Technical Evaluation Report

TO ASSIST WITH CODE COMPLIANCE

Stanley Fastening Systems, L.P.
Stanley® BOSTITCH® Pneumatic Pins

TER No. 1109-02

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DIVISION: 05 00 00 – METALS
Section: 05 05 23 – Metal Fastenings

1. Products Evaluated:

1.1. Stanley® BOSTITCH® Pneumatic Pins

1.1.1. Stanley® BOSTITCH® Pneumatic Pins are intended to be used to fasten wood structural panel (WSP) sheathing to cold-formed steel (CFS) framing as an alternate to screws.

1.1.2. The CFS framing is nominally 33 mil to 54 mil thick, *ASTM A1003* Type H or *ASTM A653 SS*, Grades 33 and 50 ksi (224 MPa and 340 MPa).

1.1.3. The WSP must be at least $^{7}/_{16}$" (11.1 mm) OSB or $^{15}/_{32}$" (11.9 mm) plywood sheathing. These WSP must comply with *DOC PS-1* or *PS-2*. Thicker WSP panels up to $^{23}/_{32}$" (18.2 mm) may be used but without increased design values.

1.1.3.1. Stanley® BOSTITCH® Pneumatic Pins are installed using the Stanley® BOSTITCH® SF150C pneumatic tool or similar. Pneumatic pins shall be driven such that they pierce the WSP sheathing and the CFS framing member. The pneumatic pins must protrude through the CFS framing member a minimum of $^1/_2$" (12.7 mm). The heads of the pneumatic pins shall firmly contact the sheathing and be flush with the sheathing surface, so that the sheathing is held tight to the CFS framing members. The pneumatic pins shall not be overdriven, which is defined as the head breaking the surface fibers of the sheathing.

1.2. For the most recent version of this report, visit drjengineering.org. For more detailed state professional engineering and code compliance legal requirements and references, visit drjengineering.org/statelaw. DrJ is fully compliant with all state professional engineering and code compliance laws.

2. Applicable Codes and Standards:[1]

2.1. *2006*, *2009* and *2012 International Building Code* (*IBC*)

2.2. *2006*, *2009* and *2012 International Residential Code* (*IRC*)

2.3. *AISI S213 – North American Standard for Cold-Formed Steel Framing – Lateral Design*

2.4. *Special Design Provisions for Wind and Seismic* (*SDPWS*)

3. Performance Evaluation:

3.1. Stanley® BOSTITCH® Pneumatic Pins were tested in accordance with *ASTM E2126* techniques and the CUREE protocol. Wall assemblies were tested both as 4x8 single element walls and in a braced wall line of a 12' x 30' building. The walls consisted of oriented strand board (OSB) and plywood sheathing and CFS framing to evaluate their performance in the following conditions:

3.1.1. Structural performance under lateral (shear) load conditions as an alternative to walls braced in accordance with *IRC* Section R602.10 and R603.9.

3.1.2. Structural performance under lateral (shear) load conditions for use as an alternative to *IBC* Section 2211.6 lateral design.

3.1.3. Structural performance under lateral (shear) load conditions for use as an alternative to *AISI S213* for light-frame construction.

3.1.4. Structural performance under lateral (shear) load conditions for use as an alternative to the Wood-Frame Shear Wall Bracing[2] provisions in *IBC* Section 2306.3.

3.1.5. Structural performance under lateral (shear) load conditions for use as an alternative to *IBC* Section 2308 Conventional Light-Frame Construction, and specifically, Section 2308.9.3 Method 3 for Type V construction.

3.1.6. Structural performance under transverse loading conditions.

3.2. Any code compliance issues not specifically addressed in this section are outside the scope of this evaluation.

[1] Unless otherwise noted, all references in this code-compliant research report (TER) are from the 2012 version of the codes and the standards referenced therein, including, but not limited to, *ASCE 7*, *SDPWS* and *WFCM*. This product also complies with the 2000-2009 versions of the *IBC* and *IRC* and the standards referenced therein. As required by law, where this research report is not approved, the building official shall respond in writing, stating the reasons this research report was not approved.

