

**BUILDING A REPUTATION
BY BUILDING FOR
TOMORROW.**



Firestone
BUILDING PRODUCTS
NOBODY COVERS YOU BETTER.™

FIRESTONE BUILDING PRODUCTS - LEADING ON LEED®:

For more than 35 years, Firestone Building Products has provided commercial roofing and building envelope solutions with a consistent commitment to quality, durability and innovation – before ‘green building’ became an industry catchphrase, Firestone systems were saving energy around the world.

As the business and environmental case for sustainability gained momentum, the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) certification program became synonymous with green building: More than a million-and-a-half square feet of real estate are LEED-certified every day, and the rating system is introducing a fourth sweeping revision to the market.

LEED Version 4 makes significant changes to an already demanding process, including more rigorous analysis of building products, mandatory measurement of energy performance, and more emphasis on water and land use.

With LEED setting higher standards, Firestone continues to raise the bar. A full portfolio of green products – energy-saving polyiso insulations, reflective UltraPly™ TPO and EcoWhite™ EPDM membranes, vegetative roofing solutions, airtight building envelope systems and more – qualify for LEED credits and contribute to healthy, high-performance construction.

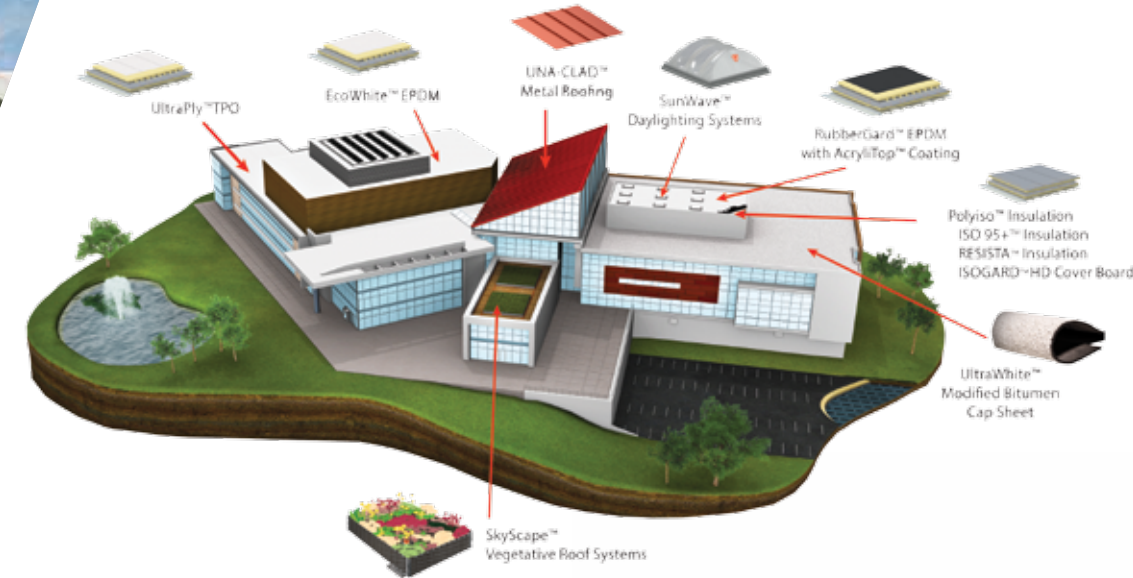
As LEED evolves, Firestone’s commitment to industry-leading systems, support and service remains constant. Consult this guide for an overview of LEED V4 and how Firestone products can minimize your environmental impact and maximize building value.

WHAT’S NEW IN LEED V4?

When the U.S. Green Building Council announced the launch of LEED V4 in 2016, many building and design professionals called it the most comprehensive overhaul in the program’s 18-year history. It expands the certification to new sectors – like data centers and warehouses – while streamlining many credits and cutting documentation paperwork.

But while some administrative aspects of V4 are less challenging, many of the program requirements are more stringent. The new LEED is more performance-based, demands more transparency on building materials, and adopts more stringent energy efficiency standards - an area where Firestone’s building envelope systems (including our ISO insulations) help raise indoor comfort while lowering utility bills.

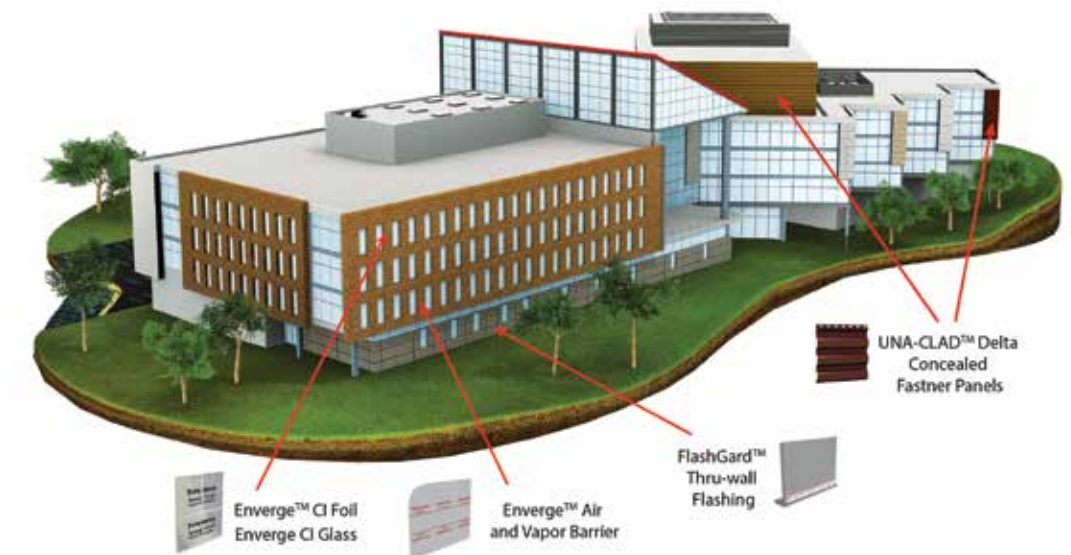
Another point of emphasis in LEED V4 is Integrative Process, recognizing the value of collaboration by rewarding the engagement of a project team that works together from design through construction. At Firestone, we see our role as a partner, not a supplier, and we will provide resources and involvement on the team to help projects that use our systems earn the Integrative Process credit.



INNOVATIVE PRODUCTS FOR SUSTAINABLE BUILDINGS

Firestone Building Products provides sustainable solutions for the full spectrum of building requirements from a single new roof to a fully integrated, site-wide sustainability solution. The diagram below highlights the many sustainable products and systems that we offer.

Please read on to view more specifics on our sustainable products.



OVERVIEW OF LEED® V4 CATEGORIES:

The following are descriptions of the LEED V4 categories of greatest relevance to Firestone's portfolio of products and building systems, excerpted directly from the U.S. Green Building Council. The italicized text highlights a few ways that Firestone advances each area; later, you'll find a comprehensive reference guide matching individual credits with specific Firestone products.

SUSTAINABLE SITES

The Sustainable Sites (SS) category rewards decisions about the environment surrounding the building, with credits that emphasize the vital relationships among buildings, ecosystems, and ecosystem services. It focuses on restoring project site elements, integrating the site with local and regional ecosystems, and preserving the biodiversity that natural systems rely on.

SS REQUIREMENT: CONSTRUCTION ACTIVITY POLLUTION PREVENTION

Requirements: Create and implement an erosion and sedimentation control plan for all construction activities associated with the project. The plan must conform to the erosion and sedimentation requirements of the 2012 U.S. Environmental Protection Agency (EPA) Construction General Permit (CGP) or local equivalent, whichever is more stringent. Projects must apply the CGP regardless of size. The plan must describe the measures implemented.

Intent: To reduce pollution from construction activities by controlling soil erosion, waterway sedimentation, and airborne dust.

SS CREDIT: RAINWATER MANAGEMENT

Requirements:
Option 1: Percentile of rainfall events - In a manner best replicating natural site hydrology processes, manage on site the runoff from the developed site for the 95th percentile of regional or local rainfall events using low-impact development (LID) and green infrastructure.
Option 2: Achieve Option 1 but for the 98th percentile of regional or local rainfall events, using LID and green infrastructure.

Intent: To reduce runoff volume and improve water quality by replicating the natural hydrology and water balance of the site, based on historical conditions and undeveloped ecosystems in the region.

SS CREDIT: SITE DEVELOPMENT – PROTECT OR RESTORE HABITAT

Requirements: Preserve and protect from all development and construction activity 40% of the greenfield area on the site (if such areas exist).
• On-site Restoration (2 points except healthcare, 1 point healthcare): Using native or adapted vegetation, restore 30% (including the building footprint) of all portions of the site identified as previously developed. Projects that achieve a density of 1.5 floor-area ratio may include vegetated roof surfaces in this calculation if the plants are native or adapted, provide habitat, and promote biodiversity.

Intent: To conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

SS CREDIT: HEAT ISLAND

Requirements: High reflectance or vegetative roof.

Intent: To minimize effects on microclimates and human and wildlife habitats by reducing heat islands.

SS CREDIT: OPEN SPACE

Requirements: For projects that achieve a density of 1.5 floor-area ratio (FAR), and are physically accessible, extensive or intensive, vegetated roofs can be used toward the minimum 25% vegetation requirement, and qualifying roof-based physically accessible paving areas can be used toward credit compliance.

Intent: To create exterior open space that encourages interaction with the environment, social interaction, passive recreation, and physical activities.

SS CREDIT: PLACES OF RESPITE (HEALTHCARE ONLY)

Requirements: This credit rewards quality spaces that include vegetation, have exposure to the elements, and allow opportunities for exercise and movement. Such spaces must protect patients from bad weather and poor air quality while accommodating those with limited mobility.

Intent: To provide patients, staff and visitors with the health benefits of the natural environment by creating outdoor places of respite on the healthcare campus.

PILOT CREDIT: BIRD COLLISION DETERENCE

Requirements: Develop a building façade design strategy to make the building visible as a physical barrier and eliminate conditions that create confusing reflections to birds. If all materials on the building façade have a Threat Factor of 15 or below, the project is exempt from the building façade requirements and the following Bird Collision Threat Rating calculations are not required.

Intent: Reduce bird injury and mortality from in-flight collisions with buildings.

PILOT CREDIT: WALKABLE PROJECT SITE

Requirements: Continuous sidewalks or equivalent all-weather routes for walking on the project site serve all functional building entrances and connect them with public sidewalks. Newly constructed sidewalks must be at least 10 feet (2.5 meters) wide on retail or mixed-use blocks and at least 5 feet (1.5 meters) wide on all other blocks. Equivalent provisions for walking include woonerfs and all-weather-surface footpaths. Alleys and driveways are excluded from these calculations.

Intent: To promote walking, biking, and other non-motorized transportation that results in reduced vehicle miles traveled (VMT), increased public health, and enhanced community participation.

LEED V4 creates a new category, Location & Transportation, that deals with the advantages (like mass transit) that benefit a particular building location – this leaves the Sustainable Sites category focused on how the construction team can maximize the ecological value of the project.

Firestone's SkyScape™ Vegetative Roofing Systems help earn credits towards eco-friendly open space and habitation restoration requirements. Vegetative roofs also help mitigate the effects of heat islands, along with reflective white TPO membrane (meeting the higher solar reflectance standards under V4) and EcoWhite™ EPDM membrane. LEED V4 also focuses on rainwater reuse (versus stormwater management), supported by Firestone's PondGard™ liners.



FIRESTONE PRODUCTS THAT EARN SS LEED® CREDITS

ROOFING PRODUCTS

SKYSCAPE™ VEGETATIVE ROOFING SYSTEMS

SS CREDIT

- PROTECT OR RESTORE HABITAT
- OPEN SPACE
- RAINWATER MANAGEMENT
- HEAT ISLAND EFFECT
- PLACES OF RESPITE (HEALTHCARE ONLY)

RUBBERGARD™ ECOWHITE™ EPDM

SS CREDIT

- HEAT ISLAND EFFECT

ECOWHITE PLATINUM MEMBRANE

SS CREDIT

- HEAT ISLAND EFFECT

BALLASTED RUBBERGARD EPDM

SS CREDIT

- HEAT ISLAND EFFECT

ULTRAPLY™ TPO

SS CREDIT

- HEAT ISLAND EFFECT

ACRYLITOP™ COATING

SS CREDIT

- HEAT ISLAND EFFECT

ULTRAWHITE™ GRANULATED CAP SHEETS

SS CREDIT

- HEAT ISLAND EFFECT

SELF-ADHERED TPO

SS CREDIT

- HEAT ISLAND EFFECT

UNA-CLAD™ METAL PANEL ROOFING

SS CREDIT

- HEAT ISLAND EFFECT

WHITE PRE-TAPE ACCESSORIES

SS CREDIT

- HEAT ISLAND EFFECT

SITE PRODUCTS

PONDGARD™ EPDM LINERS

SS CREDIT

- RAINWATER MANAGEMENT
- CONSTRUCTION POLLUTION PREVENTION

WALL PRODUCTS

UNA-CLAD™ DELTA PANELS

PILOT CREDIT

- BIRD COLLISION DETERRENCE

OMEGA PANELS

PILOT CREDIT

- BIRD COLLISION DETERRENCE

UC 500

PILOT CREDIT

- BIRD COLLISION DETERRENCE



CASE STUDY

BRIDGESTONE AMERICAS TECHNICAL CENTER

AKRON, OH

LEED CERTIFICATION LEVEL

- GOLD

BUILDING QUICK STATS

- 265,000 SQ. FT.
- 450 TEAMMATES
- 4 FLOORS
- CONTAINS RESEARCH LABORATORY FOR ADVANCED TIRE COMPOUND TESTING, PROTOTYPE, QUALITY CONTROL ENGINEERING AND OTHER OFFICE FUNCTIONS

The Bridgestone Americas Technical Center was built to LEED® Gold specification. The roof of the 265,000 sq. ft. facility is composed of two layers of 2" Firestone ISO 95+™ GL mechanically attached insulation, one layer of Firestone ISOGARD™ HD Coverboard, Firestone fully-adhered 90-mil RubberGard™ EcoWhite™ Platinum EPDM backed by a 30-year Firestone Platinum Warranty and topped with a SkyScape™ Vegetative Roofing System, SkyPaver™ Walkways and vegetative roofing. Additionally, the building features many Firestone Metal Wall components such as:

- S4500 Aluminum Panel Rainscreen System
- Flat Lock Stainless Steel Wall Panels
- UC-600 Aluminum Exposed Fastener Panels
- UC-500 Aluminum Soffit Panels
- S200 Aluminum Column Covers
- Aluminum Sun Screens
- LS-1 Light Shelves

Other highlights include natural daylighting, light sensors, filtered chemical hoods, heat transfer heating/cooling system and ultra high-efficiency glazed glass. The grounds include rainwater cisterns that collect roof water for on-site irrigation, bioswales that absorb stormwater, recharge the aquifer and minimize runoff, as well as native plant landscaping.



WATER EFFICIENCY

The Water Efficiency (WE) section addresses water holistically, looking at indoor use, outdoor use, specialized uses, and metering. The section is based on an “efficiency first” approach to water conservation. As a result, each prerequisite looks at water efficiency and reductions in potable water use alone. Then, the WE credits additionally recognize the use of nonpotable and alternative sources of water.



WE REQUIREMENT: OUTDOOR WATER USE REDUCTION

Requirements:
Reduce the project’s landscape water requirement by at least 30% from the calculated baseline for the site’s peak watering month.

Intent:
To reduce outdoor water consumption.



WE CREDIT: OUTDOOR WATER USE REDUCTION

Requirements:
Reduce the project’s landscape water requirement (LWR) by at least 50% from the calculated baseline for the site’s peak watering month. Reductions must first be achieved through plant species selection and irrigation system efficiency as calculated in the Environmental Protection Agency (EPA) WaterSense Water Budget Tool.

Intent:
To reduce outdoor water consumption.

FIRESTONE PRODUCTS THAT EARN WE LEED® CREDITS

SITE PRODUCTS

- PONDGARD LINERS REQUIREMENT**
- OUTDOOR WATER USE REDUCTION
- WE CREDIT**
- OUTDOOR WATER USE REDUCTION

LEED V4 includes new prerequisites for reducing outdoor water use by at least 30% from a calculated peak baseline, with an additional point awarded for a 50% reduction. Being a highly sustainable membrane, Firestone’s PondGard™ liners can hold water that can be reused for irrigation or other purposes. Firestone PondGard also resists microbial and algae attack, resulting in naturally healthy ponds. The lining offers outstanding resistance to UV exposure, ozone, frost, snow and extreme temperatures.



CASE STUDY

BRIDGESTONE AMERICAS AIKEN COUNTY OFF-ROAD RADIAL TIRE PLANT

GRANITEVILLE, SC

LEED CERTIFICATION LEVEL

- SILVER

BUILDING QUICK STATS

- 1.5 MILLION SQ. FT.
- BUILT FOR \$1.2 BILLION
- UTILIZED 12 DIFFERENT FIRESTONE PRODUCTS
- FACILITY PRODUCES VARIOUS OFF-ROAD RADIAL TIRE PRODUCTS USED TO EQUIP HEAVY TRUCKS IN MINING AND CONSTRUCTION

The Aiken County Off-Road Radial Tire Plant was constructed with many sustainable features and materials in alignment with Bridgestone’s global commitment to the environment.

The plant is built to LEED® Silver construction specifications. In addition, sustainable and advanced technologies from Firestone Building Products, a subsidiary of Bridgestone Americas, were used throughout the facility. The new plant relies on UltraPly™ TPO roofing, ISO 95+™ GL Insulation, UNA-FOAM™ Insulated Metal Wall Panels, SkyPaver™ Composite Roof Pavers and GeoGard™ Lining for retention ponds and water harvesting areas.

The Firestone Building Performance Solution Break Down

- 1,760,000 sq. ft. UltraPly TPO
- 3,560,000 sq. ft. of ISO 95+ Insulation
- 32,000 sq. ft. of SkyPaver Composite Roof Pavers
- 530,300 sq. ft. of UNA-FOAM Panels
- 180,500 sq. ft. of GeoGard Lining

As a result of keeping this project in the “family,” Bridgestone has a building of which they can be proud. It’s energy efficient, high performing and visually appealing. Not to mention that it was done right the first time and completed on time.

The environmental mission statement of the Bridgestone Corporation is, “To help ensure a healthy environment for current and future generations.” For the people of Aiken County, South Carolina, that’s more than a mission statement. It’s a promise kept.



ENERGY AND ATMOSPHERE

The Energy and Atmosphere (EA) category approaches energy from a holistic perspective, addressing energy use reduction, energy-efficient design strategies, and renewable energy sources.



EA REQUIREMENT: MINIMUM ENERGY PERFORMANCE

Requirements:

Demonstrate an improvement of 5% for new construction, 3% for major renovations, or 2% for core and shell projects in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance according to ANSI/ASHRAE/IESNA Standard 90.1-2010, Appendix G, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.), using a simulation model.

Intent:

To reduce the environmental and economic harms of excessive energy use by achieving a minimum level of energy efficiency for the building and its systems.



EA CREDIT: OPTIMIZE ENERGY PERFORMANCE

Requirements:

Establish an energy performance target no later than the schematic design phase. The target must be established as kBtu per square foot-year (kW per square meter-year) of source energy use.

Intent:

To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic harms associated with excessive energy use.



EA CREDIT: RENEWABLE ENERGY PRODUCTION

Requirements:

Use renewable energy systems to offset building energy costs.

Intent:

To reduce the environmental and economic harms associated with fossil fuel energy by increasing self-supply of renewable energy.

LEED® V4 features higher standards for energy efficiency, and a stronger emphasis on performance measurement: whole-building energy is now required, to ensure that projects live up to efficiency projections in day-to-day operations. Firestone has a number of products that contribute to points in these areas, with proven installed performance.

Of particular note, the bar to achieve optimized energy performance under V4 has been raised to ASHRAE 90.1-2010 compliance (instead of the 2007 version); Firestone's ISO insulation products meet or exceed these tougher energy-saving standards.

FIRESTONE PRODUCTS THAT EARN EA LEED CREDITS

ROOFING PRODUCTS

ISO 95+™ GL INSULATION

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

TAPERED ISO 95+ POLYISO INSULATION

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

RESISTA™ POLYISO INSULATION

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

ISOGARD HD™ COVERBOARD

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

ISOGARD HD COMPOSITE BOARD

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

HAILGARD™ COMPOSITE BOARD

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

V-FORCE™ VAPOR BARRIER MEMBRANE

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

SUNWAVE™ DAYLIGHTING SYSTEM

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

SUNWAVE SMRT DAYLIGHTING SYSTEM

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

CLADGARD™ SA VAPOR BARRIER

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

COREGARD VAPOR BARRIER

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

WALL PRODUCTS

ENVERGE™ AIR & VAPOR BARRIER

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE

ENVERGE CI EXTERIOR WALL INSULATION

EA CREDIT

- MINIMUM ENERGY PERFORMANCE
- OPTIMIZE ENERGY PERFORMANCE



MATERIALS & RESOURCES

The Materials and Resources (MR) credit category focuses on minimizing the embodied energy and other impacts associated with the extraction, processing, transport, maintenance, and disposal of building materials. The requirements are designed to support a life-cycle approach that improves performance and promotes resource efficiency. Each requirement identifies a specific action that fits into the larger context of a life-cycle approach to embodied impact reduction.



MR CREDIT: BUILDING LIFE-CYCLE IMPACT REDUCTION

Requirements:

Over their lifetimes, buildings have local, regional, and global environmental effects. Some occur during the harvest, extraction, manufacture, and transportation of materials; others involve construction and operations; still others take place at demolition and disposal. A life-cycle assessment (LCA) examines as many of these environmental effects as possible. This credit identifies several strategies for reducing harm done to the environment over a building's entire life cycle: restoring existing buildings, reusing building components, and reducing a building's environmental footprint through LCA.

Intent:

To encourage adaptive reuse and optimize the environmental performance of products and materials.

The Materials and Resources category included the most changes from LEED® 2009 to LEED V4. Credits formerly based on straightforward information like recycled content and regional location have been replaced by new documents called Environmental Product Disclosures (EPDs). EPDs are based on lifecycle analysis and must be third-party certified.

Certain options for achieving Materials and Resources credits rely on building material analysis and avoiding toxic ingredients; some competitive roofing products (like PVC roofing that contains phthalate additives) include hazardous chemicals avoided by TPO and EPDM membranes.

Building reuse credits have also been reclassified as 'Building Lifecycle Impact Reduction,' and rely on lifecycle assessments for building materials used in construction.

Firestone is committed to transparency, providing the ingredient and lifecycle information needed for EPD documentation and reducing building lifecycle impact wherever possible.



MR CREDIT: BUILDING PRODUCT DISCLOSURES – Environmental Product Declarations

Requirements:

- **Option 1:** Environmental Product Declaration (EPD) (1 point): Use at least 20 different permanently installed products sourced from at least five different manufacturers that meet one of the disclosure criteria below.
 - Product-specific declaration.
 - Products with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that have at least a cradle-to-gate scope are valued as one quarter (1/4) of a product for the purposes of credit achievement calculation.
 - Environmental Product Declarations which conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle-to-gate scope.
 - Industry-wide (generic) EPD -- Products with third-party certification (Type III), including external verification, in which the manufacturer is explicitly recognized as a participant by the program operator are valued as one half (1/2) of a product for purposes of credit achievement calculation.
 - Product-specific Type III EPD -- Products with third-party certification (Type III), including external verification in which the manufacturer is explicitly recognized as the participant by the program operator are valued as one whole product for purposes of credit achievement calculation.
- USGBC approved program – Products that comply with other USGBC approved environmental product declaration frameworks.

Intent:

To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products from manufacturers who have verified improved environmental life-cycle impacts.

- **Option 2:** Multi-attribute optimization (1 point): Use products that comply with one of the criteria below for 50%, by cost, of the total value of permanently installed products in the project. Products will be valued as below.
 - Third party certified products that demonstrate impact reduction below industry average in at least three of the following categories are valued at 100% of their cost for credit achievement calculations.
 - global warming potential (greenhouse gases), in CO₂e;
 - depletion of the stratospheric ozone layer, in kg CFC-11;
 - acidification of land and water sources, in moles H⁺ or kg SO₂;
 - eutrophication, in kg nitrogen or kg phosphate;
 - formation of tropospheric ozone, in kg NO_x, kg O₃ eq, or kg ethene; and
 - depletion of nonrenewable energy resources, in MJ.
 - USGBC approved program -- Products that comply with other USGBC approved multi-attribute frameworks.

For credit achievement calculation, products sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site are valued at 200% of their base contributing cost. Structure and enclosure materials may not constitute more than 30% of the value of compliant building products.

FIRESTONE PRODUCTS THAT EARN MR LEED® CREDITS

ROOFING PRODUCTS

ISO 95+™ GL INSULATION

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

TAPERED ISO 95+ POLYISO INSULATION

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

RESISTA™ POLYISO INSULATION

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

RUBBERGARD™ EPDM MEMBRANES

RUBBERGARD EPDM MECHANICALLY ATTACHED ROOFING SYSTEMS

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

RUBBERGARD EPDM ADHERED ROOFING SYSTEMS

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

ULTRAPLY™ TPO ROOFING SYSTEMS

ULTRAPLY TPO MECHANICALLY ATTACHED ROOFING SYSTEM

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

ULTRAPLY TPO ADHERED ROOFING SYSTEM

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

MODIFIED BITUMEN ROOFING SYSTEMS

APP MODIFIED BITUMEN ROOFING SYSTEM

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

SBS MODIFIED BITUMEN ROOFING SYSTEM

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

SITE PRODUCTS

PONDGARD™ EPDM LINERS

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

GEOGARD™ EPDM MEMBRANE

MR CREDIT

- BUILDING LIFE-CYCLE IMPACT REDUCTION
- BUILDING PRODUCT DISCLOSURES - EPDs

WALL PRODUCTS

ENVERGE™ CI EXTERIOR WALL INSULATION

MR CREDIT

- BUILDING PRODUCT DISCLOSURES - EPDs



INDOOR ENVIRONMENTAL QUALITY

The Indoor Environmental Quality (EQ) category rewards decisions made by project teams about indoor air quality and thermal, visual, and acoustic comfort. Green buildings with good indoor environmental quality protect the health and comfort of building occupants. High-quality indoor environments also enhance productivity, decrease absenteeism, improve the building's value, and reduce liability for building designers and owners¹. This category addresses the myriad design strategies and environmental factors—air quality, lighting quality, acoustic design, control over one's surroundings—that influence the way people learn, work, and live.



EQ CREDIT: LOW-EMITTING MATERIALS

Requirements:

This credit includes requirements for product manufacturing as well as project teams. It covers volatile organic compound (VOC) emissions into indoor air and the VOC content of materials, as well as the testing methods by which indoor VOC emissions are determined. Different materials must meet different requirements to be considered compliant for this credit. The building interior and exterior are organized in seven categories, each with different thresholds of compliance. The building interior is defined as everything within the waterproofing membrane. The building exterior is defined as everything outside and inclusive of the primary and secondary weatherproofing system, such as waterproofing membranes and air- and water-resistive barrier materials.

Intent:

To reduce concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment.



EQ CREDIT: DAYLIGHT

Requirements:

Provide manual or automatic (with manual override) glare-control devices for all regularly occupied spaces.

Intent:

To connect building occupants with the outdoors, reinforce circadian rhythms, and reduce the use of electrical lighting by introducing daylight into the space.

¹U.S. Environmental Protection Agency, Health Buildings Healthy People: A Vision for the 21st Century, epa.gov/iaq/pubs/hbhp.html (October 2001) (accessed July 25, 2013).



EQ CREDIT: THERMAL COMFORT

Requirements:

Meet the requirements for both thermal comfort design and thermal comfort control:

- **Option 1:** ASHRAE Standard 55-2010
- **Option 2:** ISO and CEN Standards

Intent:

To promote occupants' productivity, comfort, and well-being by providing quality thermal comfort.



EQ CREDIT: QUALITY VIEWS

Requirements:

Achieve a direct line of sight to the outdoors via vision glazing for 75% of all regularly occupied floor area. View glazing in the contributing area must provide a clear image of the exterior, not obstructed by frits, fibers, patterned glazing, or added tints that distort color balance.

Intent:

To give building occupants a connection to the natural outdoor environment by providing quality views.



FIRESTONE PRODUCTS THAT EARN EQ LEED® CREDITS

ROOFING PRODUCTS

SUNWAVE™ DAYLIGHTING SYSTEM

EQ CREDIT

- DAYLIGHT

WALL PRODUCTS

ENVERGE™ CI EXTERIOR WALL INSULATION

EQ CREDIT

- THERMAL COMFORT

ENVERGE AIR & VAPOR BARRIER

EQ CREDIT

- THERMAL COMFORT



INNOVATION

Sustainable design strategies and measures are constantly evolving and improving. New technologies are continually introduced to the marketplace, and up-to-date scientific research influences building design strategies. The purpose of this LEED® category is to recognize projects for innovative building features and sustainable building practices and strategies.

The Innovation Curve

For 35 years, Firestone has been pushing the envelope to meet the needs of our customers when it comes to outstanding buildings and structures. Our focus on sustainability is one more example of how Firestone is always looking ahead, working to create innovative systems that deliver superior building performance. Firestone's full line of systems and accessories allow the creation of buildings that don't just stand up to the tests of LEED certification, but stand up to the test of time. Be sure to contact your Firestone Building Products professional to learn about our products and how you are building for the future today.



IN CREDIT: INNOVATION

Requirements:

Option 1: Achieve significant, measurable environmental performance using a strategy not addressed in the LEED green building rating system.

Option 2: Achieve one pilot credit from USGBC's LEED Pilot Credit Library.

Option 3: Achieve exemplary performance in an existing LEED V4 prerequisite or credit that allows exemplary performance, as specified in the LEED Reference Guide, V4 edition.

- **Exemplary Performance:** An exemplary performance point is typically earned for achieving double the credit requirements or the next incremental percentage threshold.

Intent:

To encourage projects to achieve exceptional or innovative performance.

REGIONAL PRIORITY

Because some environmental issues are particular to a locale, volunteers from USGBC chapters and the LEED® International Roundtable have identified distinct environmental priorities within their areas and the credits that address those issues. These Regional Priority credits encourage project teams to focus on their local environmental priorities.



REGIONAL PRIORITY CREDIT

Requirements:

Earn up to four of the six Regional Priority credits. These credits have been identified by the USGBC regional councils and chapters as having additional regional importance for the project's region.

Intent:

To provide an incentive for the achievement of credits that address geographically specific environmental, social equity, and public health priorities.

Firestone Building Products offers many products and systems that qualify for Regional Priority Credits. A database of Regional Priority Credits and geographic applicability is available on the USGBC website, www.usgbc.org/rpc. To look up Regional Priority Credits close to your location, Firestone encourages visiting this website.





University of Colorado, Denver (UCD) was creating a new landmark building for the city campus. The Academic Building was designed to symbolize optimism in education and in the future. Each day the building greets UCD students working their way through the University, as they chase the American Dream with a foothold in higher education.

To give the building a future-forward look, and based on satisfaction with previous projects, the architects had specified Firestone Series 2500NR Aluminum Plate Wall Panel for the building in addition to a Firestone UltraPly™ TPO roof. As the building was priced out, it became apparent that 2500NR was not within the budget. To provide the desired envelope performance and look, a team consisting of Firestone engineers, sales and development pros worked to adapt the Firestone Series 3200 Plate panel. Still, the project risked going over budget due to insulation needs.

Again, the team worked to find a solution and incorporated the Firestone Enverge™ Cavity Wall insulation system. This system reduced the need for additional fasteners and the amount of thermal bridging in the insulation. The Enverge was an easy switch from a competitive insulation system.

By allowing Firestone to engineer a system specifically for the Academic Building, the client saved money without sacrificing building efficiency and the design criteria. It was a complete solution from a single source. Key products used include:

- Enverge CI
- 3200NR
- UltraPly TPO

CASE STUDY

UNIVERSITY OF COLORADO (DENVER)

ACADEMIC BUILDING
DENVER, COLORADO

LEED CERTIFICATION LEVEL

- GOLD

BUILDING QUICK STATS

- 132,000 SQ. FT.
- \$68.5 MILLION PROJECT
- 5 STORIES + LECTURE HALL WING
- DOWNTOWN CAMPUS BUILDING HOUSING OFFICES AND CLASSROOMS

SUSTAINABLE SITES CATEGORY - Pages 2-4

ROOFING PRODUCTS	CREDIT OPTIONS				
	Protect or Restore Habitat	Open Space	Rainwater Management	Heat Island Effect	*Places of Respite <i>Healthcare Only</i>
SkyScape™ Vegetative Roofing Systems	•	•	•	•	•
RubberGard™ EcoWhite™ EPDM				•	
EcoWhite Platinum Membrane				•	
Ballasted RubberGard EPDM				•	
UltraPly™ TPO				•	
AcryliTop™ Coating				•	
UltraWhite™ Granulated Cap Sheets				•	
Self-Adhered TPO				•	
UnaClad™ Metal Panel Roofing				•	
White Pre-tape Accessories				•	
WALL PRODUCTS	CREDIT OPTIONS				
	Pilot - Bird Collision Deterrence				
Delta™ Panels	•				
Omega Panels	•				
UC 500	•				
SITE PRODUCTS	CREDIT OPTIONS				
	Construction Pollution Prevention	Rainwater Management			
PondGard™ EPDM Liners	•	•			

INDOOR ENVIRONMENTAL QUALITY CATEGORY - Pages 12-13

ROOFING PRODUCTS	CREDIT OPTIONS
	Daylight
SunWave™ Daylighting System	•
WALL PRODUCTS	CREDIT OPTIONS
	Thermal Comfort
Enverge™ CI Exterior Wall Insulation	•
Enverge Air & Vapor Barrier	•

WATER EFFICIENCY CATEGORY - Page 6

SITE PRODUCTS	CREDIT OPTIONS	
	Requirement - Outdoor Water Use Reduction	WE Credit - Outdoor Water Reuse Reduction
PondGard EPDM Liners	•	•

INNOVATION CATEGORY - Page 14

Contact your Firestone Building Products professional to learn about our products and how you could be building for the future today.

MATERIALS & RESOURCES CATEGORY - Pages 10-11

ROOFING PRODUCTS	CREDIT OPTIONS	
	Building Life-Cycle Impact Reduction	Building Product Disclosures - EPDs
ISO 95+™ GL Insulation	•	•
Tapered ISO 95+ Polyiso Insulation	•	•
RESISTA™ Polyiso Insulation	•	•
RubberGard EPDM Membranes - Mechanically Attached	•	•
RubberGard EPDM Membranes - Adhered Roofing Systems	•	•
UltraPly TPO Roofing Membranes - Mechanically Attached	•	•
UltraPly TPO Roofing Membranes - Adhered Roofing Systems	•	•
Modified Bitumen Roofing Systems - APP Modified Bitumen	•	•
Modified Bitumen Roofing Systems - SBS Modified Bitumen	•	•
WALL PRODUCTS	CREDIT OPTIONS	
	Building Product Disclosures - EPDs	
Enverge CI Exterior Wall Insulation	•	
SITE PRODUCTS	CREDIT OPTIONS	
	Building Life-Cycle Impact Reduction	Building Product Disclosures - EPDs
PondGard EPDM Liners	•	•
GeoGard™ EPDM Membrane	•	•

REGIONAL PRIORITY CATEGORY - Page 15

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ENERGY & ATMOSPHERE CATEGORY - Pages 8-9

ROOFING PRODUCTS	CREDIT OPTIONS	
	Minimum Energy Performance	Optimize Energy Performance
ISO 95+ GL Insulation	•	•
Tapered ISO 95+ Polyiso Insulation	•	•
RESISTA Polyiso Insulation	•	•
ISOGARD™ HD CoverBoard	•	•
ISOGARD HD Composite Board	•	•
HailGard™ Composite Board	•	•
V-Force™ Vapor Barrier Membrane	•	•
SunWave Daylighting System	•	•
SunWave SMRT Daylighting System	•	•
CladGard™ SA Vapor barrier	•	•
CoreGard Vapor Barrier	•	•
WALL PRODUCTS	CREDIT OPTIONS	
	Minimum Energy Performance	Optimize Energy Performance
Enverge CI Exterior Wall Insulation	•	•
Enverge Air & Vapor Barrier	•	•



Firestone

BUILDING PRODUCTS

NOBODY COVERS YOU BETTER.™