



December 28, 2007

TO: PARTIES INTERESTED IN EVALUATION REPORTS ON STRUCTURAL ADHESIVES USED FOR BONDING COLD-FORMED GALVANIZED STEEL SHEAR WALL ASSEMBLIES

SUBJECT: Proposed New Acceptance Criteria for Structural Adhesives Used for Bonding Cold-formed Galvanized Steel Shear Wall Assemblies, Subject AC393-0208-R1 (RK/KS)

Hearing Information:

Thursday, February 7, 2008
8:00 a.m.

The Westin Los Angeles Airport
5400 West Century Boulevard
Los Angeles, California 90045
(310) 216-5858

Dear Madam or Sir:

The enclosed proposed acceptance criteria is on the agenda for the ICC-ES Evaluation Committee hearing noted above. The criteria is new and was prepared primarily by the evaluation report applicant.

The acceptance criteria is to be applicable to qualifying adhesives that are used to factory-fabricate shear wall panels that are jobsite-installed into cold-formed steel-framed structures. The shear wall panels consist of cold-formed steel framing with sheet metal panels factory-attached to the framing with the adhesive.

The intent at this time is that evaluation reports on products qualified under the criteria will be limited to recognition of the adhesive. The adhesive evaluation report will require the adhesive to be limited to use in prefabricated shear wall panels recognized in separate ICC-ES evaluation reports issued to the shear wall panel manufacturers.

The proposed acceptance criteria, as submitted by the evaluation report applicant, has been placed on the committee hearing agenda to seek initial comments and recommendations from the public, including manufacturers, testing laboratories and code enforcement agencies. The intent of staff is to use the input from the hearing to develop a revised draft for future consideration by the Evaluation Committee.

One item that is important to the development of this criteria is the report applicant's request that the criteria include a requirement that the shear wall panels be qualified under the ICC-ES Acceptance Criteria for Cyclic Racking Shear Tests for Metal-sheathed Shear Walls with Steel Framing (AC154). It is questionable whether AC154 is appropriate, since the use of an adhesive affects the racking shear performance of the shear wall. It was assumed in the development of AC154 that the wall sheathing is mechanically attached. It should also be noted that AC154 is currently based on earlier versions of the IBC and IRC, and will need to be updated to the 2006 editions. In addition, AC154 needs to be revised to be consistent with current procedures for qualifying lateral force-resisting systems intended for use in high Seismic Design Categories, such as noted in AC130 and AC322.

You are cordially invited to submit written comments, or to attend the Evaluation Committee hearing and present verbal comments. Written comments will be forwarded to the committee, **prior to the hearing**, if received by **January 23, 2008**. If the deadline is missed, you must provide 35 copies of the submittal material, collated, stapled and three-hole punched, to the Los Angeles business/regional office before the committee meeting. Your consideration in providing written responses by the deadline would be greatly appreciated. Consideration of written comments and presentations of a significant nature received the week of the hearing or at the hearing may be delayed until a future meeting as the committee and staff may not have adequate time for review.

Comments from interested parties that are submitted in response to proposed acceptance criteria will be posted on the ICC-ES web site prior to the meeting. Postings will occur shortly after the comment deadline January 23, 2008. Staff memos responding to some of the comments, and comments received after the January 23 deadline, will be posted on February 1, 2008.

The purpose for posting the comments prior to the meeting is to help interested parties be better prepared to discuss the issues at the meeting.

Any written material submitted for committee consideration will be available for public distribution as set forth in Section 2.7 of the Rules of Procedure for the Evaluation Committee (copy enclosed).

Visual aids (including, but not limited to, charts, overhead transparencies, slides, videos, or presentation software) for viewing at meetings will be permitted only if the presenter provides to ICC-ES, before the presentation, a copy of the visual aid(s) in a medium that can be retained by ICC-ES with its record of the meeting, and that can also be provided to interested parties.

