

Berridge LEED® v4 Information

What is LEED®?

Leadership in Energy and Environmental Design (LEED) is an internationally recognized certification system established by the U.S. Green Building Council (USGBC) whose goal is to promote integrated, whole-building design practices and standards for green, sustainable building and community designs emphasizing energy savings, water efficiency, CO2 emissions reductions, improved indoor environmental quality, and stewardship of resources and their impacts on the environment.

LEED® for New Construction and Major Renovations is one component of LEED v4 and is the latest version of the USGBC's green building certification program. It recognizes the following key areas:

- Sustainable Sites (SS)** - 10 Possible Points
- Materials & Resources (MR)** - 13 Possible Points
- Water Efficiency (WE)** - 11 Possible Points
- Innovation** - 6 Possible Points
- Indoor Environmental Quality (IEQ)** - 16 Possible Points
- Energy & Atmosphere (EA)** - 33 Possible Points
- Regional Priority** - 4 Possible Points

Points are awarded to each category listed above depending on building performance on certain requirements and standards set forth by LEED® v4. Points are then totaled and LEED certification is granted based on the total point levels shown below:

- LEED Certified** - 40 to 49 Points
- LEED Silver** - 50 to 59 Points
- LEED Gold** - 60 to 79 Points
- LEED Platinum** - 80 to 110 Points

Summary

The use of Berridge Manufacturing metal roofing products can directly contribute up to 2 LEED® v4 credits for Heat Island Reduction, but when a “whole-building design” approach is implemented, metal roofing combined with other concerted efforts, products and building systems can contribute to other LEED® v4 credits mentioned herein as well as other credits not listed.

While every effort has been made to provide accurate information, applicants for LEED® Certification should verify compliance with a LEED® expert. For more information on LEED® v4 certification, visit www.usgbc.org.

Visit www.Berridge.com for the most up-to-date information.

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HOW CAN USING BERRIDGE PRODUCTS CONTRIBUTE TO A LEED® CERTIFICATION ON NEW CONSTRUCTION OR MAJOR RENOVATIONS?

Sustainable Sites - Berridge Manufacturing Company cool metal roofs have Solar Reflectance Index values that meet or exceed LEED® v4 criteria for the Heat Island Reduction credit as detailed below.

SS Credit 5: Heat Island Reduction (2 points excluding Healthcare, 1 point Healthcare)

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

Requirement - Use roofing materials that have an SRI equal to or greater than the values in Table 1. Meet the three-year aged SRI value. If three-year aged value information is not available, use materials that meet the initial SRI value.

Table 1. Minimum solar reflectance index value, by roof slope

	Slope	Initial SRI	3 Year Aged SRI
Low Sloped Roof	<2:12	82	64
Steep Sloped Roof	>2:12	39	32

Refer to the chart of SRI values for information on solar reflectance, thermal emissivity and Solar Reflectance Index (SRI) values for all Berridge cool metal roof colors.

Disclaimer: Due to different testing methods employed by various laboratories and paint suppliers these values may vary slightly. Refer to www.berridge.com technical bulletins for the most up to date information or contact BMC directly.

Berridge Colors	Solar Reflectance	Emissivity	SRI
Aged Bronze	0.31	0.85	31
Almond	0.65	0.83	77
Bristol Blue	0.33	0.85	33
Buckskin	0.43	0.83	46
Burgundy	0.32	0.84	32
Charcoal Grey	0.29	0.84	28
Cityscape	0.48	0.85	54
Colonial Red	0.35	0.83	35
Copper Brown	0.32	0.85	32
Dark Bronze	0.28	0.85	27
Deep Red	0.41	0.84	44
Evergreen	0.30	0.83	29
Forest Green	0.30	0.83	29
Hartford Green	0.27	0.83	25
Hemlock Green	0.31	0.84	31
Matte Black	0.26	0.83	24
Medium Bronze	0.31	0.85	31
Parchment	0.60	0.85	71
Patina Green	0.34	0.85	35
Royal Blue	0.27	0.85	26
Shasta White	0.61	0.85	73
Sierra Tan	0.39	0.85	42
Teal Green	0.26	0.84	25
Terra-Cotta	0.36	0.84	38
Zinc Grey	0.39	0.85	42
Acrylic-Coated Galvalume®	0.67	0.20	59
Premium Colors			
Award Blue	0.17	0.83	11
Natural White	0.71	0.85	86
Metallic Colors			
Antique Copper-Cote	0.33	0.84	34
Champagne	0.40	0.85	43
Copper-Cote™	0.51	0.85	59
Lead-Cote™	0.36	0.86	38
Preweathered Galvalume®	0.40	0.85	43
Zinc-Cote™	0.53	0.83	59

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SS Credit 4: Rainwater Management (1-3 points)

Berridge Manufacturing Company cool metal roofs can be used as a surface for non-potable rainwater collection and thus can contribute LEED® v4 criteria for water efficiency when integrated with rainwater collection systems.

