ICC EVALUATION SERVICE

ICC Evaluation Service, LLC
Birmingham Regional Office
900 Montclair Road, Suite A
Birmingham, AL 35213
tel: 205.599.9800
fax: 205.599.9850
www.icc-es.org

February 1, 2012

TO: **PARTIES INTERESTED IN PROPRIETARY SHEATHING JOBSITE-ATTACHED TO COLD-FORMED STEEL LIGHT-FRAME WALL CONSTRUCTION USED AS SHEAR WALLS**

SUBJECT: Proposed New ICC-ES Acceptance Criteria for Proprietary Sheathing Jobsite-attached to Cold-formed Steel Light-frame Wall Construction Used as Shear Walls, Subject AC269.3-0212-R1(GN/RK)

Dear Colleague:

We are seeking your comments on the enclosed proposal for a new acceptance criteria, which is being posted for 30 days of public comment on the ICC-ES web site. Public comments will be considered in preparing a revised draft of the criteria, which we hope to present at a future Evaluation Committee hearing.

In developing this new acceptance criteria, our intent is to split the current ICC-ES Acceptance Criteria for Racking Shear Evaluation of Proprietary Sheathing Materials Attached to Light-frame Wall Construction or Code-complying Sheathing Attached to Light-framed Walls with Proprietary Fasteners (AC269) into several stand-alone acceptance criteria for evaluation of proprietary sheathing materials for particular end use applications under specific model building codes. The purpose of splitting AC269 is to simplify the updating of AC269 to the 2012 and 2009 *International Building Code* (IBC) and *International Residential Code* (IRC) by separately addressing the end uses and components - in this case, shear walls with cold-formed steel framing.

The attached document entitled “Acceptance Criteria for Proprietary Sheathing Jobsite-attached to Cold-formed Steel Light-frame Wall Construction Used as Shear Walls” is proposed by the ICC-ES staff. The purpose of developing this acceptance criteria is to establish requirements for determining shear wall design values for proprietary sheathing, jobsite-attached to cold-formed steel light-frame wall construction, that is to be recognized in an ICC Evaluation Service, LLC (ICC-ES), evaluation report under the 2012 and 2009 *International Building Code*® (IBC) and the 2012 and 2009 *International Residential Code*® (IRC).

The proposed acceptance criteria includes provisions for evaluation of shear walls that are designed as individual full-height wall segments without openings to resist in-plane wind loads and seismic loads in buildings assigned to Seismic Design Categories A and B.

In addition to your comments on the proposed criteria, we are seeking your input on the following:

1. As drafted, the criteria limits the aspect ratio (the maximum shear wall height-to-length) to 1:1 based on standard ASTM E 72 tests being conducted on 8-foot-by-8 foot (2.4 m by 2.4 m) wall assemblies. The current edition of AC269 states that the maximum aspect ratio must be determined from testing, but is unclear how to test for aspect ratios higher than 1:1. The nominal shear strength tables in AISI S213 note the aspect ratio on which the tabulated values are based, and some of these tables allow certain entries to be constructed to higher aspect ratios (up to some maximum) provided the tabulated values are adjusted as required by the table. Should report holders desire recognition of aspect ratios higher than 1:1 under this criteria, direction is sought as to what test procedures and conditions of acceptance should be incorporated into the criteria to establish an adjustment factor for higher aspect ratios and a maximum aspect ratio to be recognized in an evaluation report on sheathing that is greater than 1:1.

2. The safety factor proposed in Section 4.2.2.1 of the criteria is consistent with the 2.5 safety factor noted in Section C2.1 of AISI S213 (Lateral) for seismic loads. In that document, the safety factor is applied to the published "nominal". It is not clear whether the "nominal" values in S213 are average ultimate loads of tested assemblies, the lowest ultimate load of replicate tests, or some value otherwise selected. We believe the latter may be the case, since the nominal values in Table C2.1-2 of AISI S213 are one-half of nominal values published in the 1997 *Uniform Building Code* (UBC) (Table 22-VIII-B). Because of this, and because the consistency of test loads is not addressed in the draft of this criteria, we have proposed that a 2.5 safety factor be applied to the lowest ultimate load test result of each tested configuration, and that this 2.5 safety factor be used to establish both allowable wind and seismic loads. See Comment 3, below, concerning a related matter about fingerprinting of proprietary sheathing materials used in racking tests.

