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INDOOR ENVIRONMENTAL QUALITY: Low-Emitting Materials, Systems Furniture and Seating ()

9/20/2006 -

Credit Interpretation Request

This credit specifies two compliance paths.

> Option A - “Greenguard Indoor Air Quality Certified”

> Option B requires “Calculated indoor air concentrations that are less than or equal to those established in Table 1 for furniture systems and seating determined by a procedure based on the U.S. Environmental Protection Agency’s Environmental Technology Verification (ETV) Large Chamber Test Protocol for Measuring Emissions of VOCs and Aldehydes (September 1999) testing protocol conducted in an independent air quality testing laboratory.”

The submittal requirement for Option B includes “providing details of the U.S. EPA ETV procedure, and the emission factors from the large-chamber testing of the systems furniture, showing the calculations used in determining the emission limits, complete with the air exchange rate, demonstrating that emissions limits have not exceeded those shown in Table 1. Test results and supporting calculations must be dated and signed by an officer of the independent laboratory where the testing was conducted. Test results must represent the manufacturing practices employed for the product used on the project and must have been completed before the start of manufacturing but no earlier than 24 months prior to the last manufacturing date.”

The US EPA ETV protocol is over 6 years old, has not been maintained, requires complex site specific detail to determine compliance, has not been thoroughly validated and refers to the Business and Institutional Furniture Manufacturer’s Association International (BIFMA) for sample acquisition, packaging and shipping procedures. Recognizing the limitations of the US EPA ETV protocol, BIFMA worked with Dr. Jensen Zhang of Syracuse University, an independent scientist in the field of chamber testing, who included extensive peer review while developing a method for testing system furniture and seating. This work builds upon the US EPA ETV protocol and resulted in a test method (BIFMA M7.1-2005) and standard (BIFMA X7.1-2005) detailing the procedure from product selection through chamber testing, including analytical analysis and representative worst-case modeling of office furniture.

BIFMA’s primary contribution to this work includes extensive research into office configurations and sizes for both the open plan office and private office situations. BIFMA M7.1-2005 also incorporates ASHRAE 62.1-2004 which varies occupant ventilation rates based on office foot print and occupant density. Both BIFMA M7.1-2005 and X7.1-2005 passed membership ballot, have been issued as BIFMA standards and are currently undergoing ANSI canvass. The BIFMA standards provide additional detail to improve consistency, use models based on analysis of current buildings and are open to multiple qualified laboratories.

We propose to use furniture from a manufacturer who works with an outside testing facility to review product construction materials and production processes, establish representative product groupings and test worst-case configurations based on the methodology outlined in BIFMA M7.1-2005 and

X7.1-2005. The testing facility would provide documentation stating that the products meet the LEED CI EQ 4.5 credit limits. Will the use of systems furniture and seating tested to BIFMA method M7.1-2005 which meets the requirements of BIFMA Standard X7.1-2005, as verified by an independent laboratory, be acceptable as a compliance path for LEED-CI EQ Credit 4.5.

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Ruling

Yes, the use of systems furniture and seating tested to BIFMA method M7.1-2005, which meets the requirements of BIFMA Standard X7.1-2005, as verified by an independent laboratory, will be acceptable as a compliance path for LEED-CI EQ Credit 4.5. Please see the specifics of this new compliance path as noted below.

Under “Requirements” Option C shall be added as follows:

Calculated indoor air concentrations that are less than or equal to those established in Table 1* for furniture systems and seating determined by a procedure based on BIFMA M7.1-2005 and X7.1-2005 testing protocol conducted in an independent third party air quality testing laboratory.

Under “Submittals” a paragraph shall be added as follows:

For systems furniture and seating tested using a procedure based on the BIFMA protocols, provide documentation from an independent laboratory where the testing was conducted demonstrating that emissions limits have not exceeded those shown in Table 1.* Documentation of specific products or product groupings with restrictions (if applicable) must be identified, dated and signed by an officer of the independent product testing laboratory and/or an independent third party certifier. Test results must represent the manufacturing processes and materials employed for the product at the time of project submittal. Tests must have been completed before the start of the manufacturing but no earlier than 2 years prior to the last manufacturing date.

*See Table 1 in the LEED-CI v2.0 Rating System as it relates to both Options B and C.

AMENDMENT (12/19/06):

The requirement in section 5 of BIFMA standard X7.1-2005 is waived for LEED purposes. Section 5 requires that laboratories used to perform the emissions testing and/or provide analytical results shall be independently accredited to ISO/IEC 17025, “General requirements for the competence of testing and calibration laboratories.”