

ABAA Process for Approval of Air Barrier Materials, Accessories and Assemblies

1.0 Overview

This document defines the requirements and outlines the process for a manufacturer to have air barrier products evaluated by ABAA and when the product meets the requirements listed below, be included in ABAA documents. This document provides the performance criteria for the product and submittal requirements set forth by ABAA.

2.0 Objective

To provide a consistent, documented process for ABAA evaluation of air barrier materials, accessories and assemblies.

3.0 Definitions:

Accredited laboratory

Testing laboratory that has been accredited by IAS (International Accreditation Service Inc), A2LA (American Association for Laboratory Accreditation) or SCC (Standards Council of Canada) to perform the test protocol for each test method including but not limited to ASTM E2178 and ASTM E2357.

Air barrier accessory

Products designated to maintain air tightness between air barrier materials, air barrier assemblies and air barrier components, to fasten them to the structure of the building, or both (e.g., sealants, tapes, backer rods, transition membranes, nails/washers, ties, clips, staples, strapping, primers).

Air barrier assembly

Combination of air barrier materials and air barrier accessories that are designated and designed within the environmental separator to act as a continuous barrier to the movement of air through the environmental separator.

Air barrier component

Pre-manufactured elements such as windows, doors and service elements that are installed in the environmental separator.

Air barrier manufacturer

Corporation which manufactures air barrier materials, accessory, components and / or assemblies. The manufacturer shall declare whether their product is a material, accessory, component or an assembly.

Air barrier material

Building material with an air permeance not greater than 0.02 L/(s·m²) at 75 Pa that is designed and constructed to provide the primary resistance to airflow through an air barrier assembly.

Air barrier system

Combination of air barrier assemblies and air barrier components, connected by air barrier accessories that are designed to provide a continuous barrier to the movement of air through an environmental separator.

Air leakage rate

Rate of airflow (L/s) driven through a unit surface area (m²) of an assembly at a static pressure difference (Pa) across the assembly (see also ASTM E2357).

Air permeance

Rate of airflow (L/s) through a unit area (m²) of a material driven by a unit static pressure difference (Pa) across the material (see also ASTM E2178).

Design service life

Service life specified by the designer according to the expectations (or requirements) for the air barrier material (see also CSA-S478).

Environmental separator

Parts of a building that separate the controlled interior environment from the uncontrolled exterior environment, or that separate spaces within a building that have dissimilar environments.

Sprayed polyurethane foam (medium density closed cell)

Rigid cellular plastic material that is formed in place by the catalyzed reaction of polymeric isocyanate and resin (which includes polyhydroxyl compounds, and blowing agents, etc.) producing a predominantly closed cell product that has a minimum density of 28 kg/m³.

Service life

Period of time during which the air barrier assembly or any of its materials or accessories performs without unforeseen costs or disruption for maintenance or repair.

4.0 Requirements for Evaluation of Air Barrier Materials

The manufacturer shall submit the following (signed) documentation to the ABAA office for review.

4.1 Application Form

An application form shall be completed by the manufacturer for each material they declare meets the minimum requirements set by ABAA for an air barrier material.

4.2 ABAA Licensing Agreement

An ABAA Licensing Agreement shall be signed and completed by the manufacturer.

4.3 Air Barrier Materials – Testing Requirements

The air permeance testing shall be conducted by an *accredited laboratory* in accordance with the latest published edition of ASTM E2178. All of the information required in the reporting section of the test method shall be included in the test report. The test report shall state that the test was conducted in accordance with the standard. If the test method was modified, then the test report shall describe the modification.

The water vapor transmission testing shall be conducted by an *accredited laboratory* or the manufacturer shall provide the value obtained from a recognized evaluation agency such as ICC-ES or CCMC. All of the information required in the reporting section of the test method shall be included in the test report. The test report shall state that the test was conducted in accordance with the standard. If the test method was modified, then the test report shall describe the modification.