[2] Definitions from the *IBC* – **Braced Wall Line.** A series of braced wall panels in a single story that meets the requirements of Section 2308.3 or 2308.12.4. **Braced Wall Panel.** A section of wall braced in accordance with Section 2308.9.3 or 2308.12.4. **Shear Wall.** A wall designed to resist lateral forces parallel to the plane of a wall. Shear wall, perforated. A wood structural panel sheathed wall with openings, that has not been specifically designed and detailed for force transfer around openings. **Shear wall segment, perforated.** A section of shear wall with full-height sheathing that meets the height-to-width ratio limits of Section 4.3.4 of AF&PA *SDPWS*.

4. Product Description and Materials:

4.1. Stanley® BOSTITCH® Pneumatic Pins are proprietary fasteners for light-frame composite wall assemblies. The pins have the following physical characteristics:

4.1.1. The product numbers that are the subject of this report are C4S100BG and GC4S100BG pins [length – $1^1/_2$" (38 mm)] and C6S100BG and GC6S100BG pins [length – 2" (51 mm)].

4.1.2. Head feature and diameter:

4.1.2.1. C4S100BG and C6S100BG – Full-round heads with flat under head, and head diameter of 0.240" (6.1 mm)

4.1.2.2. GC4S100BG and GC6S100BG – Full-round heads with bugle under head, and head diameter of 0.285" (7.2 mm)

4.1.3. Shank feature and diameter – Helical flutes, nominal diameter 0.100" (2.54 mm) [deformed diameter, 0.110" (2.79 mm)]

4.1.4. Point – Ballistic

4.1.5. Material – UNS 10380 (AISI 1038) steel

4.1.6. Hardness – Rockwell Hardness (HRC) 47 to 53

4.1.7. The pins are galvanized per Stanley Fastening System ES3800 with a zinc coating [0.5 oz./ft.^{2} (150 g/m^2)]

4.1.8. Stanley® BOSTITCH® Pneumatic Pins are manufactured in accordance with the Stanley Fastening Systems quality control standards.

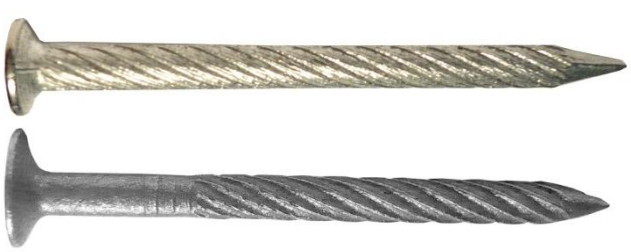

Photo 1: Stanley® BOSTITCH® Pneumatic Pins – C4S100BG, GC4S100BG & Pin Penetration through CFS Framing

4.2. Material Availability

4.2.1. Stanley® BOSTITCH® Pneumatic Pins are proprietary fasteners available as:

4.2.1.1. Collated coils for use with the Stanley® BOSTITCH® SF150C pneumatic driver or similar. Other collations may be used by Stanley® BOSTITCH® to accommodate other fastener driving tools.

5. Applications:

5.1. Walls fastened with Stanley® BOSTITCH® Pneumatic Pins are used to resist lateral (shear), transverse and gravity loads in conventional light-frame construction as evaluated per Section 3 of this report.

5.2. Stanley® BOSTITCH® Pneumatic Pins are used in structures complying with the braced wall provisions of *IRC* Section R602.10 and the steel framing provisions of Section R603.

5.3. Stanley® BOSTITCH® Pneumatic Pins are used in structures complying with the braced wall provisions of *IBC* Sections 2211, 2306 and 2308.

5.4. Stanley® BOSTITCH® Pneumatic Pins are used in structures complying with *AISI S213*.

5.5. An engineered design is needed for top plates that are required to resist uplift or combined lateral and uplift loads due to wind.

5.6. Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience, and good technical judgment.

5.7. Structural Applications

5.7.1. Prescriptive *IRC* Bracing Applications

5.7.1.1. Stanley® BOSTITCH® Galvanized Pneumatic Pins may be used in braced wall lines (BWLs) as an equivalent alternative to *2006*, *2009* and *2012 IRC* Method WSP, when installed in accordance with *IRC* Section R602.10 and this TER.