3. It is our position that fingerprinting of the proprietary sheathing used in racking shear test assemblies is necessary with quality control targets linked to the fingerprinted values. The intent is to avoid using proprietary sheathing in the qualification testing that is manufactured significantly over the minimum product specifications. It is our intent to include provisions in the criteria to address this issue, and comments are solicited from the industry and public as to how and what should be included in the provisions to address this issue.

4. Concerning the seismic limits in this criteria, the draft criteria limits the use of the proprietary sheathing to buildings assigned to Seismic Categories A and B. The following points should be noted:

    a. This is consistent with the current version of AC269, in which sheathings installed over cold-formed steel framing qualified under ASTM E 72 are limited

to these seismic design categories unless the walls are subjected to additional cyclic load testing. Although the current version of AC269 contains provisions for cyclic testing for qualifying sheathings for use in higher design categories, none of our report holders has sought recognition of these higher seismic categories using AC269 (meaning that provisions for cyclic testing are not needed to update current reports to the 2012 and 2009 codes). In view of this and the fact that AC436, (the Acceptance Criteria for Seismic Performance of Light-frame Lateral Force–resisting Assemblies) is being developed to update our requirements for cyclic testing, we have not included anything on cyclic testing in order to qualify proprietary sheathing materials for higher seismic design categories or for R>2 at this time. For similar reasons, Section 6.2.2 of the criteria also notes the seismic design coefficients and factors from ASCE 7-10 (Table 12.2.1, System A.17) and ASCE 7-05 (Table 12.2.1, System A.14) for light-framed walls with shear panels of other materials as being applicable to products being evaluated using this criteria.

b. Please note that developments taking place regarding AC436 may result in further modification of our thinking in regard to how seismic design categories are treated in this criteria. If that happens, revisions to this criteria may be proposed in the future.

5. Input is requested as to what adjustments in allowable design load should be made to account for the steel strength and thickness of the framing of the test specimens varying from minimum specified values. The proposed criteria:

   a. Addresses the strength reduction by not requiring any adjustment, provided the tensile strength of the steel does not exceed the specified tensile strength by more than 7 ksi (similar to requirements outlined in AC294 and AC316). If the tensile strength of the steel exceeds the specified tensile strength by more than 7 ksi, the criteria requires that the allowable design load be reduced as required by AISI S100.

   b. Addresses the thickness reduction by not requiring any reduction if the thickness of the steel in the tested assemblies does not exceed the design thickness to be stated in the evaluation report. Otherwise, the allowable design loads must be reduced as required by AISI S100.

6. The stiffness of wall construction using the proprietary sheathing is addressed in the criteria by applying a drift limit condition to the ASTM E 72 test results when determining the allowable load (Section 4.4.1.2). While this is consistent with the current version of AC269 and ICC-ES practice in the past, the ICC-ES staff seeks input as to whether it would be preferable to develop a deflection equation similar to Eq. C2.1-1 in AISI S213. Should this be the preference, input is requested as to what equation should be used and how its variables should be determined for purposes of publishing an equation and related variables in the evaluation report. The evaluation report would contain a condition of use which would require the

deflections to be calculated, and state that such deflections must not exceed H/180 (as currently recognized in AC130 and AC322).

7. Our staff review of ASTM E 72, ASTM E 564, and PS-2 indicates that the loading procedures and loading rates vary among these three test standards. It is our opinion that the loading procedure and loading rate specified in either ASTM E 564 or PS-2 is more appropriate for use when conducting racking shear load testing under AC269.3. However, we are seeking your input on the loading procedure and loading rate that should be specified in Section 4.1.4 of AC269.3.

