

# LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED) V2009 (V3) CERTIFICATION GUIDELINE

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is a voluntary, evolving, consensus-based national standard for developing high-performance, sustainable buildings using a comprehensive, point-based system. As the adoption of sustainable building practices increases, it becomes increasingly critical that architects have the most up-to-date information on tools and performance criteria during the development stage.

We are dedicated to developing products, systems, and services that help comply with LEED standards and promote integrated, whole-building design practices. See how you can design sustainable buildings with Kawneer products using the charts below.

ENERGY & ATMOSPHERE	Potential Points	Requirements	Kawneer Product + Service													
<b>1. Optimize Energy Performance</b> Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impact associated with excessive energy use.	1-19	Select one of the three compliance path options below.	<b>High-performance Thermal Products</b> High-performance thermal systems provide optimum performance leading to greater energy conservation. Kawneer systems accommodate double pane and triple pane insulating glass to maximize thermal performance and reduce acoustic transmission.  <b>InLighten® Light Shelf</b> InLighten™ Light Shelf integrates with framing systems to reflect natural light deeper into occupied spaces. Light shelves direct available natural light to interior spaces and reduce requirements for artificial perimeter lighting, thereby conserving electrical energy costs.  <b>Versoleil™ SunShade</b> Designed to shade interiors and optimize energy performance by reducing solar heat gain, Versoleil™ SunShades work with Kawneer products to allow greater use of glazing while reducing demand on the HVAC. <b>Cradle to Cradle Certified™</b> v3.1 Bronze and Silver level Material Health Certificate.  <b>1600 PowerShade™ Sun Shade System</b> Photovoltaic (PV) cells in the 1600 PowerShade™ Sun Shade System convert light energy from the sun into electricity, which can be fed into the building's system. On-site renewable energy reduces the environmental impact associated with the use of fossil fuels.													
	(1-19)	<b>OPTION 1: Whole Building Energy Simulation</b> Demonstrate a percentage improvement in the proposed building performance rating compared to the baseline building performance rating per ASHRAE/IESNA Standard 90.1-2007 (with errata but without addenda) by a whole building project simulation using the Building Performance Rating Method in Appendix G of the Standard.														
	(1)	<b>OPTION 2: Prescriptive Compliance Path</b> Comply with the prescriptive measures of the ASHRAE Advanced Energy Design Guide appropriate to the project scope. Project teams must fully comply with all applicable criteria as established in the Advanced Energy Design Guide for the climate zone in which the building is located.														
	(1-3)	<b>OPTION 3: Prescriptive Compliance Path: Advanced Buildings™ Core Performance™ Guide</b> Comply with the prescriptive measures identified in the Advanced Buildings™ Core Performance™ Guide developed by the New Buildings Institute.														
<b>2. On-site Renewable Energy</b> Encourage and recognize increasing levels of self-supply through renewable technologies to reduce environmental impact associated with fossil fuel energy use.	1-7	Use on-site renewable energy systems to offset building energy cost. Calculate project performance by expressing the energy produced by renewable systems as a percentage of the building annual energy cost and using the table below to determine the number of points possible:	<b>1600 PowerShade™ Sun Shade System</b> Photovoltaic (PV) cells in the 1600 PowerShad™ Sun Shade System convert light energy from the sun into electricity, which can be fed into the building's system. On-site renewable energy reduces the environmental impact associated with the use of fossil fuels.  <b>1600 PowerWall™ Curtain Wall System</b> The first proven curtain wall system to produce electricity by capturing the energy of the sun with polycrystalline cell or amorphous silicon thin film PV technology in glass laminates.													
		<table border="1"> <thead> <tr> <th>RENEWABLE ENERGY</th> <th>POINT(S)</th> </tr> </thead> <tbody> <tr><td>1%</td><td>1</td></tr> <tr><td>3%</td><td>2</td></tr> <tr><td>5%</td><td>3</td></tr> <tr><td>7%</td><td>4</td></tr> <tr><td>9%</td><td>5</td></tr> <tr><td>11%</td><td>6</td></tr> <tr><td>13%</td><td>7</td></tr> </tbody> </table>		RENEWABLE ENERGY	POINT(S)	1%	1	3%	2	5%	3	7%	4	9%	5	11%
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MATERIALS AND RESOURCES	Potential Points	Requirements	Kawneer Product + Service
<p><b>4.1 Recycled Content: 10%</b> Increase demand for building products that incorporate recycled content materials, therefore reducing the impact resulting from extraction and processing of virgin materials.</p>	1	Use materials with recycled content, such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10% (based on cost) of the total value of the materials in the project.	<p><b>Use of recycled aluminum – all Kawneer Products</b> Upon request, extrusions and panels can contain pre- and post-consumer recycled aluminum content.</p>
<p><b>4.2 Recycled Content: 20%</b> Increase demand for building products that incorporate recycled content materials, therefore reducing the impact resulting from extraction and processing of virgin materials.</p>	(4.1) + 1	Use materials with recycled content, such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 20% (based on cost) of the total value of the materials in the project.	<p><b>Use of recycled aluminum – all Kawneer Products</b> Upon request, extrusions and panels can contain pre- and post-consumer recycled aluminum content.</p>
