

Pre-ANSI/APA PRS 610.1 Ballot #3 (Closed January 7, 2013)

Summary of Comments and Proposed Responses (PE = Persuasive Editorial; PS = Persuasive Substantial; NA = No Action; TBD = To Be Determined)

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Voter	Vote	Comments	Proposed Responses
Item 1	Approval	of ANSI/APA PRS 610.1-201x	
Krivchuk	Neg	Add the phrase "equally and uniformly" to the second sentence of Section 1.3 to read "... with vertical loads applied <u>equally and uniformly</u> to both facings..."	NA. The vertical load tests are conducted with eccentric loading.
Krivchuk	Neg	Add the phrase "described in this document" to the last sentence of Section 1.3 as follows "... precut holes for electrical boxes <u>described in this document</u> are beyond the scope ...".	PE.
Krivchuk	Neg	Add the phrase "equally and" to the second sentence of Section 1.5 as follows: "... with both facers <u>equally and</u> uniformly supported..."	PS. Change to "continuously supported" to reflect the application.
Di Lenardo	Aw/C	Article 3.2 (a), (b) and (c): the three core insulations are all defined as "products that are rigid". This is misleading since it is only true that, as a class of 'insulation', they are considered rigid board insulations compared to batt insulation or blown fibrous insulation. In the domain of structural products, these foam products are usually referred to as semi-rigid or even semi-flexible. Suggest "rigid" be changed to "semi-rigid".	NA. The term of "rigid" has been used in ASTM standards, such as C578, for foam plastic.
Berger	Neg	Figure 3 has additional lines at the top and left side of the picture.	PE.
Di Lenardo	Aw/C	Section 4 SIP Walls: SIPs for above-grade wall construction*..... Suggest Footnote: * Conforming above-grade SIP wall construction includes the SIP wall panel with bottom plate and two (2) top plates (the superior one spanning the panel width) and specific nailing schedule to ensure proper load transfer.	PS. Delete the wording of "for above grade wall construction" and add the wording of "and shall be attached to the top and bottom plates" to Section 1.5.
Berger	Neg	Section 5.1.1 states that "For SIPs manufactured with core materials that are not in compliance with the requirements specified in Section 5.1.2, the SIP shall be qualified in accordance with the Method B specified in Section 5.2." The same statement could be made about the Facing. The words "core materials" should just be "materials" and it should refer to 5.1.2 through 5.1.4	PS. Delete "core" and add "through 5.1.4" to Section 5.1.1.
Berger	Neg	Section 5.1.2.2 does not fulfill the requirements of 2012 IBC Section 2603.3 Exception 4 which says "Foam plastic insulation greater than 4 inches in thickness shall have a maximum flame spread index of 75 and a smoke-developed index of 450 where tested at a minimum thickness of 4 inches, provided the end use is approved in accordance with Section 2603.10 using the thickness and density intended for use." Section 2603.10 requires NFPA 286, FM 4880, UL 1040, or UL 1715. Looking at the 2009 Code Commentary, but it states "Testing in accordance with ASTM E84 or UL 263 is required. The foam plastic must be tested in the maximum thickness to be used [up to 4-inch (102 mm) thickness; see Exception 4 for foam thicker than 4 inches (102 mm)] and limited to a flame spread index of 75 or less and a smoke-developed index of 450 or less. The 4-inch thickness for testing is specifically related to the limitation on testing thickness in ASTM E84 or UL 263."	PS. See revisions to 5.1.2.2.
Berger	Neg	Section 5.1.2.4 "Core joints shall not be allowed unless specifically qualified." The standard needs to be specific about how it is qualified if method A is used. I would recommend only allowing core joints if method B is used.	PS. Add "with core joints in each assembly tested in accordance with 5.1.5" to the end of the 5.1.2.4.
Berger	Neg	5.1.4 Limits adhesives to ASTM D7446 only. I believe the method is sufficient, but most of the current adhesives being used are either certified to AC05 or ASTM D2559. We should stay away from putting a proprietary certification method in the standard like AC05 or NTA IM 22. ASTM D2559 could be added. The IRC language says "...shall conform to ASTM D2559 or <i>approved</i> alternative specifically intended for use as an adhesive used in the lamination of structural insulated panels." That leaves a lot to interpretation. We could add " an <i>approved</i> alternative which assesses whether the adhesive has sufficient tensile and shear strength, is compatibility with the materials being bonded, has limited creep potential and has sufficient durability for long duration loads. The language needs some work.	NA. ASTM D7446 was developed specifically for this product through the ASTM consensus process. When this standard is approved, it will be proposed for adoption into the IRC, and the need to interpret D7446 will become a moot point.
Krivchuk	Neg	Section 5.1.4 requires laminating adhesives to comply with ASTM D7446. In previous ballots, I indicated my concern with the use of this standard to evaluate the adhesives. If ASTM D7446 is to be used, I propose that an additional condition of acceptance of the wood to wood test specimens require a minimum stress level be reached similar to that required by ASTM D2559 qualified adhesives.	NA. See response to Berger.

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Krivchuk	Neg	Section 5.1.4 is not clear as to whether the adhesives must comply with ASTM D7446 tested with wood bonded to wood, in addition to complying with ASTM D7446 with OSB/plywood specimens and/or foam plastic. If the adhesive qualification tests are to only be conducted on specimens consisting of OSB/plywood and foam plastic, are details needed on the specimen configuration (such foam plastic thickness and is the foam plastic to be between two facers); what are the conditions of acceptance under Section 5.1.4 for this type of specimen; and is the ASTM D7446 tests on this type of specimen an evaluation of the durability of the adhesive or an evaluation of the durability of all components? Other than Section 5.1.4 being unclear as to the specimens to be tested, it is also unclear since it does not include any conditions of acceptance. If the specimens are not wood to wood specimens, then in addition to having a minimum required stress, the conditions of acceptance should also include a maximum strength loss due to aging, similar to Section 6.8.6 of the previous draft of this document.	NA. See response to Berger for the first portion of the comments. Section 5.1.4 states "The laminating adhesives shall conform to the requirements of ASTM D7446..." The requirements for the durability of foam-in-place core are specified in Table 4.
Berger	Neg	Section 5.1.4.2 requires the foam plastic used in the adhesive qualification tests shall be the same as that used in the manufacturing of the SIP and if more than one foam is permitted for manufacturing the panel, each foam to adhesive bond shall be qualified. The section needs to better define what "the same", "more than on foam" and "each foam" means. This could mean each manufacturer of EPS, or each of the categories in 5.1.2.1 (a) through (c).	PS. See revisions to 5.1.4.2.
Krivchuk	Neg	Add the phrase "of the panel facers" to the first sentence of Section 5.1.4.2 as follows: "... shall be the same surface of the panel facers that the SIP manufacturer..."	PS. See revisions to 5.1.4.2.
Berger	Neg	Section 5.1.4.4 I suggest that the adhesive should be required to have either a manufacture date or an expiration date on the label.	PS. Add the date of manufacturing to the requirements.
Bergstrom	Aw/C	Section 5.1.4.5. I understand this section, but recommend the word "durability" be added before the word "requirements" to improve clarity.	PS. Add "durability" to 5.1.4.5.
Bergstrom	Aw/C	Section 5.1.5/Section 5.2.1. The paragraph discussing "Three (3) tests" refers to axial, transverse, and racking tests. It is recommended that this sentence be revised to clarify that this is applicable to all tests.	PE. See revision to Tables 3, 4, and 5.
Berger	Neg	Sections 5.1.6 and 5.2.2 as well as 8.1.1 talk about testing to determine the characteristic value 5 th percentile with 75% confidence. Without a lesson in statistics, the confidence level suggested is not obtained when only 20 specimens are tested. ASTM D2915 contains a very straight forward approach to determining the value, but for a nonparametric assessment, the minimum quantity is 28. Using the parametric approach you need to evaluate whether you used enough specimens to obtain the confidence interval.	PS. See revised Sections 5.1.6 and 5.2.2.
McClure	Aw/C	There are several paragraphs where we say ' (3) tests of ... '. This is then followed by a table which lists the number of tests of each type. In some cases there are 5 tests required. See, for example, Section 5.1.5 I think the intent is clear. With that said, do we want to drop the number and simply say in conformance with the table below or with table xxx? With that said, I'm satisfied with the submittal and vote to accept.	PE. See revision to Tables 3, 4, and 5.
Krivchuk	Neg	Should Section 5.2 specify a minimum thickness for the panel facers, since wall coverings are to be attached to the panel facers?	PS. See revision to Section 5.2.
Berger	Neg	The footnotes to Table 4 should be on the same page as the table.	PE. It will be corrected when the standard is printed.
Krivchuk	Neg	The minimum peak loads in Table 4 for the transverse load tests have been decreased from the previous draft. Also, the deflection limit in Table 4 has increased for the racking shear test. What is the basis for these reductions in the required performance levels of the sandwich panels? The requirements should be changed back to that in the previous draft.	NA. The adjustments in some of the values account for the changes in the test method, such as the bearing conditions for transverse load, from previous ballot.
Krivchuk	Neg	Are the conditions of acceptance in Table 4 for the bond strength for aged specimens? If not, then the durability of the bond is not being evaluated. If yes, then a maximum loss in strength due to aging is needed, similar to Section 6.8.6 of the previous draft of this document.	NA. The adhesive durability is evaluated based on ASTM D7446. The durability of the SIP assembly under construction moisture is evaluated based on Table 4.

Krivchuk	Neg	In addition to the minimum tension and shear strength requirements in Table 4 for foamed-in-place cores, a maximum loss in strength should also be included, similar to Section 6.8.6 of the previous draft of this document	NA. The durability of foam-in-place is based on 85% of the control. See revised Footnote (e) to Table 4.
Berger	Neg	Section 6.4 "Splines meeting the requirements shown in Figures 1 and 2 shall be used in the SIP assembly." Should the "and" be an "or"?	PS. Change to "or."
Krivchuk	Neg	Revise the first sentence of Section 6.4 as follows: "...with ASTM E1803 with the load beam as described in Annex B the additional requirement that the maximum stiffness of the load beam shall not exceed 3330,000 kips-in² as specified in ASTM E2176. "	PS. Accept the proposed changes.
Bergstrom	Aw/C	Section 6.4. Is it required to conduct racking resistance tests with both surface and block splines? Also recommend deleting "(See Tables 3 and 4)" as this does not add to this test method section.	PS. See response to Berger.
Berger	Neg	Section 6.5 there is only 1 test for lintels and it will either assess shear capacity, moment capacity or web crippling strength of the beam. These limit states each need to be determined. With no vertical lumber, the bearing capacity and attachment is also a question. Is combined loading a special issue on lintels?	NA. Section 6.5 is to test SIPs for compliance with Table 5. It is not intended for design values.
Bergstrom	Aw/C	Section 6.5. The "not bear on the supports" is inconsistent with the bearing length shall be 1-1/2 in.	Withdrawn.
Di Lenardo	Aw/C	Article 6.5, Lintel Load Capacity, 3 rd paragraph: The SIP lintel shall be cut from the larger SIP panel and fabricated with SPF #2 2x lumber as would be fabricated in the field, if permitted by the manufacturer, or as fabricated in the plant.	NA. The requirements in Table 5 are specific to the test method described in this Section.
DeStefano	Aw/C	Section 6.8 suggest that the test specimen use OSB rather than Douglas Fir plywood	NA. The use of plywood is necessary for the test method to be performed.
Di Lenardo	Aw/C	Article 6.8.1, last sentence: The <u>custom</u> specimens shall be prepared by the SIP manufacturer with foamed-in-place core material <u>following the same qualified material specification</u> (i.e. density, etc.) and foaming process as used in the SIP panels in the on-going production.	PS. Accept the proposed changes.
Berger	Neg	Section 6.8.4 There isn't any criteria for the cycled specimens. We have a control set and two types of aging conditioning, but no method of evaluating the results. For example, we could establish that the minimum value between all the tests required to meet Table 1, or we could require no more than a 20% limit on the total strength loss?	NA. The criteria are listed in Table 4.
Berger	Neg	Section 6.8.5 there should be a statement that the specimen should be able to self-align between the loading points.	PS. See revised Section 6.8.5.
Krivchuk	Neg	Delete the phrase "evaluated and" from the first sentence of Section 7.	PS. Accept the proposed changes.
Krivchuk	Neg	For quality control purposes, the second paragraph of Section 8 should be revised to require the conditions of acceptance of the bond tests to be equivalent to the original qualifying tested values, not that permitted by Table 4. The current provisions will permit a reduction in performance from the original qualifying tests.	PS. The provision is the minimum requirements and needs to be approved by the approved agency. The reference to Table 4 is deleted so that the approved agency could approve the requirements from qualification results.
Berger	Neg	Section 8.1.1 gives 2 choices for the stamp of the approved agency: The agency 1) inspects the manufacturer or 2) has tested a random sampling of the finished products in the shipment being certified for conformance with this standard. Item 2 does not give enough information about the minimum requirement. Does the testing need to meet Method A or Method B. Is it the full program or is it a reduced amount and what is that based on?	PS. See the revised Section 8.1.1.
Berger	Neg	Section 8.1.1 Paragraph 1 has 2 periods on the last sentence.	PE.

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Berger	Neg	Section 8.1.1 should define inspection frequency and test frequency for the approved agency. This also relates to item #7 above, the quantity of specimens and determining the 5 th percentile with 75% confidence. A suggestion would be that “inspections are to be completed once per quarter, four times per year.”	NA. The minimum inspection frequency is governed by the code agency and the agreement between the approved agency and the manufacturer.
Krivchuk	Neg	Delete the second option in the first paragraph of Section 8.1.1 . Without the inspection agency regularly conducting follow-up inspections, the document does not include the method to be used to verify that a finished product is manufactured as qualified.	PS. See the revised Section 8.1.1.
Krivchuk	Neg	Delete the word “minimum” in describing the edge distance of the nails in the first paragraph of Sections B4, B5, B6 and B7 . The specified fastener edge distance should always be the same distance.	PS. Accept the proposed changes.
Krivchuk	Neg	Revise Figure B4 , since the support condition on the left end of the transverse load test setup may create a moment resistant connection between the strong back bolted to the floor and attached to the sandwich panel with the panel facers in contact with the strong back. The support should allow free rotation of both ends of the tested panels and allow the in-plane displacement of the panel facers.	PS. See revised Figure B4.
Bergstrom	Aw/C	Annex B. Section B6 . The fastening of the spline connection is not listed. Is this intentional?	PS. Add “spine.”
Krivchuk	Neg	Figure B6 needs to be clarified as to placement of the devices used to measure movements of the racking shear test specimens. The top device is to measure horizontal movement of the inset top plate (not the movement of the panel facers). The lower right device is to measure the downward movement of the end post (not the movement of the panel facer). The vertical device at the lower left is to measure the upward movement of the left end post (not the movement of the panel facers). The horizontal device at the lower left is to measure the sliding movement of the inset bottom plate (not the movement of the panel facers).	PS. See revised Figure B6.