Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

Report No: 2204-03

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Subject to Renewal: October 1, 2027

Truss/Rafter/Joist to Wall Top Plate Connections with GripRite® Structural Screws

Trade Secret Report Holder:

PrimeSource Building Products, Inc.

Phone: 972-999-8500 Website: www.primesourcebp.com or grip-rite.com Email: gattos@primesourcebp.com

CSI Designations:

DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES

Section: 06 00 90 - Wood and Plastic Fastenings

Section: 06 05 23 - Wood, Plastic, and Composite Fastenings

1 Innovative Product Evaluated[1]

1.1 1/4" GripRite Structural Screws

2 Product Description and Materials

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

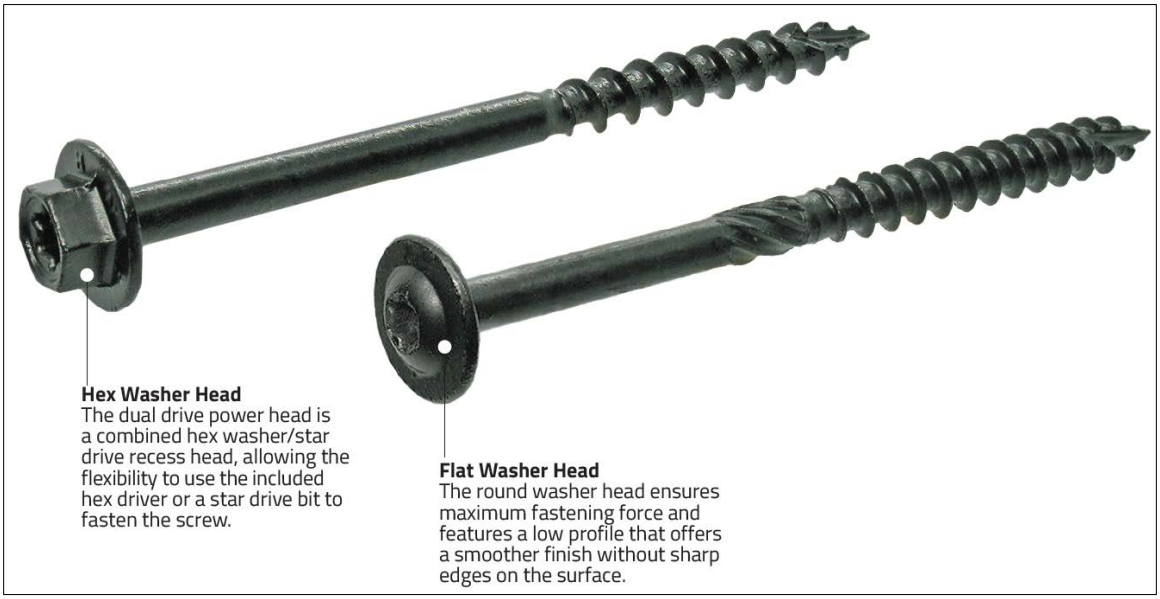


Figure 1. GripRite Structural Screws with Hex Head (Left) and Flat Head (Right)

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2.2 1/4" GripRite Structural Screws are partially threaded, self-drilling screws with flat heads and a star shaped driving recess or hex-washer heads. The screws have a Type 17 point. The screws have a reamer knurl between the screw thread and the smooth portion of the shank. For this application, 4" and 6" lengths were evaluated.

2.3 1/4" GripRite Structural Screws are formed from carbon steel wire, hardened after forming, and then coated with a proprietary coating. The coating consists of a layer of zinc and a proprietary black outer coating.

2.4 *Treated Wood Applications*

2.4.1 1/4" GripRite Structural Screws may be used in preservative-treated and fire-resistant treated lumber as alternatives to hot-dip galvanized fasteners prescribed in IBC Section 2304.10.6.[2] The 1/4" GripRite Structural Screws have been evaluated for use in wood treated with ACQ-D preservatives with a maximum retention of 0.40-pcf.

2.4.2 Corrosion resistance applications are limited to the following:

2.4.2.1 Where equilibrium moisture content of the chemically treated wood meets the dry service conditions as described in the NDS.

2.4.2.2 Exposure is freshwater and chemically treated wood (saltwater exposure is not covered under this report).

2.4.3 Fastener design values for preservative-treated and fire-resistant treated lumber must be reduced as stated by the manufacturer of the lumber treatment.