<p><b>5.1 Regional Materials: 10% Extracted, Processed and Manufactured Regionally</b> Increase demand for building materials products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impact resulting from transportation.</p>	1	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 materials 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.	<p><b>Nationwide Customer Network</b> We work selectively in all markets to maintain a network of the best-trained, highly qualified, Division 8 (glass and glazing) subcontractors. Final assembly of Kawneer components often occurs in a subcontractor's local shop. It is possible to earn points toward regional materials when both the point of final assembly and the source of high recycled content billet are within 500 miles of the project site.</p> <p><b>Use of recycled aluminum – all Kawneer Products</b> Upon request, extrusions and panels can contain pre- and post-consumer recycled aluminum content.</p>
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INDOOR ENVIRONMENT QUALITY	Potential Points	Requirements	Kawneer Product + Service
<p><b>2 Increased Ventilation</b> Provide additional outdoor air ventilation to improve indoor air quality for improved occupant comfort, well-being and productivity.</p>	1	<p>For mechanically ventilated spaces, increase breathing zone outdoor air ventilation rates to all occupied spaces by at least 30% above the minimum rates required by ASHRAE Standard 62.1-2007 as determined by EQ Prerequisite 1. For naturally ventilated spaces, design natural ventilation systems for occupied spaces to meet the recommendations set forth in the Carbon Trust "Good Practice Guide 237" [1998].</p>	<p><b>Thermal, Architectural-Grade Operable Windows</b> Provide controllable natural ventilation with architectural grade windows to increase thermal comfort. Reduce waste on the construction site with pre-assembled and factory glazed operable windows.</p> <p><b>512 Ventrow Thermal Ventilator</b> A modular insert ventilator adds natural, concealed air circulation in fixed frames.</p>
<p><b>6.2 Controllability of Systems: Thermal Comfort</b> Provide a high level of thermal comfort system control by individual occupants or specific groups in multi-occupant spaces to promote the productivity, comfort and well-being of building occupants.</p>	1	<p>Provide individual comfort controls for 50% (minimum) of the building occupants to enable adjustments to suit individual task needs and preferences. In certain areas, operable windows can be used in lieu of comfort controls. The areas of operable window must meet the requirements of ASHRAE 62.1-2007 paragraph 5.1 Natural Ventilation.</p>	<p><b>Thermal, Architectural-Grade Operable Windows</b> Provide controllable natural ventilation with architectural grade windows to increase thermal comfort. Reduce waste on the construction site with pre-assembled and factory glazed operable windows.</p> <p><b>512 Ventrow Thermal Ventilator</b> A modular insert ventilator adds natural, concealed air circulation in fixed frames.</p>
<p><b>8.1 Daylight and Views (Daylight 75% of Spaces)</b> Provide for the building occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.</p>	1	<p><b>OPTION 1: Simulation</b> Demonstrate through computer simulations that 75% or more of all regularly occupied spaces achieve defined daylight illuminance levels of a minimum of 25fc and a maximum of 500fc.</p> <p><b>OPTION 2: Prescriptive</b> Use a combination of side-lighting and/or top-lighting to achieve a total Daylighting Zone that is at least 75% (1 point) of all the regularly occupied spaces.</p> <p><b>OPTION 3</b> Any of the above calculation methods may be combined to document the minimum daylight illumination in at least 75% of all regularly occupied spaces. The different methods used in each space must be clearly recorded on all building plans.</p> <p><b>OPTION 4: Measurement</b> Demonstrate, through records of indoor light measurements, that a minimum daylight illumination level of 25 foot-candles has been achieved in at least 75% of all regularly occupied areas.</p>	<p><b>High-performance Thermal Products</b> High-performance thermal systems provide optimum performance leading to greater energy conservation. Kawneer systems accommodate double pane and triple pane insulating glass to maximize thermal performance and reduce acoustic transmission.</p> <p><b>InLighten® Light Shelf</b> InLighten™ Light Shelf integrates with framing systems to reflect natural light deeper into occupied spaces. Light shelves direct available natural light to interior spaces and reduce requirements for artificial perimeter lighting, thereby conserving electrical energy costs.</p> <p><b>Versoleil™ SunShade</b> Designed to shade interiors and optimize energy performance by reducing solar heat gain, Versoleil™ SunShades work with Kawneer products to allow greater use of glazing while reducing demand on the HVAC. <b>Cradle to Cradle Certified™</b> v3.1 Bronze and Silver level Material Health Certificate.</p> <p><b>1600 Sloped Glazing &amp; 2000 Skylight</b> Opening the center of a building with overhead pyramid skylights is one of the fastest and easiest ways to provide natural lighting to an interior space. The insulating thermal break is placed to the exterior of the plane of glass to minimize heat loss and condensation.</p>
<p><b>8.2 Daylight and Views (Views 90% of Spaces)</b> Provide for the building occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.</p>	1	<p>Achieve direct line of sight to the outdoor environment via vision glazing between 2'6" and 7'6" above finish floor for building occupants in 90% of all regularly occupied areas.</p>	<p><b>High-performance Thermal Products</b> High-performance thermal systems provide optimum performance leading to greater energy conservation. Kawneer systems accommodate double pane and triple pane insulating glass to maximize thermal performance and reduce acoustic transmission.</p>

