Boral Roofing
Build something great™

LEED® v4

LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN

Building codes are changing across the country, from Massachusetts to California, mandating greater energy efficiency and sustainability. The US Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) program is a widely used green certification. In some localities, basic LEED certification is becoming a requirement for some types of new construction.

Under LEED v4, credits for residential construction are different than credits for commercial construction. The following list represents the current areas where Boral Roofing products can help your project achieve credits under ***LEED v4 Homes****. See credits for* ***LEED v4 Building Design and Construction*** *on the next page.*

HOMES

SS Credit: Heat Island Reduction

INTENT: To minimize impact on microclimate and human and wildlife habitat by reducing heat islands.

Under OPTION 2. NONABSORPTIVE MATERIALS (1–2 points), acceptable strategies include using ENERGY STAR qualified roof products in appropriately sloped applications (or performance equivalent for projects outside the U.S.) Boral Roofing offers an extensive range concrete tile in vibrant colors and styles that meet ENERGY STAR requirements (initial solar reflectance ≥ 0.25, or 3-year aged solar reflectance ≥ 0.15), listed on the ENERGY STAR website at **www.energystar.gov/productfinder/product/certified-roof-products**

Homes (1–2 points), Multifamily Midrise (1–2 points)

SS Credit: Rainwater Management

INTENT: To reduce rainwater runoff volume from the site.

Concrete tile roofs can be part of a rainwater management system that may qualify for this credit. Smooth, hard-surfaced materials, like concrete tile, are preferred for rainwater collection because, unlike asphalt shingles, they do not shed contaminants into the rainwater storage system.

Homes (1–3 points), Multifamily Midrise (1–3 points)

Innovation Credit: Innovation

INTENT: To encourage projects to achieve exceptional or innovative performance.

The USGBC recognizes the importance of encouraging the use of innovative products or systems that achieve sustainable performance but are not directly addressed in other LEED credits. OPTION 1. INNOVATION (1 point) states: "Achieve significant, measurable environmental performance using a strategy not addressed in the LEED green building rating system."

Concrete tile roofs provide above sheathing ventilation (ASV), a strategy that has been documented to provide additional insulating value to the roof system, lowering below-roof temperatures in hot weather and helping conserve interior heat in cold weather. Tile roofs, properly installed with a ventilation channel underneath, may contribute to this credit.[1]

To achieve ASV, flat tile models should be installed with Boral's patented Elevated Batten System® or counter-battens.

Homes (1–5 points), Multifamily Midrise (1–5 points)

[1]LEED credit interpretation ruling has not yet been submitted to confirm if this innovation would classify for a point under the existing LEED structure.

BUILDING DESIGN AND CONSTRUCTION

SS Credit: Heat Island Reduction

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

Under OPTION 1, 75% of the roof must be a high-reflectance material. For high-slope roofs (> 2:12), roofing materials must have either a 3-year aged SRI of minimum 32, or initial SRI of minimum 39. (Aged SRI is preferred.)

Boral has numerous colors of concrete tile that meet this stringent standard, with cool roof choices in every tile profile.

New Construction (1–2 points)	**Data Centers (1–2 points)**
Core and Shell (1–2 points)	**Warehouses and Distribution Centers (1–2 points)**
Schools (1–2 points)	**Hospitality (1-2 points)**
Retail (1–2 points)	**Healthcare (1 point)**

SS Credit: Site Master Plan

INTENT: To ensure that the sustainable site benefits achieved by the project continue, regardless of future changes in programs or demographics.

This credit applies only to Schools (1 point.)

If the credit **SS Credit: Heat Island Reduction is achieved,** it also contributes to this credit.

Schools (1 point)

EA Pre-Requisite: Minimum Energy Performance

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.

Under OPTION 1. WHOLE-BUILDING ENERGY SIMULATION, the project must demonstrate an improvement of 5% for new construction, 3% for major renovations, or 2% for core and shell as compared to a baseline building performance, using a simulation model.

The air gap below a concrete tile installation (also called above sheathing ventilation or ASV) contributes to the insulating value of the roof assembly, and therefore to the building's energy performance. Guidance from GBCI states that, "the air gap may be used in the total roof assembly U-factor calculation." If the ASV strategy is unable to be modeled directly in the simulation software, an exceptional calculation must be performed to determine its application.

Applies to:

New Construction
Core and Shell
Schools
Retail
Data Centers
Warehouses and Distribution Centers
Hospitality
Healthcare

EA Credit: Optimize Energy Performance

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

Under OPTION 1. WHOLE-BUILDING ENERGY SIMULATION, credits are earned by demonstrating performance in excess of the improvements required in **EA Pre-Requisite Minimum Energy Performance** (see above). The contribution of concrete tile to the energy performance of the building may be included in the same way as outlined above.

