

April
2009

PlayGuard[®]

PLAYGROUND SAFETY SURFACING

& LEED

How Playguard Playground Safety
Surfacing Can Contribute To
Obtaining LEED[®] Credits



Revised on 4/16/09
Supersedes all previous
versions. Check website
for updates.

PlayGuard[®]

PLAYGROUND SAFETY SURFACING

Table of Contents

- 3** What is LEED?
Overview
- 4** How PlayGuard Can Apply to LEED
- 5** LEED-NC: Materials and Resources
Construction Waste Management
- 6** LEED-NC: Materials and Resources
Recycled Content
- 9** LEED-NC: Indoor Environmental Quality
Low-Emitting Materials
- 11** LEED 2009 Credit Alignment
The Differences/Similarities of LEED rating systems
- 12** About PlayGuard and ECORE International™

Overview

Recycled rubber is a growing category for playground surfacing within the flooring industry and continues to increase in popularity as a practical solution for playground applications. The easy installation, durability, and vast variety of color options available in Playguard Safety Surfacing is ideal for playground surfacing and rooftop applications.

The demand for recycled rubber flooring is increasing due to its many positive environmental attributes. The high recycled content and low-VOC emissions and life cycle costs make it an environmentally sensitive choice for a variety of playground and rooftop applications. These benefits also enable it to potentially contribute points towards LEED certification. Playguard Playground Safety Surfacing is designed to meet the stringent criteria required to help earn points in 2 of the 6 categories of LEED. Based on these criteria, Playguard products can assist specifiers by potentially contributing up to 8 LEED points.

What is LEED?

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System represents the U.S. Green Building Council's effort to provide a national standard for what constitutes a "green" building. It is utilized as a design guideline and certification tool for architects and designers seeking to develop high-performance, sustainable buildings.

There are currently 5 versions of LEED available:

- LEED for New Construction and Major Renovations (LEED-NC) is designed to guide and distinguish high-performance commercial and institutional projects.
- LEED for Existing Buildings: Operations & Maintenance (LEED-EB) provides a benchmark for building owners and operators to measure operations, improvements, and maintenance.
- LEED for Commercial Interiors (LEED-CI) is a benchmark for the tenant improvement market that gives the power to make sustainable choices to tenants and designers.
- LEED for Core & Shell aids designers, builders, developers, and new building owners in implementing sustainable design for new core and shell construction.
- LEED for Schools recognizes the unique nature of the design and construction of K-12 schools. Based on the LEED for New Construction rating system, it addresses issues such as classroom acoustics, master planning, mold prevention, and environmental site assessment.

The LEED rating system defines the requirements, by category (listed above), needed to achieve points under each area. Projects earn one or more points toward certification by meeting or exceeding each credit's technical requirements. Points compute to a final score that relates to one of four possible levels of certification: LEED Certified, LEED Silver, LEED Gold or LEED Platinum.

In the past nine years, over 1,753 projects have attained LEED certification and over 14,390 projects are registered and undergoing the LEED certification process. It is estimated that by 2010, approximately 10% of commercial construction starts are expected to be green and the green building products market is projected to be worth \$30-\$40 billion annually. Every business day, \$464 million worth of construction registers with LEED, clearly illustrating the increasing popularity of environmentally sustainable building practices.

This document outlines the specific requirements under LEED-NC, with a comparison of the key similarities and differences of all current rating systems.

How PlayGuard 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 your community and your 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 the following factors:

- Increased health and safety benefits of employees or students
- Increased employee productivity, and lower turnover and absenteeism
- Reduced operating costs
- Increased sales in retail establishments
- Increased building evaluation and return on investment

How PlayGuard 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 you will obtain LEED credits. It is the combination and the weight of each that is critical.

Playguard Playground Safety Surfacing is designed to meet the stringent criteria required to help earn points under 2 of the 6 categories of LEED. Based on these criteria, Playguard products can assist specifiers by potentially contributing toward earning up to 8 LEED points.

LEED Credit Areas Impacted by Flooring

Category	Credit Title	Credit Number	# of Points Attainable	Version
Materials & Resources	Construction Waste Management	MR 2.1	1	NC - CI - EB - Schools
	Construction Waste Management	MR 2.2	1	NC - CI - EB - Schools
	Recycled Content	MR 4.1	1	NC - CI - EB - Schools
	Recycled Content	MR 4.2	1	NC - CI - EB - Schools
	Local/Regional Materials	MR 5.1	1	NC - CI - EB - Schools
	Local/Regional Materials	MR 5.2	1	NC - CI - EB - Schools
Indoor Environmental Quality	Low-Emitting Materials - Adhesives	EQ 4.1	1	NC - CI - EB - Schools
	Low-Emitting Materials - Flooring Systems	EQ 4.3	1	NC - CI - Schools

NC

LEED for New Construction and Major Renovations is designed to guide and distinguish high performance commercial and institutional projects.

