

# TECHNICAL BULLETIN LEED & Air Filtration



LEED is a registered trademark of the United States Green Building Council. It is an acronym for a certification process named *Leadership in Energy & Environmental Design*.

Originally conceived in 1998, it provides third-party verification that a building or community was designed and built using strategies intended to improve performance metrics including energy savings, water efficiency, CO<sub>2</sub> emissions reduction, indoor environmental quality, resource conservation and increase sensitivity to environmental impacts.

## Green is Everywhere

In today's energy conscious world, everyone wants to be 'green' and the term is often marketed to a fault. It is important to note that the use of the word green does not directly associate with LEED and has gathered additional meaning.

Camfil Farr markets some of our products as green because they improve indoor air quality, save energy, create less waste in landfills and have a lower carbon footprint than competitive products.

These products are part of Camfil Farr's commitment to sustainability in our manufacturing processes, our logistics in getting products to market, and in the construction of the products themselves.

It is important to note that LEED does not certify products, only buildings. The USGBC states: "USGBC does not certify, endorse or promote products, services or companies, nor do we track, list or report data related to products and their environmental qualities."

Camfil Farr products can assist users in obtaining LEED credits by:

- Supplying air filters with a minimum efficiency reporting value (MERV) of 8 for air handlers used during construction, installed at each return air grille. This is a minimum standard of care to obtain a 1-point credit under LEED's *Construction IAQ Management Plan*.
- Supplying MERV 13 filtration for installation in air handlers immediately prior to building occupancy. This is a minimum standard of care to obtain the same 1-point credit under LEED's *Construction IAQ Management Plan*.

## Submittals for LEED Certification

A required submittal before LEED certification is a confirming letter by the general contractor listing each air filter used during construction and at the end of construction. It must include the MERV value, manufacturers' name and model number. Photographs taken on three different occasions during construction are also a submittal requirement.

## Does Efficiency Matter?

The USGBC does not recognize appendices of Standards, so Appendix J of Standard 52.2 is not applicable in filter selection for LEED certification. Only the MERV, as defined in the main body of Standard 52.2 is applicable for the aforementioned MERV 8 and MERV 13 requirements.

The drop in efficiency experienced with coarse fibers, or electrostatically-enhanced filters, is not exposed without the optional testing of Appendix J.

Thus, it is possible to install MERV 8 or MERV 13 air filters that use coarse fibers and drop in efficiency, and still meet the requirements of LEED certification. Promotion of these types of filters circumvents the intent of LEED and places the end user in a position of not receiving the proper filter efficiency. This includes all 1" and 2" pleated filters marketed as MERV 13 product for LEED.

There is also no additional credit for installing filters with a higher efficiency (IE: MERV 14 instead of the minimum requirement of MERV 13).

There may be paths to innovation credits by combining with other system enhancements. If your firm is seeking innovation credits for a project and wants to consider increasing filter efficiency, please contact Camfil Farr.

## LEED, Filtration & Outside Air

In the *LEED Manual, Indoor Environmental Quality, Minimum IAQ Performance*, adherence is required to the *Ventilation Standard for Acceptable Indoor Air Quality* (Standard 62.1), as published by the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE).

It is a prerequisite that does not offer points, but certification of a building is not possible unless adherence to 62.1 is demonstrated. A letter from the mechanical engineer is required, declaring that the project is fully compliant with ASHRAE 62.1 and all published addenda. It also requires a description of how the procedure was employed in the IAQ analysis (*Ventilation Rate Procedure*).

## LEED & Air Filtration

### Filtration Required for Outside Air

In areas of non-attainment, sections of the country where air pollution levels persistently exceed the national ambient air quality standards as published by the United States Environmental Protection Agency (EPA), filtration of this excessive pollution is a prerequisite.

Contaminants listed in the Standard requiring removal before ventilation air introduction into a building include particulate, carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide and lead.

If the EPA threshold for any of these contaminants is exceeded, air filtration must be used to reduce the offending contaminants to an acceptable level.

As an example, over 130 million people in the United States live in an area where the ozone is at non-attainment levels. Camfil Farr can supply the carbon filtration products that will not only reduce the ozone to acceptable levels, but remove other gaseous contaminants of concern further improving the air quality within the buildings.

### Camfil Farr & LEED

Camfil Farr can assist in the LEED certification process by helping engineers that are seeking innovation credits.

This additional credit availability provides design teams with the opportunity to be awarded points for 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 LEED.

Innovation points are not awarded for the use of a particular product; they require design innovation consistent with a change in the thought process for doing something, or the useful application of new inventions or application improvements.

### Indoor Air Quality Procedure

One example is the application of the *Indoor Air Quality Procedure* as prescribed in ASHRAE 62.1. LEED does not specifically recognize this procedure and requires that the ventilation method brings in a prescribed amount of outside air to dilute internal contaminants. In fact, LEED will provide additional point credits if outside air is increased above the minimum as prescribed in the Standard, although this seems counter-productive and can burden the building owner with additional energy cost to heat and cool this air during intertemperate seasons.

One engineering firm applied the *Ventilation Rate Procedure* as prescribed by the Standard and also designed the building to be operated using the *Indoor Air Quality Procedure*, saving the building owner significant energy dollars during intertemperate seasons. They received innovation points for this design.

### Credit for Innovation

To obtain innovation points, paperwork must be submitted that describes the innovation in detail, outlines the adherence to LEED concepts in detail, and provides the math to demonstrate the environmental benefits.

### Certified Product

Some manufacturers have had their products certified as green by independent organizations such as BuildingGreen, Greenguard, GreenSense, etc. LEED certification is based on the characteristics of the products (for instance, the greater the amount of recycled content a product contains, may result in a greater reward based on a specific LEED credit). These credits are not specific to filter requirements but are considered as part of the overall building construction.

Although independent certification may be helpful for product marketing, it is not a requirement for submitting products for a LEED certified project. In fact, in the process, manufacturer's data is wholly acceptable.

Camfil Farr manufacturers products with a clear environmental target, engineered for the lowest life-cycle cost and economically friendly to building budgets.

### References:

*ASHRAE Standard 52.2, Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size*

*ASHRAE Test Guide, Camfil Farr*

*USGBC LEED Reference Guide for Green Building Design and Construction, 2009 Edition*

*USGBC LEED Reference Guide for Green Building Operations and Maintenance*

*LEED, Indoor Air Quality and Air Filtration, M. Stutman, LEED AP, Camfil Farr*

### Useful Web Sites:

[www.usgbc.org/](http://www.usgbc.org/)

[epa.gov/airquality](http://epa.gov/airquality)

[www.camfilfarr.com/cou\\_us/](http://www.camfilfarr.com/cou_us/)

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Camfil Farr is a member of the United States Green Building Council and supports their efforts to create a better world for future generations. Through committee participation, we also provide input specific to our expertise, Indoor Environmental Quality (IEQ).