



**CERTIFICATION**



**Approved. Sealed. Code Compliant.**

**Technical Evaluation Report**

**TER 1911-03**

Big Timber® CAB Cabinet Screw  
Properties

**Western Builders Supply  
DBA Big Timber®**

**Products:**

**CAB, CAB WHT, and CAB BLK  
Cabinet Screws**

Issue Date:

September 24, 2020

Revision Date:

October 9, 2020

Subject to Renewal:

October 1, 2021



COMPANY  
INFORMATION:

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DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES

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

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## 1 PRODUCTS EVALUATED<sup>1</sup>

- 1.1 CAB, CAB WHT, and CAB BLK Cabinet Screws

## 2 APPLICABLE CODES AND STANDARDS<sup>2,3</sup>

### 2.1 Codes

- 2.1.1 *IBC—12, 15, 18: International Building Code®*
- 2.1.2 *IRC—12, 15, 18: International Residential Code®*

### 2.2 Standards and Referenced Documents

- 2.2.1 *AISI S904: Standard Test Methods for Determining the Tensile and Shear Strength of Screws*
- 2.2.2 *ANSI A208.1 Particleboard*
- 2.2.3 *ANSI/AWC NDS: National Design Specification (NDS) for Wood Construction*
- 2.2.4 *ASTM A153: Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware*
- 2.2.5 *ASTM A510: Standard Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel*
- 2.2.6 *ASTM D1554: Standard Terminology Relating to Wood-Base Fiber and Particle Panel Materials*
- 2.2.7 *ASTM D1761: Standard Test Methods for Mechanical Fasteners in Wood*

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<sup>1</sup> Building codes require data from valid [research reports](#) be obtained from [approved sources](#). 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](#).

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.”

Building official approval of a licensed [registered design professional](#) (RDP) is performed by verifying the RDP and/or their business entity complies with all professional engineering laws of the relevant [jurisdiction](#). Therefore, the work of licensed RDPs is accepted by [building officials](#), except when plan (i.e., peer) review finds an error with respect to a specific section of the code. Where this TER is not approved, the [building official](#) responds in writing stating the reasons for [disapproval](#).

For more information on any of these topics or our mission, product evaluation policies, product approval process, and engineering law, visit [drjcertification.org](http://drjcertification.org) or call us at 608-310-6748.

<sup>2</sup> Unless otherwise noted, all references in this TER are from the 2018 version of the codes and the standards referenced therein (e.g., ASCE 7, NDS, ASTM). This material, design, or method of construction also complies with the 2000-2015 versions of the referenced codes and the standards referenced therein.

<sup>3</sup> All terms defined in the applicable building codes are italicized.

- 2.2.8 *ASTM D2395: Standard Test Methods for Density and Specific Gravity (Relative Density) of Wood and Wood-Based Materials*
- 2.2.9 *ASTM D2915: Standard Practice for Sampling and Data-Analysis for Structural Wood and Wood-Based Products*
- 2.2.10 *ASTM D4442: Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials*
- 2.2.11 *ASTM F1575: Standard Test Method for Determining Bending Yield Moment of Nails*
- 2.2.12 *DOC PS 1: Structural Plywood*

### 3 PERFORMANCE EVALUATION

- 3.1 Big Timber® "Low Profile" (CAB), White Head (CAB WHT), and Black (CAB BLK) Cabinet Screws were tested and evaluated to determine their structural resistance properties, which were used to develop reference design values for allowable stress design (ASD). The following properties were evaluated:
  - 3.1.1 Bending yield in accordance with *ASTM F1575*
  - 3.1.2 Tensile strength in accordance with *AISI S904*
  - 3.1.3 Shear strength in accordance with *AISI S904*
  - 3.1.4 Lateral shear in accordance with *ASTM D1761*
  - 3.1.5 Withdrawal strength in accordance with *ASTM D1761*
  - 3.1.6 Head pull-through in accordance with *ASTM D1761*
- 3.2 CAB, CAB WHT, and CAB BLK cabinet screws were tested and evaluated for corrosion resistance of fasteners meeting or exceeding the protection afforded hot-dipped galvanized fasteners in accordance with *ASTM A153*, Class D.
- 3.3 Use of screws in locations exposed to saltwater or saltwater spray are outside the scope of this TER.
- 3.4 Any code compliance issues not specifically addressed in this section are outside the scope of this TER.
- 3.5 Any engineering evaluation conducted for this TER was performed on the dates provided in this TER and within DrJ's professional scope of work.

### 4 PRODUCT DESCRIPTION AND MATERIALS

- 4.1 CAB, CAB WHT, and CAB BLK cabinet screws have a round washer head with a star drive, are partially threaded, and are coated for exterior use. CAB, CAB WHT, and CAB BLK screws are shown in Figure 1, Figure 2, and Figure 3 respectively.



FIGURE 1. CAB CABINET SCREW



FIGURE 2. CAB WHT CABINET SCREW



FIGURE 3. CAB BLK CABINET SCREW



- 4.2 CAB, CAB WHT, and CAB BLK screws are manufactured using a standard cold-formed process followed by a heat-treating process.
- 4.3 CAB screws are coated with a proprietary coating, designated as Bronze, which exceeds the protections provided by hot-dipped galvanized coatings conforming to *ASTM A153*.
- 4.4 CAB WHT screws are coated with a proprietary coating, designated as Bronze, which exceeds the protections provided by hot-dipped galvanized coatings conforming to *ASTM A153*.
- 4.5 CAB BLK screws are coated with a proprietary coating, designated as Black, which exceeds the protections provided by hot-dipped galvanized coatings conforming to *ASTM A153*.
- 4.6 CAB, CAB WHT, and CAB BLK screws are approved for use in chemically-treated or untreated lumber where *ASTM A153*, Class D coatings are approved for use in accordance with *IBC Section 2304.10*<sup>4</sup> and *IRC Section R317.3*.
  - 4.6.1 The proprietary coating has been tested and found to exceed the protection provided by code-approved hot-dipped galvanized coatings meeting *ASTM A153*, Class D *IBC Section 2304.10.5*<sup>5</sup> and *IRC Section R317.3*, allowing for its use in pressure-treated wood.
  - 4.6.2 Screws are approved for use in fire-retardant-treated lumber, provided the conditions set forth by the fire-retardant-treated lumber manufacturer are met, including appropriate strength reductions.

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<sup>4</sup> 2012 *IBC Section 2304.9*

<sup>5</sup> 2012 *IBC Section 2304.9.5*

4.7 The screws evaluated in this TER are set forth in Table 1.

TABLE 1. SCREW SPECIFICATIONS

Screw Name	Designation	Head (in.)		Nominal Length <sup>1</sup> (in.)	Thread Length <sup>1</sup> (in.)	Shank Diameter <sup>2</sup> (in.)	Thread Diameter (in.)		Specified Minimum Core Hardness <sup>4</sup> (HV 0.3)	Nominal Bending Yield, f <sub>yb</sub> (psi)	Allowable Screw Strength (lbf)	
		Diameter	Drive Type				Minor	Major			Tensile	Shear <sup>3</sup>
CAB	8 x 1¼"	0.433	T20	1¼	7/8	0.119	0.107	0.171	240	179,000	480	415
	8 x 15/8"			15/8	1							
	8 x 2"			2	13/8							
	8 x 2½"			2½	2							
	8 x 3"			3	2							
	10 x 2½"	0.500	T25	2½	2	0.144	0.122	0.190	240	190,000	885	680
10 x 3"	3			2								
CAB WHT	8 x 1¼"	0.433	T20	1¼	7/8	0.119	0.107	0.171	240	179,000	480	415
	8 x 15/8"			15/8	1							
	8 x 2"			2	13/8							
	10 x 2½"	0.500	T25	2½	2	0.144	0.122	0.190	240	190,000	885	680
	10 x 3"			3	2							
CAB BLK	8 x 1¼"	0.433	T20	1¼	7/8	0.119	0.107	0.171	240	179,000	480	415
	8 x 15/8"			15/8	1							
	8 x 2"			2	13/8							
	10 x 2½"	0.500	T25	2½	2	0.144	0.122	0.190	240	190,000	885	680
	10 x 3"			3	2							

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

1. Screw length is measured from the underside of the head to the tip. Thread length includes tapered tip.
2. Shank diameter based on manufactured thickness. Finished dimensions are larger, due to the proprietary coatings added.
3. Shear strength applicable at both the smooth shank and thread diameter.
4. Based on a 300 gram load using the Vickers indenter.

## 5 APPLICATIONS

### 5.1 General

- 5.1.1 CAB, CAB WHT, and CAB BLK screws are used to attach cabinets to wood framing members in conventional light-frame construction and provide resistance against withdrawal, head pull-through, axial, and shear loads. See Section 6 for installation requirements.
- 5.1.2 CAB, CAB WHT, and CAB BLK screws are installed without lead holes, as prescribed in NDS.
- 5.1.3 Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience, and technical judgment.



5.2 Design

- 5.2.1 Design of CAB, CAB WHT, and CAB BLK screws is governed by the applicable code and the provisions for dowel-type fasteners in *NDS*.
- 5.2.2 Unless otherwise noted, adjustment of the design stresses for duration of load shall be in accordance with the applicable code.

5.3 Reference Lateral Design Values (Z)

- 5.3.1 Reference lateral design values (lbf) for shear load parallel and perpendicular to grain for CAB, CAB WHT, and CAB BLK screws are specified in Table 2 for plywood with gypsum wallboard (GWB) between the main and side members and in Table 3 for sawn lumber.

TABLE 2. REFERENCE LATERAL DESIGN VALUES (Z) FOR 23/32" PLYWOOD SIDE MEMBER WITH 5/8" GWB

Screw Name	Designation	Nominal Length (in.)	Thread Length (in.)	Minimum Side Member Thickness (in.)	Minimum Main Member Penetration <sup>4</sup> (in.)	Lateral Design Value <sup>1,2,3,6</sup> , Z (lbf)	
						Main Member Wood Species <sup>5</sup> (Specific Gravity)	
						SPF (0.42)	DF-L (0.50)
CAB	8 x 2½"	2½	2	23/32	1½	115	150
	8 x 3"	3	2	23/32	1½		
	10 x 2½"	2½	2	23/32	1½	115	150
	10 x 3"	3	2	23/32	1½	200	200
CAB WHT	10 x 2½"	2½	2	23/32	1½	115	150
	10 x 3"	3	2	23/32	1½	200	200
CAB BLK	10 x 2½"	2½	2	23/32	1½	115	150
	10 x 3"	3	2	23/32	1½	200	200

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

1. Reference lateral design values apply to two-member single shear connections where the side member is plywood and GWB, the main member is DF-L (SG = 0.50) or SPF (SG = 0.42) respectively, and the screw is installed in the face of the member. The main member shall have a minimum thickness of 1.5".
2. Tabulated lateral design values (Z) shall be adjusted by all applicable adjustment factors per *NDS* Table 11.3.1.
3. Lateral design values apply to both perpendicular (Z<sub>⊥</sub>) and parallel (Z<sub>||</sub>) to main member grain orientations.
4. Screw main member penetration is the length embedded in the main member, including the tip.
5. For wood species of main member with a SG between 0.42 and 0.50, use the tabulated values for SG of 0.42.
6. Plywood shall comply with *DOC PS 1*. Plywood shall have a SG of at least 0.42.

TABLE 3. REFERENCE LATERAL DESIGN VALUES (Z) FOR SAWN LUMBER MAIN AND SIDE MEMBERS

Screw Name	Designation	Nominal Length (in.)	Thread Length (in.)	Minimum Side Member Thickness (in.)	Minimum Main Member Penetration <sup>5</sup> (in.)	Lateral Design Value, <sup>1,2,3,4</sup> Z (lbf)			
						SPF (SG = 0.42)		DF-L (SG = 0.50)	
						Z <sub>⊥</sub>	Z <sub>∥</sub>	Z <sub>⊥</sub>	Z <sub>∥</sub>
CAB	8 x 1 <sup>5</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>8</sub>	1	<sup>3</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	50	50	70	70
	8 x 2"	2	1 <sup>3</sup> / <sub>8</sub>	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	60	60	75	75
	8 x 2 <sup>1</sup> / <sub>2</sub> "	2 <sup>1</sup> / <sub>2</sub>	2	1 <sup>1</sup> / <sub>2</sub>	1	65	65	80	80
	8 x 3"	3	2	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	75	75	85	85
	10 x 2 <sup>1</sup> / <sub>2</sub> "	2 <sup>1</sup> / <sub>2</sub>	2	1 <sup>1</sup> / <sub>2</sub>	1	80	80	100	100
	10 x 3"	3	2	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	100	125	115	225
CAB WHT	8 x 1 <sup>5</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>8</sub>	1	<sup>3</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	50	50	70	70
	8 x 2"	2	1 <sup>3</sup> / <sub>8</sub>	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	60	60	75	75
	10 x 2 <sup>1</sup> / <sub>2</sub> "	2 <sup>1</sup> / <sub>2</sub>	2	1 <sup>1</sup> / <sub>2</sub>	1	80	80	100	100
	10 x 3"	3	2	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	100	125	115	225
CAB BLK	8 x 1 <sup>5</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>8</sub>	1	<sup>3</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	50	50	70	70
	8 x 2"	2	1 <sup>3</sup> / <sub>8</sub>	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	60	60	75	75
	10 x 2 <sup>1</sup> / <sub>2</sub> "	2 <sup>1</sup> / <sub>2</sub>	2	1 <sup>1</sup> / <sub>2</sub>	1	80	80	100	100
	10 x 3"	3	2	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	100	125	115	225

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

- Reference lateral design values apply to two-member single shear connections where both members are of the same specific gravity, and the screw is installed in the face of the member and oriented perpendicular to grain. Where the members are of different specific gravities, use the lower of the two.
- For wood species with a SG between 0.42 and 0.50, use the tabulated values for SG of 0.42.
- Tabulated lateral design values (Z) shall be adjusted by all applicable adjustment factors per *NDS* Table 11.3.1.
- Z<sub>⊥</sub> = Lateral Design Values Perpendicular to Grain, Z<sub>∥</sub> = Lateral Design Values Parallel to Grain.
- Screw main member penetration is the length embedded in the main member, including the tip.



5.4 Reference Withdrawal Design Values (*W*) in Side Grain Applications

5.4.1 Reference withdrawal design values (lbf/in.) for CAB, CAB WHT, and CAB BLK screws in sawn lumber are specified in Table 4.

TABLE 4. REFERENCE WITHDRAWAL DESIGN VALUES (*W*)

Screw Name	Designation	Nominal Length (in.)	Thread Length (in.)	Withdrawal Design Value <sup>1,3,4</sup> , <i>W</i> (lbf/in.)	
				Wood Species <sup>2</sup> (Specific Gravity)	
				SPF (0.42)	DF-L (0.50)
CAB	8 x 1¼"	1¼	7/8	100	120
	8 x 1⅝"	1⅝	1		
	8 x 2"	2	1⅜		
	8 x 2½"	2½	2		
	8 x 3"	3	2		
	10 x 2½"	2½	2		
	10 x 3"	3	2		
CAB WHT	8 x 1¼"	1¼	7/8	100	120
	8 x 1⅝"	1⅝	1		
	8 x 2"	2	1⅜		
	10 x 2½"	2½	2		
	10 x 3"	3	2		
CAB BLK	8 x 1¼"	1¼	7/8	100	120
	8 x 1⅝"	1⅝	1		
	8 x 2"	2	1⅜		
	10 x 2½"	2½	2		
	10 x 3"	3	2		

SI: 1 in. = 25.4 mm, 1 lb./ft. = 0.0146 kN/m

1. Tabulated withdrawal values (*W*) shall be adjusted by all applicable adjustment factors per *NDS* Table 11.3.1.
2. For wood species with a SG between 0.42 and 0.50, use the tabulated values for SG of 0.42.
3. The full design withdrawal value is equal to the reference withdrawal value multiplied by the length of the threaded portion of the screw embedded in the main member.
4. Screw penetration is the threaded length embedded in the main member, including the tip.





5.5 Reference Head Pull-Through Design Values (P)

5.5.1 Reference design values for head pull through (lbf) for CAB, CAB WHT, and CAB BLK screws are specified in Table 5 for particleboard, plywood, sawn lumber.

TABLE 5. REFERENCE HEAD PULL-THROUGH DESIGN VALUES

Screw Name	Designation	Nominal Length (in.)	Thread Length (in.)	Head Pull-Through Design Value <sup>1,5</sup> , P (lbf)		
				Side Member		
				¾" Particleboard <sup>2</sup>	23/32" Plywood <sup>3</sup>	1.5" SPF <sup>4</sup>
CAB	8 x 1¼"	1¼	7/8	160	290	180
	8 x 15/8"	15/8	1			
	8 x 2"	2	13/8			
	8 x 2½"	2½	2			
	8 x 3"	3	2			
	10 x 2½"	2½	2			
CAB WHT	10 x 3"	3	2	205	290	300
	8 x 1¼"	1¼	7/8	160	290	180
	8 x 15/8"	15/8	1			
	8 x 2"	2	13/8			
	10 x 2½"	2½	2			
10 x 3"	3	2				
CAB BLK	8 x 1¼"	1¼	7/8	160	290	180
	8 x 15/8"	15/8	1			
	8 x 2"	2	13/8			
	10 x 2½"	2½	2			
	10 x 3"	3	2			

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

1. Tabulated pull-through values (P) shall be adjusted by all applicable adjustment factors per NDS Table 11.3.1.
2. Particleboard shall be medium density and comply with ANSI A208.1 per IBC Section 2303.1.8. Particleboard shall have a minimum density of 40 lb/ft<sup>3</sup> (640 kg/m<sup>3</sup>).
3. Plywood shall comply with DOC PS 1. Plywood shall have a SG of at least 0.42.
4. Wood species shall have a SG of at least 0.42.
5. Pull-through design values apply to connections having the listed minimum wood side member thickness.

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's installation instructions and this TER, the more restrictive shall govern.
- 6.2 Minimum penetration is 1", unless otherwise stated in this TER. Install screws with head flush to the surface of the wood member.
- 6.3 Lead holes are not required.
- 6.4 Screws shall be installed with the appropriate rotating powered driver.



6.5 Minimum requirements for screw spacing, edge distance, and end distance shall be in accordance with Table 6.

TABLE 6. SCREW SPACING, EDGE DISTANCE, AND END DISTANCE REQUIREMENTS

Connection Geometry	Minimum Spacing/Distance (in.)	
	CAB8, CAB8 WHT, and CAB8 BLK	CAB10, CAB10 WHT, and CAB10 BLK
Edge Distance – Load in any direction	3/8	3/8
End Distance – Load parallel to grain, towards end	1 7/8	2 1/4
End Distance – Load parallel to grain, away from end	1 1/4	1 1/2
End Distance – Load perpendicular to grain	1 1/4	1 1/2
Spacing between Screws in a Row – Parallel to grain	1 7/8	2 1/4
Spacing between Screws in a Row – Perpendicular to grain	1 1/4	1 1/2
Spacing between Rows of Screws – In-line	5/8	3/4
Spacing between Rows of Screws – Staggered	3/8	3/8

SI: 1 in. = 25.4 mm

1. Edge distances, end distances, and spacing of screws shall be sufficient to prevent splitting of the wood or as shown in this table, whichever is the more restrictive.
2. Values for "Spacing between Rows of Screws-Staggered" apply where the screws in adjacent rows are offset by one half of the "Spacing between Screws in a Row"

## 7 TEST ENGINEERING SUBSTANTIATING DATA

- 7.1 Testing for bending yield by SBCRI in accordance with *ASTM F1575*
- 7.2 Testing for tensile strength by SBCRI in accordance with *AISI S904*
- 7.3 Testing for shear strength by SBCRI in accordance with *AISI S904*
- 7.4 Testing for lateral strength by SBCRI in accordance with *ASTM D1761*
- 7.5 Testing for withdrawal by SBCRI in accordance with *ASTM D1761*
- 7.6 Testing for head pull-through by SBCRI in accordance with *ASTM D1761*
- 7.7 Testing for corrosion resistance by Element in accordance with *ASTM B117* and *ASTM G85*.
- 7.8 Some information contained herein is the result of testing and/or data analysis by other sources which conform to *IBC Section 1703* and relevant professional engineering law. DrJ relies on accurate data from these sources to perform engineering analysis. DrJ has reviewed and found the data provided by other professional sources to be credible.
- 7.9 Where appropriate, DrJ's analysis is based on design values that have been codified into law through codes and standards (e.g., *IBC*, *IRC*, *NDS®*, and *SDPWS*). This includes review of code provisions and any related test data that aids in comparative analysis or provides support for equivalency to an intended end-use application. Where the accuracy of design values provided herein is reliant upon the published properties of commodity materials (e.g., lumber, steel, and concrete), DrJ relies upon the grade mark, stamp, and/or design values provided by raw material suppliers to be accurate and conforming to the mechanical properties defined in the relevant material standard.

## 8 FINDINGS

- 8.1 When used and installed in accordance with this TER and the manufacturer's installation instructions, the product(s) listed in Section 1.1 have the reference design value properties defined herein and are approved for use in accordance with the applicable code.
- 8.2 *IBC Section 104.11* (*IRC Section R104.11* and *IFC Section 104.9* 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, provided that any such alternative has been *approved*. An alternative material, design or method of construction shall be *approved* where the *building official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code...Where the alternative material, design or method of construction is not *approved*, the *building official* shall respond in writing, stating the reasons the alternative was not *approved*.

- 8.3 This product has been evaluated in the context of the codes listed in Section 2 and is compliant with all known state and local building codes. Where there are known variations in state or local codes applicable to this TER, they are listed here.
  - 8.3.1 No known variations

## 9 CONDITIONS OF USE

- 9.1 Moisture content of wood members shall be the following.
  - 9.1.1 Sawn lumber: less than or equal to 19% per *NDS* Section 4.1.4
  - 9.1.2 Plywood: less than 16% per *NDS* Section 9.1.4
  - 9.1.3 Particleboard: less than 10% per *ANSI A208.1*
- 9.2 Use of screws in locations exposed to saltwater or saltwater spray is outside the scope of this TER.
- 9.3 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.
- 9.4 Any generally accepted engineering calculations needed to show compliance with this TER shall be submitted to the AHJ for review and approval.
- 9.5 *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 *registered design professional*).
- 9.6 At a minimum, this product shall be installed per Section 6 of this TER.
- 9.7 This product is manufactured under a third-party quality control program in accordance with *IBC* Section 104.4 and 110.4 and *IRC* Section R104.4 and R109.2.
- 9.8 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. Therefore, the TER shall be reviewed for code compliance by the *building official* for acceptance.
- 9.9 The use of this TER is dependent on the manufacturer's in-plant QC, the ISO/IEC 17020 third-party quality assurance program and procedures, proper installation per the manufacturer's instructions, the *building official's* inspection, and any other code requirements that may apply to demonstrate and verify compliance with the applicable building code.

## 10 IDENTIFICATION

- 10.1 The product(s) listed in Section 1.1 are 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 [bigtimberfasteners.com](http://bigtimberfasteners.com).

## 11 REVIEW SCHEDULE

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