Your cooperation is requested in forwarding to the Los Angeles business/regional office all material directed to the Evaluation Committee. Parties interested in the deliberations of the committee should refrain from communicating, whether in writing or verbally, with committee members regarding agenda items. The committee reserves the right to refuse communications that do not comply with this request.

Newly approved acceptance criteria may involve test methods or test protocols that are not currently included in the scope of testing services offered by accredited testing laboratories. As noted in the ICC-ES Rules of Procedure for Evaluation Reports, the scope of the laboratory's accreditation must include the type of testing that is to be reported to ICC-ES. We encourage accredited laboratories to expand their scopes of accreditation to include testing under newly approved acceptance criteria. Please note that testing laboratories must be accredited by the International Accreditation Service (IAS) or by another accreditation body that is a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement. For further information, please contact IAS at (562) 699-0541, extension 3309, or send an e-mail to pmccullen@iasonline.org.

If you have any questions, please contact the undersigned at (800) 423-6587, extension 3275. You may also reach us by e-mail at es@icc-es.org.

Yours very truly,

A handwritten signature in black ink that reads "Russ Krivchuk". The signature is written in a cursive, slightly slanted style.

Russ Krivchuk
Senior Staff Engineer

RK/aam

Enclosures

cc: Evaluation Committee



ICC EVALUATION SERVICE, INC., RULES OF PROCEDURE FOR THE EVALUATION COMMITTEE

1.0 PURPOSE

The purpose of the Evaluation Committee is to monitor the work of ICC-ES, in issuing evaluation reports; to evaluate and approve acceptance criteria on which evaluation reports may be based; and to sponsor related changes in the applicable codes.

2.0 MEETINGS

2.1 The Evaluation Committee shall schedule meetings that are open to the public in discharging its duties under Section 1, subject to Section 3.

2.2 All scheduled meetings shall be publicly announced.

2.3 Two-thirds ($\frac{2}{3}$) of the voting Evaluation Committee members shall constitute a quorum. A majority vote of members present is required on any action.

2.4 In the absence of the nonvoting chairman-moderator, Evaluation Committee members present shall elect an alternate chairman from the committee for that meeting. The alternate chairman shall be counted as a voting committee member for purposes of maintaining a committee quorum and to cast a tie-breaking vote of the committee.

2.5 Minutes of the meetings shall be kept.

2.6 An electronic audio record of meetings shall be made by ICC-ES; no other audio, video, electronic or stenographic recordings of the meetings will be permitted. Visual aids (including, but not limited to, charts, overhead transparencies, slides, videos, or presentation software) viewed at meetings shall be permitted only if the presenter provides ICC-ES before presentation with a copy of the visual aid in a medium which can be retained by ICC-ES with its record of the meeting and which can also be provided to interested parties requesting a copy. A copy of the ICC-ES recording of the meeting and such visual aids, if any, will be available to interested parties upon written request made to ICC-ES together with a payment as required by ICC-ES to cover costs of preparation and duplication of the copy. These materials will be available beginning five days after the conclusion of the meeting but will no longer be available after 30 days have elapsed from the conclusion of the meeting.

2.7 Parties interested in the deliberations of the committee should refrain from communicating, whether in writing or verbally, with committee members regarding agenda items. All written communications and submissions regarding agenda items should be delivered to ICC-ES. All such written communications and submissions shall be considered nonconfidential and available for discussion in open session of an Evaluation Committee meeting, and shall be delivered at least ten days before the scheduled Evaluation Committee meeting if they are to be forwarded to the committee. Correspondence received by ICC-ES will not

be released to any party, except to the Evaluation Committee, prior to the meeting without permission of the author. The committee reserves the right to refuse recognition of communications which do not comply with the provisions of this section. All such communications and submissions will be available from ICC-ES upon written request and payment of costs associated with duplication. The materials will be available beginning five days after the conclusion of the meeting but will no longer be available after 30 days have elapsed from the conclusion of the meeting.

