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January 14, 2011

Mr. Ted Berman, P.E.
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Miami Beach, FL 33140
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Dear Mr. Berman:

The following provides the original comments that were sent to us along with responses on behalf of Quick Tie Products, Inc.:

Comment #1 by Administrator: The application indicates ASTM D1671, but the evaluation report does not make a reference to the standard.

> ***Quick Tie's Response:*** Both the online application (www.floridabuilding.org) and our evaluation report (TER) reference ASTM D1761: *Test Method for Fasteners in Wood*. The following is a screen capture of both the application (see Figure 1) and the TER (see Figure 2) referencing ASTM D1761.
>
> ASTM D1671 is a test method for medical exam gloves and is not referenced in the application.

Referenced Standard and Year (of Standard)	Standard	Year
	AF&PA NDS	2005
	AISC 360	2005
	AISI NAS	2001
	ASTM D1761-88	2000

Figure 1: FL3557-R2 online application listing ASTM D1761

7. Test and Engineering Substantiating Data:

7.1. The allowable loads for the products listed in this Testing and Engineering Report were developed using the following referenced standards, as applicable:

7.1.1. *AF&PA NDS-05* National Design Specification (NDS) for Wood Construction - with 2005 Supplement

7.1.2. *AISC 360-05* Specification for Structural Steel Buildings

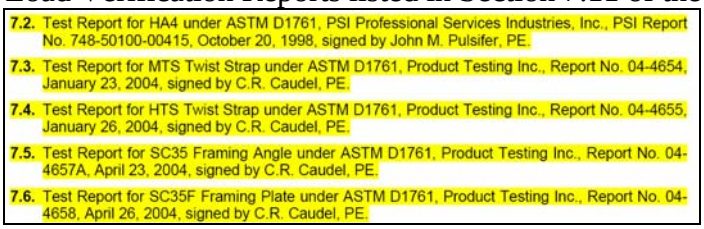
7.1.3. *AISI NAS-01* North American Specification for the Design of Cold-formed Steel Structural Members, including 2004 Supplement

7.1.4. *ASTM D 1761-88(2000)* Test Method for Mechanical Fasteners in Wood

Figure 2: TER listing ASTM D1761

Comment #2 by Administrator: Also, it is not clear on the evaluation on which products were tested and which were by rational analysis.

Quick Tie's Response: We will add to the TER a listing of the test reports (see Figure 3) that were used to prepare the Allowable Load Verification Reports listed in Section 7.11 of the TER.



7.2. Test Report for HA4 under ASTM D1761, PSI Professional Services Industries, Inc., PSI Report No. 748-50100-00415, October 20, 1998, signed by John M. Pulsifer, PE.

7.3. Test Report for MTS Twist Strap under ASTM D1761, Product Testing Inc., Report No. 04-4654, January 23, 2004, signed by C.R. Caudel, PE.

7.4. Test Report for HTS Twist Strap under ASTM D1761, Product Testing Inc., Report No. 04-4655, January 26, 2004, signed by C.R. Caudel, PE.

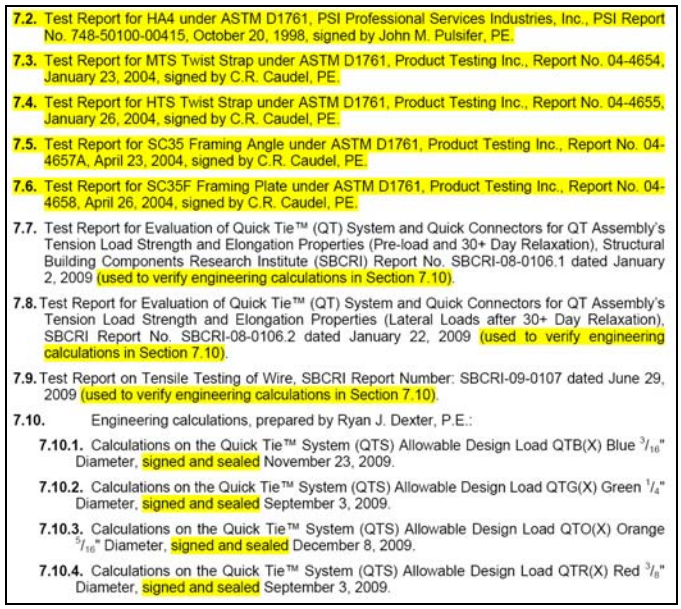
7.5. Test Report for SC35 Framing Angle under ASTM D1761, Product Testing Inc., Report No. 04-4657A, April 23, 2004, signed by C.R. Caudel, PE.

