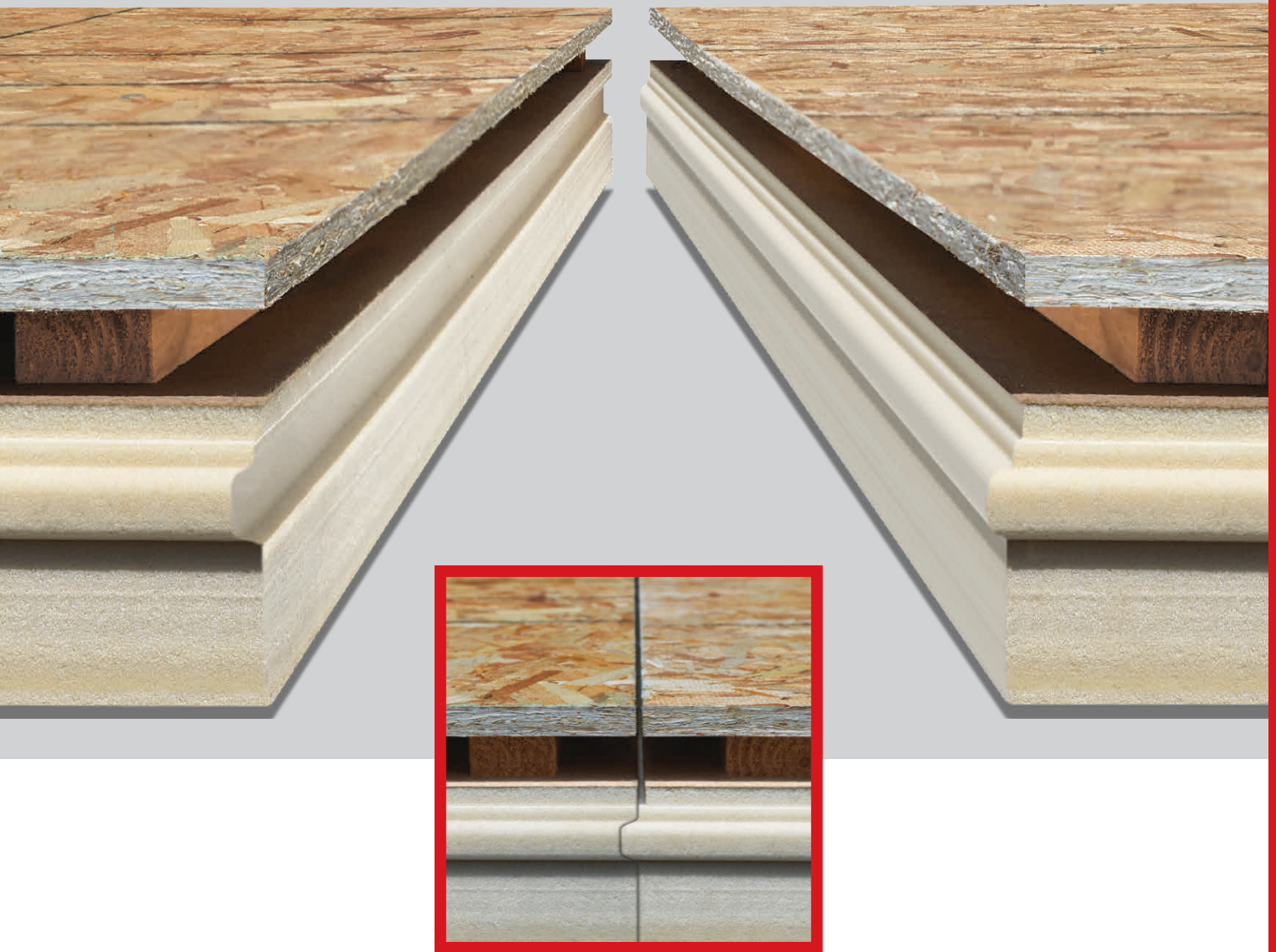




ThermaCal[®]
Nail Base Roof Insulation Panels

Nail Base Roof Insulation Panels



Exclusive tongue-and-groove ISO design for maximum insulating performance

We protect what matters most™



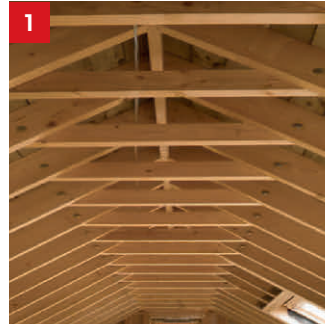
ThermaCal® Roof Insulation Panels are designed for maximum insulating performance and easy installation

All ThermaCal® Roof Insulation Panels Feature:

- **Reduced heat loss** — Exclusive tongue-and-groove ISO design minimizes heat loss up through the panel joints
- **Easy installation** — Fully machined construction with cut-back sheathing allows for a precision fit
- **Less hassle** — H-clips are not required because each panel is pre-spaced to allow for sheathing expansion

ThermaCal® Ventilated Roof Panels Only:

- **Exceptional airflow** — Unique spacer pattern maximizes airflow (“upventing”) and reduces hot spots. Over 92% open area (spacers occupy only 8% of panel area) with 50% open area for lateral (across the slope) ventilation
- **Extra-strong design** — Solid wood spacer blocks (positioned 12" [305 mm] or less apart in all directions) minimize the chance of deflection or nail back-out



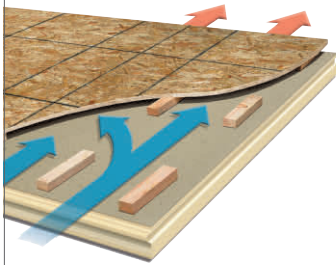
1. Cathedral Ceilings
2. Glulam Construction
3. Post and Beam
4. Engineered Truss
5. Banks

6. Strip Malls
7. Schools
8. Military
9. Churches
10. Assisted Living

VENTILATED ROOF

GAF ThermaCal[®] 1 Ventilated Roof Insulation Panels

For asphalt shingle and metal roof systems

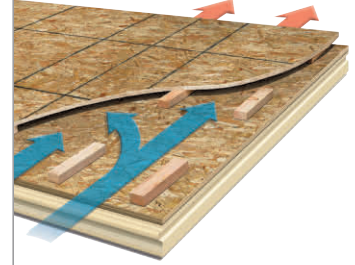


- Nominal 4' x 8' (1.21 m x 2.44 m) panels
- Single layer of sheathing (7/16" [11.1 mm] OSB standard); other options available, including fire-treated sheathing
- R-values from 5.70 to 32.50
- 1" (25.4 mm) airspace standard - 10 sq. in. of NFA per ft. (21,163 sq. mm per m) run. Also available: 1.5" (38.1 mm) and 2" (51 mm) options.
- Panels include premium-quality GAF EnergyGuard™ Polyiso Insulation

Approximate overall panel thickness ¹		Nominal Polyiso Insulation thickness		Approx. weight		LTTR R-Value ²
in.	mm	in.	mm	lb./sq. ft	kg/sq.m	
2.5	64	1.0	25	1.8	8.82	5.70
3.0	75	1.5	38	1.9	9.29	8.60
3.5	89	2.0	51	2.0	9.76	11.40
4.0	102	2.5	65	2.1	10.25	14.40
4.5	114	3.0	76	2.2	10.74	17.40
5.0	127	3.5	89	2.3	11.23	20.50
5.5	140	4.0	102	2.4	11.72	23.60
6.0	152	4.5	114	2.5	12.21	26.60
6.5	165	5.0	127	2.6	12.69	29.50
7.0	178	5.5	140	2.7	13.18	32.50

GAF ThermaCal[®] 2 Ventilated Roof Insulation Panels

For slate, tile, and maximum-loading roof systems



- Nominal 4' x 8' (1.21 m x 2.44 m) panels
- Two layers of sheathing (7/16" [11.1 mm] OSB standard); other options available for top layer only, including fire-treated sheathing
- R-values from 9.20 to 27.20
- 1" (25.4 mm) airspace standard - 10 sq. in. of NFA per ft. (21,163 sq. mm per m) run. Also available: 1.5" (38.1 mm) and 2" (51 mm) options.
- Panels include premium-quality GAF EnergyGuard™ Polyiso Insulation

Approximate overall panel thickness ³		Nominal Polyiso Insulation thickness		Approx. weight		Total system R-Value ⁴
in.	mm	in.	mm	lb./sq. ft	kg/sq.m	
3.5	89	1.5	38	3.3	16.11	9.20
4.0	102	2.0	51	3.4	16.60	12.00
4.5	114	2.5	64	3.5	17.09	15.00
5.0	127	3.0	76	3.6	17.58	18.00
5.5	140	3.5	89	3.7	18.06	21.10
6.0	152	4.0	102	3.8	18.55	24.20
6.5	165	4.5	114	3.9	19.04	27.20

¹ Approx. overall panel thickness and weight based on the polyiso insulation, one layer of 7/16" (11.1 mm) OSB, and 1" (25.4 mm) spacer height.

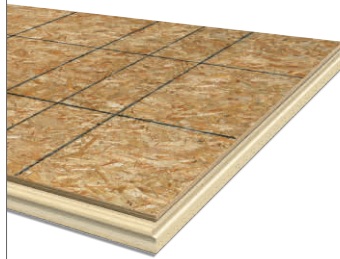
² LTTR R-value refers to polyiso insulation. LTTR R-value calculations are based on ASTM C1289-17.

³ Approx. overall panel thickness and weight based on the polyiso insulation, two layers of 7/16" (11.1 mm) OSB, and 1" (25.4 mm) spacer height.

⁴ Total system R-value includes the LTTR R-value of the polyiso insulation and .55 R-value of the 7/16" (11.1 mm) OSB attached to the polyiso. LTTR R-value calculations are based on ASTM C1289-17.

GAF **ThermaCal®**
Non-Ventilated Roof Insulation Panels

For metal roof systems



- Nominal 4' x 8' (1.21 m x 2.44 m) panels
- Single layer of sheathing (7/16" [11.1 mm] OSB standard); other options available. Fire-treated sheathing option NOT available.
- R-values from 6.30 to 39.00
- Panels include premium-quality GAF EnergyGuard™ Polyiso Insulation

Approximate overall panel thickness ¹		Nominal Polyiso Insulation thickness		Approx. weight		Total system R-Value ²
in.	mm	in.	mm	lb./sq. ft	kg/sq.m	
1.5	38	1.0	25	1.6	7.81	6.30
2.0	51	1.5	38	1.7	8.30	9.20
2.5	64	2.0	51	1.8	8.79	12.00
3.0	76	2.5	65	1.9	9.29	15.00
3.5	89	3.0	76	2.0	9.76	18.00
4.0	102	3.5"	89	2.1	10.25	21.10
4.5	114	4.0	102	2.2	10.74	24.20
5.0	127	4.5	114	2.3	11.23	27.20
5.5	140	5.0	127	2.4	11.72	30.10
6.0	152	5.5	140	2.5	12.21	33.10
6.5	165	6.0	152	2.6	12.69	36.00
7.0	178	6.5	165	2.7	13.18	39.00

GAF **ThermaCal® Wall**
Exterior Wall Insulation Panels

For insulating exterior walls



- Nominal 4' x 8' (1.21 m x 2.44 m) panels (actual coverage is approx. 47½" x 96" [1.21 m x 2.44 m])
- Single layer of sheathing (7/16" [11.1 mm] OSB standard); other options available including fire-treated sheathing
- R-values from 6.30 to 24.20
- Panels include premium-quality GAF EnergyGuard™ Polyiso Insulation
- Tongue-and-groove ISO foam (8' [2.44 m] sides) provides a tight fit to help minimize heat loss through panel joints
- Top sheathing layer is cut back (8' [2.44 m] sides) for sheathing expansion clearance and easy installation

Approximate overall panel thickness ¹		Nominal Polyiso Insulation thickness		Approx. weight		Total system R-Value ²
in.	mm	in.	mm	lb./sq. ft	kg/sq.m	
1.5	38	1.0	25	1.6	7.81	6.30
2.0	51	1.5	38	1.9	8.30	9.20
2.5	64	2.0	51	2.0	8.79	12.00
3.0	76	2.5	64	2.1	9.29	15.00
3.5	89	3.0	76	2.2	9.76	18.00
4.0	102	3.5	89	2.3	10.25	21.10
4.5	114	4.0	102	2.4	10.74	24.20

Note: For more information on ThermaCal® Wall, visit gaf.com or call 877-GAF-ROOF.

¹Approx. overall panel thickness and weight based on the polyiso insulation and one layer of 7/16" (11.1 mm) OSB.

²Total system R-value includes the LTR R-value of the polyiso insulation and .55 R-value of the 7/16" (11.1 mm) OSB attached to the polyiso. LTR R-value calculations are based on ASTM C1289-17.

For the full collection visit gaf.com/Thermacal

See back for **Fasteners**

Short Form Draft Specifications

ThermaCal® 1 — Ventilated Roof Insulation Panels Only¹

1. VENTILATED ROOF INSULATION

A. Description of system:

1. The ventilated roof insulation should be a factory-assembled panel consisting of one layer of 7/16" (11.1 mm) oriented strand board top surface, a built-in ventilation space maintained by 1" (25.4 mm) wood spacer blocks, and polyisocyanurate insulation on the bottom.
2. The Long Term Thermal Resistance (LTTR) R-Value of the polyiso insulation shall be no less than _____.
3. Wood panel edges shall be rabbeted to allow the foam edges to fit together, while providing clearance between the wood sheathing on adjoining panels.
4. ISO foam sides and ends shall have a machined tongue-and-groove profile to reduce heat loss at the joints.
5. The wood spacer blocks shall not exceed 8% of the panel area and shall have 50% open area for lateral (across the slope) ventilation. Spacer blocks shall not be over 12" (305 mm) apart in either direction.
6. The vent space shall provide a minimum of 10 sq. in. of Net Free Area per lineal foot (21,163 sq. mm per 1m) on insulation (along the 8' [2.44 m] edge) after deduction for the spacer blocks.
7. The ventilated roof insulation will be attached with GAF ThermaCal® Fasteners per specified wind load requirements.

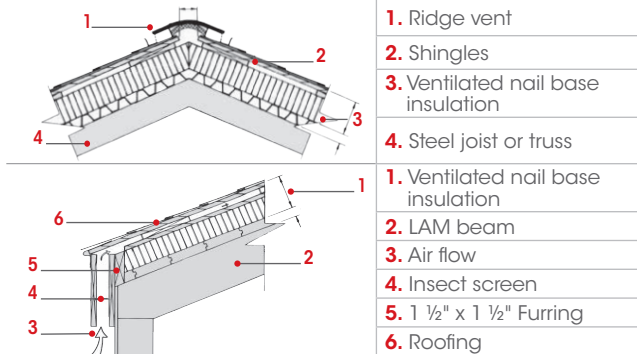
2. SUBMITTALS

- A. The following will be submitted to the architect for approval: copies of the manufacturer's product information and installation instructions; a sample with the edge profile specified and large enough to show the actual lateral spacing of the vent space supports; a manufacturer's dimensioned drawing showing how the 50% lateral ventilation is achieved; and calculations of spacer block percentage of panel area and the Net Free Area per lin. ft. (1m) of insulation after deducting for spacers.

3. PRODUCTS:

- A. Products shown below are acceptable provided they meet the requirements of this specification.²
1. ThermaCal® 1 Ventilated Roof Insulation Panels from GAF, 1 Campus Drive, Parsippany, NJ 07054, 877-GAF-ROOF, 1-800-522-9224, or gaf.com
 2. Fastener Requirements — GAF requires the use of its fasteners for steel and wood substrate applications for all nail base roof insulation panels. See complete installation instructions, available from GAF, for recommended fastening patterns.

Roof Deck Diagrams: Metal or wood



¹ **Note to Specification Writer:** This draft spec can be used for ThermaCal®1 (with one layer of oriented strand board). This spec is typically placed in Section 07220. All product specifications can be downloaded from our website at gaf.com or call 877-GAF-ROOF.

² The designer should determine if a vapor barrier is required between the deck and the insulation. The vapor retarder should always be specified in buildings with high humidity. Always refer to local building codes.

Codes and Standards

All Panels Except as Noted

Standards	
<ul style="list-style-type: none"> ▪ Polyiso insulation complies with ASTM C1289, Type II, Class I, Grade 2 	
<ul style="list-style-type: none"> ▪ Standard APA/TECO rated OSB or CDX Exposure 1 plywood 	
<ul style="list-style-type: none"> ▪ Optional fire-treated OSB/Plywood (ventilated roof insulation and wall insulation panels only) 	
<ul style="list-style-type: none"> ▪ ANSI/UL 790 Classification 	Classified under ANSI/UL 790 as a Shingle Decking Accessory for use with Class A, B, or C asphalt shingle or metal shingle roof coverings
<ul style="list-style-type: none"> ▪ ANSI/UL 1256 Classification 	Classified for Insulated Metal Deck Assemblies, Constructions No. 120 and No. 123
<ul style="list-style-type: none"> ▪ Physical Properties 	<ol style="list-style-type: none"> 1. Sheathing: OSB conforms to APA Standard PRP 109, Exposure 1, and HUD/FHA-918. Plywood conforms to CDX Exposure 1. 2. Polyiso insulation: <ul style="list-style-type: none"> – ASTM E84 Flame Spread Index of 55 – ASTM E84 Smoke Developed Index of 160 – Moisture Vapor Permeance per ASTM E96 of less than 1.5 perms
<ul style="list-style-type: none"> ▪ Vent Space Properties ThermaCal®1 & ThermaCal®2 only 	<ol style="list-style-type: none"> 1. Depth: 1" (25.4 mm) standard, optional 1.5" (38.1 mm) or 2" (51 mm) 2. Cross Section: 10 sq. in. of Net Free Area per lin. ft. (21,163 sq. mm per 1m) along the 8' (2.44 m) edge dimension after deducting spacer block area 3. Open Area: Not less than 92% of panel area 4. Spacer Separation: 12" (305 mm) or less apart in all directions

Codes	
<ul style="list-style-type: none"> ▪ Miami-Dade County Approved 	
<ul style="list-style-type: none"> ▪ UL Listed¹ 	
<ul style="list-style-type: none"> ▪ Eligible for LEED® Credits 	

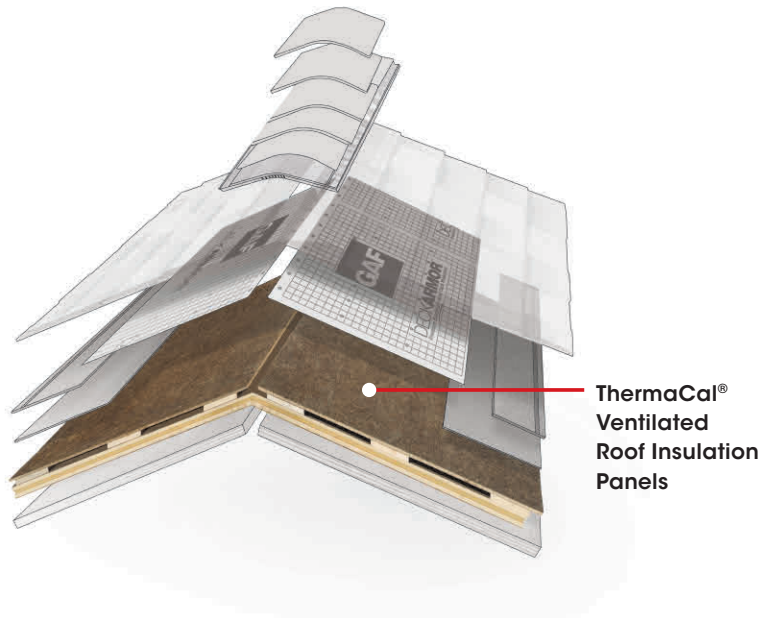
- **State of Florida Approved**

Note: Always refer to local building codes. For roof pitches less than 3:12, contact GAF Technical Services.

¹ Refer to UL Product_iQ for actual assemblies.

ThermaCal® Ventilated Roof Insulation Panels and GAF Asphalt Shingle Roofing Systems

ThermaCal® Ventilated Roof Insulation Panels¹ can serve as a nailable base for the installation of GAF Asphalt Shingle Roofing Systems while helping to provide increased insulation and ventilation performance.



**ThermaCal®
Ventilated
Roof Insulation
Panels**

ThermaCal® Nail Base and Potential LEED® Credits

The use of ThermaCal® Nail Base Roof and Exterior Wall Insulation Panels can help you reach your LEED® green building program objectives in a wide variety of applications, including LEED® v4 for BD+C: New Construction; LEED® v4 for Homes; LEED® v4.1 (Beta) for BD+C: New Construction; and LEED® v4.1 Residential BD+C: Single Family.

For specific use cases, refer to gaf.ecomedes.com to evaluate GAF ThermaCal® Insulation Panels and potential LEED® credits. You can also download the *GAF Green Building Playbook* at gaf.com/Green. For immediate information on ThermaCal® Insulation Products and potential LEED® credits, please call GAF Technical Services at 877-GAF-ROOF.

ThermaCal® Drill Point and Thread Point Fasteners

GAF offers a full line of nail base roof insulation panel fasteners for wood and steel roof deck applications. These fasteners meet FM wind load requirements. Contact GAF for more information.

Nail Base Insulation Panel Fasteners		
<p>ThermaCal® Light-Duty Drill Point Fasteners</p>		<ul style="list-style-type: none"> ▪ Designed for attaching ThermaCal® Insulation Panels to steel roof decks/ substrates ▪ Manufactured with case-hardened and tempered carbon steel
<p>ThermaCal® Thread Point Fasteners</p>		<ul style="list-style-type: none"> ▪ Designed for attaching ThermaCal® Insulation Panels to wood roof decks/ substrates ▪ Manufactured with case-hardened and tempered carbon steel

For Technical Assistance:
877-GAF-ROOF or technicalquestions@gaf.com

For assistance with specifications, contact
GAF Architectural Information Services at:
1-800-522-9224 or ais@gaf.com

¹ThermaCal® Nail Base Roof Insulation Panels are not part of the GAF Lifetime® Roofing System and are covered separately by the *ThermaCal® Nail Base Roof Insulation Panels Limited Warranty*.

We protect what matters most™

