ANSI A190.1-2017 (Ballot 2017-1)

**Ballot issue date: 09/15/2016 Ballot closing date: 10/17/2016**

**Ballot Instructions:**

1. All members are required to return the letter ballot. Failure to return 3 consecutive letter ballots will lead to the termination of the membership from this committee.
2. All votes shall be cast by marking the appropriate column of each ballot item.
3. Ballot items marked Negative or Affirmative-with-Comment shall be accompanied by a written explanation and proposed resolution that would address the negative using the comment form at the end of this ballot form.

Exception: A written explanation and proposed resolution is not required for a ballot item to find a negative non-persuasive.

1. Return ballot by e-mail to [borjen.yeh@apawood.org](mailto:borjen.yeh@apawood.org). Please attach the completed ballot and comments as a word processor file (e.g., Microsoft Word) to facilitate the collection of comments for committee actions.

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| Committee Member Name | | Signature (not required with e-mail) | | Date |

**Ballot** (Aff = affirmative; Aw/C = affirmative with comment; Neg = negative; Abst = abstention)

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| --- | --- | --- | --- | --- | --- |
| Item | Description | Aff | Aw/C | Neg | Abst |
| 2017-1-01 | Revise Section 12.1.2 |  |  |  |  |
| 2017-1-02 | Revise Section 12.1.3 |  |  |  |  |
| 2017-1-03 | Revise Section 12.2.1 |  |  |  |  |
| 2017-1-04 | Revise Section 12.2.3 |  |  |  |  |
| 2017-1-05 | Revise Section 13.2 |  |  |  |  |
| 2017-1-06 | Revise Section 16 |  |  |  |  |
| 2017-1-07 | Revise Section 17 |  |  |  |  |
| 2017-1-08 | Revise “appearance grade” to “appearance classification” throughout the standard |  |  |  |  |

**Ballot Comment Form for ANSI A190.1-2017 (Ballot 2017-1)**

Required only for Negative or Affirmative-with-Comment

**Please attach this page to the e-mail ballot return**

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| Item | Comments |
| 2017-1-01 |  |
| 2017-1-02 |  |
| 2017-1-03 |  |
| 2017-1-04 |  |
| 2017-1-05 |  |
| 2017-1-06 |  |
| 2017-1-07 |  |
| 2017-1-08 |  |

**Ballot Item 2017-1-01:** Revise Section 12.1.2 as proposed

**Rationale:** This revision is intended for clarification. The current wording for shear strength and wood failure is based on “the sample” and “all specimens,” respectively. It is unclear if the criteria are meant to apply to each beam (1 open assembly beam and 1 close assembly beam), or the average of both beams. In addition, the delamination requirements can be interpreted as applicable to each glueline, each specimen (5 gluelines), or the average of a combination of all 3 specimens (15 gluelines).

The proposed revision is based on the long-standing practice for the glulam industry and was unanimously supported by the committee at the meeting on August 29, 2016.

**Ballot:**

12.1.2 Face and Edge Joint Qualification

(a) Face and edge joints shall … (no change)

(b) A minimum of 10 bondlines from each of two beams shall be tested using AITC Test T107. The average shear strength of ~~the sample~~ all specimens for each beam shall equal or exceed 90% of the average clear wood shear strength parallel to grain as determined from ASTM D2555. Where species groups are used, the procedures for assigning values for groups given in ASTM D2555 shall be used. The shear value for 12% moisture content shall be used for moisture contents of 12% or less. The average wood failure of the sheared or broken surfaces of all specimens for each beam to be evaluated for qualification or lot verification testing of adhesives shall equal or exceed 80% for adhesives used with softwoods and non-dense hardwoods, or shall equal or exceed 60% for adhesives used with dense hardwoods.

(c) A minimum of three cyclic delamination specimens shall be prepared and tested in accordance with AITC Test T110. After one complete cycle, softwoods shall have no more than 5% delamination and hardwoods shall have no more than 8% delamination for each specimen.

