Technical Evaluation Report™ - Canada

Conformity Assessment by an Approved Certification Agency

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Big Timber® BL and GL Screw Properties - Canada

Trade Secret Report Holder:

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CSI Designations:

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

1 Innovative Products Evaluated[1]

1.1 BL Log, Timber, and Landscape Screws and GL Gray Structural Screws

2 Product Description and Materials

2.1 BL Log, Timber, and Landscape Screws and GL Gray Structural Screws have a hex washer head and are partially threaded.

2.2 The innovative products evaluated in this report are shown in **Figure 1** and **Figure 2**.



Figure 1. BL Log, Timber, and Landscape Screw



Figure 2. GL Gray Structural Screw

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2.3 BL Log, Timber, and Landscape Screws and GL Gray Structural Screws are manufactured using a standard cold-formed process followed by a heat-treating process.

2.4 BL Log, Timber, and Landscape Screws are coated with a proprietary coating, designated as Black Log.

2.5 GL Gray Structural Screws are coated with a proprietary coating, designated as Gray Log.

2.6 BL Log, Timber, and Landscape Screws and GL Gray Structural Screws are approved for use in chemically treated or untreated lumber where ASTM A153, Class D coatings are approved for use in accordance with NBC Subsection 5.9.1.[2]

2.6.1 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 (NBC Subsection 5.9.1), allowing for its use in pressure treated wood.

2.7 BL Log, Timber, and Landscape Screws and GL Gray Structural Screws are approved for use in fire-retardant treated lumber, provided the conditions set forth by the fire-retardant treated lumber manufacturer be met, including appropriate strength reductions.

2.8 The fasteners evaluated in this report are set forth in **Table 1**.

Table 1. Fastener Specifications

Fastener Name	Designation	Head in (mm)		Nominal Length[1] in (mm)	Thread Length[1] in (mm)	Shank Diameter[2] in (mm)	Thread Diameter in (mm)		Specified Minimum Core Hardness[4] (HV 0.3)	Nominal Bending Yield, f_{yb} psi (MPa)	Factored Fastener Strength lbf (kN)	
		Diameter	Drive Type				Minor	Major			Tensile	Shear[3]
BL	14 x 2"	0.487 (12.4)	Hex 5/16	2 (51)	2 (51)	0.189 (4.8)	0.171 (4.3)	0.258 (6.6)	355	177,700 (1,225)	1,955 (8.7)	1,305 (5.8)
	14 x 2 1/2"			2 1/2 (64)	2 (51)							
	14 x 3 1/4"			3 1/4 (83)	2 (51)							
	14 x 4"			4 (102)	2 (51)							
	14 x 5"			5 (127)	2 (51)							
	14 x 6"			6 (152)	2 (51)							
	14 x 7"			7 (178)	2 1/2 (64)							
	14 x 8"			8 (203)	2 1/2 (64)							
	14 x 9"			9 (229)	2 1/2 (64)							
	14 x 10"			10 (254)	2 1/2 (64)							
	14 x 12"			12 (305)	2 1/2 (64)							
	14 x 14"			14 (356)	2 1/2 (64)							
	17 x 4"	0.570 (14.5)	Hex 5/16	4 (102)	2 (51)	0.224 (5.7)	0.211 (5.4)	0.297 (7.5)	355	172,600 (1,190)	3,580 (15.9)	2,230 (9.9)
	17 x 5"			5 (127)	3 (76)							
	17 x 6"			6 (152)	3 (76)							
	17 x 7"			7 (178)	3 (76)							
	17 x 9"			9 (229)	3 (76)							

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Table 1. Fastener Specifications

Fastener Name	Designation	Head in (mm)		Nominal Length[1] in (mm)	Thread Length[1] in (mm)	Shank Diameter[2] in (mm)	Thread Diameter in (mm)		Specified Minimum Core Hardness[4] (HV 0.3)	Nominal Bending Yield, f_{yb} psi (MPa)	Factored Fastener Strength lbf (kN)	
		Diameter	Drive Type				Minor	Major			Tensile	Shear[3]
GL	17 x 4"	0.570 (14.5)	Hex 5/16	4 (102)	2 (51)	0.224 (5.7)	0.211 (5.4)	0.297 (7.5)	355	172,600 (1,190)	3,580 (15.9)	2,230 (9.9)
	17 x 5"			5 (127)	3 (76)							
	17 x 6"			6 (152)	3 (76)							
	17 x 7"			7 (178)	3 (76)							
	17 x 9"			9 (229)	3 (76)							
	17 x 11"			11 (279)	3 (76)							

SI: 25.4 mm = 1 in, 1 N = 0.225 lb, 1 MPa = 145-psi

1. Fastener 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 determined at smooth shank diameter.
4. Based on a 300-gram load using the Vickers indenter.

