Alpen Windows - LEED® Impact Analysis™

SECTION I. PRODUCT IDENTIFICATION
Product Name: Alpen Windows
Manufacturer: Alpen High Performance Products
6268 Monarch Park Place
Longmont, CO 80503

SECTION II. ENVIRONMENTAL POLICY
The world today produces over 30 billion tons of greenhouse gas emissions per year. Alpen Windows develops and manufactures sustainable green building materials that dramatically reduce the impact of the 'built environment' on the climate. We aim for breakthroughs in product performance, without requiring changes in customer behavior or in how products are used – thus speeding market adoption. Our goal, as a company, to save one billion tons of greenhouse gas emissions every year, as our contribution.

To learn more about our CO2 reduction commitment, please visit: www.AlpenHPP.com

SECTION III.
While products alone are not awarded points by the LEED rating systems, they can contribute to achievement of LEED milestones. This LEED Impact Analysis summarizes contributions of Alpen Windows to the following LEED 2009 Rating Systems:

- ☐ LEED for New Construction: LEED-NC
- ☐ LEED for Core and Shell: LEED-CS
- ☐ LEED for Schools: LEED-S
- ☐ LEED for Commercial Interiors: LEED-CI
- ☐ LEED for Existing Buildings: LEED-EBOM
- ☐ LEED for Homes: LEED-H

ENERGY AND ATMOSPHERE	**Intent:** Establish the minimum level of energy efficiency for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.
MINIMUM ENERGY PERFORMANCE **LEED NC 2009-** **LEED CS 2009 -** **LEED SCHOOLS 2009-** EA Prerequisite 2: Minimum Energy Performance **LEED EBOM 2009-** EA Prerequisite 2: Minimum Energy Performance **LEED CI 2009-** EA Prerequisite 2: Minimum Energy Performance **Required Prerequisite**	**Requirements:** OPTION 1: (NC, CS, S) Whole Building Energy Simulation Demonstrate a 10% improvement in the proposed building performance rating for new buildings, or a 5% improvement in the proposed building performance rating for major renovations to existing buildings, compared with the baseline building performance rating. Calculate the baseline building performance rating according to the building performance rating method in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2007 (w/ errata but w/out addenda) using a computer simulation model for the whole building project. OPTION 2. (NC,CS, S) Prescriptive Compliance :ASHRAE Advanced Energy Design Guide Comply with the prescriptive measures of the ASHRAE Advanced Energy Design Guide Path 1,2, 3, or K-12 School Buildings as appropriate to the project scope. Project teams must comply with all applicable criteria as established in the Advanced Energy Design Guide for the climate zone in which the building is located. OPTION 3.(NC,CS, S) Prescriptive Compliance:Advanced Buildings Core Performance Guide Comply with the prescriptive measures identified in the Advanced Buildings™ Core Performance™ Guide developed by the New Buildings Institute. ✓ **LEED for SCHOOLS ONLY**: The project must first establish an energy performance rating goal for the facility design using the EPA's Target Finder rating tool. LEED EBOM CASE 1 - Projects Eligible for Energy Star Rating For buildings eligible to receive an energy performance rating using the EPA's ENERGY STAR® Portfolio Manager tool, achieve an energy performance rating of at least 69. Have energy meters that measure all energy use throughout the performance period of all buildings to be certified. Each building's energy performance must be based on actual metered energy consumption for both the LEED project building(s) and all comparable buildings used for the benchmark. A full 12 months of continuous measured energy data is required. LEED EBOM CASE 2. - Projects Not Eligible for Energy Star Rating For buildings not eligible to receive an energy performance rating using Portfolio Manager, comply with 1 of the following: Option 1: Demonstrate energy efficiency at least 19% better than the average for typical buildings of similar type by benchmarking against national average source energy data provided in the Portfolio Manager tool as an alternative to energy performance ratings. Follow the detailed instructions in the LEED Reference Guide for Green Building Operations & Maintenance, 2009 Edition. Option 2: Use the alternative method described in the LEED Reference Guide for Green Building Operations & Maintenance, 2009 Edition and have energy meters that measure all energy use through- out the performance period of all buildings to be certified. Each building's energy performance must be based on actual metered energy consumption for both the LEED project building(s) and all comparable buildings used for the benchmark. A full 12 months of continuous measured energy data is required.