CI

LEED for Commercial Interiors is a benchmark for the tenant improvement market that gives the power to make sustainable choices to tenants and designers.

EB

LEED for Existing Buildings: Operations & Maintenance provides a benchmark for building owners and operators to measure operations, improvements, and maintenance.

Core/Shell

LEED for Core & Shell aids designers, builders, developers, and new building owners in implementing sustainable design for new core and shell construction.

Schools

LEED for Schools recognizes the unique nature of the design and construction of K-12 schools. Based on the LEED for New Construction rating system, it addresses issues such as classroom acoustics, master planning, mold prevention, and environmental site assessment.

Definition of LEED-NC Credits

MR 2.1 & MR 2.2:

MR 2.1 ... (1 point)

- Recycle and/or salvage at least 50% of non-hazardous construction and demolition debris. Develop and implement a construction waste management plan that, at a minimum, identifies the materials to be diverted from disposal and whether the materials will be sorted on-site or commingled. Calculations can be done by weight or volume but must be consistent throughout.

MR 2.2 ... (1 point in addition to MR 2.1)

- Recycle and salvage an additional 25% beyond MR 2.1 (75% total) of non-hazardous construction and demolition debris.

How PlayGuard can contribute:

PlayGuard can contribute in two ways:

- All salvages and overages can be packaged and shipped back at the owner's expense to ECORE in Lancaster, PA (product manufacturer).

- Modular Playguard tiles, both 2-1/2" and 3-3/4" may be packaged and shipped back at the owner's expense to ECORE in Lancaster, PA.

Both product scrap and Playguard tiles must be free of adhesive, dowel rods and debris, including dirt, concrete or asphalt. It will be reground and used in other materials ECORE manufactures.

For more information on ECORE's reclamation program, please call 1-800-322-1923.

Potential Strategies:

Establish goals of diversion from disposal in landfills and incineration facilities and adopt a construction waste management plan to achieve these goals. Consider recycling cardboard, metal, brick, rubber, mineral fiber panel, concrete, plastic, clean wood, glass, gypsum wallboard, carpet, and insulation. Designate a specific area on the construction site for segregated or commingled collection of recyclable materials, and track recycling efforts through the construction process.

LEED-NC: Materials and Resources

Recycled Content

Definition of LEED-NC Credits

MR 4.1 & MR 4.2:

MR 4.1 ... (1 point)

- Use materials with recycled content such that the sum of post-consumer recycled content plus one half (the value of) the pre-consumer content constitutes at least 10% of the total value of the materials in the project.
- The value of the recycled content portion of a material or furnishing shall be determined by dividing the weight of recycled content in the item by the total weight of all material in the item, then multiplying the resulting percentage by the total value of the item.

MR 4.2 ... (1 point in addition to MR 4.1)

- Use materials with recycled content such that the sum of post-consumer recycled content plus one half (the value of) the pre-consumer content constitutes at least 20% of the total value of the materials in the project.

How PlayGuard can contribute:

PlayGuard Playground Safety Surfacing is comprised of shredded and cleaned SBR tire rubber and colorful EPDM flecks. The result is a polymerically bound floor with very high recycled content.

Recycled content is defined in accordance with the International Organization for Standardization® document, ISO 14021 – Environmental labels and declarations:

- Post-consumer material – waste materials diverted from the waste stream after consumer or commercial use.
- Pre-consumer material – materials diverted from the waste stream during the manufacturing process.

Excluded is regrind, rework, or scrap.

Potential Strategies:

Establish a project goal for recycled content materials and identify material suppliers that can achieve this goal. During construction, ensure that the specified recycled content materials are installed and quantify the total percentage of recycled content materials installed.

PlayGuard Recycled Content

Pigmented	Thickness	Product Number	Total Recycled Content (post-consumer)
	2 - 1/2"	PG40	90%
		PG41	90%
		PG42	89%
		PG43	88%
	3 - 3/4"	PG40	90%
PG41		90%	
PG42		88%	
PG43		88%	

Carnival Ultra	Thickness	Product Number	Total Recycled Content (post-consumer)
	2 - 1/2"	PG60	85%
		PG61	85%
		PG62	85%
		PG63	85%
		PG64	85%
		PG65	85%
		PG66	85%
		PG68	87%
		PG69	87%
	4 - 1/4"	PG60	89%
		PG61	89%
		PG62	89%
		PG63	89%
		PG64	89%
		PG65	89%
		PG66	89%
		PG68	90%
PG69		90%	

