



# ThermaCal® Wall Exterior Wall Insulation Panels Installation Instructions

## PRODUCTS

- a. **ThermaCal® Wall Exterior Wall Insulation Panel** is a nailable exterior wall insulation consisting of standard 7/16" (11 mm) OSB or optional 5/8" (16 mm) or ¾" (19 mm) OSB or plywood bonded to polyisocyanurate foam. Maximum panel thickness not to exceed 4.5" (114 mm).
- b. **GAF ThermaCal® Fastener** is a self-drilling, self-tapping insulation fastener without a plate. (Refer to the *Insulation Fasteners* section for further details).

**Note:** FSC-certified and fire-treated wood sheathing is available upon request.

All ThermaCal® Wall panel sizes are nominal 4' x 8' (1.22 m x 2.44 m). The actual coverage is approximately 47-1/4" x 96" (1.20 m x 2.44 m). The edges of wood sheathing are rabbeted or cut back to allow for expansion with foam edges machined into a tongue and groove profile. ThermaCal® Wall panels are **NOT** structural. For more information on the product and its uses and limitations please see product literature or visit: [www.cornellcorporation.com](http://www.cornellcorporation.com) or [www.gaf.com](http://www.gaf.com). Check local building codes for any additional and/or applicable requirements.

## DELIVERY, STORAGE, AND PROTECTION

Follow GAF Cornell directions and requirements for protection of ThermaCal® Wall products prior to and during installation.

- a. Deliver products to site in original containers with seal unbroken and labeled with manufacturers' names, product brand names and types.
- b. Store materials in weather-protected environment, clear of the ground and moisture, in accordance with GAF instructions listed below.
- c. Outside storage of wall insulation panel materials:
  1. All materials stored outside must be raised above ground level on pallets and covered with a tarpaulin or other waterproof and "breathable" material. Insulation products should be properly stored and weighted to avoid weather and wind damage.
  2. Factory-installed plastic wrapping is NOT designed as protective covering for insulation materials and should be removed. Use "breathable" type covers, such as canvas tarpaulins to allow venting and protection from weather and moisture.
  3. Cover and protect materials at the end of each day's work.
  4. Do not remove any protective tarpaulins until immediately before material will be installed. Extreme heat or cold conditions may require special storage requirements. Review product data sheets for specific product storage requirements.
- d. Do NOT use materials that are wet or damaged to the extent that they will no longer serve their intended purposes.
- e. All insulation that has been repeatedly wetted is considered damaged, even if later dried out. Remove all damaged materials from the job site. Insulation that has been slightly wetted from rain or snow should be dried out thoroughly before applying the wall covering.

- f. At the job site, no more material should be stored than what will be used within two weeks. For periods longer than two weeks, the materials should be properly warehoused; i.e., dry ventilated, on pallets, etc.

## **WORKING ENVIRONMENT**

- a. Work should only begin when the contractor has decided to his/her satisfaction, that all specifications are workable as specified, and that the contractor can meet project and code requirements.
- b. The contractor should only begin installing the exterior wall insulation panels when the substrates have been prepared as necessary, and are ready to accept the wall panel installed as specified.
- c. Provide a safe working environment, including, but not limited to, adequate fall protection, restriction of unauthorized access to the work area, and protection of the building and its occupants.
- d. Safe work practices should be followed, including, but not limited to, keeping tools in good operating order; providing adequate ventilation if adhesives are used; and, daily housekeeping to remove debris and other hazards. See *Safety Considerations and Warnings* for further details.
- e. Protect the building, contents, surrounding area, building occupants and contractor personnel during work. Coordinate all work operations with the building owner and building occupants so that adequate interior protection, as necessary, is provided and disruption to normal building operations is minimized.
- f. If conditions are uncovered or created which would be detrimental to the proper conduct of specified work, immediately notify the building owner and GAF Cornell of these conditions for consultation on acceptable treatments.

