Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

Report No: 1503-03

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Subject to Renewal: July 1, 2027

Use of FastenMaster® FrameFAST™ Structural Wood Screw Fasteners in Roof, Beam, and Wall Applications

Trade Secret Report Holder:

OMG®, Inc. dba FastenMaster®

Phone: 413-789-0252 Website: www.fastenmaster.com Email: mguthrie@omginc.com

CSI Designations:

DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES Section: 06 05 23 - Wood, Plastic, and Composite Fastenings

1 Innovative Product Evaluated[1]

1.1 FastenMaster FrameFAST Structural Wood Screws (FrameFAST Fasteners)

2 Product Description and Materials

2.1 The innovative product evaluated in this report is shown in **Figure 1**.

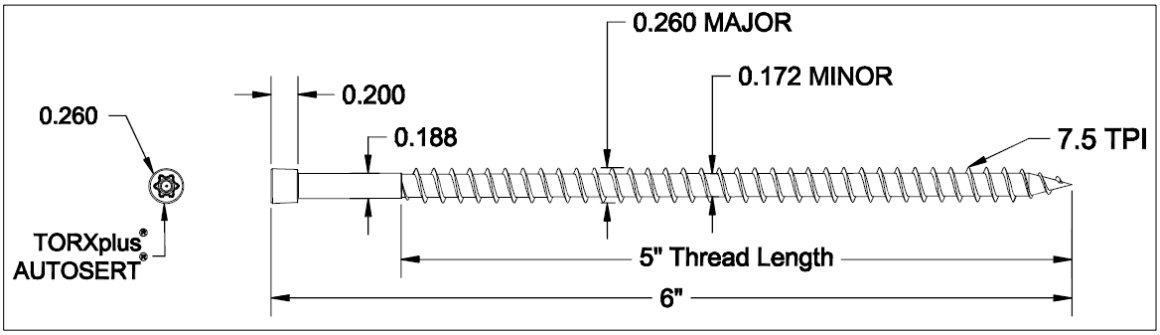

Figure 1. FrameFAST Fasteners Specifications

2.2 *FrameFAST Fasteners*

2.2.1 FrameFAST Fasteners are manufactured from carbon steel wire using a standard cold-forming process followed by a heat-treating process conforming to the manufacturer specifications.

2.2.2 FrameFAST Fasteners are coated with a proprietary coating, red in color, meeting the equivalent protection provided by hot-dip galvanized fasteners coated in accordance with ASTM A153, Class D.

2.2.3 FrameFAST Fasteners are approved for use in interior and exterior applications, including pressure-treated wood having ground contact levels of treatment meeting APWA UC1 through UC4A.

2.2.4 FrameFAST Fasteners are recognized for use in fire-retardant treated lumber, provided the conditions set forth by the fire-retardant treated lumber manufacturer be met, including appropriate strength reductions.

2.2.5 FrameFAST Fasteners in-plant quality control procedures, under which the FrameFAST Fasteners are manufactured, are audited through an inspection process performed by an approved agency.

2.3 FrameFAST Fasteners evaluated in this report are designated as shown in **Table 1**.

Table 1. FrameFAST Fastener Specifications

Fastener	Fastener Designation	Length[1] (in)		Head (in)		Diameter (in)			Bending Yield Strength[2] F_{yb} (psi)	Allowable Fastener Strength[2] (lb)	
		Fastener	Thread	Diameter	Height	Shank	Minor (Root)	Major (Thread)		Tensile	Shear
FrameFAST Fasteners	FMFF006	6	5	0.300	0.220	0.188	0.172	0.260	166,600	1,205	930

SI: 1 in = 25.4 mm, 1-psi = 0.00689 MPa

1. Fastener length is measured from the top of the head to the tip. Thread length includes tapered tip (see **Figure 1**).
2. Bending yield, tension, and shear values determined at minor root diameter.

2.4 As needed, review material properties for design in **Section 6** and the regulatory evaluation in **Section 8**.

3 Definitions[2]

3.1 New Materials[3] are defined as building materials, equipment, appliances, systems, or methods of construction, not provided for by prescriptive and/or legislatively adopted regulations, known as alternative materials.[4] The design strength and permissible stresses shall be established by tests[5] and/or engineering analysis.[6]

3.2 Duly authenticated reports[7] and research reports[8] are test reports and related engineering evaluations that are written by an approved agency[9] and/or an approved source.[10]

3.2.1 This report utilizes intellectual property and/or trade secrets to create public domain material properties for commercial end-use.

3.2.1.1 This report protects confidential Intellectual Property and trade secrets under the regulation, 18.US.Code.90, also known as Defend Trade Secrets Act of 2016 (DTSA).[11]

3.3 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is accredited and listed in the ANAB directory.

3.4 An approved source is *"approved"* when a professional engineer (i.e., Registered Design Professional, hereinafter RDP) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.[12]

3.5 Testing and/or inspections conducted for this duly authenticated report were performed by an ISO/IEC 17025 accredited testing laboratory, an ISO/IEC 17020 accredited inspection body, and/or a licensed RDP.

3.5.1 The Center for Building Innovation (CBI) is ANAB[13] ISO/IEC 17025 and ISO/IEC 17020 accredited.

3.6 The regulatory authority shall enforce[14] the specific provisions of each legislatively adopted regulation. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in writing[15] stating the nonconformance and the path to its cure.

3.7 The regulatory authority shall accept duly authenticated reports from an approved agency and/or an approved source with respect to the quality and manner of use of new materials or assemblies as provided for in regulations regarding the use of alternative materials, designs, or methods of construction.[16]

3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) signatory. Therefore, recognition of certificates and validation statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope shall be approved.[17] Thus, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent,[18] and can be used in any country that is an MLA signatory found at this link: https://iaf.nu/en/recognised-abs/

3.9 Approval equity is a fundamental commercial and legal principle.[19]

4 Applicable Local, State, and Federal Approvals; Standards; Regulations[20]

4.1 *Local, State, and Federal*

4.1.1 Approved in all local jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured local jurisdictions: Austin, Baltimore, Broward County, Chicago, Clark County, Dade County, Dallas, Detroit, Denver, DuPage County, Fort Worth, Houston, Kansas City, King County, Knoxville, Las Vegas, Los Angeles City, Los Angeles County, Miami, Nashville, New York City, Omaha, Philadelphia, Phoenix, Portland, San Antonio, San Diego, San Jose, San Francisco, Seattle, Sioux Falls, South Holland, St. Louis County, Texas Department of Insurance, and Wichita.[21]

4.1.2 Approved in all state jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured states: California, Florida, New Jersey, Oregon, New York, Texas, Washington, and Wisconsin.[22]

4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[23] and Part 3280[24] pursuant to the use of ISO/IEC 17065 duly authenticated reports.

4.1.4 Approved means complying with the requirements of local, state, or federal legislation.

4.2 *Regulations*

4.2.1 *IBC – 18, 21, 24: International Building Code®*

4.2.2 *IRC – 18, 21, 24: International Residential Code®*

4.2.3 *FBC-B—20, 23: Florida Building Code[25] – Building (FL 21662)*

4.2.4 *FBC-R—20, 23: Florida Building Code[25] – Residential (FL 21662)*

4.3 *Standards*

4.3.1 *ANSI/AWC NDS: National Design Specification (NDS) for Wood Construction*

4.3.2 *ASTM A153: Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware*

4.3.3 *ASTM D1761: Standard Test Methods for Mechanical Fasteners in Wood*

4.3.4 *ASTM D2395: Standard Test Methods for Density and Specific Gravity (Relative Density) of Wood and Wood-Based Materials*

4.3.5 *ASTM D4442: Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials*

4.3.6 *ASTM F606: Standard Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, Direct Tension Indicators, and Rivets*

4.3.7 *ASTM F1575: Standard Test Method for Determining Bending Yield Moment of Nails, Spikes, and Dowel-type Threaded Fasteners*

4.3.8 *AWC TR 12: General Dowel Equations for Calculating Lateral Connection Values*

5 Listed[26]

5.1 Equipment, materials, products, or services included in a List published by a nationally recognized testing laboratory (e.g., CBI), an approved agency (e.g., CBI and DrJ), and/or and approved source (e.g., DrJ), or other organization(s) concerned with product evaluation (e.g., DrJ), that maintains periodic inspection (e.g., CBI) of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

6 Tabulated Properties Generated from Nationally Recognized Standards

6.1 FrameFAST Fasteners are used in buildings requiring design in accordance with IBC Section 1609 or wind analysis in accordance with IRC Section R301.2.1.

6.2 FrameFAST Fasteners are used in buildings requiring design in accordance with IBC Section 1613 or seismic analysis in accordance with IRC Section R301.2.2.

6.3 FrameFAST Fasteners, when used in the connection of roofs, walls, and beams, provide resistance to uplift and/or lateral loads applied parallel and/or perpendicular to the wall or structural framing that meet the requirements of IBC Section 2308 and IRC Section R602 for the following applications:

6.3.1 To attach minimum 1$^1/_2$" thick wood trusses or rafters to the top plates of wood stud walls using a single fastener.

6.3.1.1 Where the truss or rafter is directly over the stud or beam, fasteners can be installed at an angle through the top plates. See **Figure 2** for installation details.

6.3.1.2 Where the truss or rafter is aligned between studs, fasteners can be installed vertically through double top plates with no reduction in value. See **Figure 3** for installation details.