5.7.1.2. Stanley® BOSTITCH® Galvanized Pneumatic Pins may be used in BWLs as an equivalent alternative to *2006*, *2009* and *2012 IRC* steel framing provisions, when installed in accordance with *IRC* Section R603 and this TER.

5.7.1.2.1. The minimum total length of braced wall panels required along a braced wall line based on a set of equivalency factors derived from equivalency testing are provided in Table 1 for the *2009 IRC* Table R602.10.1.2(1-3) and *2012 IRC* Table R602.10.3(1-4). All footnotes and adjustment factors found in *IRC* R602.10 must be used with Table 1, to adjust the bracing lengths shown to that required for end use.

5.7.1.2.2. When different combinations of exterior sheathing are used, the Method WSP columns are used to identify the required base bracing length.

5.7.1.2.3. Stanley® BOSTITCH® Pneumatic Pins can also be used to construct walls that are in compliance with the *IRC* Continuously Sheathed Braced Wall Panel provisions of Section R602.10.4.

5.7.1.2.4. When the *IRC* Continuously Sheathed Braced Wall Panel provisions of Section R602.10.4 are used, the Method CS-WSP columns are used to identify the required base bracing length.

Condition	Braced Wall Line Spacing	Stanley® BOSTITCH® Pneumatic Pin Connections into 33 mil[1] CFS Framing					
		Length of Wall Line to be Braced (ft.)					
		Method WSP[1]	Method CS-WSP[2]	Method WSP[1]	Method CS WSP[3]	Method WSP[1]	Method CS-WSP[2]
		90 mph[4]		100 mph[4]		110 mph[4]	
One Story or the Top of Two or Three Stories	10	2.5'	2.0'	3.0'	2.5'	4.0'	3.0'
	20	4.5'	4.0'	6.0'	5.0'	7.0'	6.0'
	30	7.0'	6.0'	8.5'	7.0'	10.0'	8.5'
	40	9.0'	7.5'	11.0'	9.5'	13.0'	11.5'
	50	11.0'	9.5'	13.5'	11.5'	16.5'	14.0'
	60	13.0'	11.0'	16.0'	13.5'	19.5'	16.5'
First Story of Two Stories or Second Story of Three Stories	10	5.0'	4.0'	6.0'	5.0'	7.5'	6.0'
	20	9.0'	7.5'	11.0'	9.5'	13.5'	11.5'
	30	13.0'	11.0'	16.0'	14.0'	19.5'	16.5'
	40	17.0'	14.5'	21.0'	18.0'	25.5'	21.5'
	50	21.0'	18.0'	26.0'	22.0'	31.5'	26.5'
	60	25.0'	21.0'	31.0'	26.0'	37.5'	31.5'
First Story of Three Stories	10	7.0'	6.0'	9.0'	7.5'	11.0'	9.0'
	20	13.5'	11.5'	16.5'	14.0'	20.0'	17.0'
	30	19.5'	16.5'	24.0'	20.5'	29.0'	24.5'
	40	25.5'	21.5'	31.0'	26.5'	38.0'	32.0'
	50	31.0'	26.5'	38.5'	32.5'	46.5'	39.5'
	60	37.0'	31.5'	45.5'	39.0'	55.0'	47.0'

1. For 54 mil studs, the listed values can be decreased by a maximum of 10 percent.
2. Method WSP: wood structural panels
3. Method CS-WSP: continuously sheathed wood structural panels
4. Wind speeds given are V_{ASD}. For ultimate wind speeds, multiply allowable wind pressures by √1.6.

Table 1: *IRC* Required Bracing Lengths for Wind & Seismic Design Categories A, B & Detached Dwellings in C

5.7.2. *IBC* and *SDPWS* Wall Bracing

5.7.2.1. CFS Framing Construction

5.7.2.1.1. Stanley® BOSTITCH® Pneumatic Pins may be used to construct shear walls that are used to brace walls of buildings as an equivalent alternative to Method 3 (Method WSP) shear walls (wall bracing) in Type V construction, as found in the referenced *IBC* and *SDPWS* when installed in accordance with *IBC* Section 2306.3, *SDPWS* Section 4.3 and this TER.

