

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
Summary of Comments and Proposed Responses

October 7, 2010

Page 1 of 13

| Item | | Ballot | |
|-----------|------|--|--|
| 1 | | Approve of Section 1 | |
| Voter | Vote | Comments | Proposed Responses |
| Krivchuk | Neg | The scope does not mention lintels. Also, Section 5.1 regarding Method A qualification procedure does not mention lintels. But, Sections 5.2.2 and 6.5 address testing of lintels for qualifying panels for use as lintels under Method B qualification procedures. If lintels are within the scope of the standard, Section 1 should be revised to address lintels. Since the standard does not prescribe the method of constructing Method A qualified lintels, if lintels are within the scope, do panels qualified under Method A also need to be qualified for use as lintels under Section 5.2.2? If not, then will it always be true that all laminated panels and foamed-in-place panels qualified under Method A will have equivalent performance to Method B qualified panels used as lintels? | Ballot withdrawn to rework on the standard for rebalot |
| Bergstrom | Aw/C | See attached file | |
| Ehrlich | Aw/C | <ol style="list-style-type: none"> 1) The 2nd sentence of Section 1.2 uses some form of “test” three times. Suggest revising to read: “The values provided in this standard are obtained from testing under laboratory conditions.” 2) Since the list of end-use considerations includes seismic design categories, “basic wind speed” should be added to the list as well. 3) In a lintel, the “long dimension” will be in the horizontal direction. Will the definition of “strength axis” as “axis parallel to the long direction” and the requirement that the strength axis be oriented in the vertical direction cause issues for lintels? Does the fact that Section 6.5.4 states that SIP lintels shall be cut out from a larger SIP clarify the issue, since the larger SIP presumably will have the strength axis oriented properly? Does the requirement to cut a SIP lintel from a larger panel need to be repeated in Section 5.2.2? 4) Suggest revising last sentence of Section 1.5 to read: “The panels must be protected from the elements with an appropriate weather-resistive exterior wall covering, appropriate flashing, and a water-resistive barrier, and be provided with a positive means of drainage, in accordance with building code requirements.” | |
| Whalen | Aw/C | Section 1.4 – Revise wording to: PRS-610.1 performance-rated SIPs shall be labeled with the rated direction in accordance with the requirements of this standard and the applicable building codes. <u>Follow published manufacturer-specific published installation instructions for SIPs labeled as conforming to this standard. However, in the event of a conflict between the requirements of the manufacturer installation instructions and this standard, must be in agreement with the requirements of this standard shall govern.</u> | |
| Reindl | Aw/C | See 1.3 Add “of the panel” to the statement with parenthesis in the second sentence -(axis | |

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
Summary of Comments and Proposed Responses

October 7, 2010

Page 2 of 13

| | | | |
|--------------|------------------------------|--|--|
| | | parallel to the long dimension of the panel). Clarification only. | |
| Berger | Aw/C | I would suggest the following editorial changes: 1.1 "... two structural facings made of wood structural panels." Is redundant I would suggest "... two facings made of wood structural panels." 1.2 "...test values which are obtained from testing under as-tested conditions." I would reword to "...test values which are obtained from testing under in-use conditions." 1.3 "axis parallel to the long dimension" is not an accurate description of the strength axis. The strength axis is defined by the panel construction. A 4x8 panel could be cut from a 8x24 panel with the strength axis in the 8 foot direction. I would change the sentence to read "...SIPs shall have the strength axis oriented in the vertical direction of the wall and ..." eliminating the part in parenthesis. 1.5 There is something missing from the second sentence. I would suggest "...appropriate weather-resistive exterior wall covering, including the use of flashing, use of a water-resistive barrier, and by providing a positive means..." | Ballot withdrawn to rework on the standard for rebalot |
| Item | Ballot | | |
| 2 | Approval of Section 2 | | |
| Voter | Vote | Comments | Proposed Responses |
| Bergstrom | Aw/C | See attached file | Ballot withdrawn to rework on the standard for rebalot |
| Ehrlich | Aw/C | 1) Bring the "D" for D1623-08 down from the end of the line above. 2) Is a reference to ASCE 7 necessary? The specific mention of a 130mph basic wind speed and Seismic Design Category C were removed from Section 1.2, and I cannot find any other text in the standard that would require a direct reference. | |
| Whalen | Aw/C | 2.1 ASTM Standards – Editorial comment D at the end of D 1622 title should be on next line as part D 1623. | |
| Krivchuk | Aw/C | See Comment No. 8 regarding reference to AC04. | |
| Item | Ballot | | |
| 3 | Approval of Section 3 | | |
| Voter | Vote | Comments | Proposed Responses |
| Ehrlich | Neg | 1) I disagree with the revisions to the definition of "core" in Section 3.2.3. They assign to the core material greater structural properties than I believe it actually possesses. The two facings are the primary structural components of the panel. I agree the core certainly provides lateral support to the facings for out-of-plane loads. I'm less certain about the degree the core contributes to improved in-plane shear or racking resistance. Suggest revising the sentence to read: "...and provides the required thermal insulation for the wall, supplies buckling resistance to the two panel facings under axial loads, and contributes to the shear and bending resistance of the panel under short-term transverse and lateral loads." | Ballot withdrawn to rework on the standard for rebalot |

