Installation guide

Vertigo Cladding Board

Geolam: a stunning alternative to wood cladding

Vertigo is a composite wood cladding board requiring minimum maintenance. Durable and fade resistant, it will not crack or show significant signs of age over time. It is resistant to insect and fungus damage. It has been used by Japanese architects for more than 20 years, and in Europe for more than five, to enhance the architectural features of their buildings. Geolam Vertigo is made from recycled material and is manufactured using environmentally friendly processes.

Geolam®
Architectural Eco-Technology

www.geolaminc.com

Installation guide

Geolam® is a composite material made from recycled wood and resins, and is easy to install. However, handling and fitting techniques are different to those deployed when using natural wood, so please be sure to follow the instructions below carefully…

Vertigo Board

Stainless steel Vertigo clips

QUICK BUT IMPORTANT HINTS

1. Board lengths expand and contract according to temperature. Refer to the Expansion Table (on page 3) to compare temperature at time of installation vs maximum or minimum temperatures anticipated. For example if boards are installed on the hottest day of the year they will not expand.
2. Allow airflow behind the boards to assist in temperature and moisture management. (See diagrams on page 10)
3. Install "anchor" screws at mid point of boards to prevent "walking" (See diagram on page11).
4. Cover boards with a waterproof tarp prior to installation to avoid greater-than-normal accumulation of dust. If you fail to do this, you may need to wash the boards just prior to installation.

Please refer to these installation guidelines carefully, as improper installation may result in product malfunction and voiding the warranty. Geolam consists of, amongst other materials natural wood. Accordingly, color variation may occur.

BASIC GUIDELINES FOR USING GEOLAM®.

- Geolam composite boards consist of almost 50% natural wood fiber. As a result there will be some color variation from board to board. Please take this into consideration in planning your installation to maximize aesthetic appeal.
- Leave a minimum interval of ¾" between the wall and the cladding boards. Thickness of the strapping or sleepers must be no less than ¾" to ensure adequate ventilation of the boards after installation, including around doors and window frames.
- Intervals between each sleeper center cannot exceed 16". Minimum section of sleepers must be ¾" x 2". You may install exterior insulation between the sleepers, but if you do so please make sure that your sleepers are sufficiently deep so as not to compromise the ¾" airspace behind the boards. For example, if you install ¾" rigid insulation, you will need 1 ½" deep sleepers.
- Vertigo boards are 12 feet in length. Clips need to be applied on each sleeper, however a minimum of 3 contact points and 3 clips are required per board, whatever the length of the board, i.e. for shorter lengths of boards.

BASIC GUIDELINES CONT/...

- The cladding board is water resistant and is designed for exterior application. It contains both wood and plastic, and as such will expand and contract according to changes in temperature and humidity. The board is at its shortest under dry, cold conditions and is longest under hot, wet conditions.

For a horizontal application you are advised to drive a stainless steel screw or finishing nail through the upper tab of each board into a sleeper at, or close to, the middle of the board's length. (This screw will be hidden by the next board placed above it by its lower, overlapping edge). This screw will secure the board in place, ensure that all expansion and contraction activity is assigned to its ends, and will eliminate the possibility of the board to 'walk'.

For vertical applications the boards can be placed on a ledge or flat hooks that allow for proper drainage. All expansion and contraction activity will occur at the top of each board, so please allow for this.

You will need to allow for expansion of the boards depending on the temperature when installed and the anticipated maximum temperature for your location. Similarly, you will need to anticipate contraction of the board depending on the temperature when installed and the expected minimum temperature for your location. Please refer to the expansion table below:

Expansion table

Temperature difference		Full board	Half length
°C	°F	12 ft	6 ft
10	18	1/2"	1/4"
20	36	1/2"	1/4"
30	54	5/8"	5/16"
40	72	5/8"	5/16"
50	90	5/8"	5/16"

Eg. Install a board at 60°F. If maximum temperature is 100°, this will mean a temperature increase of about 40°F, so 1/2" must be left as an end gap between two 12 ft boards. Please note that each single board will expand 1/4" on each end.

FASTENING:

- It is preferable to use the stainless steel Vertigo clips to fasten the boards. You may face screw the boards if desired, but you will need to take into account the effects of expansion and contraction. For short pieces of board e.g. 4 ft or less, these effects will be minimal. For longer boards it will be necessary to screw the board securely at each strapping point.
- Use the 2 stainless steel 1" screws provided per clip
- In order to avoid rust stains always use only stainless steel screws.
- Set your screw gun on low and fasten at reduced speed.