5.7.2.1.2. Stanley® BOSTITCH® Pneumatic Pins may be used to construct shear walls that are used to brace walls of buildings as an equivalent alternative to Method 3 (Method WSP) shear walls (wall bracing) in Type V construction as found in the referenced *IBC* Section 2308.2, 2308.3, 2308.9 and 2308.9.3, *SDPWS* Section 4.3 and this TER.

5.7.2.1.3. The Nominal Unit Shear Capacities (NUSC) for shear walls where the sheathing is fastened to the CFS frame with Stanley® BOSTITCH® Pneumatic Pins and for use with the referenced *IBC* and *SDPWS* are found in Table 2.

5.7.2.1.4. The NUSC values in Table 2, 3 and 4 may not be adjusted for Duration of Load (DOL) per *NDS*[3].

Nominal Unit Shear Capacities[1,2] for Shear Walls with Sheathing Fastened with Stanley® BOSTITCH® Pneumatic Pins For Use with the *2006*, *2009* and *2012 IBC* and *2008 SDPWS*. CFS Framing Thickness is 33 mil or 54 mil. Hold-Down Hardware is Required.

CFS Framing	Sheathing	Fastener Spacing[3] (in.)	Max. Framing Spacing, o.c. (in.)	Nominal Unit Shear Capacity (plf)	
				Wind	Seismic
33 mil	7/16" OSB & 15/32" Plywood	6:12	16	605	430
		6:12	24	555	400
54 mil	7/16" OSB & 15/32" Plywood	6:12	16	665	475
		6:12	24	610	435

1. For LRFD, the Nominal Unit Shear Values shall be multiplied by resistance factor φ_D=0.80, and for ASD applications, the values shall be divided by 2.0. No duration of load increases shall be made.
2. WSPs up to 23/32" (18.2 mm) may be used without increased shear capacity.
3. Fastener spacing on panel edges (in.); fastener spacing on interior framing members (in.).

Table 2: Nominal Unit Shear Capacities[1,2] for Shear Walls with Sheathing Fastened with Stanley® BOSTITCH® Pneumatic Pins

5.7.3. *AISI S213* – Lateral Design

5.7.3.1. Nominal Unit Shear Capacities for simple shear walls (walls that are designed for gravity loads only) are given in Table 3.

5.7.3.2. Nominal Unit Shear Capacities for fully provisioned shear walls (walls that are designed and detailed for both gravity and lateral loads) are given in Table 4.

5.7.3.3. Nominal Unit Shear Capacities of Table 3 and Table 4 are adjusted using safety factors (Ω) for ASD and resistance factors (Φ) for LRFD of *AISI S213* Section C2.1. WSP up to 23/32" (18.2 mm) thick may be used without increased shear capacities. No increases for duration of load shall be applied to the reference unit shear capacities.

5.7.3.4. As needed, shear wall deflection shall be calculated using *AISI S213* equation C2.1-1 and C2.1-2.

[3] The listed NUSC values are based on equivalency factors derived from testing using *ATSM 2126* techniques and the CUREE protocol. These are short-term loading techniques designed to simulate wind/seismic loading conditions. As such, no additional increase for short-term loading is allowed.

Nominal Unit Shear Capacities for Simple Shear Walls (Designed for gravity loads; not designed and detailed for supplemental forces associated with lateral shear resistance.) CFS Framed Using OSB/Plywood Attached with Stanley® BOSTITCH® Pneumatic Pins [1,2,3,4]				
Sheathing	**Fastener Spacing[5]**	**CFS Thickness (mil)**	**NUSC Capacity (Seismic)**	**NUSC Capacity (Wind)**
7/16" OSB	6:12	33	625	810
15/32" 4-Ply Structural 1 Plywood	6:12	33	785	810
7/16" OSB	4:12	33	810	810
15/32" 4-Ply Structural 1 Plywood	4:12	33	810	810
7/16" OSB	3:12	33	810	810
15/32" 4-Ply Structural 1 Plywood	3:12	33	810	810
7/16"OSB	2:12	33	810	810
15/32" 4-Ply Structural 1 Plywood	2:12	33	810	810
7/16" OSB	6:12	54	685	865
15/32" 4-Ply Structural 1 Plywood	6:12	54	790	865
7/16" OSB	4:12	54	865	865
15/32" 4-Ply Structural 1 Plywood	4:12	54	865	865
7/16" OSB	3:12	54	865	865
15/32" 4-Ply Structural 1 Plywood	3:12	54	865	865
7/16" OSB	2:12	54	865	865
15/32" 4-Ply Structural 1 Plywood	2:12	54	865	865