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
Summary of Comments and Proposed Responses

October 7, 2010

Page 3 of 13

| | | | |
|-----------|------|---|--|
| | | <p>2) General editorial note in Section 3.2.3 and following – change all occurrences of “facer” to “facing”, for consistency. Most of the standard already uses “facing”; but some of the added text from Ballot #1 used “facer”.</p> <p>3) Revise the definition of Laminating adhesive in Section 3.2.6 to read: “The adhesives used to bond the facings to the core.”</p> <p>4) Revise the definition of Spline, Surface to read: “...that fits into grooves cut into...”</p> <p>5) The response to Scott Maxwell’s comment #17 suggested that a definition of Strength Axis was to be added to Section 3, but no definition was provided.</p> | |
| Whalen | Neg | <p>1. Add the following definitions:</p> <p>a) EPS – The letter designation for the molded expanded polystyrene thermal insulation classified by this specification. It is defined as cellular plastic product manufactured from pre-expanded polystyrene beads subsequently molded into desired shapes and sizes resulting in a product which is rigid with closed cellular structure.</p> <p>b) XPS – The letter designation for the extruded expanded polystyrene thermal insulation classified by this specification. It is defined as cellular plastic product manufactured in a one stage process by extrusion and expansion of the base polymer in the presence of blowing agent(s) resulting in a product which is rigid with closed cellular structure.</p> <p>c) Foamed-in-place polyurethane insulation – A rigid cellular plastic material that is formed in place by the catalyzed reaction of polyisocyanates and polyhydroxyl compounds, expanded with blowing agents and producing a predominantly closed cell product.</p> <p>2. Delete the definition for “R-value Thermal Resistance” or add specific qualification requirements. If this definition is to remain, revise to definition as per ASHRAE Handbook of Fundamentals.</p> <p>3. Revise the following definitions:</p> <p>3.2.12 Spline, Block – A structural component longitudinal SIP connection consisting of wood structural panels s facings bonded to a foam core of the same materials s as the structural insulated panel facings used for manufacture of SIPs qualified to this standard bonded with the same foam core to form a block with overall thickness equal to the core thickness of the structural insulated panels the two SIPs to be connected (see Figure 1).</p> <p>3.2.13 Spline, Surface – A pair of wood structural panels longitudinal SIP connection consisting of a strip of wood structural panel cut from of the same facing material as the structural insulated panel facings used for manufacture of SIPs qualified to this standard that fits into a groove cut into the foam core at the longitudinal edges of the two structural insulated panels SIPs to be connected (see Figure 2).</p> | Ballot withdrawn to rework on the standard for rebalot |
| Bergstrom | Aw/C | See attached file | |
| Reindl | Aw/C | Section 3 – Why are sections 3.2.6, 3.2.7 and 3.2.8 deleted?? I recommend keeping them. | |

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
Summary of Comments and Proposed Responses