2.5 *Wood Material*

2.5.1 Wood main and side members must be solid-sawn lumber or boards having an assigned specific gravity as given in the respective tables of this report.

2.6 The 1/4" GripRite Structural Screws evaluated in this report are specified in **Table 1**.

Table 1. 1/4" GripRite Structural Screws Properties

Fastener Designation	Head			Length (in)		Diameter (in)			Bending Yield Strength,[3] F_{yb}, (psi)	Allowable Steel Strength (lbs)	
	Style	Drive System	Diameter (in)	Fastener[1]	Thread[2]	Shank	Minor	Major		Tensile	Shear
1/4" x 4"	Hex Washer	T-20	0.415	4	2	0.166	0.148	0.234	220,000	1,155	645
1/4" x 6"				6	3 1/4						
1/4" x 4"	Flat	T-25	0.533	4	2	0.166	0.148	0.234	220,000	1,155	645
1/4" x 6"				6	3 1/4						

SI: 1 in = 25.4 mm, 1 lb = 4.45 N, 1-psi = 0.00689 MPa

1. Fastener length is measured from the underside of the head to the tip.
2. Thread length includes tapered tip.
3. Bending yield strength, F_{yb}, is determined in accordance with ASTM F1575-21 using minor thread diameter.

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

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3 Definitions[3]

3.1 New Materials[4] 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.[5] The design strength and permissible stresses shall be established by tests[6] and/or engineering analysis.[7]

3.2 Duly authenticated reports[8] and research reports[9] are test reports and related engineering evaluations that are written by an approved agency[10] and/or an approved source.[11]

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).[12]

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.[13]

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[14] ISO/IEC 17025 and ISO/IEC 17020 accredited.

3.6 The regulatory authority shall enforce[15] 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[16] 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.[17]

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.[18] Thus, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent,[19] 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.[20]

4 Applicable Local, State, and Federal Approvals; Standards; Regulations[21]

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.[22]

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.[23]

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4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[24] and Part 3280[25] 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®*

4.3 *Standards*

4.3.1 *AISI S904: Standard Test Methods for Determining the Tensile and Shear of Screws*

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

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

4.3.4 *ASTM A510: Standard Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel*

4.3.5 *ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus*

4.3.6 *ASTM D1761: Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials*

4.3.7 *ASTM F1575-21: Standard Test Method for Determining Bending Yield Moment of Nails, Spikes, and Dowel-type Threaded Fasteners*

4.3.8 *ASTM G85: Standard Practice for Modified Salt Spray (Fog) Testing*

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 an 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 The 1/4" GripRite Structural Screws described in this report are used in construction of walls that meet the requirements of IBC Section 2308 or IRC Section R602 for the following applications:

6.1.1 To attach minimum 1 1/2" thick wood trusses, rafters, or floor joists to wood walls.

6.1.2 To attach minimum 1 1/2" thick wood gable end trusses to wood walls.

6.2 Allowable design loads are applicable to fasteners installed in accordance with **Section 9**.

6.3 At a minimum, walls shall consist of a single or double top plate installed in accordance with IBC Section 2308.9.3.2[27] or IRC Section R602.3.2.

6.4 The 1/4" GripRite Structural Screws described in this report are used in buildings requiring design in accordance with IBC Section 1609, or wind analysis in accordance with IRC Section R301.2.1.

6.5 The 1/4" GripRite Structural Screws described in this report are used in buildings requiring design in accordance with IBC Section 1613, or seismic analysis in accordance with IRC Section R301.2.2.

6.6 To maintain a continuous uplift load path, connections in the same area must be stacked on the same side of the wall (i.e., rafter to top plate connection and top plate to stud connection).

6.7 Allowable design loads for uplift and lateral resistance for truss, rafter, and joist to top plate connections are provided in **Table 2**.

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6.8 Loads parallel to the wall are labeled F1 and loads perpendicular to the wall are labeled F2. See **Figure 2** for load directions.

6.9 Allowable design loads are applicable to fasteners installed in accordance with **Section 9** in top plate applications.