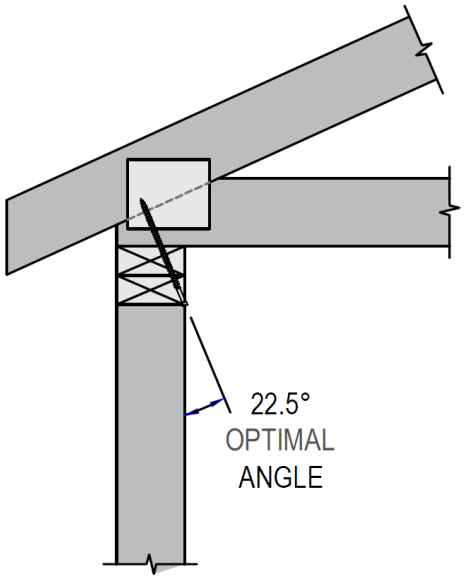

Figure 2. Angled Installation of FrameFAST Fasteners in Truss to Top Plates

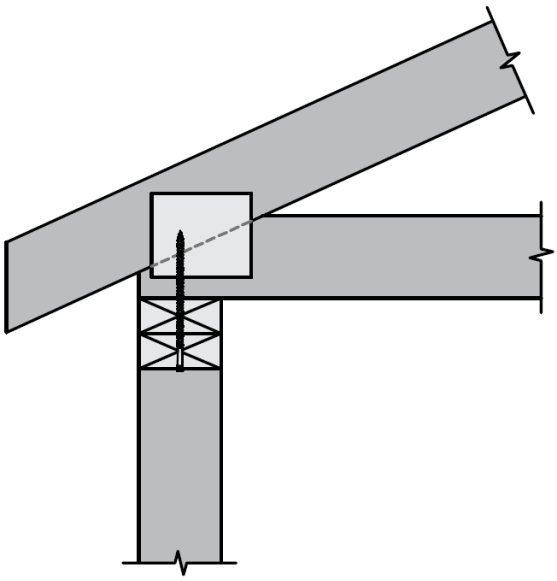

Figure 3. Vertical Installation of FrameFAST Fasteners in Truss to Top Plates

6.3.1.3 Blocking may be installed between trusses or rafters to increase allowable F1 lateral loads. See **Figure 4** for installation details.

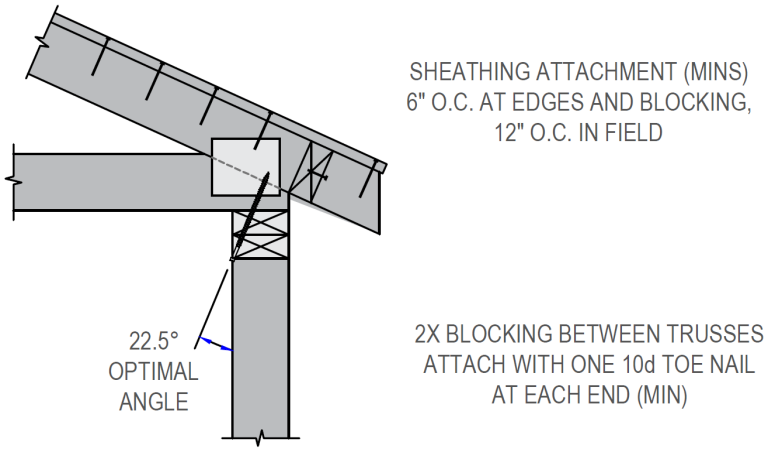

Figure 4. Blocking Between Trusses

6.3.1.4 Blocking may be installed between roof rafters, floor/ceiling joists, or floor trusses to increase allowable F1 lateral loads. See **Figure 5** for installation details.

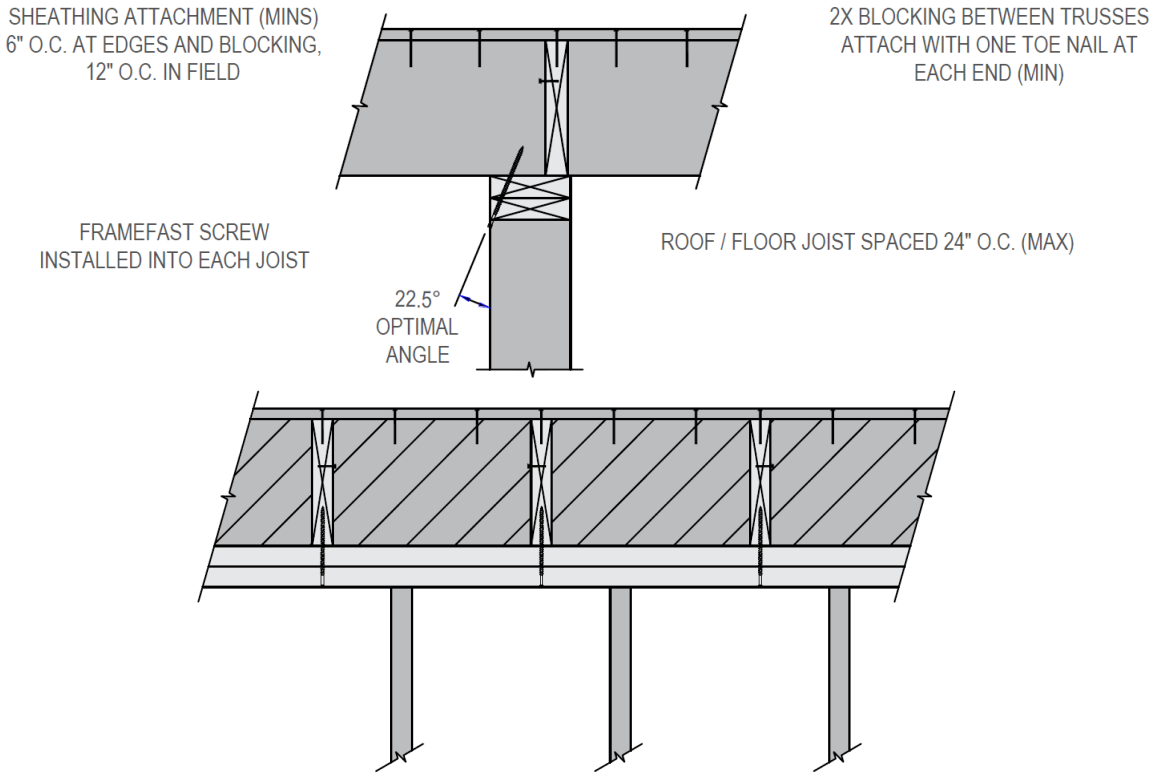

Figure 5. Blocking Between Rafters, Joists, or Floor Trusses

6.3.1.5 Loading orientation is depicted in **Figure 6**.

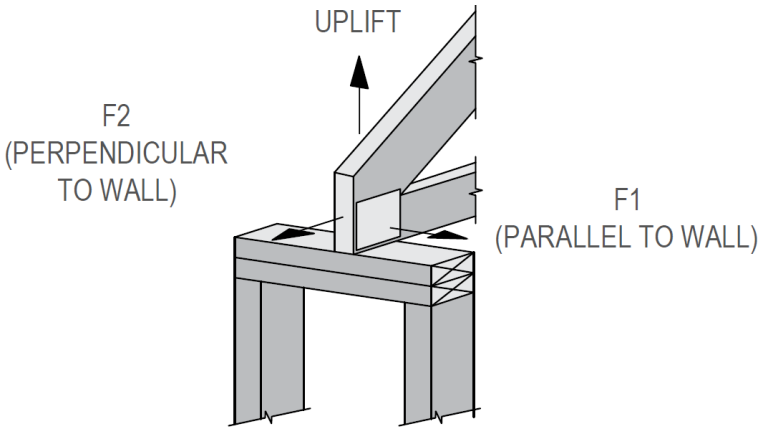

Figure 6. Allowable Design Value Load Orientations

6.3.1.6 Allowable design loads for this application are provided in **Table 2**.

Table 2. FrameFAST Fasteners Allowable Loads for Uplift and Lateral Resistance

Fastener Designation	Minimum Penetration into Truss/Rafter/Wood Structural Support[8] (in)	Species Group (Specific Gravity)[1,2,3]	Uplift[4,5,6,8] (lb)	Lateral[4,8] (lb)		
				F1 Parallel to Wall (Without Blocking)	F1 Parallel to Wall (With Blocking)[7]	F2 Perpendicular to Wall
6" FMFF006	2 1/2	SP (0.55)	950	330	650	485
		DF-L (0.50)	990	300	600	455
		SPF/HF (0.42)	780	285	520	400

SI: 1 in = 25.4 mm, 1 lb = 4.45 N

1. Wood truss, rafter, or floor joist members shall be a minimum of 2" nominal thickness. Design of truss, rafter, or floor joist members is by others.
2. Equivalent specific gravity of Structural Composite Lumber (SCL) shall be equal to or greater than the specific gravities provided in this table. Refer to product information from SCL manufacturer.
3. For applications involving members with different specific gravities, use the allowable load corresponding to the lowest specific gravity.
4. No further duration of load increases permitted (values listed correspond to Load Duration Factor of 1.6).
5. Use reduction factor of 0.80 when connecting each ply of multiply trusses to the top plate.
6. Fasteners installed perpendicular to the wood grain of the main member.
7. See **Figure 4** and **Figure 5** for blocking requirements between trusses, rafter, or floor joists.
8. Allowable uplift and lateral values are applicable for fastener installation with up to 3/8" of the head being left exposed (proud), as long as minimum embedment of 2 1/2" in the main member is maintained.