October 7, 2010

Page 4 of 13

| | | | |
|-----------|-----------------------|---|---|
| | | <p>Section 3.2.7 (old 3.2.9) – Why “Qualified” Inspection Agency. Just go with Inspection Agency. Section a & b (of this section) should be deleted – reasoning if the Inspection Agency is accredited under ISO/IEC 17020 – the Inspection Agency should have procedures and trained personnel and equipment as necessary to perform the audit. Otherwise the agency would not get approved under 17020.</p> <p>Section 3.2.8 (old 3.2.10) – Why “Qualified” Testing Agency. Just go with Testing Agency. Section a & b should be deleted – reasoning if the testing agency is accredited under ISO/IES 17025 – the Testing Agency should have procedures, equipment and trained personnel to perform the testing. Otherwise the agency would not get approved under the 17025.</p> <p>Section 3.2.17 – Why was this section removed. Should it stay in?????</p> | |
| Berger | Aw/C | 3.2.13 this could be “...the same or better material as the structural insulated panel facings...” | Ballot withdrawn to rework on the standard for reballot |
| Item | Ballot | | |
| 4 | Approval of Section 4 | | |
| Voter | Vote | Comments | Proposed Responses |
| Ehrlich | Neg | I believe there needs to be some minus tolerance on Panel Thickness. I recognize the concern that Russ Krivchuk identifies and do not necessarily disagree that a -1/8” tolerance may be too loose. However, a tolerance of -0” invites the possibility of causing a significant project delay because a panel or a batch of panels turns out to be minimally (say, 1/32”) thinner than the specified thickness. | Ballot withdrawn to rework on the standard for reballot |
| Krupa | Neg | LTTR test is not a qualified test for R values for polyurethane foam systems in this industry. A physical property must specify a test method and requirement to be included in the table. If the R-value is necessary, the correct test method is ASTM C-518 and a requirement needs to be established. | |
| Pataluna | Aw/C | 4.2. Change tolerance of SIP facing squareness to 1/16” (more realistic) from 1/32” | |
| Bergstrom | Aw/C | See attached file | |
| Lau | Aw/C | <p>Section 4.2</p> <p>Recommend adding the panel sizes for SIP Panel Tolerances for SIP Panel Width, SIP Panel Length and SIP Panel Straightness: SIP Panel Width – Plus or minus 1/8 inch (3.2 mm) for 4 foot panel width; SIP Panel Length – Plus or minus ¼ inch (6.4 mm) for 8 foot panel width; SIP Panel Straightness – 1/16 inch (1.6 mm) of panel edge for panel length up to 10 feet measured by a straight line drawn from one corner to the adjacent corner.</p> <p>Also recommend changing “To ensure equal bearing on both facings, the SIP facing squareness shall be within plus or minus 1/32 inch (0.8 mm).” to “To ensure equal bearing on both facings, the relative alignment of the SIP facings shall be within plus or minus 1/32</p> | |

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
Summary of Comments and Proposed Responses

October 7, 2010

Page 5 of 13

| Item | Ballot | Comments | Proposed Responses |
|-----------|-----------------------|---|--|
| 5 | Approval of Section 5 | inch (0.8 mm)." | |
| Bergstrom | Neg | A number of requirements which should be in section 5 are contained in section 6. | Ballot withdrawn to rework on the standard for rebalot |
| Ehrlich | Neg | <p>1) Will the typical end user who would be referring to Table 1 know what an "LTTR test" is? Should LTTR be spelled out here or defined in Section 2?</p> <p>2) In Section 5.1.4.1, I'm not sure the new phrasing "laminating adhesive on the full surface of the panel core..." addresses the concerns raised by several comments, mine included (see Comments #2, #5, #9 and #10). In addition, given that the provisions for Method B in Section 5.2 still references back to Section 5.1.4 for adhesives, I don't see that the language in Section 6.1.3 allowing limited variation in permits the use of bead-applied adhesive which the commenters want to preserve.</p> <p>3) Table 3 should either be sorted alphabetically by Requirement, or numerically by Referenced Section.</p> <p>4) Revise 2nd sentence of 5.1.6 to read: "A minimum of 20 specimens 4-1/2 inches (114 mm) in thickness, 4 inches (102 mm) in width, and 4 feet (1219 mm) in length shall be tested at a 45-inch (1143 mm) span from center to center of support using third point loading, with a minimum end bearing of 1-1/2" (38 mm).</p> <p>5) In Section 5.2, the reference should be to CAN/ULC-S701 (not 5701). Also, the portion of Section 5.2 calling out the core and facing requirements is confusing. Suggest revising the sentence as follows: "...specified in Section 5.1.4, the core shall be characterized in accordance with ASTM C 578, CAN/ULC-S701, or Table 1, and the facing shall be characterized in accordance with Annex A1."</p> <p>6) Remove the reference to ICC-ES AC04 in footnote (a) of Table 4. ICC-ES does not support referencing of acceptance criteria in codes and standards. See Ballot #1 comment #35.</p> | |
| Whalen | Neg | <p>A. Revise 5.1.2.1 as noted:</p> <p>a) Polystyrene foam-(EPS and-or XPS) <u>insulation</u> complying with ASTM C 578 Type I, or CAN/ULC-S701 Type 1.</p> <p>b) <u>Foamed-in-place polyurethane Polyurethane foam foamed in place insulation</u> meeting the physical properties shown in Table 1.</p> <p><u>Revise title of Table 1 to:</u> Properties for <u>Foamed-In-Place</u> Polyurethane <u>Foam Foamed In Place</u> Insulation Used as</p> | |

