



Building Diagnostics
& Property Science



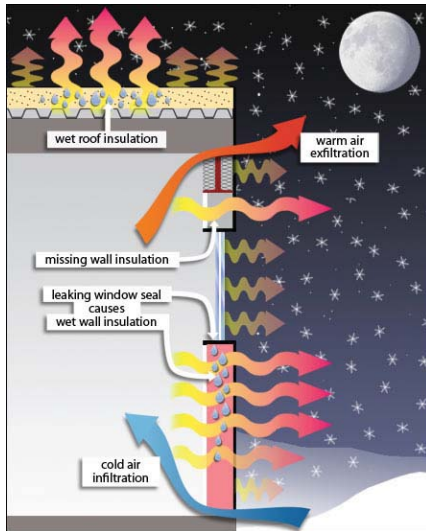
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Building Air/Vapor Barrier System Testing

What is an Air Barrier?

Air Barriers control the unintended movement of air into and out of a building enclosure. Air barrier systems are comprised of a number of materials which are assembled together to provide a complete barrier to air leakage through the building enclosure. Air leakage can have detrimental effects on how a building functions and can even reduce the life span of a building.

A properly functioning air barrier system provides a barrier against both the air leakage and the diffusion of air caused by wind, stack and mechanical equipment pressures. Air barrier systems are used to make the building perform better. The primary purpose of an air barrier system is to stop the air from leaking into and out of the building enclosure.



What is a Vapor Barrier?

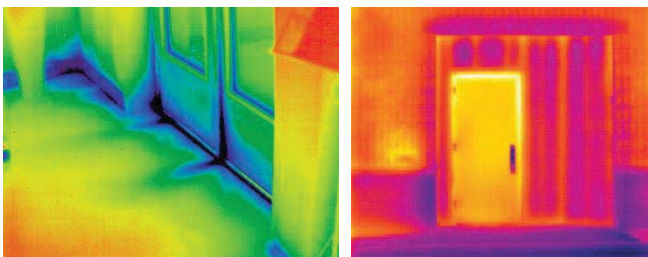
A vapor barrier is designed to restrict the flow of water vapor through a material, just the same as an air barrier restricts the flow of air through a material. Vapor barriers are intended to control the rate of diffusion into a building assembly and control the rate of moisture flow where they are placed.

Why Use an Air/Vapor Barrier?

The US Army Corp of Engineers (USACE) has taken the lead in mandating that all new and retrofitted conditioned buildings meet an air tightness metric verified by testing.

Building Diagnostics & Property Science (BD&PS) is currently one of only a few consultants that has experience applicable to the USACE air tightness testing and diagnostic requirements.

Qualitative Testing using Infrared Thermography to locate air leakage paths



Air and Vapor Barrier Performance Testing

Performance testing for Air and Vapor Barrier includes:

- Large Building fan pressurization testing to identify areas of air infiltration/exfiltration through the enclosure and to provide normalized air leakage rates performed by certified Level III personnel.
- Testing building air tightness in accordance with both ASTM E 1827(2002) and ASTM E 779 (2003)
- Test programs conforming to USACE protocols and requirements for measuring air leakage in buildings, including ECB 2009-29 *Building Air Tightness Requirements*.



Air and Vapor Barrier Diagnostics Testing

Diagnostics testing for Air and Vapor Barrier includes:

- Infrared Thermography scanning to diagnose areas of building enclosure air leakage, thermal bridges or missing insulation performed by certified Thermographer
- Infrared thermography and smoke trace diagnostics in accordance with ASTM C 1060 (2003), ASTM 1186 (2003) and ISO 6781:1938
- Diagnostic programs conforming to USACE protocols and requirements.



Air Tightness Specification Guide

BD&PS can help you meet the requirements of your air and vapor barrier testing specification.

Goal: less than 0.25 cfm/ft² @ 75 Pa

Objective:

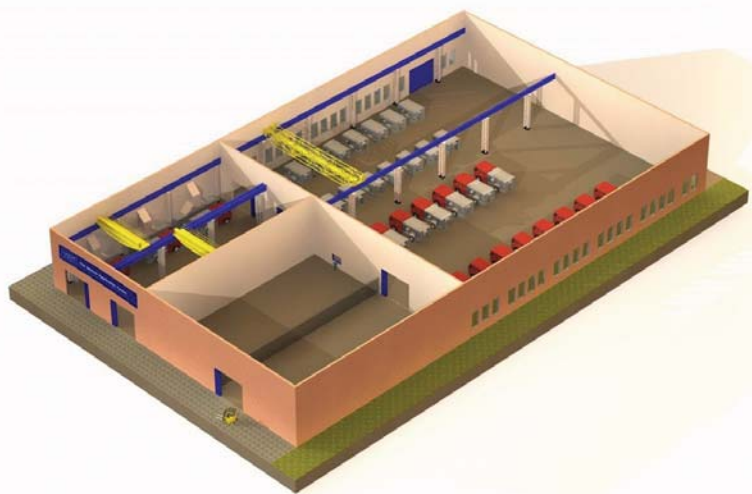
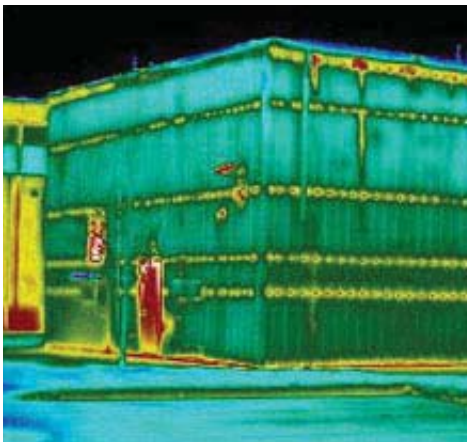
- Properly specified requirements
- Airtightness Levels achieved
- Accurate, repeatable measurements
- Rate Quality of construction

The BD&PS Difference:

BD&PS offers the following additional services to our clients.

- Pre-design consultation with the design-build team on air barrier assemblies and systems, detailing , and material specifications.
- Quality assurance field observations during construction identifying typical complaint and non-complaint construction methods.
- Follow-up testing, diagnostics and consultation in the event that the air barrier system fails to meet the required USACE Air Tightness Metric.
- Building Envelope Commissioning (BECx) to include commissioning the air, moisture, vapor, and thermal barriers which can qualify for a LEED credit.

Know the Building Envelope



For more information about this or any of the other services offered by BD&PS please contact us at 205.439.7780.

Building Diagnostics and Property Science (BD&PS) is a SBA Certified 8(a) Small Minority Owned Business founded in 2005 to provide forensic engineering services related to building envelopes, evaluation of energy management systems and building commissioning. Our technical staff consists of individuals with expertise in traditional environmental services, indoor air quality, energy management, building envelope and building commissioning services.

BD&PS is a member of:



BUILDING DIAGNOSTICS & PROPERTY SCIENCE

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