

ENERGY SAVINGS

Controlling air leakage is an important factor in maintaining a building's energy efficiency.

According to the United States Department of Energy, some 40 percent of the energy of heating and cooling a building is lost by uncontrolled air leakage through the building enclosure. As a result, North American energy codes have started to address airtight qualities in buildings. Uncontrolled air leakage could have consequences beyond increased energy consumption, regarding health and safety of the building occupants, as well as premature deterioration of building materials.

A 2005 National Institute of Standards and Technology (NIST)* study indicates that an air barrier system could reduce air leakage by up to 85 percent, and realize a 40 percent savings in natural gas, and a 25 percent savings in electricity.

*The study was conducted by Steven J. Emmerich (Building and Fire Research Laboratory, NIST), Timothy P. McDowell (TESS Inc.) and Wagdy Anis (Shepley Bulfinch Richardson and Abbott). It evaluated the energy savings of an effective air barrier requirement for nonresidential buildings in five cities representing different climate zones (Miami, Phoenix, St. Louis, Bismark and Minneapolis).

LEED

Air Barrier Systems can contribute to LEED certification. Simply using an Air Barrier or any product does not guarantee any LEED points.

There is no such thing as a LEED certified product!

Possible LEED Contribution points for Wall Guardian air barriers:

- EA Credit 1: Optimize Energy Performance
- MR Credit 1.1: Building Reuse-Maintaining existing walls, floors, and roof.
- IEQ Credit 7.1: Thermal Comfort-Design.
- Depending on product used other credits may also apply.

The next version of LEED will reference ASHRAE 90.1-2010 as the baseline standard for LEED buildings. **LEED Buildings will require air barrier systems as a mandatory building system.**

OTHER CODES RELATED TO AIR BARRIERS

INTERNATIONAL GREEN CONSTRUCTION CODE

606.1.2 Air leakage. Air leakage mitigation measures shall be provided in accordance with this section.

606.1.2.1 Sealing of the building envelope. The building thermal envelope shall be durably sealed to limit infiltration. The sealing methods between dissimilar materials shall allow for differential expansion and

contraction. The following shall be caulked, gasketed, and weather-stripped and additionally sealed with an air barrier film.

1. All joints, seams and penetrations.
2. Site-built windows, doors and skylights.
3. Openings between window and door assemblies and their respective jambs and framing.
4. Utility penetrations.