

Disclaimer: This technical bulletin does not include all information required to complete a design of a construction/air barrier project using the sections/articles summarized below. Consult the appropriate code or standard for all the required information to complete a through design analysis.

ABAA Technical Bulletin – 2012-01

Air Barrier Materials, Air Barrier Assemblies, Whole Building Testing and Water Resistive Barriers in Codes and Standards

Below is a list of six codes and standards with the requirements for air barrier materials, air barrier assemblies, whole building testing and water resistive barriers.

ASHRAE 90.1-2010

5.4.3. Air Leakage

5.4.3.1. Continuous Air Barrier

- requirement for continuous air barrier design and construction

5.4.3.1.1. Air Barrier Design

- requirement for continuous air barrier design, air barrier structural design and documentation on air barrier construction documents.

5.4.3.1.2. Air Barrier Installation

- requirement for air barrier construction details

5.4.3.1.3. Air Barrier Materials and Assemblies

- air permeance compliance requirement for the selection of air barrier materials and assemblies for opaque envelopes.

ASHRAE 189.1-2011

7.4.2. Building Envelope

7.4.2.9. Continuous Air Barrier

- requirement for air barrier design and construction in a continuous fashion. Air barrier components shall be clearly identified on construction documents and the joints, interconnections, and penetrations of the air barrier components shall be detailed.

NORMATIVE APPENDIX B – PRESCRIPTIVE CONTINUOUS AIR BARRIER

B1. CHARACTERISTICS

- requirement for air barrier design and installation

B2. COMPLIANCE

- air permeance compliance requirement for the selection of air barrier materials and assemblies for opaque envelopes
- requirements for building envelope air leakage testing

2012 International Green Construction Code

SECTION 605 BUILDING ENVELOPE SYSTEMS

605.1.2 Air Leakage

- requirement for building envelope to be sealed in accordance with section C402.4 of the International Energy Conservation Code and the other sections of the IgCC code.

605.1.2.1 Air barrier

- requirement for building envelope to be designed in buildings in climate zones 1 through 8.

605.1.2. Testing Requirements

- requirements for building envelope air leakage testing

2012 International Energy Conservation Code

Definition:

Air Barrier. Material(s) assembled and joined together to provide a barrier to air leakage through the building envelope. And air barrier may be a single material or a combination of materials.

C402.4 Air leakage (Mandatory)

- requirement for air leakage of the thermal envelope shall comply with the noted sections of this code.

C402.4.1 Air barriers

- requirement for continuous air barrier in the listed climate zones and with the noted sections of this code.

C402.4.1.1 Air barrier construction

- prescriptive measures for a continuous air barrier to be designed and installed.

C402.4.1.2.1 Materials

- air permeance compliance requirement for the selection of air barrier materials for opaque building envelopes.

C402.4.1.2.2 Assemblies

- air permeance compliance requirement for the selection of air barrier assemblies for opaque building envelopes.

C402.4.1.2.3 Building test

- requirements for building envelope air leakage testing

C402.4.2 Air barrier penetrations

- prescriptive methods for sealing air barrier penetrations and paths of air leakage

2012 International Energy Conservation Code cont'd

R402.4 Air leakage (Mandatory)

- requirement for air leakage of the thermal envelope shall comply with the noted sections of this code.

R402.4.1 Building thermal envelope

- requirement for sealing between dissimilar materials

R402.4.1.1 Installation

- requirements of the thermal envelope (air barrier) shall be installed as per manufacturer's instructions

R402.4.1.2. Testing

- requirements for building envelope air leakage testing

2012 International Building Code

Definitions:

Water-Resistive Barrier. A material behind an exterior wall covering that is intent to resist liquid water that has penetrated behind the exterior covering from further intruding into the exterior wall assembly.

Vapor Permeable. The property of having a moisture vapor permeance rating of 10 perms ($5.7 \times 10^{-10} \text{ kg/Pa}\cdot\text{s}\cdot\text{m}^2$) or greater, when tested in accordance with the desiccant method using Procedure A of ASTM E96.

Water Resistive Barriers

1404.2 Water-resistive barrier

- requirement for a continuous water-resistive barrier behind exterior wood veneer.

2012 International Residential Code

Definitions:

Water-Resistive Barrier. A material behind an exterior wall covering that is intent to resist liquid water that has penetrated behind the exterior covering from further intruding into the exterior wall assembly.

Vapor Permeable. The property of having a moisture vapor permeance rating of 5 perms (2.9×10^{-10} kg/Pa•s•m²) or greater, when tested in accordance with the desiccant method using Procedure A of ASTM E96.

R703.1.1 Water resistance.

- requirement for exterior wall envelope to be designed and constructed in a fashion that has a water-resistive barrier.

R703.2 Water-resistive barrier

- requirement and application for a water-resistive barrier

N1102.4 (R402.4) Air Leakage (Mandatory)

- design and construction of the building thermal envelopes to limit air leakage

N1102.4.1.1 (R402.4.1.1)

- installation of the air barrier components with manufacturer's instructions

N1102.4.1.2 (R402.4.1.2)

- requirements for air leakage testing of the building envelope