a side elevational view of the alternate embodiment of the horizontal plank.

FIG. 8 shows a cross sectional view of two alternate embodiments of the building siding installed.

REFERRED EMBODIMENT OF THE INVENTION

Referring now to the drawings and, particularly, FIG. 1, the starting strip 12 is shown in a side elevational view to illustrate the “J-shaped” groove that is inverted 12b formed between the back wall of the starting strip 12a and the front wall 12c. The starting strip 12 also includes a plurality of dimples 12d that are circular recessed portions sized approximately in diameter to equal the head of a nail or a screw. However, the dimples are not required. This provides a visual indication to a construction worker as to where to insert fasteners such as nails or screws that will be countersunk when the starter strip is mounted to a vertical wall stub 18 as shown in FIG. 3.

It is further contemplated that each starting strip 12 may additionally have a plurality of shallow vertical grooves located on the flat back wall. These grooves will extend from the top of the flat back wall to the bottom of the flat back wall.

Referring now to FIG. 2, the basic siding plank 14 is shown that is used to complete the building siding. Each plank 14 is mounted horizontally starting from the starting strip 12 as shown in FIG. 3 downward in horizontal rows. The plank 14 has a flat back wall 14d and an upper “L-shaped” wall 14a which is slightly tapered and fits snugly within the inverted “J-shaped” groove 12b of the starting strip shown in FIG. 1. It is contemplated that the structure 12 may have a “J-shaped” with an interior non-parallel, tapered “Y-shaped” groove 12a to provide a tapered exterior surface. The top “L-shaped” portion 14a also is sized to fit snugly in an adjacent horizontal plank into the inverted “J-shaped” groove 14b as each horizontal plank is attached to the plank above it in a downward pattern. The front surface of each plank is flat but tapered to give the effect of overlapping boards and to allow water run off.

It is further contemplated that each siding plank 14 may additionally have a plurality of shallow vertical grooves located on the side of the plank 14 which will share a planar relationship with the flat back wall of the starting strip 12. These grooves will extend from the top edge to the bottom edge of the plank 14.

Looking at FIG. 3, the starting strip is shown attached to a vertical stud 18 which is the exterior wall stud for the building. Also shown in FIG. 3 are two planks 14 connected to each other vertically. The planks may have dimples 20 and 22 that are also visual representations of where to place the appropriate fasteners such as nails, screws, staples or glue when attaching each plank 14 to a vertical stud 18.

Referring now to FIG. 4, the siding is shown with the starting strip 12 mounted at the top of a representative wall stud 18 and is interlocked with the first horizontal row 14 of a faster 16 that has been attached to the starting strip 12 at the top. Subsequently, the first horizontal plank 14 is fastened into the inverted groove in starting strip 12 at the top and with a faster 16 at its bottom securely fastening the horizontal plank to the starting strip and to the stud at its base. Thus, the sequence repeats from the top down of inserting the next row of horizontal planks and attaching them to the stud with fasteners such as nails, screws, staples or glue. The fasteners at the base of each plank are covered by the next plank inserted from below by wall 14a.

Looking at FIGS. 3 and 4, one can easily see how strong and tight the siding is mounted on the building exterior wall. It would be difficult for the wind or rain to penetrate the siding in the interlocking configuration as shown.

Looking at FIG. 4, the top starting strip 12 can also include a decorative edge 12c if desired. Also, as shown in FIGS. 3 and 4, the horizontal planks 14 have a front facade that is visible after installation that includes a beveled or inclined shape to achieve the lap style look. However, any other facade can be utilized on the front exterior surface.

The back surfaces 12a and 14d are flat. The siding planks 14 and starting strip 12 can be made in various widths and thicknesses and lengths and from many different materials including mixed fibers, wood, concrete, steel, aluminum, plastics, polymers, foam or other blended or natural or man-made composite materials. The siding can function not only as a protective outer layer on a building protecting the building against wind, moisture, rain and solar energy, but also acts as an insulation for heat or cold. Overall, the siding provides greater uplift protection from stronger than average wind and moisture intrusion that results in a reduction of costly repairs and replacements to the building.
Referring to FIGS. 5 and 6, in an alternate embodiment 100, two horizontal planks 140 are shown joined together along one edge, side by side. Each plank 140 has one or more vertical shallow channels formed in its back surface. The back surface channels can be of any cross sectional shape and are shown as rectangular. The channels are used to collect moisture that may accumulate on the exterior surface of the wall of the building being covered by the siding. As each horizontal plank row is attached to a vertical plank row above, the vertical channels 140a can be aligned vertically so that the plank moisture channels from the top of the wall to the bottom of the wall are aligned. The starting strip channels can also be vertically aligned. Condensate and moisture will be drained downwardly by gravity.

As shown in FIG. 6, the plank back surface channels 140a are shallow and rectangular grooves but could be any design or shape. Also note that in an alternate embodiment, the planks 140 can be overlapped from side to side such that one plank has an extended lip 140b along one edge which is sized to engage a comparable recess 140b in the adjacent panel along each side. Thus, the panels can be overlapped laterally for moisture prevention. Note that a small channel can be disposed along the edge that shows the overlap 140a and 140b that itself could be a moisture barrier along the inside back surface between the planks 140.