| | | | |
|----------|-----|---|--|
| | | <p>the Core of SIPs</p> <p>B. Revise Table 1 as follows:</p> <ol style="list-style-type: none"> 1. Minimum flexural strength (ASTM C203) – Revise note (b) to reference to specific test method and procedure used to obtain specified flexural strength value. 2. Delete reference to R-values for thermal qualification or add definition of LTTR, state qualification value and provide required test method. Reference to ULC S705.1 is not appropriate as there no confirmation that properties of foamed-in-place polyurethane insulation per Table 1 used to manufacture SIPs qualified to this standard would meet the requirements of S705.1 and S705.1 is not in the reference section. <p>C. Revise Table 2, Note (a) to reference Annex A as opposed Annex A1.</p> <p>D. Revise Section 5.2 as noted:</p> <p>The PRS-610.1 performance-rated SIPs are permitted to be qualified based on empirical full-scale SIP tests specified in this section. When using this qualification method, core materials shall meet the requirements specified in Section sError! Reference source not found. and Error! Reference source not found. 5.1.2, facing materials shall meet the requirements specified in Section 5.1.3 except that the required properties shall be characterized in accordance with Annex A ASTM C 578 or CN/ULC-D701 or Table 1, and Annex A1 and the adhesives shall meet the requirements specified in Sections s5.1.4, and the core and facing materials shall meet the requirements specified in Section 5.1.3 be characterized in accordance with ASTM C 578 or CN/ULC-D701 or Table 1, and Annex A1, respectively. Lumber and fasteners used for qualification under this method as described in Annex B shall be documented and specified for end-use applications. Annex B also provides details regarding provisions for electrical chases and boxes.</p> | |
| Rogne | Neg | <p>Table 1 Section 5.1.2.1 refers to R-Values for Thermal Qualification that the test should be LTTR. We do not feel the LTTR test gives a real world result for R-Value for PUR SIP panels. This could be simply replaced with ASTM C518.</p> | Ballot withdrawn to rework on the standard for rebalot |
| Krivchuk | Neg | <ol style="list-style-type: none"> 1. Section 5.1.2.1 a and Section 5.2 both indicate that the polystyrene can comply with either ASTM C 578 or CAN/ULC S701. Has it has been established that the two standards are equivalent and acceptable under applicable building codes? 2. Table 1 of the standard lists the physical property requirements for foamed-in-place polyurethane foam plastic of Method A qualified panels. Is there a need to include a stiffness requirement for the polyurethane to ensure shear stiffness of the panel subjected to out-of-plane bending loads? 3. The term “LTTR” that appears in the table in Section 5.1.2.1 b needs to be defined. Also, is the ULC S705.1 standard applicable under the building codes used in the United States? 4. Editorially add a comma after “manufacturing” in the first sentence of Section 5.1.2.3. 5. Section 5.1.3 identifies six different standards for the wood structural panels. Has it been established that the six standards are equivalent and acceptable under applicable building codes? | |

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
 Summary of Comments and Proposed Responses