INSTALLATION HINTS

- **For horizontal installation:** To minimize boards "walking" it is suggested that you face-screw the inner tab on the upper side of each board at or near the center. Expansion and contraction will occur towards the ends of each board. This screw will be hidden by the overlapping lip of the higher board when it is installed. (See diagram on page 11.)
- **Outside corners:** You may choose to not leave an expansion gap at the corner for aesthetic reasons. If so, you will need to face screw the inner tabs of each board at or near the corner and "force" the expansion and contraction towards the other end of each board. Please ensure that you allow an additional gap to accommodate all of the expansion. e.g. ½". (See diagrams on page 7.)
- **Vertical installation:** All of these installation instructions apply. Boards can be mounted either on a ledge with proper drainage or on hooks. Each board weighs slightly more than 14 lbs. For heights greater than 12 feet, you can install the boards either in rows, or in a brick pattern. In either case, please remember that all of the expansion will occur at the top end of each vertical board, so you will need to leave enough room. e.g. ½". (See diagrams on pages 8 and 9.)
- There are several ways to minimize the appearance of butt joints, depending on your design:
  a. Hide the ends of the Geolam boards behind trim (pls allow expansion and contraction behind the trim) (See diagram on page 6.)
  b. Have the ends meet another architectural feature. The expansion gap required will appear less visible when the Geolam boards meet another material e.g. stucco, brick, or another plane i.e. an inside corner. (See diagram on page 6.)
  c. Inside corners with Geolam boards. One board should be tucked into the corner with enough room to expand. The other board will meet it, but with the required expansion space. (See diagram on page 7.)

INSTALLATION CARE:

- Vertigo is a rain screen. Please ensure that your exterior wall is properly protected prior to application of sleepers and Vertigo boards.
- Boards can be installed horizontally or vertically. If installed vertically it is recommended that sleepers be properly flashed so as not to deteriorate from moisture build up. In addition, sleepers mounted horizontally will need to have 2" gaps every 3 ft to allow a weep hole for moisture intrusion and condensation as well as air circulation behind the boards.
- Boards can also be installed using our hidden fasteners for soffit applications. e.g. upside down.
- It is recommended that a waterproof coating be applied on the exterior wall, including the sleepers, prior to installation of the Vertigo boards.
- Start the installation from the bottom up. For the first line of clips you can break the expansion winglet of the clip or use a metal profile adapted to that use (not provided).
- At butt joints fasten each end of the boards on double sleepers or on a support no less than 4" wide. Do the same thing for inner and outer corners and around window frames. Boards should not be cantilevered.
- The Geolam fastening system is designed to move. Accordingly, you will need to ensure that the ends of the boards are secure either by meeting at inside or outside corners (the latter can be mitered), the addition of trim, meeting another cladding material, or other architectural feature.

INSTALLATION CARE CONT/...

- Vertigo cladding can break when hit hard. Handle the boards with care.
- Newly installed boards may bear an inordinately high level of dust and dirt either because they were stored near a dusty construction site or were exposed to higher than normal levels of dust at the site immediately after installation. A subsequent light rain will pick up both dust and pollution in the air, add this to the dust on the board, and may result in streaking when the boards dry, similar to glass streaking in a dishwasher. This ordinarily washes away in later heavy rainfalls, but can be avoided altogether if the boards are cleaned prior to, or just after, installation. Soapy water and a hose should do it.
- Avoid contact with fire, chimneys, or stove exhausts. Boards melt at 340ºF.
- **Never obstruct the space between the cladding and the wall in order to allow for good air circulation.** (See page 10) It is recommended that screening or other measures be used to discourage entry of insects or vermin at the lower boards.
- It is recommended to affix a flashing at the bottom of the cladding in order to protect the foundation.
- Never immerse the cladding boards in concrete.
- Although the cladding boards are highly resistant to bending, they can crack under a violent impact or an extreme pressure. When installing the boards, be careful not to break the corners of the boards.
- Vertigo boards can be handled the same way as lumber with respect to cutting. We recommend the use of a carbide saw blade or a light metal saw.

