



CERTIFICATION



Approved. Sealed. Code Compliant.

Technical Evaluation Report

TER 2206-01

TrussBRACE™ Roof Truss Support

OMG®, Inc. DBA FastenMaster®

Product:

TrussBRACE™

Issue Date:

September 9, 2022

Revision Date:

September 9, 2022

Subject to Renewal:

October 1, 2023



COMPANY
INFORMATION:

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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

SECTION: 06 11 00 - Wood Framing

1 Product Evaluated¹

1.1 TrussBRACE™

2 Applicable Codes and Standards^{2,3}

2.1 Codes

2.1.1 *IBC—15, 18, 21: International Building Code®*

2.1.2 *IRC—15, 18, 21: International Residential Code®*

2.1.3 *IECC—15, 18, 21: International Energy Conservation Code®*

2.1.4 *CBC—16, 19: California Building Code (Title 24, Part 2)⁴*

2.1.5 *CRC—16, 19: California Residential Code (Title 24, Part 2.5)⁴*

2.1.6 *LABC—17, 20: Los Angeles Building Code⁵*

2.1.7 *LARC—17, 20: Los Angeles Residential Code⁵*

2.1.8 *FBC-B—17, 20: Florida Building Code – Building⁶*

2.1.9 *FBC-R—17, 20: Florida Building Code – Residential⁶*

2.2 Standards and Referenced Documents

2.2.1 *AISI S100: North American Specification for the Design of Cold-Formed Steel Structural Members*

2.2.2 *ASTM D1761: Standard Test Method for Mechanical Fasteners in Wood and Wood-Based Materials*

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

² Unless otherwise noted, all references in this TER are from the 2021 version of the codes and the standards referenced therein. This material, design, or method of construction also complies with the 2000-2018 versions of the referenced codes and the standards referenced therein.

³ All terms defined in the applicable building codes are italicized.

⁴ All references to the *CBC* and *CRC* are the same as the 2018 *IBC* and 2018 *IRC* unless otherwise noted in the California Supplement at the end of this TER.

⁵ All references to the *LABC* and *LARC* are the same as the 2018 *IBC* and 2018 *IRC* unless otherwise noted in the Los Angeles Supplement at the end of this TER.

⁶ All references to the *FBC-B* and *FBC-R* are the same as the 2018 *IBC* and 2018 *IRC*, respectively, unless otherwise noted in the supplement at the end of this document.

- 2.2.3 *Building Component Safety Information (BCSI) Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses*
- 2.2.4 *ANSI/TPI 1 – National Design Standard for Metal Plate Connected Wood Trusses*

3 Performance Evaluation

- 3.1 TrussBRACE™ was tested and evaluated to determine its structural resistance properties, which are used to develop reference design values for allowable stress design (ASD). The following conditions were evaluated:
 - 3.1.1 Tension and compression strength in accordance with *ASTM D1761*.
- 3.2 TrussBRACE™ is used to provide temporary lateral and diagonal bracing along top chord and webs of wood trusses during installation.
 - 3.2.1 The TrussBRACE™ temporary bracing may be left in place to form part of the permanent bracing that is required by *IBC Section 2303.4*, *IRC Section R802.10.3* and *ANSI/TPI Section 2.3.3*.
- 3.3 Any code compliance issues not specifically addressed in this section are outside the scope of this TER.
- 3.4 Any engineering evaluation conducted for this TER was performed within DrJ's ANAB accredited ICS code scope and/or the defined professional engineering scope of work on the dates provided herein.

4 Product Description and Materials

- 4.1 The product evaluated in this TER is shown in Figure 1.



Figure 1. FastenMaster TrussBRACE Installed on Truss Top Chords

- 4.2 TrussBRACE™ is a hinged Y-shaped bracket with the following properties:
 - 4.2.1 *Steel Properties:*
 - 4.2.1.1 20 Gauge Steel (0.0375")
 - 4.2.1.2 Galvanized Coating



4.2.2 Dimensions:

- 4.2.2.1 1" x 1⁵/₈" L-shaped channel with flat tabs where member is attached to the truss
- 4.2.2.2 Length: 25 1/2"
- 4.2.2.3 Width of TrussBRACE™ with diagonal brace extended: 17 3/4"
- 4.2.2.4 Hinge Location: 16 1/4"

4.2.3 Fasteners:

- 4.2.3.1 Three (3) 10d nails (0.148" x 1 1/2")

5 Applications

- 5.1 TrussBRACE™ can be incorporated into the temporary lateral and diagonal bracing to prevent rotation and provide lateral stability for buildings per ANSI/TPI 1 Section 2.3.1.6 and BCSI-B1 and BCSI-B2 as pertinent.
- 5.2 TrussBRACE™ can be incorporated into the permanent lateral and diagonal bracing to prevent rotation and provide lateral stability for buildings per IBC Section 2303.4, IRC Section R802.10.3, ANSI/TPI 1 Section 2.3.3 and BCSI-B1 and BCSI-B3, as pertinent.
- 5.3 Tension and compression values for the TrussBRACE™ are specified in Table 1.

Table 1. TrussBRACE™ Design Values^{1,2,3,4}

Load Direction	Maximum Allowable Load ⁵
Tension	140
Compression	420

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

1. TrussBRACE™ can be incorporated into the permanent truss lateral and diagonal bracing to prevent rotation and provide lateral stability for buildings per ANSI/TPI 1 section 2.3.3 and BCSI B1 and B3 as pertinent, and when installed as described in Section 6.
2. Design of TrussBRACE™ bracing plans shall comply with [IBC Section 2303.4.1.2](#)
3. Minimum of three (3) 10d (1 1/2" x 0.148") nails
4. Minimum specific gravity of truss is 0.42.
5. No further load increases are allowed.

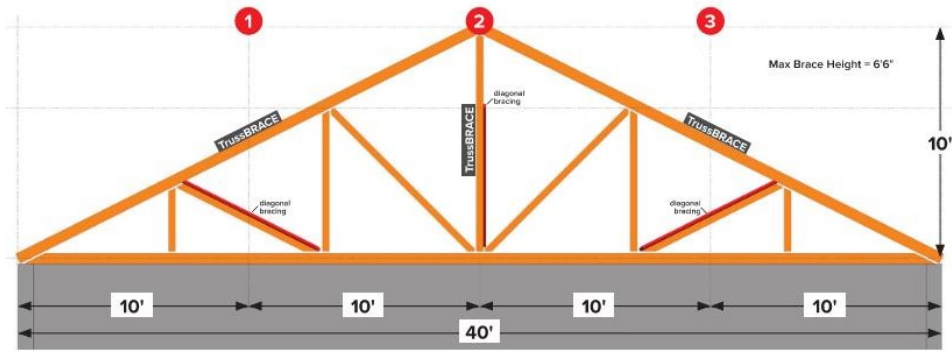
- 5.4 Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience, and technical judgment.

6 Installation

- 6.1 Installation shall comply with the manufacturer's installation instructions and this TER. In the event of a conflict between the manufacturer installation instructions and this TER, the more restrictive shall govern.
- 6.2 TrussBRACE™ shall be installed on the top chords and webs along the trusses at the spacing shown in Table 2 and Figure 2.

Table 2. TrussBRACE™ Spacing Based on Truss Span

Truss Span	Maximum On Center Spacing
Up to 30'	12'
30' to 45'	10'
45' to 60'	8'



The example in the visual guide uses 40' trusses with a maximum height of 10'. Therefore, the required TrussBRACE spacing is every 10' on center, with TrussBRACES at locations 1 and 3 installed on the top chord and TrussBRACES at location 2 installed on the webs, as illustrated above. The diagonal bracing shown is added in STEP 2. In locations 1 and 3, it is placed on the web members below the TrussBRACES. In location 2, it is placed on either side of the web member. Diagonal bracing may be placed over top of the TrussBRACES.

Figure 2. Example of TrussBRACE™ Location on 40' Truss

- 6.3 At any point in the installation process, when top chord can no longer be conveniently reached (5½ to 6½ feet), apply TrussBRACE™ to the next web member that is within the spacing listed in Table 2 or otherwise requires lateral restraint per the truss design drawing (TDD).
 - 6.3.1 See Figure 2 for an example.
 - 6.3.2 Keep placing TrussBRACE™ on the webs until the top chord becomes within reach (5½ to 6½ feet) and finish applying the TrussBRACE™ along the top chord per Table 2.
- 6.4 TrussBRACE™ is applied to truss with the lateral portion spanning between truss top chords or truss web members, with the diagonal leg swinging down below the lateral part of the brace to connect back to the top chord or web as shown in Figure 3.



Figure 3. TrussBRACE™ Connection to Truss Top Chord

6.5 6-Step Installation Procedure

- 6.5.1 Step 1 – Determine TrussBRACE™ spacing based on truss span shown in Table 2.
- 6.5.2 Step 2 – Set the first three trusses with TrussBRACE™ to create a stable foundation for the structure (see Figure 4).
 - 6.5.2.1 At minimum, use three (3) 10d common (1½" x 0.148") nails; one at each end of the lateral leg and the third on the diagonal leg.
 - 6.5.2.2 Drive nails completely so the TrussBRACE™ is tight on the truss
 - 6.5.2.3 Apply diagonal bracing to webs per [BCSI](#) after trusses are set and TrussBRACE™ are installed.

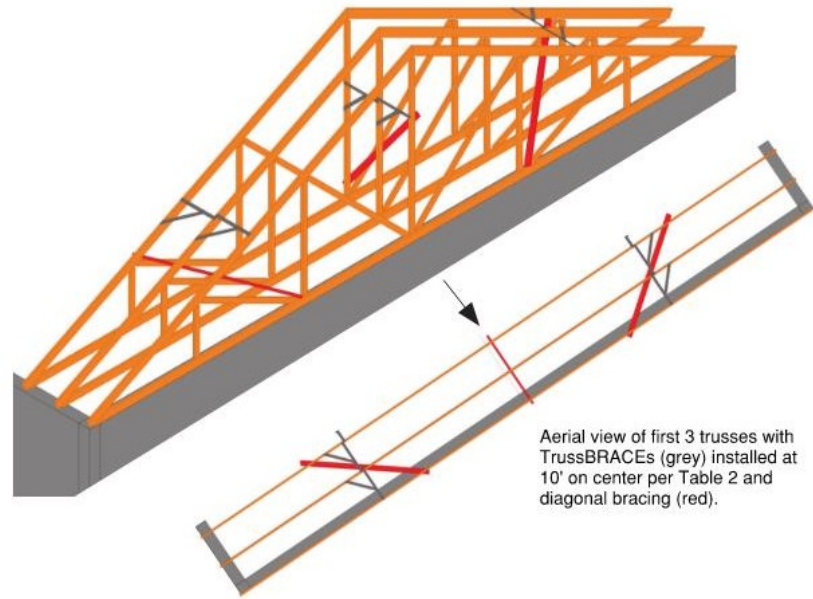


Figure 4. Installation Step 2 – Temporary Bracing of First Three Trusses.

6.5.3 Step 3 – Working from the bottom chords, set trusses 4 through 15 in line with the TrussBRACE™ placed on the first 3 trusses (see Figure 5).

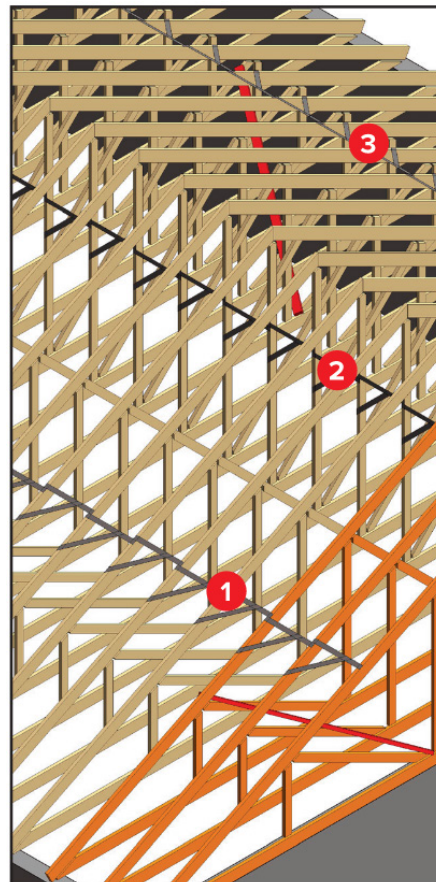


Figure 5. Installation Steps 1-5

- 6.5.4 Step 4 – Apply web member diagonal bracing per [BCSI](#), Figure B2-34 after Truss 15 has been set. Web member diagonal bracing is shown in red in Figure 5 and Figure 6.
 - 6.5.4.1 If fewer than 30 trusses are being used, apply diagonal bracing at midway point in truss installation. (e.g., if setting 20 trusses, apply diagonal bracing after truss 10 is set).
 - 6.5.4.2 Never exceed 20' between diagonal braces per [BCSI](#), Figure B2-34.
- 6.5.5 Step 5 – Apply steps 3 and 4 until the entire roof system is set.
- 6.5.6 Step 6 – Apply structural sheathing to the top chord of all the trusses directly of the TrussBRACE™ as shown in Figure 6.

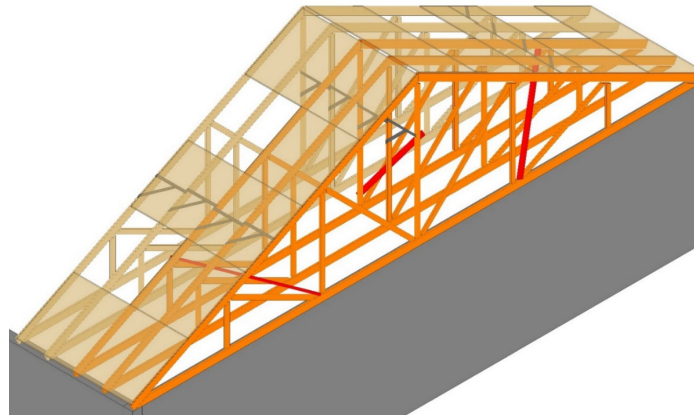


Figure 6. Installation Step 6

- 6.6 For additional information on temporary bracing, refer to [BCSI-B2](#).
- 6.7 For additional information on permanent bracing, refer to [BCSI-B3](#).

7 Substantiating Data

- 7.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:
 - 7.1.1 Tension and compression strength in accordance with *ASTM D1761*.
- 7.2 Information contained herein is the result of testing and/or data analysis by sources which conform to [IBC Section 1703](#) and/or [professional engineering regulations](#). DrJ relies upon accurate data to perform its ISO/IEC 17065 evaluations.
- 7.3 Where appropriate, DrJ's analysis is based on provisions that have been codified into law through state or local adoption of codes and standards. The providers of the codes and standards are legally responsible for their content. DrJ analysis may use code-adopted provisions as a control sample. A control sample versus a test sample establishes a product as being equivalent to that prescribed in this code in quality, *strength*, effectiveness, *fire resistance*, durability, and safety. Where the accuracy of the provisions provided herein is reliant upon the published properties of materials, DrJ relies upon the grade mark, grade stamp, mill certificate, and/or test data provided by material suppliers to be minimum properties. DrJ analysis relies upon these properties to be accurate.

8 Findings

- 8.1 When used and installed in accordance with this TER and the manufacturer's installation instructions, the product listed in Section 1.1 is approved for the following:
- 8.1.1 Temporary lateral and diagonal bracing to prevent rotation and provide lateral stability for buildings per BCSI B1 and B2 as pertinent.
 - 8.1.2 Permanent lateral and diagonal bracing to prevent rotation and provide lateral stability for buildings per *IBC* Section 2303.4, *IRC* Section R802.10.3, *ANSI/TPI 1* Section 2.3.3 and *BCSI-B1* and *BCSI-B3*, as pertinent.
 - 8.1.3 Where TrussBRACE™ temporary bracing will be used a part of the permanent bracing system, TrussBRACE™ must be placed at the permanent individual truss member restraint (PITMR) locations as shown on the truss design drawings in accordance with *IBC* Section 2303.4.1.2 and *IRC* Section R802.10.3.
- 8.2 Building codes require data from valid *research reports* be obtained from *approved sources* (i.e., licensed *registered design professionals* [RDPs]).
- 8.2.1 Building official approval of a licensed RDP is performed by verifying the RDP and/or their business entity is listed by the *licensing board* of the relevant *jurisdiction*.
- 8.3 Agencies who are accredited through ISO/IEC 17065 have met the *code requirements* for approval by the *building official*. DrJ is an ISO/IEC 17065 *ANAB-Accredited Product Certification Body – Accreditation #1131* and employs RDPs.
- 8.4 Through ANAB accreditation and the *IAF MLA*, DrJ certification can be used to obtain product approval in any *jurisdiction* or country that has *IAF MLA Members & Signatories* to meet the *Purpose of the MLA* – “certified once, accepted everywhere.”
- 8.5 *IBC* Section 104.11 (*IRC* Section R104.11 and *IFC* Section 104.10⁷ are similar) states:

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...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*.

9 Conditions of Use

- 9.1 Do not walk on TrussBRACE™ or use to support body weight.
- 9.2 Do not remove TrussBRACE™ for re-use.
- 9.3 Do not use TrussBRACE™ that have been bent, kinked, or otherwise damaged.
- 9.4 Do not install TrussBRACE™ on top of knots or other lumber defects.
- 9.5 TrussBRACE™ is limited to use with dry service conditions and untreated lumber.
- 9.6 Install TrussBRACE™ at right angles to the plane of the truss member.
- 9.7 Where TrussBRACE™ temporary bracing will be used a part of the permanent bracing, TrussBRACE™ must be placed at the permanent web buckling bracing locations as shown on the truss design drawings in accordance with *IBC* Section 2303.4.
- 9.8 TrussBRACE™ may only be installed on trusses spaced 24" on center and up to 60' in length.
- 9.9 Trusses that span over 60' require complex temporary installation of restraint/diagonal bracing. Consult a professional engineer.
- 9.10 Where required by the *building official*, also known as the authority having jurisdiction (AHJ) in which the project is to be constructed, this TER and the installation instructions shall be submitted at the time of *permit* application.

⁷ 2018 *IFC* Section 104.9



- 9.11 Any generally accepted engineering calculations needed to show compliance with this TER shall be submitted to the AHJ for review and approval.
- 9.12 Design loads shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (e.g., owner or RDP).
- 9.13 At a minimum, this product shall be installed per Section 6 of this TER.
- 9.14 This product has an internal quality control program and a third-party quality assurance program in accordance with IBC Section 104.4 and Section 110.4 and IRC Section R104.4 and Section R109.2.
- 9.15 The actual design, suitability, and use of this TER, for any particular building, is the responsibility of the owner or the owner's authorized agent.
- 9.16 This TER shall be reviewed for code compliance by the AHJ in concert with IBC Section 104.
- 9.17 Commodity lumber design values, found in the ANSI/AWC National Design Specification® (*NDS*) for Wood Construction Supplement, are defined as strength and stiffness property values of structural lumber products published for design use. These values are determined for specific grades and species/species groups. Sawn lumber used for load-supporting purposes, including end-jointed, edge-glued, machine stress-rated, or machine-evaluated lumber, shall be identified by the grade mark of a lumber grading or inspection agency that has been approved by an accreditation body that complies with the latest edition of the American Softwood Lumber Standard (DOC PS 20) or equivalent. Approved end-jointed lumber is permitted to be used interchangeably with solid-sawn members of the same species and grade. End-jointed lumber used in an assembly required to have a fire-resistance rating shall have the designation "Heat Resistant Adhesive" or "HRA" included in its grade mark. DrJ relies upon each lumber manufacturer to provide building code conforming design values, application, conditions of use, quality, and repair requirements as well as compliance with DOC PS 20 and the NDS Supplement, as pertinent. DrJ also relies upon quality assurance being performed by an accredited agency (e.g., ISO/IEC 17020, professional engineer, etc.). With respect to individual lumber manufacturers, DrJ makes no representation or warranty with respect to the lumber grade, design values, grade marking, or performance.
- 9.18 The NDS provides design values for the design of generic connections (i.e., bolts, nails, wood screws, spikes, timber rivets, drift pins, etc.). Nails, staples, screws, bolts, and hangers are presumed to be manufactured and identified as required in accordance with *ASTM A36*, *ASTM A153/A153- 16A*, *ASTM A307*, *ASTM A576*, *ASTM A576 GR1015 Modified*, *ASTM F606/ F606M*, *ASTM A641/A641M*, *ASTM A653 Structural Grade (GR) 33*, *ASTM A653M SR 33*, *ASTM A675 GR60*, *ASTM A1011 SS GR33*, *ASTM D1761*, *ASTM D5764*, *ASTM D7147*, *ASTM F606/ F606M*, *ASTM F680*, *ASTM F1575*, *ASTM F1667*, including Supplement 1, *ASTM F3359*, and/or *ASTM SAE J429 GR 2*. DrJ makes no representation or warranty with respect to *NDS* defined product performance or the performance of any proprietary manufactured product that uses *NDS* design values.
- 9.19 The implementation of this TER for this product is dependent on the design, quality control, third-party quality assurance, proper implementation of installation instructions, inspections required by IBC Section 110.3, and any other code or regulatory requirements that may apply.

10 Identification

- 10.1 The product listed in Section 1.1 is identified by a label on the board or packaging material bearing the manufacturer's name, product name, TER number, and other information to confirm code compliance.
- 10.2 Additional technical information can be found at fastenmaster.com.

11 Review Schedule

- 11.1 This TER is subject to periodic review and revision. For the most recent version, visit drjcertification.org.
- 11.2 For information on the current status of this TER, contact DrJ Certification.

Issue Date: September 9, 2022
Subject to Renewal: October 1, 2023

CBC and CRC Supplement to TER 2206-01

REPORT HOLDER: OMG®, Inc. DBA FastenMaster®

1 Evaluation Subject

1.1 TrussBRACE™

2 Purpose and Scope

2.1 Purpose

2.1.1 The purpose of this Technical Evaluation Report (TER) supplement is to show TrussBRACE™, recognized in TER 2206-01, has also been evaluated for compliance with the codes listed below.

2.2 Applicable Code Editions

2.2.1 *CBC—16, 19: California Building Code (Title 24, Part 2)*

2.2.2 *CRC—16, 19: California Residential Code (Title 24, Part 2.5)*

2.2.3 *CEC —16, 19: California Energy Code (Title 24, Part 6)*

3 Conclusions

3.1 TrussBRACE™, described in TER 2206-01, complies with the *CBC* and *CRC* and is subject to the conditions of use described in this supplement.

3.2 Where there are variations between the *IBC* and *IRC* and the *CBC* and *CRC* applicable to this TER, they are listed here.

3.2.1 No variations.

4 Conditions of Use

4.1 TrussBRACE™, described in TER 2206-01, must comply with all of the following conditions:

4.1.1 All applicable sections in TER 2206-01

4.1.2 The design, installation, and inspections are in accordance with additional requirements of the *CBC* and *CRC*, as applicable.

Issue Date: September 9, 2022
Subject to Renewal: October 1, 2023

LABC and LARC Supplement to TER 2206-01

REPORT HOLDER: OMG®, Inc. DBA FastenMaster®

1 Evaluation Subject

1.1 TrussBRACE™

2 Purpose and Scope

2.1 Purpose

2.1.1 The purpose of this Technical Evaluation Report (TER) supplement is to show TrussBRACE™, recognized in TER 2206-01, has also been evaluated for compliance with the codes listed below as adopted by the Los Angeles Department of Building and Safety (LADBS).

2.2 Applicable Code Editions

2.2.1 LABC—17, 20: Los Angeles Building Code

2.2.2 LARC—17, 20: Los Angeles Residential Code

3 Conclusions

3.1 TrussBRACE™, described in TER 2206-01, complies with the LABC and LARC and is subject to the conditions of use described in this supplement.

3.2 Where there are variations between the IBC and IRC and the LABC and LARC are applicable to this TER, they are listed here.

3.2.1 LABC Section 91.104.2.6 replaces IBC Section 104.11

3.2.2 LARC Section 91.104.2.6 replaces IRC Section R104.11

3.2.3 LABC Section 91.104.2.2 replaces IBC Section 104.4

3.2.4 LABC Section 91.108 replaces IBC Section 110.4

3.2.5 LARC Section 91.104.2.2 replaces IRC Section R104.4

3.2.6 LARC Section 91.108 replaces IRC Section R109.2

3.2.7 LABC Section 91.104 replaces IBC Section 104

3.2.8 LABC Section 91.108.5 replaces IBC Section 110.3.

4 Conditions of Use

4.1 TrussBRACE™, described in TER 2206-01, must comply with all of the following conditions:

4.1.1 All applicable sections in TER 2206-01

4.1.2 The design, installation, conditions of use, and identification of TrussBRACE™ are in accordance with the 2018 *International Building Code (IBC)* provisions noted in TER 2206-01.

4.1.3 The design, installation, and inspections are in accordance with additional requirements of LABC Chapter 16 and 17, as applicable.



Issue Date: September 9, 2022

Subject to Renewal: October 1, 2023

FBC Supplement to TER 2206-01

REPORT HOLDER: OMG®, Inc. DBA FastenMaster®

1 Evaluation Subject

1.1 TrussBRACE™

2 Purpose and Scope

2.1 Purpose

2.1.1 The purpose of this Technical Evaluation Report (TER) supplement is to show TrussBRACE™, recognized in TER 2206-01, has 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—17, 20: Florida Building Code – Building*

2.2.2 *FBC-R—17, 20: Florida Building Code – Residential*

3 Conclusions

3.1 TrussBRACE™, described in TER 2206-01, complies with the *FBC-B* and *FBC-R* and is 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 TER, they are listed here.

3.2.1 *FBC-B* Section 104.4 and Section 110.4 are reserved.

3.2.2 *FBC-R* Section R104 and Section R109 are reserved.

3.2.3 *FBC-R* Section R802.10.3 is reserved.

4 Conditions of Use

4.1 TrussBRACE™, described in TER 2206-01, must comply with all of the following conditions:

4.1.1 All applicable sections in TER 2206-01

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