

March 29, 2024

TO: PARTIES INTERESTED IN FACTORY BONDED HUMIDITY-DEPENDENT VAPOR RETARDER MEMBRANES TO RIGID INSULATION BOARD

SUBJECT: Proposed Acceptance Criteria for Factory Bonded Humidity-Dependent Vapor Retarder Membrane to Rigid Insulation Board, AC566-0624-R1 (YM/DW)

Hearing Information:

WebEx Event Meeting

[Tuesday, June 25, 2024](#)

8:00 am Pacific Daylight Time

Click the date above to register

Dear Colleague:

You are invited to comment on a proposed new acceptance criteria, AC566, which will be discussed at the Evaluation Committee hearing noted above. The criteria is for the evaluation of rigid insulation board that is factory laminated to a humidity-dependent vapor retarder membrane and installed on the interior side of exterior wall assemblies under 2021 IBC Section 1404.3, 2021 IRC Section R702.7, and optionally as a component of an air barrier assembly under 2021 IECC Section C402.5.1.4.

You are invited to submit written comments on this or any other agenda item, or to attend the Evaluation Committee hearing and present your views in person. If you wish to contribute to the discussion, please note the following:

1. Regarding written comments and presentations:
 - a. You should submit these via e-mail to es@icc-es.org by the applicable due date.
 - b. Comments are to be received by **April 25, 2024**. These written comments will be forwarded to the committee before the meeting, and will also be posted on the ICC-ES web site shortly after the deadline for submission. Written comments that are not submitted by this deadline will not be considered at the meeting.
 - c. Rebuttal comments, from the proponent noted in this letter, are to be received by **May 16, 2024**. They will be forwarded to the committee before the meeting, and will also be posted on the ICC-ES web site shortly after the deadline for submission. Written rebuttal comments that are not submitted by the deadline will not be considered at the meeting.

- d. If you want to make a visual presentation at the hearing, it must be received in PowerPoint format. The presentation is to be received by **May 30, 2024**. These will be forwarded to the committee before the meeting and will also be posted on the ICC-ES web site after the deadline for submission. Presentations that are not submitted by the deadline cannot be presented at the meeting. **Note:** Videos will not be posted on the web site.

Presentations will be retained with other records of the meeting.

- e. ICC-ES will post to the web site, on **June 11, 2024**, memos by the ICC-ES staff, responding to the previously received public comments.
- f. If you miss the deadlines for submission of written comments and visual presentations, your verbal comments can be presented at the meeting.
- g. Proposed criteria, written public comments, visual presentations, and responses by ICC-ES staff for this agenda item are all available on our website.

2. Regarding verbal comments and presentations:

Please plan to speak for not more than ten minutes. As noted above, visuals are to be in PowerPoint format.

3. Keep in mind that all materials submitted for committee consideration are part of the public record and will not be treated as confidential. It is the presenter's responsibility to certify to ICC-ES staff that no materials infringe copyright.
4. Please do not communicate with committee members before the meeting about any items on the agenda.

We appreciate your interest in the work of the Evaluation Committee. If you have any questions, please contact me at (800) 423-6587, extension 3691, or Danny Wong, P.E., P. Eng., Senior Staff Engineer at extension 3272. You may also reach us by e-mail at es@icc-es.org.

Yours very truly,



Yamil Moya, P.E.
Senior Staff Engineer

YM/dw/lis

Encl.

cc: Evaluation Committee

ICC EVALUATION SERVICE, LLC, RULES OF PROCEDURE FOR THE EVALUATION COMMITTEE

1.0 PURPOSE

The purpose of the Evaluation Committee is to review and approve acceptance criteria on which evaluation reports may be based.

2.0 MEMBERSHIP

2.1 The Evaluation Committee has a membership of not fewer than nine, with one of the members named by the ICC-ES president each year to serve as the chairman–moderator.

2.2 All members of the committee shall be representatives of a body enforcing regulations related to the built environment.

2.3 Persons are appointed to the committee by the ICC-ES president, from among individuals who have formally applied for membership.