1. Studs shall be spaced 16" or 24" (406 or 610 mm) o.c. and fastened with screws to the tracks.
2. Chord studs shall be selected such that compression forces from gravity and lateral loads can be resisted.
3. Hold-downs must be selected that provide adequate overturning resistance for the shear wall assembly.
4. Fastener spacing on panel edges (in.); fastener spacing on interior framing members (in.).
5. Thickness of CFS studs and tracks.

Table 3: Nominal Unit Shear Capacities for Simple Shear Walls

Nominal Unit Shear Capacities for Fully Provisioned Shear Walls (Designed and detailed for gravity and supplemental forces associated with lateral shear resistance) CFS Framed Using OSB/Plywood Attached with Stanley® BOSTITCH® Pneumatic Pins[1,2]				
Sheathing	**Fastener Spacing[5]**	**CFS Thickness (mil)**	**NUSC Capacity (Seismic)**	**NUSC Capacity (Wind)**
7/16" OSB	6:12	33	625	875
15/32" 4-Ply Structural 1 Plywood	6:12	33	785	1100
7/16" OSB	4:12	33	842	1180
15/32" 4-Ply Structural 1 Plywood	4:12	33	970	1355
7/16" OSB	3:12	33	1295	1815
15/32" 4-Ply Structural 1 Plywood	3:12	33	1490	2085
7/16" OSB	2:12	33	1750	2450
15/32" 4-Ply Structural 1 Plywood	2:12	33	2015	2820
7/16" OSB	6:12	54	685	960
15/32" 4-Ply Structural 1 Plywood	6:12	54	790	1105
7/16" OSB	4:12	54	1035	1450
15/32" 4-Ply Structural 1 Plywood	4:12	54	1190	1670
7/16" OSB	3:12	54	1495	2090
15/32" 4-Ply Structural 1 Plywood	3:12	54	1720	2405
7/16" OSB	2:12	54	1950	2735
15/32" 4-Ply Structural 1 Plywood	2:12	54	2245	3145

1. Studs shall be spaced 16 or 24 (406 or 610 mm) o.c. and fastened with screws to the tracks.
2. Chord studs shall be selected such that compression forces from gravity and lateral loads can be resisted.
3. Hold-downs must be selected that provide adequate overturning resistance for the shear wall assembly.
4. Fastener spacing on panel edges (in.); fastener spacing on interior framing members (in.).
5. Thickness of CFS studs and tracks.

Table 4: Nominal Unit Shear Capacities for Fully Provisioned Shear Walls

5.7.4. Transverse Loading

5.7.4.1. Where required to resist transverse wind pressures, Table 5 shall be used to determine the required fastening schedule.

