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4TH QUARTER NEWSLETTER

FEATURE NEWS ARTICLE

PUT PENETRATIONS TO THE TEST: THE EFFECT OF CLADDING ATTACHMENTS ON AIR AND WATER BARRIERS

by Sarah K. Flock, CDT, AIA, and Andrew Dunlap, AIA, CDT, LEED AP, NCARB

Guidelines for detailing and testing air and water barriers (AWB) with cladding attachments are limited. Installation practices are also not consistent across projects. Each of these penetrations have their own unique attachment method, with varying potential effects on air and water tightness and the building's overall

thermal performance. However, the impact these cladding attachments may have on the effectiveness of the AWB can easily be overlooked. Design professionals should be aware of the limitations of current terminology and test methods related to the performance of penetrations through the AWBs.

For more info: <https://bit.ly/2QTPs4X>

HOW CONTINUOUS IS CONTINUOUS? AND WHAT ABOUT Z CHANNELS?

by Laverne Dalglish with Contributor: Roy Schauffele FCSI, CCPR, FABAA, LEED GREEN Assoc., CABS

In the last few years a lot of attention has been placed on the proper installation of continuous insulation in buildings. The purported reason for this has been to stop the thermal bridging that occurs when you put thermal insulation between steel studs.



Years ago, we started out insulating our buildings by requiring a certain R-Value insulation to be installed in the cavities. In those days wood framing was very common. As we moved

to steel studs in commercial buildings, we realized that the building assembly was performing less than the R-Value of the insulation. From that we started requiring an “effective thermal insulating value”.

Today some building codes simply require a maximum U-Value for the building envelope which is supposed to reflect the thermal performance of the building assembly. But does it? In most cases, the answer is “not really”.

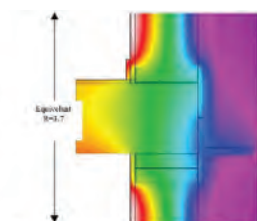


Figure 1: Floor Slab Heat Flow with no exterior insulation (vertical section)

When we look at the requirements in the International Building Code and in ASHRAE 90.1, the basic principal of overall building assembly U-Value is there but the only requirement is that you take into

consideration the primary framing members (in a lot of cases, simply the studs). This is a good first step.

If we want to get to truly energy efficient buildings, we need to look at all thermal bridging materials that are incorporated into the building assembly. Not only should the main structural beams be calculated and the steel studs, but we need to look at all thermal bridges. This includes Z channels, fasteners, brick ledges, hat channels, masonry ties, balconies, parapets and anything else that will transfer heat. But the codes are not yet there. Peering in to the future there are some manufacturers that are starting to develop thermal break materials and designers are starting to incorporate thermal breaks into their building envelope design. This is a desire by forward-thinking architects.

Today, the International Building Code and ASHRAE

90.1 do not require you to take all of the thermal breaks into consideration and you do not have to include them in your modeling. The Z channel is a common method used to be able to structurally support the cladding system. Is it a thermal break? Yes. For code purposes, do you need to consider it? No. That is a disconnect between code requirements and good building practice.

We want to reduce the energy use by our buildings and the building envelope provides the biggest opportunity. We need to bridge the thermal gap between what is required by the codes and what is good building practice. Having requirements for continuous insulation was a good step forward, we need to keep going.

AUTHORS



Mr. Roy Schauffele, FCSI, CCPR, FABAA, LEED Green Assoc., CABS, is the founder of D7S (Division 7 Solutions, Inc.) in Converse, TX.

He is the only person in the world to be a fellow of both the Construction Specification Institute (FCSI) and the Air Barrier Association of America (ABAA). He is an internationally published author in Division 7 subjects, holder of numerous awards and US patents, and he has been the speaker at over 425 AIA Learning Unit programs. He currently sits on the Executive Committee for the Air Barrier Association of America and is their former chairman.



Mr. Laverne Dalglish specializes in Standards, Building Codes, Quality Assurance, Building Science, Building Envelope, and Personnel Certification.

He is the Executive Director of the Air Barrier Association of America working to champion energy conservation in buildings while educating the building owners and designers about the benefits of energy conservation such as durability, comfort, reduced maintenance, reduced HVAC equipment costs and the positive impact on the environment.

WHAT HAS ABAA BEEN UP TO?

TECHNICAL COMMITTEE

Last month, discussion was held on including a criteria for approving water resistive barriers as currently the ABAA website only lists house wrap materials. The committee agreed with this as inclusion of other testing methods, is something that needs to happen. The direction from the committee was to look at how to incorporate this, now becoming a work item for the Material Testing Methods Task Group. This group will take the existing criteria and identify additional tests we want to be approved water resistive barriers for ABAA.

