



ICC Evaluation Service, LLC
Western Regional Office
3060 Saturn Street, Suite 100
Brea, CA 92821
t: 1.800.423.6587, ext. 1
f: 562.695.4694
www.icc-es.org

March 29, 2024

TO: PARTIES INTERESTED IN NATURAL FIBER BOARD INSULATION

SUBJECT: Proposed Acceptance Criteria for Natural Fiber Board Insulation, AC565-0624-R1 (CD/YM)

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 ICC-ES Acceptance Criteria for Natural Fiber Board Insulation (AC565), which will be discussed at the Evaluation Committee hearing noted above. The proponent is TimberHP. The criteria is for the evaluation of fiber board insulation that is comprised of plant based fibers, such as wood fibers, and other proprietary additives having a density of less than 10 lb/ft³. The natural fiber board insulation is used on the outside face of exterior walls (either behind or over the water-resistive barrier), behind the exterior wall covering or in interior concealed protected spaces, such as wall cavities.

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 3245, or Yamil Moya, P.E., Senior Staff Engineer at extension 3691. You may also reach us by e-mail at es@icc-es.org.

Yours very truly,



Cindy Deligiannis, E.I.T.
Evaluation Specialist

CD/ls

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

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

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 NATURAL FIBER BOARD INSULATION

AC565

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.

ICC EVALUATION SERVICE® and ICC-ES® (and their associated logos) are registered trademarks and service marks of ICC Evaluation Service, LLC, and INTERNATIONAL CODE COUNCIL®, ICC®, INTERNATIONAL BUILDING CODE® and IBC® (and their associated logos) are registered trademarks and service marks of its parent company, International Code Council, Inc.

No portion of this document (AC565) may be copied, reproduced, reprinted, republished, distributed, transmitted, or modified in any form or manner without the express prior written permission of ICC-ES. Any request for such permission should be addressed to ICC-ES at 3060 Saturn Street, Suite 100, Brea, California 92821. Any of the foregoing expressly authorized by ICC-ES must include all the copyright, trademark, service mark and other proprietary rights notices contained herein.

Copyright © 2024 ICC Evaluation Service, LLC. All rights reserved.

PROPOSED ACCEPTANCE CRITERIA FOR NATURAL FIBER BOARD INSULATION (AC565)

1.0 INTRODUCTION

1.1 Purpose: The purpose of this acceptance criteria is to establish requirements for issuance of ICC Evaluation Service, LLC (ICC-ES) evaluation reports on natural fiber board insulation under the 2024, 2021, and 2018 *International Building Code*[®] (IBC) and the 2024, 2021, and 2018 *International Residential Code*[®] (IRC). The bases of this acceptance criteria and resulting evaluation reports are 2024 IBC Section 104.2.3 (2021 and 2018 IBC Section 104.11) and 2024 IRC Section 104.2.2 (2021 and 2018 IRC Section R104.11).

1.2 Scope: The scope of this criteria is to provide guidelines for the evaluation of natural fiber board insulation used on the outside face of exterior walls (installed behind the exterior wall covering and either over or behind an approved water-resistive barrier) or interior concealed protected spaces, such as wall cavities. The insulation boards are limited for installation in Type V construction and optionally as a component of a fire-rated exterior wall assembly.

1.3 Codes and Reference Standards: Where standards are referenced in this guide, these standards shall be applied consistently with the code upon which compliance is based.

1.3.1 Codes:

1.3.1.1 2024, 2021, and 2018 *International Building Code*[®] (IBC), International Code Council.

1.3.1.2 2024, 2021, and 2018 *International Residential Code*[®] (IRC), International Code Council.

1.3.2 Reference Standards:

1.3.2.1 ASTM B152/152M-19, Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar.

1.3.2.2 ASTM C177-19e1, Standard Test Method for Steady-State Heat Flux in Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.

1.3.2.3 ASTM C303-21 Standard Test Method for Dimensions and Density of Preformed Block and Board-Type Thermal Insulation.

1.3.2.4 ASTM C518-21, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

1.3.2.5 ASTM C739-21a, Standard Specification for Cellulosic Fiber Loose-Fill Thermal Insulation.

1.3.2.6 ASTM D1037-12(2020) Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials.

1.3.2.7 ASTM E84-21a Test Methods for Surface Burning Characteristics of Building Materials.

1.3.2.8 ASTM E119-20 Test Methods for Fire Tests of Building Construction and Materials.

1.3.2.9 AWPA E1-23 Laboratory Methods for Evaluating the Termite Resistance of Wood-Based Materials: Choice and No-Choice Tests.

1.3.2.10 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).

1.3.2.11 NFPA 286-23 Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

1.3.2.12 UL 723-2018 Test for Surface Burning Characteristics of Building Materials.

1.4 Definition:

1.4.1 Natural Fiber Board Insulation: A non-structural board insulation consisting of plant-based fibers and other proprietary additives and having a density of less than 10 lb/ft³ (160 kg/m³). Examples of plant-based fibers include wood fiber. Natural fiber insulation described in this criteria does not comply with ASTM C208 fiberboard insulation.

2.0 BASIC INFORMATION

2.1 General: The following information shall be submitted:

2.1.1 Product Description: Complete information concerning material specifications, thickness, size and the manufacturing process.

2.1.2 Installation Instructions: Installation details and limitations, and fastening methods.

2.1.3 Packaging and Identification: A description of the method of packaging and field identification of the board insulation. Product identification shall be in accordance with the product identification provisions of the ICC-ES Rules of Procedure for Evaluation Reports.

2.1.4 Field Preparation: A description of the methods of field-cutting and application.

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 the ICC-ES Acceptance Criteria for Test Reports (AC85).

2.4 Product Sampling: Products shall be sampled in accordance with Section 3.1 of AC85.

2.5 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 Surface-burning Characteristics: The natural fiber board insulation shall be tested for surface-burning characteristics to document flame-spread index and smoke-developed index. The test methods and conditions of acceptance are noted in Section 4.1 of this criteria. For boards thicker than 4 inches (102 mm), testing in accordance with Section 3.5 of this criteria is required.

3.2 Thermal Transmission Properties: The natural fiber board insulation shall be tested to document the thermal resistance, *R*-values. The test methods and conditions of acceptance are noted in Section 4.2 of this criteria.

3.3 Material Properties: The natural fiber board insulation shall be tested to document the following physical properties: thickness and density, corrosiveness, fungi

PROPOSED ACCEPTANCE CRITERIA FOR NATURAL FIBER INSULATION (AC565)

resistance, and moisture absorption. The test methods and conditions of acceptance are noted in Section 4.3 of this criteria.

3.4 Fire-resistance-rated Assemblies (Optional): When natural fiber board insulation is used in a fire-resistance-rated assembly, fire testing of the assembly shall be performed to determine the fire-resistance rating. The test methods and conditions of acceptance are noted in Section 4.4 of this criteria.

3.5 NFPA 286 Room Fire Tests: Natural fiber board insulation shall comply with the test methods and conditions of acceptance as noted in Section 4.5 of this criteria when the thickness is greater than 4 inches (102 mm).

3.6 Termite Resistance (Optional): The natural fiber board insulation shall be tested to determine termite resistance if the installation conditions do not comply with IBC Section 2304.12.1.5 or IRC Section R317.1. The test methods and conditions of acceptance are noted in Section 4.6 of this criteria.

3.7 Ultraviolet (UV) Resistance and Accelerated Aging: When installed on the exterior side of exterior walls, the natural fiber board insulation shall be tested to determine effects of ultraviolet exposure and accelerated aging during installation. The test methods and conditions of acceptance are noted in Section 4.7 of this criteria.

4.0 TEST METHODS

4.1 Surface-burning Characteristics: Surface-burning characteristics of the natural fiber board insulation shall be tested in accordance with ASTM E84 or UL723. The test shall be performed for each insulation density at the maximum thickness to be evaluated. The density and thickness of the tested board shall be reported.

Conditions of Acceptance: When used in exterior walls and in concealed spaces of Type V construction under the IBC and construction under the IRC, the board shall have flame-spread index not exceeding 75 and a smoke-developed index not exceeding 450.

4.2 Thermal Resistance: Thermal resistance of the natural fiber board insulation shall be determined by tests conducted in accordance with ASTM C518. Test specimen density shall be within 10 percent of the nominal density included in the evaluation report. Thermal-resistance values shall be based on a mean test temperature of 75°F ± 5°F (23.9°C ± 2.8°C). Evidence of calibration in accordance with the standard must be certified and properly documented in the test report. This includes a description of the control samples used and the last date of calibration prior to testing of the natural fiber insulation. Thermal resistance, when determined in accordance with ASTM C177 (guarded hot plate), is permitted with proper documentation.

Conditions of Acceptance: Evaluation of thermal-resistance values for a range of thicknesses of natural fiber board insulation shall be established by tests conducted at a 1-inch (25.4 mm) thickness and at the maximum thickness permitted by the test procedure, but at no less than 3.5 inches (89 mm). Calculated *R*-Values for thicknesses between 1-inch (25.4 mm) and 3.5 inches (89 mm) shall be based on linear interpolation of tested *R*-values at 1-inch (25.4 mm) and 3.5-inch (89 mm) thicknesses. Calculated *R*-values for thicknesses greater than 3.5 inches (89 mm) shall be based on tested *R*-values per inch at 3.5-inch (89

mm) thickness. The description of test samples shall include details of air spaces, if so tested.

Exception: When the maximum thickness of the *natural fiber board insulation* included in the evaluation report is less than 3.5 inches (89 mm), tests shall be conducted at the minimum thickness and at the maximum thickness included in the evaluation report.

4.3 Material Properties: The natural fiber board insulation shall be tested for the physical properties given in Sections 4.3.1, 4.3.2, 4.3.3, and 4.3.4 of this criteria.

4.3.1 Thickness and Density: Thickness and density of the board shall be determined by tests conducted in accordance with ASTM C303. Specimen thickness is determined from the average of measurements specified in ASTM C303. Density is determined by one of the equations as specified in ASTM C303.

Conditions of Acceptance: Thickness and density of the boards are reported in the evaluation report.

4.3.2 Corrosiveness: Corrosiveness of the insulation board shall be tested in accordance with ASTM C739. A minimum of six specimens, each weighing 0.7 ounce (20 grams), shall be used for each test. Each of the six tests shall be conducted using the following metal coupon specimens:

4.3.2.1 Two aluminum coupons, Type 3003 bare aluminum, zero temper.

4.3.2.2 Two copper coupons, ASTM B152, Type ETP, Carbon No. 110 soft copper.

4.3.2.3 Two steel coupons, low carbon, commercial quality, cold rolled, less than 30 carbon content, shim steel. Each coupon shall be 2 inches by 2 inches (50.8 mm by 50.8 mm) by 0.003 inch (0.076 mm) in thickness, and free of tears, punctures or crimps. Distilled or deionized water shall be used for the test mixture. Specimens shall be placed in a preconditioned humidity chamber maintained at 120°F ± 3°F (48.9°C ± 1.7°C) and 97 ± 1.5 percent relative humidity for 336 ± 4 hours. A continuous 24-hour strip chart recording, showing the 336-hour exposure conditions, must be included in the test report.

Conditions of Acceptance: After testing in the above manner, there shall be no perforations in metal coupons when examined over a 40-watt light bulb.

4.3.3 Fungi-resistance: Mold and mildew (fungus) resistance shall be tested in accordance with ASTM C739. One sample shall be selected from each of three representative bundles. Test condition is to be maintained at 86°F (30°C) and at a minimum relative humidity of 95 percent for 28 days. A continuous strip chart recording of chamber conditions must accompany the test report. Test chambers shall be kept closed during incubation period, except during inspection. Samples are examined visually after incubation period under 40X magnification to determine extent of mold growth and deterioration.

Conditions of Acceptance: Mold growth must be confined to the inoculated area with no significant growth within.

4.3.4 Moisture Absorption: Moisture absorption shall be tested in accordance with ASTM C739. Specimen is weighed in a 9-by-9-by-5-inch (233 by 233 by 127 mm) or 0.23-cubic-foot (6.6 L) container. The container filled with the insulation specimen is to be preconditioned in a humidity chamber at 120°F ± 2°F (49°C) and 50 percent

PROPOSED ACCEPTANCE CRITERIA FOR NATURAL FIBER INSULATION (AC565)

relative humidity to a constant weight and weighed to determine the initial conditioned weight. Humidity shall then be increased to 90 ± 2 percent and maintained for 24 hours. The specimen in the container is then reweighed. The weight gain is determined as a percentage of the initial conditioned weight.

Conditions of Acceptance: The weight gain of the specimen shall not exceed 15 percent.

4.4 Fire-resistance-rated Assembly (Optional): The natural fiber insulation shall be tested as a component of a fire-resistance-rated exterior wall assembly in accordance with ASTM E119.

Conditions of Acceptance: The fire-resistance-rated assembly shall be completely described in the evaluation report with the assigned hourly rating.

4.5 NFPA 286 Room Fire Tests: The natural fiber insulation greater than 4 inches (102 mm) in thickness shall be tested in accordance with NFPA 286. The tests shall be conducted with the natural fiber board insulation installed at the maximum thickness and maximum density for which recognition is sought, over an approved thermal barrier.

Conditions of Acceptance: Testing conducted in accordance with NFPA 286 shall have conditions of acceptance as stated in IBC Section 803.1.1 or IRC Section R302.9.4.

4.6 Termite Resistance (Optional): Termite resistance is not required if installation conditions comply with IBC Section 2304.12.1.5 or IRC Section R317.1.

For installations that do not comply with IBC Section 2304.12.1.5 or IRC Section R317.1, termite resistance shall be determined in accordance with AWP A E1.

4.7 Ultraviolet (UV) Resistance and Accelerated Aging: The insulation board shall be exposed to ultraviolet light followed by accelerated aging. The UV exposure will be in accordance with Section 4.7.1 of this criteria followed by accelerated aging in accordance with Section 7 of ASTM D1037. Three replicate samples cut from the insulation board with a minimum area of 36 in^2 (0.0232 m^2) each, shall be subjected to the UV exposure and accelerated aging conditions of this section. Prior to exposure, each sample must be conditioned at 73°F (23.7°C) and 50% relative humidity for a minimum of 40 hours and weighed with a calibrated balance.

4.7.1 Ultraviolet Light Exposure: After samples have been weighed, they shall be exposed to light from ultraviolet sun lamps for 210 hours (10 hours per day for 21 days) in an enclosure. Ultraviolet light exposure shall be directed on the sample surfaces that will be exposed to sunlight in normal application. Lamps and enclosure shall be adjusted so the specimen temperature is between 135°F and 140°F (57°C and 60°C). Sunlamp bulbs shall be General Electric Type H275 RUB (275 W) or equivalent bulbs, providing UV characteristics of $5.0 \text{ W/m}^2/\text{nm}$ irradiance at a wavelength of 315 to 400 nm at 1 meter.

4.7.2 Accelerated Aging: Following the exposure in 4.7.1, the samples shall be subjected to the six cycles of accelerated aging in accordance with ASTM D1037.

Conditions of Acceptance: Samples will be weighed after the accelerated aging cycles and conditioned at 73°F (23.7°C) and 50 RH for 40 hours. The weights after exposure will be determined. The average weight change

of the specimens before and after exposure shall not exceed 10 percent. Test specimens shall be frequently inspected during the exposure testing for any signs of delamination or other disintegration. Any signs of delamination or other disintegration shall be documented with photographs.

5.0 QUALITY CONTROL

5.1 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.

5.2 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).

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

6.0 EVALUATION REPORT REQUIREMENTS

The following information shall be presented in the evaluation report:

6.1 The board thicknesses and densities shall be reported.

6.2 The thermal resistance value shall be reported.

6.3 Surface burning characteristics of the board shall be reported.

6.4 When installed directly behind an approved exterior wall covering, a statement indicating that an approved water-resistive barrier may be installed behind or in front of the insulation board.

6.5 A statement indicating that the interior of the building must be protected by an approved thermal barrier, such as $\frac{1}{2}$ -inch gypsum board in accordance with IBC Section 2603.4 or 2024 IRC Section R303.4 (2021 and 2018 IRC Section R316.4).

6.6 A statement indicating that installation of the board in an exterior wall assembly is limited to Type V-B under the IBC and construction permitted under the IRC, unless testing in accordance with Section 3.4 of this criteria is submitted.

6.7 A statement indicating that the board must be installed in accordance with IBC Section 2304.12.1.5 or IRC Section R317.1, unless qualified in accordance with Section 4.6 of this criteria.

6.8 A statement that the insulation shall not be installed over recessed light fixtures that are not insulated or against any heat-producing appliance.

6.9 A statement that the exterior wall covering shall be securely fastened with corrosion-resistant fasteners in accordance with 2024 IBC Section 1404.4 (2021 and 2018 IBC Section 1404.17) and IRC Section R703.3.3.

7.0 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.■