6.3.2 To attach minimum 1½" wood trusses, rafters, ceiling joists, or floor joists to headers or beams.

6.3.2.1 See **Figure 7** and **Figure 8** for installation details.

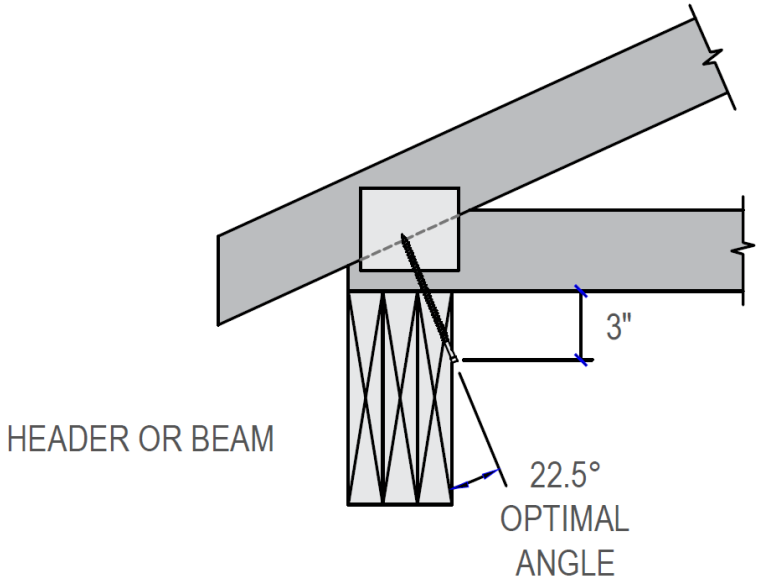

Figure 7. Angled Installation of FrameFAST in Truss to Beam

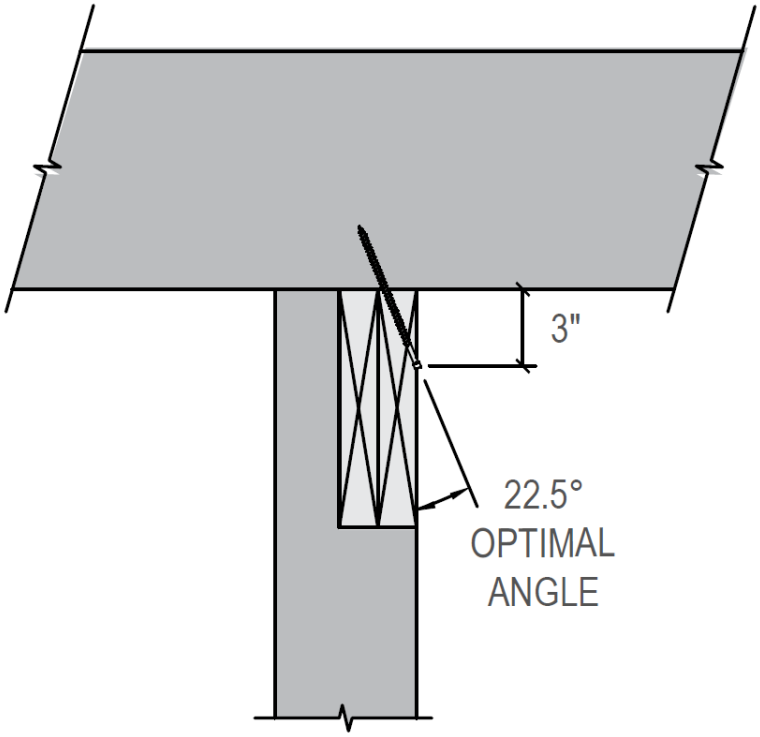

Figure 8. Angled Installation of FrameFAST in Joist to Beam

6.3.2.2 Allowable design loads for this application are provided in **Table 2**.

6.3.3 To attach minimum 1 1/2" thick wood trusses or rafters to the top plates of wood stud walls using two fasteners.

6.3.3.1 One fastener is to be installed at an angle through the top plates and into the center of the truss or rafter. The second fastener is to be installed vertically through the top plates into the truss or rafter. See **Figure 9** for installation details.

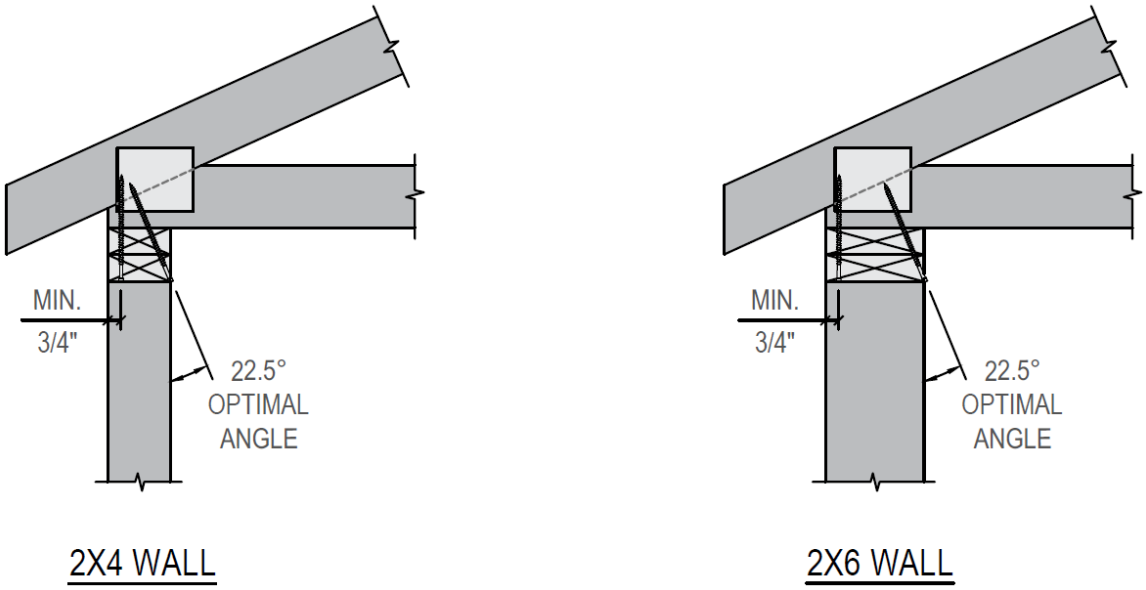

Figure 9. Installation of Two FrameFAST in Truss to Top Plate Connection

6.3.3.2 Where the truss or rafter is aligned directly over a stud, the vertical fastener can be installed up to a 12-degree angle through the top plates to engage the truss or rafter above.

6.3.3.3 Allowable design loads for this application are provided in **Table 3**.

Table 3. Allowable Loads for Uplift and Lateral Resistance for Two FrameFAST Fasteners Connection[6]

Fastener Designation	Species Group (Specific Gravity)[1,2,3]	Uplift[4,5] (lb)	Lateral[4] (lb)		
			F1 Parallel to Wall (Without Blocking)	F1 Parallel to Wall (With Blocking)	F2 Perpendicular to Wall
6" FMFF006	SP (0.55)	1,425	500	755	640
	DF-L (0.50)	1,485	465	670	570
	SPF/HF (0.42)	1,195	385	520	435

SI: 1 in = 25.4 mm, 1 lb = 4.45 N

1. Wood truss, rafter, or floor joist members shall be a minimum of 2" nominal thickness. Design of truss, rafter, or floor joist members is by others.
2. Equivalent specific gravity of SCL shall be equal to or greater than the specific gravities provided in this table. Refer to product information from SCL manufacturer.
3. For applications involving members with different specific gravities, use the allowable load corresponding to the lowest specific gravity.
4. No further duration of load increases is permitted.
5. Use reduction factor of 0.80 when connecting each ply of multiply trusses to the top plate.
6. See **Figure 9** for connection detail requirements.

6.3.4 To attach the 3½" thick bottom or top chords of open web floor trusses to the top or bottom plates of wood stud walls.

6.3.4.1 Where the bottom plate is over floor trusses, fasteners can be installed at an angle or vertically through the bottom plate and into the ribbon board below. See **Figure 10** and **Figure 11** for installation details.

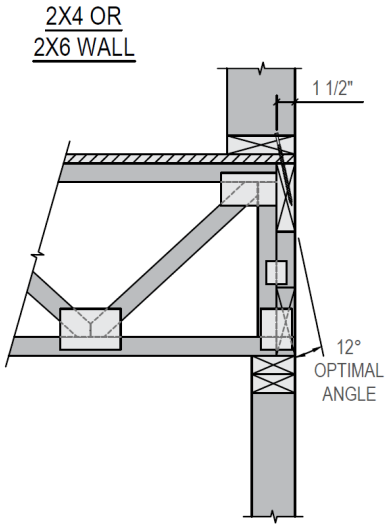

Figure 10. Angled Installation of FrameFAST Fasteners Bottom Plate to Truss Ribbon Board

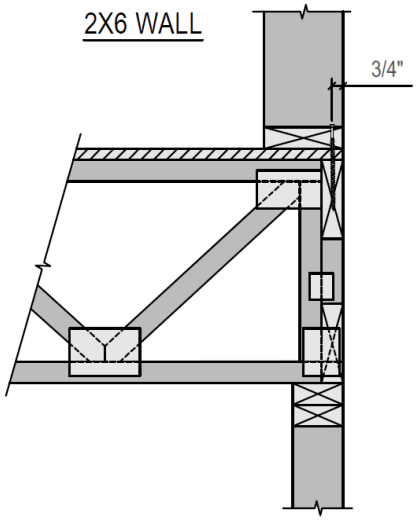

Figure 11. Vertical Installation of FrameFAST Fasteners Bottom Plate to Truss Ribbon Board

6.3.4.2 Where the floor truss is directly above a stud or header, fasteners can be installed at an angle through the top plates and into the truss chord above.