RECAP OF THE BOSTON, MA SYMPOSIUM

In cooperation with the Boston Building Enclosure Council (BEC), ABAA offered a half day educational session in Boston, MA. Held at the Boston Society of Architects, 50 individuals attended to see 3 presentations on Air Barrier Detailing, Tools to help drive decision and provide information to help develop specifications, and the always interesting topic of Vapor permance of materials and the placement within the wall system. Presenters included Ryan Dalglish with ABAA, Andrew Dunlap with SmithGroup and Chris Schuamacher of RDH. In the post event survey, 100% of the attendees indicated they would recommend the event to others and attend a future seminar with different topics.

A thank you to some of our manufacturer members and reps that sponsored this event. They included Henry Company, Carlisle, and RTS (represents Vaproshield).

AIA EASTERN NEW YORK EVENT IN ALBANY, NY

In cooperation with the AIA Eastern New York Chapter, a full day educational event took place on air barrier detailing, roof to wall connections, integration of flashing and water management materials into the building enclosures and key language for air barrier specifications. Speakers included Ryan Dalglish with ABAA, Andrew Dunlap with SmithGroup and Dave Carroll of York Manufacturing. A special thank you to Rebecca with the AIA chapter and Mr. Paul Conant of CSARCH who is the chair of the AIA education committee. With almost 50 people in attendance, it was one of the largest educational events the AIA chapter has had in a while.

Here are some of the comments from the attendees:

“VERY WELL PRESENTED AND I WILL SEND OTHER STAFF MEMBERS IN THE FUTURE”

“I THOUGHT THE SPEAKERS AND SUBJECT MATTER WERE SPOT ON”

A number of our ABAA manufacturer members helped to sponsor the AIA Eastern New York Event in Albany, NY and these included:



WHAT HAS ABAA BEEN UP TO? (CONTINUED)

CHICAGO – OCTOBER 17TH AND 18TH, 2018

ABAA, in cooperation with the Chicago-BEC and the International Masonry Institute (IMI) held a two-day education program in Chicago, IL. This program consisted of one day of lecture style presentations, followed by a day of hand's on application of various types of air barrier materials on a standardized mock-up.



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DAY 1 of the event sold out and some individuals had to sit in the hallway in order to take in some of the presentations with the door open to the speaker room. Presenters included Laverne Dalglish with ABAA, Craig Wetmore (ABAA board member and secretary), Brian Stroik (ABAA board members and vice-chair) and Roy Schaufelle (ABAA board member, past chair and executive committee member).

DAY 2 of the event had 10 mock-ups built at the IMI training facility in Addison, IL. This was an excellent facility for the hand's on and 10 manufacturer's of air barrier products participated and provided assistance to attendees as they installed the air barrier, wall accessories and other components. As part of the education, demonstrations were shown of air leakage testing and the day wrapped up with a moderated discussion by ABAA's executive director, Laverne Dalglish, on lessons learned by attendees from their experience.

”

IF YOU CARE ABOUT FACADES
AND THE BUILDING ENVELOPE
YOU NEED TO BE HERE!

”

From one of our attendees.



IN A POST EVENT SURVEY, 100% OF PEOPLE INDICATED THEY WOULD RECOMMEND THIS EVENT TO OTHERS AND 100% WOULD COME TO ANOTHER EVENT LIKE THIS.

A big shout out to Jeff Diqui of the IMI and Sarah Flock of Raths, Raths and Johnson for taking the lead in Chicago to coordinate the event. A tremendous amount of work goes into planning such an event, so we want to thank the BEC Chicago members and leadership, along with IMI's staff for the use of their facility and the mock-ups.

WE APPRECIATE THE SUPPORT OF THE MANUFACTURER SPONSORS FOR THE HANDS ON EVENT.



CONSTRUCT CONFERENCE AND TRADE SHOW

ABAA once again was present and had a booth at the Construct Show, which is affiliated with the Construction Specifications Institute (CSI). The trade show booth was manned by Ryan Dalgleish of ABAA, who was on hand to discuss technical issues, education opportunities and the association's quality assurance program that can be specified for construction projects. This is one of the shows that ABAA has participated in for a number of years to continue to provide a resource to the specification community.

A number of our manufacturer members were in attendance also, and provided assistance on air barrier materials to attendees.



ABAA BREAKS 500 MEMBERS

ABAA BREAKS 500 MEMBERS!

In August 2018, the association eclipsed 500 companies as members for the first time in the history of the association. ABAA has enjoyed year over year growth of our membership base and have come a long way from the 6 original founding members of the association.