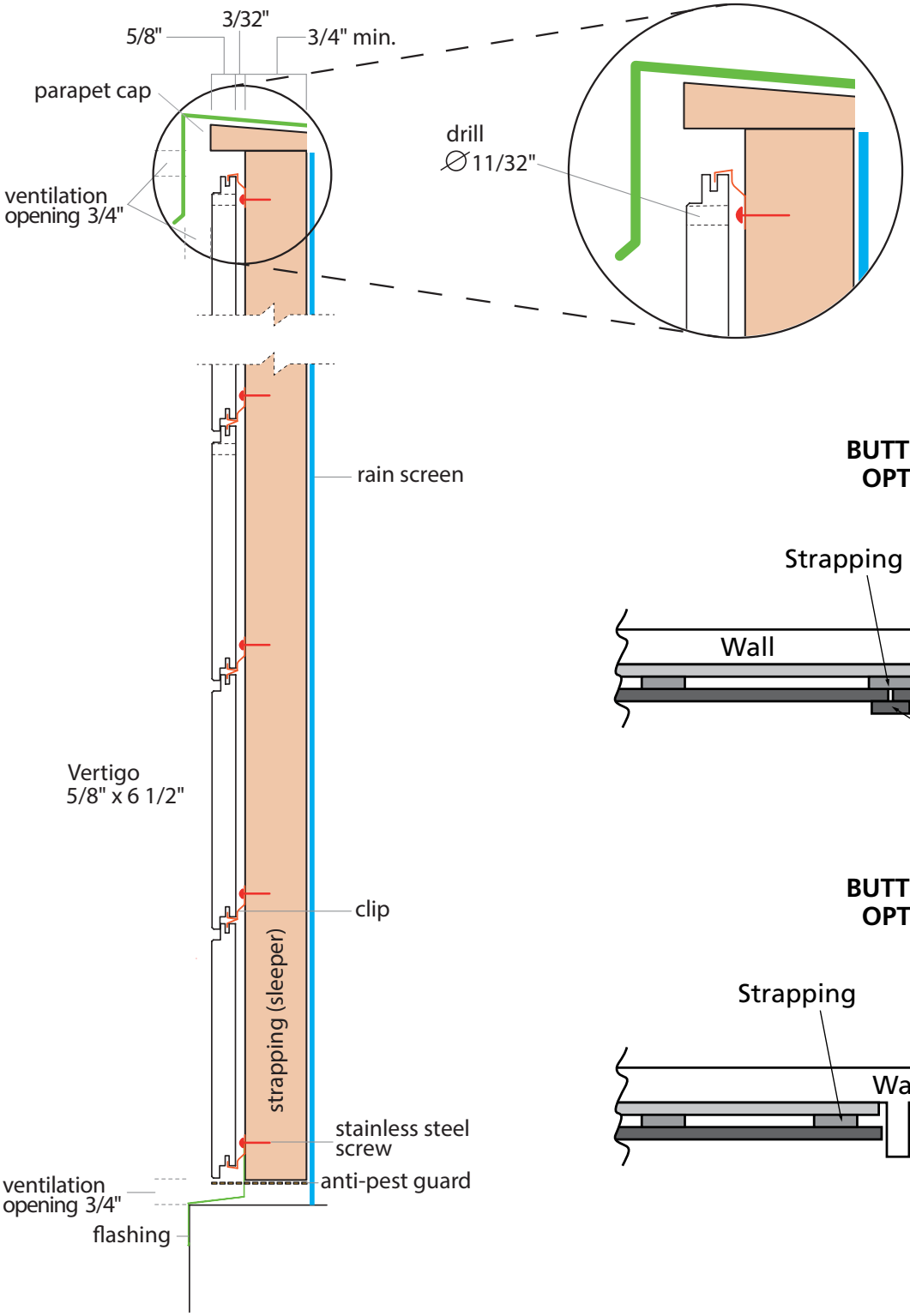
FINISHING:

- You may use galvanized or aluminium profiles for corners and edges.
- For the installation of the last upper board, break the winglet of the clip, turn the clip upside down and screw it through the Vertigo board. A predrill of the board is necessary for each screw. (See cross-section diagrams on page 6.)

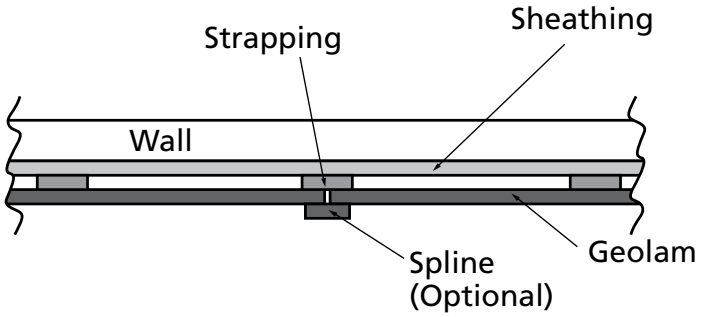
STORAGE:

- Store the boards on sleepers spaced no more than 16" apart and in a flat area only. Keep indoors or cover with a waterproof tarp. If allowed to get wet during storage the dust laden water will leave spots when it dries. This does not occur when the boards are installed because of the natural cleaning process provided by wind & rain.