6.3.4.2.1 For a 2 x 4 wall, see **Figure 12** for installation details.

6.3.4.2.2 For a 2 x 6 wall, see **Figure 13** for installation details.

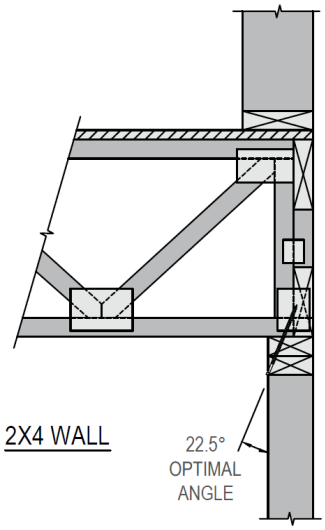

Figure 12. Angled Installation of FrameFAST Fasteners 2 x 4 Top Plates to Bottom Chord

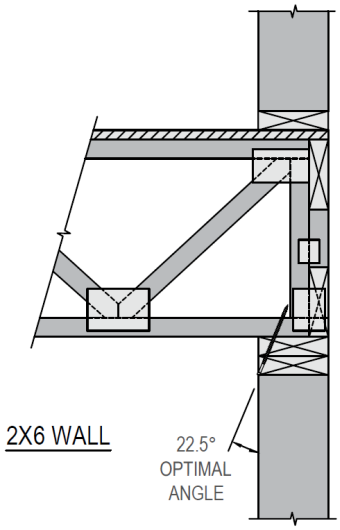

Figure 13. Angled Installation of FrameFAST Fasteners 2 x 6 Top Plates to Bottom Chord

6.3.4.3 Where the floor truss is aligned between studs, fasteners can be installed at an angle or vertically through the top plates and into the ribbon board above. See **Figure 14** and **Figure 15** for installation details.

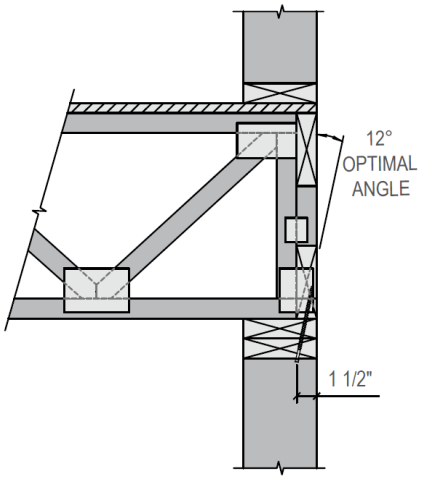

Figure 14. Angled Installation of FrameFAST Fasteners Top Plates to Bottom Chord and Ribbon Board

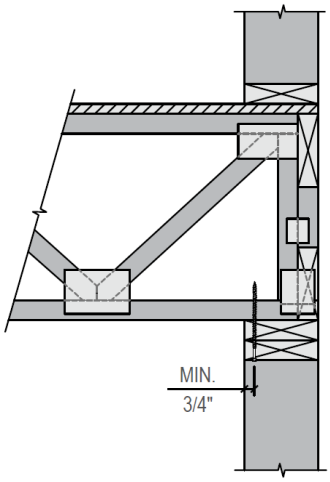

Figure 15. Vertical Installation of FrameFAST Fasteners Top Plates to Bottom Truss Chord

6.3.4.4 The allowable design loads for these configurations are provided in **Table 4**. These values include a load reduction where thread penetration into the truss material is less than $2^1/_2$".

Table 4. Allowable Loads for Uplift and Lateral Resistance of FrameFAST Fasteners in Plate to Floor Truss Configuration

Configuration[3]			Load Orientation	Allowable Loads (lb)[1,2]		
				Species Group (Specific Gravity)		
				SP (0.55)	DF-L (0.50)	SPF (0.42)
Bottom Plate to Floor Truss	12° Angle into Ribbon Board	**Figure 10**	Uplift	325	245	210
			Lateral - F1	395	265	340
	Vertical into Ribbon Board	**Figure 11**	Uplift	325	245	210
			Lateral - F1	395	265	340
Top Plates to Floor Truss	22.5° Angle into Bottom Chord and Ribbon Board	**Figure 12**	Uplift	595	590	475
			Lateral - F1	650	595	495
	22.5° Angle into Bottom Chord Only	**Figure 13**	Uplift	595	590	475
			Lateral - F1	650	595	495
	12° Angle into Bottom Chord and Ribbon Board	**Figure 14**	Uplift	595	590	475
			Lateral - F1	650	595	495
	Vertical into Bottom Chord Only	**Figure 15**	Uplift	570	590	470
			Lateral - F1	650	595	495

SI: 1 lb = 4.45 N

1. For applications involving members with different specific gravities, G, use the allowable load corresponding to the lowest specific gravity. The top/bottom plates shall be minimum SPF dimensional lumber. Dimensional lumber members shall be minimum of 2" nominal thickness.
2. Design values are based on a load duration factor, C_D, of 1.6. No further duration of load increases permitted. Reduced design values for other load durations as applicable.
3. See **Figure 5** for blocking requirements.

6.3.5 To attach gable trusses or drag trusses to the top plates of wood stud walls.

6.3.5.1 See **Figure 16** for installation details.

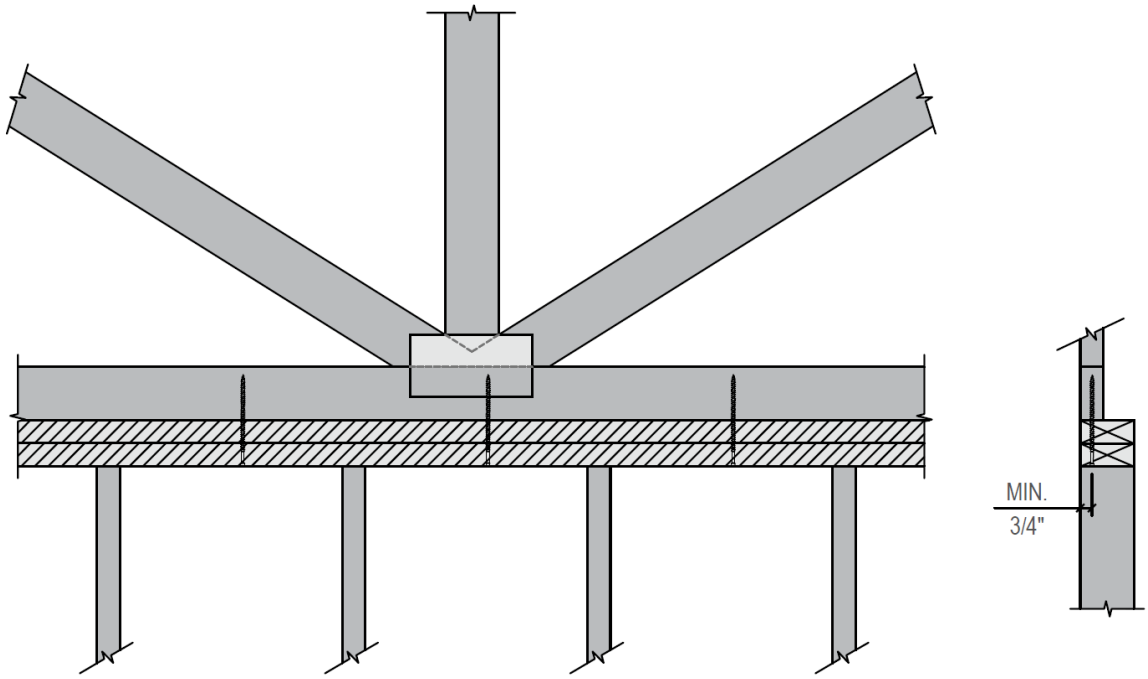

Figure 16. Installation of FrameFAST Fasteners in Gable and Drag Truss to Plates

6.3.5.2 Allowable design loads for this application are provided in **Table 5**.

Table 5. Allowable Loads for Uplift and Lateral Resistance of FrameFAST Fasteners in Gable and Drag Truss Connections

Wood Species	Allowable Design Value in Lateral/Shear Parallel to Wall (F1)					
	Uniform Load (plf) Based on Fastening Pattern					
	24" o.c.	16" o.c.	12" o.c.	8" o.c.	6" o.c.	4" o.c.
SP (0.55)	165	250	330	495	660	990
DF-L (0.50)	150	225	300	450	600	900
SPF (0.42)	145	215	285	430	570	855

SI: 1 in = 25.4 mm, 1 lb = 4.45 N

1. Wood truss, rafter, or floor joist members shall be a minimum of 2" nominal thickness. Design of truss, rafter, or floor joist members is by others.
2. For applications involving members with different specific gravities, use the allowable load corresponding to the lowest specific gravity.
3. No further duration of load increases permitted (values listed correspond to Load Duration Factor of 1.6).
4. Use reduction factor of 0.80 when connecting each ply of multiply trusses to the top plate.
5. Fasteners installed perpendicular to the wood grain of the main member.