October 7, 2010

Page 7 of 13

| | | | |
|------------|-----|--|--|
| | | <p>6. In the first sentence of Section 5.1.3 the phrase “and the requirements specified in this standard” is redundant with the phrase “and shall meet the properties specified in Table 2”. Please delete one of these two phrases.</p> <p>7. Section 5.1.4 requires adhesives to comply with ASTM D 7446. The conditions of acceptance stated in Sections 10.1.1.2, 10.1.1.3, 10.1.2.2 and 10.1.2.3 of ASTM D 7446 are that the aged laminated specimen’s strength is to be equal to or greater than 80 percent of the strength of wood blocks that do not contain adhesive that are subjected to the same aging conditions as the laminated specimens. This is not an evaluation of the durability of the adhesive. To evaluate the durability of the adhesive, the strength of the aged laminated specimens needs to be compared to the strength of conditioned-only (control) laminated specimens. Consideration should be given to revising PRS-610.1, such that the conditions of acceptance of these tests are to be compared to the strength of control specimens, similar to what is currently required in Section 6.8.6 of PRS-610.1 for the foamed-in-place foam plastic.</p> <p>8. Footnote A of Table 4 in Section 5.2.1 indicates that the allowable design values are to be established in accordance with AC04. However, AC04 is not included in the list of referenced documents in Section 2.2. In addition, Section 1.7 of PRS-610.1 states that certification of design values is beyond the scope of the standard. As a result, there is a conflict between the footnote and Section 1.7 that needs to be resolved.</p> <p>9. Table 4 in Section 5.2.1 contains minimum average test values. Since the panels are tested in series of three specimens, consideration should be given to revising the standard to include a limitation on the variability of the test results.</p> <p>10. The racking shear deflection limit of 0.200-inch specified in Table 4 of Section 5.2.1 relates to the methods of recording deflections of the racking shear test specimens noted in APA document 154 dated May 1993. Instead of measuring the upward movement of the end post, the APA document indicates that only the upward movement of the sill plate is measured. As a result, unless Table 4 is revised with the deflection limit reduced to 0.125-inch, Section 6.4 should be revised such that the upward movement of the sill plate is measured and not the end post upward movement (see additional comments below regarding the racking shear test setup).</p> | |
| Di Lenardo | Neg | <p>Section 5: Article 5.1.2.1 (b) This compliance statement for the polyurethane foam needs a footnote to clarify that the compliance to Table 1 must be demonstrated by each polyurethane SIP manufacturer. Each PUR SIP manufacturers manufactures the PUR foam with their own proprietary method (i.e. injection, spray, poured system) with proprietary press. Hence each SIP manufacturer must demonstrate the PUR core ‘they’ manufacture meets the Table 1 specification.</p> | Ballot withdrawn to rework on the standard for rebalot |
| Berger | Neg | <p>Table 1 has tensile test values for the PU core. It is a different method than what is used in Section 6 but Section 6 it would be better to use the same method (see section 6 notes)</p> | |

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
Summary of Comments and Proposed Responses

October 7, 2010

Page 8 of 13

| | | | |
|--------------|------------------------------|--|--|
| | | 5.1.2.2 Note that in section 2603.3 Exception 4 of the 2009 IBC: "foam plastic insulation greater than 4 inches (102 mm) in thickness shall have a maximum flame spread index of 75 and smoke-developed index of 450 where tested at a minimum thickness of 4 inches (102 mm), provided the end use is approved in accordance with section 2603.9 using the thickness and density intended for use." 2603.9 then requires NFPA 286, FM4880, UL1040, or UL1715 in the actual end use configuration in the maximum thickness intended for use. This indicates that E84 is not sufficient for foam plastic insulation thicker than 4 inches. Does the committee need to address this? The wording in the standard could be changed to "... when tested in accordance with 2009 IBC 2603.3." and the responsibility would be thrown on the manufacturer and approval agency. Table 2 contains flatwise bending stiffness values which do not match the IRC. | |
| Pataluna | Aw/C | 5.1.4.1 – we call out adhesive on 'full surface' of panel core. What about Bead application? | Ballot withdrawn to rework on the standard for rebalot |
| Reindl | Aw/C | Section 5.1.5 – Why was this section removed??? Should Lumber not be included in section 3 also???? Lumber indicated in Racking Testing. Section 5.1.6 – This section should have description of what the Fasteners are used for. Should Fasteners not be included in section 3 also???? | |
| Item | Ballot | | |
| 6 | Approval of Section 6 | | |
| Voter | Vote | Comments | Proposed Responses |
| Bergstrom | Neg | A number of requirements which should be in section 5 are contained in section 6. | Ballot withdrawn to rework on the standard for rebalot |
| Maxwell | Neg | <p>• Section 6.3.1 – The "proposed response" said that my comment/issue would be addresses in Annex B. It is not currently addressed in Annex B and this section has not been changed. Thus, I am maintaining my negative on this section and resubmitting my previous comment.</p> <p>Uniform loading and 1/3 point loading ARE NOT interchangeable. Uniform loading and 1/4 point loading ARE interchangeable for moments (but not for deflections). For example, take the first item in Table 4 under Transverse Load Capacity..."4" nominal by 8 ft panel...it has ultimate load of 114 lb/ft per ft of width and a deflection limit of 0.4 inches when loaded with 38 lb/ft per ft of width. These equate into 1/3 point loads of 456 lbs per ft of width and 152 lbs per ft of width respectively. This will result in a maximum moment of 912 lb-ft per ft of width for the uniform load and 1217.5 lb- ft per ft of width for the 1/3 point load. Since the tested panels used as a basis for this whole thing were all done with 1/3 point loads, this means that uniformly loaded member would be conservative for the ultimate loads. But, then there are the deflection tests. For deflections, the uniform load results in 3502080/EI (should be in inches if appropriate units are used for EI) and the 1/3 load results would be 1660245/EI. Note that this does NOT include shear deformation to keep it simple for the moment. In this case, the uniform load would be UNCONSERVATIVE...in otherwords, the same overall deflection load on the uniformly loaded specimen would result in more flexural deflection than the 1/3 point load case. As result, this section needs to only use the 1/3</p> | |