The air leakage of air barrier assembly testing shall be conducted by an *accredited laboratory* in accordance with the latest published edition of ASTM E2357. All of the information required in the reporting section of the test method shall be included in the test report. The test report shall state that the test was conducted in accordance with the standard. If the test method was modified, then the test report shall describe the modification.

4.4 Air Permeance Testing

4.4.1 Fluid applied air barrier materials

a. Free film material testing

Fluid applied materials shall be tested at a measured thickness, in accordance with the manufacturer's product data sheet(s), installation instructions and/or master specification and fabricated in accordance with the manufacturer's field delivery requirements. The test report shall include the method of installation used for the evaluation. The air permeance testing shall be in accordance with ASTM E2178 by installing the material on a release paper, then removing the release paper after installation in the test apparatus.

b. Sub-assembly testing

For products which cannot be tested in a "free film" state, instead of testing as a free film, the manufacturer shall test the material as part of a sub-assembly where the material shall be installed on a medium density CMU substrate and this sub assembly is tested. In cases of sub-assemblies, the air permeance of the CMU before installation of the air barrier material shall be reported. A copy of

the test report stating what modifications were made to ASTM E2178 for the purpose of conducting this test shall be provided with the application.

A successful test by using the particular installation method will result in the following ABAA approval methods:

Installation Method	Installation Methods Approved
Spray	Spray, Roll, Trowel
Roll	Roll, Trowel
Trowel	Trowel

4.5 Material Specific Testing

The manufacturer shall conduct all of the tests in one of the tables of Clause 5.0 based on the table appropriate for their type of material. A copy of a test report from a manufacturer's internal laboratory or a third-party laboratory with all of the information required in the reporting section of the test method shall be submitted.

4.6 Supporting Documentation

The manufacturer shall provide the following applicable documentation for each air barrier material:

- i. Technical data sheet for the material
- ii. Manufacturer guide/master specification for the material
- iii. Typical construction details (if climate specific, this shall be indicated) which include the following as a minimum;
 1. roof/wall
 2. wall/foundation
 3. window/wall
 4. expansion joint
 5. change in plane
 6. change in substrate
 7. penetrations
 8. inter-story connections
 9. deflection joints
 10. substrate joints
 11. defects

- iv. Installation instructions that include information on;
 - 1. substrate preparation
 - 2. required ambient and substrate conditions (e.g. temperature, moisture content, wind, humidity, precipitation, falling temperature, etc.)
 - 3. application method (e.g. mechanically fastened, trowel on, roll on or spray on)
 - 4. sequence and technique for installation of *air barrier materials* and *air barrier accessories*
 - 5. material compatibility listing
 - 6. listing of air barrier accessories
 - 7. for fluid-applied membranes - minimum installation thickness
- v. A list of substrates that the material can be installed on and specifically list any substrate where the manufacturer does not recommend their material be installed upon
- vi. Service temperature of installed material
- vii. Declared VOC content in g/l and test method
- viii. Material Safety Data Sheet
- ix. Maximum allowed UV exposure
- x. Shelf life of material
- xi. Manufacturers logo electronically in vector format (.eps or .ai)

4.7 Submission of Product Samples

The manufacturer will submit three material samples, minimum size of 120 square inches.

5.0 Review Process

All submittal documentation, when received will be reviewed against the ABAA checklist for compliance. The ABAA office will correspond with the manufacturer in regards to clarification or missing items.

Once all submittal information has been received, it will be documented and organized by ABAA Technical Staff, who will provide a review of the documentation submitted and any comments in the form of an itemized checklist.