6.3.6 To attach wall studs to the top plates or bottom plates of walls.

6.3.6.1 Fasteners may be installed into the narrow face of the stud or wide face of the stud.

6.3.6.2 Multiple fasteners can be used to obtain greater loads.

6.3.6.2.1 For connections using one fastener, see **Figure 17** and **Figure 18** for installation details.

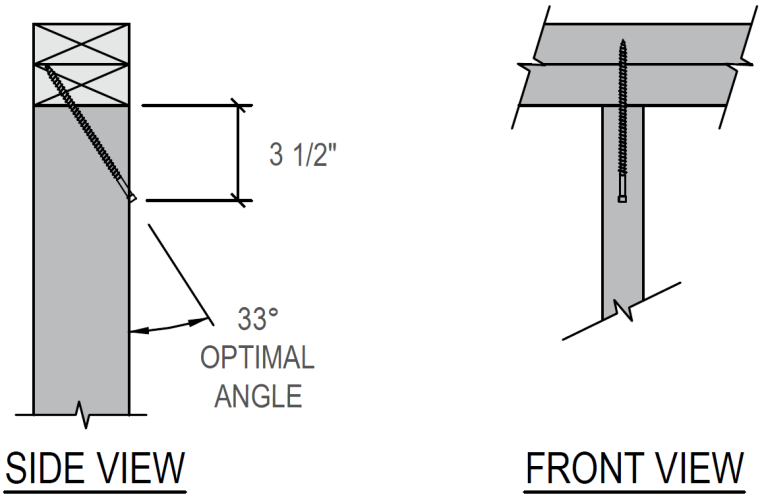

Figure 17. Stud-to-Single or Double Top Plate – Single FrameFAST Installation

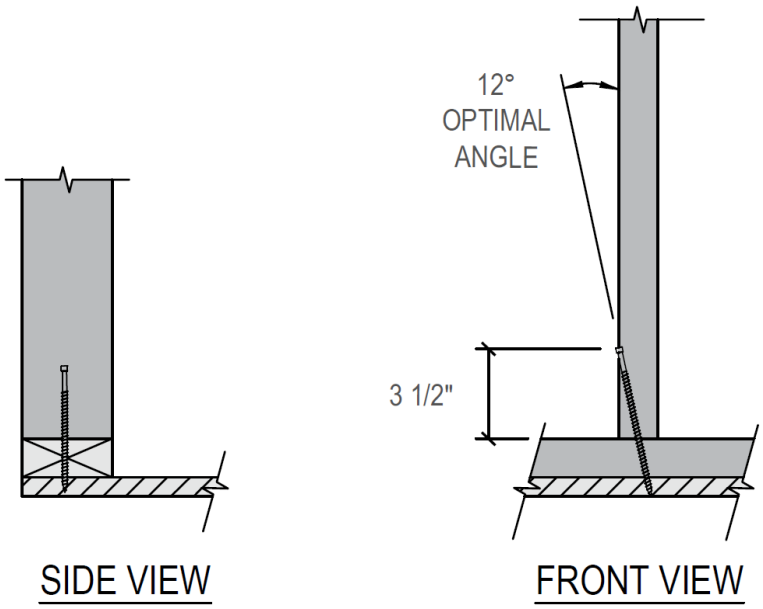

Figure 18. Stud to Bottom Plate – Single FrameFAST Installation

6.3.6.2.2 For connections using two fasteners, see **Figure 19** and **Figure 20** for installation details.

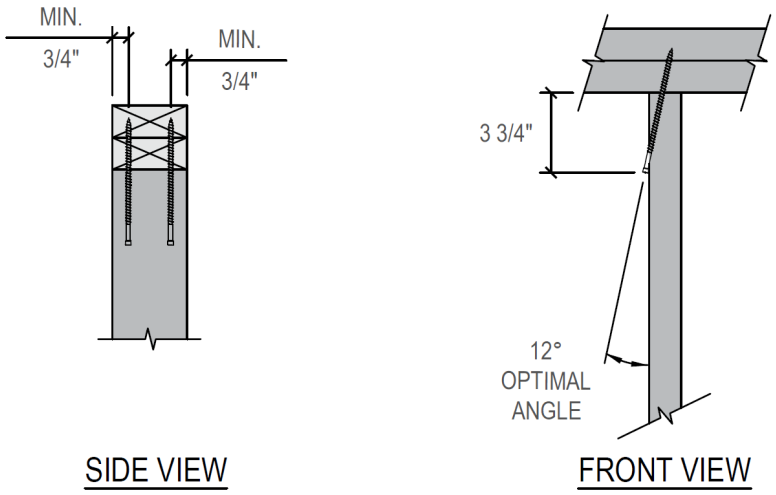

Figure 19. Stud-to Single or Double Top Plate – Two FrameFAST Installation

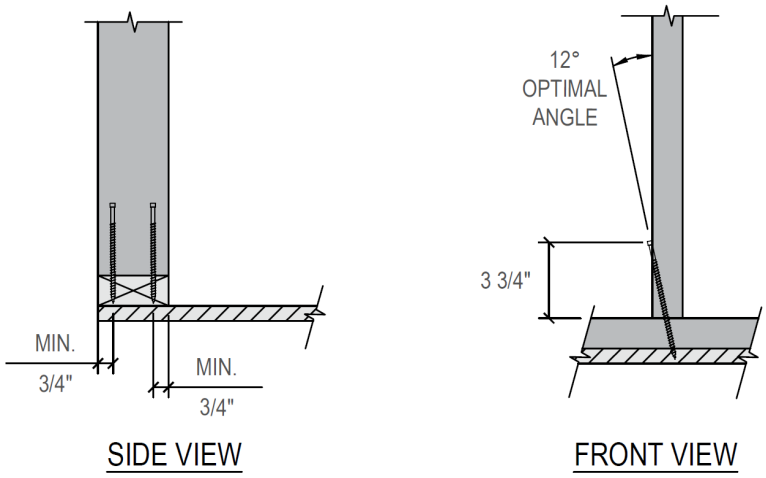

Figure 20. Stud to Bottom Plate – Two FrameFAST Installation

6.3.6.2.3 For connections using three fasteners, see **Figure 21** and **Figure 22** for installation details.

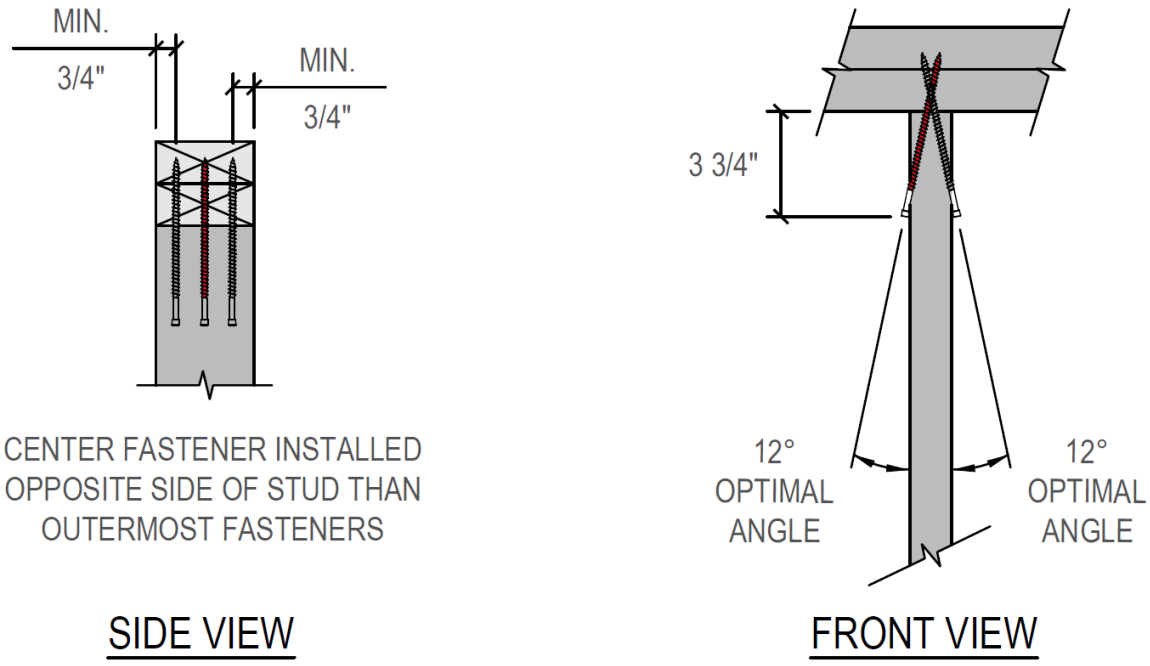

Figure 21. Stud-to Single or Double Top Plate – Three FrameFAST Installation

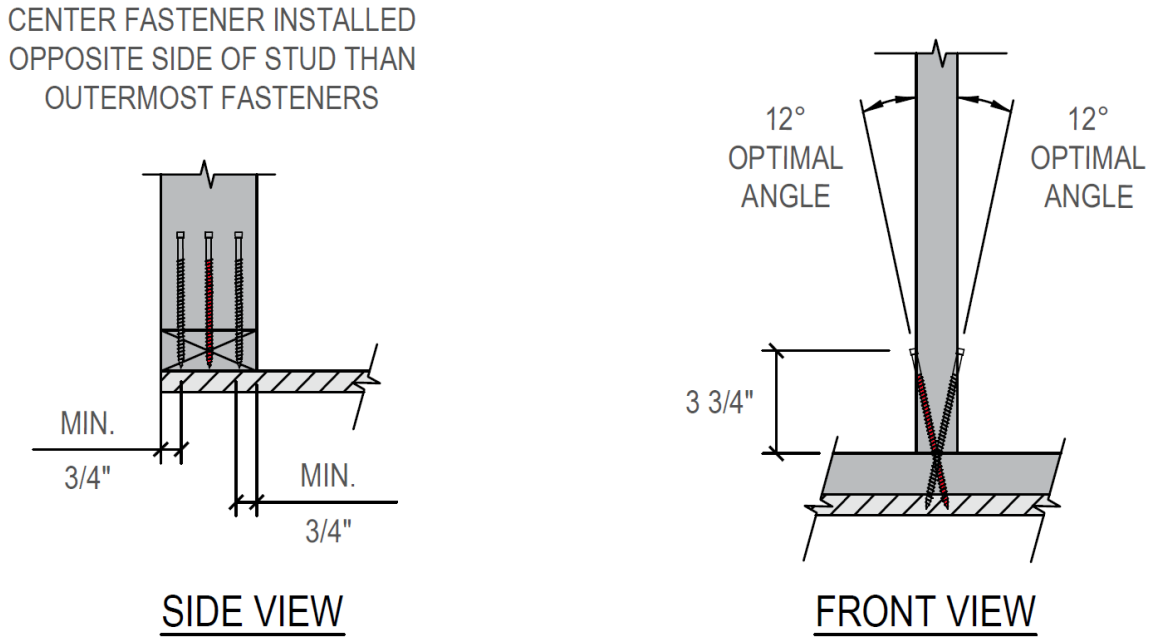

Figure 22. Stud to Bottom Plate – Three FrameFAST Installation

6.3.6.3 Allowable design loads for this application are provided in **Table 6**.

Table 6. Allowable Loads for Uplift and Lateral Resistance of FrameFAST Fasteners in Stud to Plate Connections[3,4,5]