Table 2. Allowable Uplift and Lateral Loads for Fasteners in Truss/Rafter/Joist to Wall Top Plate Connections

Fastener Designation	Main Member[1,2]	Minimum Main Member Penetration (in)	Top Plate	Fastener Angle to Vertical	Allowable Loads[3] (lb)		
					Wood Species[4] (Specific Gravity)		
					SPF (0.42)		
					Uplift	F1	F2
1/4" x 4"	Truss/Rafter/Joist[5]	2 1/4	Single	22.5°	420	390	400
				0°	595	390	455
1/4" x 6"		2 3/4	Double	22.5°	495	390	560
				0°	635	390	575
1/4" x 4"	Gable End Truss	2 1/2	Single	0°	595	455	390
1/4" x 6"		3	Double	0°	635	575	390

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

1. Gable end truss, truss, rafter, or floor joist members shall be a minimum of 2" nominal thickness. Design of gable truss, truss, rafter, or floor joist is by others.
2. See Figure 2 for truss, rafter, or floor joist load directions, and Figure 3 for gable end truss load directions. See Figure 3, Figure 4, Figure 5, and Figure 6 for installation details.
3. Includes 1.6 duration of load increase for wind and seismic. No further duration of load increases permitted. Reduce design values for other load durations as applicable.
4. 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.
5. Install fastener at an upward angle from the vertical of 20° to 30° (22.5° is optimal) or 0° (See Figure 4 and Figure 5). For installation between 20° and 30°, design values for 22.5° may be used.

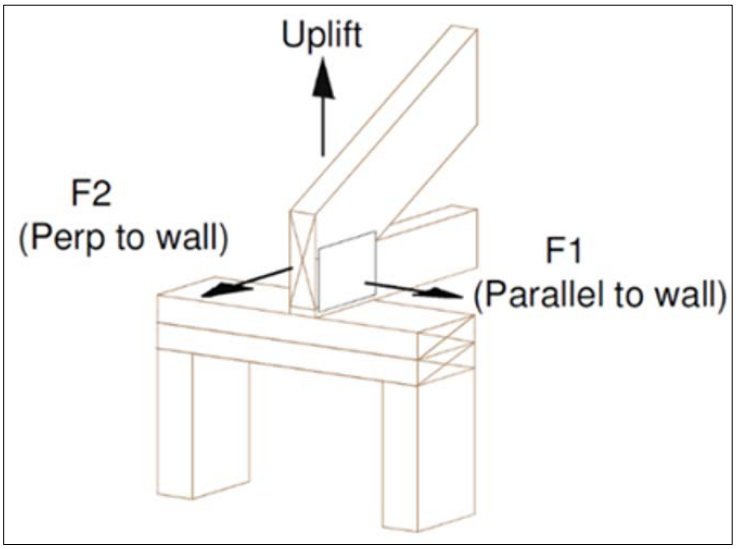


Figure 2. Uplift and Lateral Load Orientations for Truss, Rafter, and Joist

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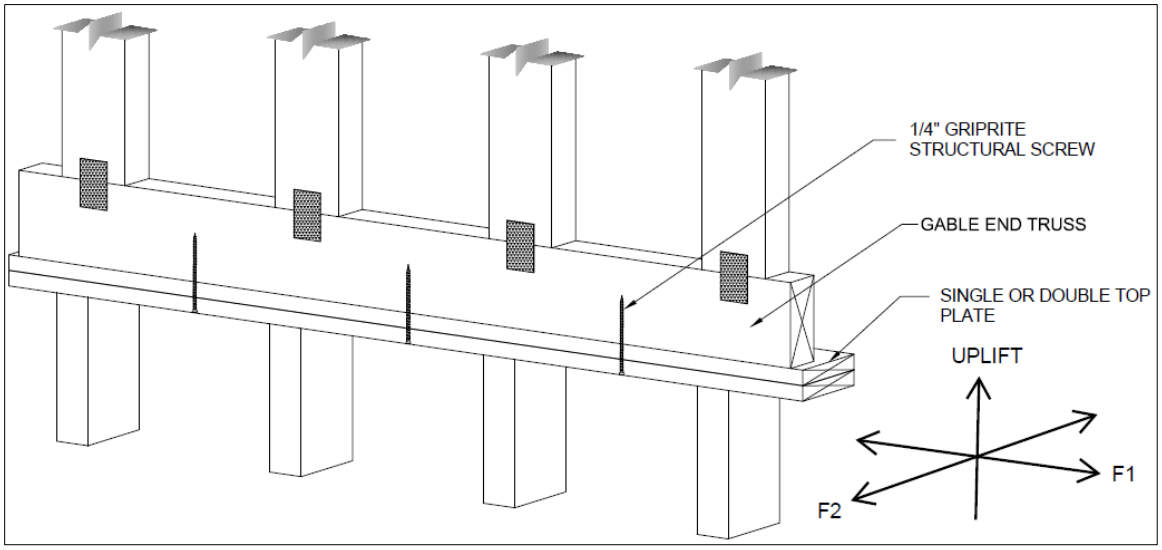