2.4 The ICC-ES Board of Managers, using simple majority vote, shall ratify the nominations of the president.

2.5 Committee membership is for one year, coinciding with the calendar year. Members may be renominated and reappointed.

2.6 In the event that a member is unable to attend a committee meeting or complete a term on the committee, the ICC-ES president may appoint a replacement to fill in at the meeting or for the remainder of the member's term. Any replacement appointed for only one meeting must have prior experience as a member of the Evaluation Committee. Appointments under this section (Section 2.6) are subject to ratification as noted in Section 2.4.

3.0 MEETINGS

3.1 The Evaluation Committee shall schedule meetings that are open to the public in discharging its duties under Section 1.0, subject to Section 3.0.

3.2 All scheduled meetings shall be publicly announced. There shall be three to six meetings per year (as necessary).

3.3 More than half of the Evaluation Committee members, counting the chairman, shall constitute a quorum. A majority vote of members present is required on any action. To avoid any tie vote, the chairman may choose to exercise or not exercise, as necessary, his or her right to vote.

3.4 In the absence of the chairman–moderator, Evaluation Committee members present shall elect an alternate chairman from the committee for that meeting. The alternate chairman shall be counted as a voting committee member for purposes of maintaining a committee quorum and to cast a tie-breaking vote of the committee.

3.5 Minutes shall be kept and shall be the official record of each meeting.

3.6 An electronic record of meetings may be made by ICC-ES if deemed necessary; no other audio, video, electronic recordings of the meetings will be permitted. Visual aids (including, but not limited to, charts, slides, videos, or presentation software) viewed at meetings shall be permitted only if the presenter provides ICC-ES before the presentation with a copy of the visual aid in a medium which can be retained by ICC-ES with its record of the meeting and which can also be provided to interested parties requesting a copy.

3.7 Parties interested in the deliberations of the committee should refrain from communicating, whether in writing or verbally, with committee members regarding agenda items. All written communications and submissions regarding agenda items must be delivered to ICC-ES and shall be considered nonconfidential and available for discussion in open session of an Evaluation Committee meeting. Such materials will be posted on the ICC-ES web site (www.icc-es.org) prior to the meeting. Comments and submissions not meeting the following deadlines will not be considered at the meeting:

- Initial comments on agenda items shall be submitted at least 28 days before the scheduled meeting.
- A rebuttal comment period shall follow, whereby rebuttal comments to the initial comments may be submitted by the proponent at least 21 days before the scheduled meeting.
- Those planning on giving a visual presentation at the meeting must submit their presentation, in PowerPoint format only, at least 10 days before the scheduled meeting.

The committee reserves the right to refuse recognition of communications which do not comply with the provisions of this section.

4.0 CLOSED SESSIONS

Evaluation Committee meetings shall be open except that at the discretion of the chairman, staff counsel may be necessary. Also, matters related to clients or potential clients covered by confidentiality requirements of ICC-ES Rules of Procedure for Evaluation Reports are discussed only during closed meetings.

5.0 ACCEPTANCE CRITERIA

5.1 Acceptance criteria are established by the committee to provide a basis for issuing ICC-ES evaluation reports on products and systems under codes referenced in Section 2.0 of the Rules of Procedure for Evaluation Reports. They also clarify conditions of acceptance for products and systems specifically regulated by the codes.

Acceptance criteria may involve a product, material, or method of construction. Consideration of any acceptance criteria must be in conjunction with a current and valid application for an ICC-ES evaluation report, an existing ICC-ES evaluation report, or as otherwise determined by the ICC-ES President.

EXCEPTIONS: The following acceptance criteria are controlled by the ICC-ES executive staff and are not subject to committee approval:

- The Acceptance Criteria for Quality Documentation (AC10)
- The Acceptance Criteria for Test Reports (AC85)
- The Acceptance Criteria for Inspections and Inspection Agencies (AC304)

5.2 Procedure:

5.2.1 Proposed acceptance criteria shall be developed by the ICC-ES staff and discussed in open session with the Evaluation Committee during a scheduled meeting, except as permitted in Section 4.0 of these rules.