2.9 As needed, review material properties for design in **Section 4** and the regulatory evaluation in **Section 5**.

3 Applicable Codes and Standards[3]

3.1 *Codes*

3.1.1 *NBC—20, 25: National Building Code of Canada*

3.1.2 *O Reg. 163/24: Ontario Building Code (OBC)[4]*

3.2 *Standards and Referenced Documents*

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

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

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

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

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

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

3.2.7 *ASTM D2915: Standard Practice for Sampling and Data-Analysis for Structural Wood and Wood-Based Products*

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

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

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

3.2.11 *CSA O86: Engineering Design in Wood*

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4 Tabulated Properties Generated from Nationally Recognized Standards

4.1 *General*

4.1.1 BL Log, Timber, and Landscape Screws and GL Gray Structural Screws are used to attach 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.

4.1.2 BL Log, Timber, and Landscape Screws and GL Gray Structural Screws are installed without lead holes, as prescribed in CSA O86 Article 12.11.2.1.

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

4.2 *Design*

4.2.1 Design of BL Log, Timber, and Landscape Screws and GL Gray Structural Screws is governed by the applicable code and the provisions for wood screws in CSA O86.

4.2.2 Unless otherwise noted, adjustment of the design stresses for duration of load shall be in accordance with the applicable code.

4.3 *BL and GL Factored Lateral Design Values (N_r)*

4.3.1 The factored lateral design values for shear load perpendicular to grain and parallel to grain for BL Log, Timber, and Landscape Screws and GL Gray Structural Screws in sawn lumber are specified in **Table 2**.

Table 2. BL and GL Screw Factored Lateral Design Values for Connections in Sawn Lumber (N_r)

Fastener Name	Designation	Nominal Length in (mm)	Thread Length in (mm)	Minimum Side Member Thickness in (mm)	Minimum Main Member Penetration[4] in (mm)	Factored Lateral Design Values[1,2] lbf (N)	
						Species[3] (Relative Density)	
						HF/SPF (0.42)	
						$N_{r\perp}$	$N_{r\parallel}$
BL	14 x 2 1/2"	2 1/2 (64)	2 (51)	3/4 (19.1)	1 3/4 (44)	365 (1,620)	365 (1,620)
	14 x 3 1/4"	3 1/4 (83)	2 (51)	3/4 (19.1)	2 1/2 (64)		
	14 x 4"	4 (102)	2 (51)	3/4 (19.1)	3 1/4 (83)		
	14 x 5"	5 (127)	2 (51)				
	14 x 6"	6 (152)	2 (51)	3 (76)	3 (76)	585 (2,595)	720 (3,205)
	14 x 7"	7 (178)	2 1/2 (64)				
	14 x 8"	8 (203)	2 1/2 (64)				
	14 x 9"	9 (229)	2 1/2 (64)				
	14 x 10"	10 (254)	2 1/2 (64)				
	14 x 12"	12 (305)	2 1/2 (64)				
	14 x 14"	14 (356)	2 1/2 (64)				
	17 x 4"	4 (102)	2 (51)	1 1/2 (38)	2 1/2 (64)	535 (2,370)	535 (2,370)
	17 x 5"	5 (127)	3 (76)	1 1/2 (38)	3 1/2 (89)	605 (2,700)	660 (2,940)
	17 x 6"	6 (152)	3 (76)				

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Table 2. BL and GL Screw Factored Lateral Design Values for Connections in Sawn Lumber (N_r)