Figure 3. Gable End Truss to Top Plate - Uplift and Lateral Load (F1 and F2) Directions

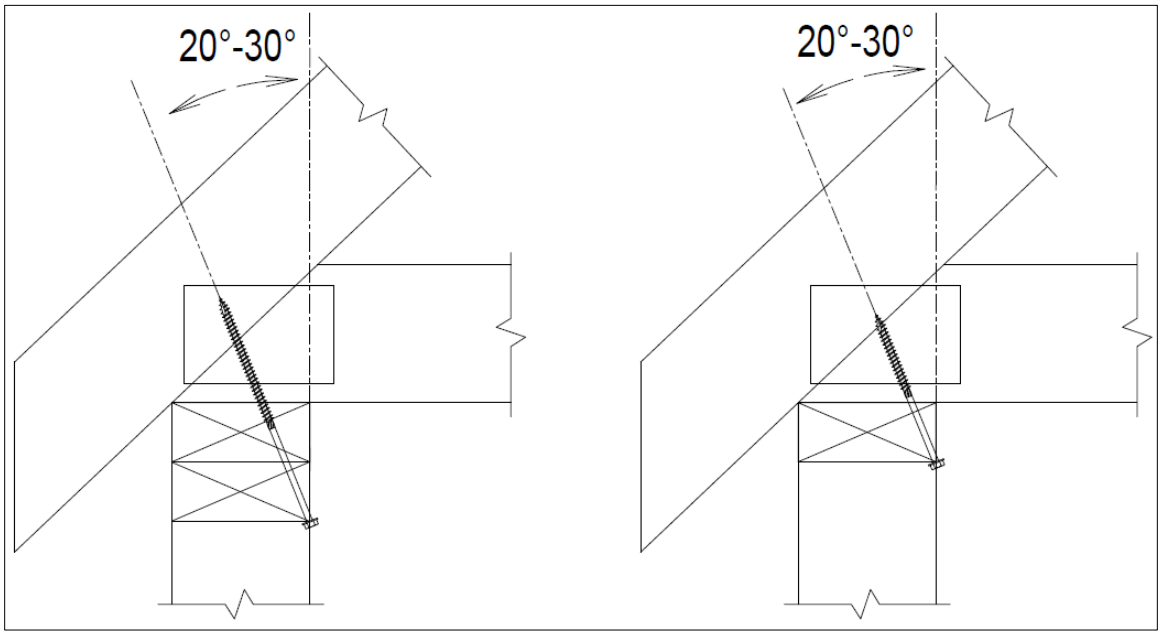


Figure 4. Installation of Fasteners at an Angle in Top Plate to Truss/Rafter/Joist Applications

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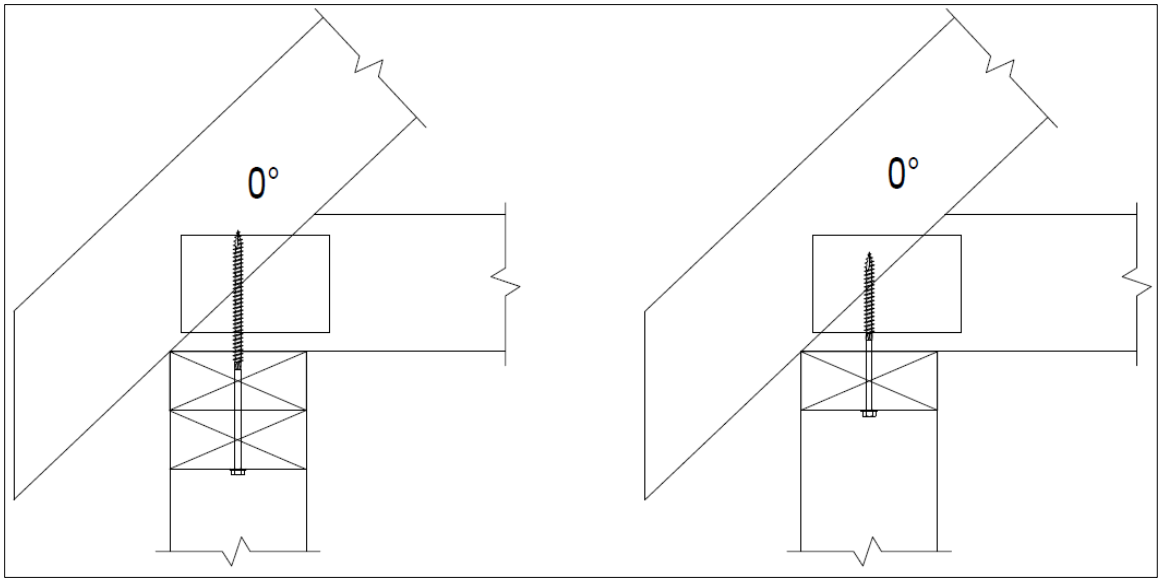