7.6. Test Report for SC35F Framing Plate under ASTM D1761, Product Testing Inc., Report No. 04-4658, April 26, 2004, signed by C.R. Caudel, PE.

Figure 3: Proposed Additions (highlighted) to the TER Listing Which Products Were Tested

Comment #1a by Randy Shackelford: Evaluation report does not reference tests performed (test lab, date, test standard) on the connectors specified in Section 7.6, as required by Product Approval Rule.

Quick Tie's Response: Referenced tests performed (test lab, date, test standard) on the connectors will be added to the TER (see response to ***Comment #2 by Administrator*** above). In the case of the connectors, tests were not conducted by SBCRI. The only testing SBCRI performed were two tests using the QT system in a 12' by 30' wall assembly for verification of the engineering calculations in Section 7.10 (see Figure 4). The results of the SBCRI tests were not used to develop any of the allowable design values listed in the TER.



7.2. Test Report for HA4 under ASTM D1761, PSI Professional Services Industries, Inc., PSI Report No. 748-50100-00415, October 20, 1998, signed by John M. Pulsifer, PE.

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7.4. Test Report for HTS Twist Strap under ASTM D1761, Product Testing Inc., Report No. 04-4655, January 26, 2004, signed by C.R. Caudel, PE.

7.5. Test Report for SC35 Framing Angle under ASTM D1761, Product Testing Inc., Report No. 04-4657A, April 23, 2004, signed by C.R. Caudel, PE.

7.6. Test Report for SC35F Framing Plate under ASTM D1761, Product Testing Inc., Report No. 04-4658, April 26, 2004, signed by C.R. Caudel, PE.

7.7. Test Report for Evaluation of Quick Tie™ (QT) System and Quick Connectors for QT Assembly's Tension Load Strength and Elongation Properties (Pre-load and 30+ Day Relaxation), Structural Building Components Research Institute (SBCRI) Report No. SBCRI-08-0106.1 dated January 2, 2009 (used to verify engineering calculations in Section 7.10).

7.8. Test Report for Evaluation of Quick Tie™ (QT) System and Quick Connectors for QT Assembly's Tension Load Strength and Elongation Properties (Lateral Loads after 30+ Day Relaxation), SBCRI Report No. SBCRI-08-0106.2 dated January 22, 2009 (used to verify engineering calculations in Section 7.10).

7.9. Test Report on Tensile Testing of Wire, SBCRI Report Number: SBCRI-09-0107 dated June 29, 2009 (used to verify engineering calculations in Section 7.10).

7.10. Engineering calculations, prepared by Ryan J. Dexter, P.E.:

7.10.1. Calculations on the Quick Tie™ System (QTS) Allowable Design Load QTB(X) Blue $^{3}/_{16}$" Diameter, signed and sealed November 23, 2009.

7.10.2. Calculations on the Quick Tie™ System (QTS) Allowable Design Load QTG(X) Green $^{1}/_{4}$" Diameter, signed and sealed September 3, 2009.

7.10.3. Calculations on the Quick Tie™ System (QTS) Allowable Design Load QTO(X) Orange $^{5}/_{16}$" Diameter, signed and sealed December 8, 2009.

7.10.4. Calculations on the Quick Tie™ System (QTS) Allowable Design Load QTR(X) Red $^{3}/_{8}$" Diameter, signed and sealed September 3, 2009.

Figure 4: Proposed Additions (highlighted) to the TER Listing that the SBCRI Tests were conducted only to verify the Engineering Calculations on the Quick Tie System

Comment #1b by Randy Shackelford: If the tests were performed by SBCRI, then the tests should not be accepted since SBCRI is not accredited to perform tests to ASTM D1761.

Quick Tie's Response: We do not believe Mr. Shackelford is not correct with respect to the SBCRI accreditation, how SBCRI tests and what they are accredited to test. SBCRI is accredited to perform the following tests or properties measured (see Figure 5):

I. Construction Materials / Mechanical	
ITEMS, MATERIALS OR PRODUCTS TESTED	**SPECIFIC TESTS OR PROPERTIES MEASURED**
Building Systems	Compression, Deflections, Tension, & Flexure
Building Elements	Compression, Deflections, Tension, & Flexure

Figure 5: SBCRI Accreditation

Therefore SBCRI can provide accredited test results for tests that generate compression resistance, tension resistance, bending/flexural resistance and measure deflections/deformations in any of the above applied loading conditions.