Fastening Schedule[1] to Resist Transverse Wind Loads Using Stanley® BOSTITCH® Pneumatic Pins with $^{7}/_{16}$" OSB and $^{15}/_{32}$" Plywood Sheathing on CFS Framing that is at Least 33-mil Thick and Spaced No Greater than 24" o.c.								
Exposure	MRH[2]	Wind Speed (MPH 3-second gust), Studs Spaced 24" o.c.						
		100	110	120	130	140	150	170
B	15	6:12	6:12	6:12	6:6	4:12	4:12	2:12
	20	6:12	6:12	6:12	6:6	4:12	4:12	2:12
	25	6:12	6:12	6:12	6:6	4:12	4:12	2:12
	30	6:12	6:12	6:12	6:6	4:12	4:12	2:12
	35	6:12	6:12	6:12	6:6	4:12	4:12	2:12
	40	6:12	6:12	6:12	6:6	4:12	4:6	2:12
	45	6:12	6:12	6:12	4:12	4:12	4:6	2:12
	50	6:12	6:12	6:6	4:12	4:12	2:12	2:12
	55	6:12	6:12	6:6	4:12	4:12	2:12	2:12
	60	6:12	6:12	6:6	4:12	4:6	2:12	2:12
C	15	6:12	6:12	6:6	4:12	4:6	2:12	2:12
	20	6:12	6:12	6:6	4:12	4:6	2:12	2:12
	25	6:12	6:12	4:12	4:12	2:12	2:12	2:12
	30	6:12	6:6	4:12	4:12	2:12	2:12	2:12
	35	6:12	6:6	4:12	4:6	2:12	2:12	2:12
	40	6:12	6:6	4:12	4:6	2:12	2:12	2:12
	45	6:12	6:6	4:12	4:6	2:12	2:12	2:12
	50	6:12	6:6	4:12	2:12	2:12	2:12	2:12
	55	6:12	4:12	4:12	2:12	2:12	2:12	N/A
	60	6:12	4:12	4:12	2:12	2:12	2:12	N/A
D	15	6:12	6:6	4:12	4:6	2:12	2:12	2:12
	20	6:12	6:6	4:12	2:12	2:12	2:12	2:12
	25	6:12	4:12	4:12	2:12	2:12	2:12	N/A
	30	6:6	4:12	4:6	2:12	2:12	2:12	N/A
	35	6:6	4:12	4:6	2:12	2:12	2:12	N/A
	40	6:6	4:12	4:6	2:12	2:12	2:12	N/A
	45	6:6	4:12	4:6	2:12	2:12	2:12	N/A
	50	6:6	4:12	4:6	2:12	2:12	2:12	N/A
	55	6:6	4:12	2:12	2:12	2:12	2:12	N/A
	60	6:6	4:12	2:12	2:12	2:12	2:12	N/A

1. Based on pin withdrawal using the average tributary area of fasteners in a 4x8 WSP using the fastening pattern indicated.
2. Mean Roof Height per *ASCE 7*.

Table 5: Fastening Schedule[1] to Resist Transverse Wind Loads Using Stanley® BOSTITCH® Pneumatic Pins

5.7.5. Seismic Provisions

5.7.5.1. Seismic design for categories other than A, B and detached dwellings in C is outside the scope of this TER.

6. Installation:

6.7. Vertical Installation

6.7.4. Stanley® BOSTITCH® Pneumatic Pins may be used to fasten WSP to CFS framing. The CFS studs shall be C-sections with lips where the web is not less than 3.50" (89 mm), and the flange width is not less than 1.625" (41 mm). The studs shall not be spaced greater than 24" (610 mm) o.c. The CFS tracks shall be compatible with the studs. Pneumatic pins for sheathing fastening shall be placed not less than $^3/_8$" (9.5 mm) from the sheathing edges.

6.7.5. The sheathing joints shall be butted over the studs with a gap for panel expansion. Edge fastening shall be a single row of pneumatic pins along the panel edge that penetrate the WSP and the framing member.

6.8. Horizontal Installation

6.8.4. Stanley® BOSTITCH® Pneumatic Pins may be used to fasten WSP to CFS framing. The CFS studs shall be C-sections with lips where the web is not less than 3.50" (89 mm), and the flange width is not less than 1.625" (41 mm). The studs shall not be spaced greater than 24" (610 mm) o.c. The CFS tracks shall be compatible with the studs. Pneumatic pins for sheathing fastening shall be placed not less than $^3/_8$" (9.5 mm) from the sheathing edges.

6.8.5. Sheathing joints shall be butted over the studs with a gap for panel expansion. Edge fastening shall be in a single row of pneumatic pins along the panel edge that penetrate the WSP and the framing member.

