

# Weather Shield LEED Statements



## 2 LEED® v3 New Construction and Major Renovations

The purpose of this document is to assist professional designers to achieve the highest possible energy efficiency in their buildings. Weather Shield products not only meet the testing guidelines of the National Fenestration Rating Council (NFRC) and the Environmental Protection Agency's (EPA) ENERGY STAR® program, but exceed them by enough to gain extra credits! The following will show you how to maximize your credits through the use of Weather Shield products to help obtain up to 30 points under the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED v3) for new Construction and Major Renovations.

LEED points are awarded in Sustainable Sites, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality and Innovation in Design Process.

A LEED-certified project must obtain a minimum rating of 40 points out of 49 (Silver – 50-59 points; Gold – 60-79 points; Platinum – 80 points and above).

Additional information is available through the USGBC at [www.usgbc.org](http://www.usgbc.org).

### Sustainable Sites (SS)

#### SS CREDIT 7.2: HEAT ISLAND EFFECT: ROOF — 1 POINT

##### Intent

To reduce heat islands to minimize impacts on microclimate and human and wildlife habitats.

**Weather Shield Solution:** Refer to daylighting below for possible combination for an *Innovations in Design* credit.

**Innovation in Design:** One (1) point may be gained for a strategy to combine window/skylight daylighting with Green/Cool Roof for increased total Solar Reflective Index on Steep Roof or combination design.

#### SS CREDIT 8: LIGHT POLLUTION REDUCTION — 1 POINT

##### Intent

To minimize light trespass from the building and site, reduce sky-glow to increase night sky access, improve nighttime visibility through glare reduction, and reduce development impact on nocturnal environments.

**Weather Shield Solution:** While designers are encouraged to install automatic turn-off systems for interior lighting, it should be noted that tinted glass in windows may achieve the desired affect. Bronze and gray tinted glazing options can have a Visible Transmittance of 0.29 and 0.22 respectively, compared to a 0.64 for clear insul glass, reducing the light pollution exiting the building.

### Energy + Atmosphere (EA)

#### EA CREDIT 1: OPTIMIZE ENERGY PERFORMANCE — 1-19 POINTS

##### Intent

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

**Weather Shield Solution: Zo-e-shield® 5, 6 or 7 with Inert Gas:** These glazing options can exceed ENERGY STAR prerequisites by 25% to 75%. This provides for a possible contribution to energy design for the Optimize Energy Performance category of beyond the 42%.

**Aluminum Clad Wood/All-Wood Product Lines: Weather Shield®, Legacy Series® and Collections™:** Zo-e-shield 5 with inert gas can offer U-factor of 0.29 and Zo-e-shield 6 has a U-factor of 0.30 both with an SHGC of 0.20. Zo-e-shield 7 has a U-factor of 0.26 and SHGC of 0.19 and industry's highest Condensation Rating (CR) of 64.

**Fiberglass Clad/Wood/All-Fiberglass Product Lines: Weather Shield EnduraShield™** Fiberglass-Clad with Zo-e-shield 5 achieves a U-factor of 0.26 and Zo-e-shield 6 achieves a U-factor of 0.29, both with an SHGC of 0.20. Zo-e-shield 7 has a U-factor of 0.22 and SHGC of 0.18 with a Condensation Rating (CR) of 67. Refer to individual product performance data for more information.



**Vinyl Clad Wood/All-Vinyl Product Lines: ProShield® and Visions 3000®:** Zo-e-shield 5 and Zo-e-shield 6 with inert gas can offer U-factor of 0.26, an improvement over the required ENERGY STAR minimum of 0.35 (North) and 0.55 (South). They also offer an SHGC of 0.20 versus 0.45 (N) and 0.35 (S). Refer to individual product performance data for more information.

**For Coastal Areas and Weather Penetration: LifeGuard® and LifeGuard® IG:** LifeGuard IG windows and doors offer similar U-factor and SHGC ratings, but have the additional protection of impact resistance for hurricanes. LifeGuard single glazed units are tested for Florida Building Code and Dade County for impacts up to 190 mph—almost 50 mph higher than the required standard test for impact for Missile Level D.

## Materials + Resources (MR)

### MR CREDIT 2.1–2.2: CONSTRUCTION WASTE MANAGEMENT: DIVERT 50% OR 75% FROM DISPOSAL — 1–2 POINTS

#### Intent

To divert construction and demolition debris from disposal in landfills and incineration facilities. To redirect recyclable recovered resources back to the manufacturing process and reusable materials to appropriate sites.

**Weather Shield Solution:** Weather Shield places 60–65% recycle value to the window for glass, aluminum and packaging. In renovations, windows often make up 18–100% of the exterior building envelope. Developing a recycling plan that includes glass windows can assist in diverting 50–75% waste from landfills. All Weather Shield windows are shipped in 95% recycled packaging that is also recyclable.

### MR CREDIT 4.1–4.2: RECYCLED CONTENT: 10% OR 20% (POST-CONSUMER + 1/2 PRE-CONSUMER) — 1–2 POINTS

#### Intent

To increase demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.

**Weather Shield Solution:** Weather Shield products have high recycled content from 9% pre-consumer on vinyl, 65% on glass and up to 95% on aluminum extrusions (refer to chart on page 4). Weather Shield holds the only pre-consumer vinyl window certification from Scientific Certification Systems (SCS).

**Innovation in Design:** One (1) point may be gained for *Exemplary Performance* if recycled content is 30% or greater. Also refer to EQ 4.2.

### MR CREDIT 5.1–5.2: REGIONAL MATERIALS: 10% OR 20% EXTRACTED, PROCESSED & MANUFACTURED REGIONALLY — 1–2 POINTS

#### Intent

To increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

**Weather Shield Solution:** Weather Shield has multiple manufacturing facilities in Wisconsin. While we are able to service many U.S. markets comfortably within the 500-mile requirement, due to the complexity and proprietary nature of raw materials and your project's location, we strongly suggest that you contact our Environmental Department to further compare your project's regional material credit.

**Innovation in Design:** One (1) point may be gained for *Exemplary Performance* if calculations reach 40% or greater.

### MR CREDIT 7: CERTIFIED WOOD — 1 POINT

#### Intent

To encourage environmentally-responsible forest management.

**Weather Shield Solution:** In development—details to follow.



ASSEMBLY TYPE *	RECYCLED by WEIGHT	COST % of PRODUCT (Base x \$ Value) =
Aluminum/Wood/Glass/Low E/Argon Gas (BASE)	60%	31% (Base x 1.0) = 31%
Aluminum/Wood/Glass/Krypton	60%	31% (Base x 2.5) = 77.5%
Aluminum/Wood/Glass/Impact Resistant	59%	34.4% (Base x 1.42) = 48.84%
Aluminum/Wood/Glass/Zo-e-shield 5 & 6	60%	31% (Base x 1.28) = 39.68%
Aluminum/Wood/Glass/Zo-e-shield 7	59%	30% (Base x 1.17) = 35.10%
Aluminum/Wood/Glass/Triple Insul	59%	33% (Base x 1.12) = 36.96%
Vinyl/Wood/Glass	40.5%	14% (Base x 1) = 14%
Vinyl/Vinyl/Glass	51%	13.5% (Base x 1) = 13.5%
Fiberglass/Glass	49.3%	14% (Base x 1) = 14%
Packaging	95%	1% (Base x 1) = 1%

\* Please request recycled letter for doors or specialty products.

## Indoor Environmental Quality (IEQ)

### IEQ CREDIT 2, CASE 2: INCREASED VENTILATION — 1 POINT

#### Intent

To provide additional outdoor air ventilation to improve indoor air quality (IAQ) and promote occupant comfort, well-being and productivity.

**Weather Shield Solution:** Natural light along with windows that can be opened are preferred by most building occupants over mechanical HVAC. Use Weather Shield products in Design to provide natural ventilation with operable window (non-fixed) systems for at least 9% of occupied spaces. Operable window types available from Weather Shield include casement, awning, single- and double-hung tilts, sliding patio doors and hinged French doors. Frame/mullion vents may also be added for increased ventilation.

### IEQ CREDIT 3.1–3.2: CONSTRUCTION IAQ MANAGEMENT PLAN: DURING CONSTRUCTION AND BEFORE OCCUPANCY — 1–2 POINTS

#### Intent

To reduce indoor air quality (IAQ) problems from construction or renovation to promote the comfort and well-being of construction workers and building occupants.

**Weather Shield Solution:** Operable window openings with or without temporary exhaust systems are an economical alternative to a mechanical flush with HVAC and risk of airborne contaminants in the filters (refer to EQ Credit 5: Indoor Chemical & Pollutant Source Control and MERV 13 filters).

### IEQ CREDIT 4.2: LOW-EMITTING MATERIALS: PAINTS & COATINGS — 1 POINT

#### Intent

To reduce the quantity of indoor contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

**Weather Shield Solution:** All Weather Shield windows and doors are assembled prior to site arrival. Factory-applied finishes (Low VOC, 2-K coatings and Green Seal products) produce no on-site construction emissions. In addition, paint finishes meeting AAMA 2605 requirements and/or anodized finished help protect from salt water erosion in coastal applications.

**IEQ CREDIT 6.1: CONTROLLABILITY OF SYSTEMS – LIGHTING — 1 POINT****Intent**

To provide a high level of lighting system control by individual occupants or groups in multi-occupant spaces (e.g., classrooms and conference areas) and promote their productivity, comfort and well-being.

**Weather Shield Solution:** Provide internal or external shading devices for individual control by occupant for ambient management of lighting and overall energy management.

**IEQ CREDIT 6.2: CONTROLLABILITY OF SYSTEMS – THERMAL COMFORT — 1 POINT****Intent**

To provide a high level of thermal comfort system control by individual occupants or groups in multi-occupant spaces (e.g., classrooms or conference areas) and promote their productivity, comfort and well-being.

**Weather Shield Solution:** 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. Operable window types available from Weather Shield include casement, awning, single- and double-hung tilts, sliding patio doors and hinged French doors. Refer to individual window opening specification information charts for more information.

**IEQ CREDIT 7.1: THERMAL COMFORT & DESIGN — 1 POINT****Intent**

To provide a comfortable thermal environment that promotes occupant productivity and well-being.

**Weather Shield Solution:** Natural ventilation reduces mechanical support and is preferred by most building occupants over mechanical HVAC. Designing operable windows and the building envelope to meet requirements will increase ventilation rates, indoor air quality and occupant control over thermal comfort to naturally ventilate spaces and support building energy performance and comfort.

**IEQ CREDIT 8.1-8.2: DAYLIGHT & VIEWS; DAYLIGHT 75% OF SPACES OR VIEW FOR 90% OF SPACES — 1-2 POINTS****Intent**

To provide building components with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

**Weather Shield Solution:** Windows above 7'6" are considered daylight glazing and need to be diffused (for direct glare) or deflected with awning/shelf on south side of building. Weather Shield transom windows can be manufactured with bronze, gray or Zo-e-shield glazing options. North-facing transoms as opposed to skylights (twice summer cooling) allow non-glare light. Window areas between 2'6" and 7'6" are considered vision glazing. Addition of a custom inner layer of translucent glazing above 7'6" can increase interior foot candle rating from 10 to 30.

**Exemplary Performance:** Up to two (2) points for *Exemplary Performance* for Daylighting or View with goal to reach 95%.



## 6 Innovation in Design (ID)

### ID CREDIT 1.1-1.5 PATH 2: INNOVATION IN DESIGN — 1-3 POINTS

#### Intent

To 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.

**Weather Shield Solution:** Combine operating and direct-set windows in transom or daylight of green/cool roof system to reduce Solar Reflective Index for Heat Island Effect Roof and increase ventilation. Weather Shield products have high-recycled content (pre-consumer) on vinyl, glass and aluminum extrusions.

#### Exemplary Performance Credits:

1. Exemplary recycled content (over 30%)
2. Provide increased ventilation and reduce grid power
3. Achieve 95% daylighting
4. Acoustical performance enhancement
5. Energy performance (Zo-e-shield glazing)

## LEED for Schools + Sport Facilities

Please use this guide in addition to the IEQ for special applications that apply to educational and sporting facilities. All product specifications, Thermal and Performance testing for specific product applications should be obtained from our Website or your local representative.

### SS CR 8: LIGHT POLLUTION REDUCTION — 1 POINT

#### Intent

Mimimize light trespass from the building at night and improve visibility through glare reduction.

**Weather Shield Solution:** Light parameters are controlled by glazing and color selection. It may be possible to obtain SS CR 8 by incorporating select Weather Shield products into the building's envelope.

### EA CR 1.1-1.10: OPTIMIZE ENERGY PERFORMANCE — 1-10 POINTS

#### Intent

Demonstrate energy-saving solutions over baseline by 10 to 45%+.

**Weather Shield Solution:** Weather Shield products exceed ENERGY STAR performance requirements by up to 75%. Use simulation modeling to determine exact contribution.

### EA PREREQUISITE: MINIMIZE ENERGY PERFORMANCE: REQUIRED

#### Intent

Design project to comply with ASHRAE St 90.1-2004.

**Weather Shield Solution:** Weather Shield products allow natural sunlight to illuminate interiors, saving energy.

### ID 1.1, 2-4: INNOVATION IN DESIGN — 1 POINT

#### Intent

Exemplary energy performance, school as teaching tool, or integrations of sustainable features not included above.

**Weather Shield Solution:** Weather Shield products can exceed thermal performance up to 75%, over 45% recycled content, provide certified wood and other innovative features.

### MR 4.1, 2: RECYCLED CONTENT OF MATERIALS — 1 POINT FOR 10% VALUE / 2 POINTS FOR 20% VALUE / ID CREDIT FOR 30%+

#### Intent

Use materials with recycled content with the sum of post consumer content + 1/2 pre-consumer content (based on weight/cost).

**Weather Shield Solution:** Refer to Weather Shield IEQ for specific product content (most are over 60%) with fenestration being a significant cost in the exterior envelope.

## MR 5.1, 2: REGIONAL MATERIALS — 1 POINT FOR 10% VALUE / 2 POINTS FOR 20% VALUE

### Intent

Use materials manufactured within 500 miles of project.

**Weather Shield Solution:** Weather Shield manufactures products in Medford, Ladysmith, Park Falls, and Mosinee, Wisconsin.

## EQ CR 2: INCREASED VENTILATION — 1 POINT

### Intent

Provide natural ventilation for at least 90% of spaces per ASHRAE 62.1-2004.

**Weather Shield Solution:** All Weather Shield operable windows achieve this credit.

## EQ CR 3.2: CONSTRUCTION MANAGEMENT — 1 POINT

### Intent

Provide air flush after construction and before occupancy.

**Weather Shield Solution:** All Weather Shield operable windows provide flush-out potential without supplemental mechanical system.

## EQ CR 6.1, 6.2: LIGHTING SYSTEM AND THERMAL COMFORT CONTROLLABILITY — 1 POINT EACH

### Intent

Provide 1) 25 foot candles of light in all areas, 2) individual control for 50% of occupants. Operable windows are an option.

**Weather Shield Solution:** Weather Shield products provide natural light, controllable by glazing and internal shading. Operable windows with control systems are an option.

## EQ CR 7.1: THERMAL DESIGN — 1 POINT

### Intent

Provide thermal environment to promote productivity.

**Weather Shield Solution:** Provide Weather Shield thermal windows and operable windows to offset HVAC in gymnasiums and natatoriums.

## EQ CR 8.1: DAYLIGHTING — 1-3 POINTS

### Intent

75% of core learning space has daylight (1 pt), 90% of core spaces (2 pt) and 75% of occupied (3 pt).

**Weather Shield Solution:** Use Calculation, Simulation or Measurement to demonstrate Weather Shield products.

## EQ CR 8.2: DAYLIGHTING/VIEWS — 1 POINT

### Intent

Vision glazing (2.6'-7.6') for 90% of occupants.

**Weather Shield Solution:** Extend building perimeter and maximize exterior/interior glazing.

## EQ CR 9: ENHANCED ACOUSTICAL — 1-2 POINTS

### Intent

Windows must meet STA rating of 35 dBa (1 pt), or 40 dBa (2 pt).

**Weather Shield Solution:** See performance data.



# Weather Shield Manufacturing Locations



## WISCONSIN

- Medford★
- Ladysmith
- Park Falls
- Mosinee

★ Headquarters



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[www.weathershield.com](http://www.weathershield.com) | 1-800-538-8836

