



PREMIER SIPS
STRUCTURAL INSULATED PANELS



PREMIER SIPS & LEED V4.1 BUILDING DESIGN + CONSTRUCTION

Premier SIPS High-Performance Building Envelope (HPBE) System can significantly contribute to LEED Certification for new construction and major renovation of commercial and institutional buildings. LEED Certification offers an energy-efficient, comfortable, durable, and environmentally conscious building outcome for owners.

LEED v4.1 Building Design + Construction:

- Focuses on accessibility, current standards, and real-world project experiences.
- Applicable to new construction or major renovations.
- Requires at least 60% of gross floor area to be complete at the time of certification (except for LEED BD+C: Core and Shell).
- Suitable for various building types, excluding residential, K-12 educational, retail, data centers, warehouses, distribution centers, hospitality, and health care buildings.

Building Types for LEED v4.1 BD+C:

1. **New Construction and Major Renovation:** For non-residential buildings.
2. **Core and Shell Development:** For exterior shell and core mechanical, electrical, and plumbing units.
3. **Schools:** For K-12 school buildings and non-academic structures on school campuses.
4. **Retail:** For buildings engaged in retail sale of consumer products.
5. **Data Centers:** For whole-building data centers with over 60% floor area.
6. **Warehouses and Distribution Centers:** For storage facilities.
7. **Hospitality:** For hotels, motels, inns, and similar businesses providing lodging.
8. **Healthcare:** For hospitals providing inpatient medical treatment.

LEED-certified projects must accumulate points in specific categories. Each category has specific prerequisites that must be met: Location, Sustainable Sites, Water Efficiency, Energy, Indoor Quality, Integrative Process, Innovation, and Regional Priority.

FOUR LEVELS OF CERTIFICATION:

Certified: 40 to 49 points
Silver: 50 to 59 points
Gold: 60 to 79 points
Platinum: 80 to 110 points

Total points possible with Premier SIPS Materials: 40

INTEGRATIVE PROCESS	1 Point Possible with Premier SIPS Intent: To support high-performance, cost-effective, equitable project outcomes through an early analysis of the interrelationships among systems.	Requirements: Beginning in pre-design and continuing throughout the design phases, identify and use opportunities to achieve synergies across disciplines and building systems. Use the analyses described below to inform the owner's project requirements (OPR), basis of design (BOD), design documents, and construction documents Energy-Related Systems 1. Basic envelope attributes. Assess insulation values, window-to-wall ratios, glazing characteristics, shading, and window operability. 2. Thermal comfort ranges. Assess thermal comfort range options. SIPS add to the evaluation of the building envelope's attributes for achieving high performance.
ENERGY & ATMOSPHERE	Enhanced Commissioning 2 Points Possible with Premier SIPS Intent: To further support the design, construction, and eventual operation of a project that meets the owner's project requirements for energy, water, indoor environmental quality, and durability.	Requirements: Option 2. Building Enclosure Commissioning - 2 points Fulfill the requirements in EA Prerequisite Fundamental Commissioning and Verification as they apply to the building's enclosure in addition to mechanical and electrical systems and assemblies. Complete the following commissioning process (Cx) activities for the building's thermal envelope in accordance with ASHRAE Guideline 0-2013 and ASTM E2947-16: Standard Guide for Building Enclosure Commissioning, as they relate to energy, air and water tightness, indoor environmental quality, and durability. SIPS, used as part of the building design provide best indoor environmental quality and durability, as well as energy efficiency and air tightness.
	Optimize Energy Performance 18 Points Possible with Premier SIPS Intent: To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic harms associated with excessive energy use and greenhouse gas emissions that disproportionately impact frontline communities.	Requirements: Analyze efficiency measures during the design process and account for the results in design decision making. Use energy simulation of efficiency opportunities, past energy simulation analyses for similar buildings, or published data (e.g., Advanced Energy Design Guides) from analyses for similar buildings. Analyze efficiency measures, focusing on load reduction and HVAC-related strategies (passive measures are acceptable) appropriate for the facility. Project potential energy savings and holistic project cost implications related to all affected systems, using one of the options below. • Option 1: Energy Performance Compliance - 1-18 points, 1-16 points Schools, 1-20 points Healthcare • Option 2: Prescriptive Compliance: ASHRAE Advanced Energy Design Guide - 1-6 points, 1-4 points CS • Option 3: Systems Optimization - 1-6 points. SIPS provide the most valuable envelope component that exceeds the energy performance levels required of this LEED requirement and is Supported by an Industry. SIPS Reduced Global Warming and the Life Cycle Benefits of SIPS documents.

Building Life-Cycle Impact Reduction

5 Points Possible with Premier SIPS

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.

- Option 1: Whole-Building Life-Cycle Assessment - 1-4 points
- Option 2: Embodied Carbon/LCA Optimization - 1 point

With the use of SIPS, the designer can demonstrate the reduction in construction materials to assemble the building envelope.

Environmental Product Declarations

2 Points Possible with Premier SIPS

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 below, for a maximum of 2 points.

Option 1: Environmental Product Declaration (EPD) - 1 point

SIPS EPS and GPS cores are supported by an Industry EPD for EPS and GPS Insulations and SIPS by an Industry SIPS Reduced Global Warming and the Life Cycle Benefits of SIPS document.

Sourcing of Raw Materials

2 Points Possible with Premier SIPS

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.

Requirements:

Responsible Sourcing of Raw Materials - 1-2 points

Use products sourced from at least three different manufacturers that meet at least one of the responsible sourcing and extraction criteria below for at least 15%, by cost, of the total value of permanently installed building products in the project (1 point). Use products sourced from at least five different manufacturers that meet at least one of the responsible sourcing and extraction criteria below for at least 30%, by cost, of the total value of permanently installed building products in the project (2 points).

SIPS EPS and GPS are supported by an Industry LCA for EPS and GPS Insulations and SIPS by a Life Cycle Benefits document.

Construction & Demolition Waste Management

2 Points Possible with Premier SIPS

Intent: To reduce construction and demolition waste disposed of in landfills and incineration facilities through waste prevention and by reusing, recovering, and recycling materials, and conserving resources for future generations. To delay the need for new landfill facilities that are often located in frontline communities and create green jobs and materials markets for building construction services.

Requirements:

Develop and implement a construction and demolition waste management plan and achieve points through waste prevention and/or diversion.

Option 1: Diversion - 1 point

Option 2: Waste Prevention - 1-2 points

SIPS are sent to the building site prefabricated, thus reducing job site waste substantially.

Low-Emitting Materials**3 Points Possible with Premier SIPS**

Intent: To reduce concentrations of chemical contaminants that can damage air quality and the environment, and to protect the health, productivity, and comfort of installers and building occupants.

Requirements:**Insulation - 1 point**

At least 75% of all insulation, by cost or surface area, meets the *VOC emissions evaluation*. The insulation product category includes all thermal and acoustic boards, batts, rolls, blankets, sound attention fire blankets, foamed-in place, loose-fill, blown, and sprayed insulation. Exclude insulation for HVAC ducts and plumbing piping from the credit. Insulation for HVAC ducts may be included at the project team's discretion.

SIPS, including its insulation core material are CLEAN AIR CERTIFIED to CDPH Standard Method v1.2-2017

Composite Wood - 1 point

At least 75% of all composite wood, by cost or surface area, meets the Formaldehyde emissions evaluation OR salvaged and reused materials criteria. The composite wood product category includes all particleboard, medium density fiberboard (both medium density and thin), hardwood plywood with veneer, composite or combination core, and wood structural panels or structural wood products.

SIPS, including their engineered wood facings are CLEAN AIR CERTIFIED to CDPH Standard Method v1.2-2017

Adhesives and Sealants - 1 point

At least 75% of all adhesives and sealants, by volume or surface area, meet the VOC emissions evaluation AND 100% meet the VOC content evaluation. To meet the 100% requirement for VOC content evaluation, a VOC budget may be used. The adhesives and sealants product category includes all interior adhesives and sealants wet-applied on site.

SIPS field apply Sealant is CLEAN AIR CERTIFIED to CDPH Standard Method v1.2-2017

Thermal Comfort**1 Points Possible with Premier SIPS**

Intent: To promote occupants' productivity, comfort, and well-being by providing quality thermal comfort.

Requirements:

Meet the requirements for both thermal comfort design and thermal comfort control.

Thermal Comfort Design - 1 Point

Design heating, ventilating, and air-conditioning (HVAC) systems and the building envelope to meet the requirements of ASHRAE Standard 55-2017, Thermal Comfort Conditions for Human Occupancy with errata or a local equivalent. For natatoriums, demonstrate compliance with ASHRAE HVAC Applications Handbook, 2015 edition, Chapter 5, Places of Assembly, Typical Natatorium Design Conditions, with errata.

SIPS High Performance Building Envelopes aid in the designer meeting ASHRAE Standards.

5 Points Possible with Premier SIPS

Intent: To encourage projects to achieve exceptional or innovative performance to benefit human and environmental health and equity. To foster LEED expertise throughout building design, construction, and operation and collaboration toward project priorities.

Requirements:

To achieve all five innovation points, a project team must achieve at least one pilot credit, at least one innovation credit and no more than two exemplary performance credits.

Exemplary Performance - 1-2 points

Achieve exemplary performance in an existing LEED v4 prerequisite or credit that allows exemplary performance, as specified in the LEED Reference Guide, v4 edition. An exemplary performance point is typically earned for achieving double the credit requirements or the next incremental percentage threshold.

SIPS are an innovative technology that demonstrably contribute to overall building performance.

Disclaimer: The information in this document has been provided to designers for the purpose of alerting them to the performance attributes of Premier SIPS and the documentation available from Premier Building Systems that potentially may assist them in achieving LEED Points for their building project. The information in this document is taken in excerpts from LEED v4.1 Rating Program as presented on the USGBC.org web site as of July 2023, with additional comments by PBS regarding SIPS. The information is provided by PBS in good faith and is based on the general understanding of the LEED v4.1 by PBS. However, it is the sole responsibility of the designer to research information available for SIPS, and determine how SIPS may earn LEED Points under the LEED v4.1 Rating Programs.



PREMIER SIPS

Website: premiersips.com Toll Free: 800-275-7086

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