**Ballot Item 2017-1-02:** Revise Section 12.1.3 as proposed

**Rationale:** This revision is intended for clarification. The current wording for end joint delamination requirements can be interpreted as applicable to each specimen (end joint) or the average of all 5 end joint specimens.

The proposed revision is based on the long-standing practice for the glulam industry and was unanimously supported by the committee at the meeting on August 29, 2016.

## **Ballot:**

12.1.3 End Joint Qualification

(a) Full-size end joint specimens shall… (no change)

(b) A minimum of 30 specimens shall… (no change)

(c) A minimum of 5 specimens shall be tested for durability using AITC Test T110. After one complete cycle, softwoods shall have no more than 5% delamination and hardwoods shall have no more than 8% delamination for each specimen.

**Ballot Item 2017-1-03:** Revise Section 12.2.1 as proposed

**Rationale:** This revision is intended for clarification. The current wording for shear strength and wood failure is based on “the sample” and “all specimens,” respectively. It is unclear if the criteria are meant to apply to each beam (1 open assembly beam and 1 close assembly beam), or the average of both beams. In addition, the delamination requirements can be interpreted as applicable to each glueline, each specimen (5 gluelines), or the average of a combination of all 3 specimens (15 gluelines).

The proposed revision is based on the long-standing practice for the glulam industry and was unanimously supported by the committee at the meeting on August 29, 2016.

## **Ballot:**

12.2.1 Face Bonding: Strength and Wood Failure

Shear tests shall be performed on each new lot of adhesives in accordance with AITC Test T107. The average shear strength of ~~the sample~~ all specimens for each beam shall equal or exceed 90% of the average clear wood shear strength parallel to grain as determined from ASTM D2555. Where species groups are used, the procedures for assigning values for groups given in ASTM D2555 shall be used. The shear value for 12% moisture content shall be used for moisture contents of 12% or less. The average wood failure of the sheared or broken surfaces of all specimens for each beam to be evaluated for qualification or lot verification testing of adhesives shall equal or exceed 80% for adhesives used with softwoods and non-dense hardwoods, or shall equal or exceed 60% for adhesives used with dense hardwoods.

**Ballot Item 2017-1-04:** Revise Section 12.2.3 as proposed

**Rationale:** This revision is intended for clarification. The current wording for the delamination requirements can be interpreted as applicable to each glueline, each specimen (multiple gluelines), or the average of a combination of all specimens.

The proposed revision is based on the long-standing practice for the glulam industry and was unanimously supported by the committee at the meeting on August 29, 2016.

## **Ballot:**

12.2.3 Durability of Adhesive Bonds: Face and End Joint Bonding

Face and end joint bond durability shall be tested in accordance with AITC Test T110 on each new lot of adhesive. After one complete cycle, softwoods shall have no more than 5% delamination and hardwoods shall have no more than 8% delamination for each specimen. Face and end joint test specimens shall be prepared using the same adhesive curing procedures used in production.

**Ballot Item 2017-1-05:** Revise Section 13.2 as proposed

**Rationale:** Item (h) in Section 13.2 requires “A lot number or job identification number as a means to trace the member back to the production and quality control records at the manufacturing facility.” This should be applicable to Custom glulams.

The proposed revision is based on the long-standing practice for the glulam industry and was unanimously supported by the committee at the meeting on August 29, 2016.

## **Ballot:**

13.2 Custom Members

For members laminated to meet specific job specifications (custom members) the marking need consist of only items (a), (b), (c), (h), and (i) in Section 13.1. Custom-made timbers shall bear at least one mark containing the required identification. When long members shipped to a job are to be cut later into several members for use in the structure, the frequency of marking required for non-custom members shall be followed.

**Ballot Item 2017-1-06:** Add the definition of “wane” to Section 16 as proposed

**Rationale:** “Wane” is referenced in Section 6.2, but no definition is provided; “pencil wane” is defined.

The proposed addition is based on Section 2.12 of Annex C in ANSI 117 and is consistent with the definition in the lumber grading rules. This revision was unanimously supported by the committee at the meeting on August 29, 2016.