Safari Ultra	Thickness	Product Number	Total Recycled Content (post-consumer)
	2 - 1/2"	PG50	90%
		PG51	89%
		PG52	89%
		PG53	89%
		PG54	89%
		PG55	89%
		PG56	89%
		PG57	89%
		PG58	88%
		PG59	88%
	4 - 1/4"	PG50	92%
		PG51	91%
		PG52	91%
		PG53	91%
		PG54	91%
		PG55	91%
		PG56	91%
PG57		91%	
PG58		91%	
PG59	91%		

LEED-NC: Materials and Resources

Local/Regional Materials

Definition of LEED-NC Credits

MR 5.1 & MR 5.2:

MR 5.1 ... (1 point)

- Use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for a minimum of 10% (based on cost) of the total material value. If only a fraction of a product or material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value.

MR 5.2 ... (1 point in addition to MR 5.1)

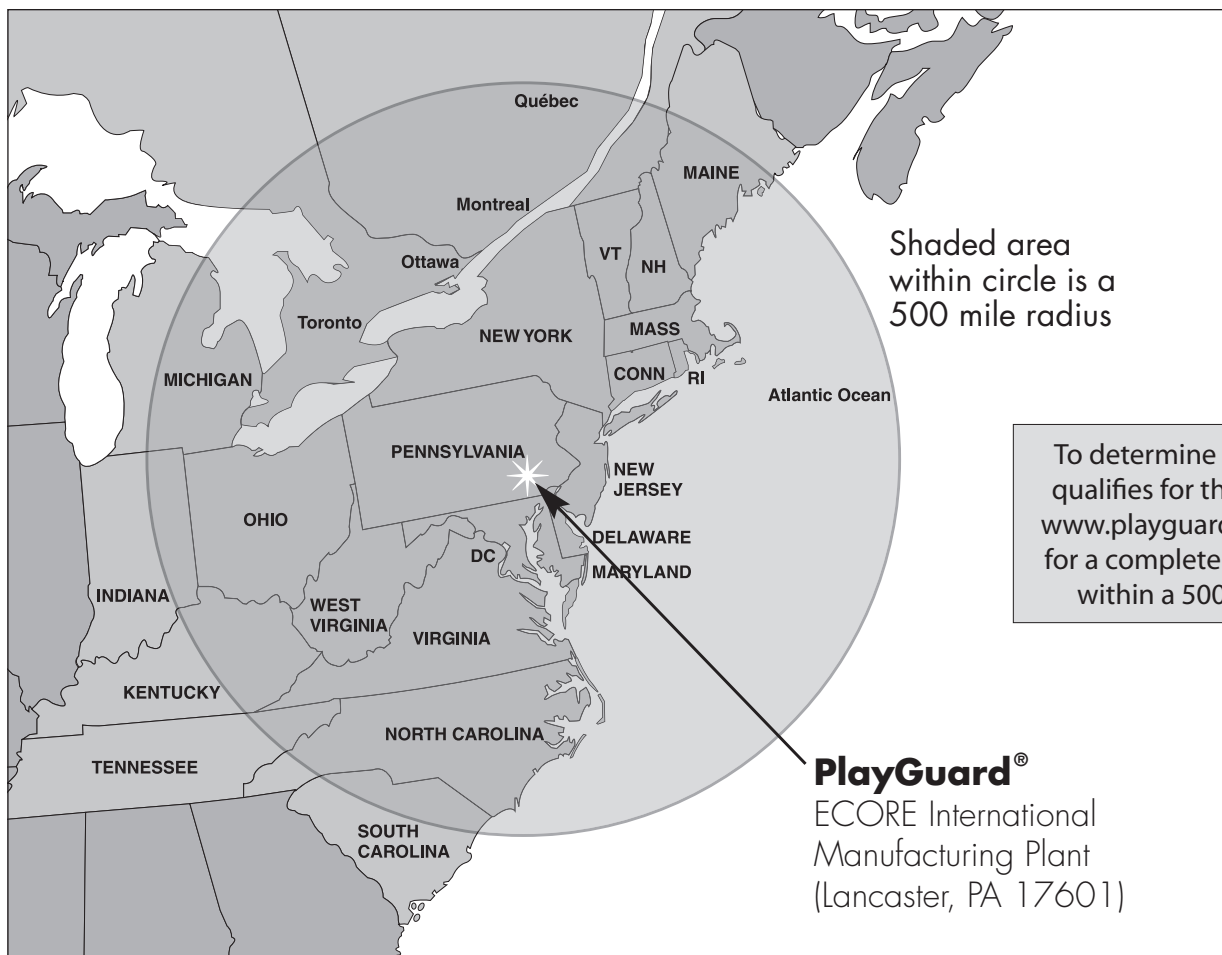
- Same as above but with a minimum of 20% of the total material value.