Further, the SBCRI is accredited to apply the needed test method technique that is appropriate to generate an accurate measurement of compression, tension, bending/flexure and resulting deflections (see Figure 6).

I. Construction Materials / Mechanical		
ITEMS, MATERIALS OR PRODUCTS TESTED	**SPECIFIC TESTS OR PROPERTIES MEASURED**	**SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED**
Building Systems	Compression, Deflections, Tension, & Flexure	ASTM E72, E73, E455, E564, E2127
Building Elements	Compression, Deflections, Tension, & Flexure	ASTM D4761, ASTM E8

Figure 6: SBCRI Accreditation

This is allowed by ANSI/ACLASS because much of SBCRI's work is performed on entire code complying structures where they need the flexibility to measure load paths that create compression, tension, flexure/bending and resulting deflections in three dimensions. Therefore, SBCRI's internal testing quality control relies upon accurately measuring the applied load and measuring the resulting resistance load. SBCRI does this in all the testing that they undertake. The simple equation that SBCRI uses to ensure that they have provided an accurate test result is the fundamental principle of "loads in" equaling "loads out". Hence, SBCRI's accreditation does apply to any compression, tension, bending/flexure tests that are performed using the technique(s) needed to generate the load and measure the resulting resistance (see Figure 7). In all cases, SBCRI also measures a variety of deformations.

I. Construction Materials / Mechanical

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
Building Systems	Compression, Deflections, Tension, & Flexure	ASTM E72, E73, E455, E564, E2127	Load Cells, Actuators, String Potentiometers
Building Elements	Compression, Deflections, Tension, & Flexure	ASTM D4761, ASTM E8	Load Cells, Actuators, String Potentiometers

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SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Structural Building Components Research Institute (SBCRI)
6300 Enterprise Lane, Madison, WI 53719
Dan Hawk Phone: 608-274-4849

TESTING

Valid to:February 5, 2011 Certificate Number: AT - 1373

This is to certify that

Structural Building Components Research Institute (SBCRI)
6300 Enterprise Lane
Madison, WI 53719

has been assessed by ACLASS®
and meets the requirements of international standard

ISO/IEC 17025:2005

while demonstrating technical competence in the field(s) of

TESTING

Refer to the accompanying Scope(s) of Accreditation for information regarding the types of calibrations and/or tests/types to which this accreditation applies.

AT-1373

CERTIFICATE NUMBER

ACLASS APPROVAL

Certificate Valid: 02/05/2009-02/05/2011

ilac-MRA ACLASS®

Figure 7: SBCRI Accreditation

SBCRI was successfully recertified the week of January 3, 2011 and had the baseline testing areas/assemblies reviewed for performing compression, tension, bending/flexural, cyclic and all resulting deformations based on a “loads in” equaling “loads out” basis. Therefore, in the future SBCRI believes that they are very qualified to provide testing that exceeds any requirements that Florida and the majority of testing facilities can provide given SBCRI is one of the only facilities that can/will provide “loads in” and “loads out” data to assure an outside agency evaluating their work of known and precise accuracy.

Finally, SBCRI would encourage the Florida Product Approval process to require all testing and test facilities to provide “loads in” and “loads out” data so that the Florida Product Approval process is assured that there is rock solid internal testing quality control as SBCRI has found that it is very easy to generate inaccurate results when only applied load cells or only reaction load cells are used.

Comment #2 by Randy Shackelford: Evaluation report does not reference tests performed (test lab, date, test standard) on the Epoxy Adhesives listed in Section 4.2.9, as required by Product Approval Rule. The epoxy adhesives are an integral part of this system by connecting the wire ropes to the foundation. Since I can find no FL Product Approval for any of these adhesives, they must be tested as part of this evaluation. Testing must be for both concrete application and masonry lintels and bond beams since they are permitted by Section 10.8. The alternate adhesives that are recommended in Section 4.2.9 of the report should not be permitted, since the Quick Tie website states that “All warranties void on Quick Tie’s installed with epoxies that do not carry the Quick Tie label.” Note 7 of Figure 12 states to “Use only Quick Tie system materials as specified and supplied by Quick Tie Products, Inc”. Without FL Product Approval, there is no evidence of required quality assurance on the private label epoxy adhesive.