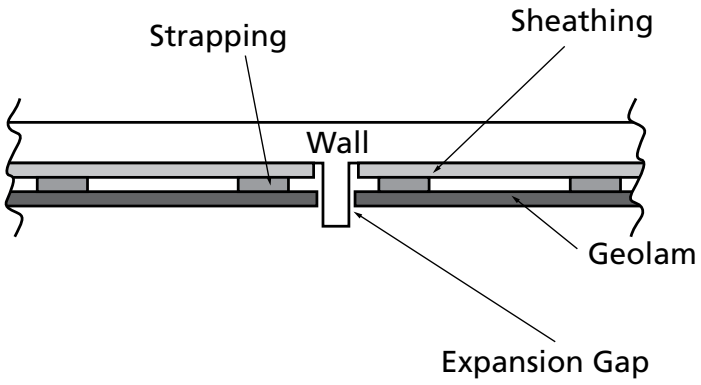
CROSS SECTION DIAGRAMS



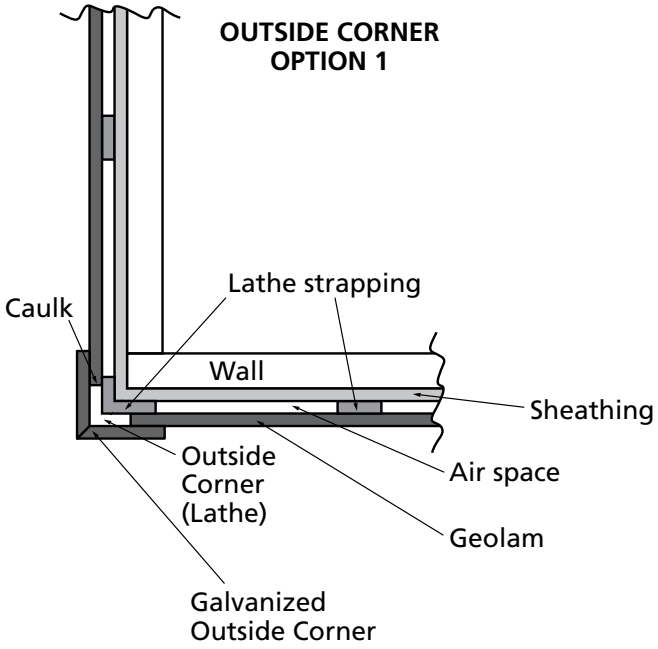
BUTT JOINT
OPTION 1

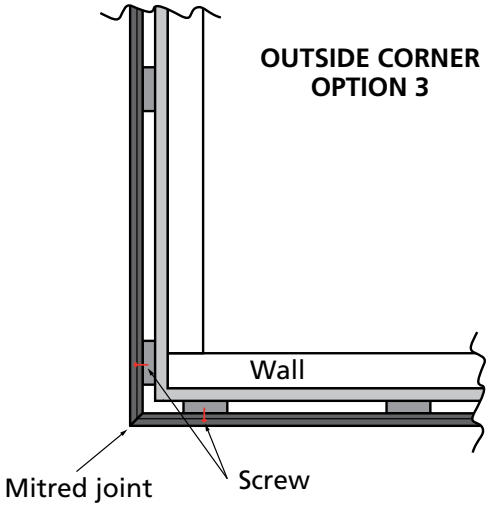


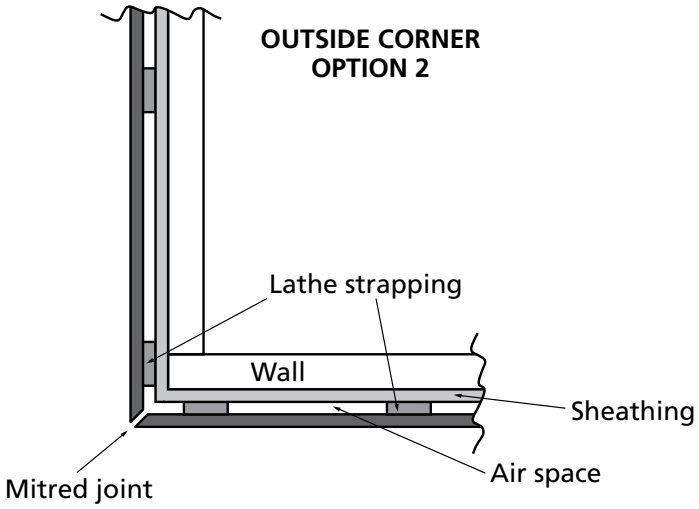
BUTT JOINT
OPTION 2

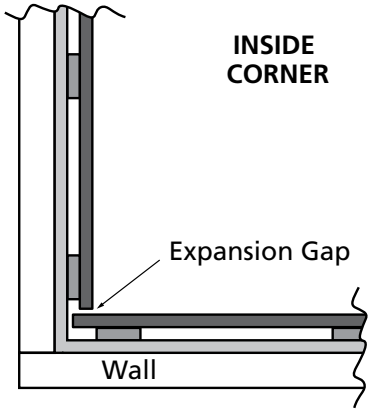


FINISHING - CORNER OPTIONS

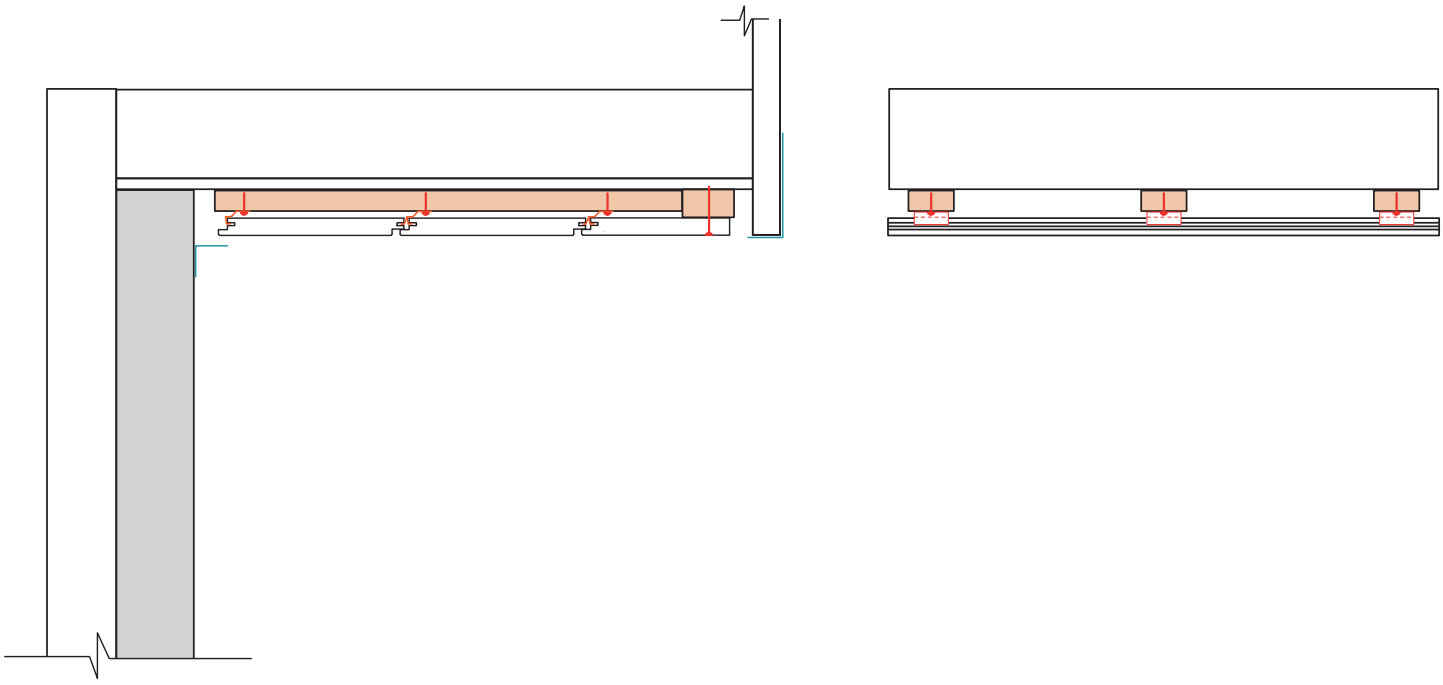