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
 Summary of Comments and Proposed Responses

October 7, 2010

Page 9 of 13

| | | | |
|----------|-----|---|--|
| | | <p>loading (as was used in the testing that this is all based upon) OR there needs to be something done to “convert” the loads to appropriate levels for the uniform loading (much like there are “adjustment” factors for different size concrete cylinders when doing concrete cylinder compression tests). Either we provide adjustment factors for the different load testing configurations or we make sure that all the values in Table 4 are ALWAYS the conservative value for the worst case (in which case, someone using the other loading option would likely get screwed...i.e. in the case of the ultimate loading, those who test with a uniform load method, which is likely many current manufacturers, will get screwed as the ultimate load values in Table 4 will be conservative for the uniform loading...in other words, they could increase the uniform load a bit before they would achieve the same ultimate moment that failed the specimens under the 1/3 point loading).</p> | |
| Krivchuk | Neg | <ol style="list-style-type: none"> 1. Section 6.1.2 describes the electrical chases that are to occur in the load tested panels. However, this section or Section B4 should be further revised to specify the location of the electrical chases with respect to the panel thickness. Are the electrical chases centered or offset from the panel core centerline? 2. Either Section 6.1.2 or Sections B5 and B6 should be revised to state that the panel core of the axial and transverse load test specimens is to be recessed at both vertical edges of the panels consistent with the recess amount required to accommodate the spline type specified by the manufacturer or the amount necessary to accommodate a block spline. 3. Section 6.2 refers to ASTM E 1803 for the axial load test procedure. Section 7 of ASTM E 1803-06 requires the axial load tests to be conducted in accordance with ASTM E-72. ASTM E 72 shows a steel load beam and a steel plate of unknown thickness being used to apply the load to the top of the specimen, with the steel plate width being wider than the test specimen thickness. Figure B5b of Appendix B appears to be consistent with this. However, it is questionable whether this test load application method will be representative of end-use installation conditions, since the tested conditions will place the axial loads directly and uniformly into both facings of the load tested panels. This does not occur when the panels are used to support spaced floor or roof framing (the load is not applied uniformly to the wall panel), especially when the framing does not extend over both panel facings (the load is not applied to both panel facings). The test conditions also may not be representative of conditions where the wall panels support roof or floor sandwich panels (in this case, the axial loads in the wall panel facings are applied directly into the bottom facing of the floor and roof panel above the wall, with a bearing width equal to the wall panel facing thickness). The test condition will also not be representative of an installation of a wall panel with a panel wide wood cap plate installed on top of the panel. Also, the test condition may not be representative of the type of support provided to the bottom of wall panels provided by floor framing. 4. Section 6.2 refers to Appendix B for the axial load tests. The axial load test setup depicted in Figure B5b shows the specimen tested in the horizontal position with the | Ballot withdrawn to rework on the standard for rebalot |

