Green Code Now Allows Air Curtains

BERNER INTERNATIONAL CORP.

The addition of air curtains in the International Green Construction Code (IgCC) — the new comprehensive high-performance green building code — promises energy and construction cost savings for commercial, industrial and institutional buildings.

Specifying air curtains as energy-saving, cost-cutting alternatives to vestibules in 3,000-square-foot buildings and larger has been a recent trend among consulting engineers and architects. However, many times specifications are blocked by local jurisdictions that have adopted the International Energy Construction Code (IECC), which doesn't yet sight air curtains as vestibule alternatives.

Thus, the newly enacted IgCC, which is scheduled for March 2012 publishing, now provides an approved overlay of green construction products to the base code IECC, which is overseen by the International Code Council (ICC), the Washington-based organization responsible for providing minimum safety, sustainability, and affordability building codes and standards.

“Building owners have lobbied code organizations for an alternative to vestibules, because of their higher costs, waste of space and less effectiveness compared to air curtains,” said David Johnson, director of engineering at air curtain manufacturer, Berner International. “The overlay helps high-performance green building advocates push through design criteria, such as substituting a vestibule with an air curtain. However it's still up to the discretion of local code jurisdictions whether it's accepted in a project.”

Recent proposals to the IgCC by the Air Movement and Control Association International (AMCA) helped establish air curtains as a vestibule alternative with the stipulation that they're tested in accordance with ANSI/AMCA Standard 220-05, “Laboratory Methods of Testing Air Curtains for Aerodynamics Performance Ratings.”

Also helpful in the code modification effort were recent studies proving air curtains as 10 percent more energy-efficient than vestibules. The three-month research study, “Air Curtains: A Proven Alternative to Vestibule Design,” used second-party validation from research/validation consultant Blue Ridge Numerics (which has since been acquired by AutoDesk) with certified results from proven computational fluid dynamics (CFD) analysis.

Besides energy savings, Johnson also said vestibules, especially in retail settings, consume anywhere from 25 to 250 square feet of usable retail space and carry construction costs ranging from $3,750 to $37,500, based on an average of $150/square feet construction costs.

“The IgCC is an overlay code to the base energy code,” said Amanda Hickman, manager of regulatory affairs, Intercode Inc., who along with Johnson, helped AMCA present data to IgCC committees. “This means the requirements of the IECC must be met first. The IECC does not contain the same allowance that the IgCC just accepted for an air curtain alternative.”

Meanwhile air curtain proponents will continue to present energy efficiency data to code committees, in hopes of instituting the vestibule alternative measure into the IECC. The next meeting on the subject is scheduled in January 2013. “The next step for the air curtain industry is to seek the same allowance that was approved by the IgCC and get it into the IECC. Then, designers will be able to use an air curtain as an alternative to a vestibule full-stop throughout the country,” said Hickman.

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