If it is of interest, please review the draft criteria and send us your comments at the earliest opportunity. At the end of the 30-day comment period, we will post on our web site the correspondence we have received.

To submit your comments, please use the form on the web site and attach any letters or other materials. If you would like an explanation of the "alternate criteria process," under which we are soliciting comments, this too is available on the ICC-ES web site.. Please do not try to communicate directly with any Evaluation Committee member about a criteria under consideration, as committee members cannot accept such communications.

Thank you for your interest and your contributions. If you have any questions, please contact me at (800) 423-6587, extension 5684, or Russ Krivchuk, PE, Senior Staff Engineer, at extension 3275. You may also reach us by e-mail at es@icc-es.org.

Yours very truly,

Gary G. Nichols

Gary. G. Nichols, PE, SECB
Vice President

GGN/raf

Enclosure

cc: Evaluation Committee

ICC EVALUATION SERVICE

www.icc-es.org | (800) 423-6587 | (562) 699-0543 *A Subsidiary of the International Code Council®*

PROPOSED ACCEPTANCE CRITERIA FOR PROPRIETARY SHEATHING JOBSITE-ATTACHED TO COLD-FORMED STEEL LIGHT-FRAME WALL CONSTRUCTION USED AS SHEAR WALLS

AC269.3

Proposed February 2012

PREFACE

Evaluation reports issued by ICC Evaluation Service, LLC (ICC-ES), are based upon performance features of the International family of codes. (Some reports may also reference older code families such as the BOCA National Codes, the Standard Codes, and the Uniform Codes.) Section 104.11 of the *International Building Code*® reads as follows:

> **The provisions of this code are not intended to prevent the installation of any materials or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.**

ICC-ES may consider alternate criteria for report approval, provided the report applicant submits data demonstrating that the alternate criteria are at least equivalent to the criteria set forth in this document, and otherwise demonstrate compliance with the performance features of the codes. ICC-ES retains the right to refuse to issue or renew any evaluation report, if the applicable product, material, or method of construction is such that either unusual care with its installation or use must be exercised for satisfactory performance, or if malfunctioning is apt to cause injury or unreasonable damage.

NOTE: The Preface for ICC-ES acceptance criteria was revised in July 2011 to reflect changes in policy.

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

PROPOSED ACCEPTANCE CRITERIA FOR PROPRIETARY SHEATHING JOBSITE-ATTACHED TO COLD-FORMED STEEL LIGHT-FRAME WALL CONSTRUCTION USED AS SHEARWALLS

1.0 INTRODUCTION

1.1 Purpose: The purpose of this acceptance criteria is to establish requirements for proprietary sheathing jobsite-attached with mechanical fasteners to cold-formed steel light-frame wall construction used as shear walls to be recognized in ICC Evaluation Service, LLC (ICC-ES), evaluation reports under the 2012 and 2009 *International Building Code*® (IBC) and the 2012 and 2009 *International Residential Code* (IRC). The bases of recognition are IBC Section 104.11 and IRC Section 104.11.

The reason for the development of this criteria is to establish guidelines for the evaluation of the racking shear resistance of proprietary sheathing materials used in shear walls, since proprietary sheathing materials are not included in the IBC or IRC, nor do these codes include testing or analysis requirements for this use.

1.2 Scope: This acceptance criteria provides a means of determining racking shear design values for shear walls constructed of proprietary sheathing materials that are jobsite attached with mechanical fasteners to cold-formed steel light-frame walls as an alternative to the engineering provisions of 2012 IBC Section 2211.6 and 2009 IBC Section 2210.6. The type of shear wall construction under this criteria is limited to proprietary sheathing mechanically attached to cold-formed steel light-frame wall framing.