Wood Species[1,2]	Allowable Uplift and Lateral (F2) Based on Number of Fasteners (lb)					
	Single Fastener		2 Fasteners		3 Fasteners	
	Uplift	Lateral – F2	Uplift	Lateral – F2	Uplift	Lateral – F2
SP (0.55)	665	295	1,165	590	1,665	885
DF-L (0.50)	560	275	1,075	550	1,590	825
SPF (0.42)	425	230	765	460	1,105	690

SI: 1 lb = 4.45 N

1. For applications involving members with different specific gravities, use the allowable load corresponding to the lowest specific gravity.
2. Dimensional lumber members shall be minimum of 2" nominal thickness.
3. Design values are based on a load duration factor, C_D, of 1.6. No further duration of load increases permitted. Reduced design values for other load durations as applicable.
4. Use a reduction factor of 0.80 when connecting each ply of multi-ply stud columns to the top plate.
5. Two 10d (0.131" x 3") nails shall be installed through the lower top plate and into the studs.

6.3.7 To attach two-ply or three-ply carrying beams to the top of supporting nominal 4x or 6x posts.

6.3.7.1 For 2-ply beams that are attached to 4x posts, see **Figure 23** for installation details.

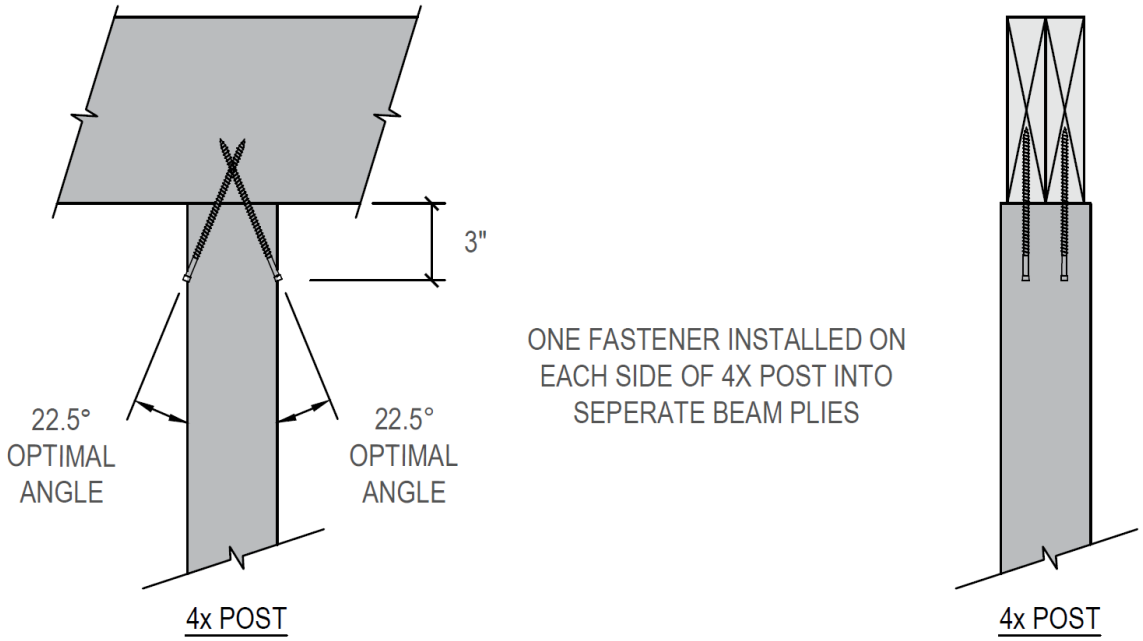

Figure 23. 4x Post to 2-Ply Beam using Two FrameFAST Fasteners

6.3.7.2 For 2-ply beams that are attached to 6x posts, see **Figure 24** for installation details.

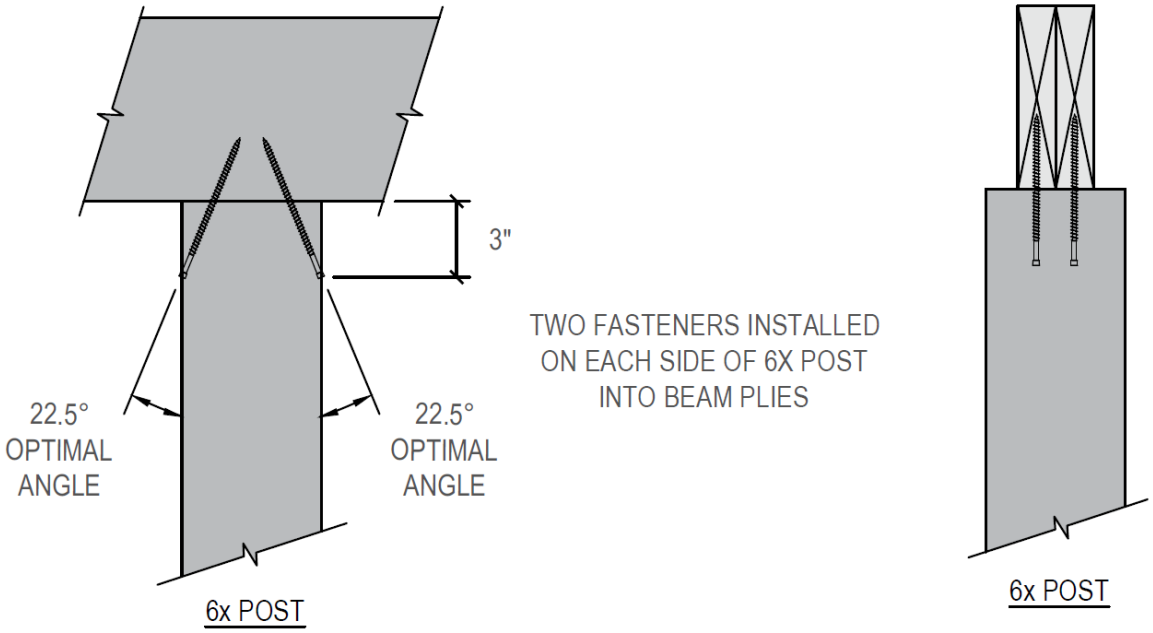

Figure 24. 6x Post to 2-Ply Beam using Four FrameFAST

6.3.7.3 For 3-ply beams that are attached to 6x posts, see **Figure 25** for installation details.

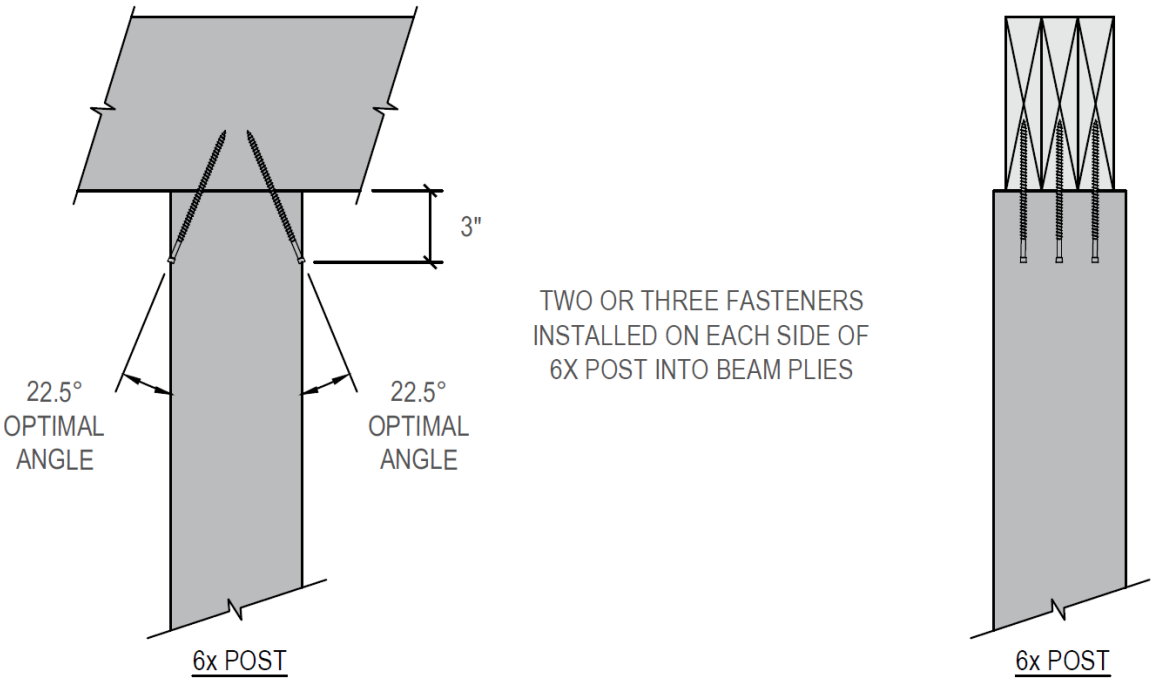

Figure 25. 6x Post to 3-Ply Beam using Six FrameFAST

6.3.7.4 Allowable design loads for these applications are provided in **Table 7**.

Table 7. Allowable Loads for Uplift and Lateral Resistance of FrameFAST Fasteners in Post to Beam Connections

