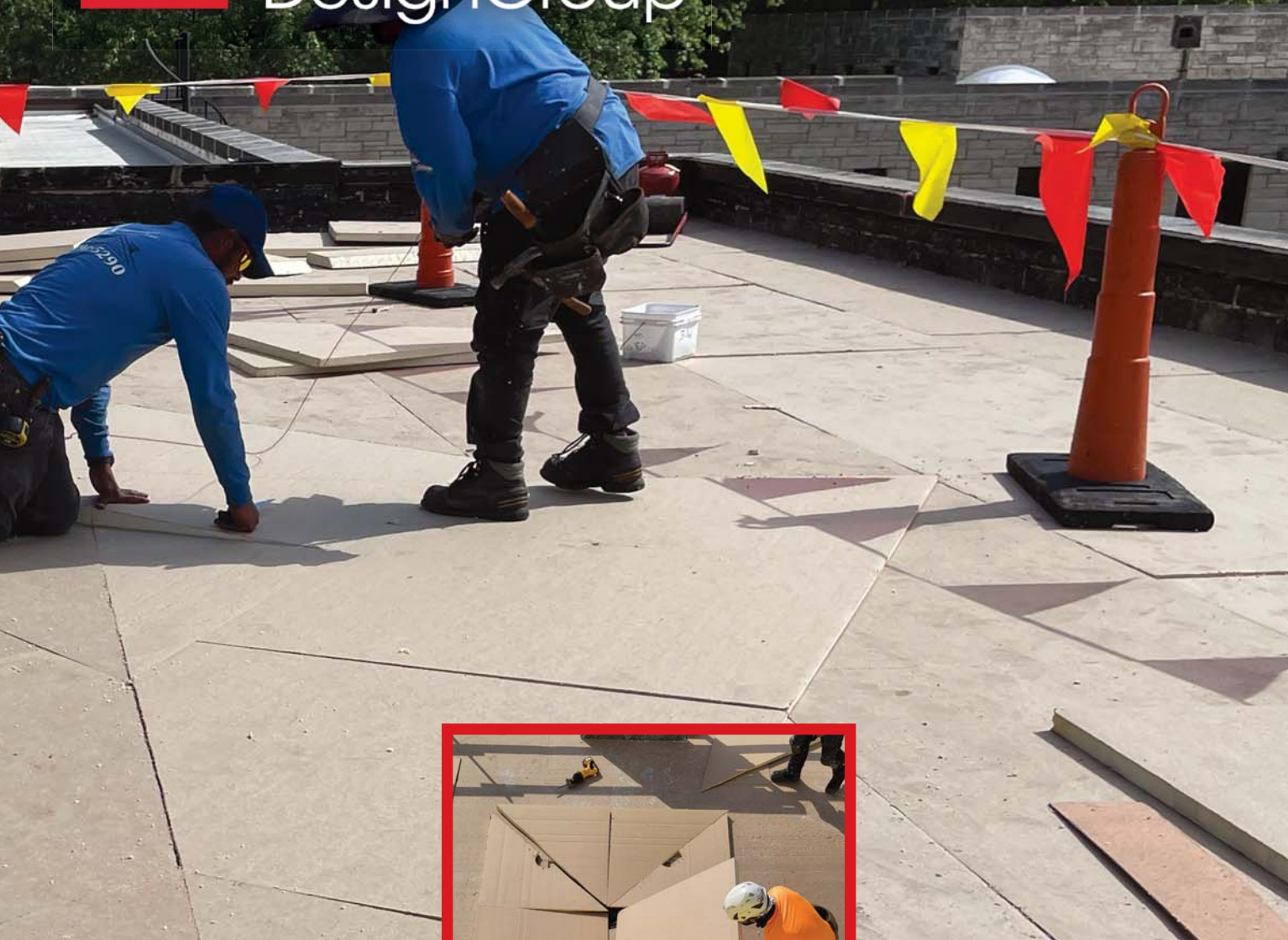




Tapered DesignGroup



EnergyGuard™ Tapered Polyiso
Products and Design Services



We protect what matters most™



Ramp up your commercial roof investment

Water is the enemy of your roof. Work with the GAF Tapered Design Group for the correct product selection, services, and tapered design solution to achieve your performance criteria.



Why Polyiso

In every commercial roof system, the insulation layer performs multiple functions in the performance and protection of the building.

Product Highlights:

- Polyiso has approximately 70% market share as the insulation of choice in commercial roofs
- Highest R-value per inch of any insulation
- Lightweight, easy to cut, easy to maneuver
- Two facer options: Glass fiber reinforced (GRF) standard and coated glass fiber (CGF) adds durability, moisture, and mold resistance¹
- Compatible with TPO, PVC, Modified Bitumen, BUR
- Assembly attachment compatibility: Adhered, Mechanically Fastened, Induction Welding, Ballasted
- Compatible with other GAF polyiso products: EnergyGuard™ HD Cover boards, EnergyGuard™ Flute Fill

Code Compliance and Sustainability:

- Refer to individual product data sheets on gaf.com for code compliance of specific products referenced
- Manufactured with EPA-compliant blowing agents containing no CFCs or HCFCs
- Zero ozone depletion potential (ODP) and negligible global warming potential (GWP)
- Potential LEED Credits for polyiso use
- Environmental Product Declaration (EPD)
- UL GREENGUARD Gold
- EnergyGuard™ NH Polyiso Insulation products can contribute towards sustainability certifications under a green building rating system such as LEED V4, or Living Building Challenge



For additional product information, visit gaf.com/insulation

¹ GAF warranties and guarantees do not provide coverage against mold or other biological growth. Refer to gaf.com for more information on warranty and guarantee coverage and restrictions.



Why Tapered Polyiso

Standing or “ponding” water can threaten the integrity and longevity of a commercial roof system. Left unaddressed, standing water will add weight to your roof and may eventually lead to leaks and bacteria growth—which can degrade the components of the roof assembly. A tapered polyiso insulation system incorporates designed slopes on an otherwise low-slope roof system. The tapered system diverts water to gutters, drains, or scuppers.

Product Highlights:

- All the benefits of EnergyGuard™ Polyiso Insulation
- Various thicknesses available: .5" – 4.5"
- Various slopes available (per foot):
1/16", 1/8", 3/16", 1/4", 3/8", 1/2"
- Two panel sizes: 4' x 4' or 4' x 8' (special request)
- Fill panels available in 4' x 4' or 4' x 8'
- Two compressive strengths available: 20 psi or 25 psi
- Non-Halogenated, stable low-temperature formulation option¹ available in both GRF and CGF facers

System:

- System approval: Modified Bitumen, BUR, Single-Ply
- Assembly attachment compatibility: Adhered, Mechanically Fastened, Induction Welding, Ballasted
- Compatible with other GAF polyiso products: EnergyGuard™ HD Cover boards, EnergyGuard™ Flute Fill

For information on GAF Tapered Design Services, visit gaf.com/tapereddesign

¹ Maintains the same R-value when tested according to ASTM C1289 standard using the C518 test method and both a mean temperature of 40°F and 75°F.



Tapered polyiso products offer solutions based on economics, performance, moisture, and sustainability goals

A properly designed tapered system boils down to two main aspects — product selection and design criteria. GAF offers tapered panels, in all slopes and panel designations, with two facers — GRF and CGF, both in the standard formulation and a non-halogenated formulation to meet your specification needs. Proper product selection, with design theory, can help to add years to the service life of your roof system.

EnergyGuard™ Tapered Polyiso Insulation EnergyGuard™ Polyiso Insulation

Polyiso banded to GRF facers

- ASTM C1289 Type II, Class 1, Grade 2 (20 psi) or Grade 3 (25 psi)
- Standard product, most economical.

Sustainability benefits

- Potential LEED Credits for polyiso use
- Green Circle Certified for Recycled Content



- GREENGUARD Gold



EnergyGuard™ Ultra Tapered Polyiso Insulation EnergyGuard™ Ultra Polyiso Insulation

Polyiso banded to CGF facers

- ASTM C1289 Type II, Class 2, Grade 2 (20 psi) or Grade 3 (25 psi)
- Durable coated glass facer resists moisture and mold¹
- ASTM D3273 for resistance to the growth of mold¹

Sustainability benefits

- Potential LEED Credits for polyiso use
- GREENGUARD Gold



For information on GAF Tapered Design Services, visit gaf.com/tapereddesign

¹ GAF warranties and guarantees do not provide coverage against mold or other biological growth. Refer to gaf.com for more information on warranty and guarantee coverage and restrictions.



EnergyGuard™ NH Tapered Polyiso Insulation EnergyGuard™ NH Polyiso Insulation

Non-halogenated polyiso bonded to GRF facer

- ASTM C1289 Type II, Class 1, Grade 2 (20 psi) or Grade 3 (25 psi)
- GreenCircle certified for recycled content



EnergyGuard™ NH Ultra Tapered Polyiso Insulation EnergyGuard™ NH Ultra Polyiso Insulation

Non-halogenated polyiso bonded to CGF facers

- ASTM C1289 Type II, Class 2, Grade 2 (20 psi) or Grade 3 (25 psi)
- Durable coated glass facer resists moisture and mold¹
- ASTM D3273 for resistance to the growth of mold¹



Sustainability benefits for EnergyGuard NH flat and tapered polyiso products:

- No potentially hazardous flame-retardant chemicals
- Maintains the same R-value when tested according to ASTM C1289 standard using the C518 test method at both mean temps: 40° F and 75° F
- Manufactured with EPA-compliant blowing agents containing no CFCs or HCFCs
- Zero ozone depletion potential (ODP)
- Living Building Challenge Red List Approved
- GREENGUARD Gold
- Only polyiso insulation with product-specific Environmental Product Declaration (EPD) for non-halogenated products

Declare.



For information on GAF Tapered Design Services, visit gaf.com/tapereddesign

¹ GAF warranties and guarantees do not provide coverage against mold or other biological growth. Refer to gaf.com for more information on warranty and guarantee coverage and restrictions.

Tapered Design Solutions offer economics, performance, and drainage

We offer a comprehensive array of products and services for your insulation systems. But GAF Commercial provides more than just products; we provide complete solutions. The GAF Tapered Design Group (TDG) brings it all together, working with architects, specifiers, contractors, and property managers to design high-quality, detailed tapered solutions, take-offs, and other related problem-solving.

TDG designers work with you to provide practical solutions at all phases of your project, including conception, design, material selection, shipment breakouts, and order management. Services include:

- Regional tapered design expertise
- Conceptual tapered design assistance per job criteria, including performance, budget, and inventory selection
- Quote review and comparison
- Plan and spec review
- Job startups
- Alternate tapered design recommendations (e.g., labor savings, incorporation of cover boards, alternate tapered systems)
- Contractor trainings
- AIA designations
- Product knowledge presentations



Reach out to your TDG representative to start your next tapered insulation roof system: tdg@GAF.com or **866.207.7123**

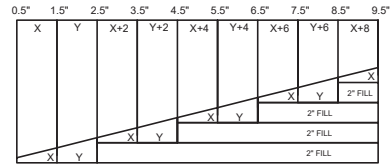
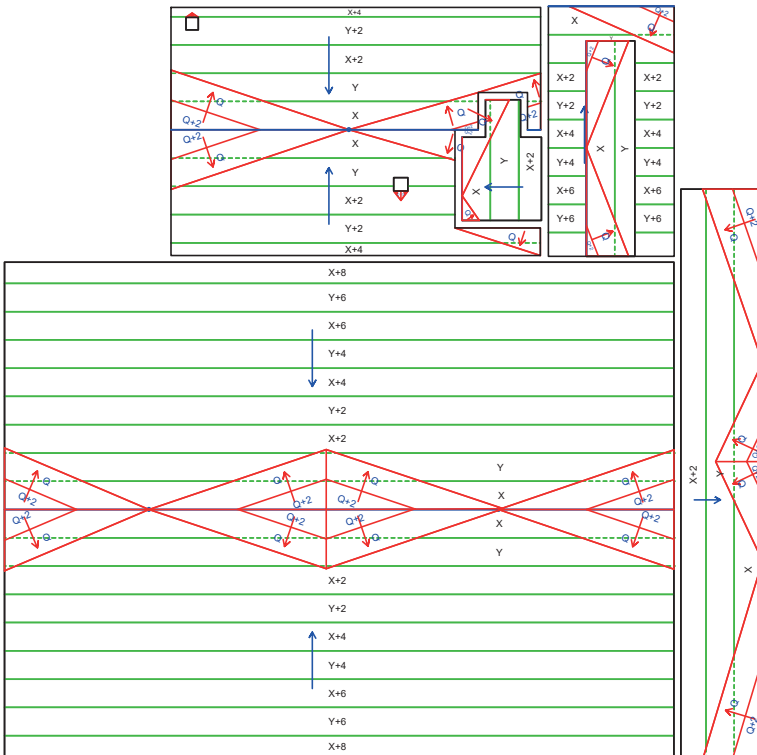
Quote designs with the contractor in mind

- Easy-to-read and clearly defined tapered design quotes.
- Leaves no guesswork!
- More helpful information on quotes than competition, including notes and detailed system information.

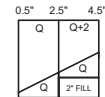
Additional base layers of insulation may be required in order to meet applicable energy code requirements. The use of the average R-value method to show compliance may not be acceptable with the authority having jurisdiction (AHJ). This method is intended to be used for tapered insulation systems where the insulation thickness does not vary more than 1 inch. When the variation exceeds 1 inch, it is acceptable to use an R-value based on the thickness of the insulation where the insulation is 1 inch thicker than the tapered system's low point. Consult with the AHJ for further guidance.

Notes:


1. Freight and Fuel Surcharges Not Included.
2. All panels are 4x4. If 4x8 is required please contact Design Specialist
3. Price Includes a 0.5" taper start
4. Base layer, Cover board & Sumps to be quoted separately unless noted otherwise



1/4" SLOPE TAPERED ISO



1/2" SLOPE TAPERED ISO

System Information				Project Name	
Material: CLASS I (FELT), 20 PSI				WAREHOUSE	
Tapered Panels	Cricket Panels	System Properties	Shipping	NE	
Area (sf): 9969.5	Area (sf): 1637.6	Min. R-Value: 2.8	4X4 Bundles: 63.00	Quote Number: G23SS 9387 A01	
T. Slope: 1/4"	C. Slope: 1/2"	Avg R-Value: 23.46	4X8 Bundles: 0.00	Date: 7/7/2023	
Min: 0.5	Min: 0.5	Sqs. Handled: 271.04	Trucks: 1.31	Quote Expires: 12/31/2023	
Max: 9.34	Max: 4.5	Sqs. Applied: 253.94			
				Project Designer Information Direct: 866-207-7123 Email: tdg@gaf.com	

Tapered Design Concept - Quote Based on Provided Drawing and Dimensions Quote based on design shown here. IMPORTANT - As a provider of materials and service only -Design will not assume responsibility for quantities due to errors on submitted plans, drawings or differences in field conditions. Contractor shall verify all drain locations, perimeter dimensions, materials and R-values. Contractor is responsible for verifying this quote to insure that it meets job specifications. All shop drawings must be approved prior to installation.



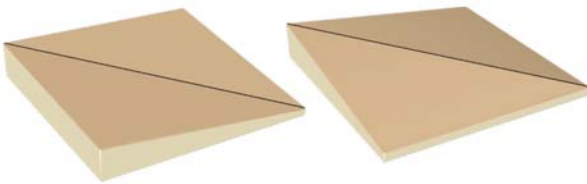
Tapered labor savings products and services

GAF's Tapered Design Group helps you work with greater efficiency by offering you customized tapered designs and the following products and services:

Pre-cut Hips & Valleys

Contact rep for availability

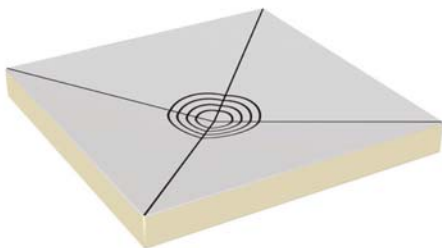
These products ship ready-to-install as part of your tapered design or when purchased à la carte. Check with your regionalized TDG professional for availability on all tapered product offering options of EnergyGuard™, EnergyGuard™ Ultra, EnergyGuard™ NH, and EnergyGuard™ NH Ultra.



Pre-cut Sumps

Contact rep for availability

Drives water inward to lowest point of slope and includes circle marks to guide cutting the center to access the drain. Available in EnergyGuard™ Ultra Tapered 25 psi only.



Pre-cut Sump Packaging

Sump	Thickness	Pieces per Package
Q1	.5 - 1.5"	30
Q2	1.5" - 2.5"	18

Tapered Double Packs

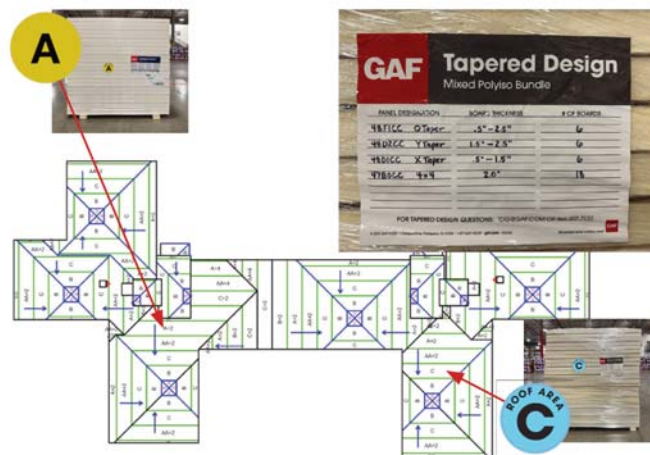
Contains two 4' x 4' bundles to help save time staging, unloading, and on cranes. Available in tapered, fill, and cover boards for tapered design projects only.



Tapered Load and Label by Area

Roof Area Labeling

Maximize efficiency when you sort, unload, stage, and install polyiso bundles. GAF offers the option of shipping flat and tapered panel bundles pre-sorted and pre-labeled by roof area. Mixed bundles are labeled for ease of sorting.



For information on GAF Tapered Design Services, visit gaf.com/tapereddesign

Increase Efficiency with Tapered Design Solutions

Let GAF Tapered Design Group help you make slight modifications to your tapered design to help lower installation, material, and labor costs.

A standard tapered design system starts with a 4' x 4' base layer or thermal layer, followed by subsequent 4' x 4' tapered and fill panels. Tapered systems can be mechanically attached to the deck or put into adhesive. In the examples below, we illustrate how panel and fastener count can be altered without affecting system performance, but instead offer material and labor savings.

Traditional Tapered Design

4.5"	5.5"	6.5"	7.5"	8.5"	9.5"	10.5"	11.5"	12.5"	13.5"
X	Y	Z	X+3	Y+3	Z+3	X+6	Y+6	Z+6	
			X	Y	Z		X	Y	Z
			3" FILL	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL
X	Y	Z	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL
4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO

1/4" slope, 4' x 4' base layer, tapered and fill

- | | |
|--|---|
| 36' Run - 144 sq ft.: | 100 sq.: |
| <ul style="list-style-type: none"> ■ 27 panels, ■ 36 fasteners | <ul style="list-style-type: none"> ■ 1875 panels ■ 2500 fasteners |

4' x 8' Base Layer Tapered Design

4.5"	5.5"	6.5"	7.5"	8.5"	9.5"	10.5"	11.5"	12.5"	13.5"
X	Y	Z	X+3	Y+3	Z+3	X+6	Y+6	Z+6	
			X	Y	Z		X	Y	Z
			3" FILL	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL
X	Y	Z	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL
4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO

1/4" slope, 4' x 8' base layer, 4' x 4' tapered, fill

- | | |
|---|---|
| 36' Run — 144 sq ft.: | 100 sq.: |
| <ul style="list-style-type: none"> ■ 23 panels ■ 36 fasteners | <ul style="list-style-type: none"> ■ 1597 panels ■ 2500 fasteners |

■ **15% fewer panels Installed**

Inverted Tapered Design

4.5"	5.5"	6.5"	7.5"	8.5"	9.5"	10.5"	11.5"	12.5"	13.5"
X	Y	Z	X+3	Y+3	Z+3	X+6	Y+6	Z+6	
			X	Y	Z		X	Y	Z
			3" FILL	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL	3" FILL
			4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO
4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO	4.0"ISO

1/4" slope, 4' x 8' overlay and fill

- | | |
|---|--|
| 36' Run - 144 sq ft. : | 100 sq.: |
| <ul style="list-style-type: none"> ■ 19 panels ■ 24 fasteners | <ul style="list-style-type: none"> ■ 1,319 panel ■ 1,667 fasteners |

■ **30% fewer panels installed**

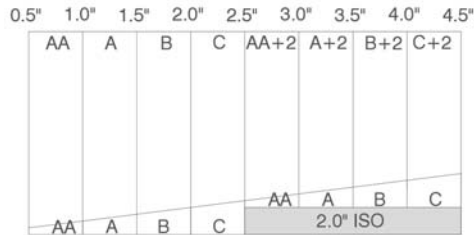
■ **45% fewer fasteners installed***

* Results may vary based on actual number of fasteners used in the field, corners and perimeters, shape of roof, and configuration of tapered system. These illustrations were designed to show that when you change the size of the insulation the number of panels installed and fasteners required is affected.

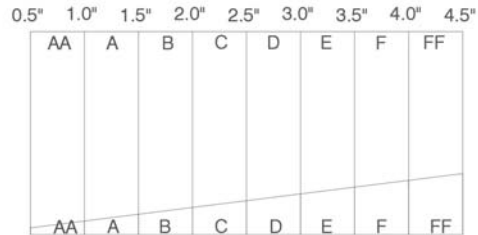
Standard vs. Extended Panels Comparison

GAF Tapered Design Group will design a system for you using standard panel repeats or extended panel repeats. The extended panel option allows for more tapered panels and thicker fill panels resulting in an overall faster installation due to a reduced number of panels installed. The design also reduces the squares of adhesive needed. All without compromising performance.

Common System



Extended Panels System



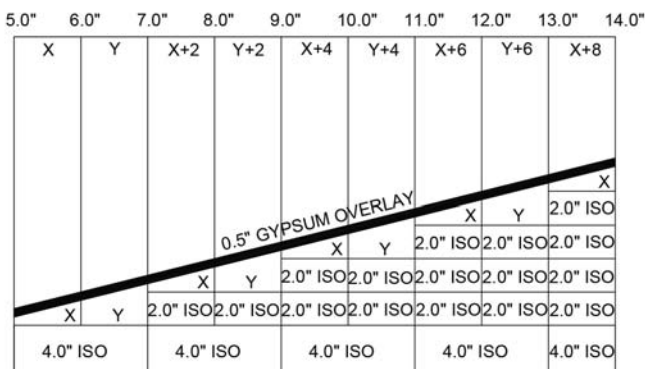
With the Extended Panels System:

- 30% fewer panels installed
- 30% less adhesive
- 30% reduction in labor

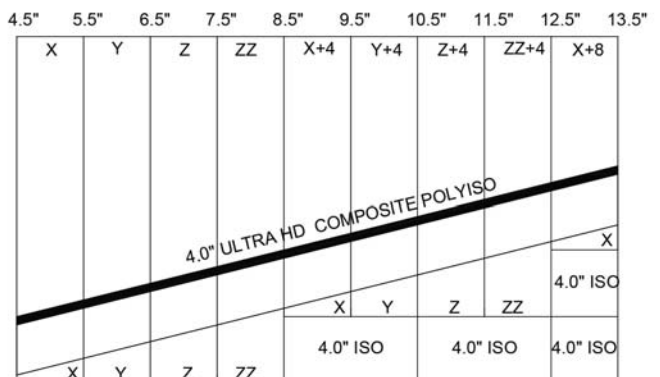
Save with Extended Panels and EnergyGuard™ HD Polyiso Cover Board

Save on overall thickness and R-value on your next tapered system with EnergyGuard™ HD Polyiso Cover Board. With an R-value of 2.5 (which is significantly higher than the R-value provided by gypsum boards), the R-value added into the overall R-value on the roof allows for less thickness below the cover board. Ultra HD Composite Insulation combines a high-density cover board with EnergyGuard™ Ultra insulation into a composite panel consisting of high compressive strength and added thermal value. In the example below, we have illustrated the savings of an inverted extended panel system with Ultra HD Composite.

Common System



Extended Panels System



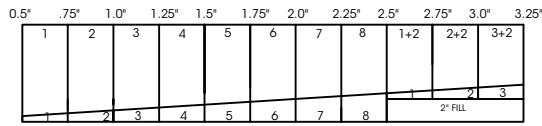
With the Extended Panels System:

- 33% fewer panels installed
- 3 less applications of adhesive
- ½" reduction in overall thickness
- 30% reduction in labor

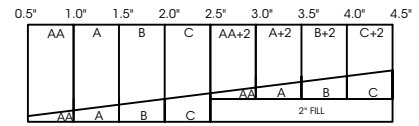
Tapered Profiles

EnergyGuard™ Tapered, EnergyGuard™ Ultra Tapered, EnergyGuard™ NH Tapered, EnergyGuard™ NH Ultra Tapered

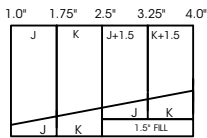
Typical Standard Profiles



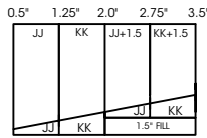
1/16" SLOPE



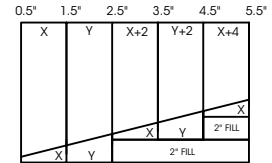
1/8" SLOPE



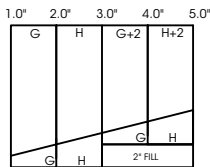
3/16" SLOPE



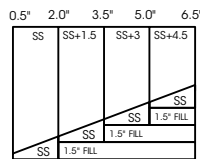
3/16" SLOPE



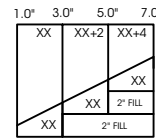
1/4" SLOPE



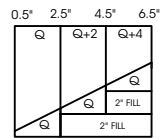
1/4" SLOPE



3/8" SLOPE

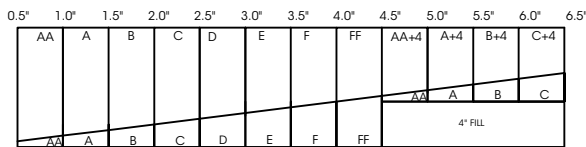


1/2" SLOPE

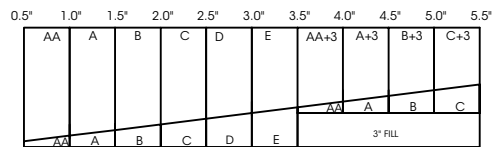


1/2" SLOPE

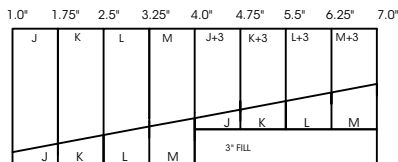
Typical Extended Profiles



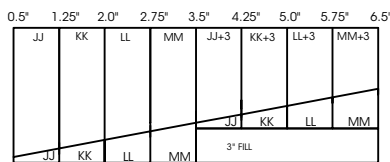
1/8" SLOPE



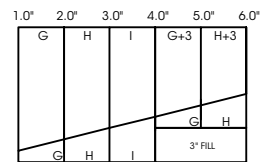
1/8" SLOPE



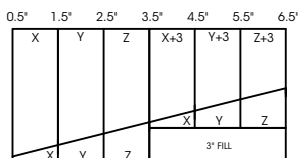
3/16" SLOPE



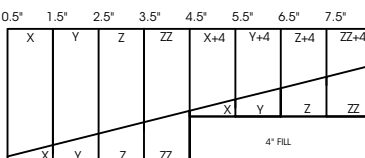
3/16" SLOPE



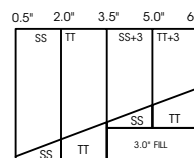
1/4" SLOPE



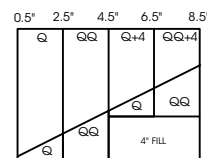
1/4" SLOPE



1/4" SLOPE



3/8" SLOPE



1/2" SLOPE

Tapered Polyiso

Physical Characteristics and Shipping Information

Physical Characteristic				Shipping Information (4' x 4') (1.22 m x 1.22 m)				
Slope	Thickness (Inches/Millimeters)	Size*	Average Thickness (Inches/Millimeters)	Board Feet Per Panel	Boards/ Bundle	Boards/ Truck	Bundle/ Truck	Sq. Ft. Per Truck
1/16" (1.6 mm)	0.5 — 0.75 (12.7 — 19.1)	1	0.625 (15.9)	10	72	3,456	48	55,296 (5,137 sq. m)
	0.75 — 1.0 (19.1 — 25.4)	2	0.875 (22.2)	14	52	2,496	48	39,936 (3,710 sq. m)
	1.0 — 1.25 (25.4 — 31.8)	3	1.125 (28.6)	18	40	1,920	48	30,720 (2,854 sq. m)
	1.25 — 1.5 (31.8 — 38.1)	4	1.375 (34.9)	22	32	1,536	48	24,576 (2,283 sq. m)
	1.5 — 1.75 (38.1 — 44.5)	5	1.625 (41.3)	26	28	1,344	48	21,504 (1,998 sq. m)
	1.75 — 2.0 (44.5 — 51.0)	6	1.875 (47.6)	30	24	1,152	48	18,432 (1,712 sq. m)
	2.0 — 2.25 (51.0 — 57.2)	7	2.125 (54.0)	34	20	960	48	15,360 (1,427 sq. m)
	2.25 — 2.5 (57.2 — 64.0)	8	2.375 (60.3)	38	18	864	48	13,824 (1,284 sq. m)
1/8" (3.2 mm)	0.5 — 1.0 (12.7 — 25.4)	AA	0.75 (19.1)	12	64	3,072	48	49,152 (4,566 sq. m)
	1.0 — 1.5 (25.4 — 38.1)	A	1.25 (31.8)	20	38	1,824	48	29,184 (2,711 sq. m)
	1.5 — 2.0 (38.1 — 51.0)	B	1.75 (44.5)	28	26	1,248	48	19,968 (1,855 sq. m)
	2.0 — 2.5 (51.0 — 64.0)	C	2.25 (57.2)	36	20	960	48	15,360 (1,427 sq. m)
	2.5 — 3.0 (64.0 — 76.2)	D	2.75 (70.0)	44	16	768	48	12,288 (1,142 sq. m)
	3.0 — 3.5 (76.2 — 89.0)	E	3.25 (82.6)	52	14	672	48	10,752 (999 sq. m)
	3.5 — 4.0 (89.0 — 102.0)	F	3.75 (95.3)	60	12	576	48	9,216 (856 sq. m)
	4.0 — 4.5 (102.0 — 114.3)	FF	4.25 (108.0)	68	10	480	48	7,680 (713 sq. m)
3/16" (4.8 mm)	0.5 — 1.25 (12.7 — 31.8)	JJ	0.875 (22.2)	14	50	2,400	48	38,400 (3,567 sq. m)
	1.25 — 2 (31.8 — 51.0)	KK	1.625 (41.3)	26	26	1,248	48	19,968 (1,855 sq. m)
	2.0 — 2.75 (51.0 — 70.0)	LL	2.375 (60.3)	38	20	960	48	15,360 (1,427 sq. m)
	2.75 — 3.5 (70.0 — 89.0)	MM	3.125 (79.4)	50	15	720	48	11,520 (1,070 sq. m)
	1.0 — 1.75 (25.4 — 44.5)	J	1.375 (34.9)	22	34	1,632	48	26,112 (2,426 sq. m)
	1.75 — 2.5 (44.5 — 64.0)	K	2.125 (54.0)	34	22	1,056	48	16,896 (1,570 sq. m)
	2.5 — 3.25 (64.0 — 82.6)	L	2.875 (73.0)	46	16	768	48	12,288 (1,142 sq. m)
	3.25 — 4.0 (82.6 — 102.0)	M	3.625 (92.1)	58	12	576	48	9,216 (856 sq. m)
1/4" (6.35 mm)	0.5 — 1.5 (12.7 — 38.1)	X	1.0 (25.4)	16	48	2,304	48	36,864 (3,425 sq. m)
	1.5 — 2.5 (38.1 — 64.0)	Y	2.0 (51.0)	32	24	1,152	48	18,432 (1,712 sq. m)
	2.5 — 3.5 (64.0 — 89.0)	Z	3.0 (76.2)	48	16	768	48	12,288 (1,142 sq. m)
	3.5 — 4.5 (89.0 — 114.3)	ZZ	4.0 (102.0)	64	12	576	48	9,216 (856 sq. m)
	1.0 — 2.0 (25.4 — 51.0)	G	1.5 (38.1)	24	32	1,536	48	24,576 (2,283 sq. m)
	2.0 — 3.0 (51.0 — 76.2)	H	2.5 (64.0)	40	18	864	48	13,824 (1,284 sq. m)
	3.0 — 4.0 (76.2 — 102.0)	I	3.5 (89.0)	56	12	576	48	9,216 (856 sq. m)
3/8" (9.5 mm)	0.5 — 2.0 (12.7 — 51.0)	SS	1.25 (31.8)	20	38	1,824	48	29,184 (2,711 sq. m)
	2.0 — 3.5 (51.0 — 89.0)	TT	2.75 (69.9)	44	16	768	48	12,288 (1,142 sq. m)
	1.0 — 2.5 (25.4 — 64.0)	S	1.75 (44.5)	28	27	1,296	48	20,736 (1,926 sq. m)
1/2" (12.7 mm)	0.5 — 2.5 (12.7 — 64.0)	Q	1.5 (38.1)	24	32	1,536	48	24,576 (2,283 sq. m)
	2.5 — 4.5 (64.0 — 114.3)	QQ	3.5 (89.0)	56	12	576	48	9,216 (856 sq. m)
	1.0 — 3.0 (25.4 — 76.2)	XX	2.0 (51.0)	32	22	1,056	48	16,896 (1,570 sq. m)

