

# THE LIVING BUILDING CHALLENGE™ (LBC) V4.0 CERTIFICATION GUIDELINE

The Living Building Challenge™ (LBC) building certification program challenges design techniques with the most stringent sustainability characteristics in the building industry today. Using creativity to push design, LBC encompasses the social community in the built environment. To help better understand how Kawneer products can contribute to LBC projects, we created a LBC Certification Guide.

A few sections or petals as they are called for LBC that relate to Kawneer products include: Energy, Health & Happiness and Materials.

ENERGY PETAL	Requirements	Guidance	Kawneer Product + Service
<p><b>Energy + Carbon Reduction (Imperative 07)</b> To treat energy as a precious resource and minimize energy-related carbon emissions that contribute to climate change.</p>	<p>All projects must meter energy used by the project. New or Existing Building projects must demonstrate a 20% reduction in the embodied carbon of primary materials compared to an equivalent baseline. Operational Carbon: New Building: 20% improvement beyond the energy consumption levels required by ASHRAE Standard 90.1-2019 or later (demonstrating compliance under Appendix G) or IECC 2021 or later New Building: 70% reduction from an equivalent building baseline. Existing Building: 50% reduction from an equivalent building baseline. Interior Energy Performance Requirement: 35% reduction from an equivalent building baseline.</p>	<p>To achieve such a high standard the first step is to reduce energy waste and increase efficiencies through design, then move on to technological solutions. Kawneer has a variety of thermal products that provide insulation to increase energy efficiency as well as products that can accommodate triple pane glass to provide even more energy efficiency. Additionally, Kawneer has shading systems to reduce solar heat gain through the glass and help to prevent glare. Kawneer has created the Solector™ which is an energy savings estimating tool to compare shading performance of different scenarios of avoided solar heat gain. When it comes to renewable energy, Kawneer has that covered too. We have a sun shade system with building integrated photovoltaics (BIPV) to generate energy while conserving it at the same time. Kawneer has also made modifications within our curtainwall and overhead glazing systems to integrate thin film photovoltaic technology within the glass. We are able to work with a variety of glass manufacturers to make sure integration into each system is smooth and reliable.</p>	<p><b>Sun Control</b> Kawneer's sun control products combined with framing systems can reduce the amount of solar radiation when installed over a glazed opening on the exterior of the building or reflect natural light deeper into occupied spaces when installed over a glazed opening on the interior of the building.</p> <p><b>Versoleil® SunShades</b> Designed to shade interiors and optimize energy performance by reducing solar heat gain, Versoleil® SunShades work with Kawneer's 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 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.</p> <p><b>High-Performance Thermal Products</b> High-performance thermal systems provide optimum performance leading to greater energy conservation. Kawneer's systems accommodate double pane and triple pane insulating glass to maximize thermal performance and reduce acoustic transmission.</p> <p><b>InLighten® Interior Light Shelf</b> InLighten® Interior 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>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>

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<p><b>Net Positive Carbon (Imperative 08)</b> To foster the development and use of carbon-free renewable energy resources while avoiding the negative impacts of fossil fuel use, primarily the emissions that contribute to global climate change.</p>	<p>All projects must be designed to be "zero ready" through strategies such as designating area(s) and pre-installing wiring and connections for both electric vehicle charging and future installation of renewable energy systems.</p>	<p>To achieve such a high standard the first step is to reduce energy waste and increase efficiencies through design, then move on to technological solutions. Kawneer has a variety of thermal products that provide insulation to increase energy efficiency as well as products that can accommodate triple pane glass to provide even more energy efficiency. Additionally, Kawneer has shading systems to reduce solar heat gain through the glass and help to prevent glare. Kawneer has created the Solector™ which is an energy savings estimating tool to compare shading performance of different scenarios of avoided solar heat gain. When it comes to renewable energy, Kawneer has that covered too. We have a sun shade system with building integrated photovoltaics (BIPV) to generate energy while conserving it at the same time. Kawneer has also made modifications within our curtainwall and overhead glazing systems to integrate thin film photovoltaic technology within the glass. We are able to work with a variety of glass manufacturers to make sure integration into each system is smooth and reliable.</p>	<p><b>Sun Control</b> Kawneer's sun control products combined with framing systems can reduce the amount of solar radiation when installed over a glazed opening on the exterior of the building or reflect natural light deeper into occupied spaces when installed over a glazed opening on the interior of the building.</p> <p><b>Versoleil® SunShades</b> Designed to shade interiors and optimize energy performance by reducing solar heat gain, Versoleil® SunShades work with Kawneer's 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 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.</p> <p><b>High-Performance Thermal Products</b> High-performance thermal systems provide optimum performance leading to greater energy conservation. Kawneer's systems accommodate double pane and triple pane insulating glass to maximize thermal performance and reduce acoustic transmission.</p> <p><b>InLighten® Interior Light Shelf</b> InLighten® Interior 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>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>