| | | |
|--|---|--|
| | <p>eccentricity of the applied load measured toward the bottom face of the panel. The test drawing should be revised with the load eccentricity measured toward the top of the horizontally tested panel so that the moment created by the applied load is supplemental to the moment created by the weight of the panel.</p> <p>5. Section 6.4.1 indicates that the racking shear tests shall be in accordance with ASTM E 1803 with the stated exception that the loading beam used to apply the load to the racking shear test specimen shall have a maximum stiffness of 330,000 kip-inches squared. However, Figure B7b depicting the racking shear test setup does not include the load beam described in Section 6.4.1. Since the figure has been added to this draft of the standard, my understanding is that Section 6.4.1 is to be revised to be consistent with the new figure.</p> <p>6. Section 6.4.1 requires the racking shear test assemblies to have wood end posts, and Figures B7a and B7b appear to depict a double end post located at each end of the test specimen. This will be applicable only to end use installations where a double end post is installed each end of the shearwall. Question: Is it typical for a full-height double end post to be installed each end of sandwich panel shearwalls?</p> <p>7. Section 6.4.1 should be revised to indicate that the fasteners used to attach the facers of the panels to the end posts of the racking shear test specimens need to be installed at the minimum fastener edge distance.</p> <p>8. Section 6.4.1 states that the racking shear test specimen is permitted to bear at the top and bottom plates to simulate end-use conditions. This sentence should be deleted to be consistent with the new Figure B7b depicting the racking shear test setup. However, see the next comment regarding Figure B7b.</p> <p>9. The end view of the racking shear test setup in Figure B7b needs to be revised such that the holdown plate and rollers do not contact the facers of the sandwich panel at any time during the racking shear tests. Also the figure should be revised to clarify that the lateral guides are not permitted to contact the top edge of the sandwich panel facers.</p> <p>10. The following comments concern the deflection measuring devices depicted in Figure B7b for the racking shear tests:</p> <ul style="list-style-type: none">a. The device measuring the horizontal movement at the bottom of the wall needs to measure the displacement of the sill plate, not the horizontal displacement of the end posts or panel facers.b. The device measuring the uplift movement on the right side of the assembly needs to measure the upward movement of the sill plate. If the displacement limit of 0.200 inch is changed to 0.125, the device should measure the uplift movement of the end post.c. The purpose for the device on the left side of the assembly is not clear, because ASTM E72 does not include a measuring device at this location, and the equation used to calculate the net horizontal displacement does not accommodate this fourth device. Also, if this device is to be included, the height at which this measurement is to be taken needs to be identified. | |
|--|---|--|

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
 Summary of Comments and Proposed Responses

October 7, 2010

Page 11 of 13

| | | | |
|------------|-----|--|--|
| | | <p>11. In regard to the racking shear testing under Section 6.4.1, since the intent of conducting the racking shear test is to evaluate the performance of the sandwich panel in transferring an in-plane lateral force in the wall top plate to the bottom plate, consideration should be given to revising ANSI/APA PRS-610.1 to clarify that the “end plate restraint” of Figure B7b is to bear only on the end of the bottom plate, and not bear on the sandwich panel facings. Allowing the panel facings to bear on the “end plate restraint” will be providing an artificial restraint to the panel facings that is not representative of end-use conditions.</p> | |
| Di Lenardo | Neg | <p>Section 6: Article 6.6.3. Durability of SIPs.....no less than 75%. This article has two deficiencies:(i) it does not deal with durability but rather ultimate strength retention after construction moisture conditioning and (ii) the compliance for deformation under service load is left out. Should/could read:</p> <p>Ultimate strength retention is SIPs is satisfied....no less than 75% of dry....of each assembly. In addition, deformations and load at deformation limits in Table 4 shall continue to be met.</p> <p>Section 6: Article 6.8.1. Construction – SIP assemblies shall be constructed.....</p> <p>Same as (1) above. The PUR specimens must be made by each individual PUR SIP manufacturer with their own proprietary manufacturing process.</p> <p>Section 6: Article 6.8.1. If the foamed-in-place core differs from the foam requirements in Table 1 the actual core density of the core material shall be used.</p> <p>What does “the actual core density of the core material shall be used” imply for the specimen preparation?</p> | Ballot withdrawn to rework on the standard for rebalot |
| Berger | Neg | <p>6.6.3 starts out “Durability of SIPs is ...” the title of Section 6 was changed from “Durability of SIP Panels” to “Construction Moisture Effects”. 6.6.3 should be changed to read “Construction moisture effect requirements are met when the results...”</p> <p>6.7.1 does not apply to Foamed-In-Place SIPs. Add 6.7.2 which states “Foamed-in-place gluebond strength is evaluated in Section 6.9.”</p> <p>6.8 needs to be looked at again. The tensile test method should match the method used in table 1 (ASTM D1623) or if the methods are considered equivalent I would recommend changing the requirement in table 1 to the same method used in 6.8, 6.9, and 8.2. There is no statement about an allowable percent of delamination vs. core failure (ASTM D7446 Section 10.2 allows 10%).</p> <p>6.9.1 refers to Section 15.2.2 of ASTM D7446 which is conditioning of the specimens. It was probably in accordance with Section 15 with section 15.1 modified to the specimen shown in PRS-610.1 figure 5.</p> | |