7. Test and Engineering Substantiating Data:

7.1. Lateral shearwall testing and data in accordance with ASTM E564 and ASTM E2126 by SBCRI 2009-2011

7.2. Some information contained herein is the result of testing and/or data analysis by other sources, which DrJ relies on to be accurate as it undertakes its engineering analysis.

7.3. DrJ has reviewed and found the data provided by other professional sources are credible. This information has been approved in accordance with DrJ's procedure for acceptance of data from approved sources.

7.4. DrJ's responsibility for data provided by approved sources is in accordance with professional engineering law.

7.5. Where appropriate, DrJ relies on the derivation of design values, which have been codified into law through the codes and standards (e.g., *IRC*, *WFCM*, *IBC*, *SDPWS*, etc.), to undertake the review of test data that is comparative or shows equivalency to an intended end-use application.

8. Findings:

8.1. Shear walls fastened with Stanley® BOSTITCH® Pneumatic Pins as described in this TER comply with, or are suitable alternatives to, the applicable sections of the *2006*, *2009* and *2012 IBC* and *IRC.*

8.2. *IBC* Section 104.11 and *IRC* Section R104.11 (*IFC* Section 104.9 is similar) state:

> **104.11 Alternative materials, design and methods of construction and equipment.** The provisions of this code are not intended to prevent the installation of any material 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. … Where the alternative material, design or method of construction is not *approved*, the *building official* shall respond in writing, stating the reasons the alternative was not *approved*.[4]

9. Conditions of Use:

9.1. Where required by the authority having jurisdiction (AHJ) in which the project is to be constructed, this report and the installation instructions shall be submitted at the time of permit application.

9.2. Where a building, or portion thereof, does not comply with one or more of the bracing requirements within the prescriptive section of the *IRC*, those portions shall be designed and constructed in accordance with Section R301.1.

[4] The last sentence is adopted language in the 2015 codes.

9.3. Design

9.3.1. Building Designer Responsibility

9.3.1.1. Unless the AHJ allows otherwise, the Construction Documents shall be prepared by a Building Designer (e.g., Owner, Registered Design Professional, etc.) for the Building and shall be in accordance with *IRC* Section R106 and *IBC* Section 107.

9.3.1.2. The Construction Documents shall be accurate and reliable and shall provide the location, direction and magnitude of all applied loads and shall be in accordance with *IRC* Section 301 and *IBC* Section 1603.

9.3.2. Construction Documents

9.3.2.1. Construction Documents shall be submitted to the Building Official for approval and shall contain the plans, specifications and details needed for the Building Official to approve such documents.

9.4. Responsibilities

9.4.1. The information contained herein is a product, engineering or building code compliance research report performed in accordance with the referenced building codes, testing and/or analysis through the use of accepted engineering procedures, experience and good technical judgment.

9.4.2. Product, design and code compliance quality control are the responsibility of the referenced company. Consult the referenced company for the proper detailing and application for the intended purpose. Consult your local jurisdiction or design professional to assure compliance with the local building code.

9.4.3. DrJ research reports provide an assessment of only those attributes specifically addressed in the Products Evaluated or Code Compliance Process Evaluated section.

9.4.4. The engineering evaluation was performed on the dates provided in this TER, within DrJ's professional scope of work.

9.4.5. The actual design, suitability and use of this research report for any particular building is the responsibility of the Owner, the Owner's authorized agent or the Building Designer.

8. Identification:

9.1. The products shall have labels that show BOSTITCH Fastening Systems (701 E. Joppa Road, Towson, MD 21286) and the product numbers that are given in this report.

9.2. Additional technical information can be found at the Stanley® BOSTITCH® website.

10. Review Schedule:

10.1. This TER is subject to periodic review and revision. For the most recent version of this report, visit drjengineering.org.

10.2. For information on the current status of this report, contact DrJ Engineering.

Scope of Responsibility / Work, Operations Policies, and Legal Responsibilities

- Mission and Scope of Responsibility
- Product Evaluation Operations Concepts and Policies
- TERs Are Comparable to, Compatible with, and Equivalent to the Purpose of an ICC-ES ESR, IAPMO ER, Intertek IRR, Architectural Testing CCRR, etc.
- Legal Aspects of Product Approval