SOFFIT INSTALLATION



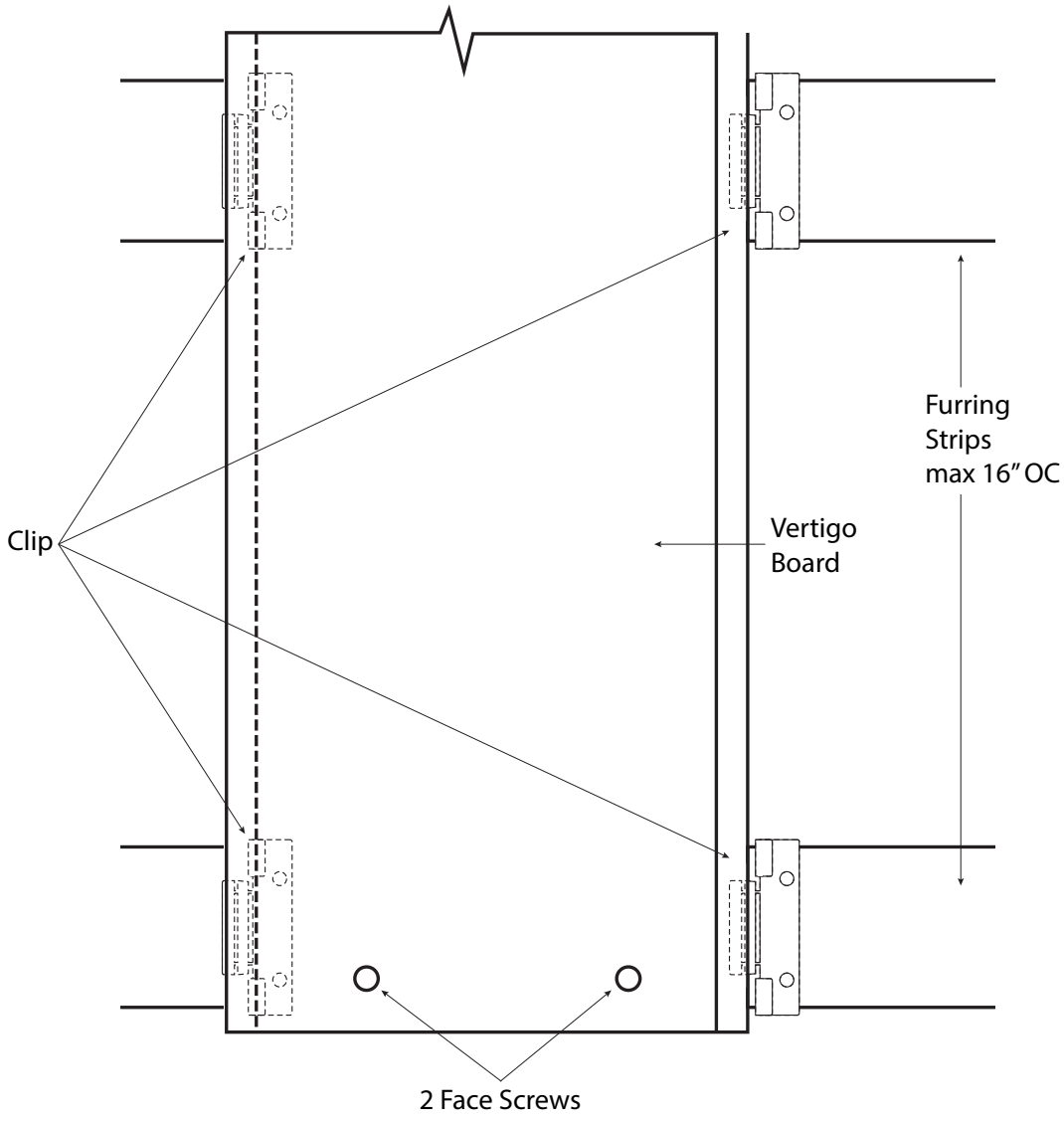
These boards can be used as a soffit material, i.e. on a horizontal plane. The same basic rules apply:

- Furring strips need to be a minimum of 2" wide and ¾" deep and no more than 16" on center
- Allowance to be made for expansion/contraction as per our expansion chart