3.0 CLOSED SESSIONS

Evaluation Committee meetings shall be open except that the chairman may call for a closed session to seek advice of counsel.

4.0 ACCEPTANCE CRITERIA

4.1 Acceptance criteria are established by the committee to provide a basis for issuing ICC-ES evaluation reports on products and systems under codes referenced in Section 2.0 of the Rules of Procedure for Evaluation Reports. They also clarify conditions of acceptance for products and systems specifically regulated by the codes.

Acceptance criteria may involve a product, material, method of construction, or service. Consideration of any acceptance criteria must be in conjunction with a current and valid application for an ICC-ES evaluation report, an existing ICC-ES evaluation report, or as otherwise determined by the Evaluation Committee.

4.2 Procedure:

4.2.1 Proposed acceptance criteria shall be developed by the ICC-ES staff and discussed in open session with the Evaluation Committee during a scheduled meeting, except as permitted in Section 5.0 of these rules.

4.2.2 Proposed acceptance criteria shall be available to interested parties at least 30 days before discussion at the committee meeting.

4.2.3 The committee shall be informed of all pertinent written communications received by ICC-ES.

4.2.4 Attendees at Evaluation Committee meetings shall have the opportunity to speak on acceptance criteria listed on the meeting agenda, to provide information to committee members.

4.3 Approval of acceptance criteria shall be as specified in Section 2.3 of these rules.

4.4 The action of the Evaluation Committee may be appealed in accordance with the ICC-ES Rules of Procedure for Appeal of Acceptance Criteria.

5.0 COMMITTEE BALLOTING FOR ACCEPTANCE CRITERIA

5.1 Acceptance criteria may be issued without a public hearing following a 45-day public comment period and a majority vote for approval by the Evaluation Committee when, in the opinion of ICC-ES staff, one or more of the following conditions have been met:

1. The subject is nonstructural, does not involve life safety, and is addressed in nationally recognized standards or generally accepted industry standards.
2. The subject is a revision to an existing acceptance criteria that requires a formal action by the Evaluation Committee, and public comments raised were resolved by staff with commenters fully informed.
3. Other acceptance criteria and/or the code provide precedence for the revised criteria.

5.2 Negative votes must be based upon one or more of the following, for the ballots to be considered valid and require resolution:

- a. *Lack of clarity:* There is insufficient explanation of the scope of the acceptance criteria or insufficient description of the intended use of the product or system; or the acceptance criteria is so unclear as to be unacceptable. (The areas where greater clarity is required must be specifically identified.)
- b. *Insufficiency:* The criteria is insufficient for proper evaluation of the product or system. (The provisions of the criteria that are in question must be specifically identified.)
- c. *The subject of the acceptance criteria is not within the scope of the applicable codes:* A report issued by ICC-ES is intended to provide a basis for approval under the codes. If the subject of the acceptance criteria is not regulated by the codes, there is no basis for issuing a report, or a criteria. (Specifics must be provided concerning the inapplicability of the code.)
- d. *The subject of the acceptance criteria needs to be discussed in a public hearings.* The committee member

requests additional input from other committee members, staff or industry.

5.3 An Evaluation Committee member, in voting on an acceptance criteria, may only cast the following ballots:

- Approved
- Approved with Comments
- Negative: Do Not Proceed

6.0 COMMITTEE COMMUNICATION

Direct communication between committee members, and between committee members and an applicant or concerned party, with regard to the processing of a particular acceptance criteria or evaluation report shall take place only in a public hearing of the Evaluation Committee. Accordingly:

6.1 Committee members receiving an electronic ballot should respond only to the sender (staff). Committee members who wish to discuss a particular matter with other committee members, before reaching a decision, should ballot accordingly and bring the matter to the attention of ICC-ES staff, so the issue can be placed on the agenda of a future committee meeting.