## **Ballot:**

16 Definitions

Wane - Bark or lack of wood from any cause except eased edges, on the edge or corner of a piece of lumber.

**Ballot Item 2017-1-07:** Update the references in Section 17 as proposed

**Rationale:** This revision provides the update of referenced standards. The latest AITC test methods should have been dated 2007.

This revision was unanimously supported by the committee at the meeting on August 29, 2016.

## **Ballot:**

17 Referenced Documents

AITC/WCLIB 200-2009 Manufacturing Quality Control Systems Manual

AITC Test T102-~~2009~~2007, Adhesive Spread Measurement

AITC Test T103-~~2009~~2007, Calibration of Plant Pressure System: Bolts or Screw Type Jacks

AITC Test T104-~~2009~~2007, Calibration of Torque Wrenches

AITC Test T105-~~2009~~2007, Diagnostic Tests for Finger Joint Quality

AITC Test T106-~~2009~~2007, Strip Tension Test for End Joints Used in Lamination Repair

AITC Test T107-~~2009~~2007, Shear Test

AITC Test T110-~~2009~~2007, Cyclic Delamination Test

AITC Test T115-~~2009~~2007, Machining Test for End Joints

AITC Test T118-~~2009~~2007, Bending Proof Loading for End Joints

AITC Test T119-~~2009~~2007, Full Size End Joint Tension Test

AITC Test T121-~~2009~~2007, Tension Proof Loading for End Joints

AITC Test T122-~~2009~~2007, Mix Ratio Check for Automatic Adhesive Mixing Machines

AITC Test T123-~~2009~~2007, Sampling, Testing and Data Analysis to Determine Tensile Properties of Lumber

ANSI 405-~~2008~~2013, American National Standard for Adhesives for Use in Structural Glued Laminated Timber

APA 2015 Quality Assurance Policy for Structural Glued Laminated Timber

ASTM D2555-~~06~~15 Standard Methods for Establishing Clear Wood Strength Values

ASTM D3737-~~09~~12 Standard ~~Method~~ Practice for Establishing Allowable ~~Stresses~~ Properties for Structural Glued-Laminated Timber (Glulam) ~~Manufactured from Visually Graded Lumber~~

ASTM D4444-~~08~~13 Standard Test Methods for ~~Use~~ Standardization and Calibration of Hand-Held Moisture Meters

ASTM D5456-~~10a~~14b Standard Specification for Evaluation of Structural Composite Lumber Products

**Ballot Item 2017-1-08:** Revise “appearance grade” to “appearance classification” as proposed throughout this standard

**Rationale:** The wording of “Grades” is usually associated with structural requirements, such as “Grade Combination” in Section 3.2 or “visual-grade and mechanical-grade lumber.” However, appearance is simply non-structural aesthetic characteristics of glulam. Therefore, it is suggested that the wording of “appearance grade” be changed to “appearance classification” throughout this standard to avoid confusion.

## This revision was unanimously supported by the committee at the meeting on August 29, 2016.

## **Ballot:**

1. Scope

(second para)

This Standard describes minimum requirements for the production of structural glued laminated timber, including size tolerances, grade combinations, lumber, adhesives, appearance ~~grades~~ classifications, and manufacture.

8. Wood inserts are permitted to be used to meet appearance ~~grades~~ classifications requirements.

1. Appearance ~~Grades~~ Classifications

Glued laminated timber shall be finished to a Framing, Industrial, Architectural or Premium ~~grade~~ classification unless otherwise agreed upon by buyer and seller.

* 1. Framing Appearance ~~Grade~~ Classification
  2. Industrial Appearance ~~Grade~~ Classification
  3. Architectural Appearance ~~Grade~~ Classification
  4. Premium Appearance ~~Grade~~ Classification

12.3.7 Appearance ~~grade~~ classification

13.1(f) Appearance ~~grade~~ classification