Fastener Name	Designation	Nominal Length in (mm)	Thread Length in (mm)	Minimum Side Member Thickness in (mm)	Minimum Main Member Penetration[4] in (mm)	Factored Lateral Design Values[1,2] lbf (N)	
						Species[3] (Relative Density)	
						HF/SPF (0.42)	
						$N_{r\perp}$	$N_{r\parallel}$
BL continued	17 x 7"	7 (178)	3 (76)	2 3/4 (70)	4 1/2 (114)	650 (2,895)	970 (4,315)
	17 x 9"	9 (229)	3 (76)				
GL	17 x 4"	4 (102)	2 (51)	1 1/2 (38)	2 1/2 (64)	535 (2,370)	535 (2,370)
	17 x 5"	5 (127)	3 (76)	1 1/2 (38)	3 1/2 (89)	605 (2,700)	660 (2,940)
	17 x 6"	6 (152)	3 (76)				
	17 x 7"	7 (178)	3 (76)	2 3/4 (70)	4 1/2 (114)	650 (2,895)	970 (4,315)
	17 x 9"	9 (229)	3 (76)				
	17 x 11"	11 (279)	3 (76)	3 1/2 (89)	7 1/2 (191)	710 (3,165)	1,190 (5,295)

SI: 25.4 mm = 1 in, 1 N = 0.225 lb

1. $N_{r\perp}$ = Lateral Design Values Perpendicular to Grain, $N_{r\parallel}$ = Lateral Design Values Parallel to Grain.
2. Tabulated values are for a standard load duration. Values shall be factored by all applicable modification factors per CSA O86.
3. Factored lateral design values apply to two-member single shear connections where both members are of the same relative density, and the fastener is oriented perpendicular to grain. Where the members are of different relative densities, use the lower of the two.
4. Fastener main member penetration is the length embedded in the main member, including the tip.

4.4 *BL and GL Factored Withdrawal Design Values (P_{rw}) in Side Grain Applications*

4.4.1 The design provisions for withdrawal noted in CSA O86 Subsection 12.11.4 apply to BL Log, Timber, and Landscape Screws and GL Gray Structural Screws, unless otherwise noted in this report. Factored withdrawal design values per millimeter of threaded shank penetration for BL Log, Timber, and Landscape Screws and GL Gray Structural Screws are specified in **Table 3**.

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Table 3. BL and GL Screw Factored Withdrawal Design Values (P_{rw}) – Side Grain Applications

Fastener Name	Designation	Nominal Length in (mm)	Thread Length in (mm)	Factored Withdrawal Design Values[1,2,3] lbf/in (N/mm)
				Species (Relative Density)
				HF/SPF (0.42)
BL	14 x 2"	2 (51)	2 (51)	370 (65)
	14 x 2 1/2"	2 1/2 (64)	2 (51)	
	14 x 3 1/4"	3 1/4 (83)	2 (51)	
	14 x 4"	4 (102)	2 (51)	
	14 x 5"	5 (127)	2 (51)	
	14 x 6"	6 (152)	2 (51)	
	14 x 7"	7 (178)	2 1/2 (64)	
	14 x 8"	8 (203)	2 1/2 (64)	
	14 x 9"	9 (229)	2 1/2 (64)	
	14 x 10"	10 (254)	2 1/2 (64)	
	14 x 12"	12 (305)	2 1/2 (64)	
	14 x 14"	14 (356)	2 1/2 (64)	
	17 x 4"	4 (102)	2 (51)	230 (40)
	17 x 5"	5 (127)	3 (76)	370 (65)
	17 x 6"	6 (152)	3 (76)	
	17 x 7"	7 (178)	3 (76)	
	17 x 9"	9 (229)	3 (76)	
GL	17 x 4"	4 (102)	2 (51)	230 (40)
	17 x 5"	5 (127)	3 (76)	370 (65)
	17 x 6"	6 (152)	3 (76)	
	17 x 7"	7 (178)	3 (76)	
	17 x 9"	9 (229)	3 (76)	
	17 x 11"	11 (279)	3 (76)	

SI: 25.4 mm = 1 in, 1 N/mm = 5.71 lbf/in

1. Tabulated values are for a standard load duration. Values shall be factored by all applicable modification factors per CSA O86 for wood screws.
2. Minimum fastener penetration into main member of 1" (25.4 mm) is required. Fastener penetration is the threaded length embedded in the main member, excluding the tip.
3. The full factored design withdrawal value is equal to the tabulated withdrawal value multiplied by the length of the threaded portion of the fastener embedded in the main member.

