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July 10, 2025

TO: PARTIES INTERESTED IN CANADIAN ACCEPTANCE CRITERIA FOR WOOD-PLASTIC COMPOSITE AND PLASTIC LUMBER DECK BOARD SPAN RATINGS AC174CA (20)

SUBJECT: Proposed Canadian Acceptance Criteria for Wood-plastic Composite and Plastic Lumber Deck Board Span Ratings, Subject AC174CA (20)-0925-R1 (WU/DW)

Hearing Information:
WebEx Event Meeting
Thursday, September 18, 2025
8:00 am Pacific Daylight Time
Click the date above to register

Dear Colleague:

You are invited to comment on a new ICC-ES Canadian Acceptance Criteria for Wood-Plastic Composite and Plastic Lumber Deck Board Span Ratings, AC174CA (20), which will be discussed at the Canadian Evaluation Committee hearing noted above.

The proposed new ICC-ES Canadian Acceptance Criteria (AC) is based on Volume 1-Division A, Article 1.2.1.1.b. of the National Building Code of Canada (NBC). The NBC does not specifically address wood-plastic composite and plastic lumber deck boards. Articles considered to show equivalency are noted in Section 1.1 of the attached AC draft.

1. ASTM D7032 is a consensus Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite and Plastic Lumber Deck Boards, Stair Treads, Guards, and Handrails. ASTM D7032 is the primary reference for this AC. However, only deck boards and stair treads are evaluated under this criteria, with the following modifications:
    - Structural Loads: ASTM D7032 is based on Allowable Strength Design (ASD) whereas the NBC is based on Limit States Design (LSD).

      Considering the load combination differences between ASD and LSD, it is proposed that the general relationship be $\Omega = 1.6/\phi$. Therefore, the resistance factors have been modified accordingly. This was based on the analysis attached at the end of this letter, which considers the worse-case load combinations while varying dead and snow loads and keeping the minimum live load constant.

- Termite and decay resistance: At this time, termite and decay resistance for products containing wood or cellulosic material are to be considered outside the scope of this criteria.
- Flame Spread: ASTM D7032 requires a maximum flame spread of 200 in accordance with ASTM E84. The test method has been replaced with CAN/ULC-S102.2 as referenced by the NBC.
- Slip Resistance: ASTM D7032 references test method options to determine slip resistance, whereas the NBC does not. Minimum coefficient of friction requirements is not identified in either ASTM D7032 or the NBC. Therefore, conditions of acceptance are to the satisfaction of the building official.

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 **July 29, 2025.** 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 **August 17, 2025**. 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 **August 25, 2025.** 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 **September 4, 2025**, 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 Canadian Evaluation Committee. If you have any questions, please contact me at (205) 986-1335, or Danny Wong, P.E., P.Eng., Senior Staff Engineer, at (800) 423-6587 extension 3272. You may also reach us by e-mail at es@icc-es.org.

Yours very truly,

Will Utsey, P.E.
Director of Engineering

WU/ls

Encl.

cc: Evaluation Committee

ASD Versus LSD

Ω = 1.6/ϕ Ω 2.5 ϕ 0.64

Values in psf

			ASD	ASD	ASD	LSD	LSD	LSD	LSD/ASD
D	**L**	**S**	**D+L**	**D+0.75L+0.75S**	**Test Load**	**1.25D+1.5L+1.0S**	**1.25D+1.5S+1.0L**	**Test Load**	**Test Load**
0	100	10	100	83	250	160	115	250	1.00
0	100	50	100	113	281	200	175	313	1.11
0	100	100	100	150	375	250	250	391	1.04
5	100	10	105	88	263	166	121	260	0.99
5	100	50	105	118	294	206	181	322	1.10
5	100	100	105	155	388	256	256	400	1.03
10	100	10	110	93	275	173	128	270	0.98
10	100	50	110	123	306	213	188	332	1.08
10	100	100	110	160	400	263	263	410	1.03
33	100	10	133	116	333	201	156	314	0.95
33	100	50	133	146	364	241	216	377	1.04
33	100	100	133	183	458	291	291	455	0.99

ASD Test Load = Ω * Maximum value given per load combination

LSD Test Load = Maximum value given per load combination divided by ϕ

ASD Versus LSD

Ω = 1.6/ϕ	Ω	2.5	ϕ	0.64

Values in kPa

D	L	S	ASD D+L	ASD D+0.75L+0.75S	ASD Test Load	LSD 1.25D+1.5L+1.0S	LSD 1.25D+1.5S+1.0L	LSD Test Load	LSD/ASD Test Load
0	4.79	0.48	4.79	3.95	11.98	7.66	5.51	11.98	1.00
0	4.79	2.40	4.79	5.39	13.47	9.58	8.38	14.97	1.11
0	4.79	4.79	4.79	7.19	17.96	11.98	11.98	18.71	1.04
0.24	4.79	0.48	5.03	4.19	12.57	7.96	5.81	12.44	0.99
0.24	4.79	2.40	5.03	5.63	14.07	9.88	8.68	15.44	1.10
0.24	4.79	4.79	5.03	7.42	18.56	12.27	12.27	19.18	1.03
0.48	4.79	0.48	5.27	4.43	13.17	8.26	6.11	12.91	0.98
0.48	4.79	2.40	5.27	5.87	14.67	10.18	8.98	15.90	1.08
0.48	4.79	4.79	5.27	7.66	19.16	12.57	12.57	19.65	1.03
1.58	4.79	0.48	6.37	5.53	15.93	9.64	7.48	15.06	0.95
1.58	4.79	2.40	6.37	6.97	17.42	11.56	10.36	18.06	1.04
1.58	4.79	4.79	6.37	8.77	21.91	13.95	13.95	21.80	0.99

ASD Test Load = Ω * Maximum value given per load combination

LSD Test Load = Maximum value given per load combination divided by ϕ

ICC EVALUATION SERVICE, LLC

RULES OF PROCEDURE FOR THE CANADIAN EVALUATION COMMITTEE

1.0 PURPOSE

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

2.0 MEMBERSHIP

2.1 The Canadian Evaluation Committee has a membership of not fewer than five, with one of the members named by the ICC-ES Vice President, Evaluation Services each year to serve as the chairperson–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 Vice President, Evaluation Services, 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 vice 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 Vice President, Evaluation Services 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 Canadian 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 Canadian 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 two to four meetings per year (as necessary).

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

3.4 In the absence of the chairperson–moderator, committee members present shall elect an alternate chairperson from the committee for that meeting. The alternate chairperson 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 a Canadian 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

Canadian Evaluation Committee meetings shall be open, except that at the discretion of the chairperson, 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 Vice President, Evaluation Services.

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 Canadian 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 Canadian 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 to 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 chairperson–moderator shall have limited authority to modify time limitations on testimony. The chairperson–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 chairperson–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 Canadian Evaluation Committee include:

- Approval;
- Approval with Revisions;
- Disapproval; or
- Further Study.

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

5.4 Actions of the Canadian 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 Canadian 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 Canadian 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 A Canadian 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 Canadian 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 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 May 2024

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PROPOSED CANADIAN ACCEPTANCE CRITERIA FOR WOOD-PLASTIC COMPOSITE AND PLASTIC LUMBER DECK BOARD SPAN RATINGS

AC174CA (20)

Proposed July 2025

PREFACE

Canadian evaluation reports issued by ICC Evaluation Service, LLC (ICC-ES), are based upon requirements of the National Model Construction Codes of Canada, and may include other codes, as applicable.

The criteria set forth in this document are the requirements to be met in order to demonstrate compliance with Division B of the National Building Code of Canada (NBC) as either an acceptable or alternative solution, as defined in Division A of the NBC, Subsection 1.2.1 "Compliance with this Code."

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 demonstrates compliance with the requirements 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.

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

PROPOSED CANADIAN ACCEPTANCE CRITERIA FOR WOOD-PLASTIC COMPOSITE AND PLASTIC LUMBER DECK BOARD SPAN RATINGS AC174CA (20)

1.0 INTRODUCTION

1.1 Purpose: The purpose of this acceptance criteria is to establish the basis of evaluation for wood-plastic composite and plastic lumber deck board span ratings in ICC Evaluation Service, LLC (ICC-ES) evaluation reports, under the National Building Code of Canada (NBC) 2020 and 2015.

Bases of evaluation are as alternatives to the following articles in Volume 2 of the NBC 2020 and 2015:

- Article 9.3.2.9. “Termite and Decay Protection
- Article 9.4.2.3. “Platforms Subject to Snow and Occupancy Loads”
- Article 9.4.3.1. “Deflections”
- Article 9.8.9.6. Finish for Treads and Landings
- Article 9.8.9.1. “Loads on Stairs and Ramps”
- Article 9.23.15.5. “Subfloor Thickness or Rating”

The reason for development of this criteria is that the code does not address the use of materials identified in Section 1.2 of this criteria for use in deck board applications. Therefore, the basis of evaluation is Volume 1 Division A Article 1.2.1.1.(b) of the NBC, regarding “Alternative Solutions”.

1.2 Scope: Evaluation of wood-plastic composite and plastic lumber deck boards in an ICC-ES evaluation report shall be restricted for use in exterior applications for residential regulated by Volume 2 of the NBC

Deck boards covered by this acceptance criteria shall be of any shape and thickness (solid or non-solid).

A deck board and a deck board used as a stair tread are assigned a span rating indicating the board's ability to comply with functions identified for its specific end use.

Note: There is a general assumption in this criteria that the stair treads are produced from the same material and thickness as the deck boards. If this is not the case, the stair treads are required to comply with all the deck board requirements, except as noted.

1.3 Referenced Standards: Editions of the standards applicable to each code are summarized in Table 1.

1.3.1 ASTM D2017, Standard Test Method of Accelerated Laboratory Test of Natural Decay Resistance of Woods, ASTM International.

1.3.2 ASTM D2565, Standard Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications, ASTM International.

1.3.3 ASTM D7032, Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems (Guards or Handrails), ASTM International.

1.3.4 ASTM E330, Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference, ASTM International.

1.3.5 *CAN/ULC-S102.2, Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies, ULC Standards.*

1.3.6 *MIL-STD-1916, DOD Preferred Methods for Acceptance of Product*, Department of Defense.

1.3.7 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).

1.4 Definitions:

1.4.1 Span Rating: The span rating is based on the test span used in all structural load testing, which is the maximum center-to-center support spacing for the specified end use, and factor resistance.

1.4.2 Standard Terminology: Standard terminology for deck boards given in Section 3.0 of ASTM D7032 is applicable to this acceptance criteria.

2.0 BASIC INFORMATION

2.1 General: The following information shall be submitted:

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

2.1.2 Installation Instructions: Installation details and limitations, fastening methods, joint treatments, and face treatments.

2.1.3 Packaging and Identification: The report shall indicate how the product will be identified. Identification shall be in accordance with the following:

2.1.3.1. Decking shall be identified by a product label. Product identification shall be in accordance with the product identification provisions of the ICC-ES Rules of Procedure for Evaluation Reports. Labels shall identify the product, the manufacturer and the ICC-ES evaluation report number. In addition, assemblies complying with the NBC 2020 and/or NBC 2015 must include the performance level, or a reference to the evaluation report that includes the performance level, on the label. The performance level shall include the maximum span rating and factored resistance load for use as deck board or as a stair tread.

2.1.3.2. Labels may be permanent or removable.

2.1.3.3. Labeling may be applied to the finished product or the product packaging.

2.1.3.3.1. When package labeling is used, packages must be labeled as sold, by the report holder or an approved fabricator/repackaging facility (see Section 5.1 of this criteria), and must be identifiable by the local building official.

2.1.3.3.2. When not labeling the entire assembly, individual components or their packaging may be labeled.

2.1.3.3.3. Other methods of product identification using the ICC-ES evaluation report number must be approved by ICC-ES.

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

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: Products for testing shall be sampled in accordance with Section 3.1 of AC85. Products shall be sampled at the manufacturing site by an accredited inspection agency or testing laboratory acceptable to ICC-ES. Exceptions to sampling at the manufacturing site, such as at a warehouse or distribution center, require written consent by ICC-ES. The sampled product shall be representative of the standard manufactured product for which the evaluation is sought.

Variations in color shall be considered in the evaluation of products establishing flexural properties under Section 3.4 and UV resistance under Section 3.6, unless data is submitted indicating there is no effect.

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

3.0 TEST PERFORMANCE AND REQUIREMENTS

3.1 General: ASTM D7032 is used as a primary reference for this criteria. See Table 2 for test requirements.

3.2 Sample Size: The sample sizes for testing shall be determined in accordance with Section 4.2 of ASTM D7032 for deck boards.

3.3 Conditioning: Conditioning of test material shall be performed in accordance with Section 4.3 of ASTM D7032.

3.4 Deck Board Flexural Tests: All flexural tests shall be conducted in accordance with Section 4.4 of ASTM D7032, except that the constant strain rate shall be determined by using the "nonsimplified version" of the formula used to calculate strain rate and the appropriate geometric properties (stiffness) shall be utilized at the location where the failure occurs (positive and negative). A preliminary test would be required to determine which location is applicable.

The two-span test method defined in Annex 1 of ASTM D7032 shall also be permitted for flexural testing of deck boards and deck boards used as stair treads. Also, see Section 4.1.5 in this criteria.

Data resulting from testing shall be used to determine a span rating, which shall identify the maximum center-to-center spacing of the joists and the factored resistance of the deck boards.

3.5 Temperature and Moisture Effects: To establish the effect of temperature and moisture on materials used to fabricate deck boards, all tests shall be conducted in accordance with Section 4.5 of ASTM D7032. Moisture effect testing is not required for deck boards manufactured with materials that do not absorb water.

3.6 Ultraviolet (UV) Resistance: The resistance to UV exposure of materials used to fabricate deck boards shall be evaluated in accordance with Section 4.6 of ASTM D7032, except that adjustment factors for stiffness also shall be considered. Alternatively, evaluation is permitted to be conducted in accordance with ASTM D2565 Cycle 1.

3.7 Freeze-Thaw Resistance: The resistance to freeze-thaw cycles of materials used to fabricate deck boards shall be evaluated in accordance with Section 4.7 of ASTM D7032.

3.8 Termite and Decay Resistance: Termite and decay resistance are not required for deck boards that do not contain wood or cellulosic material. Termite and decay resistance is also not required when limited to installation in locations where termite and decay resistance is not required by NBC (see NBC 2020 and 2015 Figure A-9.3.2.9.(1)-A).

For deck boards fabricated with wood or other cellulosic materials, termite and decay resistance is currently outside the scope of this criteria.

3.9 Flame Spread: The flame-spread rating of materials used to fabricate deck boards shall be determined by testing in accordance with CAN/ULC-S102.2 and shall have a flame-spread rating of not more than 200.

3.10 Duration of Load: The duration of load effect shall be considered for deck boards. Testing shall be conducted in accordance with Section 5.4 of ASTM D7032. A minimum of 3 specimens shall be loaded to a minimum of 1.33 times the expected Limit States Design (LSD) capacity, increased by the applicable adjustment factors from Sections 3.5 and 3.6 of this criteria.

3.11 Slip Resistance: Slip resistance shall be determined in accordance with ASTM D7032 Section 5.6.

4.0 DECK BOARD PERFORMANCE REQUIREMENTS

4.1 Deck boards and deck boards used as stair treads shall meet all requirements as specified in Sections 5.1 through 5.5 of ASTM D7032, except for the following:

4.1.1 When a stair tread performance rating is desired, ASTM D7032 shall be followed with the following exception: the maximum deflection shall be $^1/_8$ inch (3.2 mm) at 1.33 kN (300 pounds), plus adjustments for end use, as stated in Section 5.1.2 of ASTM D7032.

4.1.2 The sample size shall be a minimum of 28 for establishing the baseline flexural properties of the deck boards and deck boards used as stair treads.

4.1.3 The unadjusted allowable load for strength determination, noted in Section 5.3 of ASTM D7032, shall apply, except for the following: the lesser of: (a) the average ultimate load multiplied by 0.65; (b) the nonparametric 5^{th} percentile ultimate load multiplied by 0.75; and the deflection limits required by NBC Article 9.4.3.1 for decks.

4.1.4 Mechanical fastener tests shall be conducted in accordance with Section 5.5 of ASTM D7032. Proprietary fastener systems may be evaluated in accordance with ASTM E330 with a resistance factor of 0.55 in lieu of allowable capacity requirements in Section 5.5 of ASTM D7032.

4.1.5 Two-Span Adjustment: As noted in Section 5.3.3 of ASTM D7032, for stair treads only, when flexural testing is conducted to failure using a simple-span condition per ASTM D7032, and the failure mode is flexure (e.g., not a crushing failure at a load point or support), two-span adjustments for flexural strength and stiffness shall be

permitted. For flexural strength (MOR or moment capacity) the increase is 23 percent, and for flexural stiffness (MOE or EI) the increase is 39 percent.

Note: When using this section, consideration shall be given to the factored load assigned to the interior support, due to the possibility of a higher load being assumed, which could cause local crushing.

5.0 QUALITY CONTROL

5.1 Deck boards 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. If any fabrication and/or repackaging is performed by anyone other than the report holder, that fabricator and/or packaging facility must be 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.

5.3 The quality documentation shall contain a process evaluation technique and a procedure for re-evaluation of compliance with the provisions of this criteria when a significant change in the product occurs. Examples of items that shall be considered for inclusion in the quality documentation are as follows:

5.3.1 Process Evaluation Techniques:

5.3.1.1. Threshold levels shall be the same as performance values determined during the qualification testing. Quality control testing shall be performed as specified in the quality control manual. Explanations shall be provided for target quality control values established based on an analysis of qualification test data and load span ratings noted in the evaluation report. These targets shall also consider potential sources of production variability (batches, manufacturing lines, etc.).

5.3.1.2. The quality control procedures may be based on the methodology specified in *MIL-STD-1916, April, 1996, DOD Preferred Methods for Acceptance of Product*, Department of Defense.

5.3.2 Formulation and Manufacturing Change: ICC-ES will be notified in writing if there is a significant change in the product, manufacturing procedures or quality system documentation from what was evaluated upon issuance of the evaluation report. A significant change is one that may reduce the performance of the product as it pertains to applicable test standards or acceptance criteria.

6.0 EVALUATION REPORT

6.1 For products evaluated as deck boards and deck boards evaluated as stair treads, the evaluation report shall contain the maximum span determined by the procedures described in this acceptance criteria.

6.2 For products evaluated as deck boards or stair treads, the report shall contain the following statement: Deck boards used as stair treads shall be installed in a minimum of a two-span condition.

6.3 The coefficient of friction determined in accordance with Section 3.11 and the method used shall be stated in the report. The report shall state that acceptance is up to the satisfaction of the building official.

6.4 For deck boards fabricated with wood or other cellulosic materials, the report shall state that termite and decay resistance is outside the scope of the report. The report shall also state that installation shall not occur in locations required to be protected and shall be limited to locations where termite and decay resistance is not required by the NBC (see NBC 2020 and 2015 Figure A-9.3.2.9.(1)-A).

For deck boards fabricated without wood or other cellulosic materials, there shall be no limitation.

6.5 The report shall contain the range of temperatures utilized in the testing performed in accordance with Section 3.5 of this acceptance criteria.

6.6 The report shall contain the following statement: Compatibility of the supporting construction materials with all fasteners and other hardware components is subject to approval by the code official.

6.7 The evaluation report shall state compliance with ASTM D7032.

7.0 ENVIRONMENTAL PRODUCT DECLARATION (Optional):

7.1 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.■

TABLE 1 – CROSS REFERENCE OF STANDARD EDITIONS USED FOR EVALUATION

STANDARD	NBC 2015	NBC 2020
CAN/ULC-S102.2	-10	:2018
ASTM D2017	-05	-05
ASTM D2565	-23	-23
ASTM D7032	-10a	-17
ASTM E330	-02	-14
MIL-STD-1916	April 1, 1996	April 1, 1996

TABLE 2 – TEST REQUIREMENTS[1]

AC174CA SECTION	DESCRIPTION	Sample Test Size	TEST REQUIREMENT
3.2 and 4.1.2	Sample Size	-	ASTM D7032 Section 4.2 (minimum 28)
3.3	Conditioning	-	ASTM D7032 Section 4.3
3.4	Deck Board Flexural Tests	See AC174CA Sections 3.2, 3.3, & 4.1.2 (minimum 28)	ASTM D7032 Section 4.4
3.5	Temperature and Moisture Effects	Min. 10 at high temperature Min. 10 at low temperature Min. 10 at maximum moisture	ASTM D7032 Section 4.5
3.6	Ultraviolet (UV) Resistance	Min. 5	ASTM D7032 Section 4.6
3.7	Freeze-Thaw Resistance	Min. 5	ASTM D7032 Section 4.7
3.8	Termite and Decay Resistance	N/A	N/A
3.9	Flame Spread	Min. 3	CAN/ULC-S102.2
3.10	Duration of Load	Min. 3	ASTM D7032 Section 5.4
3.11	Slip Resistance	Min. 5 in each orientation	ASTM D7032 Section 5.6
4.1, 4.1.1, 4.1.2, 4.1.3 and 4.1.5	Stair Treads	See AC174CA Sections 3.2, 3.3, & 4.1.2 (minimum 28)	ASTM D7032 Sections 5.1.2 and 5.3.2, and 5.3.3 (Two-Span).
4.1.4	Mechanical Fastener Tests	Min. 5 in each direction for lateral Min. 5 for withdrawal Min. 5 for pull-through	ASTM D7032 Section 5.5

[1]Test requirements are typically for one profile and/or fastener.