ENERGY AND ATMOSPHERE **MINIMUM ENERGY PERFORMANCE ...continued** **Required Prerequisite**	**Requirements (...cont'd) :** LEED CI Design portions of the building as covered by the tenant's scope of work to comply with ANSI/ASHRAE/IESNA Standard 90.1-2007 (w/ errata but w/out addenda). Projects in California may use Title 24-2005, Part 6 in place of ANSI/ASHRAE/IESNA Standard 90.1-2007. **Product Contribution Statement** The super-insulating value of Alpen high-performance windows can improve the insulative value of the building envelope which can dramatically improve occupant comfort levels. This can reduce energy loss and thus energy costs. **Contribution Calculation** Total sq. ft. of Alpen Windows with associated U-values and Solar Heat Gain Co-efficient (SHGC) as labeled by the National Fenestration Rating Council must be entered into building simulation software, if using Option 1 for NC, CS, S or LEED CI. For Options 2-3, show proof of meeting SHGC and visible transmittance requirements as specified in Design/Performance Guides. For LEED EBOM window areas and values must be entered into Energy Star Portfolio Manager. ***Example Calculation*** *Required calculations are performed by building simulation software. For prescriptive compliance paths, no calculations are required.*

ENERGY AND ATMOSPHERE **OPTIMIZE ENERGY PERFORMANCE** **LEED NC 2009-** **LEED CS 2009 -** **LEED SCHOOLS 2009-** EA Credit 1: Optimize **LEED EBOM 2009-** EA Credit 1: Optimize Energy Performance **LEED H 2009-** EA Credit 1: Optimize Energy Performance **Available Points:** **NC, S: 1-19 pts** **CS: 3-21 pts** **EBOM: 1-18 pts** **HOMES: 2-34 pts**	**Intent:** Achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use. **Requirements:** OPTION 1: (NC, CS, S) Whole Building Energy Simulation Demonstrate a percentage improvement in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance rating according to the building performance rating method in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2007 (w/ errata but w/out addenda) using a computer simulation model for the whole building project. OPTION 2. (NC,CS, S) Prescriptive Compliance : ASHRAE Advanced Energy Design Guide Comply with the prescriptive measures of the ASHRAE Advanced Energy Design Guide Path 1,2, 3, or K-12 School Buildings as appropriate to the project scope. Project teams must comply with all applicable criteria as established in the Advanced Energy Design Guide for the climate zone in which the building is located. OPTION 3.(NC,CS, S) Prescriptive Compliance: Advanced Buildings Core Performance Guide Comply with the prescriptive measures identified in the Advanced Buildings™ Core Performance™ Guide developed by the New Buildings Institute. LEED EBOM CASE 1 - Projects Eligible for Energy Star Rating For buildings eligible to receive an energy performance rating using the EPA's ENERGY STAR® Portfolio Manager tool, achieve an energy performance rating of at least 71. Have energy meters that measure all energy use throughout the performance period of all buildings to be certified. Each building's energy performance must be based on actual metered energy consumption for both the LEED project building(s) and all comparable buildings used for the benchmark. A full 12 months of continuous measured energy data is required. LEED EBOM CASE 2. - Projects Not Eligible for Energy Star Rating For buildings not eligible to receive an energy performance rating using Portfolio Manager, comply with 1 of the following: Option 1: Demonstrate energy efficiency at least 21% better than the average for typical buildings of similar type by benchmarking against national average source energy data provided in the Portfolio Manager tool as an alternative to energy performance ratings. Follow the detailed instructions in the LEED Reference Guide for Green Building Operations & Maintenance, 2009 Edition. Option 2: Use the alternative method described in the LEED Reference Guide for Green Building Operations & Maintenance, 2009 Edition and have energy meters that measure all energy use throughout the performance period of all buildings to be certified. Each building's energy performance must be based on actual metered energy consumption for both the LEED project building(s) and all comparable buildings used for the benchmark. A full 12 months of continuous measured energy data is required.

ENERGY AND ATMOSPHERE **OPTIMIZE ENERGY PERFORMANCE ...continued** **Available Points:** **NC, S: 1-19 pts** **CS: 3-21 pts** **EBOM: 1-18 pts** **HOMES: 2-34 pts**	**✓ LEED for HOMES ONLY: Intent:** Improve the overall energy performance of a home by meeting or exceeding the performance of an ENERGY STAR labeled home. **✓ LEED for HOMES ONLY: Requirements** Prerequisite EA 1.1 :Meet the performance requirements of ENERGY STAR for Homes, including 3rd- party inspections (HERS Index below 85 for IECC climate zones 1-5 or 80 for IECC zones 6-8) Credit EA 1.2 Exceptional Energy Performance: Exceed the performance of ENERGY STAR for Homes. Exceeding IECC 2004 by at least 16% in climate zones 1-5 and 21% in climate zones 6-8 **Product Contribution Statement** The super-insulating value of Alpen high-performance windows can improve the insulative value of the building envelope which can dramatically improve occupant comfort levels. This can reduce energy loss and thus energy costs. **Contribution Calculation** Total sq ft of Alpen Windows with associated U-values and Solar Heat Gain Co-efficient (SHGC) as labeled by the National Fenestration Rating Council must be entered into building simulation software, if using Option 1 (NC, CS, S), LEED CI, or LEED for HOMES. For Options 2-3 (NC, CS and S) show proof of meeting SHGC, R-Value/U-Factor and visible transmittance requirements as specified in Design/Performance Guides. For LEED EBOM, window areas and values must be entered into Energy Star Portfolio Manager. For LEED-H projects, once HERS Index is determined by building simulation software, refer to LEED-H reference guide page 170 for HERS Index and LEED point equivalents. ***Example Calculation*** *Required calculations are performed by building simulation software. For prescriptive compliance paths, no calculations are required. Use the provided chart in LEED-H Reference Guide relating the Home Energy Standards (HERS) Index to the appropriate number of LEED points.*

ENERGY AND ATMOSPHERE **WINDOWS** **LEED HOMES -** EA Credit 4: Windows **Available Points: 1-3**	**Intent:** Maximize the energy performance of windows. **✓ LEED-H Projects receiving points for EAC1 are not eligible for this credit & vice versa.** **Requirements:** Prerequisites 4.1 Good Windows. Meet all the following requirements: a) Design and install windows and glass doors that have NFRC ratings that meet or exceed the window requirements of the ENERGY STAR for Homes national Builder Option Package below. b) The ratio of skylight glazing to conditioned floor area may not exceed 3% All skylights must meet the ENERGY STAR performance requirements for skylights, but are exempt from the requirements in table below. c) Homes in the North or North/Central climate zones that have a total window-to-floor area ratio (WFA) of 18% or more must meet a more stringent U-factor requirement (also applicable to EA 4.2 and 4.3): U-factor = [0.18 / WFA] * d) Homes in the South or South/Central climate zones that have a total window-to-floor area ratio (WFA) of 18% or more must meet a more stringent solar heat gain coefficient (SHGC) requirement (also applicable to EA 4.2 and 4.3): SHGC = [0.18 / WFA] * **✓ Note: Up to 0.75% of the window-to-floor area may be used for decorative glass or skylight area that does not meet the U-factor and SHGC requirements above.** Credits 4.2 Enhanced Windows (2 points). Design and install windows and glass doors that have NFRC ratings that exceed the window requirements in the ENERGY STAR for Homes national Builder Option Package below 4.3 Exceptional Windows (3 points). Design and install windows and glass doors that have NFRC ratings that substantially exceed the window requirements in the ENERGY STAR for Homes national Builder Option Package below. **Product Contribution Statement** The super-insulating value of Alpen high-performance windows can improve the insulative value of the building envelope which can dramatically improve occupant comfort levels. This can reduce energy loss and thus energy costs. Alpen Windows' superior performance allows projects the flexibility of higher window to floor area (WFA) ratios without the thermal losses associated with lower quality fenestration products. **Contribution Calculation** To calculate window to floor area ratio, divide the total window area by the total floor area. If this number is greater than 18%, refer to the LEED reference guide appropriate for your project type for increased U-factor or SHGC requirements.

ENERGY AND ATMOSPHERE

WINDOWS ...cont'd

LEED HOMES -
EA Credit 4: Windows

Available Points: 1-3

Example Calculation

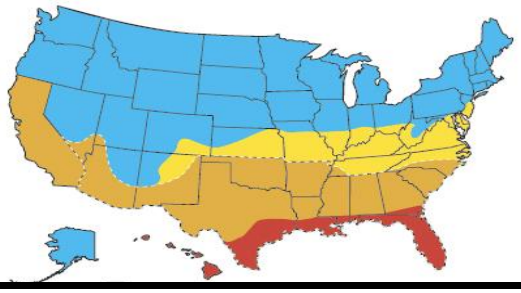
1.There are 23 Alpen Windows 725 Series Windows and Sliding Patio Doors with Alpenglass 7L Package specified for a new 3500 sf home in Northern California. The combined total window area is 600 sf. WFA is 17.1%

2. Northern California is located in what Energy Star calls the South Central region

3. Alpenglass 7L Package has a 0.17 U-factor and a 0.23 SHGC

4.The performance of the specified Alpen Windows ≤0.32 U-factor and ≤0.30 SHGC thresholds required for EA C4.3 Exceptional Windows

Credit	Metric	Northern	North Central	South Central	Southern
EA 4.1: Good Windows	U-factor	≤0.35	≤0.40	≤0.40	≤0.55
(prerequisite)	SHGC	Any	≤0.45	≤0.40	≤0.35
EA 4.2: Enhanced Windows	U-factor	≤0.31	≤0.35	≤0.35	≤0.55
(optional, 2 points)	SHGC	Any	≤0.40	≤0.35	≤0.33
EA 4.3: Exceptional	U-factor	≤0.28	≤0.32	≤0.32	≤0.55
Windows (optional, 3	SHGC	Any	≤0.40	≤0.30	≤0.30



MATERIALS & RESOURCES

REGIONAL CONTENT

LEED NC 2009-
LEED CS 2009 -
LEED SCHOOLS 2009-
LEED CI 2009-
MR Credit 5: Regional Content

LEED H
MR Credit 2.2: Environmentally Preferable Products, Criteria C - Local Production

Available Points
NC, CS, S: 10% = 1
NC, CS, S: 20% = 2
CI: OPTION 1 = 1
CI: OPTION 2 = 2
HOMES: 0.5 - 8 pts

Intent:
Increase demand for building materials/products extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

Requirements:
Use building materials/products that have been extracted, harvested or recovered AND manufactured within 500 miles of the project site for a minimum of 10% or 20%, of the total materials $ value. If only a fraction of a product or material is extracted, harvested, or recovered and manufactured locally, then only that % can contribute to the regional value.

✓ LEED CI 2009 ONLY:

OPTION 1 (1 point)
Use a minimum of 20% of the combined value of construction AND Division 12 (Furniture) materials and products that are manufactured regionally within a radius of 500 miles.

OPTION 2 (2 points)
Meet the requirements for Option 1. Use a minimum of 10% of the combined value of construction and Division 12 (furniture) materials and products extracted, harvested or recovered AND manufactured within 500 miles of the project.

✓ LEED for HOMES ONLY:

Use products that were extracted, processed, and manufactured within 500 miles of the home. A material must make up 90% of the component, by weight or volume.

Product Contribution Statement (CA was a former manufacturing site)

Alpen Windows used in projects located within 500 miles of the facility where they were manufactured qualify for contributions to LEED CI. Option 1. Product used in projects located both within 500 miles of manufacturing facility AND within 500 miles of raw material suppliers qualify for contributions to this credit under LEED NC, CS, S and CI Option 2.

Contribution Calculation

Total cost of Alpen Windows (x) % of product (by dry weight) manufactured (CI Option 1) or manufactured AND extracted within 500 miles of project site (CI Option 2 and NC, CS, and S), divided by total project materials cost = Alpen Windows' % contribution to 10% (CI Option 2, NC, CS, S) or 20% (CI Option1, NC, CS, S) thresholds for total materials $ spent on regional content.

Example Calculation (LEED NC)

1.The total construction cost for a small office building in zip code 94109 is $600k

2. Using 45%, default materials value, the total cost of materials (excluding labor and equipment) is $270k.

3. The total cost of Alpen Windows (including shipping, handling, taxes and contractor mark-up) is $20k.

4. Alpen Windows contains 100% content manufactured in zip code 94089.

5. Distances from project site to materials extraction and manufacturing is 43 miles.

6. The cost of Alpen Windows, $20k (÷) total project materials cost, $270K =0.07 or 7%.

7. 7% is Alpen Windows' contribution to the 10% or 20% threshold required to earn 1 or 2 points.

MATERIALS & RESOURCES	**Intent:** Reduce the environmental & air quality problems of materials acquired for the upgrade of buildings.
■■■■■■■■■■■■■■■■■■ **SUSTAINABLE PURCHASING: FACILITY ALTERATIONS & ADDITIONS** **LEED EBOM 2009-** MR Credit 3 **Available Points = 1**	**Requirements:** Maintain a sustainable purchasing program covering materials for base building renovations, demolitions, refits and new construction additions and achieve sustainable purchases of 50% of total purchases (by cost) during the performance period (minimum 3 months). **Product Contribution Statement (CA was a former manufacturing site)** Tile materials that are SCS Floor Score-certified and constitute a minimum of 25% of the finished floor OR contain ≥ 10% post-consumer and/or 20% post-industrial recycled material, as defined by ISO 14021-1999 OR contain at least 50% material harvested/extracted & processed within 500 miles of project qualify to contribute to the 50% sustainable purchase requirement. **Contribution Calculation** Cost of Alpen Windows purchased for alteration/addition ÷ by total addition/alteration base building materials cost = Alpen Windows % contribution to 50% sustainable materials purchase threshold to earn this point. Supporting documentation is required. ***Example Calculation*** *1. The total cost of base building materials for an office retrofit in zip code 94109 is $40k* *2. The total cost of Alpen Windows (including shipping, handling, taxes and contractor mark-up) purchased for the project is $10k.* *3. Alpen Windows contain 100% content manufactured within 500 miles, in zip codes 94089.* *4. The cost of Alpen Windows, $10k (÷) total project materials cost, $40K =0.25 or 25%.* *5. 25% is Alpen Windows' contribution to the 50% threshold required to earn 1 point under this credit.*

ALPEN WINDOWS MANUFACTURING & EXTRACTION LOCATION

Alpen High Performance Products, 6268 Monarch Park Place, Longmont, CO 80503

INDOOR ENVIRONMENTAL QUALITY	**Intent:** Provide additional air ventilation to improve indoor air quality for improved occupant comfort, well-being and productivity.
INCREASED VENTILATION **LEED NC 2009-** **LEED CS 2009-** **LEED S 2009-** **LEED CI 2009-** IEQ Credit 2 IEQ Credit 1.3 **Available Points = 1**	**Requirements:** CASE 2. Naturally Ventilated Spaces Design natural ventilation systems for occupied spaces to meet the recommendations set forth in the Carbon Trust's Good Practice Guide 237 (1998). Determine that natural ventilation is an effective strategy for the project by following the flow diagram process shown in Figure 1.18 of the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual 10: 2005, Natural Ventilation in Non-domestic Buildings ..AND OPTION 1 Use diagrams and calculations to show that the design of the natural ventilation systems meets the recommendations set forth in the CIBSE Applications Manual 10: 2005, Chapter 2- Natural Ventilation in Non-domestic Buildings. OR... OPTION 2 Use a macroscopic, multi-zone, analytic model to predict that room-by-room airflows will effectively naturally ventilate, defined as providing minimum ventilation rates required by ASHRAE 62.1-2007 Chapter 6 (w/ errata but w/out addenda) for at least 90% of occupied spaces. **Product Contribution Statement** Alpen Windows high performance operable windows designed to naturally ventilate spaces contribute to this credit without requiring the typical energy tradeoffs. **Contribution Calculation** Determine the opening sizes for operable windows in accordance with CIBSE Application Manual 10-2005. For projects using a macroscopic, multi-zone, analytic model to predict that room-by-room airflows, provide predicted airflow and a comparison with minimum ventilation rates required by ASHRAE 62.1-2007 Chapter 6 (w/ errata but w/out addenda)
CONTROLLABILITY OF SYSTEMS - THERMAL COMFORT **LEED NC 2009-** **LEED CS 2009-** **LEED S 2009-** **LEED CI 2009 -** IEQ Credit 6.2 **Available Points = 1**	**Intent:** Provide a high level of thermal comfort system control1 by individual occupants or groups in multi-occupant spaces (e.g., classrooms or conference areas) and promote their productivity, comfort and well-being. **Requirements:** Provide individual comfort controls for 50% (minimum) of the building occupants to enable adjustments to meet individual needs and preferences. Operable windows may be used in lieu of controls for occupants located 20 feet inside and 10 feet to either side of the operable part of a window. The areas of operable window must meet the requirements of ASHRAE Standard 62.1-2007 ¶ 5.1 Natural Ventilation (w/ errata but w/out addenda). Provide comfort system controls for all shared multi-occupant spaces to enable adjustments that meet group needs and preferences. Conditions for thermal comfort are described in ASHRAE Standard 55-2004 (w/ errata but w/out addenda) and include the primary factors of air temperature, radiant temperature, air speed and humidity. **Product Contribution Statement** Alpen Windows high performance operable windows designed to naturally ventilate spaces contribute to this credit without requiring the typical energy tradeoffs. **Contribution Calculation** Per the requirements of ASHRAE Standard 62.1-2007 paragraph 5.1 Natural Ventilation (w/ errata but w/out addenda)For the limits used in this credit (i.e. and area 20ft by 20ft per window) The minimum area of the window that may be opened is 4% of the net occupiable floor area. ***Example Calculation*** *1. 24x60 inch Alpen Windows casement windows are specified on a new office building* *2. Each 10x10ft work station will have access to 2 of these operable casement windows, which when fully open have an opening the size of the window area minus the frame area.* *3. While at their work stations, at no time will occupants be more than 20 feet inside or 10 feet to either side of the operable windows* *4. Window opening area = 10 sq ft total window area minus frame area for 2.84in frame (10 sf minus 1.54sf) = 8.46 sf. With 2 windows for each station, total opening (8.46 x 2) is 16.92 sf* *5. For the limits used in this credit (i.e. an area 20 ft by 20ft per window or 400 sq ft per window), 16.92 sq ft = 4.2% of net occupiable floor area.* *6. This project earns 1 point under this credit because operable window openings totaling more than 4% of net occupiable floor area limits of 400 sf are available to 100% of the occupants.*

INDOOR ENVIRON-MENTAL QUALITY	**Intent:** Provide occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the tenant space.
■■■■■■■■■■■■■■■■■■ **DAYLIGHT AND VIEWS - DAYLIGHT** **LEED NC 2009-** **LEED CS 2009-** **LEED S 2009-** **LEED CI 2009-** IEQ Credit 8.1 **LEED EBOM 2009 -** IEQ Credit 2.4, OPTION 1: DAYLIGHT **Available Points** **NC, CS: 75% = 1pt** **S: 75% = 1 pt, 90% = 2pts** **CI: 75% = 1 pt, 90% = 2pts** **EBOM = 1pt**	**Requirements:** Through 1 of the 4 options, achieve daylighting in at least the following OPTION1. Simulation Demonstrate through computer simulations that 75% or more of all regularly occupied spaces areas achieve daylight illuminance levels of ≥ 25 foot candles (fc) and a maximum of 500 fc in a clear sky condition on Sept 21 at 9 a.m. and 3 p.m. Designs that incorporate view-preserving auto-mated shades for glare control may demonstrate compliance for only the minimum 25 fc illuminance level. OPTION 2. Prescriptive Use a combination of side-lighting and/or top-lighting to achieve a total daylighting zone that is ≥ 75% of all the regularly occupied spaces. OPTION 3. Measurement Demonstrate through records of indoor light measurements that a minimum daylight illumination level of 25 fc has been achieved in at least 75% of all regularly occupied areas. Measurements must be taken on a 10-foot grid for all occupied spaces and recorded on building floor plans. Only the square footage associated with the portions of rooms or spaces meeting the minimum illumination requirements may be counted in the calculations. For all projects pursuing this option, provide daylight redirection and/or glare control devices to avoid high-contrast situations that could impede visual tasks. Exceptions for areas where tasks would be hindered by daylight will be considered on their merits. OPTION 4. Combination 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. In all cases, only the square footage associated with the portions of rooms or spaces meeting the requirements may be applied toward the 75% of total area calculation required to qualify for this credit. In all cases, provide glare control devices to avoid high- contrast situations that could impede visual tasks. Exceptions for areas where tasks would be hindered by the use of daylight will be considered on their merits. ✓ **LEED for SCHOOLS ONLY**: Earn 1 additional point if 75% of all other regularly occupied non-classroom spaces are daylight. Project teams can achieve a point for these other spaces only if they have also achieved at least 1 point for classroom spaces. ✓ **LEED EBOM ONLY**: 1 point available for either Daylight option OR Views option, but not both. **Product Contribution Statement** Alpen Windows high performance windows are designed to naturally light spaces contribute to this credit without the typical energy tradeoffs of windows with lower insulative values. **Contribution Calculation** For compliance Option 1, calculations may be performed by a daylight/building simulation software, for Option 2, please refer to the appropriate reference guide for prescriptive compliance calculation instructions and examples. For Option 3, a light meter must be used for field testing, see reference guides for details. For Option 4 any of the previous 3 compliance approaches may be used.
DAYLIGHT AND VIEWS - VIEWS - **LEED NC 2009-** **LEED CS 2009-** **LEED S 2009-** EQ Credit 8.2:VIEWS **LEED CI 2009** EQ Credit 8.2: VIEWS FOR SEATED SPACES **LEED EBOM 2009 -** EQ Credit 2.4 OPTION 2: VIEWS **Available Points = 1**	**Requirements:** Achieve a direct line of sight to the outdoor environment via vision glazing between 30" and 90" above the finish floor for building occupants in 90% of all regularly occupied areas. Determine the area with a direct line of sight by totaling the regularly occupied square footage that meets the following criteria: In plan view, the area is within sight lines drawn from perimeter vision glazing. In section view, a direct sight line can be drawn from a point 42" above the floor (typical seated eye height) to perimeter vision glazing. The line of sight may be drawn through interior glazing. For private offices, the entire square footage of the office may be counted if 75% or more of the area has a direct line of sight to perimeter vision glazing. If less than 75% of the area has a direct line of sight, only the area with the direct line of sight count toward meeting the credit requirement. For multi-occupant spaces, the actual square footage with a direct line of sight to perimeter vision glazing is counted. ✓ **LEED CS ONLY**: The CS design must incorporate a feasible tenant layout per the default occupancy counts (or some other justifiable occupancy count) that can be used in analysis of this credit. **Product Contribution Statement** Alpen Windows high performance windows provide building occupants with a connection between indoor spaces and the outdoors and contribute to this credit without the typical energy tradeoffs of windows with lower insulative values. **Contribution Calculation** Two calculations are required to determine compliance: One using direct line of sight to perimeter vision glazing between 30 and 90 inches above the floor, determines whether 90% of the regularly occupied area has the potential for views. The second calculation uses horizontal view at a typical seated eye height (42 in) to determine access to views. See LEED reference guides for more details. ***Example Calculation*** *See LEED reference guides for example calculations.*