How PlayGuard can contribute:

PlayGuard Playground Safety Surfacing systems are manufactured in Lancaster, PA. All product components, including both SBR and EPDM rubber are manufactured on-site.

Potential Strategies:

Establish a project goal for locally sourced materials and identify materials and material suppliers that can achieve this goal. During construction, ensure that the specified local materials are installed and quantify the total percentage of local materials installed.



Definition of LEED-NC Credit EQ 4.1:

EQ 4.1...(1 point)

- Adhesives and sealants must be lower than the current VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule #1168.

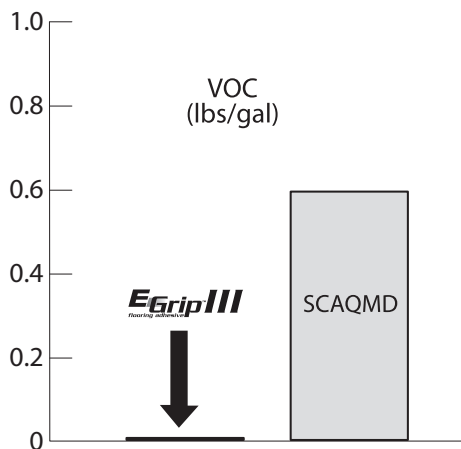
How PlayGuard can contribute:

E-Grip III, a revolutionary zero-VOC adhesive (SCAQMD) Rule #1168. The new low odor, one-component urethane adhesive is formulated for use with indoor and outdoor applications. Easy to trowel and apply, its moisture-cured, no-mix formula provides excellent adhesion to elastomers, concrete and wood. The product is solvent free, anti-microbial, and has a 12 month shelf life.

The zero-VOC content of E-Grip III is far less than that which is required by the California South Coast Air Quality Management District (SCAQMD) Rule #1168 for adhesive flooring and sealant applications, the most demanding standard in the U.S.

Potential Strategies:

Specify low-VOC materials in construction documents. Ensure that VOC limits are clearly stated in each section where adhesives and sealants are used. Review product cut sheets, MSD sheets, signed attestations or other official literature from the manufacturer clearly identifying the VOC contents or compliance with referenced standards.



E-Grip III: Recycled Rubber Flooring Adhesive

PHYSICAL DATA

Adhesive Type:	Single component polyurethane	Moisture Vapor Emission of Concrete Floor:	Maximum 5.5 lbs per ASTM F 1869
Color:	Gray	Flashpoint:	> 500°F
Antimicrobial:	Yes	Shelf Life:	12 Months
Adhesive Cure System:	Moisture-cured	Working Time:	30-40 mins
VOC Content:	0 (calculated) lbs/gal	Trowel:	1/16" x 1/16" x 1/16" square notch
Solvents:	0 (calculated) lbs/gal	Coverage:	95 sq ft/gal - 1/16" notched trowel 60 sq ft/gal - 1/8" notched trowel
Freeze/Thaw Stability:	Stable		
Application Temp:	40°F to 100°F		

Floor Score Certification

Definition of LEED-NC Credit

EQ 4.3:

EQ 4.3

- All flooring must comply with the following as applicable to the project scope.

All hard surface flooring must be certified as compliant with the FloorScore standard by an independent third-party. Flooring products covered by FloorScore include vinyl, linoleum, laminate flooring, wood flooring, ceramic flooring, rubber flooring, wall base, and associated sundries. OR All flooring products will meet the testing and product requirements of the California Department of Public Health Standard Practice for The Testing Of Volatile Organic Emissions From Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda.

Potential Strategies:

Clearly specify requirements for product testing and/or certification in the construction documents. Select products that are FloorScore certified or for which testing has been done by qualified independent laboratories in accordance with the appropriate requirements.

How PlayGuard can contribute:

Indoor applications of Playguard Playground Safety Surfacing have earned FloorScore certification. The FloorScore program was developed by the Resilient Floor Covering Institute (RFCI) in conjunction with Scientific Certification Systems (SCS), which tests and certifies flooring, as well as flooring adhesive products and certifies production facilities for compliance with rigorous indoor air quality emission requirements. Individual volatile organic compounds (VOC's) are evaluated using health-based specifications.