4.5 *BL and GL Factored Head Pull-Through Design Values (P_{pt})*

4.5.1 The factored design values for head pull-through for BL Log, Timber, and Landscape Screws and GL Gray Structural Screws are specified in **Table 4**.

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Table 4. BL and GL Screw Factored Head Pull-Through Design Values (P_{pt})

Fastener Name	Designation	Nominal Length in (mm)	Thread Length in (mm)	Factored Head Pull-Through Design Value[1,2] lbf (N)
				Species (Relative Density)
				HF/SPF (0.42)
BL	14 x 2"	2 (51)	2 (51)	110 (495)
	14 x 2 1/2"	2 1/2 (64)	2 (51)	
	14 x 3 1/4"	3 1/4 (83)	2 (51)	
	14 x 4"	4 (102)	2 (51)	
	14 x 5"	5 (127)	2 (51)	
	14 x 6"	6 (152)	2 (51)	
	14 x 7"	7 (178)	2 1/2 (64)	
	14 x 8"	8 (203)	2 1/2 (64)	
	14 x 9"	9 (229)	2 1/2 (64)	
	14 x 10"	10 (254)	2 1/2 (64)	
	14 x 12"	12 (305)	2 1/2 (64)	
	14 x 14"	14 (356)	2 1/2 (64)	
	17 x 4"	4 (102)	2 (51)	
	17 x 5"	5 (127)	3 (76)	
	17 x 6"	6 (152)	3 (76)	
	17 x 7"	7 (178)	3 (76)	
	17 x 9"	9 (229)	3 (76)	
GL	17 x 4"	4 (102)	2 (51)	
	17 x 5"	5 (127)	3 (76)	
	17 x 6"	6 (152)	3 (76)	
	17 x 7"	7 (178)	3 (76)	
	17 x 9"	9 (229)	3 (76)	
	17 x 11"	11 (279)	3 (76)	

SI: 25.4 mm = 1 in, 1 N = 0.225 lb

1. Tabulated values are for a standard load duration. Values shall be factored by all applicable modification factors per CSA O86 for wood screws.
2. Pull-through design value applies to connectors having a minimum wood side member thickness of 3/4" (19 mm).

4.6 Alternative solutions shall be permitted where they achieve at least the minimum level of performance required by the applicable acceptable solutions of NBC Division B in the areas defined by the attributed objectives and functional statements, in accordance with accepted engineering practice and experience.

4.6.1 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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5 Regulatory Evaluation and Accepted Engineering Practice

5.1 BL Log, Timber, and Landscape Screws and GL Gray Structural Screws comply with the following adopted codes and/or accepted engineering practice for the following reasons:

5.1.1 BL Log, Timber, and Landscape Screws and GL Gray Structural Screws were tested and evaluated to determine their structural resistance properties, which were used to develop design values for limit states design (LSD) in accordance with CSA O86. The following properties were evaluated:

5.1.1.1 Bending yield in accordance with ASTM F1575

5.1.1.2 Tensile strength in accordance with AISI S904

5.1.1.3 Shear strength in accordance with AISI S904

5.1.1.4 Lateral shear in accordance with CSA O86 Clause 12.11.3

5.1.1.5 Withdrawal strength in accordance with CSA O86 Clause 12.11.4

5.1.1.6 Head pull-through in accordance with CSA O86 Clause 12.11.4.3

5.1.1.7 Corrosion resistance of fasteners, meeting or exceeding the protection afforded hot dipped galvanized fasteners in accordance with ASTM A153, Class D

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

5.3 Any building code, regulation, and/or accepted engineering evaluations (i.e., research reports, duly authenticated reports, conformity assessments by approved certification agencies etc.) that are conducted for this report 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[5] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise, respectively.