Configuration	Number of Fasteners	Wood Species	Allowable Loads (lb)	
			Uplift	Lateral
2-Ply Beam	2	SP (0.55)	2,130	1,055
		DF-L (0.50)	1,790	960
		SPF (0.42)	1,090	910
2-Ply Beam	4	SP (0.55)	3,405	1,690
		DF-L (0.50)	2,865	1,535
		SPF (0.42)	1,740	1,460
3-Ply Beam	6	SP (0.55)	5,105	2,535
		DF-L (0.50)	4,300	2,305
		SPF (0.42)	2,610	2,190

SI: 1 lb = 4.45 N

1. For applications involving members with different specific gravities, use the allowable load corresponding to the lowest specific gravity.
2. Dimensional lumber members shall be minimum of 2" nominal thickness.
3. Design values are based on a load duration factor, C_D, of 1.6. No further duration of load increases permitted. Reduced design values for other load durations as applicable.
4. Use a reduction factor of 0.80 when connecting each ply of multi-ply beams to the post.

6.3.8 To attach top or bottom wall plates to rim boards:

6.3.8.1 Allowable design loads are applicable for both single bottom plate with OSB subfloor to rim board applications, and to single or double top plate to blocking/rim board applications. See **Figure 26** for installation details.

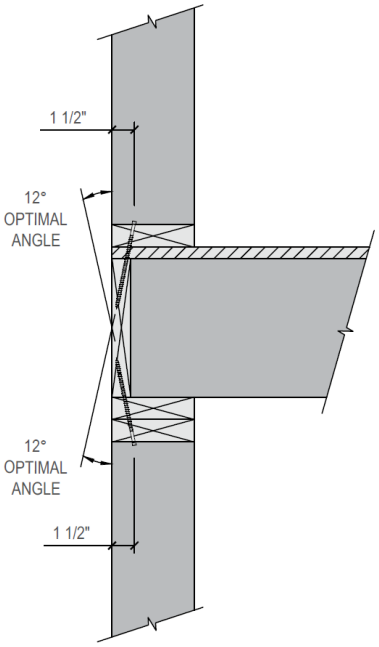

Figure 26. Installation of FrameFAST in Plate to Rim Connections

6.3.8.2 Allowable design loads for these applications are provided in **Table 8**.

Table 8. Allowable Loads for Uplift and Lateral Resistance of FrameFAST Fasteners in Plate to Rim Connections

Load Direction	Configuration	Allowable Design Value (lb)[1,2]					
		Rim Board Species (Specific Gravity or Equivalent Specific Gravity)					
		SPF (0.42)	DF-L (0.50)	SP (0.55)	1 1/8" OSB (0.50)[5]	1 1/4" LSL (0.46)[3]	1 1/4" LVL (0.47)[3]
Uplift	Single Plate to Rim Board	210	245	325	195	165	110
	Double Plate to Rim Board	475	590	595	360	610	570
Load Direction	**Configuration**	**SPF (0.42)**	**DF-L (0.50)**	**SP (0.55)**	**1 1/8" OSB (0.50)[6]**	**1 1/4" LSL (0.50)[4]**	**1 1/4" LVL (0.50)[4]**
Lateral	Single Plate to Rim Board	340	265	395	340	210	320
	Double Plate to Rim Board	495	595	650	230	485	440
	Double Plate to Blocking[7]	495	595	650	230	485	440

SI: 1 lb = 4.45 N

1. For applications involving members with different specific gravities, G, use the allowable load corresponding to the lowest specific gravity. For EWP rim boards (e.g., OSB, LSL, LVL), the top/bottom plates shall be minimum SPF dimensional lumber. Dimensional lumber members shall be minimum of 2" nominal thickness.
2. Design values are based on a load duration factor, C_D, of 1.6. No further duration of load increases permitted. Reduced design values for other load durations as applicable.
3. Equivalent specific gravity values are for withdrawal of nails or screws installed in edge.
4. Equivalent specific gravity values are dowel bearing of nails or screws installed in edge.
5. Equivalent specific gravity values are for withdrawal of nails installed in face.
6. Equivalent specific gravity values are dowel bearing of nails or screws installed in face.
7. See **Figure 5** for blocking requirements.

6.4 See **Section 9** for additional fastener installation requirements.

6.5 When needed, consult a professional engineer for complex design conditions.

6.6 Alternative techniques shall be permitted in accordance with accepted engineering practice and experience. These provisions for the use of alternative materials, designs, and methods of construction are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed herein. This includes, but is not limited to, the following areas of engineering: mechanics of materials, structures, building science, and fire science.

7 Certified Performance[27]

7.1 All construction methods shall conform to accepted engineering practices to ensure durable, livable, and safe construction and shall demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.[28]

7.2 The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur.[29]

8 Regulatory Evaluation and Accepted Engineering Practice

8.1 FrameFAST Fasteners comply with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:

8.1.1 Uplift and lateral resistance in stud to plate connections in accordance with ASTM D1761

8.1.2 Uplift and lateral resistance in plate to rim board connections in accordance with ASTM D1761

8.2 Any building code, regulation and/or accepted engineering evaluations (e.g., research reports, duly authenticated reports, etc.) that are conducted for this Listing were performed by DrJ, which is an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDP or approved sources. DrJ is qualified[30] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[31] respectively.

8.3 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise, which is also its areas of professional engineering competence.

9 Installation

9.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report, and the applicable building code.

9.2 In the event of a conflict between the manufacturer installation instructions and this report, contact the manufacturer for counsel on the proper installation method.

9.3 FrameFAST Fasteners shall be installed at the reference angle and offset distance specific to the application detail to obtain the corresponding tabulated loads in **Section 6**.

9.4 Use a $^1/_2$" low-RPM/high-torque drill to drive the fastener head flush with the surface of the wall framing or wood structural framing member.

9.4.1 The head of the fastener may be left proud a maximum of $^3/_8$" for inspectability without a reduction in the printed allowable loads, provided the minimum embedment requirements of the applicable tables in **Section 6** are maintained.

10 Substantiating Data

10.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:

10.1.1 Uplift and lateral resistance in stud to plate connections in accordance with ASTM D1761

10.1.2 Uplift and lateral resistance in plate to rim board connections in accordance with ASTM D1761

10.1.3 Additional tabulated applications in **Section 6** are based on engineering analysis, and/or accepted engineering practice

10.2 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies, approved sources, and/or an RDP. Accuracy of external test data and resulting analysis is relied upon.

10.3 Where applicable, testing and/or engineering analysis are based upon provisions that have been codified into law through state or local adoption of regulations and standards. The developers of these regulations and standards are responsible for the reliability of published content. DrJ's engineering practice may use a regulation-adopted provision as the control. A regulation-endorsed control versus a simulation of the conditions of application to occur establishes a new material as being equivalent to the regulatory provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.

10.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, or duly authenticated reports from approved agencies and/or approved sources provided by the supplier. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this duly authenticated report, may be dependent upon published design properties by others.

10.5 *Testing and Engineering Analysis*

10.5.1 The strength, rigidity, and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.[32]

10.6 Where additional condition of use and/or regulatory compliance information is required, please search for FrameFAST Fasteners on the DrJ Certification website.

11 Findings

11.1 As outlined in **Section 6**, FrameFAST Fasteners have performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.

11.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, FrameFAST Fasteners shall be approved for the following applications to provide uplift and or lateral load resistance due to wind and seismic forces:

11.2.1 As an acceptable means of attaching metal plate connected wood trusses, roof rafters, and ceiling or floor joists to the top wall plates or supporting beams as provided in **Table 2**, **Table 3**, **Table 4**, and **Table 5**.

11.2.2 As an acceptable means of attaching studs to top/bottom plate in accordance with **Table 6**.

11.2.3 As an acceptable means of attaching posts/columns to multi-ply beams in accordance with **Table 7**.

11.2.4 As an acceptable means of attaching top/bottom wall plate to rim board/ribbon board in accordance with **Table 8**.

11.3 Unless exempt by state statute, when FrameFAST Fasteners are to be used as a structural and/or building envelope component in the design of a specific building, the design shall be performed by an RDP.

11.4 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from FastenMaster.

11.5 IBC Section 104.2.3[33] (IRC Section R104.2.2[34] and IFC Section 104.2.3[35] are similar) in pertinent part state:

> **104.2.3 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 is not specifically prohibited by this code and has been approved.

11.6 **Approved:**[36] Building regulations require that the building official shall accept duly authenticated reports.[37]

11.6.1 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited.

11.6.2 An approved source is *"approved"* when an RDP is properly licensed to transact engineering commerce.

11.6.3 Federal law, Title 18 US Code Section 242, requires that, where the alternative product, material, service, design, assembly, and/or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. Denial without written reason deprives a protected right to free and fair competition in the marketplace.