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.

Requirements:

Option 1. Percentile of rainfall events

Path 1. 95th percentile (2 points excluding Healthcare, 1 point Healthcare)

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.

Use daily rainfall data and the methodology in the U.S. Environmental Protection Agency (EPA) Technical Guidance on Implementing the Storm Water Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act to determine the 95th percentile amount.

OR

Path 2. 98th percentile (3 points excluding Healthcare, 2 points Healthcare)

Achieve Path 1 but for the 98th percentile of regional or local rainfall events, using LID and green infrastructure.

OR

Path 3. Zero lot line projects only - 85th Percentile (3 points excluding Healthcare, 2 points Healthcare)

The following requirement applies to zero lot line projects in urban areas with a minimum density of 1.5 FAR. In a manner best replicating natural site hydrology processes, manage on site the runoff from the developed site for the 85th percentile of regional or local rainfall events, using LID and green infrastructure.

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Materials & Resources –

Berridge Manufacturing Company’s metal products are made from 32.3% recycled content and are 100% recyclable at the end of their life. Reusing, recycling, or salvaging Berridge metal products can help contribute to the following LEED® v4 credits:

MR Credit 1: Building Life-Cycle Impact Reduction: Building and Material Reuse (2-5 points)

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

Requirements: Demonstrate reduced environmental effects during initial project decision-making by reusing existing building resources or demonstrating a reduction in materials use through life-cycle assessment.

Points for reuse of building materials:

Percentage of Completed Project Surface Area Reused	Points BD&C	Points BD&C (Core and Shell)
25%	2	2
50%	3	3
75%	4	5

MR Credit 2: Building Product Disclosure and Optimization- Environmental Product Declarations (1-2 points)

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.

Requirements:

Achieve one or more of the options for a maximum of 2 points.

Primary Steel Mills:

Processing Location: Indiana Harbor West Plant, East Chicago, IN 46312
Extraction Location: United Taconite, Ishpeming, MI 49849
Northshore Mine, Silver Bay, MN 55614

Processing Location: Fairfield Works, Fairfield, AL 35064
Extraction Location: Minntac, Mt. Iron, MN 55768
Keetac, Keewatin, MN 55753

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Manufacturing Locations:

Painted: Berridge Manufacturing Company, San Antonio, TX 78218

Manufactured: Berridge Manufacturing Company, Seguin, TX 78155

Alternate Manufacturing Location: Location of Berridge Portable Roll Former used to site-form panels

All Berridge Manufacturing Company's architectural metal products are made from AZ-50 Galvalume steel extracted, harvested, or recovered from various mines in the United States as noted above. Documentation from Berridge's steel providers is inconclusive in regards to the exact extraction locations for all raw materials and recycled content. Therefore, it is not possible for Berridge to verify or document a primary extraction, harvesting, or recovery location. As such, Berridge recommends verifying compliance with a LEED® expert.

MR Credit 5: Construction and Demolition Waste Management (1-2 points)

Intent: To reduce construction and demolition waste disposed of in landfills and incineration facilities by recovery, reusing, and recycling materials.

Requirements: Recycle and/or salvage nonhazardous construction and demolition materials. Calculations can be by weight or volume but must be consistent throughout.

Exclude excavated soil, land-clearing debris from calculations. Include materials destined for alternative daily cover (ADC) in the calculations as waste (not diversion). Include wood waste converted to fuel (bio-fuel) in the calculations; other types of waste-to-energy are not considered diversion for this credit.

Indoor Environmental Quality

Berridge Manufacturing Company recommends using Tremco Spectrum I, Dow Corning 790, Pecora 890NST, DuraLink or Titebond Metal Roof Sealant with Berridge architectural metal products. When Berridge metal products are used for indoor product applications, the aforementioned sealants meet LEED® v4 criteria for IEQ Credits as indicated below:

Tremco Spectrum I contains 0 g/L of VOC
Dow Corning 790 contains 50 g/L of VOC
Pecora 890NST contains 98 g/L of VOC
DuraLink contains less than 19 g/L of VOC
Titebond Metal Roof Sealant contains 9 g/L of VOC

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IEQ Credit2: Low Emitting Materials (Possible 3 Points)

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

Requirements: This credit includes requirements for product manufacturing as well as project teams. It covers volatile organic compound (VOC) emissions in the 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.

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