5.4 Testing and related engineering evaluations are defined as intellectual property and/or trade secrets.[6]

5.5 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise that is also its areas of professional engineering competence.[7]

6 Installation

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

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

6.3 *Installation Procedure*

6.3.1 Minimum penetration is 1" (25.4 mm) unless otherwise noted in this report.

6.3.2 Install fasteners with the underside of the head flush to the surface of the wood member.

6.3.3 Lead holes are not required.

6.3.4 Screws shall be installed with the appropriate rotating powered driver.

6.3.5 Minimum requirements for screw spacing, edge distance, and end distance shall be in accordance with **Table 5**.

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Table 5. BL Log, Timber, and Landscape Screws and GL Gray Structural Screws Spacing, Edge Distance, and End Distance Requirements[3]

Figure 3 Symbol	Dimension	Minimum Spacing[1,2] (mm)	
		Species (Relative Density)	
		HF/SPF (0.42)	
		BL 14	BL 17, GL 17
S_P	Spacing parallel to grain	106	120
S_Q	Spacing perpendicular to grain	53	60
a	End distance parallel to grain	79	90
e	Edge distance perpendicular to grain	26	30

SI: 1 in = 25.4 mm

1. Table values are based on the major thread diameter from **Table 1** in accordance with CSA O86-19, Figure 12.16.
2. Spacing, edge distances, and end distances of fasteners shall be sufficient to prevent splitting of the wood or as shown in this table, whichever is more restrictive.
3. See **Figure 3** for fastener placements.

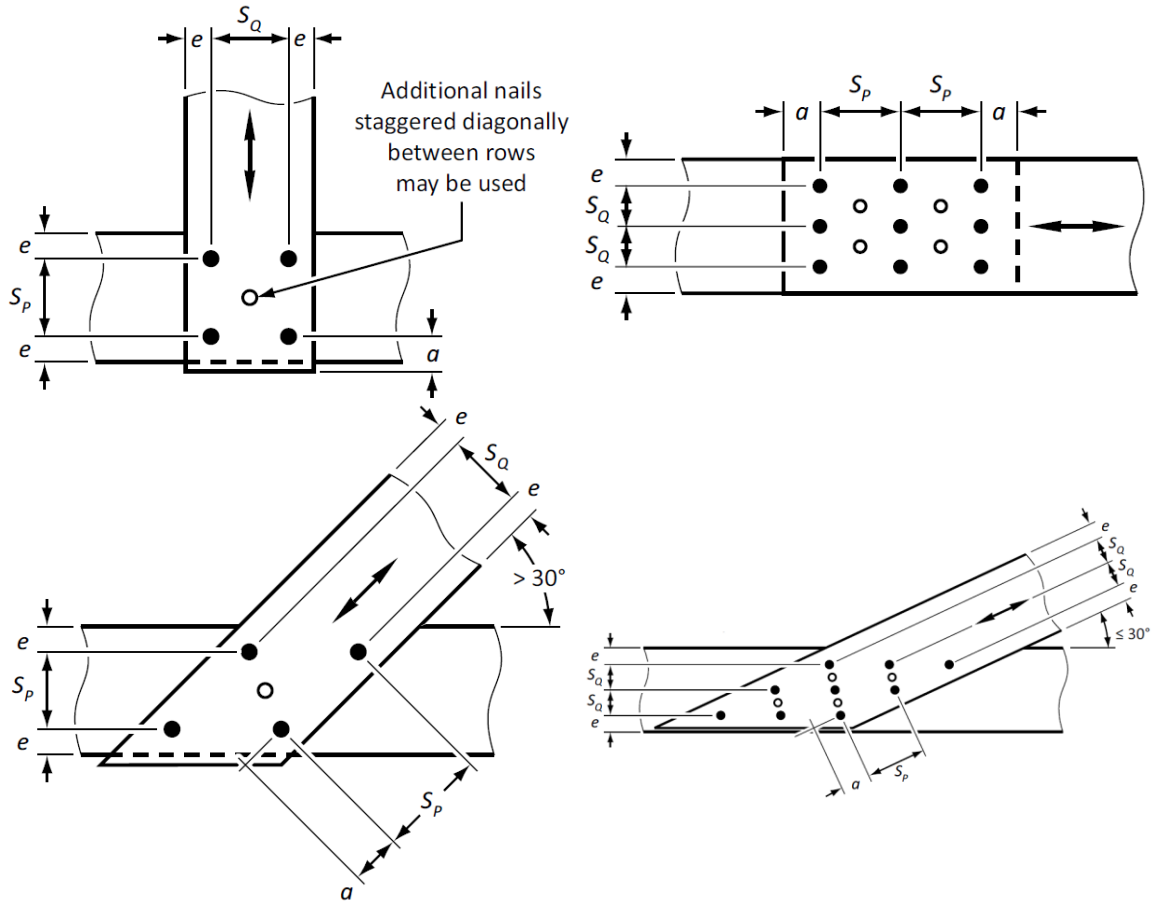


Figure 3. Example Diagrams Illustrating Fastener Spacings[8]

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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 Bending yield testing in accordance with ASTM F1575

7.1.2 Shear and tensile testing in accordance with AISI S904

7.1.3 Lateral strength testing in accordance with ASTM D1761

7.1.4 Withdrawal strength testing in accordance with ASTM D1761

7.1.5 Corrosion resistance testing in accordance with ASTM B117 and ASTM G85

7.1.6 Calculations for factored lateral design values in accordance with CSA O86 and accepted engineering practice.

7.2 Information contained herein is the result of testing and/or data analysis by sources that conform to the conformity assessment framework described in NBC Volume 1, "*Relationship of the NBC to Standards Development and Conformity Assessment*," 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 provincial, territorial, or local adoption of codes and standards. The developers of these codes and standards are responsible for the reliability of published content. DrJ's analysis may use code-adopted provisions as a benchmark in evaluating whether a product, material, assembly, design, or method of construction demonstrates equivalency in quality, strength, effectiveness, fire resistance, durability and safety.

7.4 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, listings, certified reports, conformity assessments by approved certification agencies, and research reports prepared by approved agencies and/or approved sources provided by the suppliers of products, materials, designs, assemblies and/or methods of construction. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this report, may be dependent upon published design properties by others.

7.5 *Testing and Engineering Analysis*

7.5.1 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.

7.6 Where additional condition of use and/or code compliance information is required, please search for BL Log, Timber, and Landscape Screws and GL Gray Structural Screws on the DrJ Certification website.

8 Findings

8.1 As outlined in **Section 4**, BL Log, Timber, and Landscape Screws and GL Gray Structural Screws have performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to their specified purpose.

8.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, BL Log, Timber, and Landscape Screws and GL Gray Structural Screws shall be approved for the following applications:

8.2.1 Use as fasteners in accordance with required codes and the design values listed in this report.

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

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8.4 These innovative products have been evaluated in the context of the codes listed in **Section 3** and are compliant with all known provincial, territorial, and local building codes. Where there are known variations in provincial, territorial, or local codes applicable to this report, they are listed here:

8.4.1 No known variations

8.5 NBC Volume 1 "*Relationship of the NBC to Standards Development and Conformity Assessment*":

> **Certification**
>
> Certification is the confirmation by an independent organization that a product, service, or system meets a requirement. Certification may entail physical examination, testing as specified in appropriate standards or other normative documents, an initial plant inspection, and/or follow-up unannounced plant inspections… Certification bodies publish lists of certified products and companies.
>
> **Evaluation**
>
> An evaluation is a written opinion by an independent professional organization that a product will perform its intended function. An evaluation is very often done to determine the ability of an innovative product, for which no standards exist, to satisfy the intent of the Code requirement...

8.6 ISO/IEC 17065 accredited third-party certification bodies,[9] including but not limited to, Standards Council of Canada (SCC)[10] and ANSI National Accreditation Board (ANAB),[11] confirm that product certification bodies have the expertise to provide technical evaluation services within their scope of accreditation. All SCC and ANAB product certification bodies meet NBC requirements to offer evaluation services for alternative solutions.[12]

8.6.1 DrJ is an ISO/IEC 17065 ANAB-Accredited Product Certification Body – Accreditation #1131[13] and employs professional engineers.[14]

8.7 Through ANAB accreditation and the Global ACI Multilateral Recognition Arrangement (MRA), this report can be used to obtain product approval in any jurisdiction or country that has Global ACI Members and Global ACI Signatories to meet the Purpose of the MRA.

8.8 Product certification organizations, accredited by the SCC and ANAB, are defined as equivalent evaluation services:

8.8.1 Canada-United States-Mexico Agreement (CUSMA), Article 11.6 Conformity Assessment confirms mutual recognition by stating, "*...each Party shall accord to conformity assessment bodies located in the territory of another Party treatment no less favorable than that it accords to conformity assessment bodies located in its own territory or in the territory of the other Party*."

