

Polyiso Insulation Products



The Foundation of Carlisle's Single-Ply Roofing Systems



Carlisle Value

For over 50 years, the name Carlisle has been synonymous with high-quality, innovative commercial roofing materials. Since its inception as a company, Carlisle has been dedicated to providing construction professionals with the best products, services, and warranty programs on the market.

Today, as the world's largest supplier of commercial roofing materials, Carlisle's product offerings have grown but the company's mission remains much the same as it was 5 decades ago: developing and manufacturing the industry's most innovative, highest-quality products to enhance building performance and promote sustainability.

One of the simplest ways to support sustainability through construction practices is through the use of insulation. Carlisle's lightweight, cost-effective polyisocyanurate (polyiso) insulation products provide energy-efficient solutions for buildings in any region and climate, as well as outstanding return on investment and significant energy savings. With an industry leading eight polyiso manufacturing lines strategically positioned throughout North America, Carlisle is able to provide on-time delivery of its innovative insulation products to any jobsite.

Energy-Efficient Polyiso Insulation



FEATURES AND BENEFITS

- » Highest R-value per inch of any commercially available insulation
- » Unmatched design flexibility
- » Outstanding installed cost advantages
- » Compatible with all single-ply membranes
- » Minimal water absorption and vapor transmission
- » Exceptional fire resistance (FM 4450 and UL 1256 approvals)
- » Zero ODP and CFC-/HCFC-free
- » Quality Mark^{CM} third-party certification for Long-Term Thermal Resistance (LTTR)
- » Superior compressive strength
- » Excellent dimensional stability
- » Readily available throughout North America
- » Contains post-industrial recycled content

SUPERIOR INSULATION

Polyiso is a closed-cell, rigid foam board insulation used primarily in offices, health facilities, warehouses, retail buildings, industrial manufacturing facilities, and educational institutions. Because of its high thermal performance, polyiso is the product of choice for energy-conscious consumers who are looking to reduce energy consumption and costs.

Polyiso is one of North America's most widely-used and cost-effective insulation products and has been promoted by the U.S. Environmental Protection Agency for its responsible impact on the environment.

THE BEST OPTION

Polyiso insulation offers the highest level of thermal performance of any rigid foam insulation on the market, providing design flexibility while remaining cost-effective, energy-efficient, and environmentally responsible.

ENVIRONMENTALLY SOUND

Polyiso insulation provides the highest net return on embedded energy and the lowest global warming potential of all rigid commercial roof insulation choices.

- » Zero ozone depletion potential (Zero-ODP)
- » LEED[®] benefits

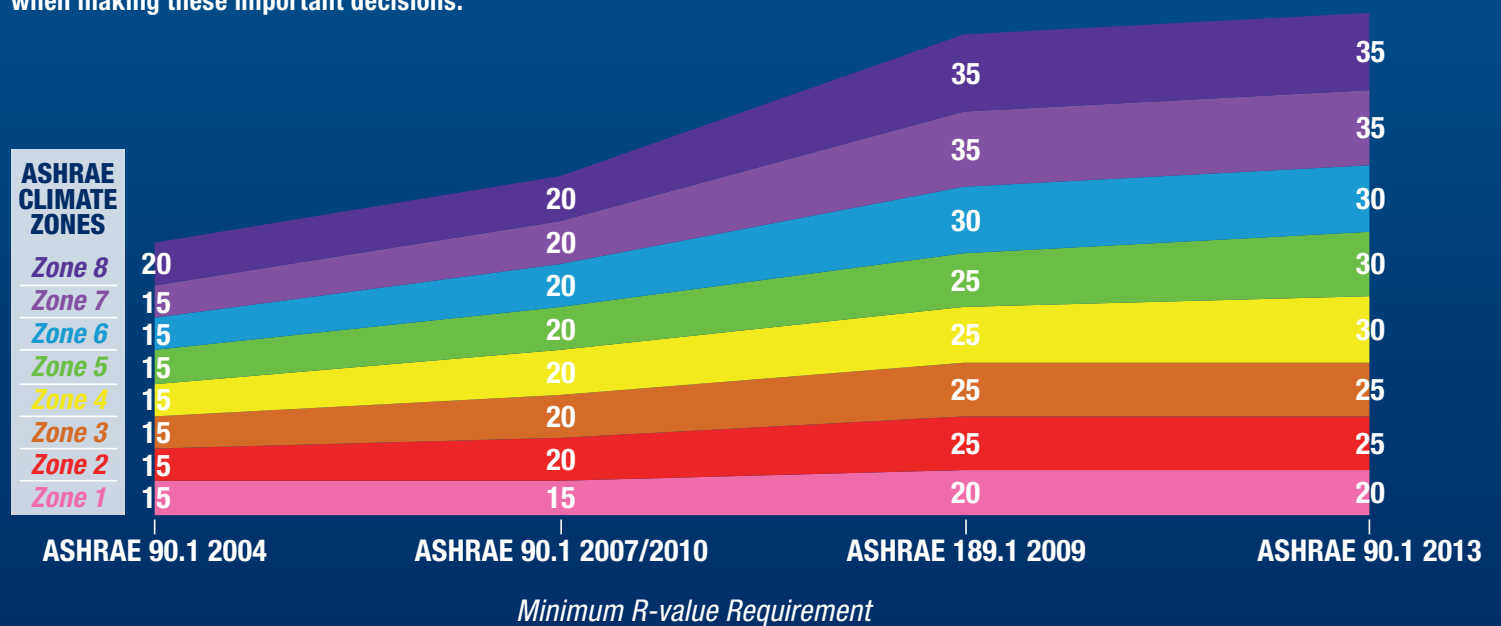


**PIMA Polyiso Roof Insulation
Environmental Product Declaration (No. EPD10043)**



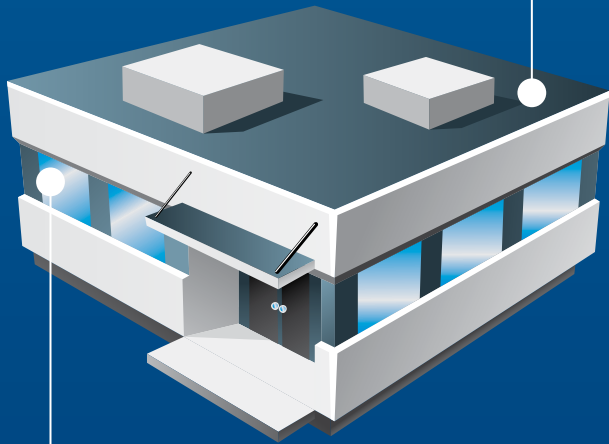
Code Requirements

Code required R-values have increased substantially in a short period of time based upon the growing recognition of the positive impact insulation usage has on reducing energy consumption. Minimum insulation requirements have increased 66%-100% over a 9 year period. A building owner only gets one chance to increase the insulation in the roof system approximately every 20 years. Consider future energy requirements and associated energy costs over the entire lifespan of the installed roof system when making these important decisions.



Energy Savings

EPDM – 20-year roof



One-story office building – 50,000 sq. ft.

Additional R-10 Insulation

What is the true cost of adding insulation to a roof system? Adding R-10 to the building above would cost approximately \$31,000 in insulation product. Modeled Energy Savings based on various locations are displayed to the right.

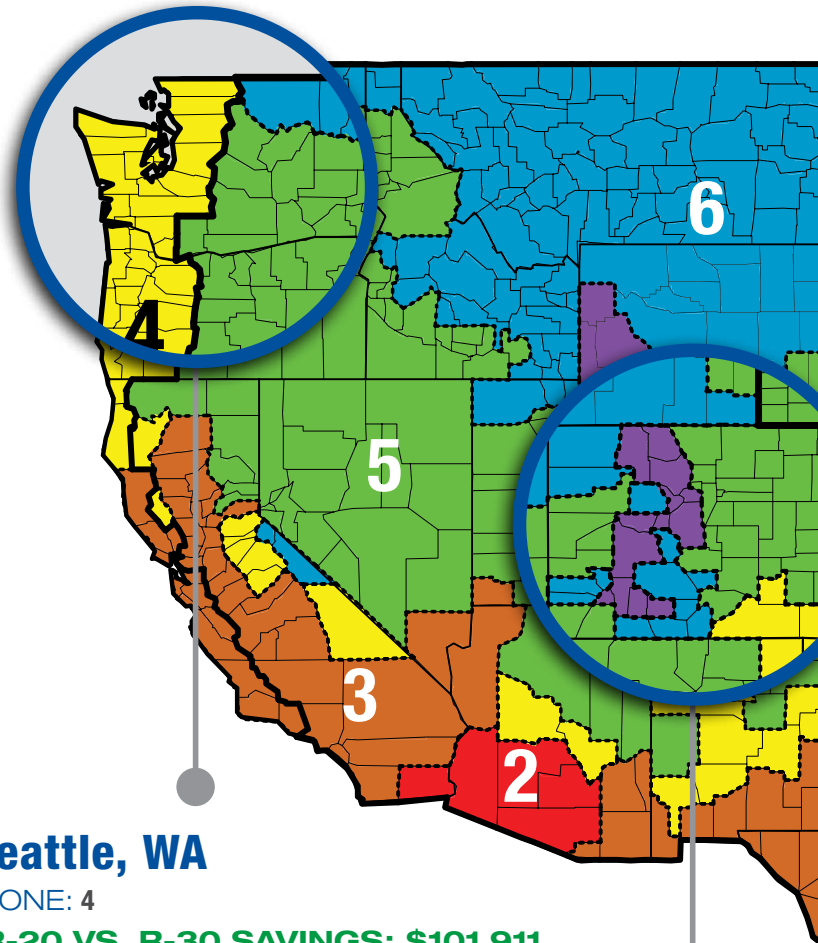
*Electric @ \$0.10/kWh and gas @ \$8.59/1000 cubic ft.
Energy costs assuming 2% annual inflation
Results generated by ORNL's Roof Savings Calculator.*

Minneapolis, MN

ZONE: 6

R-20 VS. R-30 SAVINGS: \$140,049

PAYBACK IN YEARS: 6



Seattle, WA

ZONE: 4

R-20 VS. R-30 SAVINGS: \$101,911

PAYBACK IN YEARS: 7

Denver, CO

ZONE: 5

R-20 VS. R-30 SAVINGS: \$99,027

PAYBACK IN YEARS: 7

Chicago, IL

ZONE: 5

R-20 VS. R-30 SAVINGS: \$118,811

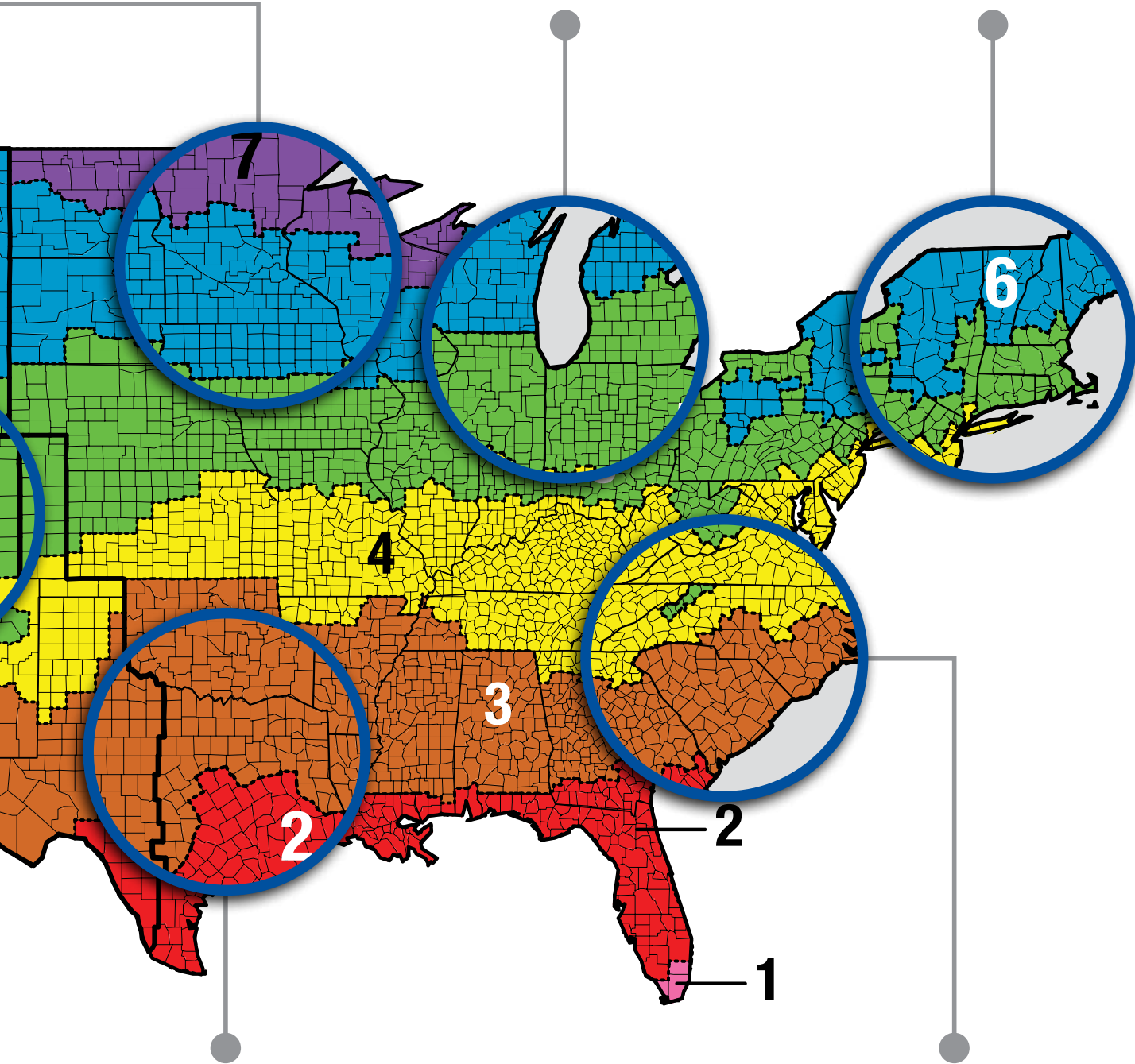
PAYBACK IN YEARS: 7

Boston, MA

ZONE: 5

R-20 VS. R-30 SAVINGS: \$107,371

PAYBACK IN YEARS: 7



Dallas, TX

ZONE: 3

R-20 VS. R-30 SAVINGS: \$70,454

PAYBACK IN YEARS: 10

Charlotte, NC

ZONE: 4

R-20 VS. R-30 SAVINGS: \$75,399

PAYBACK IN YEARS: 10

Polyiso Insulation Products to Meet Every Need

InsulBase – The Foundation

The foundation for most Carlisle Single-Ply roofing solutions and an effective value in Polyiso insulation for low-slope commercial rooftop applications. The glass-reinforced felt (GRF) facer is compatible with all membranes, including FleeceBACK and all adhesives, including self-adhered technologies.

- » InsulBase polyiso insulation provides the highest R-value per inch of any commercially available insulation products
- » Environmentally friendly construction with 0% ozone-depleting components and CFC free
- » Approved for direct application to steel decks

StormBase – Ultimate Defense

The ultimate defense in the harshest of environments. OSB cover board combined with InsulBase insulation to create a single product. StormBase OSB composite insulation is the definitive solution where enhanced hail and uplift resistance are required.

- » A superior combination of high-insulating properties and a resilient OSB surface, ideal for high-traffic roof installations
- » Higher wind uplift performance
- » Composite of insulation and cover board saves handling and installation labor
- » Suitable for new construction and re-roofing on commercial projects – Incorporates APA-TECO-rated exposure 1 oriented strand board
- » Environmentally friendly construction with 0% ozone-depleting components and CFC free



InsulBase

A rigid roof insulation panel composed of a closed-cell polyisocyanurate foam core bonded to **glass-reinforced felt (GRF) facers**. UL and FM approved for direct application over steel decks, polyiso provides the highest R-value per inch of any commercially available insulation product.



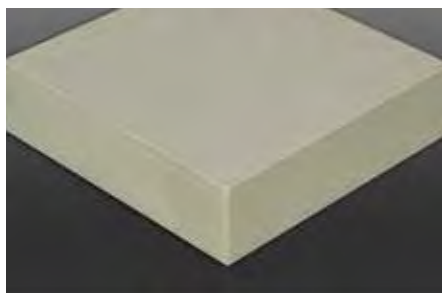
StormBase

A rigid roof insulation composite panel composed of a closed-cell polyisocyanurate foam core bonded to a **glass-reinforced felt (GRF) facer** on one side and $\frac{7}{16}$ " oriented strand board (OSB) on the other.



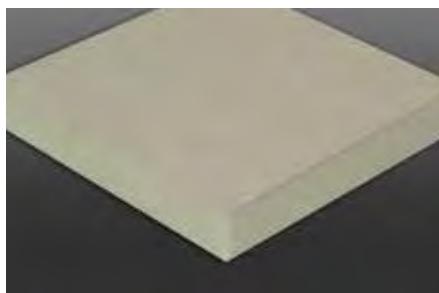
SecurShield – Enhanced Performance

Enhanced performance through superior moisture resistance. The coated glass facer (CGF) is compatible with all membranes, adhesives, and ideal for use with adhered membranes. Offering increased resistance to foot traffic, hail, wind uplift and fire, the SecurShield family of products offer the **best value** in Polyiso insulation for low-slope commercial rooftop applications.



SecurShield®

A rigid roof insulation panel composed of a closed-cell polyisocyanurate foam core bonded to high performance **coated glass facers (CGF)**. Ideal for use in adhered membrane systems.



SecurShield CD

A rigid roof insulation panel composed of a closed-cell polyisocyanurate foam core bonded to **enhanced coated glass facers (CGF)**. Provides a UL Class A fire rating at only 1" on combustible decks.



SecurShield HD Composite

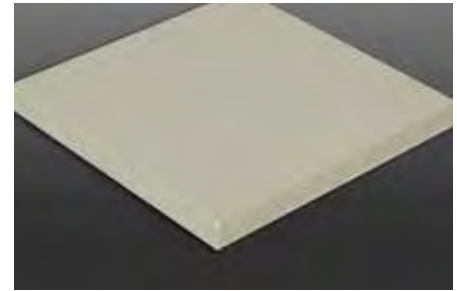
A unique composite insulation panel comprised of a ½" high-density polyiso cover board bonded during the manufacturing process to SecurShield rigid polyiso roof insulation. Eliminates the need for a separate cover board, reduces interply adhesives and saves labor on the roof. **A single product solution.**

Polyiso Insulation Products to Meet Every Need

Exceptional Performance

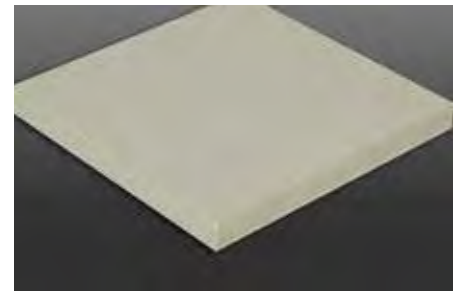
Carlisle's SecurShield HD and HD Plus Polyiso Insulation products are composed of a high-density, closed-cell Polyisocyanurate foam core laminated to a premium-performance, coated glass facer (CGF). These ½"-thick, high-density insulating cover boards have several benefits that make them a better option than traditional cover boards, including:

- » Superior moisture resistance
- » 5 times higher R-value than gypsum cover boards
- » 2 times higher R-value than wood fiber cover boards
- » Lightweight: approximately one-fifth the weight of gypsum cover boards
- » Easy to cut, handle, and install
- » Provides exceptional protection against hail, rooftop traffic, mold, and moisture
- » Coated glass facer (CGF) provides strong bond for adhered roofing applications
- » Type II, Class 4, Grade 1 designation per ASTM C1289
- » FM 1-90 with only 8 fasteners per 4' x 8' board (HD Plus)
- » Achieves FM severe hail rating