Alternate Embodiment

As an alternative embodiment, referring now to FIG. 7A, the starting strip 200 is shown in a side elevational view to illustrate the “J-shaped” groove 200b formed between the back wall of the starting strip 200a and the front wall 200c. In this embodiment the starting strip 200 is installed at the bottom area of the wall to be covered. Subsequent panels 210 are then attached in an upward direction. The top plank can be attached and cut longitudinally to fit the top most row. Flashing or a sealant may be used to seal the top plank. The starting strip 200 also includes a plurality of dimples 200d that are circular recessed portions sized approximately in diameter to equal the head of a nail or screw. However, the dimples are not required. This provides a visual indication to a construction worker as to where to insert fasteners such as nails or screws that will be countersunk when the starter strip 200 is mounted to a vertical wall stub.

Each starting strip 200 may additionally have a plurality of shallow vertical grooves located on the flat back wall. These grooves will extend from the bottom of the flat back wall to the top of the flat back wall.

Referring now to FIG. 7B, the basic siding plank 210 is shown that is used to complete the building siding from the bottom of the wall upwardly. Each plank 210 is mounted horizontally starting from the starting strip 200 as shown in FIG. 7A upwardly in horizontal rows. The plank 210 has a flat back wall 210a and an lower inverted “J-shaped” wall 210a and groove 210b which fit snugly within the “J-shaped” groove 200b of the starting strip shown in FIG. 7A. The back wall 200a of the starter strip 200 fits into the inverted “J-shaped” groove 210a of the plank 210. The front wall 200c of the starter strip 200 fits into the second groove 210c of the plank 210. The top “L-shaped” portion 210b of the plank 210 is sized to fit snugly in an adjacent horizontal plank into the inverted “J-shaped” groove 210a, and second groove 210c as each horizontal plank is attached to the plank above it in an upwardly pattern. The front surface 210c of each plank is flat but tapered to give the effect of overlapping boards and to allow water run off.

Each siding plank 210 may additionally have a plurality of shallow vertical grooves located on the side of the plank 210 which will share a planar relationship with the flat back wall of the starting strip 200. These grooves will extend from the top edge to the bottom edge of the plank 210.

Alternate Embodiment

As an alternative embodiment, referring now to FIG. 8, the starting strip and horizontal planks 220 can also be used as soffits 230 or as roofing material 240. In both usages, the starting strip 220a as well as the horizontal planks 220b will be mounted in similar fashion to the procedure for the building siding 220. A starting strip will be mounted first. For the roofing material 240, the starting strip will be mounted near the top of the roof and the horizontal planks will be subsequently mounted below and downwardly. For the soffits 230, the starting strip 230a may be mounted on either side with the horizontal planks 230b subsequently mounted thereafter.

The instant invention has been shown and described herein in what is considered to be the most practical and preferred embodiment. It is recognized, however, that departures may be made therefrom within the scope of the invention and that obvious modifications will occur to a person skilled in the art.

What is claimed is:

1. A building envelope component for protecting the exterior of a building from the elements comprising:
   a plank including an elongated body having a front surface and a flat back surface;
   said plank having a top edge and a bottom edge;
   said plank top edge having a male connector including a raised projection of a predetermined height and thickness that includes a portion of said plank front surface;
   said top edge including an L-shaped recess formed between said male connector and said flat back surface;
   said plank bottom edge including a back wall male projection, a front wall raised projection and a recessed channel formed between said back wall male projection and said front wall projection;
   said plank bottom edge back wall male projection extending below said plank bottom edge front wall projection a sufficient distance to provide a bottom area projecting along said plank beyond said bottom edge front wall projection to receive one or more fasteners for connecting said plank to a building exterior surface; and
   said top edge male projection sized to fit snugly into the bottom edge recessed channel of a corresponding plank having the same top edge and bottom edge configuration for trapping and locking a lower plank to an upper plank.

2. A building siding having a plurality of vertically trapped and locked planks fastened to the exterior of a building to protect the building from the elements, each plank comprising:
   an elongated plank body having a front surface and a flat back surface for engagement to the exterior of a building;
   said plank body having a top edge that includes a male projection formed with a portion of said plank body front surface along the plank body length;
said plank body top edge including an L-shaped lip formed above said plank body back surface;
said plank body having a bottom edge having a central recess formed between said plank body front surface and said rear surface, said bottom plank body edge recess configuration being sized and shaped to trap and lock a lower plank having the same top edge configuration receiving said top edge male projection in a snug fit into said bottom edge recess of an adjoining plank; and
said plank bottom edge having a plank bottom edge back wall projection that extends beyond the plank body edge front wall projection a sufficient distance to provide a back wall area for receiving one or more fasteners to fasten the plank to a building exterior.

3. Building exterior assembly for protecting the exterior of a building from the elements having a plurality of plank-shaped similarly configured building components, said components to be installed in a configuration trapped and locked to each other vertically on a building exterior from the top down, each component comprising:
a first plank having a top edge and a bottom edge and a front face and a back face;
a male locking member protruding from the plank top edge;
said bottom edge having a trapping recess for receiving, trapping and locking the plank top edge male locking member of a lower positioned similarly configured plank to be trapped and locked to said upper plank; and
said first bottom edge protruding along the plank back side extending sufficiently below the plank bottom front surface edge and sized in area to permit the receipt of one or more fasteners for fastening said plank to the exterior of a building.

4. A building envelope component as in claim 1, whereby the plank front surface is beveled.

5. A building envelope component as in claim 1, including an elongated starter strip substantially rectangular in shape and having generally a J-shaped body in cross section and including an inverted recess sized to receive the plank top edge male connector snugly formed by the J-shaped section, said body having a flat back wall for attachment to a building exterior wall.