The technical completeness and consistency review will consist of the following:

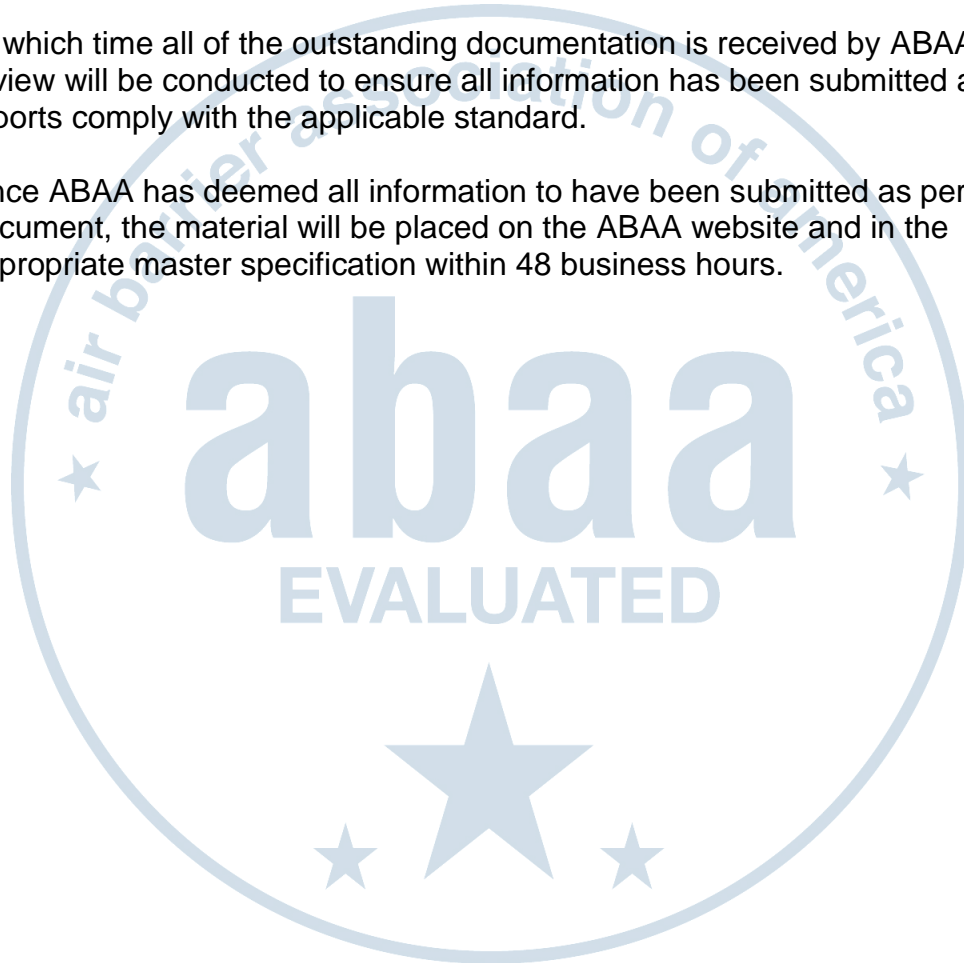
- a. Review of test data reports
- b. Review of specifications, installation instructions and product limitations

Once the technical review has been completed, an itemized checklist with comments will be forwarded to the ABAA office outlining approval, disapproval or requests for further information or clarification from the manufacturer.