Figure 5. Installation of Fasteners in Top Plate Perpendicular to Truss/Rafter/Joist Applications

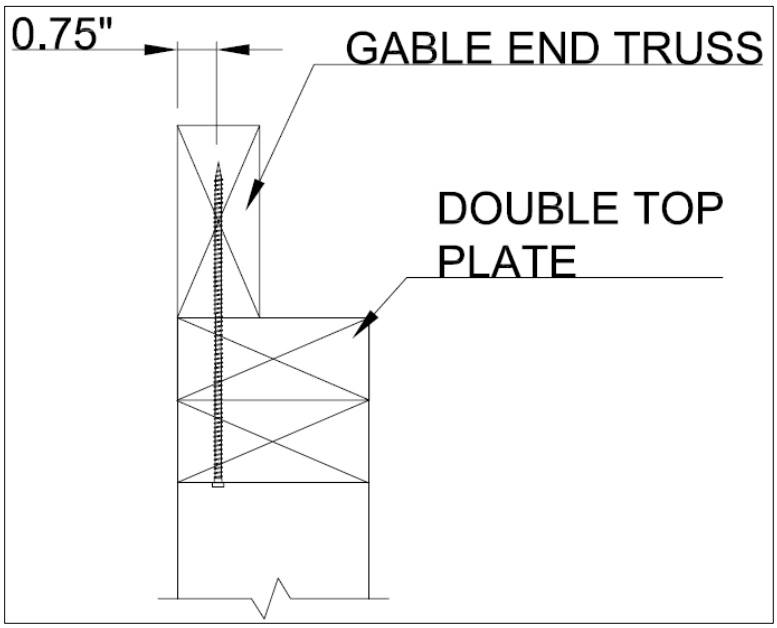


Figure 6. Gable End Truss to Top Plate Installation Configuration

6.10 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.

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7 Certified Performance[28]

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.[29]

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.[30]

8 Regulatory Evaluation and Accepted Engineering Practice

8.1 1/4" GripRite Structural Screws comply with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:

8.1.1 1/4" GripRite Structural Screws were evaluated as an alternate means of attaching metal plate connected wood trusses, rafters, or floor joists to the tops of walls to provide uplift and lateral load resistance. The fasteners were evaluated under the following conditions:

8.1.1.1 Shear strength for use as an alternate to toenail connections, hurricane, and seismic clip/straps or nails in shear (lateral) load applications either parallel or perpendicular to wood grain.

8.1.1.2 Withdrawal strength for use as an alternative to toenail connections, metal hurricane, and seismic clip/straps or nails in tension (uplift) load applications.

8.1.1.3 Head pull-through strength for use as an alternative to toenail connections, hurricane, and seismic clips/straps or nails in tension (uplift) load application.

8.1.2 Connections other than those addressed in this section are outside the scope of this report.

8.1.3 Use of fasteners in locations exposed to saltwater or saltwater spray is outside the scope of this report.

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[31] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[32] 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 *Truss/Rafter/Joist to Top Plate Installation*

9.3.1 Install 1/4" GripRite Structural Screws upward into the center of the truss, rafter, or joist through the wall top plates or wood structural framing member at the bottom corner of the top plate(s). The fastener should be installed at an upward angle from the vertical of 20° to 30° (see **Figure 4**) and should penetrate the truss, rafter or joist within 1/4" of the centerline. Fasteners located between studs may be installed perpendicular to the face of the top plate (see **Figure 5**).