ABAA RESEARCH - WATER DETECTION TESTING



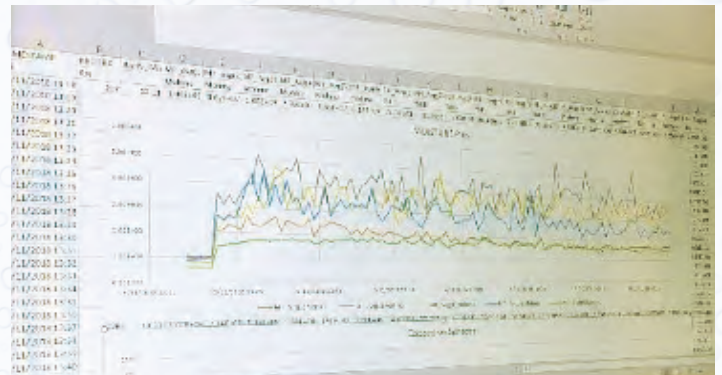
ABAA has completed the final week of testing required for the Water Detection Research Project at the Tremco testing facility in Cleveland Ohio. This research project was a joint venture between Oak Ridge National Laboratories (ORNL) and ABAA, it involved three separate weeks of testing.

The Research Committee is working on developing a testing protocol for water resistance of water resistive barriers based on the ASTM E331 test method. When considering what details needed to be included in the ASTM E331 test method, it was identified that the current ASTM E331 test deals with water coming through the wall assembly whereas ABAA is concerned about water getting past the water resistive barrier.

The Research Committee developed the water detection method research protocol where one meter by one meter specimens were fabricated using steel studs and exterior gypsum sheathing. Then six rows of fasteners were installed in the specimen after the water detection means and the air and water resistive barrier had been installed.

Each row of fasteners was installed different – overdriven, flush, under driven, angle driven, missed stud with fastener left in place and missed stud with fastener removed - to represent typical field conditions.

One set of specimens was then subjected to a pressure difference of 0 Pa (0.000 lbs/ft²) pressure difference with water being sprayed on them at a rate of 3.4 L/min·m² (5.0 U.S. gal/ft²·h) for 120 minutes. A second set of specimens constructed the same, with the same rate of water being sprayed but were subjected to a 300 Pa (6.266 lbs/ft²) pressure difference.



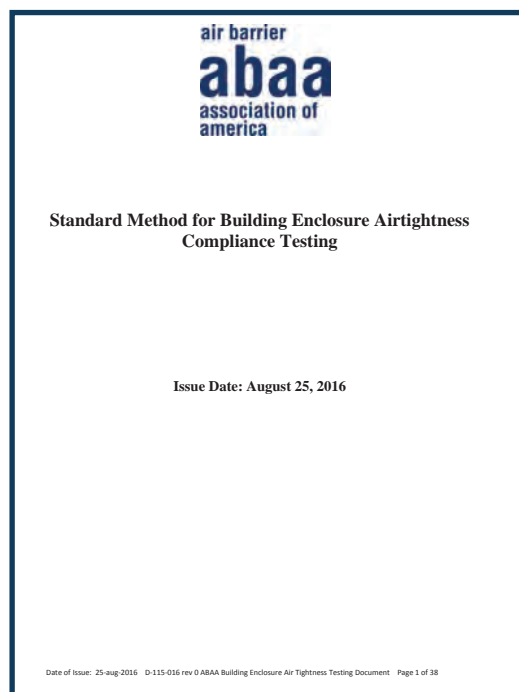
With the testing now completed, work is underway to analyze the data and compile the report on this project, which will be available in early 2019. Thanks to Tremco's contribution as they provided their test facility and Steven Kraynik, Test Facility Lab Manager, for the testing portion of this project. The research project team consisted of Mr. Andre Desjarais (ORNL), Mr. Anthony Gehl (ORNL), Dr. Som Sagar Shrestha (ORNL), Mr. Steven Kraynik (Tremco), Mr. Peter Spafford (ABAA) and Mr. Laverne Dalgleish (ABAA).



NEW ASTM STANDARD – STANDARD TEST METHOD FOR MEASURING THE AIR LEAKAGE RATE OF A LARGE OR MULTIZONE BUILDING

ABAA was asked by the Army Corps of Engineers in 2012 to assist them in updating the protocol for whole building testing. A Task Group was formed to accomplish this task and when the work was completed, the Task Group agreed to use the work done as the basis to develop an updated whole building test method document. The Task Group, made of the best subject matter experts in the country, met once a week for two years to develop this test method. The work was completed in 2016 and ABAA published Standard Method for Building Enclosure Airtightness Compliance Testing as an official ABAA document.

The document was supplied to ASTM and a work item was started for the document to go through the ASTM process to become an ASTM standard. At the October 23, 2018 ASTM E06 meeting in Washington, D.C., the E06 approved the document for publication as an ASTM standard. Many thanks to all the people who worked on the ABAA document and continued to work to have the document become an ASTM standard. This document is important as the industry needs a whole building test method to determine the air leakage of a building that can be referenced in the building codes and the ASHRAE standards.



UPCOMING EVENTS

EVENT LIST

For further information on any of our upcoming events, visit our website:
<https://www.airbarrier.org/events/>

TRAINING AND EDUCATION

INSTALLER TRAINING

December 11-13, 2018 in Daytona Beach, FL

More Info: <https://www.airbarrier.org>



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TRACK 2: CONSTRUCTION & TESTING

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