This criteria is limited to the evaluation of the proprietary wall sheathing used in the construction of shear walls that are designed as individual full height wall segments without openings to resist in-plane wind loads and seismic loads in buildings assigned to Seismic Design Categories A and B. This criteria is applicable to sheathing that is applied to interior walls or to the exterior side of exterior walls provided a water-resistive barrier and exterior wall covering is installed over the sheathing.

For properties other than racking shear, separate evaluation of proprietary materials shall be as required by the appropriate ICC-ES acceptance criteria for the material.

1.3 Codes and Referenced Standards: Referenced standards shall be applied in a manner consistent with their use in the code upon which compliance is based.

1.3.1 2012 and 2009 *International Building Code*® (IBC), International Code Council.

1.3.2 2012 and 2009 *International Residential Code*® (IRC), International Code Council.

1.3.3 AISI S100 [-07/S2-10 (2012 IBC), -07 (2009 IBC)], North American Specification for the Design of Cold-formed Steel Structural Members, American Iron and Steel Institute.

1.3.4 AISI S200-07, North American Standard for Cold-formed Steel Framing - General Provisions, American Iron and Steel Institute.

1.3.5 AISI S213 [-07/S1-09 (2012 IBC), -07 (2009 IBC)], North American Standard for Cold-formed Steel Framing – Lateral Design, American Iron and Steel Institute.

1.3.6 ASTM A 370-11a, Standard Test Methods and Definitions for Mechanical Testing of Steel Products, ASTM International.

1.3.7 ASTM A 1003/A 1003M - 11$^{\varepsilon 1}$, Standard Specification for Sheet Steel, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members, ASTM International.

1.3.8 ASTM E 72-05, Standard Test Methods of Conducting Strength Tests of Panels for Building Construction, ASTM International.

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

1.4 Definitions:

1.4.1 Aspect Ratio: The height divided by the length of a shear wall panel.

1.4.2 Proprietary Sheathing: A wall sheathing without specifications in the applicable code, but evaluated under both this and another appropriate ICC-ES acceptance criteria.

1.4.3 Drift: The horizontal in-plane displacement under racking load of the top horizontal member of the wall frame relative to the bottom horizontal member of the wall frame.

1.4.4 Net Deflection: Gross horizontal movement (drift) of the top horizontal member of a tested shear wall panel assembly subjected to racking load

reduced by subtracting the contribution of both sliding of the bottom track and assumed rigid body rotation caused by upward and downward movement of the stud at each end of the shear wall panel.

1.4.5 Proprietary Shear Wall Panel: A full-height section of a light-frame wall containing a proprietary sheathing, designed to resist in-plane shear loads through the interaction of the framing members, sheathing, and anchors.

1.4.6 Unit Shear Resistance: Unit shear resistance is determined by dividing the applied peak racking shear load by the horizontal length of the sheathing comprising the tested shear wall assembly.

1.5 Notation

F_u = Specified tensile strength of steel base material, ksi (MPa).

$F_{u,test}$ = Actual tensile strength of steel base material, ksi (MPa).

t = Specified (design) thickness of steel base material, inches (mm).

t_{test} = Actual (measured) steel base material thickness, inches (mm).

2.0 BASIC INFORMATION

2.1 General: The following information shall be submitted:

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

2.1.2 Installation Instructions: Installation details and limitations, fastener description and specifications, and installation procedure.

2.1.3 Packaging and Identification: A description of the method of packaging and field identification of the proprietary sheathing. Identification provisions must include the evaluation report number and the name or logo of the inspection agency. The identification shall be visible after the sheathing is installed.

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

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: Sheathing to be used in the qualification tests shall be sampled in accordance with Section 3.1 of AC85. Framing and fasteners to be used in the qualification tests shall be sampled in accordance with Section 3.2 of AC85.