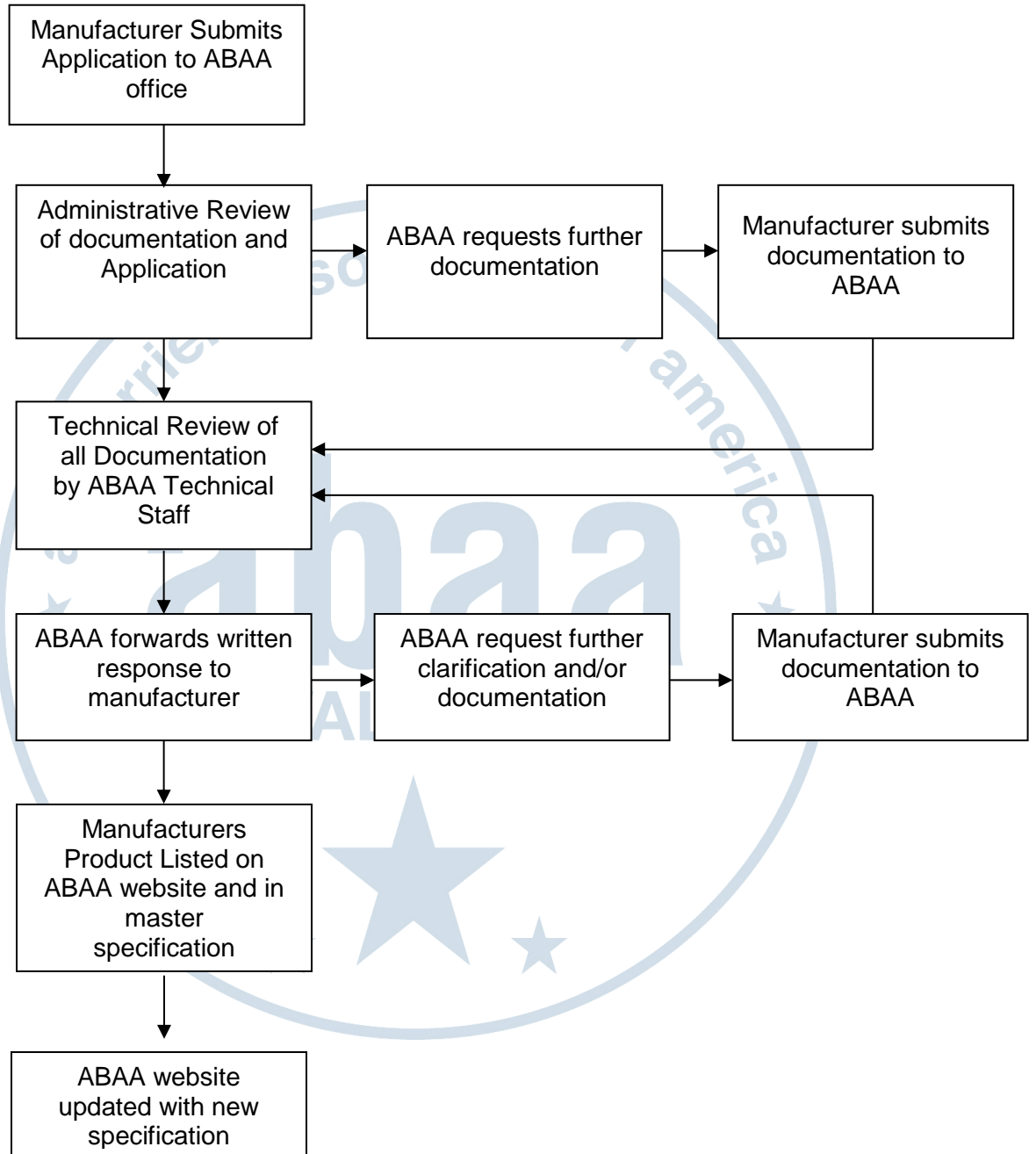
The ABAA office will then forward a written response by email to the manufacturer.

At which time all of the outstanding documentation is received by ABAA, a final review will be conducted to ensure all information has been submitted and test reports comply with the applicable standard.

Once ABAA has deemed all information to have been submitted as per this document, the material will be placed on the ABAA website and in the appropriate master specification within 48 business hours.



5.1 Flow Chart- ABAA Process for Evaluation of Air Barrier Materials, Components and Assemblies



6.0 Manufacturer Evaluation

Once a manufacturer has gone through the process of having a material, component or assembly listed with ABAA, they would be required to sign a Licensing Agreement that would formalize their requirements to maintain their license.

By being a licensed manufacturer, the manufacturer would be able to promote themselves as such.

On-going maintenance of the licensing would be outlined in their Licensing Agreement which would include such items as:

- a. Maintaining professionalism
- b. Submission of test results and documentation when product changes occur.
- c. Internal audit every three years that would review manufacturers documentation, and
- d. Compliance to the License Agreement

The renewal of the license would occur on a yearly basis which may include the following:

- a. Payment of fees
- b. Declaration / confirmation of air barrier materials, components or assemblies.