## **SAFETY CONSIDERATIONS AND WARNINGS**

- a. As with any construction process, safety is a key element. All applicable safety standards and good installation practices must be followed. Read and understand the GAF Cornell installation instructions before starting application. Follow all precautions and directions.
- b. Only properly trained and professionally equipped contractors experienced in the installation of nailable wall insulation panel application should install these systems. Always wear protective gear, including but not limited to: hardhats, goggles, heavy-duty gloves, and snug fitting clothing.
- c. **Fire safety precautions should be observed when ThermaCal® Wall products are installed.** Protect wall panel from flame cutting and welding operations, etc. Provide suitable fire protection around chimneys or high temperature areas.
- d. Thoroughly train all personnel in first aid procedures, and always comply with all OSHA safety standards and fire codes. Also, use extreme caution when working around equipment, such as gas lines or HVAC units, which have electrical or gas connections.

## **AIR/VAPOR RETARDER**

- a. The designer/installer should determine whether air/vapor retarder (house wrap) is required between the existing wall surface and ThermaCal® Wall panels. An air/vapor retarder should always be specified for high humidity buildings. A dew point calculation is recommended for verification.
- b. Install the air/vapor retarder components per applicable installation recommendations of the manufacturer.

## **INSTALLATION**

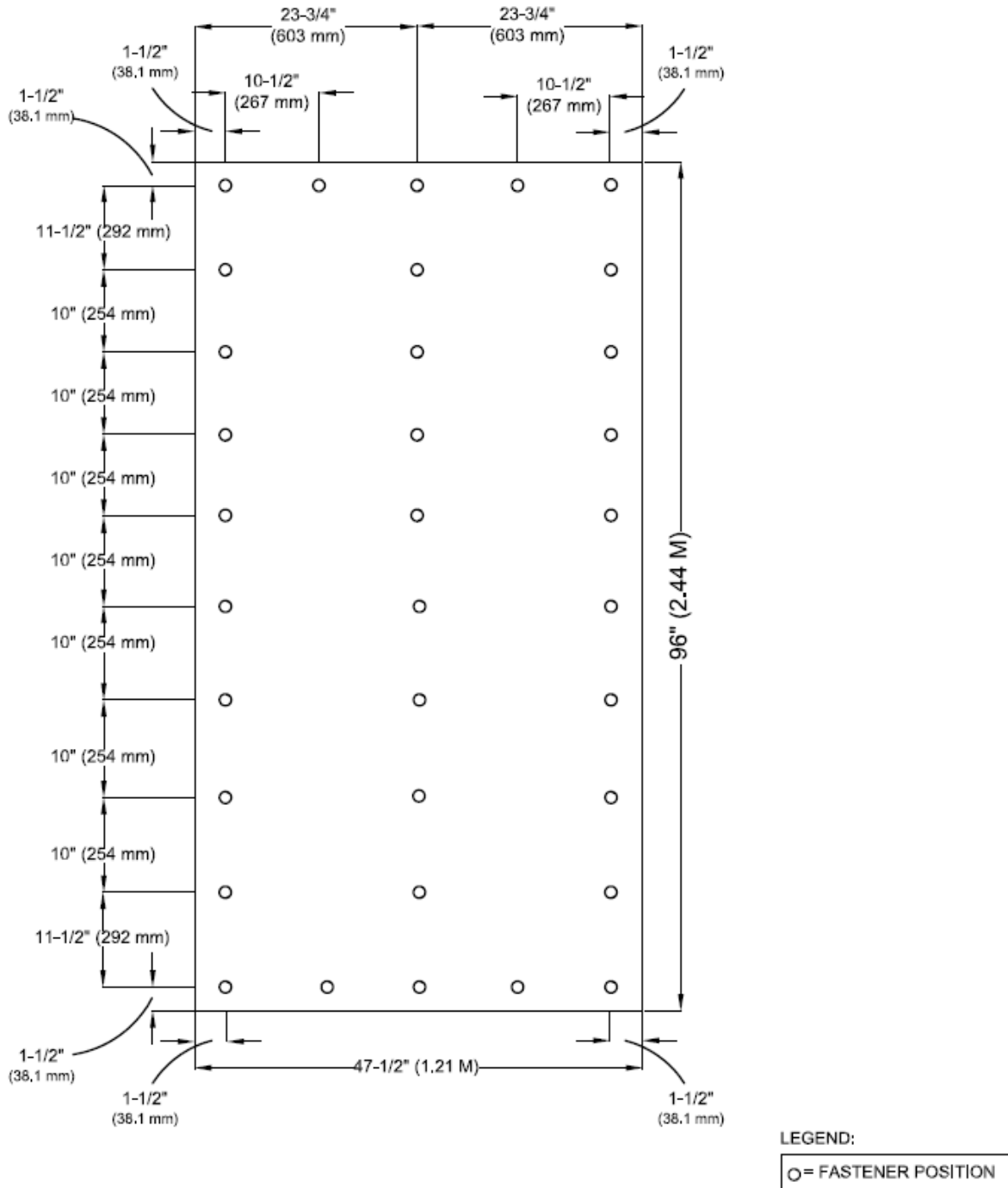
- a. ThermaCal® Wall panels are meant to be installed over existing exterior sheathing and studwall (wood construction), or over concrete walls or metal building walls. See appropriate fastener pattern.

- b. Check that the existing wall structure is smooth and even without bumps or depressions. Remove or hammer down any protruding nails.
- c. Install a wood nailer so that it fully covers and supports the bottom of the ThermaCal® Wall panel at the base of the wall. Multiple layers of wood nailers may be necessary in order to match the thickness of ThermaCal® Wall panel. Make sure the support is level.
- d. ThermaCal® Wall panels can be installed either vertically or horizontally with the wood side facing out. When the panels are installed horizontally, the tongue foam edge should face up the wall. Panels have rabbeted edges to maintain the proper clearance between the sheathing. Field cut panels should be kerf cut to maintain a 1/8" (3 mm) minimum gap between the sheathing on adjacent panels. Stagger end joints in succeeding panel rows. Fill any gaps or voids with spray foam to ensure a tight seal. **Clips are NOT required to gap ThermaCal® Wall panels.**
- e. Fasten through the panel into the sheathing and studs or sheathing alone using the appropriate ThermaCal® Fasteners. It is not necessary to hit all studs; however fasten through at least two stud structures per panel installed. Always use appropriate ThermaCal® Fasteners to install ThermaCal® Wall panels as listed in the *Insulation Fasteners* section below. Secure fasteners so that they are firmly embedded into the wood surface without over or under-driving. Do NOT over-torque the screws as this could damage the insulation.
- f. Check the panels' top surface for uneven edges BEFORE covering. Grind off any uneven edges with an electric sander/grinder.
- g. ThermaCal® Wall panels should always be covered with a WRB (Water Resistant Barrier) before applying the exterior wall covering.
- h. The exterior wall covering (i.e. siding) should be applied over a dry WRB (Water Resistant Barrier) as soon as possible. Install covering per the covering manufacturers' instructions. **Important:** Exterior wall covering must be able to be attached to the sheathing only. Heavier exterior wall covering products that must be attached to studs per the covering manufacturer are **NOT** suitable for use with ThermaCal® Wall panels.
- i. Do **NOT** apply EIFS (Exterior Insulation Finishing Systems) over ThermaCal® Wall panels.
- j. Do **NOT** install ThermaCal® Wall panels on sidewalls exceeding 30' (9.14 m) in height.