New Construction (1–18 points)	**Data Centers (1–18 points)**
Core and Shell (1–18 points)	**Warehouses and Distribution Centers (1–18 points)**
Schools (1–16 points)	**Hospitality (1-18 points)**
Retail (1–18 points)	**Healthcare (1-20 point)**

MR Credit: Building Life-Cycle Impact Reduction

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

For new construction, OPTION 4. WHOLE-BUILDING LIFE-CYCLE ASSESSMENT (3 points) allows the conduction of a life cycle assessment that demonstrates a reduction of the building's impact in several categories, one of which is global warming potential. High thermal mass is specifically cited as an example of a property that can reduce a building's peak energy demand.

Concrete roof tile, with its high thermal mass, insulating action from above sheathing ventilation, and in some cases high solar reflectance, can reduce energy demands for heating and cooling, and may contribute to this credit.

New Construction (2-5 points)	**Data Centers (2-5 points)**
Core and Shell (2-5 points)	**Warehouses and Distribution Centers (2-5 points)**
Schools (2-5 points)	**Hospitality (2-5 points)**
Retail (2-5 points)	**Healthcare (2-5 point)**

MR Credit: Building Product Disclosure and Optimization – Sourcing Of Raw Materials

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 verified to have been extracted or sourced in a responsible manner.

Under OPTION 2. LEADERSHIP EXTRACTION PRACTICES (1 point), the project must use products that meet at least one of a list of responsible extraction criteria, which include recycled content and sustainable wood products.

Select concrete roof tile products across the country use locally harvested raw materials, mining operations waste products, blast furnace slag and fly ash with pre-consumer recycled content up to 40%. Our polyethylene plastic pads are 100% post-consumer recycled material.

Boral Roofing's patented Elevated Batten System® battens are certified by the Sustainable Forestry Initiative® (SFI®), a USGBC-approved certification for the Wood Products criterion under OPTION 2.

New Construction (1–2 points)	**Data Centers (1–2 points)**
Core and Shell (1–2 points)	**Warehouses and Distribution Centers (1–2 points)**
Schools (1–2 points)	**Hospitality (1-2 points)**
Retail (1–2 points)	**Healthcare (1 point)**

Innovation Credit: Innovation

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To achieve ASV, flat tile models should be installed with Boral's patented Elevated Batten System® or counter-battens.

New Construction (1–5 points)	**Data Centers (1–5 points)**
Core and Shell (1–5 points)	**Warehouses and Distribution Centers (1–5 points)**
Schools (1–5 points)	**Hospitality (1-5 points)**
Retail (1–5 points)	**Healthcare (1 -5 point)**

ABOUT BORAL ROOFING

Boral Roofing LLC is a subsidiary of Boral USA and is the country's largest premium provider of complete roofing and re-roofing solutions for architects as well as commercial and residential builders. Boral Roofing operates manufacturing plants throughout the US.

ABOUT BORAL NORTH AMERICA

Headquartered in Roswell, Georgia, Boral North America is a leader in key construction materials and building products markets with operations across the USA, Canada and Mexico. In 2017 Boral acquired Headwaters Incorporated, expanding Boral's product offering and manufacturing and distribution footprint across North America. In construction materials, Boral has a national footprint and industry-leading position in the processing and distribution of fly ash – a by-product of coal combustion – as well as a Texas-based concrete block business, and Denver concrete and quarries operations.

In building products, Boral manufactures and supplies cladding, roof tiles, windows and other light building products for residential and commercial markets nationally. Boral's manufactured stone veneer includes leading brands Cultured Stone® by Boral®, Boral Versetta Stone®, Eldorado Stone, Dutch Quality Stone and StoneCraft. Boral's light building products portfolio includes Boral TruExterior® Siding & Trim – a pioneer of the innovative poly-ash category of exterior building products – as well as shutters, gable vent, mounting blocks and tool systems. In roofing, Boral is a leading manufacturer of clay and concrete roof tiles, and also produces composite polymer and stone-coated metal roof tiles.

Boral also has a 50% share of the Meridian Brick joint venture, a leading clay and concrete brick manufacturer which was formed with Forterra Brick in 2016.

Build something great™
www.BoralAmerica.com

Sales Offices

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Website

Download a QR Code reader app for your smart phone, then take a photo to visit our website
www.BoralRoof.com