SecurShield HD

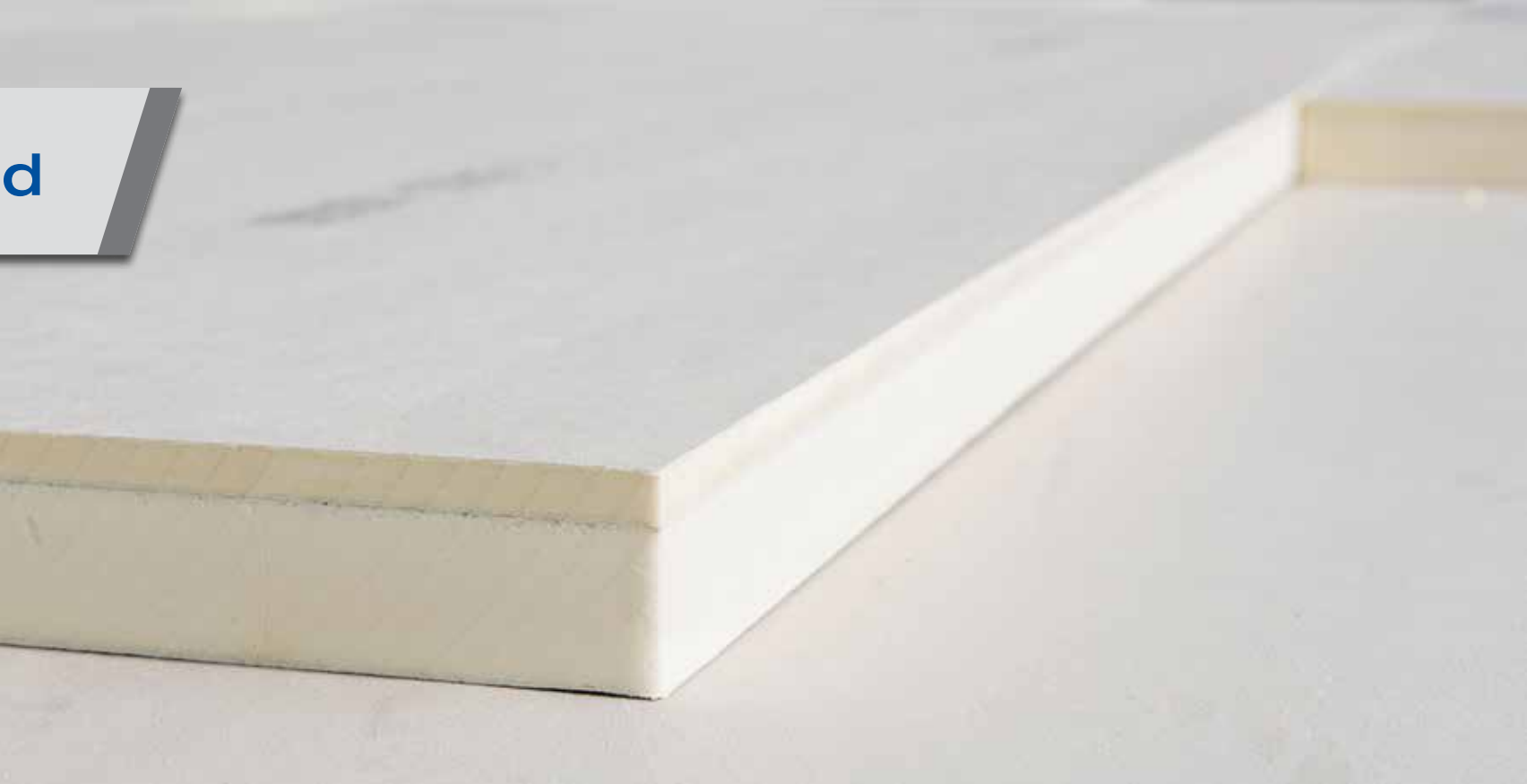
A rigid roof insulation panel composed of a ½" high-density, closed-cell polyisocyanurate foam core bonded to a premium performance coated glass facer (CGF) specifically designed for use as a **cover board**. Provides 5 times the R-value at one-fifth the weight of traditional gypsum cover boards.



SecurShield HD Plus

A rigid roof insulation panel composed of a ½" high-density, closed-cell polyisocyanurate foam core bonded to a premium performance coated glass facer (CGF) specifically designed for use as a **cover board**. Enhanced performance of the HD Plus product provides a **FM 1-90 wind uplift rating with only 8 fasteners**.

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ASTM C1289 POLYISO ROOFING INSULATION CLASSIFICATIONS

Type II	Class 1	InsulBase® POLYISO Insulation
	Class 2	SecurShield™ POLYISO Insulation
		SecurShield™ CD POLYISO (Combustible Deck) Insulation
Type IV	Class 4	SecurShield™ HD POLYISO Insulation
		SecurShield™ HD Composite POLYISO Insulation
Type V		StormBase® POLYISO Insulation

Engineered for **Positive Rooftop Drainage**

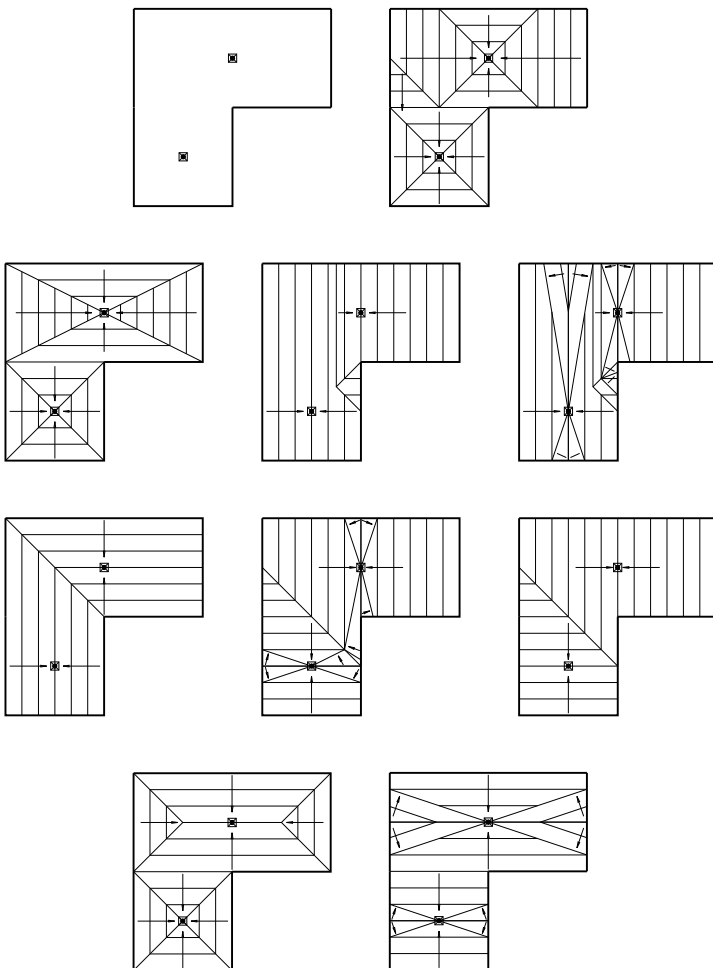


TAPERED SYSTEMS

StormFlow Technology

Buildings with poor roof drainage may experience issues that can compromise their long-term performance. A properly designed tapered insulation system can help to minimize the detrimental effects of ponding water while providing the required R-value and reducing energy consumption.

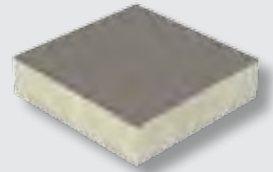
Carlisle can offer recommendations that address each building's unique requirements while increasing energy-efficiency and ensuring positive drainage. Carlisle's tapered design experts have over 100 years of collective experience and can provide a 24-hour turnaround on most tapered design requests.



TAPERED INSULATION OPTIONS

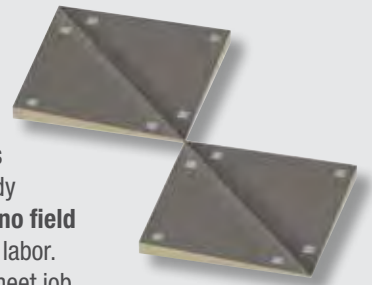
Tapered Polyiso

A sloped, rigid roof insulation panel composed of a closed-cell polyisocyanurate foam core bonded to a coated glass or fiber-reinforced facer. Designed to **promote positive drainage** and prevent ponding water.



Pre-Cut Hips and Valleys

For use in tapered polyiso systems, Carlisle's Pre-Cut Hips and Valleys arrive ready to install and **require no field cuts**, saving time and labor. Custom-designed to meet job requirements, including slope and thickness, with no waste.



Hinged Target Sumps

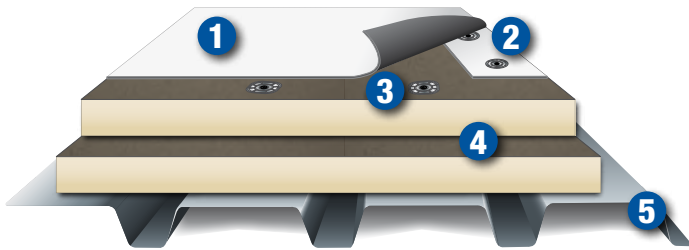
Designed for use in tapered polyiso systems, Carlisle's Hinged Target Sumps arrive ready to install, **saving valuable time on the roof**. Concentric circles simplify drain cutout. Multiple thicknesses and slopes are available to accommodate specific job conditions with no waste.