9.3.1.1 If the truss, rafter, or floor joist is located directly over a top plate splice, offset the fastener 1/4" to one side of the splice.

9.3.2 Minimum penetration into truss/gable truss/rafter/joist using a single top plate connection is 2.5".

9.3.3 Minimum penetration into truss/gable truss/rafter/joist using a double top plate connection is 3".

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9.4 *Gable End Truss to Top Plate Installation*

9.4.1 Install 1/4" GripRite Structural Screws upward into the center of the gable end truss through the wall top plates or wood structural framing member. The fastener should be installed perpendicular to the face of the top plate between studs (see **Figure 3**) and should penetrate the gable end truss within 1/4" of the centerline.

9.4.1.1 If the screw location for the gable end truss is located directly over a top plate splice or at a bottom chord splice joint, offset the fastener 1 3/4" to one side of the splice.

9.4.2 Minimum requirements for fastener spacing, edge distance, and end distance shall be in accordance with **Table 3**.

Table 3. Screw Spacing, Edge Distance, and End Distance Requirements[1,2,3]

Connection Geometry			Minimum Spacing (in)	
			0.42	0.50
End Distance	Load in Any Direction		1 3/4	1 3/4
Edge Distance	Load in Any Direction		3/4	3/4
Spacing Between Fasteners in a Row (Parallel to Grain Spacing)	Loading Parallel to Grain		3 5/8	3 5/8
	Loading Perpendicular to Grain		2 7/8	3 5/8
	Axial Loading		1 3/4	1 3/4
Spacing Between Rows (Perpendicular to Grain Spacing)	Lateral Loading	In-line rows	1 1/4	1 3/4
		Staggered rows[4]	5/8	3/4
	Axial Loading		1	1

SI: 1 in = 25.4 mm

1. Edge distances, end distances, and spacing of fasteners shall be sufficient to prevent splitting of the wood or as shown in this table, whichever is the more restrictive.
2. Wood member stresses must be checked in accordance with NDS Section 11.1.2 and NDS Appendix E. End distances, edge distances, and fastener spacing may need to be increased accordingly.
3. Values for *"Spacing between Rows or Fasteners-Staggered"* apply where the screws in adjacent rows are offset by one-half of the *"Spacing between Fasteners in a Row"*.

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 Assembly testing in accordance with ASTM D1761

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.

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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.[33]

10.6 Where additional condition of use and/or regulatory compliance information is required, please search for 1/4" GripRite Structural Screws on the DrJ Certification website.

11 Findings

11.1 As outlined in **Section 6**, 1/4" GripRite Structural Screws 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, 1/4" GripRite Structural Screws shall be approved for the following applications:

11.2.1 An acceptable alternative means of attaching metal plate connected wood trusses, gable end trusses, or floor joists to the tops of walls to provide uplift and lateral load resistance due to wind and seismic forces as provided in **Table 2**.

11.3 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from PrimeSource Building Products, Inc.

11.4 IBC Section 104.2.3[34] (IRC Section R104.2.2[35] and IFC Section 104.2.3[36] 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.

11.5 **Approved:**[37] Building regulations require that the building official shall accept duly authenticated reports.[38]

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

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

11.5.3 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.

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

11.7 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.[39]

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

12.3 Connected wood members must have a moisture content of less than or equal to nineteen percent (19%).

12.4 Use of fasteners in locations exposed to saltwater or saltwater spray is outside the scope of this report.

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

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

12.5.5 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.

12.5.6 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 $^{1}/_{4}$" GripRite Structural Screws, 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:

grip-rite.com/product/fasteners/hand-drive/screws/?_application=structural.

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.

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Notes

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

2 2018 IBC Section 2304.10.5

3 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.

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

5 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

6 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

7 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

8 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.

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

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

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

12 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.

13 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/

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

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

16 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

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

18 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

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

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

21 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.

22 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

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

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

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

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 2021 IBC Section 2308.5.3.2

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

29 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

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[30] 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

[31] 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.

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

[33] 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

[34] 2021 IBC Section 104.11

[35] 2021 IRC Section R104.11

[36] 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

[37] 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.

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

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

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