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
Summary of Comments and Proposed Responses

October 7, 2010

Page 12 of 13

| | | | |
|-----------|-----------------------|---|---|
| Reindl | Aw/C | Section 6.5.3. The first sentence indicates that 3 specimens “be prepared for testing.” Should not this sentence say “shall be tested. ” Section 6.1.2. Remove the word “qualified” from the first sentence. | Ballot withdrawn to rework on the standard for reballot |
| Item | Ballot | | |
| 7 | Approval of Section 7 | | |
| Voter | Vote | Comments | Proposed Responses |
| Bergstrom | Aw/C | See attached file | Ballot withdrawn to rework on the standard for reballot |
| Item | Ballot | | |
| 8 | Approval of Section 8 | | |
| Voter | Vote | Comments | Proposed Responses |
| Bergstrom | Aw/C | See attached file | Ballot withdrawn to rework on the standard for reballot |
| Reindl | Aw/C | Section 8.2 and 8.4.1 remove the word “qualified” in front of inspection agency. | |
| Berger | Aw/C | 8.2 specifies tensile testing in accordance with ASTM C297 for comparison to Table 1 which uses ASTM D1623 as a method. 8.4.1 I would suggest a batch number or manufacture date be added to the labeling requirements. | |
| Item | Ballot | | |
| 9 | Approval of Annex A | | |
| Voter | Vote | Comments | Proposed Responses |
| Bergstrom | Aw/C | See attached file | Ballot withdrawn to rework on the standard for reballot |
| Ehrlich | Aw/C | The standard does not appear to have a Section 0 or a Section 1.1.1, as referenced in A1.1 and A2.6. Perhaps the reference should be to Section 5.1.3, where the list of wood structural panel standards resides? | |
| Lau | Aw/C | In A1.1 and A2.6, Sections 0 and 1.1.1 were referenced but they cannot be found. Please refer to the correct Section(s). | |
| Reindl | Aw/C | Section A.1.2 should indicate that the inspection agency prepare a “Sample Selection Report” for the samples selected. A report gives the testing agency all the information on the samples. Remove the word “Qualified” in the first sentence. | |
| Item | Ballot | | |
| 10 | Approval of Annex B | | |
| Voter | Vote | Comments | Proposed Responses |
| Bergstrom | Neg | The drawings are missing important details such as fastener type and spacing. | Ballot withdrawn to rework on the standard for reballot |
| Maxwell | Neg | Per my original comment about section 6.3.1 and the “proposed response, Annex B was supposedly going to address the issue of 1/3 point loading vs. uniform loading, but it has not. Thus, either Annex B needs to be modified to address this issue or Section 6.3.1 needs to be revised. | |

ANSI/APA PRS-610.1 Ballot #2 (Closed October 4, 2010, 2010)
Summary of Comments and Proposed Responses

October 7, 2010

Page 13 of 13

| | | | |
|----------|------|---|--|
| Krivchuk | Neg | <p>1. Figure B6b illustrates the transverse load test setup with the panels being supported by steel plates and rollers in contact with the panel face. This does not represent sandwich panel wall panels that are typically restrained from out-of-plane movement by the sill and top plate inserted into the recessed panel core at the bottom and top of the sandwich panel. The test results of specimens tested as depicted in Figure B6b will vastly overestimate the transverse load capacity of the wall panels restrained as typically installed.</p> <p>2. For additional comments on Appendix B, please see comments above regarding Section 6.</p> | |
| Ehrlich | Aw/C | <p>In Section B2, need an English units equivalent for the 3mm penetration. Also, delete the trailing "s" off of "SIPs" in the 1st sentence.</p> | <p>Ballot withdrawn to rework on the standard for reballot</p> |