HEALTH & HAPPINESS PETAL	Requirements	Guidance	Kawneer Product + Service
<p><b>Healthy Interior Environment (Imperative 09)</b> To promote good indoor air quality and a healthy interior environment for project occupants.</p>	<p>Comply with the current version of ASHRAE 62, or international equivalent. Provide views outside and daylight for 75% of regularly occupied spaces. Provide direct exhaust for kitchens, bathrooms, and janitorial areas.</p>	<p>The use of Kawneer products can contribute to each of the Health &amp; Happiness petal imperatives by providing daylight, natural ventilation and views of the outside environment, all which help provide a healthy indoor environment and a connection to nature.</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>Sun Control</b> Kawneer sun control products combined with framing systems can reduce the amount of solar radiation when installed over a glazed opening on the exterior of the building or reflect natural light deeper into occupied spaces when installed over a glazed opening on the interior of the building.</p> <p><b>All Kawneer Framing Systems</b> From our core products like Framing Systems and Windows to specialty products like Overhead Glazing and InFrame™ Interior Framing, Kawneer offers strong and versatile solutions that maximize daylight autonomy and sunlight exposure.</p>
<p><b>Healthy Interior Environment (Imperative 10)</b> To demonstrate ongoing high-quality indoor air and a healthy indoor environment.</p>	<p>Provide the results from an Indoor Air Quality test one to six months after occupancy, or provide readings from an ILFI-approved continuously monitored indoor air quality system. Comply with the CDPH Standard Method v1.1-2010 (or international equivalent) for 90% of interior building products that have the potential to emit volatile organic compounds (VOCs).</p>	<p>The use of Kawneer products can contribute to each of the Health &amp; Happiness petal imperatives by providing daylight, natural ventilation and views of the outside environment, all which help provide a healthy indoor environment and a connection to nature.</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>Sun Control</b> Kawneer sun control products combined with framing systems can reduce the amount of solar radiation when installed over a glazed opening on the exterior of the building or reflect natural light deeper into occupied spaces when installed over a glazed opening on the interior of the building.</p> <p><b>All Kawneer Framing Systems</b> From our core products like Framing Systems and Windows to specialty products like Overhead Glazing and InFrame™ Interior Framing, Kawneer offers strong and versatile solutions that maximize daylight autonomy and sunlight exposure.</p>

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<p><b>Access to Nature (Imperative 11)</b> To provide opportunities for project occupants to directly connect to nature, and to assess the success of the Health + Happiness Imperatives.</p>	<p>All projects must connect people and nature through the provision of sufficient and frequent human-nature interactions in both the interior and the exterior of the project to connect the majority of occupants with nature directly.</p>	<p>The use of Kawneer products can contribute to each of the Health &amp; Happiness petal imperatives by providing daylight, natural ventilation and views of the outside environment, all which help provide a healthy indoor environment and a connection to nature.</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>Sun Control</b> Kawneer sun control products combined with framing systems can reduce the amount of solar radiation when installed over a glazed opening on the exterior of the building or reflect natural light deeper into occupied spaces when installed over a glazed opening on the interior of the building.</p> <p><b>All Kawneer Framing Systems</b> From our core products like Framing Systems and Windows to specialty products like Overhead Glazing and InFrame™ Interior Framing, Kawneer offers strong and versatile solutions that maximize daylight autonomy and sunlight exposure.</p>