11.7 DrJ is a licensed engineering company, employs licensed RDPs and is an ANAB Accredited Product Certification Body – Accreditation #1131.

11.8 Through the IAF Multilateral Arrangement (MLA), this duly authenticated report can be used to obtain product approval in any jurisdiction or country because all ANAB ISO/IEC 17065 duly authenticated reports are equivalent.[38]

12 Conditions of Use

12.1 As defined in **Section 6**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.

12.2 Loads applied shall remain within the limits recommended by the manufacturer or as defined in this report.

12.3 FrameFAST Fasteners covered in this report shall be installed in accordance with this report and the manufacturer installation instructions.

12.3.1 For conditions not covered in this report, connections shall be designed in accordance with accepted engineering practice.

12.4 Structural framing members connected with FrameFAST Fasteners shall be designed in accordance with the requirements of their specific design standards/specifications as referenced in the building code adopted by the authority having jurisdiction (AHJ) in which the project is to be constructed.

12.5 When required by adopted legislation and enforced by the building official, also known as the Authority Having Jurisdiction (AHJ) in which the project is to be constructed:

12.5.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.

12.5.2 This report and the installation instructions shall be submitted at the time of permit application.

12.5.3 This innovative product has an internal quality control program and a third-party quality assurance program.

12.5.4 At a minimum, this innovative product shall be installed per **Section 9**.

12.5.5 The review of this report by the AHJ shall comply with IBC Section 104.2.3.2 and IBC Section 105.3.1.

12.5.6 This innovative product has an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.7.2, IBC Section 110.4, IBC Section 1703, IRC Section R104.7.2, and IRC Section R109.2.

12.5.7 The application of this innovative product in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspection as required by IBC Section 110.3, IRC Section R109.2, and any other regulatory requirements that may apply.

12.6 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, *"the building official shall make, or cause to be made, the necessary tests and investigations; or the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 104.2.3"*, all of IBC Section 104, and IBC Section 105.3.

12.7 Design loads shall be determined in accordance with the regulations adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., owner or RDP).

12.8 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.

13 Identification

13.1 FastenMaster FrameFAST Structural Wood Screws (FrameFAST Fasteners), as listed in **Section 1.1**, are identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.

13.2 Additional technical information can be found at www.fastenmaster.com/products/framefastscrew.

14 Review Schedule

14.1 This report is subject to periodic review and revision. For the latest version, visit www.drjcertification.org.

14.2 For information on the status of this report, please contact DrJ Certification.

Issue Date: December 29, 2020
Supplement Revision Date: April 17, 2026
Subject to Renewal: July 1, 2027

FBC Supplement to Report Number 1503-03

REPORT HOLDER: FastenMaster

1 Evaluation Subject

1.1 FastenMaster FrameFAST Structural Wood Screws (FrameFAST Fasteners)

2 Purpose and Scope

2.1 Purpose

2.1.1 The purpose of this Report Supplement is to show FrameFAST Fasteners, recognized in Report Number 1503-03, have also been evaluated for compliance with the codes listed below as adopted by the Florida Building Commission.

2.2 *Applicable Code Editions*

2.2.1 *FBC-B—20, 23: Florida Building Code – Building (FL 21662)*

2.2.2 *FBC-R—20, 23: Florida Building Code – Residential (FL 21662)*

3 Conclusions

3.1 FrameFAST Fasteners, described in Report Number 1503-03, comply with the FBC-B and FBC-R and are subject to the conditions of use described in this supplement.

3.2 Where there are variations between the IBC and IRC and the FBC-B and FBC-R applicable to this report, they are listed here:

3.2.1 FBC-B Section 104 is reserved.

3.2.2 FBC-B Section 104.6 is reserved and replaces IBC Section 104.4.

3.2.3 FBC-B Section 104.11 replaces IBC Section 104.2.3 and Section 104.2.3.2.

3.2.4 FBC-B Section 105.3 replaces IBC Section 105.3.

3.2.5 FBC-B Section 105.3.1 replaces IBC Section 105.3.1.

3.2.6 FBC-B Section 110.3 replaces IBC Section 110.3.

3.2.7 FBC-B Section 110.4 is reserved and replaces IBC Section 110.4.

3.2.8 FBC-B Section 1609 is reserved and replaces IBC Section 1609.

3.2.9 FBC-B Section 1613 is reserved and replaces IBC Section 1613.

3.2.10 FBC-B Section 1703 replaces IBC Section 1703.

3.2.11 FBC-B Section 1707.1 replaces IBC Section 1707.1.

3.2.12 FBC-B Section 2308 is reserved and replaces IBC Section 2308.

3.2.13 FBC-R Section R104 and Section R109 are reserved.

3.2.14 FBC-R Section R301.2.1 replaces IRC Section R301.2.1.

3.2.15 FBC-R Section R301.2.2 is reserved and replaces IRC Section R301.2.2.

3.2.16 FBC-R Section R602 replaces IRC Section R602.

4 Conditions of Use

4.1 FrameFAST Fasteners, described in Report Number 1503-03, must comply with all of the following conditions:

4.1.1 All applicable sections in Report Number 1503-03.

4.1.2 The design, installation, and inspections are in accordance with additional requirements of FBC-B Chapter 16 and Chapter 17, as applicable.

Notes

1 For more information, visit drjcertification.org or call us at 608-310-6748.

2 Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of TPI 1, the NDS, AISI S202, US professional engineering law, Canadian building code, Canada professional engineering law, Qualtim External Appendix A: Definitions/Commentary, Qualtim External Appendix B: Project/Deliverables, Qualtim External Appendix C: Intellectual Property and Trade Secrets, definitions created within Design Drawings and/or definitions within Reference Sheets. Beyond this, terms not defined shall have ordinarily accepted meanings as the context implies. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

3 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1702

4 Alternative Materials, Design and Methods of Construction and Equipment: The provisions of any regulation code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by a regulation. Please review https://www.justice.gov/atr/mission and https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3

5 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests

6 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design of accepted engineering practice. https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.1:~:text=Conformance%20to%20Standards-,The%20design%20strengths%20and%20permissible%20stresses,-of%20any%20structural

7 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1:~:text=the%20building%20official%20shall%20make%2C%20or%20cause%20to%20be%20made%2C%20the%20necessary%20tests%20and%20investigations%3B%20or%20the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%20and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.2.3.

8 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4.2

9 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_agency

10 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_source

11 https://www.law.cornell.edu/uscode/text/18/1832 (b) Any organization that commits any offense described in subsection (a) shall be fined not more than the greater of $5,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. The federal government and each state have a public records act. To follow DTSA and comply state public records and trade secret legislation requires approval through ANAB ISO/IEC 17065 accredited certification bodies or approved sources. For more information, please review this website: Intellectual Property and Trade Secrets.

12 https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional AND https://apassociation.org/list-of-engineering-boards-in-each-state-archive/

13 https://www.cbitest.com/accreditation/

14 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.1:~:text=directed%20to%20enforce%20the%20provisions%20of%20this%20code

15 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3 AND https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#105.3.1

16 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

17 https://iaf.nu/en/about-iaf-mla/#:~:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%2C%20it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope

18 True for all ANAB accredited product evaluation agencies and all International Trade Agreements.

19 https://www.justice.gov/crt/deprivation-rights-under-color-law AND https://www.justice.gov/atr/mission

20 Unless otherwise noted, the links referenced herein use un-amended versions of the 2024 International Code Council (ICC) 2024 International Code Council (ICC) model codes as foundation references. Mississippi versions of the IBC 2024 and the IRC 2024 are un-amended. This material, product, design, service and/or method of construction also complies with the 2000-2012 versions of the referenced codes and the standards referenced therein. As pertinent to this technical and code compliance evaluation, CBI and/or DrJ staff have reviewed any state or local regulatory amendments to assure this report is in compliance.

21 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by the local jurisdiction. https://up.codes/codes/general

22 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by state. https://up.codes/codes/general

23 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14

24 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

25 All references to the FBC-B and FBC-R are the same as the 2024 IBC and 2024 IRC unless otherwise noted in the Florida Supplement at the end of this report.

26 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2(Listed%20or%20certified); https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#listed AND https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#labeled

27 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4

28 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=All%20construction%20methods%20shall%20be%20in%20conformance%20with%20accepted%20engineering%20practices%20to%20insure%20durable%2C%20livable%2C%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the%20various%20trades

29 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=The%20strength%20and%20rigidity%20of%20the%20component%20parts%20and/or%20the%20integrated%20structure%20shall%20be%20determined%20by%20engineering%20analysis%20or%20by%20suitable%20load%20tests%20to%20simulate%20the%20actual%20loads%20and%20conditions%20of%20application%20that%20occur

[30] Qualification is performed by a legislatively defined Accreditation Body. ANSI National Accreditation Board (ANAB) is the largest independent accreditation body in North America and provides services in more than 75 countries. DrJ is an ANAB accredited product certification body.

[31] https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date-,Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH

[32] See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition: https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

[33] 2021 IBC Section 104.11

[34] 2021 IRC Section R104.11

[35] 2018: https://up.codes/viewer/wyoming/ifc-2018/chapter/1/scope-and-administration#104.9 AND 2021: https://up.codes/viewer/wyoming/ibc-2021/chapter/1/scope-and-administration#104.11

[36] Approved is an adjective that modifies the noun after it. For example, Approved Agency means that the Agency is accepted officially as being suitable in a particular situation. This example conforms to IBC/IRC/IFC Section 201.4 (https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#201.4) where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

[37] https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

[38] Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements.