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ecore™

Commercial
Flooring

ECOsilence

& LEED

How ECOsilence Flooring
Systems Can Contribute to
Obtaining LEED® v4



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Supersedes all previous versions.
Check website for updates.

ECOsilence

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What is LEED?

Overview

Recycled rubber underlayment is a growing category for sound insulation within the construction industry and continues to increase in popularity as a practical solution for construction applications. The easy installation, durability, and quality of ECOsilence sound insulation are ideal for a wide variety of sound control applications.

The popularity of recycled rubber sounds insulation is also on the rise because of its positive environmental attributes. Benefits, such as high-recycled content, low-VOC emissions, and low life-cycle costs, make it an environmentally preferable underlayment solution for a number of applications. These benefits also enable it to potentially contribute to a number of points under the Leadership in Energy & Environmental Design (LEED) rating system. Ecore designed this educational guide to assist specifiers in understanding how our products apply to the LEED v4 rating system.

What Is LEED?

LEED has driven the green building market by creating a demand for environmentally preferable building products. This helped to transform the way we think about how our buildings and communities are designed, constructed, maintained, and operated.

LEED addresses the entire building lifecycle. Building projects must satisfy prerequisites and earn points to achieve different levels of certification. Prerequisites and credits differ for each of the four rating systems. A project team must determine which rating system and category is the best fit for their project.

Rating Systems:

Building Design & Construction (BD+C)

This rating system is appropriate for new construction and major renovation of these categories: New Construction, Core and Shell, Schools, Retail, Hospitality, Data Centers, Warehouses and Distribution Centers, Healthcare, Homes, and Multifamily Midrise.

Interior Design & Construction (ID+C)

This rating system is appropriate for interior spaces that are a complete interior fit-out of these categories: Commercial Interiors, Retail, and Hospitality.

Building Operations & Maintenance (O+M)

This rating system is appropriate for buildings that are undergoing improvement work with little to no construction. This system applies to these categories: Existing Buildings, Schools, Retail, Hospitality, Data Centers, and Warehouses and Distribution Centers.

Neighborhood Development (ND)

This rating system is appropriate for new land development projects or redevelopment projects containing residential uses, nonresidential uses, or a mix. This system includes these categories: Neighborhood Development Plan and Built Project.

How ECOsilence Can Apply to LEED

The Benefits of LEED

Why is obtaining LEED certification beneficial? In addition to the obvious environmental benefits, certification proves to the market that a building is efficient and incorporates responsible building practices. LEED certification showcases environmental commitment and leadership to both the community and employees. As a result, positive publicity, and exposure could be generated.

Green buildings have also been proven to be more economically efficient as a result of these factors:

- Increased health and safety benefits for employees or students
- Increased employee productivity and lower turnover and absenteeism
- Increased sales in retail establishments
- Reduced operating costs
- Increased building evaluation and return on investment
- Qualification for money-saving incentives, like tax rebates and zoning allowances

How ECOsilence can apply to LEED

Many products have the potential to contribute points to LEED; but, since credits are based on the performance of all the products involved in a particular project, there is not one stand-alone product that can guarantee LEED credits. It is the combination and the weight of each that is critical.

ECOsilence, which is manufactured by Ecore, is designed to meet the stringent criteria required to help earn points under 2 of the 5 categories of LEED—Materials and Resources and Indoor Environmental Quality. The Materials and Resources category deals with the conservation, purchasing, and waste management of physical products. Indoor Environmental Quality includes the conditions inside a building, such as air quality, lighting, thermal conditions, ergonomics, acoustics, and their effect on occupants. Based on these criteria, ECOsilence products can, potentially, contribute up to 7 LEED points in BD+C and ID+C, 4 LEED points in BD+C: Homes/Midrise, and 3 LEED points in O+M.

BD+C, ID+C: — ECOsilence LEED Credit Areas

Category	Credit Title	B+C Points Attainable	ID+C Points Attainable
Materials & Resources	Building Product Disclosure and Optimization-Environmental Product Declarations	1	1
	Building Product Disclosure and Optimization-Sourcing of Raw Materials	1	1
	Building Product Disclosure and Optimization-Material Ingredients	1	1
	Construction and Demolition Waste Management	2	2
Indoor Environmental Quality	Acoustic Performance	1-2 (Except Core & Shell, Retail)	2 (except Retail)

O+M — ECOsilence LEED Credit Areas

Category	Credit Title	Points Attainable
Materials and Resources	Purchasing-Facility Maintenance and Renovation	1
	Solid Waste Management-Facility Maintenance and Renovation	2

BD+C: Homes — ECOsilence LEED Credit Areas

Category	Credit Title	Points Attainable
Materials & Resources	Environmentally Preferable Products	1
	Construction Waste Management	3

BD+C, ID+C — Materials and Resources

Definition of BD+C, ID+C Credits — Materials and Resources

Building Product Disclosure and Optimization — Environmental Product Declarations (possible 2 points)

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 (1/4 point)
- Industry-wide (generic) EPD (1/2 point)
- Product-specific Type III EPD (1 point)

AND/OR

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. 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)
- Depletion of the stratospheric ozone layer
- Acidification of land and water sources
- Eutrophication
- Formation of tropospheric ozone
- Depletion of nonrenewable energy resources

How ECOsilence can Contribute:

Ecore has obtained an externally verified, product-specific Type III Environmental Product Declaration for ECOsilence. To view our EPD, please visit: <http://ecorecommercialflooring.com/Environmental-Product-Declarations.php>.

Potential Strategies:

Research and specify products from manufacturers who have available EPDs or that meet one or more of the attributes listed in the credit requirements under Option 2. During construction, coordinate a review of the submittals to ensure that selected products meet credit requirements. To track progress toward credit achievement, regularly enter information into the Materials and Resources Building Product Disclosure and Optimization calculator. Calculate compliance of products and materials using the equations provided by the USGBC.



BD+C, ID+C — Materials and Resources

Definition of BD+C, ID+C Credits — Materials and Resources:

Building Product Disclosure and Optimization - Sourcing of Raw Materials (possible 2 points)

Option 1: Raw Material Source and Extraction Reporting (1 point)

Use at least 20 different permanently installed products sourced from at least five different manufacturers that have publically released a report from their raw material suppliers, which include, raw material supplier extraction locations, a commitment to long-term ecologically responsible land use, a commitment to reducing environmental harms from extraction and/or manufacturing processes, and a commitment to meeting applicable standards or programs voluntarily that address responsible sourcing criteria. Reports from manufacturers may be self-declared (0.5 points) or a third-party verified corporate sustainability report (1 point).

AND/OR

Option 2: Leadership Extraction Practices (1 point)

Use permanently installed building products that meet at least one responsible extraction criteria:

- Extended producer responsibility
- Bio-based materials
- Certified wood products
- Materials reuse
- Recycled content

ECOsilence Recycled Content

Product	Thickness	Post-Consumer Recycled Content
ECOsilence 2	2mm	94%
ECOsilence 5	5mm	94%
ECOsilence 10	10mm	94%

How ECOsilence can Contribute:

ECOsilence is comprised of shredded and cleaned recycled tire rubber (post-consumer waste) and some EPDM flecks. The result is a polymerically bound insulation with very high recycled content. Recycled content is defined in accordance with the International Organization for Standardization® document, ISO 14021 – Environmental labels and declarations:

- Postconsumer material – waste materials diverted from the waste stream after consumer or commercial use.
- Preconsumer material – material diverted from the waste stream during the manufacturing process. Excluded is rework, regrind, or scrap materials capable of being reclaimed within the same process that generated them.

Recycled content is the sum of postconsumer recycled content plus one-half the preconsumer recycled content, based on cost. Products meeting recycled content criteria are valued at 100 percent of their cost for the purposes of credit achievement calculation.

Please consult the recycled content chart for more information.

Potential Strategies:

Establish a project goal to utilize materials from manufacturers who disclose raw material sourcing information and/or manufacturers that utilize responsible extraction. During the design phase, specify products that meet one or more of the criteria listed in the credit requirements. Try to focus on applications that use either significant quantities of materials or small amounts of high-cost materials. During construction, track your purchases in the Materials and Resources Building Product Disclosure and Optimization calculator. Do not forget to collect relevant documentation from manufacturers.

BD+C, ID+C — Materials and Resources

Definition of BD+C, ID+C Credits— Materials and Resources:

Building Product Disclosure and Optimization— Material Ingredients (possible 2 points)

Option 1: Material Ingredient Reporting (1 point)

Use at least 20 different permanently installed products sourced from at least five different manufacturers that use any of these programs to demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm):

- Manufacturer Inventory
- Health Product Declaration (HPD)
- Cradle to Cradle

AND/OR

Option 2: Material Ingredient Optimization (1 point)

Use permanently installed building products that document their material ingredient optimization using one of the paths below:

- GreenScreen v1.2 Benchmark
- Cradle to Cradle Certified
- REACH Optimization

AND/OR

Option 3: Product Manufactured Supply Chain Optimization (1 point)

Use permanently installed building products that are sourced from product manufacturers who engage in validated and robust safety, health, hazard, and risk programs.

How ECOsilence can Contribute:

Ecore is in the process of creating a Health Product Declaration for ECOsilence. This document will include full disclosure of known hazards in compliance with the Health Product Declaration Open Standard. Please check back here and/or on the Product Declarations section of the Ecore Commercial Flooring website to access the HPD when it becomes available.

Potential Strategies:

During the design phase, identify products that meet the criteria. Specify compliant products and track your purchases. Calculate your compliance as you go and collect all ingredient disclosure reports.

BD+C, ID+C — Materials and Resources

Definition of BD+C, ID+C Credits — Materials and Resources:

Construction and Demolition Waste Management

Option 1: Diversion (1-2 Points)

Path 1 (1 point): Divert at least 50 percent of the total construction and demolition from at least three material streams.

OR

Path 2 (2 points): Divert at least 75 percent of the total construction and demolition material from at least four material streams.

OR

Option 2: Reduction of Total Waste (2 points)

Do not generate more than 2.5 pounds of construction waste per square foot of the building's floor area.

How ECOsilence can Contribute:

- All ECOsilence salvages and overages can be packaged and shipped back at the owner's expense to Ecore's Redeux Reclamation Program in Lancaster, PA.
- All old ECOsilence materials may be packaged and shipped back at the owner's expense to Ecore's Redeux Reclamation Program in Lancaster, PA.

Customers must first submit an application to have their material accepted into the program. Both product scrap and old materials must be free of excessive adhesive and foreign contaminants, including stones, wood, concrete, asphalt, etc. Materials accepted into the Redeux program will be sorted, shredded, cleaned, and ground for the next generation of flooring, underlayment, and industrial products. For more information on Ecore's Redeux program, including an application and requirements, please email redeux@ecoreintl.com or visit www.ecorecommercialflooring.com/redeux.php.

Potential Strategies:

The key to success for this credit is to start early to allow time for planning and coordination, identifying strategies, developing contractual agreements, and educating project teams. Be sure to integrate the contractor into the early design phase. Establish goals of diversion from disposal in landfills and incineration facilities, and adopt a construction waste management plan to achieve these goals. Goals and strategies for waste diversion should be developed as part of the construction waste management plan prerequisite.

Identify products that can be recycled or whose manufacturer offers a take back program. Consider recycling cardboard, metal, brick, rubber, concrete, plastic, clean wood, glass, gypsum wallboard, carpet, and insulation. Other strategies include source reduction, such as modular construction, reduced packaging, pre-fabrication, and diversion options. Establish infrastructure, practices, and policies, such as designating a specific area on the construction site for segregated or commingled collection of recyclable materials. Be sure to track recycling efforts throughout the construction process, keeping reports and receipts for documentation. It is also helpful to calculate diversion rates regularly so adjustments can be made to meet goals.



Definition of BD+C, ID+C Credits — Indoor Environmental Quality:

Acoustic Performance (possible 1 point — except Core & Shell, Retail) (possible 2 points in BD+C: Healthcare, ID+C: Hospitality, Commercial Interiors)

For all occupied spaces, meet the requirements, as applicable, for HVAC background noise, sound isolation, reverberation time, and sound reinforcement and masking.

HVAC Background Noise

Achieve maximum background noise levels from heating, ventilating, and air conditioning (HVAC) systems per 2011 ASHRAE Handbook, HVAC Applications, Chapter 48, Table 1; AHRI Standard 885-2008, Table 15; or a local equivalent. Calculate or measure sound levels.

Sound Isolation

Meet the composite sound transmission class (STCC) ratings, depending on adjacency combinations or local building code, whichever is more stringent.

Reverberation Time

Meet the reverberation time requirements based on room type.

Sound Reinforcement and Masking Systems

Sound Reinforcement

For all large conference rooms and auditoriums seating more than 50 persons, evaluate whether sound reinforcement and AV playback capabilities are needed. If needed, the sound reinforcement systems must meet these criteria:

- Achieve a speech transmission index (STI) of at least 0.60 or common intelligibility scale (CIS) rating of at least 0.77 at representative points within the area of coverage to provide acceptable intelligibility.
- Have a minimum sound level of 70 dBA and must maintain sound-level coverage within ± 3 dB at the 2000 Hz octave band throughout the space.

Masking Systems

For projects that use masking systems, the design levels must not exceed 48 dBA. Ensure that loudspeaker coverage provides uniformity of ± 2 dBA and that speech spectra are effectively masked.

How ECOsilence can Contribute:

Acoustic performance of a space is the combination of all the elements in the room, including flooring. Rubber is inherently better at sound absorption and transmission than other types of surfacing. In addition ECOsilence is specifically designed to insulate sound.

ECOsilence has been tested in more than 400 laboratory and field test assemblies. For more information on these results, please visit: http://www.ecorecommercialflooring.com/ecosilence/ecosilence_solutions.php.

Potential Strategies:

The first step is determining the acoustic needs of a space based on activities, user groups, and sound/privacy sensitivity requirements. Evaluate how the four performance areas addressed by this credit affect the applicable space. Prepare a log or spreadsheet to record relevant acoustic information for each space. Identify products and equipment that could contribute to the acoustic performance of the occupied space. Implement and verify HVAC background noise, sound isolation, reverberation time, and sound reinforcement and masking.

O+M — Materials and Resources

Definition of O+M— Materials and Resources:

Purchasing - Facility Maintenance and Renovation (possible 2 points)

Option 1: Products and Materials (1 point)

Purchase at least 50 percent, by cost, of the total maintenance and renovation materials that meet at least one of these criteria:

- Recycled content
- Wood products
- Bio-based materials
- Materials reuse
- Extended producer responsibility
- GreenScreen v1.2 Benchmark
- Cradle to Cradle Certified
- REACH Optimization
- Product Manufacturer Supply Chain Optimization
- Low emissions of VOCs
- VOC content requirements for wet-applied products
- Low emissions of formaldehyde

AND/OR

Option 2: Furniture (1 point)

Purchase at least 75%, by cost, of total furniture and furnishings that meet one or more of these criteria:

- Recycled content
- Wood products
- Bio-based materials
- Materials reuse
- Extended producer responsibility
- GreenScreen v1.2 Benchmark
- Cradle to Cradle Certified
- REACH Optimization
- Product Manufacturer Supply Chain Optimization
- Low emissions of VOCs

OR

Option 3: No Alterations or Furniture Purchasing (1 point)

Make no alterations to the project space and do not purchase any furniture.

How ECOSilence can Contribute:

ECOSilence can potentially contribute to two of the above criterion: recycled content and extended producer responsibility. ECOSilence is comprised of shredded and cleaned recycled tire rubber (post-consumer waste) and some EPDM flecks. For more information about recycled content, please refer to page 6 of this guide.

ECOSilence's extended producer responsibility program is called Redeux, under which Ecore can take back scrap and old material. For more information about the Redeux program, please see page 8.

Potential Strategies:

Review schedules for space planning or tenant fit-outs to determine whether maintenance, renovations, or furniture purchases will occur during the performance period. Determine which credit options are suitable for the project and timeline. Teams may select Option 1 and 2 simultaneously or Option 3. For option 1 and 2, evaluate purchasing patterns and determine percentage compliance. Try to swap out non-compliant items for compliant substitutes. Develop a tracking system to gather data for all purchases for the building. For option 3, verify that no facility renovation activities will be undertaken during the pre-determined performance period.

O+M — Materials and Resources

Definition of O+M — Materials and Resources:

Solid Waste Management - Facility Maintenance and Renovation (possible 2 points)

Divert at least 70 percent of the waste (by weight or volume) generated by facility maintenance and renovation activities from disposal in landfills and incinerators. Include materials and products permanently and semi-permanently installed in the project (flooring, wall coverings, etc.).

Exclude furniture and furnishings that pose human health concerns as well as components not considered base building elements; mechanical, electrical, and plumbing components; and specialty items (such as elevators).

How ECOsilence can Contribute:

All ECOsilence salvages, overages, and old material can be packaged and shipped back, at the owner's expense, to Ecore's Redeux Reclamation Program in Lancaster, PA. For more information about the Redeux program, please see page 8 of this guide.

Potential Strategies:

Implement the facility maintenance and renovations solid waste management policy developed in the corresponding prerequisite. As maintenance and renovation projects are scheduled, be sure to share this policy with contractors and other personnel involved in the work, so waste diversion goals can be met. You may adapt your policy to better suit renovations projects as they come along. Develop a tracking system to gather data on all facility maintenance and renovations waste during the performance period.



BD+C: Homes and Midrise — Materials and Resources

Definition of BD+C: Homes and Midrise — Materials and Resources:

Environmentally Preferable Products (BD+C: Homes — possible 4 points, BD+C: Midrise – possible 5 points)

Use building component materials that meet one or more of these criteria:

Option 1: Local Production

Use products that were extracted, processed, and manufactured locally (100 miles) for these components:

- Framing (0.5 point)
- Aggregate for concrete and foundation (0.5 point)
- Drywall or interior sheathing (0.5 point)

AND/OR

Option 2: Environmentally Preferable Products

Use products that meet one or more of the following criteria (0.5 points each). At least 90 percent of each compliant building component, by weight or volume, must meet one of the following requirements. A single component that meets more than one criterion does not earn additional credit.

- The product contains at least 25 percent reclaimed material, including salvaged, refurbished, or reused materials.
- The product contains at least 25 percent postconsumer or 50% preconsumer recycled content.
- Wood products must be Forest Stewardship Council (FSC) Certified.
- Bio-based products must meet the Sustainable Agriculture Network's Sustainable Agriculture Standard.
- Concrete that consists of at least 30 percent fly ash or slag used as a cement substitute and 50 percent recycled content or reclaimed aggregate OR 90 percent recycled content or reclaimed aggregate.
- Products purchased from a manufacturer that participates in an extended producer responsibility program or is directly responsible for extended producer responsibility.

How ECOsilence can Contribute:

All ECOsilence products are made with recycled materials, resulting in a high recycled content. All ECOsilence products exceed 25 percent postconsumer recycled content. For more information on recycled content, please consult page 6.

Potential Strategies:

During the design phase, look for local and environmentally preferable products. Be sure to collect relevant documentation from the manufacturer.

BD+C: Homes and Midrise — Materials and Resources

Definition of BD+C: Homes and Midrise — Materials and Resources:

Construction Waste Management (possible 3 points)

Reduce total construction waste or divert from landfills and incinerators a large proportion of the waste generated from new construction. Excavated soil, land-clearing debris, and alternative daily cover (ADC) do not qualify for this credit. Any waste-to-energy is not considered recycling for this credit.

Percentage reduction	Points
10%	0.5
20%	1.0
30%	1.5
40%	2.0
50%	2.5
60%	3.0

How ECOsilence can Contribute:

All ECOsilence salvages, overages, and old material can be packaged and shipped back, at the owner's expense, to Ecore's Redeux Reclamation Program in Lancaster, PA. For more information about the Redeux program, please see page 8 of this guide.

Potential Strategies:

During the design phase, establish waste reduction goals. Try preventing construction waste by using modular construction, pre-cut materials, and purchasing only as much as you need. For the waste that is generated, develop a waste management reduction plan regarding sorting and diverting waste materials. Document quantities of waste and calculate compliance based on percentage reduced.



Locally Sourced Materials

Locally Sourced Materials

For credit achievement calculation, products sourced (extracted, manufactured, purchased) within 100 miles of the project site are valued at 200 percent of their base contributing cost for these credit categories:

- BD+C, ID+C: Building Product Disclosure and Optimization - Environmental Product Declarations
- BD+C, ID+C: Building Product Disclosure and Optimization - Sourcing of Raw Materials
- BD+C, ID+C: Building Product Disclosure and Optimization - Material Ingredients (option 2 or 3)
- O+M: Purchasing - Facility Maintenance and Renovation



About Ecore

Ecore

Ecore, the manufacturer of ECOSilence, was born “green,” and has been making smart choices for more than a century. What began as the Lancaster Cork Company in 1876 is now Ecore. Based in South Central, PA, Ecore started by harvesting the benefits of wood without harming a tree (Ecore cork products), and has evolved into mining waste streams for high performance raw materials, dominated currently by recycled rubber.

Ecore still produces cork, but its current focus is on transforming reclaimed waste into unique performance surfacing for the commercial, athletic, fitness, and sound insulation markets. As North America’s largest consumer of recycled scrap-tire rubber, Ecore transforms more than 75-million pounds of material every year into attractive, durable flooring. That’s like keeping more than 2,000 trailer loads of discarded tires out of America’s landfills, OR conserving more than a million barrels of oil. Ecore will continue to produce the smartest, highest-performing, and most eco-logically responsible flooring products in the U.S. The company is actively affiliated with the U.S. Green Building Council (USGBC) and the American Society of Testing Materials (ASTM).



For more information on ECOSilence,
Call **1-877-258-0843** or visit www.ecorecommercialflooring.com

Manufactured in the
U.S.A. by:

ecore™