MATERIALS PETAL	Requirements	Guidance	Kawneer Product + Service
<p><b>Responsible Materials (Imperative 12)</b></p> <p>To set a baseline for transparency, sustainable extraction, support of local industry and waste diversion for all projects.</p>	<p>The project must contain one Declare label product per 200 sq m of gross building area, or project area, whichever is smaller, up to twenty distinct products from five manufacturers. All other product manufacturers not currently in Declare must, at a minimum, receive a letter requesting they disclose their ingredients and identify any Red List content. All projects (except residential) must incorporate one product certified under the Living Product Challenge. 20% or more of the materials construction budget must come from within 500 kilometers of construction site. The project must divert 80% of the construction waste material from the landfill and provide dedicated infrastructure for the collection of recyclables and compostable food scraps during occupancy.</p>	<p>Kawneer has Declare labels for many products specifically for LBC projects. We have also created a Material Transparency Summary (MTS) documents for many of our products providing a full ingredient inventory to adhere with the LBC red list. Declare and MTSs for various products can be found on the Kawneer Product Transparency page.</p>	<p><b>Kawneer Products Declare Labels</b></p> <p>Kawneer’s most popular products have been vetted for the LBC Red List and have DECLARE labels that are Red List Free with disclosure down to 100 ppm. Kawneer Material Transparency Summary (MTS) Kawneer has created a complete manufacturer’s material ingredient inventory known as the Material Transparency Summary (MTS). Kawneer MTSs provide a chemical inventory of all substances above 100ppm.</p>
<p><b>Red List (Imperative 13)</b></p> <p>To foster a transparent materials economy free of toxins and harmful chemicals.</p>	<p>All projects must avoid the following Red List chemical classes in 90% of the project’s new materials by cost. “In situ” materials do not need to be removed or vetted for Red List chemical classes.</p>	<p>Kawneer has Declare labels for many products specifically for LBC projects. We have also created a Material Transparency Summary (MTS) documents for many of our products providing a full ingredient inventory to adhere with the LBC red list. Declare and MTSs for various products can be found on the Kawneer Product Transparency page. Some special notes regarding the red list include: miscellaneous hardware, such as nails, screws, bolts, etc. are not tracked for the red list and do not require an ingredients list; majority of brass hardware contains lead and should be avoided so steel hardware should be used when possible.</p>	<p><b>Kawneer Products Declare Labels</b></p> <p>Kawneer’s most popular products have been vetted for the LBC Red List and have DECLARE labels that are Red List Free with disclosure down to 100 ppm. Kawneer Material Transparency Summary (MTS) Kawneer has created a complete manufacturer’s material ingredient inventory known as the Material Transparency Summary (MTS). Kawneer MTSs provide a chemical inventory of all substances above 100ppm.</p>

