

CITY OF LOS ANGELES

CALIFORNIA



ERIC GARCETTI
MAYOR

BOARD OF
**BUILDING AND SAFETY
COMMISSIONERS**

—
VAN AMBATIELOS
PRESIDENT

E. FELICIA BRANNON
VICE-PRESIDENT

JOSELYN GEAGA-ROSENTHAL
GEORGE HOVAGUIMIAN
JAVIER NUNEZ

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

—
FRANK BUSH
GENERAL MANAGER

OSAMA YOUNAN
EXECUTIVE OFFICER

MiTekUSA, Inc.
14305 Southcross Drive, Suite 200
Burnsville, MN 55306

Attn: Steve Brekke, P. E.
(952) 898-8772

RESEARCH REPORT: RR 25836
(CSI # 06 05 23)

BASED UPON IAMPO EVALUATION SERVICE
REPORT NO. ER-583

REEVALUATION DUE

DATE: November 01, 2020
Issued Date: November 01, 2018
Code: 2017 LABC

GENERAL APPROVAL – Technical Modification, Reevaluation, and Clerical Modification – MiTek® USP® Bridging, Bracing, and Angle Connectors–: MB16 & MBG bridging; N & O bridging; RWB, WB, WBC & WBT wall bracing; and SCA stair angle.

DETAILS

The above assemblies and/or products are approved when in compliance with the use, description, design, installation, conditions of approval, and identification of Evaluation Report No. ER-583, originally issued August 21, 2018, valid through August 31, 2019 of the IAMPO Evaluation Services, LLC. The report, in its entirety, is attached and made part of this general approval.

The parts of Evaluation Report No ER-583 marked by the asterisks are deleted or revised by the Los Angeles Building Department from this approval.

RR 25836
Page 1 of 3

MiTek® USA, Inc.

Re: MiTek USP Bridging, Bracing, and Angle connectors –: MB16 & MBG bridging; N & O bridging; RWB, WB, WBC & WBT wall bracing; SCA stair angle.

The approval is subject to the following conditions:

1. The values shown in this report shall not be used in repair, retrofit and new construction of tilt-up and/or masonry wall anchorage (in tension) for the connection with the horizontal wood diaphragm.
2. Allowable loads in tables are for the wood fastening devices and its fasteners; the values do not include supporting members. The supporting members shall be checked separately for structural adequacy.
3. Approved products to be used shall be indicated on the approved set of plans.
4. Nails shall be common nails except where otherwise specified in section 3.3 through 4.3 of the attached IAMPO ER-583
5. Test data verifying the properties of the steel, by the mill or by an approved testing agency, shall be obtained for each shipment. The data shall be kept on file and submitted to the Department upon request.

MiTek® USA, Inc.

Re: MiTek USP Bridging, Bracing, and Angle connectors –: MB16 & MBG bridging; N & O bridging; RWB, WB, WBC & WBT wall bracing; SCA stair angle.

DISCUSSION

Technical modification is to change Evaluation Service from ICC-ESR-3456 to IAMPO ER-583

The report is in compliance with the 2017 City of Los Angeles Building Code.

The approval is based on tests and analysis in accordance with the IAMPO UES Evaluation Criteria for Joist Hangers and Miscellaneous Connectors (EC 002-2017) Adopted June 2007, Revised August 2017. Test results are from laboratories in compliance with ISO/IEC 17025.

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction, which must be approved, by Department of Building and Safety Engineers and Inspectors.

This general approval will remain effective provided the Evaluation Report is maintained valid and unrevised with the issuing organization. Any revisions to the report must be submitted to this Department, with appropriate fee, for review in order to continue the approval of the revised report.

This general approval of an equivalent alternate to the Code is only valid where an engineer and/or inspector of this Department has determined that all conditions of this approval have been met in the project in which it is to be used.

QUAN NGHIEM, Chief
Engineering Research Section
201 N. Figueroa St., Room 880
Los Angeles, CA 90012
Phone- 213-202-9814
Fax- 213-202-9943

BKR
RR25836
TLB1800238
09/20/2018
2304.9.3

Attachment: ICC ES Report No. ES-583 (9 Pages)



MITEK USA, INC.
16023 Swingley Ridge Road
Chesterfield, Missouri 63017
(952) 898-8772
www.mitek-us.com
uspcustomerservice@mii.com

USP® BRIDGING, BRACING, AND ANGLE CONNECTORS

CSI Section:

- 06 05 23 Wood, Plastic, and Composite Fastenings**
- 06 11 00 Wood Framing**

1.0 RECOGNITION

MiTek USP® Bridging, Bracing, and Angle Connectors recognized in this report have been evaluated for use in wood framing as connectors to collect and transfer design loads between framing members. The structural properties of the connectors comply with the intent of the provisions of the following codes:

- 2015, 2012 and 2009 International Building Code® (IBC)
- 2015, 2012 and 2009 International Residential Code® (IRC)

2.0 LIMITATIONS

Use of the MiTek USP Structural Connectors recognized in this report is subject to the following limitations:

2.1 The connectors shall be manufactured, identified and installed in accordance with this report, the recognized quality control documentation, and the manufacturer's published installation instructions. Where conflicts arise in the documentation, the more restrictive instructions shall be followed. A copy of the installation instructions and this report shall be available at the jobsite during installation for quality control purposes.

2.2 The loads transferred between framing members, through the connectors, shall be consistent with the allowable loads and connection configurations described and tabulated in this report. Design documents shall be prepared by a registered design professional and submitted to the code official where required by the local jurisdiction.

2.3 Adjustment factors noted in Section 3.2 of this report and the applicable codes shall be applied to allowable loads when warranted by the service conditions.

2.4 Fasteners in contact with preservative-treated or fire-retardant-treated wood shall comply with 2015 or 2012 IBC Section 2304.10.5; 2009 IBC Section 2304.9.5; or 2015,

2012, or 2009 IRC Section R317.3, as applicable. The report holder or lumber treater shall be contacted for recommendations on minimum corrosion resistance and connection capacities of fasteners used with the specific proprietary preservative-treated or fire-retardant-treated lumber.

2.5 The connectors recognized in this report are produced by MiTek USA in Montgomery, Minnesota; Largo, Florida; and Tolleson, Arizona.

3.0 PRODUCT USE

3.1 General: MiTek USP Bridging, Bracing, and Angle Connectors are used as connectors and fasteners for wood construction in accordance with 2015 IBC 2304.10 or 2012 and 2009 IBC 2304.9. The connectors may also be used in buildings constructed in accordance with the IRC where designed in accordance with IRC Section R301.1.3. The bridging is installed at intervals to support joists against lateral movement under loading. The bracing is used at corners and at intervals along walls to provide supplemental racking resistance in building lateral force resisting systems. The angle connectors are used to support stair treads and transfer their loads to the stringers.

3.2 Design: The connectors shall be used with wood framing and under normal temperatures (100 °F or less sustained temperatures) and dry conditions in accordance with the ANSI/AWC National Design Specifications for Wood Construction (NDS). The wood members with which the connectors are used shall be sawn lumber having minimum specific gravity of 0.50, or engineered lumber having minimum equivalent specific gravity of 0.50. The wood shall have a maximum moisture content of 19 percent for sawn lumber, and 16 percent for engineered lumber.

Loads for use under conditions other than those described are subject to appropriate adjustments in accordance with the code. Adjustments shall be made under the supervision of the design professional for each project. The allowable loads tabulated for the angle connectors are for use in Allowable Stress Design. The loads include a load duration factor, CD = 1.0, in accordance with the NDS.

3.3 Installation:

3.3.1 Bridging: Bridging shall be installed in pairs to stabilize joists at intervals specified by the manufacturer's published installation instructions. Bridging pairs shall be installed to form an "X" between joists, leaving a space between the units to avoid contact. Where fasteners are required, the manufacturer specified fasteners shall be used. The nails shall be fully seated to help prevent movement and floor noise.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This document shall only be reproduced in its entirety.





3.3.1.1 MBG series bridging: The MBG series is installed by setting the teeth at each end of the bridging unit into the wood at the top of one joist and at the bottom of the adjacent joist in accordance with the manufacturer's installation instructions. Nail holes are provided at the bent lower end for use in case the teeth are damaged during installation. The MBG series may be installed before or after sheathing.

3.3.1.2 MB16 series bridging: The MB16 is a two-part unit; the parts shall be separated before installation. The end tab of the narrow piece shall be slid into the slot of the wider piece at the appropriate location for the joist spacing. The narrow end shall be positioned near the top of one joist, and the opposite end of the unit shall be placed near the bottom of the adjacent joist. The middle of the device shall be pulled down to set the teeth at the ends of the unit into the wood at the sides of the joists and until the wider piece snaps into place over the narrow piece. This results in a rigid, one-piece bridging unit.

3.3.1.3 N and O series bridging: N and O series bridging shall be installed prior to the subfloor sheathing. The flat ends of the bridging shall be fastened to the tops and bottoms of adjacent joists using two 8d by 1½-inch-long (38.1 mm) nails at each end. The O series bridging spans three joists in under/over installation and the center connection shall be made without nails.

3.3.2 Wall Bracing: MiTek USP Wall Bracing shall be used as a framing aid, and not as a substitute for structural shear wall components. Each wall section shall be squared before the bracing is installed.

3.3.2.1 RWB and WB Bracing: RWB and WB Bracing shall be used with 16-inch or 24-inch-on-center (406 mm or 610 mm) studs. The bracing shall be installed in pairs forming an "X" or opposing "V" at each end of a maximum 25-foot-long (7.6 m) wall section. The ends of the bracing shall be flush to the top of the top plate and flush to the bottom of the bottom plate. The bracing shall be secured to the top plate and bottom plate using 16d nails for the WB bracing, or 8d nails for the RWB bracing. One 8d nail shall be used to secure the bracing to each intersecting wall stud.

3.3.2.2 WBC and WBT Bracing: WBC and WBT Bracing shall be used with 16-inch-on-center (406 mm) studs. The bracing shall be installed at each end of wall sections not exceeding 25 feet (7.6 m), in an opposing "V" pattern. A saw kerf shall be cut into the studs, in a straight line and in accordance with the manufacturer's published installation instructions. The saw kerf shall be 5/8-inch deep (15.9 mm) for the WBT bracing; the saw kerf for the WBC bracing shall be 1 inch deep. The bracing web shall be inserted into the saw kerf, one nail shall be driven into each plate and the bracing shall be fastened to the studs in accordance with the bracing nailing schedule.

3.3.3 SCA Stair Angle: The SCA9-TZ shall be used for single 2x10 stair treads and the SCA10-TZ shall be used for

double 2x6 stair treads. The location and spacing of the brackets along the stringers shall be calculated and installed in accordance with the requirements of the code to achieve compliant stair systems. The angles shall be installed using ¼-inch-diameter by 1½-inch-long (6.35 mm by 38.1 mm) lag screws in accordance with the manufacturer's published installation instructions.

4.0 PRODUCT DESCRIPTION

4.1 MiTek USP Bridging: MiTek USP Bridging is designed to span between dimensional sawn lumber joists to provide lateral bridging and bracing meeting the requirements of IBC Section 2308.8.5 and IRC Section R502.7.1. The bridging is cold-formed from ASTM A653 Grade 40 Steel with a G90 galvanized finish.

4.1.1 MB16 and MBG Bridging: The MB16 series and MBG series bridging are cold-formed from No.22 gage steel. The MB16 series is designed to be installed without the use of nails, and the MBG series is pre-punched for installation using 8d by 1½-inch-long (38.1 mm) nails. MB16 bridging is a two-piece, variable-length product for use with joists at various spacings. The pieces snap together to provide a solid piece when installed in existing floor systems to provide the required bracing. MBG Bridging has teeth that grip joists and a pre-punched hole for single-nail installation. MBG Bridging can be installed after subfloor is in place. See Table 1 and Figure 1 for more information on MB16 and MBG Bridging.

4.1.2 N and O Bridging: The N series bridging is cold-formed from No.20 gage steel or No. 22 gage steel. The O series bridging is cold-formed from No.22 gage steel. The ends of both the N and O series bridging are pre-punched for installation using 8d by 1½-inch-long (38.1 mm) nails. The O series is also pre-punched with teeth in the middle to be pressed into the middle joist. The N series bridging spans two joists per unit and can be used for bridging or bracing I-Joists (see Joist Installations table). The O series bridging spans three joists in under/over installation. The center connection is made without nails. See Tables 2A and 2B, and Figure 2 for more information on N and O Bridging.

4.2 MiTek USP Wall Bracing: MiTek USP Wall Bracing series are designed to provide lateral resistance in dimensional 2-by sawn lumber stud framed walls with stud spacings of 16 and 24 inches (406 mm and 610 mm) on center. The bracing is designed as an alternative to the code-prescribed bracing methods noted in IBC Section 2308.6.3(1) and IRC Section R602.10.3(1). The bracing is cold-formed from ASTM A653 Grade 40 Steel with a G90 galvanized finish. See Table 3 and Figure 3 for more information on RWB, WB, WBC, and WBT Wall Bracing.



4.2.1 RWB: The RWB series wall bracing is cold-formed from No.16 gage steel and is pre-punched for installation using 8d common nails. RWB bracing is flat, has pre-embossed snap-off points, and comes in a 35-pound (15.9 kg) roll.

4.2.2 WB: The WB series wall bracing is cold-formed from No.16 gage steel and is pre-punched for installation using 16d common nails into the top and bottom plates and 8d common nails into each stud. WB bracing is a flat-style bracing, engineered to easily nail to studs with no cutting or fitting needed.

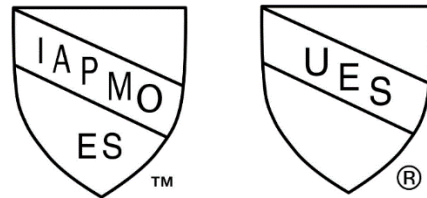
4.2.3 WBC: The WBC series wall bracing is cold-formed from No.18 gage steel and pre-punched for installation with 16 gage common nails into the top and bottom plates and 8d common nails into each stud. WBC wall bracing has an L-shaped design for strength and rigidity.

4.2.4 WBT: The WBT series wall bracing is cold-formed with rolled edges in a T-style from No.22 gage steel and is pre-punched for installation using 8d common nails. WBT bracing has rolled edges and a T-style design for strength.

4.3 SCA Stair Angle: The MiTek USP SCA Stair Angle is used to attach stair treads to stringers. The SCA Stair Angle is cold-formed from No.12 gage steel and is pre-punched for installation using lag screws in accordance with Section 3.3.3 of this report. The angles are cold-formed from ASTM A653 Grade 40 Steel with a G185 galvanized finish. See Table 4 and Figure 4 for more information on SCA Stair Angles.

5.0 IDENTIFICATION

MiTek USP connectors described in this report are identified by IAPMO UES evaluation report number (ER-583) and the product model (stock) number on each connector. The packaging shall include the report holder name and trademark, the product name, the evaluation report number (ER-583), and the IAPMO Uniform Evaluation Service Mark of Conformity. Either Mark of Conformity may be used as shown below:



or
IAPMO UES ER-583

6.0 SUBSTANTIATING DATA

- 6.1** Testing and analytical data submitted in accordance with IAPMO UES Evaluation Criteria for Joist Hangers and Miscellaneous Connectors (EC 002-2017) Adopted June 2007, Revised August 2017. Test results are from laboratories in compliance with ISO/IEC 17025.
- 6.2** Structural calculations.
- 6.3** Manufacturer’s descriptive literature, installation instructions, and quality documentation meeting ES 010.

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research carried out by IAPMO Uniform Evaluation Service on MiTek USP Bridging, Bracing, and Angle Connectors to assess their conformance to the codes shown in Section 1.0 of this report and serves as documentation of the product certification. The products are manufactured at locations noted in Section 2.5 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

Brian Gerber, P.E., S.E.
Vice President, Technical Operations
Uniform Evaluation Service

Richard Beck, PE, CBO, MCP
Vice President, Uniform Evaluation Service

GP Russ Chaney
CEO, The IAPMO Group

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org

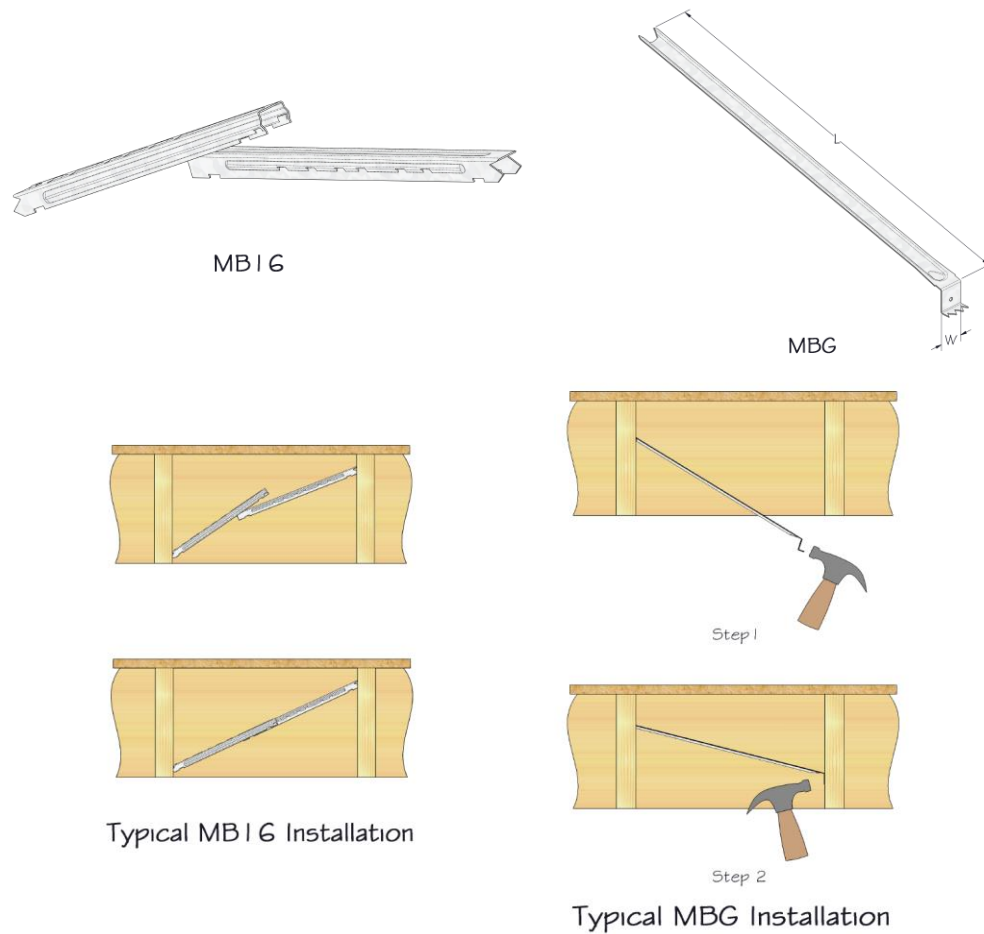


FIGURE 1 - MB16 AND MBG BRIDGING DIMENSIONS AND TYPICAL INSTALLATION DETAILS

TABLE 1 – MB16 AND MBG SERIES BRIDGING

JOIST SIZE	STOCK NO.	STEEL GAGE	DIMENSIONS (in)		FASTENER SCHEDULE		JOIST SPACING ² (in. o.c.)
			W	L	Qty	Type ¹	
2 x 8 - 10 - 12	MB16	22	1 ¹ / ₁₆	(adjustable)	--	--	16
2 x 8	MBG812	22	1 ⁵ / ₁₆	11 ³ / ₄	1	8d x 1 ¹ / ₂	12
2 x 8	MBG816	22	1 ⁵ / ₁₆	15 ⁹ / ₁₆	1	8d x 1 ¹ / ₂	16
2 x 8	MBG824	22	1 ⁵ / ₁₆	23 ¹ / ₂	1	8d x 1 ¹ / ₂	24
2 x 10	MBG1012	22	1 ⁵ / ₁₆	12 ³ / ₄	1	8d x 1 ¹ / ₂	12
2 x 10	MBG1016	22	1 ⁵ / ₁₆	16 ⁵ / ₁₆	1	8d x 1 ¹ / ₂	16
2 x 10	MBG1024	22	1 ⁵ / ₁₆	24	1	8d x 1 ¹ / ₂	24
2 x 12	MBG1212	22	1 ⁵ / ₁₆	14	1	8d x 1 ¹ / ₂	12
2 x 12	MBG1216	22	1 ⁵ / ₁₆	17 ¹ / ₄	1	8d x 1 ¹ / ₂	16
2 x 12	MBG1224	22	1 ⁵ / ₁₆	24 ³ / ₄	1	8d x 1 ¹ / ₂	24
2 x 14	MBG1412	22	1 ⁵ / ₁₆	16	1	8d x 1 ¹ / ₂	12
2 x 14	MBG1416	22	1 ⁵ / ₁₆	18 ⁷ / ₁₆	1	8d x 1 ¹ / ₂	16
2 x 14	MBG1424	22	1 ⁵ / ₁₆	25 ⁵ / ₈	1	8d x 1 ¹ / ₂	24
2 x 16	MBG1612	22	1 ⁵ / ₁₆	17	1	8d x 1 ¹ / ₂	12
2 x 16	MBG1616	22	1 ⁵ / ₁₆	19 ⁵ / ₈	1	8d x 1 ¹ / ₂	16
2 x 16	MBG1624	22	1 ⁵ / ₁₆	26 ⁵ / ₈	1	8d x 1 ¹ / ₂	24

For S.I.: 1 inch = 25.4 mm

- 1) An 8d x 1¹/₂ nail has a diameter of 0.131 inch and a length of 1¹/₂ inches.
- 2) Joist spacing is based on a 1¹/₂-inch joist width.



MiTek

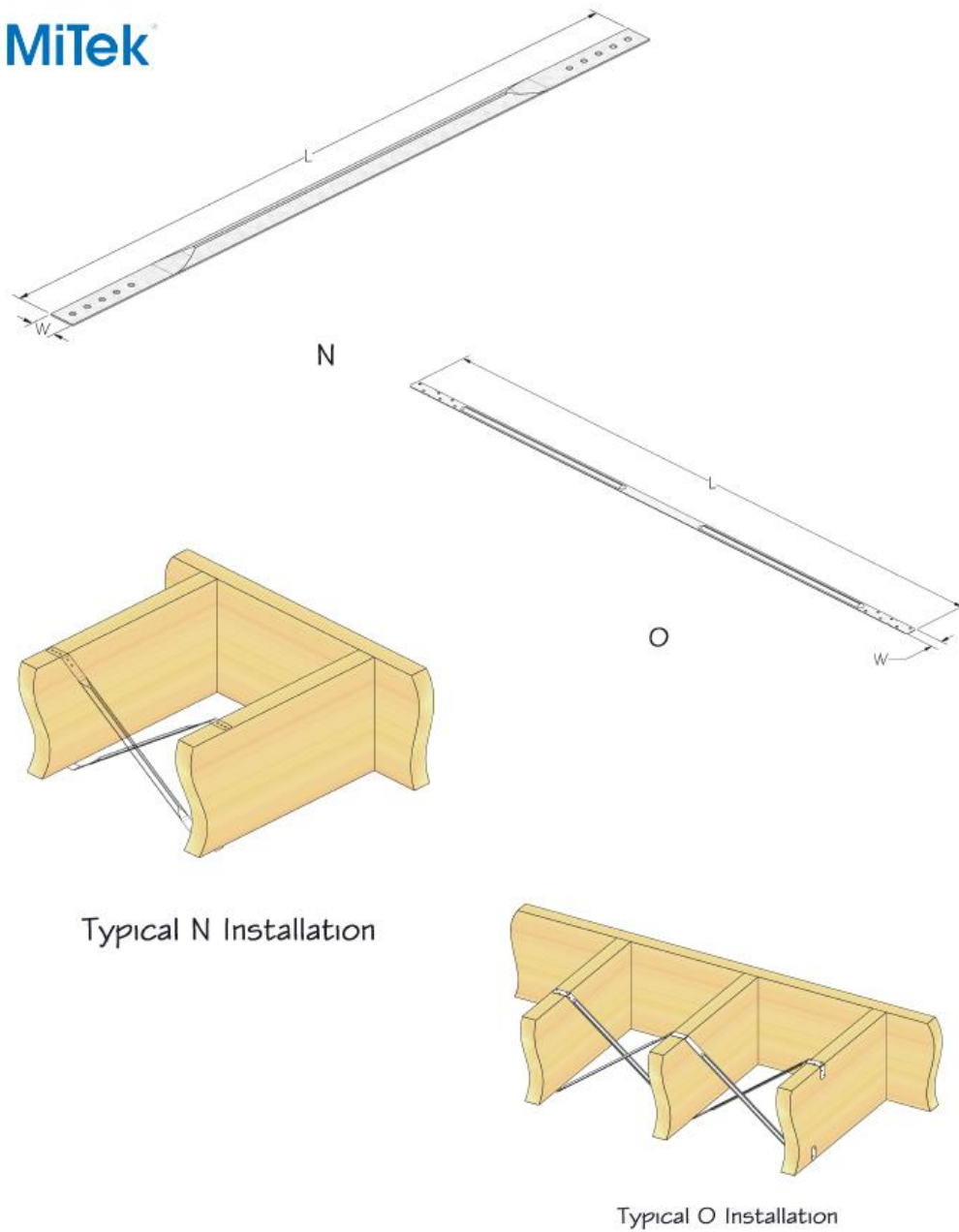


FIGURE 2 – N AND O SERIES BRIDGING DIMENSIONS AND TYPICAL INSTALLATION DETAILS



TABLE 2A – N AND O SERIES BRIDGING DESCRIPTIONS

STOCK NO.	STEEL GAGE	Dimensions (in)		FASTENER SCHEDULE		JOIST SPACING ²
		W	L	Qty	Type ¹	
N16	22	3/4	19 ^{3/4}	4	8d x 1 ^{1/2}	(See below)
N27	20	3/4	26 ^{13/16}	4	8d x 1 ^{1/2}	(See below)
N30	20	3/4	29 ^{13/16}	4	8d x 1 ^{1/2}	(See below)
N36	20	3/4	35 ^{13/16}	4	8d x 1 ^{1/2}	(See below)
N42	20	3/4	42	4	8d x 1 ^{1/2}	(See below)
N48	20	3/4	48	4	8d x 1 ^{1/2}	(See below)
N54	20	3/4	54	4	8d x 1 ^{1/2}	(See below)
N56	20	1	56	4	8d x 1 ^{1/2}	(See below)
N60	20	1	60	4	8d x 1 ^{1/2}	(See below)
O16	18	1	44	4	8d x 1 ^{1/2}	(See below)
O40	22	3/4	39 ^{3/4}	4	8d x 1 ^{1/2}	(See below)

For S.I.: 1 inch = 25.4 mm

- 1) An 8d x 1^{1/2} nail has a diameter of 0.131 inch and a length of 1^{1/2} inches.
- 2) Joist spacing is based on a 1^{1/2}-inch joist width.

TABLE 2B – N AND O SERIES BRIDGING MODEL USE BY JOIST DEPTH AND SPACING

MODEL (STOCK) NUMBER SIZES FOR JOIST-TO-JOIST X BRIDGING

Joist Depth (in)	Joist Spacing (in) ¹								
	12"	16"	19.2"	24"	30"	32"	36"	42"	48"
7 ^{1/4}	-- --	N16/O16/O40	-- --	-- --	-- --	-- --	-- --	-- --	-- --
9 ^{1/4}	N16	N16/O16/O40	N27	N27/N30	N36	N36/N42	N42	N48	N54/N56
9 ^{1/2}	N16	N16	N27	N27/N30	N36	N36/N42	N42	N48	N54/N56
10	N16	N16	N27	N27/N30	N36	N36/N42	N42	N48	N54/N56
11 ^{1/4}	N16	N16	N27	N30	N36	N36/N42	N42	N48	N54/N56
11 ^{7/8}	N16	N27	N27	N30	N36	N36/N42	N42	N48	N54/N56
12	N16	N27	N27	N30	N36	N36/N42	N42	N48	N54/N56
14	N16	N27	N27/N30	N30	N36/N42	N36/N42	N42	N48	N54/N56
16	N27	N27	N27/N30	N30	N36/N42	N42	N42/N48	N48/N54	N54/N56
18	N27	N27/N30	N30	N36	N36/N42	N42	N42/N48	N48/N54	N54/N56
20	N27/N30	N27/N30	N30	N36	N42	N42	N42/N48	N48/N54	N54/N56/N60
22	N27/N30	N30	N36	N36/N42	N42	N42/N48	N48	N54/N56	N54/N56/N60
24	N30	N36	N36	N36/N42	N42	N42/N48	N48	N54/N56	N56/N60
26	N30/N36	N36	N36/N42	N42	N42/N48	N48	N48/N54	N54/N56	N56/N60
28	N36	N36/N42	N36/N42	N42	N42/N48	N48	N48/N54	N54/N56	N60
30	N36/N42	N36/N42	N42	N42/N48	N48	N48	N48/N54/N56	N54/N56/N60	N60
32	N36/N42	N42	N42	N42/N48	N48	N48/N54	N54/N56	N54/N56/N60	N60

For S.I.: 1 inch = 25.4 mm

- 1) Joist spacing is based on a 1^{1/2}-inch joist width.

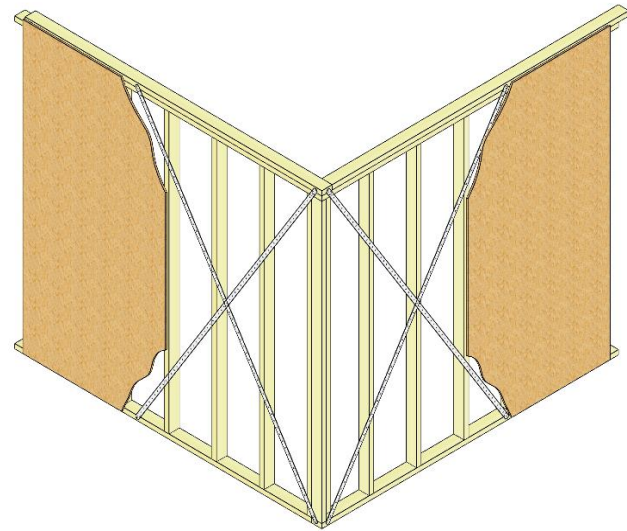
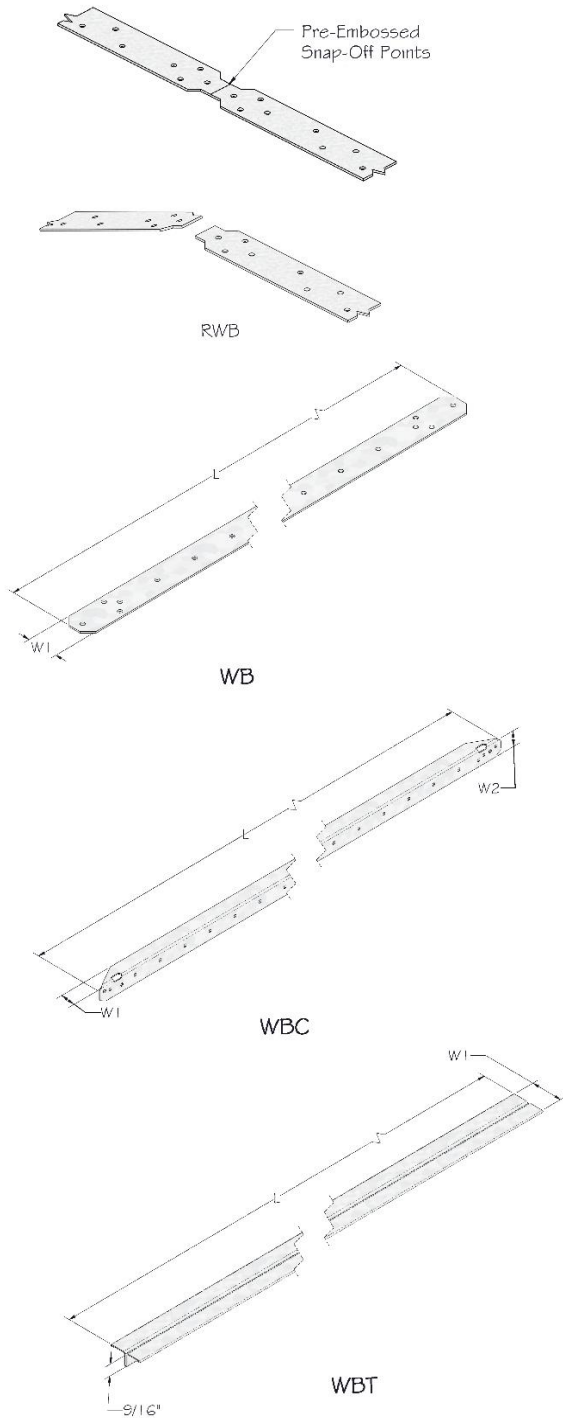


TABLE 3 – RWB, WB, WBC, AND WBT WALL BRACING SERIES DESCRIPTION AND INSTALLATION DETAILS ^{1, 2}

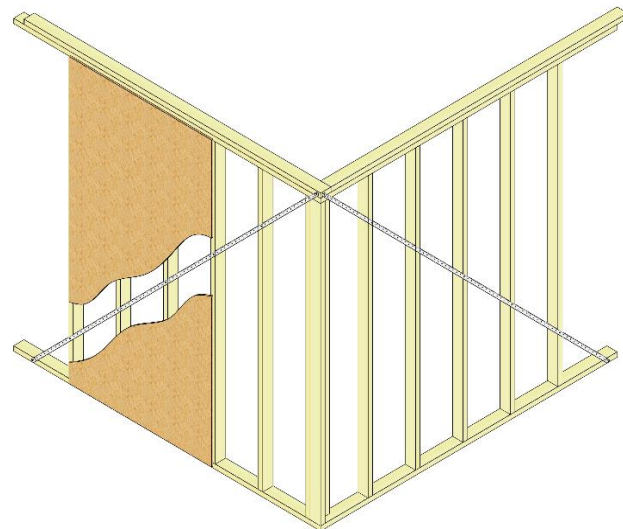
Stock No.	Steel Ga.	Wall Height (ft.)	Angle of Application (deg.)	Qty Each End ¹	Dimensions			Fastener Schedule ^{3, 4, 5}			
					W1 (in.)	W2 (in.)	L (ft.-in.)	Each Plate		Each Stud	
								Qty.	Type	Qty.	Type
RWB 96	16	8	60	2	1 ¹ / ₄	--	9-6	4	8d Common	1	8d Common
RWB 114	16	8	45	2	1 ¹ / ₄	--	11-4 ³ / ₈	4	8d Common	1	8d Common
RWB 143	16	10	45	2	1 ¹ / ₄	--	14-3	4	8d Common	1	8d Common
WB106	16	8	60	2	1 ¹ / ₄	--	9-5 ¹ / ₂	3	16d Common	1	8d Common
WB126	16	8	45	2	1 ¹ / ₄	--	11-4 ¹ / ₄	3	16d Common	1	8d Common
WBC 10	18	8	60	1	7/ ₈	1	9-5 ³ / ₄	2	16d Common	1	8d Common
WBC 12	18	8	45	1	7/ ₈	1	11-4 ³ / ₈	2	16d Common	1	8d Common
WBT 10	22	8	60	1	1 ³ / ₈	9/ ₁₆	9-3	4	8d Common	1	8d Common
WBT 12	22	8	45	1	1 ³ / ₈	9/ ₁₆	11-4	4	8d Common	1	8d Common
WBT 14	22	10	45	1	1 ³ / ₈	9/ ₁₆	14-2	4	8d Common	1	8d Common

For S.I.: 1 inch = 25.4 mm; 1 ft = 305 mm

- 1) The RWB and WB braces shall be installed in pairs forming either an "X" or "V" pattern at each end of a maximum 25-foot-long wall section. The WBC and WBT straps are installed such that there are two straps for a maximum 25-foot-long wall section; one at each end of the wall in an opposing "V" pattern.
- 2) The RWB, WB, WBC, and WBT are not designed to replace shear wall load carrying components.
- 3) The RWB, WB, WBC, and WBT are designed as substitutes to the code-prescribed 1 x 4 let-in bracing methods noted in IBC Section 2308.6.3(1) and IRC Section R602.10.3(1).
- 4) The nail schedule applies for each strap.
- 5) An 8d Common nail has a diameter of 0.131 inch and a length of 2¹/₂ inches. A 16d Common nail has a diameter of 0.162 inch and a length of 3¹/₂ inches.

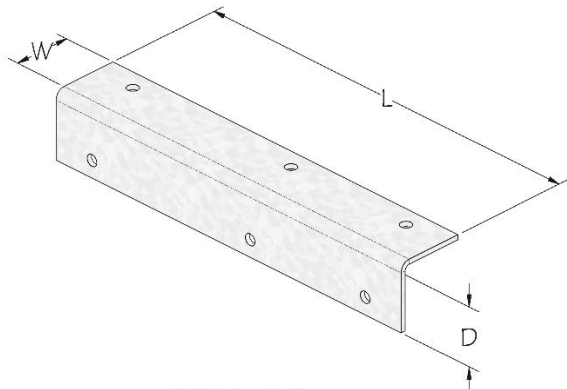


Typical WB/RWB Installation

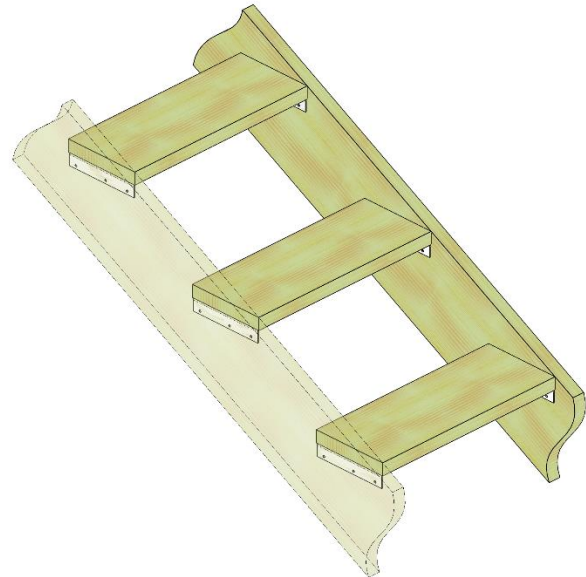


Typical WBC/WBT Installation

FIGURE 3 – RBW, WB, WBC, AND WBT SERIES WALL BRACING DIMENSIONS AND INSTALLATION DETAILS



SCA-TZ



Typical SCA9-TZ
Installation
(SCA10 Similar)

FIGURE 4 – SCA SERIES STAIR ANGLE DIMENSIONS AND INSTALLATION DETAILS

TABLE 4 – SCA SERIES STAIR ANGLE DESCRIPTION, FASTENERS, AND ALLOWABLE LOADING

Stock No.	Steel Ga.	Dimensions (in.)			Fastener Schedule ¹		Allowable Downloads (lbs.) ²
		L	W	D	Qty	Type	F _{Cperp} = 625 psi
							100%
SCA9-TZ	12	9	1 ³ / ₈	1 ³ / ₈	6	1/4" x 1-1/2" Lag Bolt	445
SCA10-TZ	12	10	1 ³ / ₈	1 ³ / ₈	8	1/4" x 1-1/2" Lag Bolt	595

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa

- 1) A 1/4" Lag Bolt has a 1/4" shank diameter with a bending yield strength of 70,000 psi.
- 2) Loads are based on stairs with a rise of 7 inches and a run of 11 inches. Adjust loads for other combinations of rise/run in accordance with code.