INNOVATION & DESIGN PROCESS	Potential Points	Requirements	Kawneer Product + Service
<p><b>1-1.4 Innovation in Design: Provide Specific Title</b> To provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by the LEED Green Building Rating System and/or innovative performance in Green Building categories not specifically addressed by the LEED Green Building Rating System.</p>	<p>1-5</p>	<p>In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance and the design approach (strategies) that might be used to meet the requirements.</p>	<p><b>Solvent-Free Powder Coat Finishes</b> Kawneer offers a wide palette of powder coat paints in attractive colors that are free from the harmful environmental effects of VOCs associated with liquid paints. These powder coat paints are available to finish all Kawneer products. Points for Innovation &amp; Design could be achieved by applying for credit and providing substantiation that the powder coat finish is a low-emitting material that results in improved air quality and has no negative environmental impact.</p> <p><b>Architectural Services Team (AST)</b> When planning projects for LEED certification, Kawneer's Architectural Services Team (AST) is available to assist with the selection of products that can qualify for LEED points. Points for the Innovation &amp; Design Process could be achieved by documenting the development of a project in a paperless environment, with the assistance of the AST via the internet - saving the energy often invested in traveling to face-to-face meetings. Division 8 can be developed in a paperless, low-energy-consuming environment.</p> <p><b>Cradle to Cradle Certified™ products</b> "Kawneer's 1600 Wall System™ 1 and 2 Curtain Walls and Versoleil™ SunShade systems have both been achieved the rigorous Cradle to Cradle standard and are Cradle to Cradle Certified™ v3.1 Bronze and hold a Silver level Material Health Certificate.</p>

**\*Note:** Cradle to Cradle Certified™ is a certification mark of MBDC. Versoleil™ SunShade, 1600 Wall System®1 and 1600 Wall System®2 have been certified for its material content, recyclability and manufacturing characteristics. Not all finishes and components qualify, contact Kawneer for details.

If you are looking for product applications or need technical assistance with your LEED project, contact Kawneer's Architectural Services Team.