5.2.2 Proposed acceptance criteria shall be available to interested parties at least 30 days before discussion at the committee meeting.

5.2.3 The committee shall be informed of all pertinent written communications received by ICC-ES.

5.2.4 Attendees at Evaluation Committee meetings shall have the opportunity to speak on acceptance criteria listed on the meeting agenda, to provide information to committee members. In the interest of fairness, each speaker requesting to testify on a proposed acceptance criteria or proposed changes to an existing acceptance criteria will be given the same amount of time, as follows:

- a. A 10-minute time limit applies to speakers giving their first testimony on any item, which applies to both verbal testimony and/or visual presentations.
- b. A 5-minute time limit applies to speakers returning to the microphone to offer additional testimony and/or to rebut testimony given by others.
- c. A 2-minute time limit applies to speakers offering testimony on the staff recommendation to criteria.

Should a company have multiple speakers, the speaker time limits above apply the company, in that multiple speakers from the same company shall share the testimony time, i.e., multiple speakers from the same company shall not each get their own testimony times. Time limits do not include time needed to answer questions from the staff and/or committee members. The chairman–moderator shall have limited authority to modify time limitations on testimony. The chairman–moderator shall also have the authority to adjust time limits as necessary in order to get through the hearing agenda.

An automatic timing device shall keep time for testimony and shall provide the time remaining to the speaker testifying. Interruptions during testimony will not be tolerated. It is the responsibility of the chairman–moderator to maintain decorum and order during all testimony.

5.3 Approval of any action on an acceptance criteria shall be as specified in Section 3.3 of these rules. Possible actions made by the Evaluation Committee include: Approval; Approval with Revisions; Disapproval; or Further

Study. The Evaluation Committee must give the reason(s) for any Disapproval or Further Study actions with specific recommendations.

5.4 Actions of the Evaluation Committee may be appealed in accordance with the ICC-ES Rules of Procedure for Appeal of Acceptance Criteria or the ICC-ES Rules of Procedure for Appeals of Evaluation Committee Technical Decisions.

6.0 COMMITTEE BALLOTING FOR ACCEPTANCE CRITERIA

6.1 Acceptance criteria may be revised without a public hearing following a 30-day public comment period and a majority vote for approval by the Evaluation Committee (i.e., alternative criteria development process), when at the discretion of the ICC-ES executive staff, the subject is a revision that requires formal action by the Evaluation Committee.

6.2 Negative votes must be based upon one or more of the following, for the ballots to be considered valid and require resolution:

- a. *Lack of clarity:* There is insufficient explanation of the scope of the acceptance criteria or insufficient description of the intended use of the product or system; or the acceptance criteria is so unclear as to be unacceptable. (The areas where greater clarity is required must be specifically identified.)
- b. *Insufficiency:* The criteria is insufficient for proper evaluation of the product or system. (The provisions of the criteria that are in question must be specifically identified.)
- c. *The subject of the acceptance criteria is not within the scope of the applicable codes:* A report issued by ICC-ES is intended to provide a basis for approval under the codes. If the subject of the acceptance criteria is not regulated by the codes, there is no basis for issuing a report, or a criteria. (Specifics must be provided concerning the inapplicability of the code.)
- d. *The subject of the acceptance criteria needs to be discussed in public hearings.* The committee member requests additional input from other committee members, staff or industry.

6.3 An Evaluation Committee member, in voting on an acceptance criteria, may only cast the following ballots:

- Approved
- Approved with Comments
- Negative: Do Not Proceed

7.0 COMMITTEE COMMUNICATION

Direct communication between committee members, and between committee members and an applicant or concerned party, with regard to the processing of a particular acceptance criteria or evaluation report, shall take place only in a public hearing of the Evaluation Committee. Accordingly:

7.1 Committee members receiving an electronic ballot should respond only to the sender (ICC-ES staff). Committee members who wish to discuss a particular matter with other committee members, before reaching a

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decision, should ballot accordingly and bring the matter to the attention of ICC-ES staff, so the issue can be placed on the agenda of a future committee meeting.

7.2 Committee members who are contacted by an applicant or concerned party on a particular matter that will be brought to the committee will refrain from private communication and will encourage the applicant or concerned party to forward their concerns through the ICC-

ES staff in writing, and/or make their concerns known by addressing the committee at a public hearing, so that their concerns can receive the attention of all committee members.■

Revised November 2023

PROPOSED ACCEPTANCE CRITERIA FOR FACTORY BONDED HUMIDITY-DEPENDENT VAPOR RETARDER MEMBRANES TO RIGID INSULATION BOARD

AC566

Proposed March 2024

PREFACE

Evaluation reports issued by ICC Evaluation Service, LLC (ICC-ES), are based upon performance features of the International family of codes, and may include other codes, as applicable. For alternative materials design and methods of construction and equipment, see Section 104.2.3 of the 2024 International Building Code® (IBC), Section 104.11 of the 2021 IBC and earlier editions, and Section R104.11 of the 2021 IRC and earlier editions.

ICC-ES may consider alternate criteria for report approval, provided the report applicant submits data demonstrating that the alternate criteria are at least equivalent to the criteria set forth in this document, and otherwise demonstrate compliance with the performance features of the codes. ICC-ES retains the right to refuse to issue or renew any evaluation report, if the applicable product, material, or method of construction is such that either unusual care with its installation or use must be exercised for satisfactory performance, or if malfunctioning is apt to cause injury or unreasonable damage.

Acceptance criteria are developed for use solely by ICC-ES for purposes of issuing ICC-ES evaluation reports.

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PROPOSED ACCEPTANCE CRITERIA FOR FACTORY BONDED HUMIDITY-DEPENDENT VAPOR RETARDER MEMBRANES TO RIGID INSULATION BOARD (AC566)

1.0 INTRODUCTION

1.1 Purpose: The purpose of this acceptance criteria is to establish requirements for factory bonded humidity-dependent vapor retarder membranes to rigid insulation board to be evaluated in an ICC Evaluation Service, LLC (ICC-ES), evaluation report under the 2021 *International Building Code*[®] (IBC) and the 2021 *International Residential Code*[®] (IRC), and optionally as an air barrier material under the 2021 *International Energy Conservation Code*[®] (IECC). Bases of evaluation are IBC Sections 104.11 and 1404.3 and IRC Sections R104.11 and R702.7.

1.2 Scope: This criteria is limited to factory bonded humidity-dependent vapor retarder membranes to rigid insulation board installed on the interior side of external wall assemblies under IBC Section 1404.3, IRC Section R702.7, and optionally as a component for an air barrier assembly under 2021 IECC Section C402.5.1.4.

1.3 Codes and Referenced Standards: For the applicable editions of the referenced standards, see Table 2 of this criteria.

1.3.1 2021 *International Building Code*[®] (IBC), International Code Council.

1.3.2 2021 *International Residential Code*[®] (IRC), International Code Council.

1.3.3 2021 *International Energy Conservation Code*[®] (IECC), International Code Council.

1.3.4 ASTM C612, Standard Specification for Mineral Fiber Block and Board Thermal Insulation, ASTM International.

1.3.5 ASTM E84, Test Methods for Surface Burning Characteristics of Building Materials, ASTM International.

1.3.6 ASTM E96, Test Method for Water Vapor Transmission of Materials, ASTM International.

1.3.7 ASTM E2357, Standard Specification for Determining Air Leakage Rate of Air Barriers Assemblies, ASTM International.

1.3.8 ISO 12572: 2016 [E], Hygrothermal performance of building material and products – Determination of water vapour transmission properties – Cup method, International Organization for Standardization.

1.3.9 ISO 21930-2017 Sustainability in Buildings and Civil Engineering Works - Core Rules for Environmental Product Declarations of Construction Products and Services, International Organization for Standardization (ISO).

1.3.10 UL 723, Standard for Test for Surface Burning Characteristics of Building Materials, Underwriters Laboratories Inc.

1.3.11 ICC-ES Acceptance Criteria for Humidity-dependent Vapor Retarders (AC528), dated October 2021.

1.4 DEFINITIONS

1.4.1 Humidity-Dependent Vapor Retarder Membrane: A sheet material that changes its water vapor permeance depending on the surrounding relative humidity. The water vapor curve of such materials is defined by testing at three distinct relative humidity conditions (dry, elevated moisture levels and inward drying) determined in accordance with ISO 12572 to facilitate hygrothermal analysis of the exterior wall assembly.

2.0 BASIC INFORMATION

2.1 General: The following information shall be submitted:

2.1.1 Product Description: Descriptions of the materials and the manufacturing process shall be submitted.

2.1.2 Installation Instructions: Installation instructions shall be submitted.

If the material is to be evaluated as an air barrier material, installation instructions shall identify specific installation provisions for air barrier material applications.

2.1.3 Packaging and Identification: A description of the method of packaging and field identification of the factory bonded humidity-dependent vapor retarder membrane to rigid insulation board shall be submitted. Product labeling shall include the evaluation report number at regularly spaced intervals. Product Identification shall be in accordance with the product identification provisions of the ICC-ES Rules of Procedure for Evaluation Reports. The ICC-ES mark of conformity, electronic labeling, and/or the evaluation report number (ICC-ES ESR-XXXX) along with the name, registered trademark, or registered logo of the report holder [and/or listee] must be included in the product label.

2.2 Testing Laboratories: Testing laboratories shall comply with Section 2.0 of the ICC-ES Acceptance Criteria for Test Reports (AC85) and Section 4.2 of the ICC-ES Rules of Procedure for Evaluation Reports.

2.3 Test Reports: Test reports shall comply with AC85.

2.4 Product Sampling: Sampling of the factory bonded humidity-dependent vapor retarder to rigid insulation board for tests under this criteria shall comply with Section 3.2 of AC85.

2.5 Sample Size: Unless otherwise specified in the applicable test method, a minimum of five specimens shall be tested.

2.6 Qualification Test Plan: A qualification test plan shall be submitted to and approved by ICC-ES staff prior to any testing being conducted.

3.0 TEST AND PERFORMANCE REQUIREMENTS

3.1 Humidity-dependent Vapor Retarder Membrane: The membrane must comply with Sections 3.1, 3.4 and optionally 3.5 of AC528.

PROPOSED ACCEPTANCE CRITERIA FOR FACTORY BONDED HUMIDITY-DEPENDENT VAPOR RETARDERS TO RIGID INSULATION BOARD (AC566)

3.2 Rigid Insulation Board: The rigid insulation board must comply with the applicable requirements listed in ASTM C612.

3.3 Factory Bonded Humidity-dependent Vapor Retarder to Rigid Insulation Board: The factory bonded humidity-dependent vapor retarder to rigid insulation board shall comply with the following requirements:

3.3.1 Water Vapor Transmission for Vapor Retarder Classification in accordance with IBC Section 1404.3 and IRC Section R702.7: For evaluation as a Class I, II, or III vapor retarder under IBC and IRC, tests shall be conducted in accordance with ASTM E96 Procedure A (Desiccant Method) as defined in IBC Section 202 and IRC Section R202 and ASTM E96 Procedure B (Water Method) as required in IBC Section 1404.3.1 and IRC Table R702.7(2).

The permeability, as determined by ASTM E96, and the vapor retarder classification, as defined by IBC Table 1404.3(1), IBC Section 1404.3.1 or IRC Tables R702.7(1) and R702.7(2), shall be stated in the evaluation report.

3.3.2 Water Vapor Transmission for Hygrothermal Analysis in accordance with IBC Section 1404.3 and IRC Section R702.7: For evaluation of board used in hygrothermal analysis, the water-vapor diffusion (equivalent air layer thickness) shall be determined by testing in accordance with ISO 12572. The relative humidity for wet and dry states, the mean relative humidity, water vapor diffusion (equivalent air layer thickness), and ambient temperature shall be stated in the evaluation report for each test condition. A minimum of three test conditions, with distinct relative humidity values for each condition, shall be tested. Dry cup test at 25% relative humidity, intermediate cup at 71.5% relative humidity and inward drying test at high humidity (90% or higher). The water vapor diffusion (equivalent air layer thickness) values determined from testing may be used for the design using accepted engineering practice when conducting hygrothermal analysis as permitted in IBC Section 1404.3 and IRC Section R702.7. The analysis must be prepared by a registered design professional and is subject to approval by the code official.

3.3.3 Air Barrier Assembly (Optional): When the product is to be evaluated as a component of an air barrier assembly, reports of air leakage or air resistance testing in accordance ASTM E2357. A minimum of two assemblies shall be tested. The assemblies shall include the specific tapes and sealants for which assembly performance evaluation is sought. Minimum conditions of acceptance shall be an average air leakage less than or equal to 0.04 cfm/ft² (0.2 L/ s·m²) under a pressure differential of 0.3-inch water gauge (w.g.) (1.57 psf [75 Pa]) for both assemblies.

3.3.4 Surface Burning Characteristics: Test data in accordance with ASTM E84 or UL 723 demonstrating a flame-spread index of 25 or less and a smoke-developed index of 450 or less in accordance with IBC Section 720.2 and IRC Section R302.10 shall be submitted.

3.3.5 Odor Emission: Test data in accordance with Section 12.8 of ASTM C612 showing compliance with Section 7.2 of ASTM C612.

3.3.6 Corrosiveness to Steel: Test data in accordance with Section 12.9 of ASTM C612 showing compliance with Section 7.3 of ASTM C612.

3.3.7 Fungi Resistance: Test data in accordance with Section 12.12 of ASTM C612 showing compliance with Section 7.9 of ASTM C612.

4.0 QUALITY CONTROL

4.1 The products shall be manufactured under an approved quality control program with inspections by ICC-ES or by a properly accredited inspection agency that has a contractual relationship with ICC-ES.

4.2 Quality documentation complying with the ICC-ES Acceptance Criteria for Quality Documentation (AC10) shall be submitted. A qualifying inspection shall be conducted at each manufacturing facility when required by the ICC-ES Acceptance Criteria for Inspections and Inspection Agencies (AC304).

4.3 Follow-up inspections shall be conducted at each manufacturing facility when required in accordance with AC304.

5.0 EVALUATION REPORT REQUIREMENTS

5.1 A description of the factory bonded humidity dependent vapor retarder membrane to rigid insulation board and installation instructions shall be included in the evaluation report.

5.2 The vapor retarder classification determined in accordance with Section 3.3.1 shall be reported.

5.3 The water vapor diffusion (equivalent air layer thickness), ambient temperature, and relative humidity values determined in accordance with Section 3.3.2 shall be reported and a statement added to the evaluation report indicating that the design using accepted engineering practice for hygrothermal analysis, as permitted in accordance with IBC Section 1404.3 and IRC Section R702.7, shall be prepared by registered design professional and submitted to code official for approval.

5.4 Flame-spread index and smoke-developed index of material shall be reported.

5.5 When evaluated in accordance with Section 3.3.3, a description of the tested assembly and a statement indicating that compliance with IECC Section C402.5.1.4, shall be included

6.0 ENVIRONMENTAL PRODUCT DECLARATION (Optional):

Environmental impacts shall be assessed via an Environmental Product Declaration (EPD) based on a Life Cycle Assessment (LCA). The LCA and EPD shall be conducted in accordance with ISO 21930 and the appropriate Product Category Rule(s) for the product type. ■

PROPOSED ACCEPTANCE CRITERIA FOR FACTORY BONDED HUMIDITY-DEPENDENT VAPOR RETARDERS TO RIGID INSULATION BOARD (AC566)

TABLE 1— APPLICABLE EDITIONS OF REFERENCED STANDARDS

STANDARDS INCLUDED IN CRITERIA	2021 CODES		
	IBC	IRC	IECC
ASTM C612	-14 (2019)		-
ASTM E84	-18b		--
ASTM E96	-16		--
ASTM E2357	--	--	-18
UL 723	-18		--