6.2 Committee members who are contacted by an applicant or concerned party on a particular matter that will be brought to the committee will refrain from private communication and will encourage the applicant or concerned party to forward their concerns through the ICC-ES staff in writing, and/or make their concerns known by addressing the committee at a public hearing, so that their concerns can receive the attention of all committee members.■

Effective November 6, 2006

1.0 INTRODUCTION

1.1 Purpose: The criteria establishes minimum requirements for recognition of adhesives in ICC Evaluation Services, Inc (ICC-ES), evaluation reports under the 2006 *International Building Code*®, the 2006 *International Residential Code*®, (IRC), the BOCA® *National Building Code/1999* (BNBC), the 1999 *Standard Building Code*® (SBC), and the 1997 *Uniform Building Code*™ (UBC) The basis of recognition is IBC Section 104.11, IRC Section 104.11, BNBC Section 106.4, SBC Section 103.7 and UBC Section 104.2.8.

1.2 Scope: The acceptance criteria applies to factory applied adhesives used in cold-formed galvanized steel connections with, or without the use of ancillary mechanical fasteners and is limited to assemblies conforming with (AC154) Cyclic Racking Shear Tests for Metal-sheathed Shear Walls with Steel Framing and (AC46) Cold-formed Steel Framing Members.

1.3 Codes and Reference Standards:

1.3.1 2006 *International Building Code*® (IBC), International Code Council

1.3.2 2006 *International Residential Code*® (IRC), International Code Council

1.3.3 BOCA® *National Building Code/1999* (BNBC)

1.3.4 1999 *Standard Building Code*® (SBC).

1.3.5 1997 *Uniform Building Code*™ (UBC)

1.3.6 ASTM A924/A924M-99 Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process

1.3.7 ASTM D1002-05 Standard Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal), American Society for Testing and Materials

1.3.8 ASTM D1876-01 Standard Test Method for Peel Resistance of Adhesives, American Society for Testing and Materials

1.3.9 ASTM D2095 -96e1 Standard Test Method for Tensile Strength of Adhesives by Means of Bar and Rod Specimens, American Society for Testing and Materials

1.3.10 ASTM D2294 -96(2002) Standard Test Method for Creep Properties of Adhesives in Shear by Tension Loading (Metal-to-Metal), American Society for Testing and Materials

1.3.11 ASTM D3166 -99(2005) Standard Test Method for Fatigue Properties of Adhesives in Shear by Tension Loading (Metal/Metal), American Society for Testing and Materials

1.3.12 ASTM D3433 -99(2005) Standard Test Method for Fracture Strength in Cleavage of Adhesives in Bonded Metal Joints, American Society for Testing and Materials

1.3.13 ISO 4587:2003, Adhesives -Determination of Tensile Lap-Shear Strength of Rigid-to-Rigid Bonded Assemblies, International Organization for Standardization

2.0 BASIC INFORMATION

2.1 General: The following information shall be submitted:

2.1.1 Description: A detailed description of the adhesive system is needed, including Material Safety Data Sheet, working life, environmental sensitivities, mixing, dispensing, application instructions and physical properties

2.1.2 Installation Instructions: Detailed application and installation instructions are needed, including the following:

2.1.2.1 Detailed application instructions and material specifications

2.1.2.2 Directions for use – mixing, application environment

2.1.2.3 Surface preparation and application requirements

2.1.2.4 Curing conditions, time and temperature sensitivities, working life (time from dispensing to assembly of components) and handling strength

2.1.2.5 Clean up practices, storage conditions

2.2 Packaging and Identification: Identification shall include the various system components, manufacturer's name and address, product designation, evaluation report number, and details on shelf life.

2.3 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

2.4 Test Reports: Reports of tests required under Section 4.0 of this criteria shall comply with the ICC-ES Acceptance Criteria for Test Reports (AC85). These reports shall include sample selection procedure, test specimen preparation, test procedures, and results of all tests

3.0 Product Sampling: Sampling of adhesive systems for tests under this criteria shall comply with Section 3.2 of AC85

3.1 Test Specimens: Test specimens are to be of commercial grade galvanized steel conforming to ASTM A924/A924M-99 Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process. Bond surfaces shall be cleaned with isopropyl alcohol (IPA) prior to application of adhesive system.

Adhesive thickness shall be as recommended by the manufacturer. Specimens shall be clamped on both bond area sides using 20-lb rated clamps. Samples are to be cured per manufacturers' recommendations.

4.0 Test and Performance Requirements

The following data shall be submitted, except as noted otherwise in this criteria:

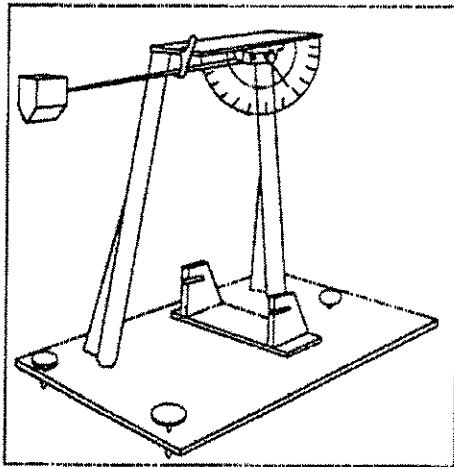
The following tests are necessary to qualify the adhesive, and must be conducted on specimens referenced in section 3.1. A series of tests are to be conducted such that the performance is quantified based on the surface area of the adhesive. Adhesive bond qualification tests are necessary for each adhesive type and surface to which recognition is requested. Adhesive recognition will be limited to coated surfaces described in Section 3.1. Additional testing is required for painted surfaces or other finishes.

4.1 Data on the impact strength of adhesive bonds in accordance with the following side impact strength test using lap-shear specimens: A pendulum impact test fixture is used to destructively determine the side impact strength of a lap-shear assembly.

DEFINITIONS, For purposes of this Standard Test Method, the following definitions apply: Impact Strength – the joules of energy absorbed by a specimen to produce failure.

APPARATUS, Impact Test Fixture, Pendulum Type (as shown in Figure 1), or equivalent commercial equipment.

Figure 1.



TEST SPECIMENS, Lap-shear specimens, seen in Figure 2

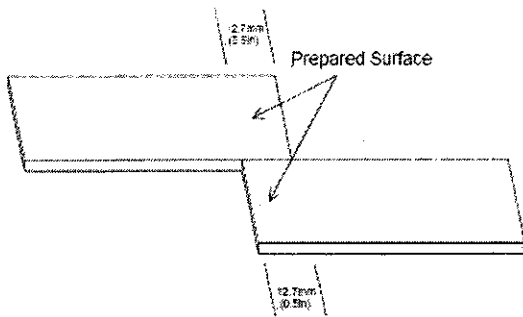


Figure 2
Position of Lap-Shear Specimens
Non-induced Gap

ASSEMBLY PROCEDURE, Assemble lap-shear specimens as follows: A 1" overlap should be used. Assemble induced gap specimens on an assembly/cure fixture as follows: Bend an appropriate gap spacer into a "V" shape and place it onto the prepared surface of the lap-shear specimen such that the two ends of the "V" shaped spacer protrude approximately 2 mm (0.0625 in) into the bond area. Place an additional gap spacer onto a spacer lap-shear specimen as shown in Figure 3, (spacer lap-shear specimen must be the same thickness as the lap-shear test specimen). Apply a sufficient quantity of adhesive to the prepared surface of the lap-shear specimen such that when the mating lap-shear specimen is placed on top of the adhesive, area to be completely covered. Place one end of the prepared surface side of the mating lap-shear specimen onto the adhesive with the other end resting on the gap spacer on the spacer lap-shear specimen, and press the mating lap-shear specimen gently until resistance from the gap spacer in the adhesive is felt. If the gap spacer in the adhesive begins slipping out of the bond area, push it back into the bond area to the required distance using a stability stick and hold it there until resistance is felt. Place a weight block on top of the mating lap-shear specimen behind the bond area to achieve a final assembly as shown in Figure 3 taking care to ensure proper alignment of the lap-shear specimens. Make sure the block is behind the bond area so as not to block any of the light during cure. Cure the lap-shear specimen(s) on the fixture under the light in the exposure area for the required exposure time specified in the quality specification, product profile, or test program.

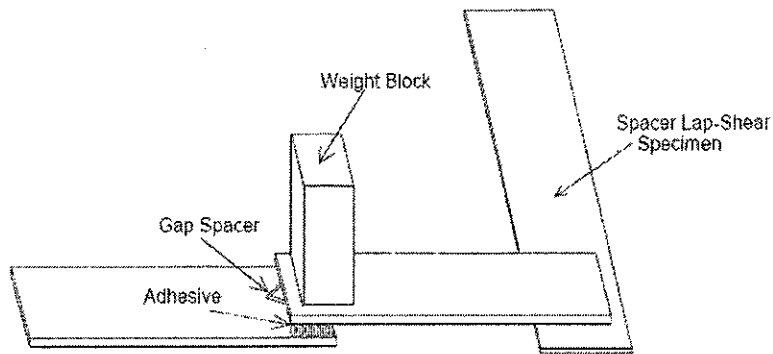


Figure 3
Gap Induced - Final Assembly
Block Method

TEST PROCEDURE, This test procedure is relevant to the equipment shown in figure 1, for equivalent commercial equipment follow the manufacturers' instructions. Install the appropriate impact head on the pendulum. There are two impact heads. The small head with a 2.5" height is the standard head. The large head with the 5.0" height is for high impact materials. Align the collar with the appropriate hatch mark on the pendulum shaft. Align the collar with the lower hatch mark for the small pendulum. Align the collar with the upper hatch mark for the large pendulum. Tighten the setscrew on the collar. Make sure the impact head is seated against the collar and is perpendicular to the specimen holder with the pointed end of the head facing toward the specimen holder. Tighten the setscrew on the impact head. Place the specimen in the holder at the base of the fixture. Check the position of the specimen to ensure that the desired point of impact is in line with the centerline of travel of the impact head and is firmly against the specimen holder stop. Adjust the specimen if necessary. The surface of the sample at this point is essentially at right angles to the line of travel and firmly against the specimen holder stop (as shown in Figure 5) **(Need Drawing)**

Mounted Specimen, Raise the impact head to the predetermined height (90 degrees) and set the safety catch. Release the safety catch. Each specimen can only be tested once. If the large impact head is required, you can not test the specimen with the small impact head then use the large impact head. A new specimen must be used with the large impact head. Impact tester must be set on a bench or floor in such a way as to assure there is no sliding or movement of the base of the unit when the head is swung freely with no specimen attached.

CALCULATIONS, When using the small head, the impact energy absorbed by the specimen is read directly from the joules indicator. When using the large head, the impact energy absorbed by the specimen is calculated by multiplying the measurement from the joules indicator times 2.

RECORDS, Record the following information: Joules of energy absorbed in the test, Head size used, record if the specimen failed or not, record the failure mode (i.e. adhesive, cohesive or substrate), number of specimens tested, if other than 5, any deviations from this method.

All specimens shall be cured in accordance with the manufacturers' recommendations

Conditions of acceptance: Minimum impact strength of, 18 KJ/m² at ambient temperature and a minimum impact strength of 8.5 KJ/m² at negative 40 degrees C/F

4.2 Data on testing in accordance with ASTM D 1002-05, Standard Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal). Each set of test specimens shall consist of a minimum of at least ten specimens. All specimens shall be cut to size prior to bonding and cured in accordance with manufacturers recommendations.

