INNOVATION FOR
SUSTAINABILITY

U.S. GREEN BUILDING COUNCIL
USGBC

LIVING
BUILDING
CHALLENGE

GREEN GLOBES®
BUILDING CERTIFICATION

PRODUCT SUSTAINABILITY
REFERENCE GUIDE

CARLISLE
SYNTEC SYSTEMS

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INNOVATION FOR **SUSTAINABILITY**

**One Planet.
Many Solutions.
One Source.**

Carlisle SynTec Systems' focus has always been innovation – innovation to solve problems, improve performance, reduce labor, and above all, improve sustainability. Carlisle is committed to driving sustainable and efficient processes in the design and manufacture of products.

Managing Environmental Impact

Carlisle's company legacy of environmental responsibility began more than 100 years ago when scrap rubber was introduced into the inner-tube production line. Today, millions of pounds of recycled material feed Carlisle's production processes and the company manufactures products that contain as much as 96% post-consumer or production waste.

EPDM, TPO, and PVC Single-Ply Roofing Membranes

Through innovation and stewardship, Carlisle continues to increase the use of waste material into production streams. Approximately 246,000 tons of single-ply material have been recycled and kept out of landfills since 1999.

Product Line's Pre-Consumer Recycled Content

EPDM	TPO	PVC
5%	**Up to 10%**	**Up to 10%**

Insulation	Metal	EPS
Up to 10%	**Up to 15%**	**Up to 25%**

Products with High Recycled Content

TPO APEEL™ Protective Film	EcoStorm® VSH™*	InsulBase® Polyiso Insulation Facer
100%	**100%**	**100%**

EcoStorm VSH Cover Board

Since its launch in 2019, Carlisle's EcoStorm VSH has diverted 6.5 million lbs. of plastic and paper from landfills.
- Sourced from post-industrial and post-consumer waste streams
- Extreme moisture and mold resistance

Nationwide Foam Recycling

Carlisle has been partnering with Nationwide Foam Recycling (NFR) since 2014 to recycle XPS, EPS, and polyiso insulations, as well as TPO, EPDM, and PVC roofing membranes. Re-roofing contractors who recycle can help building owners exceed their LEED and sustainability goals.

Extending Circular Economy Programs

Carlisle continues to find innovative ways to reduce landfill use by repurposing office and factory paper and cardboard. CCM's polyiso insulation now includes 'facer paper' made entirely from this waste.

Scan or Click here for More Information

Packaging Sustainability

Carlisle is collaborating with Clean Earth to help reduce landfill waste generated from the commercial roofing industry. Carlisle is dedicated to sustainability in all facets of its business, including product packaging. This partnership with Clean Earth will help improve the long-term health of our planet.

*1,000 SF = 1 ton of waste upcycled and not landfilled

Air Quality Management

Carlisle's SAT (Self-Adhering Technology) EPDM and TPO membranes save labor and eliminate solvents. Carlisle's TPO membrane fuses a 100%-solids, hot-melt adhesive to the bottom ply of the TPO membrane, while Carlisle's EPDM membrane utilizes a pressure-sensitive acrylic-based self-adhesive.

Carlisle's RapidLock (RL) Roofing System is a revolutionary membrane attachment method that provides an adhered membrane without the use of adhesives.

VacuSeal™ Vent Secured Roofing System is a revolutionary assembly that uses special vents to harness the power of the wind and secure the roof membrane in place. VacuSeal systems have zero adhesives, no fumes or odors, and offer proven performance.

Non-Halogenated Flame Retardants

InsulBase NH and **SecurShield® NH Polyiso** insulations provide the same performance characteristics as standard polyiso products but contain no halogenated flame retardants.

- Living Building Challenge "Red List Free" with Declare label and product database listing
- Zero halogenated flame retardants
- Can contribute toward LEED v4 credit requirements
- Living Building Challenge compatible
- California Department of Public Health (CDPH) VOC emissions compliant

Carlisle is adopting the use of new blowing agents that are much better for the ozone. HFO (hydrofluoroolefin) blowing agents are widely recognized as being more environmentally friendly than their HFC (hydrofluorocarbon) predecessors.

In 2020 Carlisle reduced the pounds of VOCs emitted by:

8.3 MILLION POUNDS

HFC-FREE

Energy and Resource Conservation

Carlisle Construction Materials is the largest producer of polyiso in the United States. For every ton of CO_2 consumed in manufacturing polyiso, CCM customers avoid emitting up to 34 tons of CO_2 over the life of the product.
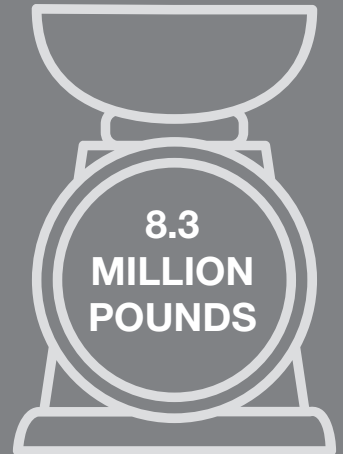
Carlisle's OPTIM-R® provides an R-38 insulating value in a 2.6" total system thickness.

- Highest insulating value in the thinnest profile
- Over 90% recyclable (by weight)
- Up to five times the R-value of commonly used roofing insulation products

White membranes are often selected because of their reflective, energy-saving properties. However, these membranes can get dirty and scuffed during installation. **PVC APEEL Protective Film** is 100% recyclable and guards the surface of the PVC membrane, keeping it white and reflective until the installation is complete. APEEL also saves the roofing contractor water and labor needed to clean the roof of boot scuffs and construction dirt at the end of the job. Even on a small job, this could be hundreds of gallons of water saved.

Carlisle's Roof Gardens provide improved stormwater management; 55-80% of all stormwater that falls on a Roof Garden annually is retained and not released into drains as runoff.

LEED, Green Globes, and Living Building Challenge

For years, sustainable initiatives have been popping up in all aspects of our lives. In the construction industry, there are three main programs pushing for greener buildings: LEED, Green Globes, and Living Building Challenge (LBC). All three of these programs seek to reduce the carbon footprint of buildings, but each takes a different approach to accomplish this goal.

U.S. GREEN BUILDING COUNCIL USGBC	GREEN GLOBES BUILDING CERTIFICATION	LIVING BUILDING CHALLENGE
Overall Mission		
LEED wants to make buildings better for the environment, community, and those who use the building.	**Green Globes** wants to make buildings more environmentally efficient based on commonly valued environmental outcomes.	**Living Building Challenge (LBC)** promotes buildings that have a positive environmental impact.
Certification Methods/Requirements		
• Points-based rating system (100 points possible) • Four levels of certification: Certified, Silver, Gold, and Platinum	• Points-based rating system (1,000 points possible) • Four levels of certification: 1 Globe, 2 Globes, 3 Globes, 4 Globes	• Seven petals (like those of a plant or flower) broken down into 20 imperatives; number of petals/imperatives completed determines award • Three awards are available (based on which path you take) • A Zero Carbon Certification and a Zero Energy Certification are available
Main Points of Focus		
Location & Transportation, Sustainable Sites, Water Efficiency, Energy & Atmosphere, Material & Resources, Indoor Environmental Quality, Innovation, Regional Priority, and Integrative Process	Project Management, Site Energy, Water, Materials & Resources, Emissions, Indoor Environment	Place, Water, Energy, Health & Happiness, Materials, Equity, and Beauty

The key below can be used to easily identify the Carlisle SynTec products in this brochure that contribute to meeting the green qualifications for LEED, Green Globes, and Living Building Challenge (LBC).

| **LEED V4 & V4.1 SS – Sustainable Sites**	**LEED V4 & V4.1 WE – Water Efficiency**	**LEED V4 & V4.1 EA – Energy and Atmosphere**	**LEED V4 & V4.1 MR - Materials and Resources**	**LEED V4 & V4.1 EQ - Indoor Environmental Quality**	**Green Globes**	**LBC Materials and Health and Happiness Petals**

Sure-Seal® EPDM
Roofing Systems

Energy Efficient and Sustainable – Sustainable roofing isn't about color, it's about performance, which is why Carlisle SynTec Systems offers the most diverse and versatile line of EPDM membranes on the market. When you need an energy-efficient and sustainable roof system, look no further than the single-ply membrane with over a half-century track record of performance and resiliency…Carlisle EPDM.

Performance & Savings – Cradle to Grave

The Athena Institute, a non-profit lifecycle analysis (LCA) organization specializing in building materials, updated its EcoCalculator to include LCA data for EPDM membranes. The institute found that EPDM has the lowest Global Warming Potential of any major commercial roofing material.

In fact, EPDM can offset its carbon footprint in as little as 15 years, compared to other materials that may require up to 54 years of service life to equal the carbon footprint resulting from their manufacturing process.
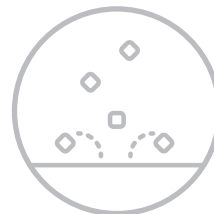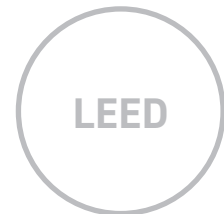
The Standard of Sustainability
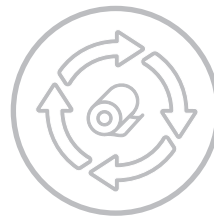
Lowest lifecycle costs of any commercial roofing material

Recyclable membranes keep waste out of landfills

Field proven hail resistance

LEED

Contributes toward LEED certification

Defining the Standard

Defining the standard means sustainable offerings such as the proven long term weathering performance and hail resistance advantage of EPDM. It means maximum energy efficiency for every EPDM roof, whether you are focused on reducing heating or cooling costs. Carlisle EPDM continues to define the standard, leading the industry with a comprehensive product line of high-performance, eco-friendly and energy-efficient roofing materials.

Carlisle's focus on sustainability does not end there. Reduced landfill space and increasing waste disposal costs throughout the nation have led to heightened interest in rooftop recycling. Loose-laid or mechanically-fastened EPDM is an inherently recyclable membrane that is useful in many post-consumer applications. Even the ballast and insulation taken from an EPDM roof can be reused or recycled.

Solar Panels on an EPDM Roof

Recycling aged EPDM

Sure-Seal® EPDM
Membranes

Ideal for use in fully adhered and ballasted assemblies, Carlisle's non-reinforced Sure-Seal EPDM membranes have a strong track record of performance and dependability. Sure-Seal EPDM features a full monolithic thickness of exceptional weathering material, comes in sheet sizes up to 50' wide by 200' long, and complies with ASTM D4637 Type I.

LEED Information

Pre-consumer Recycled Content	5%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA Greenville, IL
Solar Reflectance Index (SRI)	9
Corporate Sustainability Report	Yes

Sure-Tough™ EPDM
Reinforced Membranes

Sure-Tough polyester-reinforced EPDM membranes are ideal for fully adhered and mechanically attached roofing systems. These membranes are resistant to punctures, tears, and scuffs and are formulated to provide fire resistance. Available with an accidental puncture warranty, Sure-Tough roofing systems provide enhanced rooftop durability and puncture resistance. Sure-Tough membrane complies with ASTM D4637 Type II.

LEED Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
Solar Reflectance Index (SRI)	9
Corporate Sustainability Report	Yes

Sure-White® EPDM
Membranes

Sure-White EPDM is an ideal solution for building owners looking to reduce air conditioning costs without compromising performance or durability. Sure-White membranes feature the same material characteristics as Carlisle's standard EPDM, have over 30 years of proven field performance, come in sheet sizes up to 20' wide by 100' long, and comply with ASTM D4637 Type I.

LEED Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
Solar Reflectance Index (SRI)	98
Corporate Sustainability Report	Yes

FleeceBACK® EPDM
Membranes

FleeceBACK EPDM membranes are externally reinforced for exceptional wind uplift, hail, and puncture resistance. FleeceBACK EPDM is available in Sure-Seal and Sure-White versions and complies with ASTM D4637 Type III.

LEED Information

	Sure-Seal	Sure-White
Pre-consumer Recycled Content	5%	0%
Post-consumer Recycled Content	0%	0%
Manufacturing Location	Carlisle, PA	Carlisle, PA
Solar Reflectance Index (SRI)	0–1	98

FleeceBACK® RL™ EPDM
RapidLock Membrane

Carlisle's RapidLock (RL) Roofing System is a revolutionary method of membrane attachment resulting in a fully adhered membrane without the use of adhesives. This innovative system utilizes VELCRO® Brand Securable Solutions along with FleeceBACK RL EPDM to achieve performance equal to that of traditional adhered single-ply systems.

LEED Information

Pre-consumer Recycled Content	5%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
Solar Reflectance Index (SRI)	0–1

LEED V4 & V4.1 - Product Reference Guide
FOR GREEN BUILDING RATING SYSTEMS

	SS - Sustainable Sites	EA - Energy and Atmosphere	MR - Materials and Resources				EQ - Indoor Environmental Quality	
	Heat Island Reduction Option 1 & 2 Up to 2 PTS	Optimize Energy Performance Option 1 & 2 Up to 20 PTS	Construction & Demolition Waste Management Planning Prerequisite	Building Product Disclosure and Optimization – Environmental Product Declarations Option 1 Up to 2 PTS	Building Product Disclosure and Optimization – Sourcing of Raw Materials Option 1 & Option 2 Up to 2 PTS	PBT Source Reduction - Lead, Cadmium And Copper 1 PT	Thermal Comfort Option 1 & 2 1 PT	Acoustic Performance Up to 2 PTS
EPDM THERMOSET MEMBRANE ROOFING								
SURE-SEAL NON- REINFORCED EPDM		✓	✓	✓	✓	✓	✓	✓
SURE-TOUGH REINFORCED EPDM		✓	✓	✓		✓	✓	✓
SURE-TOUGH SAT (SELF-ADHERING TECHNOLOGY) REINFORCED EPDM		✓				✓	✓	✓
SURE-WHITE NON-REINFORCED WHITE EPDM	✓	✓	✓			✓	✓	✓
SURE-WHITE SAT (SELF-ADHERING TECHNOLOGY) NON-REINFORCED EPDM	✓	✓				✓	✓	✓
SURE-SEAL SAT (SELF-ADHERING TECHNOLOGY) NON-REINFORCED EPDM		✓			✓	✓	✓	✓
SURE-SEAL FLEECEBACK EPDM		✓			✓	✓	✓	✓
SURE-WHITE FLEECEBACK EPDM	✓	✓				✓	✓	✓
SURE-SEAL FLEECEBACK AFX EPDM		✓				✓	✓	✓
SURE-WHITE FLEECEBACK AFX EPDM	✓	✓				✓	✓	✓
FLEECEBACK RL™ EPDM		✓			✓	✓	✓	✓

FOR GREEN BUILDING RATING SYSTEMS

GREEN GLOBES BUILDING CERTIFICATION	Site	Materials			Indoor Environment	
	Construction Impacts - Mitigating Heat Island Effect Up to 14 PTS	Product Life Cycle Up to 29 PTS	Sustainable Materials Attributes Up to 10 PTS	Waste Up to 22 PTS	Thermal Comfort - Thermal Comfort Design Up to 9 PTS	Acoustic Comfort - Airborne Noise Isolation Up to 6 PTS
EPDM THERMOSET MEMBRANE ROOFING						
SURE-SEAL NON- REINFORCED EPDM		✓	✓	✓	✓	✓
SURE-TOUGH REINFORCED EPDM		✓	✓	✓	✓	✓
SURE-TOUGH SAT (SELF-ADHERING TECHNOLOGY) REINFORCED EPDM					✓	✓
SURE-WHITE NON-REINFORCED WHITE EPDM	✓			✓	✓	✓
SURE-WHITE SAT (SELF-ADHERING TECHNOLOGY) NON-REINFORCED EPDM	✓				✓	✓
SURE-SEAL SAT (SELF-ADHERING TECHNOLOGY) NON-REINFORCED EPDM					✓	✓
SURE-SEAL FLEECEBACK EPDM					✓	✓
SURE-WHITE FLEECEBACK EPDM	✓				✓	✓
SURE-SEAL FLEECEBACK AFX EPDM					✓	✓
SURE-WHITE FLEECEBACK AFX EPDM	✓				✓	✓
FLEECEBACK RL™ EPDM					✓	✓

LIVING BUILDING CHALLENGE

	Materials Petal
	Net Positive Waste

EPDM THERMOSET MEMBRANE ROOFING

	Net Positive Waste
SURE-SEAL NON- REINFORCED EPDM	✓
SURE-TOUGH REINFORCED EPDM	✓
SURE-TOUGH SAT (SELF-ADHERING TECHNOLOGY) REINFORCED EPDM	
SURE-WHITE NON-REINFORCED WHITE EPDM	✓
SURE-WHITE SAT (SELF-ADHERING TECHNOLOGY) NON-REINFORCED EPDM	
SURE-SEAL SAT (SELF-ADHERING TECHNOLOGY) NON-REINFORCED EPDM	
SURE-SEAL FLEECEBACK EPDM	
SURE-WHITE FLEECEBACK EPDM	
SURE-SEAL FLEECEBACK AFX EPDM	
SURE-WHITE FLEECEBACK AFX EPDM	
FLEECEBACK RL™ EPDM	

Sure-Weld® TPO
Roofing Systems

Thermoplastic polyolefin (TPO) membranes are the fastest-growing segment in the commercial roofing industry and are highly reflective and heat/UV resistant. TPO membranes first became commercialized for roofing in the late 1980's and since 2007 TPO has been the largest market segment of low-slope roofing.

Carlisle Construction Materials is committed to driving measurable results that will contribute to our legacy of sustainability. Carlisle's long history of responsible and sustainable practices extends to the development and production of our highly engineered, energy efficient products and solutions such as Sure-Weld TPO membranes and roof systems.

Carlisle's highly reflective Sure-Weld TPO membranes can help reduce the urban heat island effect, reduce energy consumption in warm climates, and contribute to sustainable building certifications such as LEED and Living Building Challenge.

Sustainable attributes include:

- 10% pre-consumer recycled content
- Fully recyclable when used in mechanically attached systems
- 3rd-Party verified Environmental Product Declaration available
- NSF P151 certification for rainwater catchment*
- Certified by the Cool Roof Rating Council and California Title 24 compliant**
- Free of Living Building Challenge red list chemicals

*White membrane only, produced in Tooele, UT or Carlisle, PA

**White and Tan only

Advantages of Sure-Weld TPO

Proven Long-term Performance

Long-term Energy Efficiency in Warm Climates

Greater Weather Resistance

Cleaner Surface

Excellent Heat and UV Resistance

Industry Leading Weathering Package

Sure-Weld® TPO
Reinforced Membrane

Features and Benefits

- Excellent fire resistant assemblies
- 100% recyclable
- Excellent resistance to impact and low temperatures
- Exceptional resistance to heat, solar UV, ozone and oxidation

LEED Information

Pre-consumer Recycled Content	Up to 10%
Post-consumer Recycled Content	0%
Manufacturing Location	Senatobia, MS Tooele, UT Carlisle, PA
Solar Reflectance Index (SRI)	99 (white); 53 (gray); 86 (tan)

SAT
Self-Adhering Technology

Features and Benefits

- No solvents, VOCs or odors
- FM, UL and CRRC rated; UL-2218 Class 4 Rating
- Enhanced with the OctaGuard XT weathering package
- Highly reflective and energy efficient

LEED Information

Pre-consumer Recycled Content	8%
Post-consumer Recycled Content	0%
Manufacturing Location	Tooele, UT
Solar Reflectance Index (SRI)	99 (white); 53 (gray); 86 (tan)

FleeceBACK® TPO
Membrane

Features and Benefits

- Choice of white, gray, or tan membranes that are UL Class A rated
- Superior wind uplift performance and ratings (up to an FM 1-990)
- Fleece reinforcement adds toughness, durability, and enhanced puncture resistance
- Excellent hail damage resistance

LEED Information

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Location	Senatobia, MS Tooele, UT
Solar Reflectance Index (SRI)	99 (white); 53 (gray); 86 (tan)

FleeceBACK® RL™ TPO
RapidLock Membrane

Carlisle's RapidLock (RL) Roofing System is a revolutionary method of membrane attachment resulting in an adhered membrane without the use of adhesives. This innovative system utilizes VELCRO® Brand Securable Solutions along with FleeceBACK RL TPO to achieve performance equal to traditional adhered single-ply systems.

Features and Benefits

- No VOCs, odors or temperature restrictions
- UL Class A rated
- Wind uplift ratings comparable to traditional fully-adhered single-ply systems
- 20-year warranty

LEED Information

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Location	Senatobia, MS
Solar Reflectance Index (SRI)	99 (white); 53 (gray)

FleeceBACK® AFX TPO
Membrane

Features and Benefits

- UL Class A rated
- Contains no chlorine or plasticizers
- Excellent chemical resistance to acids, bases, restaurant oils, and greases
- Excellent hail damage resistance

LEED Information

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Location	Senatobia, MS Tooele, UT
Solar Reflectance Index (SRI)	111 (white)

LEED V4 & V4.1 - Product Reference Guide
FOR GREEN BUILDING RATING SYSTEMS

	SS - Sustainable Sites	EA - Energy and Atmosphere	MR - Materials and Resources				EQ - Indoor Environmental Quality	
	Heat Island Reduction, Option 1 & 2, Up to 2 PTS	Optimize Energy Performance, Option 1 & 2, Up to 20 PTS	Construction & Demolition Waste Management Planning, Prerequisite	Building Product Disclosure and Optimization – Environmental Product Declarations, Option 1, Up to 2 PTS	Building Product Disclosure and Optimization – Sourcing of Raw Materials, Option 1 & Option 2, Up to 2 PTS	PBT Source Reduction - Lead, Cadmium And Copper, 1 PT	Thermal Comfort, Option 1 & 2, 1 PT	Acoustic Performance, Up to 2 PTS
THERMOPLASTIC MEMBRANE ROOFING								
SURE-WELD TPO	✓	✓	✓	✓	✓	✓	✓	✓
SURE-WELD SAT (SELF-ADHERING TECHNOLOGY) TPO	✓	✓			✓	✓	✓	✓
SURE-WELD FLEECEBACK TPO	✓	✓			✓	✓	✓	✓
SURE-WELD FLEECEBACK AFX TPO	✓	✓			✓	✓	✓	✓
FLEECEBACK RL TPO	✓	✓			✓	✓	✓	✓

GREEN GLOBES BUILDING CERTIFICATION	Site	Materials			Indoor Environment	
	Construction Impacts - Mitigating Heat Island Effect Up to 14 PTS	Product Life Cycle Up to 29 PTS	Sustainable Materials Attributes Up to 10 PTS	Waste Up to 22 PTS	Thermal Comfort - Thermal Comfort Design Up to 9 PTS	Acoustic Comfort - Airborne Noise Isolation Up to 6 PTS
THERMOPLASTIC MEMBRANE ROOFING						
SURE-WELD TPO	✓	✓	✓	✓	✓	✓
SURE-WELD SAT (SELF-ADHERING TECHNOLOGY) TPO	✓		✓		✓	✓
SURE-WELD FLEECEBACK TPO	✓		✓		✓	✓
SURE-WELD FLEECEBACK AFX TPO	✓		✓		✓	✓
FLEECEBACK RL TPO	✓		✓		✓	✓

LIVING BUILDING CHALLENGE

|	Materials Petal	
	Red List	Net Positive Waste
THERMOPLASTIC MEMBRANE ROOFING		
SURE-WELD TPO	✓	✓
SURE-WELD SAT (SELF-ADHERING TECHNOLOGY) TPO		
SURE-WELD FLEECEBACK TPO	✓	
SURE-WELD FLEECEBACK AFX TPO		
FLEECEBACK RL TPO		

Sure-Flex™ PVC
Roofing Systems

Carlisle has taken this proven performer and improved its integrity, flexibility, and weatherability. Featuring a variety of colors, reinforcements and other enhancement options, Carlisle's Sure-Flex PVC and KEE HP product breadth and long-term performance is unmatched.

Advantages of Sure-Flex PVC

Proven performance and industry longevity
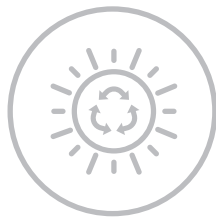
Environmental efficiency through reflectivity and recyclability

Chemical and fire resistance makes PVC & KEE HP ideal for a variety of building types

PVC is the World's Third Most Important Plastic!

57% of PVC resin feedstock is derived from salt water, a resource that is available in virtually unlimited amounts. The chemical make-up of this thermoplastic is not only unique because it utilizes less than 50% fossil fuels, but also because it imparts a range of technical features in PVC that set it apart from many other polymers including resistance to fire, alkalis, acids, and many organic solvents.

Used in a vast array of products and industries, PVC is recyclable and often used in products such as luxury vinyl tile, garden hoses, and car matting. When used in roofing applications, PVC membrane can be made in a variety of colors, but most notably, highly reflective colors that provide energy savings helping to reduce carbon emissions and combat urban heat island effect.

Sure-Flex™ PVC
Membrane

Carlisle's flagship PVC membrane, Sure-Flex PVC is an advanced-formula, heat-weldable membrane enhanced by a strong anti-wicking scrim. Developed decades ago and trusted by some of the world's most venerable institutions, Carlisle's formulation is design for long-term performance.

LEED Information

Pre-consumer Recycled Content	Up to 10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI)	White: 110, Tan: 88, Gray: 70, Light Gray: 91, Slate Gray: N/A

Sure-Flex™ KEE HP
Membrane

Sure-Flex KEE HP PVC utilizes DuPont Elvaloy KEE HP (Ketone Ethylene Ester High Performance), a resin modifier that results in enhanced chemical resistance, increased UV protection, and improved long-term weathering and cleanliness when compared to PVC and standard KEE. Formulated with the optimal amount of KEE HP, Carlisle's Sure-Flex KEE HP PVC is ideal for some of the harshest, most demanding roofing applications.

LEED Information

Pre-consumer Recycled Content	Up to 10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI)	White: 110, Tan: 90, Gray: 69, Light Gray: 93

FleeceBACK® PVC
Membrane

Carlisle's FleeceBACK PVC is an advanced-formula, heat-weldable PVC membrane enhanced with fleece on the bottom side of the membrane, creating a tough, durable, and versatile sheet that is ideal for re-roofing or new construction projects. In addition to providing a built-in separation layer which allows for use on a variety of substrates, the fleece backing significantly enhances the membrane's puncture resistance.

LEED Information

Pre-consumer Recycled Content	Up to 10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI)	White: 110, Tan: 90, Gray: 69, Light Gray: 93

FleeceBACK® KEE HP
Membrane

Carlisle's premium FleeceBACK KEE HP membrane is manufactured using Dupont Elvaloy KEE HP resin modifier and features a fleece backing. The industry-leading formulation and fleece construction yields a membrane with the enhanced weathering, chemical, and puncture resistance needed for the most demanding roofing applications.

LEED Information

Pre-consumer Recycled Content	Up to 10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI)	White: 110, Tan: 90, Gray: 69, Light Gray: 93

FleeceBACK® RL™ PVC
RapidLock Membrane

Carlisle's RapidLock (RL) Roofing System is a revolutionary membrane attachment method that provides an adhered membrane without the use of adhesives. This innovative system utilizes VELCRO® Brand Securable Solutions along with FleeceBACK RL PVC to achieve performance equal to adhered single-ply systems. Underlayment options include InsulBase RL, SecurShield® RL, or SecurShield HD RL Polyiso. RapidLock systems are VOC- and odor-free, have no temperature restrictions, and offer significant labor savings due to their simplicity and ease of installation.

LEED Information

Pre-consumer Recycled Content	Up to 10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI)	White: 110

	SS - Sustainable Sites	EA - Energy and Atmosphere	MR - Materials and Resources				EQ - Indoor Environmental Quality	
	Heat Island Reduction Option 1 & 2 Up to 2 PTS	Optimize Energy Performance Option 1 & 2 Up to 20 PTS	Construction & Demolition Waste Management Planning Prerequisite	Building Product Disclosure and Optimization – Environmental Product Declarations Option 1 Up to 2 PTS	Building Product Disclosure and Optimization – Sourcing of Raw Materials Option 1 & Option 2 Up to 2 PTS	PBT Source Reduction - Lead, Cadmium And Copper 1 PT	Thermal Comfort Option 1 & 2 1 PT	Acoustic Performance Up to 2 PTS
PVC MEMBRANE ROOFING								
SURE-FLEX PVC	✅	✅	✅	✅	✅	✅	✅	✅
SURE-FLEX KEE HP	✅	✅	✅	✅	✅	✅	✅	✅
SURE-FLEX PVC FLEECEBACK	✅	✅		✅	✅	✅	✅	✅
SURE-FLEX KEE HP FLEECEBACK	✅	✅		✅	✅	✅	✅	✅
FLEECEBACK RL PVC	✅	✅		✅	✅	✅	✅	✅

GREEN GLOBES
BUILDING CERTIFICATION

	Site	Materials			Indoor Environment	
	Construction Impacts - Mitigating Heat Island Effect Up to 14 PTS	Product Life Cycle Up to 29 PTS	Sustainable Materials Attributes Up to 10 PTS	Waste Up to 22 PTS	Thermal Comfort - Thermal Comfort Design Up to 9 PTS	Acoustic Comfort - Airborne Noise Isolation Up to 6 PTS
PVC MEMBRANE ROOFING						
SURE-FLEX PVC	✅	✅	✅	✅	✅	✅
SURE-FLEX KEE HP	✅	✅	✅	✅	✅	✅
SURE-FLEX PVC FLEECEBACK	✅		✅		✅	✅
SURE-FLEX KEE HP FLEECEBACK	✅		✅		✅	✅
FLEECEBACK RL PVC	✅		✅		✅	✅

LIVING BUILDING CHALLENGE

	Materials Petal
	Net Positive Waste

PVC MEMBRANE ROOFING

SURE-FLEX PVC	✅
SURE-FLEX KEE HP	✅
SURE-FLEX PVC FLEECEBACK	
SURE-FLEX KEE HP FLEECEBACK	
FLEECEBACK RL PVC	

THERMAL INSULATION

Energy-Efficient Polyiso Insulation – One of the simplest ways to support sustainable construction practices is by using 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 can provide innovative insulation products to any jobsite.

Advantages of Polyiso Insulation

Energy Efficiency

- High R-value per inch compared to other insulation products
- Published Long-Term Thermal Resistance (LTTR) values for roof insulation products
- Continuous insulation solution for the entire building envelope
- Reduces costly thermal bridges in roofs and walls when compared to cavity insulation only

Fire Performance

- Inherent fire resistance due to unique chemical bonds
- Thermoset material that does not melt or drip when exposed to flame (ASTM E84)
- Offers direct-to-deck attachment option for steel deck roofs (FM 4450/UL 1256)
- Versatile insulation solution for NFPA 285-compliant wall assemblies

Environmental

- Carlisle-specific Environmental Product Declaration reports available
- Contains blowing agents with zero ODP and low GWP
- Energy savings potential is equal to up to 47 times the product's embodied energy
- Recyclable through reuse where permitted and contains recycled content (varies by product)

Ease Of Use

- Third-party testing approvals for an expansive number of assemblies and applications
- Available in a variety of product thicknesses and dimensions
- Compatible with most roof and wall coverings, adhesives, and attachment systems
- Lightweight and easy to cut, reducing labor costs and time

Economic

- Meets today's code-required R-values without the added layers or increased costs of thicker assemblies
- High R-value equals thinner wall assemblies and savings from shorter fasteners
- Wall insulation can replace the need for other air and water barrier products
- HD cover boards protect owner's investment and can reduce maintenance costs

Other Attributes

- Available facer types to meet individual product needs
- Reduces the potential for problems associated with air and moisture intrusion
- Contributes to assembly's overall durability and service life
- Regionally available via a nationwide network of manufacturing plants

InsulBase® POLYISO
Insulation

Features and Benefits

- Environmentally friendly construction with 0% ozone-depleting components and CFC free
- InsulBase polyiso insulation provides the highest R-value per inch of commercially available insulation products

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

InsulBase® NH POLYISO
Insulation

Features and Benefits

- Living Building Challenge "Red List Free" – Declare Label
- Contains zero halogenated flame retardants
- InsulBase NH polyiso insulation provides the highest R-value per inch of commercially available insulation products
- Environmentally friendly construction with 0% ozone-depleting components and CFC free

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

InsulBase® RL™ POLYISO
RapidLock Insulation

Features and Benefits

- Allows for adhesiveless membrane attachment
- Provides the highest R-value per inch of commercially available roofing insulation products
- Environmentally friendly construction with 0% ozone-depleting components and CFC free
- Approved for direct application to steel decks

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

SecurShield® POLYISO
Insulation

Features and Benefits

- Zero ozone-depleting components, CFC free and HCFC free
- Superior bond to the foam core enhances wind uplift performance
- Premium facer improves fire resistance, moisture resistance, and dimensional stability

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

SecurShield™ NH POLYISO
Insulation

Features and Benefits

- Living Building Challenge "Red List Free" – Declare Label
- Contains zero halogenated flame retardants
- Premium facer improves fire resistance, moisture resistance, and dimensional stability
- Enhanced fire resistance for applications directly over wood decks with no fire-rated base sheet or thermal barrier required

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

SecurShield® RL™ POLYISO
RapidLock Insulation

Features and Benefits

- Rigid roof insulation panel composed of a high-density, closed-cell polyisocyanurate foam core laminated to a premium-performance, coated glass mat facer (CGF)
- Allows for adhesiveless membrane attachment
- Exceptional protection against hail, rooftop traffic, mold, and moisture
- ASTM C1289, Type II, Class 4, Grade 1 (109 psi max)

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
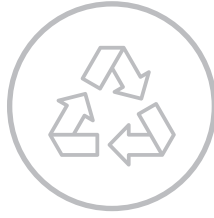www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

From cost savings to warranty, not all insulations perform the same, especially when it comes to environmental impact. EPS rigid insulations are 100% recyclable, insect- and decay-resistant, have a stable long-term R-Value, and have the lowest carbon footprint of all rigid insulations.

Used in virtually every part of the building envelope, these environmental advantages stack up LEED points for EPS products. With environmental and energy codes increasing, the design community has become quick to consider these factors when choosing rigid insulation.
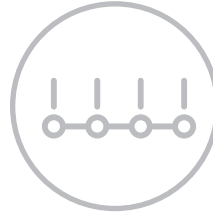
Environmental Advantages of EPS

Insect & Decay Resistant	100% Recyclable	Long-Term R-Value	Low Carbon Footprint

Insulfoam Flat

Features and Benefits

- Environmentally friendly: contains no ozone-depleting blowing agents, may contain recycled material, and is 100% recyclable if removed or replaced

- Stable R-value: thermal properties will remain stable over the material's entire service life, no thermal drift

- Moisture and mold resistance: does not readily absorb moisture from the environment, does not sustain mold or mildew growth

- Proven performance: manufactured using the same chemistry since the mid-1950s

- Variety of compressive strengths: available in more compressive strengths than comparable insulation products

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

InsulBase® HD POLYISO
Insulation

Features and Benefits

- Environmentally friendly construction with 0% ozone-depleting components and CFC free
- InsulBase HD is specifically designed for use as a cover board in mechanically attached single-ply systems only
- Provides a higher R-value than other cover board options.
- InsulBase HD delivers an R-value of 2.5 and a compressive strength of 80 psi

LEED Information

Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

SecurShield® HD POLYISO
Insulation

Features and Benefits

- Zero ozone-depleting components, CFC free and HCFC free
- Designed as a cover board for use with both adhered and mechanically attached single-ply membranes
- Premium facer improves fire resistance, moisture resistance, and dimensional stability

LEED Information

Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

SecurShield® HD Plus POLYISO
Insulation

Features and Benefits

- Industry leading wind uplift performance allowing for significant fastener reductions
- Provides a higher R-value than other cover board options
- Specifically designed for use as a cover board in fully adhered systems

LEED Information

Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

SecurShield® HD RL™ POLYISO
RapidLock Insulation

Features and Benefits

- Zero ozone-depleting components, CFC free and HCFC free
- Premium facer improves fire resistance, moisture resistance, and dimensional stability
- Provides a fully adhered roofing system without VOCs

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

SecurShield® HD Composite POLYISO
Insulation

Features and Benefits

- Base insulation and a cover board provided in a single product
- Highest performing wind uplift performance of any polyiso product
- Facilitates reduced labor and adhesive usage

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

StormBase® POLYISO
Insulation

Features and Benefits

- Environmentally friendly construction with 0% ozone-depleting components and CFC free
- A superior combination of high-insulating properties and a resilient OSB surface, ideal for high-traffic roof installations
- Utilized in projects requiring higher wind speed coverage
- Achieves FM's Very Severe Hail (VSH) rating

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

SecurShield® HD Composite EPS
Insulation

Features and Benefits

- SecurShield HD Composite EPS is an excellent choice for new or retrofit applications where high-thermal efficiency and maximum durability are desired.

- Provides additional resistance to high winds and hail

- Base insulation and a cover board provided in a single product

- Facilitates reduced labor and adhesive usage

LEED Information

Information varies by thickness of the board.
Scan or Click here to visit the LEED Letter Tool for exact information.
www.carlislesyntec.com/en/Tools/Letters/LEED-Letter

Tapered Insulation Roof Installation

EPS Roof Installation

Polyiso Job Site Recycling

LEED V4 & V4.1 - Product Reference Guide
FOR GREEN BUILDING RATING SYSTEMS

	EA - Energy and Atmosphere	MR - Materials and Resources				EQ - Indoor Environmental Quality	
	Optimize Energy Performance Option 1 & 2 Up to 20 PTS	Construction & Demolition Waste Management Planning Prerequisite	Building Product Disclosure and Optimization – Environmental Product Declarations Option 1 Up to 2 PTS	Building Product Disclosure and Optimization – Sourcing of Raw Materials Option 1 & Option 2 Up to 2 PTS	Building Product Disclosure and Optimization – Material Ingredients Option 1 Up to 2 PTS	Thermal Comfort Option 1 & 2 1 PT	Acoustic Performance Up to 2 PTS
THERMAL INSULATION							
POLYISOCYANURATE INSULATION GLASS REINFORCED FELT (GRF) FACERS							
INSULBASE®	✓	✓	✓	✓		✓	✓
INSULBASE NH	✓	✓	✓	✓	✓	✓	✓
INSULBASE RL™	✓	✓	✓	✓		✓	✓
POLYISOCYANURATE INSULATION COATED GLASS FACERS (CGF)							
SECURSHIELD®	✓	✓	✓	✓		✓	✓
SECURSHIELD NH	✓	✓	✓	✓	✓	✓	✓
SECURSHIELD RL	✓	✓	✓	✓		✓	✓
EXPANDED POLYSTYRENE (EPS)							
INSULFOAM FLAT	✓	✓	✓	✓		✓	✓
HIGH-DENSITY POLYISOCYANURATE COVER BOARDS							
INSULBASE HD	✓	✓		✓		✓	✓
SECURSHIELD HD	✓	✓	✓	✓		✓	✓
SECURSHIELD HD PLUS	✓	✓	✓	✓		✓	✓
SECURSHIELD HD RL	✓	✓	✓	✓		✓	✓
COMPOSITE COVER BOARDS							
SECURSHIELD HD COMPOSITE (HD POLYISO & POLYISO)	✓	✓	✓	✓		✓	✓
STORMBASE™ COMPOSITE (OSB & POLYISO)	✓	✓	✓	✓		✓	✓
SECURSHIELD HD EPS COMPOSITE (HD POLYISO & EXPANDED POLYSTYRENE)	✓	✓	✓	✓		✓	✓

GREEN GLOBES BUILDING CERTIFICATION	Materials		Indoor Environment	
	Product Life Cycle Up to 29 PTS	Sustainable Materials Attributes Up to 10 PTS	Thermal Comfort - Thermal Comfort Design Up to 9 PTS	Acoustic Comfort - Airborne Noise Isolation Up to 6 PTS
THERMAL INSULATION				
POLYISOCYANURATE INSULATION GLASS REINFORCED FELT (GRF) FACERS				
INSULBASE®	✓	✓	✓	✓
INSULBASE NH	✓	✓	✓	✓
INSULBASE RL™	✓	✓	✓	✓
POLYISOCYANURATE INSULATION COATED GLASS FACERS (CGF)				
SECURSHIELD®	✓	✓	✓	✓
SECURSHIELD NH	✓	✓	✓	✓
SECURSHIELD RL	✓	✓	✓	✓
EXPANDED POLYSTYRENE (EPS)				
INSULFOAM FLAT	✓	✓	✓	✓
HIGH-DENSITY POLYISOCYANURATE COVER BOARDS				
INSULBASE HD	✓	✓	✓	✓
SECURSHIELD HD	✓	✓	✓	✓
SECURSHIELD HD PLUS	✓	✓	✓	✓
SECURSHIELD HD RL	✓	✓	✓	✓
COMPOSITE COVER BOARDS				
SECURSHIELD HD COMPOSITE (HD POLYISO & POLYISO)	✓	✓	✓	✓
STORMBASE™ COMPOSITE (OSB & POLYISO)	✓	✓	✓	✓
SECURSHIELD HD EPS COMPOSITE (HD POLYISO & EXPANDED POLYSTYRENE)	✓	✓	✓	✓

LIVING BUILDING CHALLENGE

	Water Petal	Health + Happiness Petal	Materials Petal			
	Net Positive Water	Healthy Interior Performance	Responsible Materials	Red List	Responsible Sourcing	Living Economy Sourcing
THERMAL INSULATION						
POLYISOCYANURATE INSULATION GLASS REINFORCED FELT (GRF) FACERS						
INSULBASE®		✓				✓
INSULBASE NH	✓	✓	✓	✓	✓	✓
INSULBASE RL™		✓				✓
POLYISOCYANURATE INSULATION COATED GLASS FACERS (CGF)						
SECURSHIELD®		✓				✓
SECURSHIELD NH		✓	✓	✓	✓	✓
SECURSHIELD RL		✓				✓
EXPANDED POLYSTYRENE (EPS)						
INSULFOAM FLAT						✓
HIGH-DENSITY POLYISOCYANURATE COVER BOARDS						
INSULBASE HD		✓				✓
SECURSHIELD HD		✓				✓
SECURSHIELD HD PLUS		✓				✓
SECURSHIELD HD RL		✓				✓
COMPOSITE COVER BOARDS						
SECURSHIELD HD COMPOSITE (HD POLYISO & POLYISO)		✓				✓
STORMBASE™ COMPOSITE (OSB & POLYISO)		✓				✓
SECURSHIELD HD EPS COMPOSITE (HD POLYISO & EXPANDED POLYSTYRENE)						✓

ROOF GARDEN
Roofing Systems

Carlisle offers a diverse line of traditional and modular Roof Garden systems, as well as complementary items such as concrete, porcelain and rubber paver systems. Carlisle Roof Garden accessory items include protection fabrics, drainage boards, edging systems, growth media, and various vegetation options to meet almost any rooftop design. When Carlisle's Roof Garden and pavers systems are coupled with an approved Carlisle roofing system, a single-source overburden warranty is available for up to 20 years.
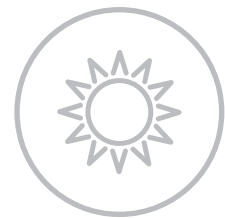
Advantages of Roof Gardens

Improved Stormwater Management

Filter and reduce stormwater, helping to prevent flooding and minimize the stress placed on sewer systems.

Enhanced Amenity Space

Add aesthetically appealing real estate to your building and give tenants much-needed green space.

Reduced Urban Heat Island Effect

Reduce the urban heat island effect as the sunlight is absorbed into the vegetation and used for growth instead of being converted into heat energy.

Extended Roof Lifecycle

Protect your membrane and substrate from weathering, extending the service life of your roof system.

Increased Air and Water Purification

Capture airborne pollutants and atmospheric deposition while also filtering noxious gases.

Habitat For Wildlife

Provide extra wildlife environments for the bee population and migrating birds, especially in towns and cities where natural habitats are scarce.

ROOF GARDEN
Traditional Assemblies

Carlisle offers a broad array of traditional Roof Garden systems that incorporate a variety of waterproofing options and a full line of accessories for a high-performance assembly. This includes a range of membranes that carry up to 20-year warranties, engineered growth media, and vegetation options.
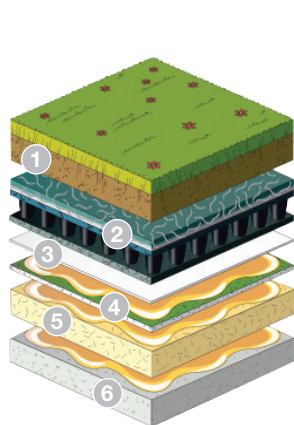
Extensive – Shallow Assembly

1. Growth Media – up to 5"
2. MiraDRAIN® G4
3. Adhered Carlisle Roof Membrane including Sure-Seal EPDM, Sure-Weld TPO, Sure-Flex PVC or Sure-Flex KEE HP
4. Adhered Coverboard (½" min. thickness) including SecurShield HD, DensDeck Prime and Securock
5. Approved Insulation
6. Substrate
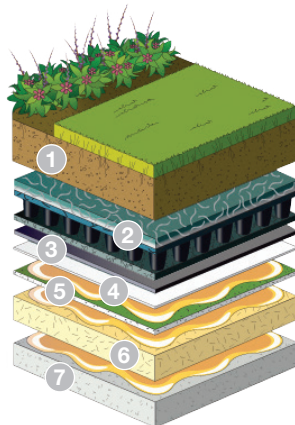
Intensive – Medium/Deep Assembly

1. Growth Media – over 5"
2. MiraDRAIN G4
3. 40-mil Root Barrier
4. Adhered Carlisle Roof Membrane including Sure-Seal EPDM, Sure-Weld TPO, Sure-Flex PVC or Sure-Flex KEE HP
5. Adhered Coverboard (½" min. thickness) including SecurShield HD, DensDeck Prime and Securock
6. Approved Insulation
7. Substrate
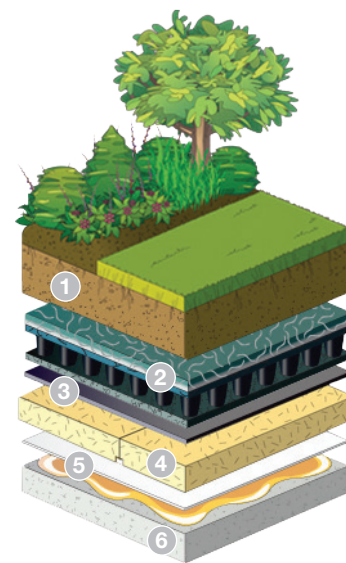
Intensive IRMA – Medium/Deep Assembly

1. Growth Media – over 5"
2. MiraDRAIN G4
3. 40-mil Root Barrier
4. Expanded Polystyrene Insulation with drainage channels
5. Adhered Carlisle FleeceBACK Membrane including FleeceBACK EPDM, TPO, PVC and KEE HP
6. Substrate

ROOF GARDEN
Modular Tray Systems

Modular Tray Roof Garden systems provide many of the benefits of a traditional Roof Garden with the advantage of being quick and easy to install. Modular Tray Roof Garden systems are self-contained and feature dedicated drainage, filtration, FLL compliant growth media and pre-grown vegetation.

Hydropack

GreenGrid

	SS - Sustainable Sites					
VEGETATED ROOF SYSTEMS	Site Development – Protect or Restore Habitat, Option 1, Up to 2 PTS	Open Space, 1 PT	Rainwater Management, Option1, Up to 3 PTS	Heat Island Reduction, Option 1 & 2, Up to 2 PTS	Site Master Plan, 1 PT	Places of Respite, 1 PT
CCW 300HV PROTECTION COURSE	✓	✓	✓	✓	✓	✓
CCW 200V PROTECTION COURSE	✓	✓	✓	✓	✓	✓
ROOT BARRIER	✓	✓	✓	✓	✓	✓
MIRADRAIN G4	✓	✓	✓	✓	✓	✓
MIRADRAIN 9800	✓	✓	✓	✓	✓	✓
MIRADRAIN IDB	✓	✓	✓	✓	✓	✓
HYDRO-BLANKET D13	✓	✓	✓	✓	✓	✓
ENGINEERED GROWTH MEDIA	✓	✓	✓	✓	✓	✓
SEDUM PLUGS	✓	✓	✓	✓	✓	✓
SEDUM TILES	✓	✓	✓	✓	✓	✓
SEDUM MATS	✓	✓	✓	✓	✓	✓
ALUMINUM DRAIN BOX	✓	✓	✓	✓	✓	✓
ALUMINUM EDGE	✓	✓	✓	✓	✓	✓
EASY BEND ALUMINUM EDGE	✓	✓	✓	✓	✓	✓
STAINED GLASS STONE		✓	✓		✓	✓
HYDROPACK PRE-GROWN TRAY	✓	✓	✓	✓	✓	✓
GREENGRID PRE-GROWN TRAY	✓	✓	✓	✓	✓	✓
HANOVER PREST PAVERS		✓	✓	✓	✓	✓
HANOVER GUARDIAN PAVERS		✓	✓		✓	✓
HANOVER PEDESTAL PAVERS		✓	✓		✓	✓
HANOVER HIGH TAB PEDESTALS		✓	✓		✓	✓
HANOVER EPDM PEDESTALS		✓	✓		✓	✓
HANOVER COMPENSATOR		✓	✓		✓	✓
HANOVER PORCELAIN PAVERS		✓	✓	✓	✓	✓
SUNNY BROOK CONCRETE PAVERS		✓	✓	✓	✓	✓
WAUSAU CONCRETE PAVERS		✓	✓		✓	✓
WESTILE CONCRETE PAVERS		✓	✓		✓	✓
MRP ADJUSTABLE SUPPORTS		✓	✓		✓	✓
RUBBER PAVERS		✓	✓		✓	✓
RUBBER PAVER EDGE RESTRAINT		✓	✓		✓	✓
RUBBER PAVER EASY-BEND EDGE RESTRAINT		✓	✓		✓	✓

Direct Exterior Access	WE - Water Efficiency	EA - Energy and Atmosphere	MR - Materials and Resources			EQ - Indoor Environmental Quality	
Direct Exterior Access 1 PT	Outdoor Water Use Reduction Direct Exterior Access Option 1 & 2 Prerequisite	Optimize Energy Performance Option 1 & 2 Up to 20 PTS	Construction & Demolition Waste Management Planning Prerequisite	Building Product Disclosure and Optimization – Sourcing of Raw Materials Option 1 & Option 2 Up to 2 PTS	PBT Source Reduction - Lead, Cadmium And Copper 1 PT	Thermal Comfort Option 1 & 2 1 PT	Acoustic Performance Up to 2 PTS

GREEN GLOBES BUILDING CERTIFICATION

VEGETATED ROOF SYSTEMS	Site			Water Efficiency		Materials	Indoor Environment	
	Construction Impacts - Mitigating Heat Island Effect — Up to 14 PTS	Stormwater Management — Up to 21 PTS	Landscaping — UP TO 21 PTS	Alternate Sources of Water — UP TO 28 PTS	Irrigation — UP to 27 PTS	Sustainable Materials Attributes — Up to 10 PTS	Thermal Comfort - Thermal Comfort Design — Up to 9 PTS	Acoustic Comfort - Airborne Noise Isolation — Up to 6 PTS
CCW 300HV PROTECTION COURSE	✅	✅	✅	◻	◻		◻	◻
CCW 200V PROTECTION COURSE	✅	✅	✅	◻	◻		◻	◻
ROOT BARRIER	✅	✅	✅	◻	◻		◻	◻
MIRADRAIN G4	✅	✅	✅	◻	◻	✅	◻	◻
MIRADRAIN 9800	✅	✅	✅	◻	◻	✅	◻	◻
MIRADRAIN IDB	✅	✅	✅	◻	◻	✅	◻	◻
HYDRO-BLANKET D13	✅	✅	✅	◻	◻		◻	◻
ENGINEERED GROWTH MEDIA	✅	✅	✅	◻	◻	✅	◻	◻
SEDUM PLUGS	✅	✅	✅	◻	◻	✅	◻	◻
SEDUM TILES	✅	✅	✅	◻	◻	✅	◻	◻
SEDUM MATS	✅	✅	✅	◻	◻	✅	◻	◻
ALUMINUM DRAIN BOX	✅	✅	✅	◻	◻	✅	◻	◻
ALUMINUM EDGE	✅	✅	✅	◻	◻	✅	◻	◻
EASY BEND ALUMINUM EDGE	✅	✅	✅	◻	◻	✅	◻	◻
STAINED GLASS STONE		✅		◻		✅	◻	◻
HYDROPACK PRE-GROWN TRAY	✅	✅	✅	◻	◻	✅	◻	◻
GREENGRID PRE-GROWN TRAY	✅	✅	✅	◻	◻	✅	◻	◻
HANOVER PREST PAVERS	✅	✅		◻		✅	◻	◻
HANOVER GUARDIAN PAVERS		✅		◻		✅	◻	◻
HANOVER PEDESTAL PAVERS		✅		◻		✅	◻	◻
HANOVER HIGH TAB PEDESTALS		✅		◻		✅	◻	◻
HANOVER EPDM PEDESTALS		✅		◻		✅	◻	◻
HANOVER COMPENSATOR		✅		◻		✅	◻	◻
HANOVER PORCELAIN PAVERS	✅	✅		◻		✅	◻	◻
SUNNY BROOK CONCRETE PAVERS	✅	✅		◻		✅	◻	◻
WAUSAU CONCRETE PAVERS		✅		◻		✅	◻	◻
WESTILE CONCRETE PAVERS		✅		◻		✅	◻	◻
MRP ADJUSTABLE SUPPORTS		✅		◻		✅	◻	◻
RUBBER PAVERS		✅		◻		✅	◻	◻
RUBBER PAVER EDGE RESTRAINT		✅		◻		✅	◻	◻
RUBBER PAVER EASY-BEND EDGE RESTRAINT		✅		◻		✅	◻	◻

LIVING BUILDING CHALLENGE

	Place Petal	Water Petal	Health + Happiness Petal	Beauty Petal
	Urban Agriculture	Net Positive Water	Access To Nature	Education + Inspiration

VEGETATED ROOF SYSTEMS

	Place Petal	Water Petal	Health + Happiness Petal	Beauty Petal
CCW 300HV PROTECTION COURSE	✓	✓	✓	✓
CCW 200V PROTECTION COURSE	✓	✓	✓	✓
ROOT BARRIER	✓	✓	✓	✓
MIRADRAIN G4	✓	✓	✓	✓
MIRADRAIN 9800	✓	✓	✓	✓
MIRADRAIN IDB	✓	✓	✓	✓
HYDRO-BLANKET D13	✓	✓	✓	✓
ENGINEERED GROWTH MEDIA	✓	✓	✓	✓
SEDUM PLUGS		✓	✓	✓
SEDUM TILES		✓	✓	✓
SEDUM MATS		✓	✓	✓
ALUMINUM DRAIN BOX	✓	✓	✓	✓
ALUMINUM EDGE	✓	✓	✓	✓
EASY BEND ALUMINUM EDGE	✓	✓	✓	✓
STAINED GLASS STONE		✓	✓	✓
HYDROPACK PRE-GROWN TRAY		✓	✓	✓
GREENGRID PRE-GROWN TRAY		✓	✓	✓
HANOVER PREST PAVERS	✓		✓	✓
HANOVER GUARDIAN PAVERS	✓		✓	✓
HANOVER PEDESTAL PAVERS	✓		✓	✓
HANOVER HIGH TAB PEDESTALS	✓		✓	✓
HANOVER EPDM PEDESTALS	✓		✓	✓
HANOVER COMPENSATOR	✓		✓	✓
HANOVER PORCELAIN PAVERS	✓		✓	✓
SUNNY BROOK CONCRETE PAVERS	✓		✓	✓
WAUSAU CONCRETE PAVERS	✓		✓	✓
WESTILE CONCRETE PAVERS	✓		✓	✓
MRP ADJUSTABLE SUPPORTS	✓		✓	✓
RUBBER PAVERS	✓		✓	✓
RUBBER PAVER EDGE RESTRAINT	✓		✓	✓
RUBBER PAVER EASY-BEND EDGE RESTRAINT	✓		✓	✓

AIR & VAPOR BARRIERS

Air barriers stop the uncontrolled flow of air through a building's exterior envelope. Airflow is caused by air moving from high pressure to low pressure. This moving air carries both heat and moisture. It can carry 50 to 100 times more moisture than diffusion alone. This is a huge consideration in a climate zone with high humidity.

Energy and Atmosphere Section

Prerequisite credit under Minimum Energy Performance = Updated to 2010 ASHRAE 90.1 Standard.

This means… All new commercial and institutional LEED-certified construction will require an air barrier.

Air and Vapor Barriers are Proven to:

Effectively Block Air Leakage

Decrease Energy Costs

Reduce Condensation through the Building Envelope

Provide a Seamless Moisture Barrier

Protect Rough Openings From Weather Damage During and After Construction
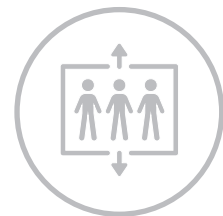
Improve Energy Efficiency and Comfort for Building Occupants

VapAir Seal™ 725TR
Air and Vapor Barrier/Temporary Roof

A 40-mil composite consisting of 35 mils of self-adhering rubberized asphalt laminated to a 5-mil woven polypropylene film. Used as an air and vapor barrier/temporary roof, its one-piece poly release liner prevents the material from bonding to itself in the roll and is easily removed for installation. May be used as a temporary roof for up to 120 days. Common substrates include concrete, DensDeck®, and SECUROCK®.

LEED Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Terrell, TX
Solar Reflectance Index (SRI)	N/A

VapAir Seal™ MD
Metal Deck Air and Vapor Barrier

VapAir Seal MD features a tough, puncture-resistant, aluminum-coated poly film laminated to 11-13 mils of SBS adhesive, which provides a strong bond to the metal deck. The thin layer of adhesive allows VapAir Seal MD to be applied directly to the metal deck without a thermal barrier (such as a gypsum board) and still meet FM 4470 Class 1 and UL 1256 internal fire ratings.

LEED Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Germany
Solar Reflectance Index (SRI)	N/A

VapAir Seal™ FLASHING FOAM
SPF Flashing

VapAir Seal Flashing Foam is a low-pressure foam system that utilizes a non-flammable blowing agent. VapAir Seal Flashing Foam has been specifically formulated for flame retardancy and conforms to the requirements of ASTM E84 as a "Class 2(B)" system (flame spread of 75 or less, smoke development of 450 or less). The foam is used to seal penetrations and helps to lower heating and cooling costs by reducing air leakage.

LEED Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Akron, Ohio
Solar Reflectance Index (SRI)	N/A

SureMB 90 Base Ply

Can be used in multi-ply roofing systems as an air and vapor barrier, or as a temporary roof for up to 60 days. This product is fiberglass-reinforced and meets or exceeds requirements of ASTM 6363 Type 1. When used as an air and vapor barrier, suitable substrates include concrete (primer required), DensDeck Prime, and SECUROCK.

LEED Information

Pre-consumer Recycled Content	24.4%
Manufacturing Location	Forth Worth, TX

SureMB 90TG Base Ply and SureMB 120TG Base Ply

Premium smooth-surfaced SBS torch-applied membranes reinforced with fiberglass mat. Can be used as a base ply in multi-ply systems, as an air and vapor barrier, or as a temporary roof for up to 60 days. Excellent for low -temperature applications when the use of peel-and-stick membranes may not be possible. Ideal substrates include primed concrete and primed SECUROCK.

LEED Information

Pre-consumer Recycled Content	3.2%
Post-consumer Recycled Content	16.7%
Manufacturing Location	Forth Worth, TX
Solar Reflectance Index (SRI)	N/A

LEED V4 & V4.1 - Product Reference Guide
FOR GREEN BUILDING RATING SYSTEMS

	EA - Energy and Atmosphere	MR - Materials and Resources		EQ - Indoor Environmental Quality
	Optimize Energy Performance Option 1 & 2 Up to 20 PTS	Building Product Disclosure and Optimization – Sourcing of Raw Materials Option 1 & Option 2 Up to 2 PTS	PBT Source Reduction - Lead, Cadmium And Copper 1 PT	Low-Emitting Materials Up to 3 PTS
AIR & VAPOR BARRIERS				
VAPAIR SEAL 725	✓		✓	
VAPAIR SEAL MD	✓		✓	
VAPAIR SEAL FLASHING FOAM	✓		✓	✓
SUREMB 90 BASE	✓		✓	
SUREMB 90TG BASE	✓	✓	✓	
SUREMB 120TG	✓	✓	✓	

Green Globes - NC 2019 - Product Reference Guide
FOR GREEN BUILDING RATING SYSTEMS

	Materials	Indoor Environment
	Sustainable Materials Attributes Up to 10 PTS	Thermal Comfort - Thermal Comfort Design Up to 9 PTS
AIR & VAPOR BARRIERS		
VAPAIR SEAL 725		✓
VAPAIR SEAL MD		✓
VAPAIR SEAL FLASHING FOAM		✓
SUREMB 90 BASE	✓	✓
SUREMB 90TG BASE	✓	✓
SUREMB 120TG	✓	✓

X-TENDA COAT™
Coating Systems

Carlisle's coatings and accessories are all designed to provide excellent performance over a variety of substrates for a high-quality, long-lasting roof system. X-Tenda Coat provides a cost-effective, fluid-applied restoration system that can extend the life of an existing roof. Carlisle offers two lines of high-performance coatings, acrylic and silicone, that can increase a rooftop's reflectivity and improve its performance, while causing minimal downtime to the building's operations.

Reflectivity

Carlisle's highly reflective white X-Tenda Coat helps reflect solar energy and is designed to meet CRRC and LEED requirements.

Functionality

X-Tenda Coat helps protect a building's primary roofing system from the elements, enhancing the longevity and performance of virtually any rooftop.

Economical

- Extends the life of the roof system
- Reduces labor and material costs
- Causes minimal disruption/downtime for building occupants and operations
- Does not count as an additional or third roof system for code purposes
- Can avoid capital expenditures for a new roofing system

Sustainable Attributes

Reducing waste is an important element of sustainability. Utilizing a roof coating extends the life of your existing roof system and dramatically decreases the amount of landfill space used to dispose of construction waste. Extending a roof's lifespan means using fewer resources, which reduces environmental impact. A roof coating is often the most effective and affordable way to help building owners save money and improve sustainability.

Restore Your Roof with Carlisle SynTec Systems – A roof coating restoration is a non-invasive, low-cost option that can add years to your roof's service life, or even just fix problem areas, with minimal labor.

Coating restoration can extend the life of the roof for 10, 15, or even 20 years, and can also be used to make repairs and prevent leaks.

Extend Roof's Life
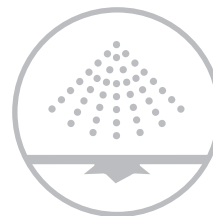
Make Repairs

Prevent Leaks and Protects Roof

Non-Invasive

X-TENDA COAT™ CLASSIC
Acrylic Coating

Features and Benefits

A 100% acrylic, single-component, water-based, premium quality elastomeric coating.

- Easy to apply with conventional or airless spray equipment, roller, or brush
- Title 24 compliant
- High solar reflectivity can contribute to energy savings
- Restoration System and Material Warranties available
- Available in: White, Light Gray, Dark Gray, and Tan
- High Tensile and Quick Set formulations available

LEED Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Phoenix, AZ Winter Haven, FL
Solar Reflectance Index (SRI)	White - 111
Corporate Sustainability Report	No

X-TENDA COAT™ XTRA
Silicone Coating

Features and Benefits

A single-component, moisture-cured, fluid-applied, low-VOC silicone coating.

- Industry-leading resistance to dirt pick-up and biological growth
- Title 24 compliant
- NSF P151 Rated (white only)
- Restoration System and Material Warranties available
- Low-VOC compliant
- Available in White, Light Gray, Dark Gray, Tan, Santa Fe Tan, and Terra Cotta
- Excellent resistance to ponding water, UV exposure, and natural weathering

LEED Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Winter Haven, FL
Solar Reflectance Index (SRI)	White - 110
Corporate Sustainability Report	No

LEED V4 & V4.1 - Product Reference Guide
FOR GREEN BUILDING RATING SYSTEMS

	SS - Sustainable Sites	EA - Energy and Atmosphere	MR - Materials and Resources	EQ - Indoor Environmental Quality	
	Heat Island Reduction Option 1 & 2 Up to 2 PTS	Optimize Energy Performance Option 1 & 2 Up to 20 PTS	PBT Source Reduction - Lead, Cadmium And Copper 1 PT	Low-Emitting Materials Up to 3 PTS	Thermal Comfort Option 1 & 2 1 PT
ROOF COATINGS					
X-TENDA COAT CLASSIC ACRYLIC COATING	✓	✓	✓	✓	✓
X-TENDA COAT XTRA SILICONE COATING	✓	✓	✓	✓	✓

Green Globes - NC 2019 - Product Reference Guide
FOR GREEN BUILDING RATING SYSTEMS

	Site	Indoor Environment	
	Construction Impacts - Mitigating Heat Island Effect Up to 14 PTS	Source Control and Measurement of Indoor Pollutants - Volatile Organic Compounds Up to 17 PTS	Thermal Comfort - Thermal Comfort Design Up to 9 PTS
ROOF COATINGS			
X-TENDA COAT CLASSIC ACRYLIC COATING	✓	✓	✓
X-TENDA COAT XTRA SILICONE COATING	✓	✓	✓

LIVING BUILDING CHALLENGE

Materials Petal
Red List

ROOF COATINGS

	Red List
X-TENDA COAT CLASSIC ACRYLIC COATING	✔
X-TENDA COAT XTRA SILICONE COATING	✔

SKYLIGHTS

Daylight solutions for sustainable buildings – In buildings all over the world, natural daylight is replacing artificial lighting, improving occupants' sense of well-being, mood, and even productivity. With their ability to let in natural light and reduce energy use, choosing skylights for your building project is a great step toward sustainability.

Benefits of Daylighting

Save energy used for artificial lighting during daylight hours

Reduce energy bills

Improve occupants' comfort and productivity

Increase your building's value and aesthetic appeal

Better Access to Daylight Has Been Linked to:

- Improved sense of vitality
- Decreased daytime sleepiness
- Reduced stress and anxiety
- Improved productivity

SUNPATH™
Tubular Skylight

The SunPath Tubular Daylighting Device (TDD) light tube utilizes Miro-Silver to create pure white light with no color shift during transmission, even after multiple reflections. At nearly 98% total light reflectivity, these Miro-Silver light tubes allow daylight to illuminate interior spaces longer, and brighter, than any other TDD.

Benefits of Miro-Silver Light Tubes

- Solid reflective material
- Will not delaminate, yellow, crack, or peel due to prolonged UV exposure
- 25-year material warranty

LEED Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%

SUNWELD™ PLUS
Conventional Skylight BY **VELUX®** Commercial

SunWeld Plus Dynamic Dome Skylight by VELUX® has a revolutionary dome design with superior daylight-capturing capabilities. The VELUX Dynamic Dome skylight is architecturally elegant, strong, and can deliver more daylight by capturing low-angle sunlight in the early morning and late afternoon.

Light Harvesting

- Dome shape engineered to maximize low-angle sunlight
- Taller domes provide more surface area to harvest more daylight
- Smooth, clear outer dome delivers 20% more daylight than a skylight with a prismatic outer dome
- White prismatic inner dome option provides 100% light diffusion
- Steeper side walls harvest more daylight than skylights with lower-profile domes

LEED Information

Pre-consumer Recycled Content	36.70%
Post-consumer Recycled Content	0%

LEED V4 & V4.1 - Product Reference Guide
FOR GREEN BUILDING RATING SYSTEMS

	EA - Energy and Atmosphere	MR - Materials and Resources	EQ - Indoor Environmental Quality		
	Optimize Energy Performance Option 1 & 2 Up to 20 PTS	Building Product Disclosure and Optimization – Sourcing of Raw Materials Option 1 & Option 2 Up to 2 PTS	Thermal Comfort Option 1 & 2 1 PT	Daylight Option 1 & 2 Up to 3 PTS	Quality Views Up to 2 PTS
SKYLIGHTS					
SUNPATH	✓		✓	✓	✓
SUNWELD PLUS	✓	✓	✓	✓	✓

Green Globes - NC 2019 - Product Reference Guide
FOR GREEN BUILDING RATING SYSTEMS

	Materials	Indoor Environment
	Sustainable Materials Attributes Up to 10 PTS	Thermal Comfort - Thermal Comfort Design Up to 9 PTS
SKYLIGHTS		
SUNPATH		✓
SUNWELD PLUS	✓	✓

Scan or Click Here for Full Guide

LIVING BUILDING CHALLENGE

	Health + Happiness Petal		
	Healthy Interior Environment	Healthy Interior Performance	Access To Nature
SKYLIGHTS			
SUNPATH	✓	✓	✓
SUNWELD PLUS	✓	✓	✓

INNOVATION FOR SUSTAINABILITY

**One Planet.
Many Solutions.
One Source.**

INNOVATION FOR
SUSTAINABILITY

CARLISLE®
SYNTEC SYSTEMS