Quick Tie’s Response: This TER is intended to only evaluate the structural performance of the Product Lines listed in Section 1. The epoxy adhesives are not listed in Section 1 and are not part of the renewal application process for Florida Product Approval (FL3557-R2); therefore, no tests are referenced within the TER. As stated in TER Section 4.2.9, the epoxy adhesives used must provide at least the following resistances (which are based on 2,500 psi concrete strength, a specified concrete embedment and edge distances as defined in TER Figure 11: Quick Tie System (QTS) Allowable Loads for Uplift Resistance):

- 1,909 lbs. for use with QTB(X) Blue $^{3}/_{16}$" diameter wire rope
- 3,182 lbs. for use with QTG(X) Green $^{1}/_{4}$" diameter wire rope
- 4,455 lbs. for use with QTO(X) Orange $^{5}/_{16}$" diameter wire rope
- 6,545 lbs. for use with QTR(X) Red $^{3}/_{8}$" diameter wire rope

The private label Q1000 Quick Set Epoxy is an HS200 brand manufactured by Adhesives Technology Corp. (formerly U.S. Anchor, Inc.). This is the same adhesive that has been specified in Quick Tie’s 2004 Florida Product Approval. The Tech Data Sheet for the HS200 Adhesive indicates that this adhesive has Metro-Dade County approval, FL #06-0111.05, Caltrans Approval and is Florida DOT 937HSHV Listed.

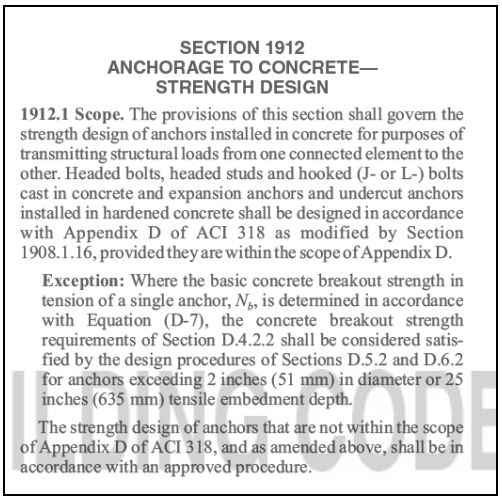
The EPCON A7 Acrylic Adhesive is manufactured by ITW Red Head. The A7 adhesive is approved for the 2004 Florida Building Code under Florida Product Approval No. FL6582.

Quick Tie also recently started to provide the EPCON G5 Epoxy Adhesive manufactured by ITW Red Head for use outside of Florida. It is our understanding that ITW Red Head will soon be receiving an ICC-ES Evaluation Report for their G5 Epoxy Adhesive that will include a Supplement indicating compliance with the 2007 Florida Building Code. When this occurs, the appropriate revisions will be made to the TER.

These three epoxies are the only epoxies that have been verified by Quick Tie to provide the required minimum resistances.

Comment #3 by Randy Shackelford: Concrete anchor adhesives should be approved for resistance to creep. Because the cables are required to be pre-tensioned (Section 6.2.2.1), the adhesive will have a constant load applied to it. Many adhesives are not resistant to "creep", which is allowing movement and eventual failure under constant loading. Criteria have been established by ICC-ES to evaluate creep. There is no evidence that the Quick Tie private label epoxy that is required has achieved this testing.

Quick Tie's Response: The 2007 Florida Building Code states the following with respect to Anchorage to Concrete (see Figure 8):



SECTION 1912
ANCHORAGE TO CONCRETE—
STRENGTH DESIGN

1912.1 Scope. The provisions of this section shall govern the strength design of anchors installed in concrete for purposes of transmitting structural loads from one connected element to the other. Headed bolts, headed studs and hooked (J- or L-) bolts cast in concrete and expansion anchors and undercut anchors installed in hardened concrete shall be designed in accordance with Appendix D of ACI 318 as modified by Section 1908.1.16, provided they are within the scope of Appendix D.

Exception: Where the basic concrete breakout strength in tension of a single anchor, N_b, is determined in accordance with Equation (D-7), the concrete breakout strength requirements of Section D.4.2.2 shall be considered satisfied by the design procedures of Sections D.5.2 and D.6.2 for anchors exceeding 2 inches (51 mm) in diameter or 25 inches (635 mm) tensile embedment depth.

The strength design of anchors that are not within the scope of Appendix D of ACI 318, and as amended above, shall be in accordance with an approved procedure.