Conditions of acceptance: Minimum shear strength of 1,600 psi

4.3 Data on testing in accordance with ISO 4587:2003, Adhesives, Determination of Tensile Lap-Shear Strength of Rigid-to-Rigid Bonded Assemblies, Shear Strength – At Temperature and environmental aging

Test Procedures: In this test adhesive is applied to one lap shear specimen with appropriate overlap and induced gap. The mated assembly is clamped together using two 20 lb force spring clamps. The clamped assembly is allowed to cure in accordance with the manufacturer's recommendations. Samples are to be placed into a calibrated laboratory oven at the specified temperature and duration. Samples are to be tested with a pull speed of 0.05 in/min using a 25 kN load cell.

For hot strength testing an oven is brought to 200°F (94°C) and allowed to equilibrate. The specimen to be tested is placed in the oven for fifteen minutes. The specimen is then quickly placed in the test fixture and tested.

Conditions of Acceptance: minimum shear strength of 1,600 psi.

For environmental aging, samples are conditioned at 120°F (49°C) at 100 % relative humidity for 1,000 hours.

Conditions of acceptance: There shall be no loss in Tensile Lap-Shear Strength

4.4 Data on testing in accordance with ASTM D1876-01 Standard Test Method for Peel Resistance of Adhesives, using a 3-inch by 1-inch bond area after 120 hours. Test specimens are to be pre-cut prior to bonding

Conditions of Acceptance: a minimum peel resistance of 30 lb/in of width

4.5 Data on testing in accordance with ASTM D2095 -96e1 Standard Test Method for Tensile Strength of Adhesives by Means of Bar and Rod.

Conditions of Acceptance: a minimum tensile strength of 3,600 psi

4.6 Data on testing in accordance with ASTM D2294 -96(2002) Standard Test Method for Creep Properties of Adhesives in Shear by Tension Loading (Metal-to-Metal), using a 0.50-inch bond area

Conditions of Acceptance: a creep percent maximum of 1 percent

4.7 Data on testing in accordance with ASTM D3166 -99(2005) Standard Test Method for Fatigue Properties of Adhesives in Shear by Tension Loading (Metal/Metal)

Conditions of Acceptance: a minimum of 500psi at 10,000,000 cycles

4.8 Data on testing in accordance with ASTM D3433 -99(2005) Standard Test Method for Fracture Strength in Cleavage of Adhesives in Bonded Metal Joints

Conditions of Acceptance: minimum strength of 1,350 J/m²

5.0 QUALITY CONTROL

5.1 A quality control manual complying with the ICC-ES Acceptance Criteria for Quality Control Manuals (AC10), shall be submitted.

5.1.1 The adhesive shall be manufactured under an approved quality control program with inspections by an inspection agency accredited by the International Accreditation Service (IAS), or as otherwise acceptable to ICC-ES. The purpose of the inspections is to ensure that the adhesive maintains the structural qualities established through testing under this criteria.

5.2 Factory Fabrication

Adhesive connections shall be fabricated at facilities operated by an evaluation report holder on a product or system or by fabricators accredited by the International Accreditation Service (IAS). In either case, the fabricator shall, for the fabrication of adhesive connections, have an approved quality control program with inspections by an inspection agency accredited by IAS.

6.0 EVALUATION REPORT RECOGNITION

6.1 The evaluation report shall include the following:

- 1 Basic information required by Section 2.0, 2.1 and 2.2 including product description, packaging and identification
- 2 Test and Performance data as required by Section 4 of this criteria.
- 3 The evaluation report shall include the specifications for the steel base-metal thickness required adhesive

thickness, and surface area of adhesive contact.

4 The evaluation report shall include either the adhesive connection allowable load for use in allowable strength design or the design strength for use in load and resistance factor design, or both. As an alternative, the evaluation report shall include strength values and specify the required safety factor that is to be applied to nominal strength values.

5 The evaluation report shall require reports of tests per sections 3.0 and 4.0 of the July 2005 edition of AC154, *Cyclic Racking Shear Tests for Metal-sheathed Shear Walls*, and AC46, *Cold-formed Steel Framing Members to be submitted to the building official for approval*.