INNOVATION IN DESIGN	**Intent:** Provide design teams and projects the opportunity to achieve 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.
Environmentally Preferable Material **LEED NC 2009-** **LEED CS 2009-** **LEED S 2009-** **LEED CI 2009 -** ID Credit 1	**Requirements:** Credit can be achieved through any combination of the Innovation in Design and Exemplary Performance paths as described below: Path 1. Innovation in Design Achieve significant, measurable environmental performance using a strategy not addressed in the LEED Rating Systems. One point is awarded for each innovation achieved. * Identify the following in writing: -The intent of the proposed innovation credit. -The proposed requirement for compliance. -The proposed submittals to demonstrate compliance. -The design approach (strategies) used to meet the requirements. Path 2. Exemplary Performance (1-3 points) Achieve exemplary performance in an existing LEED prerequisite or credit that allows exemplary performance as specified in the applicable LEED Reference Guide. An exemplary performance point may be earned for achieving double the credit requirements and/ or achieving the next incremental percentage threshold of an existing credit in LEED. One point is awarded for each exemplary performance achieved. *
	Product Contribution Statement The project is able to document the reduction of environmental impacts from resource processing using Alpen Windows compared with standard glazing systems (with aluminum frames) and argue that this product meets the intent of the credit.
	Contribution Calculation The best approach for accomplishing this would be by using a lifecycle assessment (LCA) that looks at the extraction, processing, transport, use and disposal of the Alpen Windows versus traditional systems (BEES or other tool). To be a standalone innovation credit, the project should demonstrate that window systems represented 5% or more of a project's materials by value, volume or some other consistent, building level, metric. Once the LCA has been performed proving the environmental preferability of Alpen Windows, window systems' % value can be calculated as demonstrated in example calculation below.
Available Points = 1-5 ***varies by Rating System**	***Example Calculation*** *1. The total cost of base building materials for a new office in zip code 94109 is $400k* *2. The total cost of Alpen Windows (including shipping, handling, taxes and contractor mark-up) purchased for the project is $50k.* *3. The cost of Alpen Windows, $50k (÷) total project materials cost, $400K =0.125 or 12.5%.* *4. 12.5% exceeds the 5% materials value threshold criteria for Innovation in Design credit contribution.*