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<p><b>Responsible Sourcing (Imperative 14)</b> To support sustainable extraction of materials and transparent labeling of products.</p>	<p>The creation and adoption of third-party certified standards for sustainable resource extraction and fair labor practices for extraction of rock, metal, minerals, and timber.</p>	<p>Kawneer has Declare labels for many products specifically for LBC projects. We have also created a Material Transparency Summary (MTS) documents for many of our products providing a full ingredient inventory to adhere with the LBC red list. Declare and MTSs for various products can be found on the Kawneer Product Transparency page. Some special notes regarding the red list include: miscellaneous hardware, such as nails, screws, bolts, etc. are not tracked for the red list and do not require an ingredients list; majority of brass hardware contains lead and should be avoided so steel hardware should be used when possible</p>	<p><b>Kawneer Products Declare Labels</b> Kawneer’s most popular products have been vetted for the LBC Red List and have Declare labels that are Red List Free with disclosure down to 100 ppm.</p>
<p><b>Living Economy Sourcing (Imperative 15)</b> To support local communities and businesses, while minimizing transportation impacts.</p>	<p>20% or more of the materials construction budget must come from within 500 kilometers of construction site. 30% of the total materials construction budget must come from within 1000 kilometers of the construction site or closer. An additional 25% of the materials construction budget must come from within 5000 kilometers of the construction site. The remaining 25% of materials may be sourced from any location.</p>	<p>Consider manufacturers and suppliers that have locations near by and contribute to the region economy. LBC allows products with Declare labels to be counted for double their value, so incorporating products with Declare labels is a particularly convenient way to quickly reach the required ratios for economy sourcing.</p>	<p><b>Facilities Located Throughout North America</b> Kawneer has manufacturing facilities and service centers located across North America to contribute to the regional economy. Contact your Kawneer Sales Rep to discuss the location of your project, the products on the project and manufacturing locations for those products. Kawneer Products Declare Labels Kawneer’s most popular products have been vetted for the LBC Red List and have Declare labels that are Red List Free with disclosure down to 100 ppm.</p>

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<p><b>Net Positive Waste (Imperative 16)</b> To integrate waste reduction into all phases of projects and to encourage imaginative reuse of salvaged “waste” materials.</p>	<p>All projects must create a Materials Conservation Management Plan that explains how the project optimizes materials in each of the following phases:</p> <ul style="list-style-type: none"> <li>- Design Phase, including the consideration of deconstruction and appropriate durability in product specifications.</li> <li>- Construction Phase, including product optimization and collection of waste materials for reuse or recycling.</li> <li>- Operation Phase, including a collection plan for extra consumables and durables.</li> <li>- End of Life Phase, including a plan for adaptable reuse and deconstruction.</li> </ul> <p>Materials and their minimum diversion rate- Metal 99%; Paper and cardboard 99%; Soil and biomass 100%; Rigid foam, carpet, and insulation 95%; All others – combined weighted average 90%; Demolition Waste 80%.</p>	<p>During the Design phase specifying pre-fabricated Kawneer products can help to reduce waste at the construction site. Aluminum is also one of the easiest materials to recycle, so during the Construction phase, any waste aluminum can be easily diverted.</p>	<p><b>Aluminum is 100% Recyclable</b> Post-fabricated aluminum excess can be recycled into the metal waste stream.</p> <p><b>Unitized Curtain Walls</b> Pre-fabricated aluminum minimizes excess waste on the construction site.</p> <p><b>Pre-Glazed 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>Universal Access (Imperative 17)</b> To allow equitable access to, and protections from negative impacts resulting from the development of, Living Building projects.</p>	<p>All projects must make all primary transportation, roads and non-building infrastructure that are considered externally focused (e.g. plazas, seating or park space) equally accessible to all members of the public regardless of background, age and socioeconomic class—including the homeless—with reasonable steps taken to ensure that all people can benefit from the project’s creation. Projects in Transects L3-L6 (except single-family residences) must provide for and enhance the public realm through design measures and features that are accessible to all members of society, such as street furniture, public art, gardens, and benches. All projects must safeguard access for those with physical disabilities through designs meeting either the Principles of Universal design (United States Access Board), the Americans with Disabilities Act (ADA), and the Architectural Barriers Act (ABA) Accessibility Guidelines, or international equivalent. Sunlight: Projects must demonstrate that shading of adjacent building will not result in negative impacts to the occupants of those buildings.</p>	<p>From entrances to windows, Kawneer provides solutions to satisfy the guidelines of the Americans with Disabilities Act (ADA). Kawneer’s products can be configured to include features such as hardware, door controls, and dimensions that meet ADA standards. Contact the Architectural Services team to discuss these options for ADA compliance.</p>	<p><b>Architectural Services Team (AST)</b> When planning projects for certification, Kawneer’s Architectural Services Team (AST) is available to assist with the selection of products that can help.</p>