PlayGuard is FloorScore Certified

PlayGuard Playground Safety Surfacing has earned FloorScore certification for indoor applications. The FloorScore program was developed by the Resilient Floor Covering Institute (RFCI) in conjunction with Scientific Certification Systems (SCS), which tests and certifies flooring as well as flooring adhesive products, and certifies production facilities for compliance with rigorous indoor air quality emission requirements. Individual volatile organic compounds (VOCs) are evaluated using health-based specifications. Flooring and adhesives that earn FloorScore certification qualify for use in high performance schools and office buildings. Products bearing the FloorScore label meet the indoor air emissions criteria and meet the Collaborative for High Performance Schools (CHPS) criteria (Section 01350) for indoor air quality in classrooms as described in the State of California's Department of Health Services Standard Practice.

The Key Differences and Similarities of LEED Rating Systems

LEED 2009 is a new version of the rating system that delivers against key environmental and human health impacts, and puts in place a transparent framework for weighting credits accordingly, based on the best available science. LEED 2009 consists of credit alignment and harmonization; transparent environmental and human impact credit weighting; regionalization; and a predictable development cycle. The organizational structure now being used to manage LEED makes many of the credits congruent across all rating systems. The following chart outlines the similarities and differences between the various LEED rating systems.

LEED-NC	LEED-CI	LEED-EB
General		
Applies to whole buildings	Applies to tenant improvements of new or existing office space	Applies to facility management policies and measured performance
Materials and Resources		
MR 2: 1 point if 50% of construction debris is diverted from landfills; 2 points for 75%	MR 2: Same as NC	MRc2 offers points for green purchasing, including building materials, at a rate of 1 point for each 10% of confirming purchases. Points may be earned by specifying PlayGuard through the following criteria: <ul style="list-style-type: none"> • Materials contain at least 10% post-consumer or 20% pre-consumer material • Contains at least 50% materials harvested and processed or extracted and processed within 500 miles of the project
MR 4: 1 point if 10% of all materials contain recycled content; 2 points for 20%	MR 4: Same as NC	
MR 5: 1 point for using 10% of the materials that are extracted, harvested, or recovered, as well as manufactured within 500 miles of the project site; 2 points for 20%	MR 5.1: 1 point for using 20% of building materials that are manufactured within 500 miles of the project site MR 5.2: 1 additional point for using 10% of locally manufactured materials that are extracted or harvested within a 500 mile radius	
Indoor Environmental Quality		
EQ 4.1: 1 point for using adhesives and sealants that meet South Coast Air Quality Management District (SCAQMD)	EQ 4.1: Same as NC; 1 point for using adhesives and sealants that meet SCAQMD and aerosol adhesives that meet Green Seal Standard GS-36	MRc3 provides up to 2 points for using low-emitting materials. One point may be obtained for each 45% of annual purchases calculated on a dollar value that conform to the same categories as NC (including using adhesives with a VOC content less than SCAQMD).
EQ 4.3: 1 point for using flooring materials that are FloorScore certified for low VOC's or that meet the Collaborative for High Performance Schools (CHPS) criteria (Section 01350) for indoor air quality.	EQ 4.3: Same as NC; 1 point for using flooring materials that are FloorScore certified for low VOC's or that meet the Collaborative for High Performance Schools (CHPS) criteria (Section 01350) for indoor air quality.	EQ 4.3: N/A

PlayGuard®

PLAYGROUND SAFETY SURFACING

Made from recycled rubber, PlayGuard® playground tiles are an environmentally supportive solution designed exclusively to reduce the risk of serious injury associated with falls from playground equipment.

From the 4 traditional pigmented lines to the 20 elaborate color options of PlayGuard Ultra, PlayGuard is the playground safety surface of choice for aging and new playgrounds. It offers bold color choices, ease of installation and maintenance, and proven durability.

PlayGuard has consistently led the way in advancing the technology to make rubber playground surfacing not only safer and more environmentally sustainable, but also accessible for children of all ages and abilities.

ECORE International

ECORE International, manufacturer of PlayGuard Playground Safety Surfacing, was founded in 1989. Located in Lancaster, PA, ECORE is the largest user of scrap tire rubber in North America and annually recycles over 80 million pounds of scrap tire rubber, helping to conserve more than 1 million barrels of oil to make viable solutions for the commercial, consumer, and industrial markets.

ECORE is committed to operating its business and facilities in a manner that uses resources wisely and protects the quality of the environment and the health and safety of associates, families, and community. The company is actively affiliated with the U.S. Green Building Council, American Society of Testing Materials, and Building for Environmental and Economic Sustainability run by the US National Institute of Standards and Technology.

For more information on PlayGuard Playground Safety Surfacing, call **800.851.4746** or visit **www.playguardsurfacing.com**

Manufactured in the U.S.A. by:

