



*GUIDE FOR LEED NC*

## ***AERCO & LEED***

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The environmental impact of commercial building design, construction and operation is significant. The negative impact of buildings has become a social and economic focal point of society today. The United States Green Building Council was established to create standards for sustainable building design; more specifically the LEED Green Building Rating System.

### **So why make your building Green?**

Green buildings are known for conserving natural resources, using alternative material and recycling construction waste. People now see the financial advantage as well. Well designed green buildings yield lower utility and operational costs. **Building green is no longer a pricey experiment.**

### **What is LEED?**

LEED is a certification system that deals with the environmental performance of buildings based on overall characteristics of a project. The USGBC does not LEED-certify individual products.

#### LEED addresses:

- 1) Sustainable Site
- 2) Water Efficiency
- 3) Energy and Atmosphere
- 4) Materials and Resources
- 5) Indoor Environmental Quality
- 6) Innovation and Design Practices

### **What can AERCO do to help you achieve LEED points?**

This paper examines how AERCO products support the intentions of the LEED rating system. Furthermore, we are committed to populate our organization with people who are familiar with the concepts of Green, understand its metrics and can be identified by owners, architects, facility managers and general contractors as being experts.

**AERCO International recognizes the importance of both LEED and Green and is striving to adopt these principles into our company's culture and products.**

## Sustainable Sites

### SS Credit 5.2 *Site Development – Maximize Open Space*

#### ***Intent:***

Provide a high ratio of open space to development footprint to promote biodiversity.

#### ***Potential Product Application:***

AERCO's innovative products are designed with a **small footprint and flexible venting and piping options, all of which can help reduce the sprawl of building space.**

#### **Footprint:**

- Our products have minimum footprints allowing them to fit through a standard size door, and are a solution for boiler rooms with space restrictions/limitations.
- Modulex boilers are designed with complete redundancy, eliminating the need for a multiple boiler plant.
- Semi-instantaneous design of our domestic water heaters eliminates the need for storage tanks.

#### **Sealed Combustion:**

- Eliminates the need for make up air units for combustion.

#### **Venting:**

- Smaller duct sizes attributed to long equivalent runs
- Termination flexibility (roof top, side-wall)
- Single penetration to the outdoors via the ability to common breach multiple boiler/heater ducts (exhaust & combustion air)
- Modulex connection flexibility allows for various installation options

#### **Piping:**

- Single (primary) loop installation (eliminates secondary loop and associated auxiliary equipment)
- Boilers can be installed into two pipe changeover systems (less piping)
- Modulex connection flexibility allows for various installation options

#### ***AERCO Products:***

Benchmark 1.5 LN Boiler	Benchmark 2.0 Low NOx Boiler	Modulex Boilers
Benchmark 3.0 Boiler	Benchmark 2.0 Boiler	Indirect Water Heaters
KC Boiler and Water Heater		

## Water Efficiency

### **WE Credit 1.1** ***Water Efficient Landscaping***

#### ***Intent:***

Limit or eliminate the use of potable water, or other natural surface or subsurface water resources available near or on the project site, for landscape irrigation.

#### ***Potential Product Application:***

AERCO's high efficiency gas-fired products produce a significant amount of condensate during operation.

#### **Water Efficient Landscaping:**

- Flue gas condensate can be used for irrigation. Based on specific landscape design and types, treatment of condensate may be required.

#### ***AERCO Products:***

Benchmark 1.5 Boiler  
Benchmark 2.0 Boiler  
Benchmark 2.0 Low NOx Boiler  
Benchmark 3.0 Boiler  
Modulex Boilers  
KC Boiler and Water Heater

# Energy and Atmosphere

## EA Credit 1 *Optimize Energy Performance*

### *Intent:*

Achieve increasing levels of energy performance above the baseline in the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

### *Potential Product Application:*

AERCO products are designed to reduce environmental and economic impacts associated with excessive energy use.

- Meet the overall intent of ASHRAE 90.1 specific to hydronic heating systems
- Meet the requirements of ASHRAE 90.1, section 6.4: We exceed efficiency requirements shown in table 6.8.1F (hot water boilers)
- High turndown ratio minimizes cycling losses (minimizes wasted energy) and maximizes operating efficiency
- The condensing of flue gases (latent heat of vaporization) ensures maximum heat transfer, thus minimizing thermal losses
- VFD controlled blower motors are used to optimize performance with minimal electrical consumption
- B+II WaterWizard sub cooling coil extracts latent heat from condensed steam in order to maximize efficiency

### *AERCO Products:*

Benchmark 1.5 Boiler  
Benchmark 2.0 Boiler  
Benchmark 2.0 Low NOx Boiler  
Benchmark 3.0 Boiler  
Modulex Boilers  
KC Boiler and Water Heater  
B+II WaterWizard Heater

## Indoor Environmental Quality

### EQ Credit 4.1 Low Emitting Materials – Adhesives & Sealants

#### *Intent:*

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

#### *Potential Product Application:*

AERCO uses low emitting Volatile Organic Compounds (VOC) adhesives, sealants, and insulation in the manufacturing of our products. The VOC limits are established by Green Seal Standard GS-36 and Green Guard®.

#### *AERCO Products:*

##### *Adhesives*

Benchmark 1.5 Boiler  
Benchmark 2.0 Boiler  
Benchmark 2.0 Low NOx Boiler  
Benchmark 3.0 Boiler  
KC Boiler and Water Heater  
Indirect Water Heaters

##### *Insulation\**

Benchmark 1.5 Boiler  
Benchmark 2.0 Boiler  
Benchmark 2.0 Low NOx Boiler  
Benchmark 3.0 Boiler  
KC Boiler and Water Heater  
Indirect Water Heaters

##### *Sealants*

Indirect Water Heaters

\*The insulation has been GREENGUARD Indoor Air Quality Certified® by the GREENGUARD Environmental Institute under the GREENGUARD Standard for Low Emitting Products.

**EQ Credit 4.2**  
**Low Emitting Materials – Paints & Coatings**

***Intent:***

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

***Potential Product Application:***

AERCO uses low emitting Volatile Organic Compounds (VOC) paints in the manufacturing of our products. These paints are applied to prevent corrosion and oxidation (rust). The VOC limits are established by Green Seal Standard GS-03.

***AERCO Products:***

Benchmark 1.5 Boiler  
Benchmark 2.0 Boiler  
Benchmark 2.0 Low NOx Boiler  
Benchmark 3.0 Boiler  
KC Boiler and Water Heater  
Indirect Water Heaters

**EQ Credit 5  
Indoor Chemical & Pollutant Source Control**

***Intent:***

Minimize exposure of building occupants to potentially hazardous particulates and chemical pollutants.

***Potential Product Application:***

AERCO's high efficiency gas-fired products utilize sealed combustion. The benefit is the elimination of damper systems mounted on outside walls which reduces the distribution of pollutants and particulates through the building (outdoor contaminants are isolated from occupants of building).

***AERCO Products:***

Benchmark 1.5 Boiler  
Benchmark 2.0 Boiler  
Benchmark 2.0 Low NOx Boiler  
Benchmark 3.0 Boiler  
Modulex Boilers  
KC Boiler and Water Heater



## Innovation & Design Process

### ID Credit 1.1 – 1.4 Innovation In Design

#### *Intent:*

To provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by the LEED for New Construction Green Building Rating System and/or innovative performance in Green Building categories not specifically addressed by this Rating System.

#### *Potential Product Application:*

##### **Turndown**

- AERCO's high efficiency gas-fired products have a turn down ratio of 20:1 which reduces overall energy consumption by minimizing cycling which reduces overall fuel consumption and electrical KW demand (purge cycle).

##### **Footprint**

- AERCO's gas-fired products and indirect products have a small footprint providing an opportunity to increase the building open space.

#### *AERCO Products:*

Benchmark 1.5 Boiler  
Benchmark 2.0 Boiler  
Benchmark 2.0 Low NOx Boiler  
Benchmark 3.0 Boiler  
Modulex Boilers  
KC Boiler and Water Heater  
Indirect Water Heaters