- Allowance to be made for drainage and air circulation. When properly constructed there should be no water accumulation on top of (i.e. behind) the boards except for a small amount of condensation which may occur.

VERTICAL INSTALLATION OF CLADDING BOARD

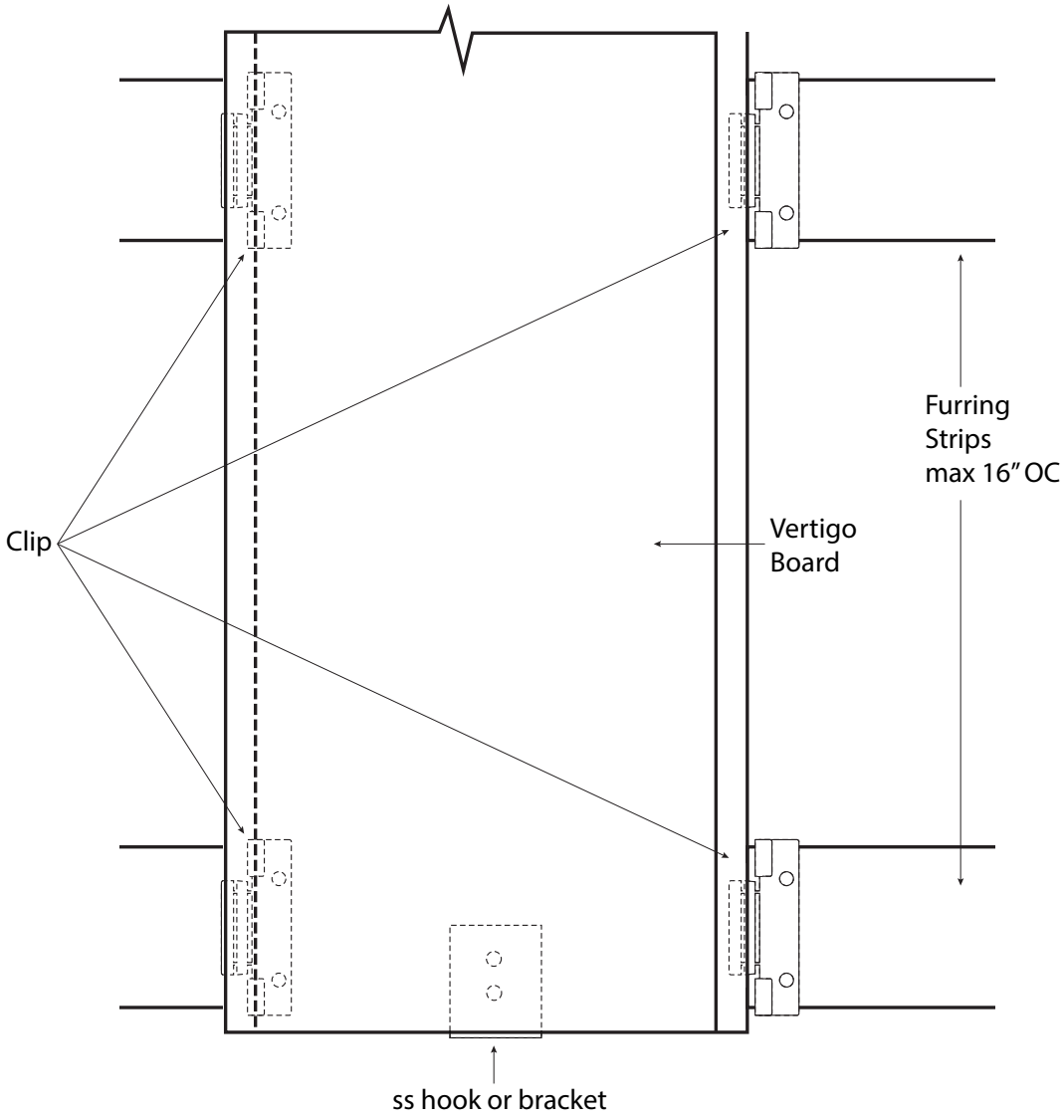
OPTION 1 – 2 FACE SCREWS SUPPORTING THE WEIGHT OF THE BOARD

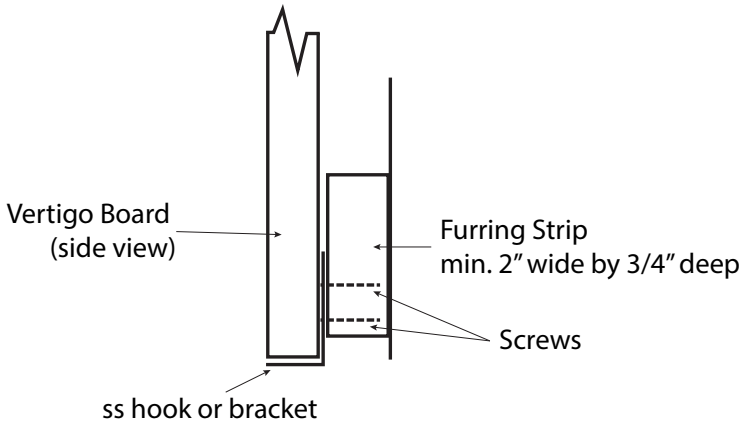
In the example shown, boards are installed from left to right – this allows access to screw holes on the clips.



OPTION 2 – WEIGHT OF BOARD SUPPORTED BY SS HOOK OR BRACKET FASTENED TO FURRING STRIP

In the example shown, boards are installed from left to right – this allows access to screw holes on the clips.

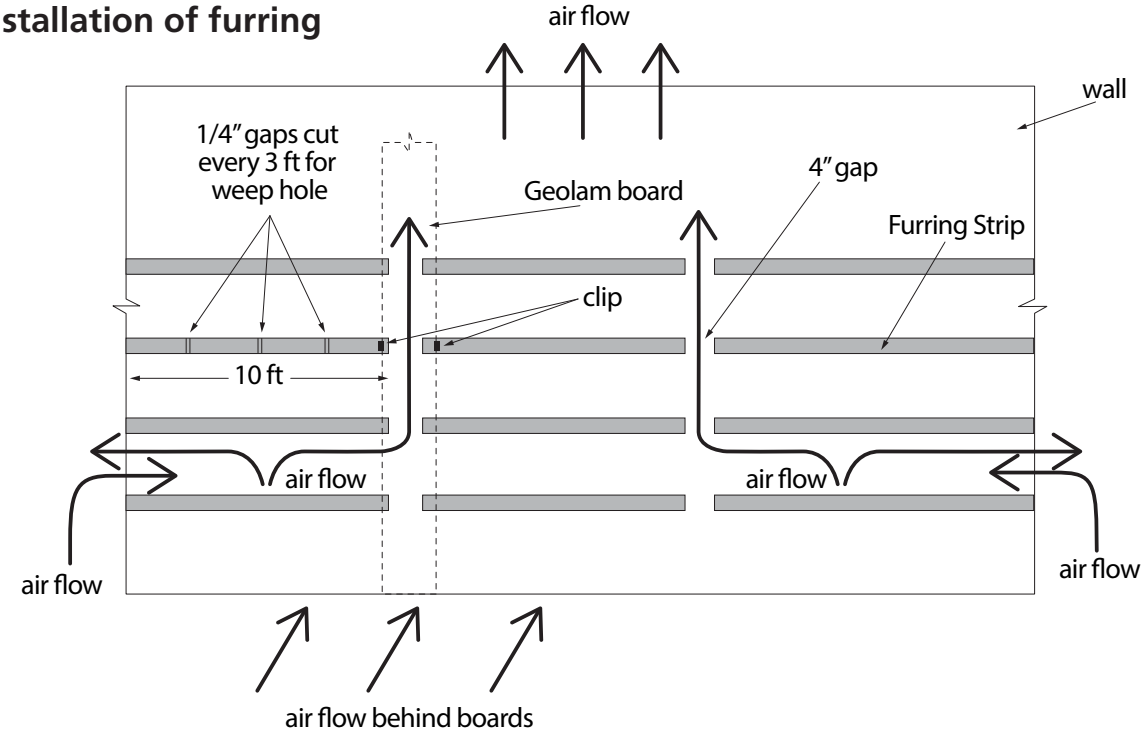




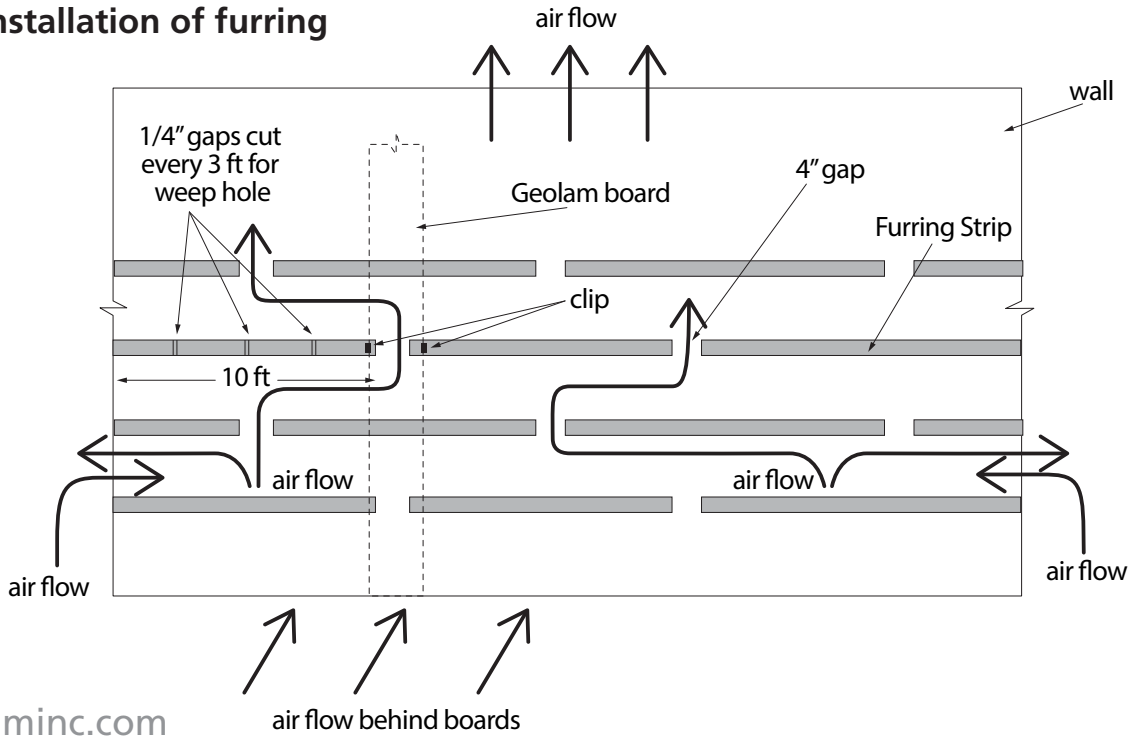
VERTICAL INSTALLATION OF BOARDS – OPTIONS FOR INSTALLATION OF FURRING STRIPS TO CREATE AIRFLOW

1. Maximum length of furring strip is 10ft., cut every 3 ft with a ¼" weep hole
2. Leave a gap of 4 inches between furring strips to allow both weeping and airflow
3. Air permitted to flow in and out at edges of wall.
4. Air permitted to easily enter bottom of wall.
5. Air permitted to easily exit top of wall.

Standard installation of furring



Staggered installation of furring



INSTALLATION OF "ANCHOR" SCREWS AT MID POINT OF BOARDS TO PREVENT "WALKING"