3.0 GENERAL TESTING REQUIREMENTS

3.1 Proprietary Sheathing General Requirements: Qualification of a proprietary sheathing material for shear wall design and construction shall be limited to the sizes and types of materials used in the testing submitted for evaluation. The proprietary sheathing shall be installed on one side of the wall framing. The test specimens shall be installed without gypsum wallboard or any other sheathing on the opposite face of the wall framing. For properties other than racking shear, the proprietary sheathing shall also be evaluated and comply with all ICC-ES acceptance criteria applicable to the proprietary sheathing.

3.2 Racking Shear Evaluation: The shear wall racking shear design values shall be established by testing in accordance with Section 4.0. The description of the tested assemblies shall include the following:

3.2.1 Proprietary Sheathing: A description of the proprietary sheathing used in the test assemblies shall be included in the test report. The description shall include the thickness, height, and length of each proprietary sheathing type tested. The proprietary sheathing shall be installed with at least one vertical sheathing joint.

3.2.2 Wall Framing: The framing of the tested shear wall assemblies shall be representative of shear wall framing for which recognition is sought and shall be described in the test report. The description of the steel framing shall include: all dimensions (including all cross-sectional dimensions and base metal thickness of the studs and tracks); actual mechanical properties of the steel based on representative samples taken from the studs and tracks of the test assemblies; and the steel material specification. The base steel thickness, yield strength, tensile strength and elongation of the steel of all tested cold-formed steel framing shall be established from coupon tests of representative members. The coupon testing shall be in accordance with ASTM A 370. These mechanical properties shall comply with the material specification that is to be specified in the evaluation report.

Studs shall be C-shaped members spaced not greater than the maximum spacing for which recognition is sought, but not greater than 24 inches (610 mm) on center. Studs shall have a flange width of $1^5/_8$ inches (41.3 mm), a web depth of $3^1/_2$ inches (89

mm), and a return lip of $^3/_8$-inch (9.5 mm). Top and bottom tracks shall be C-shaped members with a flange width of $1^1/_4$ inches (31.8 mm) and a web depth of $3^1/_2$ inches (89 mm). The steel shall be of ASTM A 1003 Structural Grade 33 (Grade 230) Type H and have a maximum actual base metal thickness of 0.0346 inch (0.879 mm). Framing dimensions and steel requirements other than those noted above may be considered, but must be submitted for review prior to testing.

3.2.3 Connections: The sheathing-to-framing, stud-to-track, and test specimen to the test apparatus connection details shall be described in the test report. Fasteners shall be described, including fastener type, diameter, length and location. Fasteners used in the sheathing-to-framing and stud-to-track connections of the tested assemblies shall comply with the code, or data in accordance with an applicable ICC-ES Acceptance Criteria shall be submitted. The test report shall include the fastener spacing and edge distance. The spacing of fasteners used to attach the sheathing to the framing shall not exceed 12 inches (304.8 mm) along intermediate framing members and 6 inches (152.4 mm) along sheathing edge framing members. Fasteners along the edges of each panel of sheathing shall be placed at the minimum edge distance to be specified in the evaluation report. The fastener-to-framing edge distance of the tested assembly is to be noted in the test report and shall be not less than 1.5 times the fastener diameter from the center of the fastener to the nearest edge of the framing.

3.2.4 Holes in Framing Members: Holes do not need to be included in the steel framing members of the tested assemblies. Holes in framing members in the end use conditions will be as permitted AISI S200.

3.2.5 Sheathing Penetrations and Joints:

3.2.5.1 Penetrations in Sheathing Material: A description of any holes in the sheathing of the tested assemblies shall be included in the test report. Penetrations in the sheathing material will be permitted only at predetermined locations based on the tested assemblies including the appropriate size and location of hole(s) as intended for end use. The ICC-ES evaluation report shall state the limitations for holes (sizes and locations) ascertained by testing.

3.2.5.2 Sheathing Joints: The location and width of all sheathing joints of the tested assemblies shall be included in the test report. The joints in sheathing materials shall occur over framing members or shall be blocked, with the sheathing attached to the framing members and blocking. Assemblies tested with unblocked horizontal joints will be the basis for this method of installation being reported in the evaluation report.

3.3 Shear Wall Panel Aspect Ratios: The maximum height-to-width aspect ratio of shear wall panels to be noted in the evaluation report is 1:1.

4.0 TEST METHODS AND DETERMINATION OF RACKING SHEAR

4.1. Test Methods:

4.1.1 Test Specimen Assembly Construction: Test specimens shall be constructed in accordance with the sheathing manufacturer's instructions and Section 3.2 of this criteria.

4.1.2 Test Method and Repetitions: Six identical 8-ft by 8-ft shear wall assemblies (1:1 aspect ratio) shall be constructed for each shear wall configuration (i.e., variations in the assemblies that might result in a different racking shear capacity, such as, but not limited to, sheathing thickness, fastener type, fastening schedule, framing thickness, framing grade, and framing spacing) for which evaluation is sought. Three assemblies shall be tested in accordance with ASTM E 72 Section 14 (dry tests) and the other three assemblies shall be conditioned in accordance with ASTM E 72 Section 15 (wet tests) and tested in accordance with ASTM E 72 Section 14.4.

Exception:

For proprietary sheathing not subjected to wetting during construction or in-service (such as interior use), the testing per ASTM E 72 (wet tests) are not required.

4.1.3 Loading Beam: The loading beam used in the tests shall not be in contact with the sheathing and shall not interfere with the movement of the sheathing during the entire test procedure.

4.1.4 Loading Procedure: Loading procedure from ASTM E 72 shall be followed, except that the specimen shall be allowed to recover for 5 minutes after the load is removed following the first and second loading stages.

4.1.5 Compressive Deformation: An additional sensor shall be installed at the right lower corner of the specimen (Figure 7 of ASTM E 72) to measure bottom plate compressive deformation and the displacement of the end wall stud relative to the test fixture base.

4.1.6 Net Deflection: Net deflection, used to establish the available racking shear strength, shall be calculated by removing the end stud uplift displacement, end stud compressive deformation, and base slip (bottom track slip) from the total wall deflection measured at the top of the specimen (top track horizontal displacement).

4.2 Data Analysis:

4.2.1 General: For each tested configuration, the average ultimate load from the wet test assemblies shall not be less than 77 percent of the average ultimate load from the dry test assemblies. From the load-deflection curves representing the average of the three dry and three wet test assemblies, the wet test assembly deflection at 23 percent of the dry test average ultimate load shall not exceed the deflection of the dry test assemblies at the same load level by more than 40 percent, and the wet test assembly deflection at 46 percent of dry test average ultimate load shall not exceed the deflection of the dry test assemblies at the same load level by more than 33 percent. Proprietary sheathing materials that fail to meet this criterion shall not be considered for an ICC ES Evaluation Report.

Exception:

For proprietary sheathing not subjected to wetting during construction or in-service (such as interior use), loss of strength and stiffness from wet testing need not be considered.

4.2.2 Determination of Available Racking Shear Load Values: Test results from the dry testing shall be used to determine design values. The design racking shear load value (pounds per foot or N/m) for each test configuration shall be the lesser of the loads based on the ultimate load and a drift limit, determined as follows:

4.2.2.1 Ultimate Load: The available racking shear load (pounds per foot or N/m) for each tested configuration is the lowest ultimate load of the three assemblies divided by the length of the wall panel divided by a safety factor (Ω) of 2.5. If the tensile strength of the steel in the tested assemblies exceeds the specified tensile strength by more than 7 ksi (48.26 MPa), the available racking shear load shall be reduced by multiplying the result from the calculation noted above by $F_u/F_{u,test}$. If the thickness of the steel in the tested assemblies exceeds the design thickness, the result shall be further reduced by multiplying the result by t/t_{test}. When the tensile strength of the studs differs from the tensile strength of the tracks, the adjustment shall be based on the type of member (stud or track) where the predominant failure occurred, provided the tensile strengths of the studs and tracks are within 10 ksi (69 MPa) of each other. When the failure of the shear wall is not predominantly due to one type of member (stud or track), the adjustment shall be based on the worse case of the tensile strength of the studs and the tracks.

4.4.1.2 Drift Limit: The available racking shear load (pounds per foot or N/m) based on drift is the average applied load in pounds (N) applied to the three test assemblies that causes a net deflection of 0.2 inch (5.1 mm), divided by the length of the tested shear wall. If the tensile strength of the steel in the tested assemblies exceeds the specified tensile strength by more than 7 ksi (48.26 MPa), the allowable racking shear load shall be reduced by multiplying the result from the calculation noted above by $F_u/F_{u,test}$. If the thickness of the steel in the tested assemblies exceeds the design thickness, the result shall be further reduced by multiplying the result by t/t_{test}.

5.0 QUALITY CONTROL

Quality control requirements for the sheathing shall be as noted in an applicable ICC-ES acceptance criteria for the proprietary sheathing. If not noted otherwise, the sheathing shall be manufactured under a quality control program with follow up inspections by an accredited inspection agency and a qualifying inspection shall be conducted at each manufacturing facility when required by the ICC-ES Acceptance Criteria for Inspection Agencies (AC304).

6.0 EVALUATION REPORT RECOGNITION

6.1 Installation: The following is information that shall be included in the ICC-ES evaluation report on the proprietary sheathing:

6.1.1 Cutting of Proprietary Wall Sheathing: Either a description of the penetrations permitted in the sheathing (as tested) or a statement that holes in the sheathing in shear walls is outside the scope of the evaluation report, as applicable.

6.1.2 Holes in Framing Members: Holes in the framing members shall not exceed that permitted by AISI S200.

6.1.3 Aspect Ratios: The shear wall height-to-width aspect ratio of 1:1 shall be reported in the evaluation report.

6.1.4 The shear wall configurations shall be detailed in the evaluation report based on the tested assemblies. The report shall also specify the grade and thickness of the steel framing (studs and tracks).

6.2 Conditions of Use: The following Conditions of Use for proprietary sheathing used as shear walls shall be included in the evaluation report, as applicable:

6.2.1 Under the 2012 IBC, special inspection must be provided in accordance with IBC Sections 1704.3 and 1705.10 for sheathing installed in shear walls on buildings in Exposure B locations where V_{asd} is 120 mph (53.6M/s) or greater and in Exposures C and D locations where V_{asd} is 110 mph (49.2 m/s) or greater. Under the 2009 IBC, special inspections must be provided in accordance with IBC Sections 1705.1, 1705.2 and 1705.4 for sheathing installed in shear walls on buildings in Exposure B locations where the basic wind speed is 120 mph (53.6M/s) or greater and in Exposures C and D locations where the basic wind speed is 110 mph (49.2 m/s) or greater. A statement of special inspections complying with 2012 IBC Section 1704.3 or 2009 IBC Section 1705 (as applicable) shall be provided to the code official (this includes addressing requirements in 2012 IBC Sections 1704.3.3 and 1705.10 or 2009 IBC Sections 1705.4.1 and 1705.4.2, as applicable).

6.2.2 For the sheathing used in shear walls, the sheathing is recognized for use in seismic design categories A and B with earthquake load resistance determined using the following maximum values: $R = 2$, $\Omega_o = 2.5$, $C_d = 2$.

6.2.3 Either as noted in Section 6.2.3.1 or 6.2.3.2, as applicable:

6.2.3.1 The sheathing must be covered by an approved water-resistive barrier and an approved exterior cladding.

6.2.3.2 The sheathing is recognized for use in applications where the sheathing is not subject to wetting during construction or in-service.

6.2.4 A statement that allows for use under the IRC when an engineered design is submitted in accordance with Section R301.1.3.