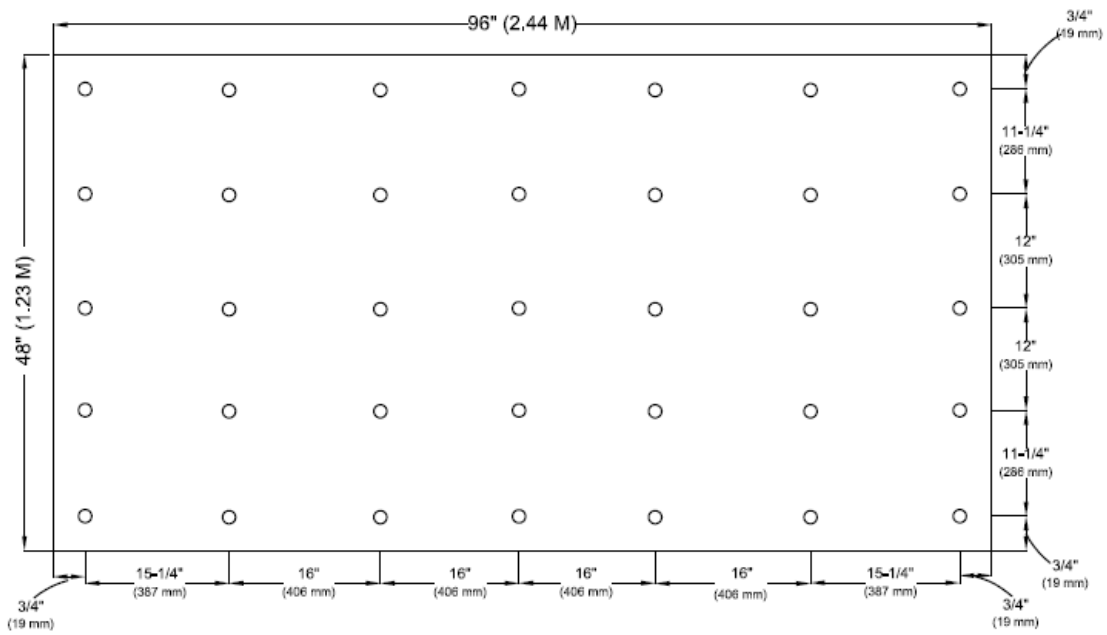
### INSULATION FASTENERS

- a. **Wood Walls:** Use ThermaCal® Thread Point Fasteners. Fasteners should fully penetrate sheathing (when fastening to sheathing only) and penetrate studs by 1" (25 mm) when fastening to studs and sheathing. The exterior wood wall should be no less than 7/16" (11 mm) OSB or 15/32" (12 mm) plywood. For these thicknesses of sheathing, the ThermaCal® Thread Point Fasteners should be sized 1½" (38 mm) longer than the thickness of the ThermaCal® Wall panel. See appropriate fastening patterns.
- b. **Metal Studs:** Use ThermaCal® Light-Duty Drill Point Fasteners. Fasteners should fully penetrate the metal stud a minimum of 1" (25 mm). Metal studs are required to be covered by sheathing. The sheathing should be no less than 7/16" (11 mm) OSB or 15/32" (12 mm) plywood or 1/2" (13 mm) DensGlass® exterior sheathing. See appropriate fastening patterns below. **Note:** Contact GAF Technical Services at 1-800-766-3411 for metal walls/panels or non-typical substrates for technical evaluation.
- c. **Concrete/CMU Walls:** Use ThermaCal® Thread Point Fasteners (or Tapcon screws or equal). ThermaCal® Wall panels can be attached to most concrete or CMU walls. Pre-drilling is required for fastening. A minimum of 1" (25 mm) thread embedment into the concrete or CMU wall is required. Advance testing of the pull out resistance is recommended for this application. See appropriate fastening patterns.
- d. **Special Applications:** Contact GAF Cornell for special applications not shown here.  
**Note:** Refer to GAF Cornell ThermaCal® Wall panel details located on the GAF website at [www.gaf.com](http://www.gaf.com) or [www.cornellcorporation.com](http://www.cornellcorporation.com) or contact GAF Technical Services at 1-800-766-3411.

**Diagram 1 – Standard Fastening Pattern for Vertical Installation:**



**Diagram 2 – Standard Fastening Pattern for Horizontal Installation:**



LEGEND:

○ = FASTENER POSITION