Figure 8: 2007 Florida Building Code Section 1912.1

As far as we are aware, the 2004 Florida Building Code and the 2007 Florida Building Code provide this design guidance identically. Given this and the fact that there is nothing that has changed with respect to the Quick Tie anchorage to concrete nor the code and this was previously approved by Florida (FL3557-R1), we respectfully request further understanding of how Mr. Shackleford's questions are relevant from a Florida Building Code Compliance perspective by addressing the following questions:

1. If the Florida Building Code language that construction was to comply with the 2004 is the same as the 2007 FBC; and Quick Tie met the provision of the 2004 FBC; and the same adhesive(s) to connect the Quick Ties to the concrete met the 2004 FBC Quick Tie's 2004 Florida Product Approval; then what specific 2007 Florida Building Code provision is not being complied with?

a. We would appreciate a response on the provision of the code that is being violated and how that provision is being violated in writing.[1]

2. Also, we would appreciate your defining the code provision(s) that reference(s) an ICC ES consensus based standard and this standard's criteria as it relates to Quick Tie for all applications where Quick Tie can be used and has been successfully used in Florida. More specifically:
   a. Where is the ICC ES standard criteria referenced in the FBC?
   b. What are the specific sections of the FBC that make the reference(s)?
   c. How do these FBC reference(s) apply to the application of Quick Tie in the context of the FBC language?
   d. We would appreciate a response on the provision of the code that is being violated and how that provision is being violated in writing.

Comment #4 by Randy Shackelford: HA8 allowable loads are not established by testing. Refer to Section 7.7, which references a "Letter of Justification for HA8 Seismic and Hurricane Clip Allowable Load, dated August 20, 2009". Recommend the HA8 be removed from the application.

Quick Tie's Response: Until testing is conducted on the HA8 Hurricane and Seismic Clip, the HA8 will be removed from the TER [Section 1 and Section 4.3.1] and the renewal application for Florida Product Approval (FL3557-R2).

Comment #5 by Randy Shackelford: General note 8 on page 20 is incomplete and must be corrected. What is missing is that the sum of those three components must be LESS THAN 1 when added together. It states that "Allowable simultaneous loads in more than one direction on a single connector must be evaluated using the following equation:

Design Load Uplift/Allowable Load Uplift +Design Load Parallel-to-the-Wall-Plate /Allowable Load Parallel-to-the-Wall-Plate + Design Load Perpendicular-to-the-Wall-Plate/Allowable Load Perpendicular-to-the-Wall-Plate."

Quick Tie's Response: We agree with this. The less-than-or-equal-to-1.0 was apparently unintentionally dropped during the revision process. – General Note 8 in the TER will be revised (see Figure 9)

8. Allowable simultaneous loads in more than one direction on a single connector must be evaluated using the following equation:

   Design Load Uplift/Allowable Load Uplift + Design Load Parallel-to-the-Wall-Plate/Allowable Load Parallel-to-the-Wall-Plate + Design Load Perpendicular-to-the-Wall-Plate/Allowable Load Perpendicular-to-the-Wall-Plate ≤ 1.0.

   The building designer is responsible for determining the simultaneous loading conditions.

Figure 9: Proposed Additions (highlighted) to the TER to Revise Equation in General Note 8

[1] 2007 FBC Section 105.3.1 Action on application. The building official shall examine or cause to be examined applications for permits and amendments thereto within a reasonable time after filing. If the application or the construction documents do not conform to the requirements of pertinent laws, the building official shall reject such application in writing, stating the reasons therefore.

Comment #6 by Randy Shackelford: Section 10.3 states "Design loads on the Quick Tie™ System and Quick Connectors shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed." This should say "Design loads on the Quick Tie™ System and Quick Connectors shall be determined in accordance with this evaluation report."

Quick Tie's Response: We agree with this comment and the TER will be revised (see Figure 10)

> **10.3.** Design loads on the Quick Tie™ System and Quick Connectors shall be determined in accordance with this Testing and Engineering Report.

Figure 10: Proposed Additions (highlighted) to the TER to Revise Section 10.3

Comment #7 by Randy Shackelford: Evaluation report is not signed and sealed by the engineer who performed the evaluation.