Note: All products are available in GRF and CGF facer options.

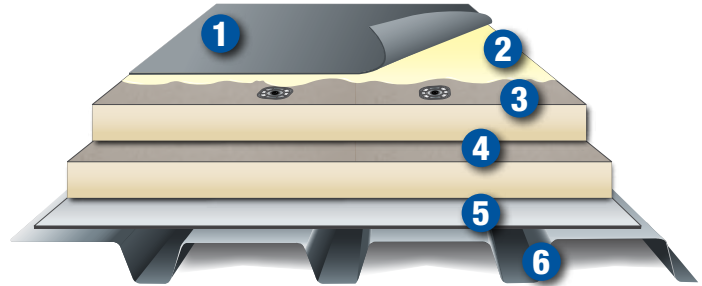
TYPICAL APPLICATIONS

InsulBase Polyiso Insulation



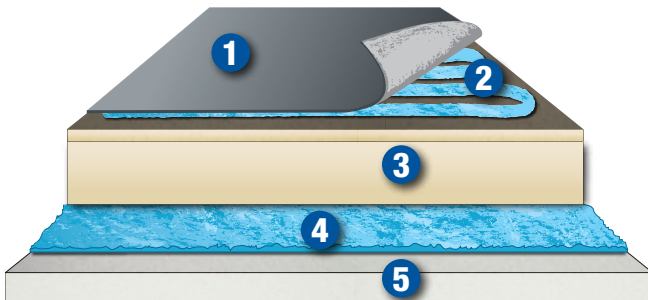
1. Carlisle Single-ply Reinforced Thermoplastic Membrane
2. Mechanically Fastened TPO with Piranha Plates
3. Insulation Fasteners and Plates
4. 2 Layers of Staggered InsulBase Polyiso Insulation
5. Metal Deck

SecurShield Polyiso Insulation



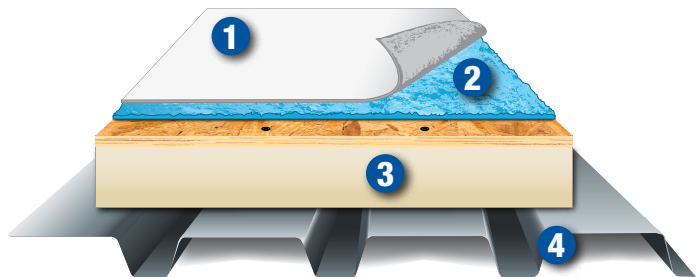
1. Carlisle EPDM Membrane
2. Carlisle Bonding Adhesive
3. Insulation Fasteners and Plates
4. 2 Layers of Staggered SecurShield Polyiso Insulation
5. VapAir Seal™ MD
6. Metal Deck

SecurShield HD Composite



1. Carlisle FleeceBACK® Membrane
2. Flexible FAST™ Adhesive
3. SecurShield HD Composite Polyiso Insulation
4. Flexible FAST Adhesive
5. Concrete Deck

StormBase Polyiso Insulation



1. Carlisle FleeceBACK Membrane
2. Flexible FAST Adhesive
3. StormBase Polyiso Insulation
4. Metal Deck

SecurShield CD POLYISO (Combustible Deck) Insulation

Exceptional performance over combustible decks. The **enhanced coated glass facer (CGF)** provides all the benefits of the standard coated glass facer, in addition to providing a UL Class A fire rating when applied directly to a wood deck. And like standard coated glass facer, it's compatible with all membranes and adhesives, and is ideal for use in adhered membrane applications.

SecurShield POLYISO Insulation

Enhanced performance through superior moisture resistance. The **coated glass facer (CGF)** is compatible with all membranes adhesives, and ideal for use with adhered membranes. Offering increased resistance to foot traffic, hail, uplift and fire, the SecurShield family of products offer the best value in Polyiso insulation for low-slope commercial rooftop applications.

InsulBase® POLYISO Insulation

The foundation for all Carlisle Single-ply roofing solutions. The **glass-reinforced facer (GRF)** is compatible with all membranes, including FleeceBACK and all adhesives, including self-adhered technologies. An effective value in Polyiso insulation for low-slope commercial rooftop applications.

EXPERIENCE THE CARLISLE DIFFERENCE



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