8.8.2 The SCC National Conformity Assessment Principles states, "*SCC is a member of a number of international organizations developing voluntary conformity assessment agreements that help ensure the international acceptance of Canadian conformity assessment results. Signatories to these agreements (like SCC) recognize each other's accreditations as being equivalent to their own*."[15]

8.9 Building official approval of a licensed professional engineer is performed by verifying the professional engineer and/or their business entity are listed by the engineering regulators of the relevant jurisdiction.

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9 Conditions of Use

9.1 As defined in **Section 4**, 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.

9.2 As listed herein, BL Log, Timber, and Landscape Screws and GL Gray Structural Screws shall be used:

9.2.1 Only with sawn lumber, that has a moisture content of less than nineteen percent (19%).

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

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

9.4.1 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.

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

9.4.3 These innovative products have an internal quality control program and a third-party quality assurance program.

9.4.4 At a minimum, these innovative products shall be installed per **Section 6**.

9.4.5 This report shall be reviewed for code compliance by the AHJ in concert with the duties and powers granted to the building official by the provincial regulations governing such duties and powers.

9.4.6 The application of these innovative products in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspections, and any other regulatory requirements that may apply.

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 (i.e., owner).

9.6 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.

10 Identification

10.1 BL Log, Timber, and Landscape Screws and GL Gray 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.

10.2 Additional technical information can be found at bigtimberfasteners.com.

11 Review Schedule

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

11.2 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] O Reg. 163/24 Subsection 5.9.1

[3] Unless otherwise noted, all references in this report are from the 2025 version of the NBC. This alternative solution is also approved for use with the 2020 NBC and the standards referenced therein.

[4] References in this report to the National Building Code of Canada (NBC) apply to the Ontario Building Code (OBC), unless noted otherwise.

[5] 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.

[6] Canada Foreign Interference and Security of Information Act – 19 - Economic Espionage – (1) Every person commits an offence who, at the direction of, for the benefit of or in association with a foreign economic entity, fraudulently and without colour of right and to the detriment of Canada's economic interests, international relations or national defence or national security. (a) communicates a trade secret to another person, group or organization; or (b) obtains, retains, alters or destroys a trade secret. (2) Every person who commits an offence under subsection (1) is guilty of an indictable offence and is liable to imprisonment for a term of not more than 10 years…

[7] ANAB is part of the CUSMA/USMCA and Global ACI, where the purpose of these agreements are to ensure mutual recognition of accredited certification and validation/verification statements between agreement signatories, and subsequent acceptance of ANAB accredited certification and validation/verification statements by professional engineers based upon having one universal approval process for the timely approval of innovative materials, products, designs, services, assemblies and/or methods of construction.

[8] Graphics in **Figure 3** are as shown in CSA O86-19, Figure 12.16

[9] https://anabpd.ansi.org/Accreditation/product-certification/DirectoryListingAccredited?menuID=1&prgID=1

[10] https://global-aci.org/en/member-details/?member_id=91

[11] https://global-aci.org/en/member-details/?member_id=14

[12] NBC Division A Clause A-1.2.1.1.(1)(b) provides information on code compliance via alternative solutions and defines alternative solutions as *"...achiev[ing] at least the minimum level of performance required by Division B."* NBC Division C Section 2.3 includes additional guidance for documentation of alternative solutions.

[13] https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?&prgID=1&OrgId=2125&statusID=4

[14] Through ANAB accreditation and the Global ACI, DrJ certification can be used to obtain material, product, design, or method of construction approval in any jurisdiction or country that has Global ACI Full Members and Global ACI Signatories to meet the Purpose of the MRA – "*certified once, accepted everywhere*".

[15] The National Conformity Assessment Principles states, "*Product regulations and standards may vary from country to country. If these are set arbitrarily, they could be deemed as protectionist. The World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT Agreement) aims to ensure that technical regulations, standards, and conformity assessment procedures are non-discriminatory and do not create unnecessary obstacles to trade. At the same time, it recognises WTO members' right to implement measures to achieve legitimate policy objectives, such as the protection of human health and safety, or protection of the environment. The TBT Agreement strongly encourages members to base their measures on international standards as a means to facilitate trade. Through its transparency provisions, it also aims to create a predictable trading environment.*"

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