Quick Tie's Response: A cover letter to the TER was prepared, signed and sealed by Ryan Dexter, P.E. and a hard copy was sent to you (Ted Berman and Associates, LLC). The TER that is currently available in the online application (www.floridabuilding.org) is not signed and sealed by Ryan but does include a cover letter with a statement of compliance. We did a search on Simpson's evaluations that have been done using the Evaluation by an Architect or Engineer method for Florida Product Approval and found some that also do not include signed and sealed evaluation reports online (e.g., FL11468[2]).

Therefore, our question would then be: what is the requirement that we should be following with respect to signing and sealing an evaluation report, given that our desire it to comply consistently with all other like kind applications.

Comment #8 by Randy Shackelford: Violation of 9N-3.009 Criteria for Certification of Independence. Paragraph (4) states that "The Florida registered architect or licensed professional engineer performing an evaluation does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product." Mr. Dexter, who is the Florida engineer who prepared the Evaluation Report, is also listed on the BCIS as the administrator for SBCRI, which is the test lab that performed some or all of the testing and analysis for this evaluation report. (I have asked Mr. Madani his opinion of this and am waiting to hear back)

Quick Tie's Response: We do not agree that this is a violation as SBCRI only performed verification tests, which were not used to determine the allowable design loads for the products included in the TER prepared by Ryan Dexter, P.E. (see also ***Quick Tie's Response to Comment #1 by Randy Shackelford)***.

Comment #9 by Randy Shackelford: I would like the opportunity to provide further comments when the tests are listed. For example, if a test dated October 20, 1998 is used for the HA4 tests, then the incorrect nails are listed for the HA4 in the evaluation report and installation instructions.

Quick Tie's Response: Table 2 of the TER (see Figure 11) and the installation instructions will be revised to indicate the use of minimum 8d (0.131 x 2-$^1/_2$") nails.

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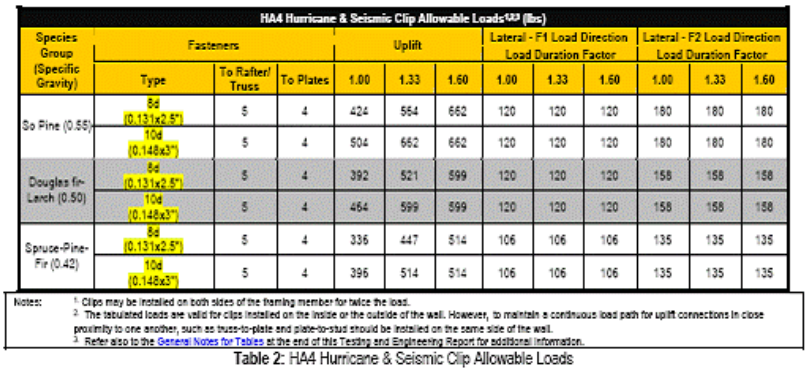
[2] www.floridabuilding.org/upload/PR_Tech_Docs/FL11468_R0_AE_SIM%20200802%20WoodHangers.pdf



HA4 Hurricane & Seismic Clip Allowable Loads[1,2,3] (lbs)

Species Group (Specific Gravity)	Fasteners			Uplift			Lateral - F1 Load Direction Load Duration Factor			Lateral - F2 Load Direction Load Duration Factor		
	Type	To Rafter/ Truss	To Plates	1.00	1.33	1.60	1.00	1.33	1.60	1.00	1.33	1.60
So Pine (0.55)	8d (0.131x2.5")	5	4	424	564	662	120	120	120	180	180	180
	10d (0.148x3")	5	4	504	662	662	120	120	120	180	180	180
Douglas fir-Larch (0.50)	8d (0.131x2.5")	5	4	392	521	599	120	120	120	158	158	158
	10d (0.148x3")	5	4	464	599	599	120	120	120	158	158	158
Spruce-Pine-Fir (0.42)	8d (0.131x2.5")	5	4	336	447	514	106	106	106	135	135	135
	10d (0.148x3")	5	4	396	514	514	106	106	106	135	135	135

Notes:
1. Clips may be installed on both sides of the framing member for twice the load.
2. The tabulated loads are valid for clips installed on the inside or the outside of the wall. However, to maintain a continuous load path for uplift connections in close proximity to one another, such as truss-to-plate and plate-to-stud should be installed on the same side of the wall.
3. Refer also to the General Notes for Tables at the end of this Testing and Engineering Report for additional information.

Table 2: HA4 Hurricane & Seismic Clip Allowable Loads

Figure 11: Proposed Revision (highlighted) to the TER to Update Fastener Size Required for Listed HA4 Allowable Loads