Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

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Power Pro® Structural Wood Screws in Multi-Ply Connections

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 Power Pro Structural Wood Screws

1.1.1 Power Pro® LumberTite® Structural Wood Screws

1.1.2 Power Pro® TimberTite® Structural Wood Screws

1.1.3 Power Pro® TrussTite® Structural Wood Screws

1.1.4 Power Pro® Structural Lag Screws

1.1.5 Power Pro® TimberWood Structural Screws

2 Product Description and Materials

2.1 The innovative products evaluated in this report are shown in **Figure 1** through **Figure 5**.

Figure 1. Power Pro LumberTite Structural Wood Screws

Figure 2. Power Pro TimberTite Structural Wood Screws

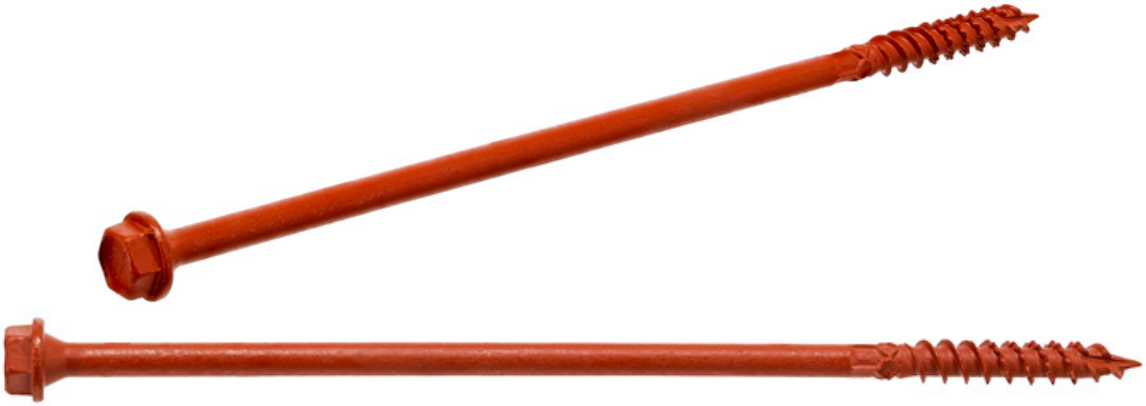

Figure 3. Power Pro TrussTite Structural Wood Screws

Figure 4. Power Pro Structural Lag Screws

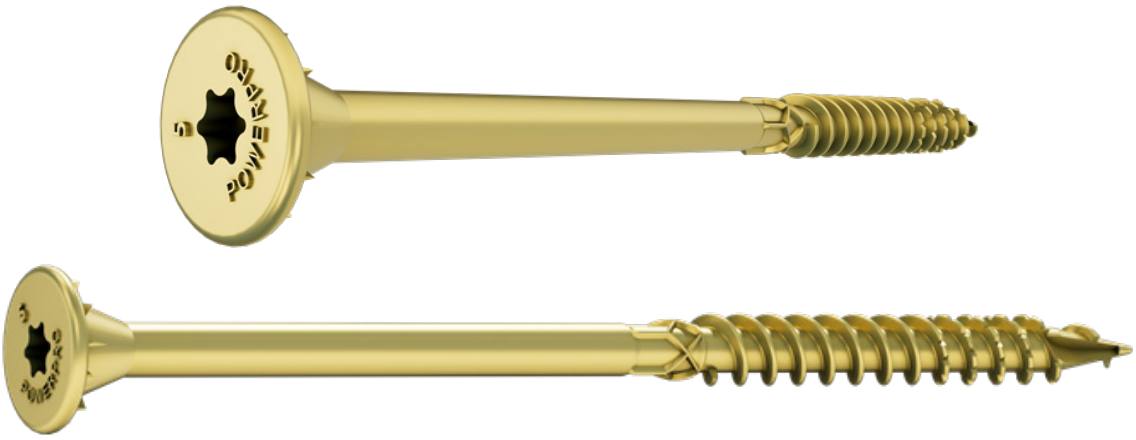

Figure 5. Power Pro TimberWood Structural Screws

2.2 *General*

2.2.1 Power Pro Structural Wood Screws are partially threaded, self-drilling, dowel-type fasteners that are manufactured using standard cold-forming processes and are subsequently heat-treated and coated with a proprietary coating comprised of a zinc layer and an organic topcoat.

2.2.1.1 LumberTite fasteners are Torx-driven screws with an integrated washer.

2.2.1.2 TimberTite fasteners are $^{5}/_{16}$" hex-driven screws with an integrated washer.

2.2.1.3 TrussTite fasteners are $^{5}/_{16}$" hex-driven screws with an integrated washer.

2.2.1.4 Structural Lag Screws are Torx-driven screws with a flattened truss head.

2.2.1.5 TimberWood Structural Screws are Torx-driven screws with a flat countersinking head.

2.3 *Fastener Material*

2.3.1 Power Pro Structural Wood Screws are made of hardened carbon steel.

2.4 *Corrosion Resistance*

2.4.1 Power Pro Structural Wood Screws may be used where screws are required to exhibit corrosion resistance when exposed to adverse environmental conditions, which are subject to the limitations of this report. Power Pro Structural Wood Screws have been evaluated for use in wood treated with ACQ-D preservatives with a retention of 0.40 pcf (6.4 kg/m^3) and may be used as an alternative to hot-dip galvanized fasteners in wood treated with preservatives or less corrosive effects meeting ASTM A153, Class D (IBC Section 2304.10.6 and IRC Section R304.3[2]).

2.4.2 Power Pro Structural Wood Screws have a proprietary coating, which may be used as an alternative to the protection provided by code-approved hot-dipped galvanized coatings meeting ASTM A153, Class D (IBC Section 2304.10.6 and IRC Section R304.3[3]).

2.5 *Pressure-Preservative Treated (PPT) Wood Applications*

2.5.1 Power Pro Structural Lag Screws and Power Pro TimberWood Structural Screws having the proprietary coating are recognized for use in PPT lumber provided the conditions set forth by the PPT lumber manufacturer are met, including appropriate strength reductions.

2.6 *Fire Retardant Treated (FRT) Wood Applications*

2.6.1 Power Pro Structural Wood Screws having the proprietary coating are recognized for use in FRT lumber, provided the conditions set forth by the FRT lumber manufacturer are met, including appropriate strength reductions.

2.7 *Wood Members*

2.7.1 Solid sawn wood members connected Power Pro Structural Wood Screws shall consist of lumber species or species combinations having a Specific Gravity (SG) of 0.42 to 0.55.

2.7.2 Structural composite lumber (e.g., LVL, LSL, PSL, etc.) connected with Structural Lag Screws or TimberWood Structural Screws shall be recognized in evaluation reports having published equivalent specific gravities for lateral and withdrawal resistance.

2.8 *Fastener Specifications*

2.8.1 **Table 1** lists the dimensions and mechanical properties of Power Pro Structural Wood Screws that are evaluated in this report.

Table 1. Fastener Specifications

Fastener Name	Nominal Diameter (in)	Length[1] (in)	Thread Length[2] (in)	Head Diameter[3] (in)	Unthreaded Shank Diameter (in)	Thread Diameter (in)		Nominal Bending Yield[4] (psi)	Tensile Strength (lbf)	
						Minor	Major		ASD	LFRD
Power Pro LumberTite Screws	1/4	2 7/8	2.00	0.610	0.174	0.155	0.239	180,000	780	1,170
		4 1/2								
		6								
		7								
Power Pro TimberTite Screws	1/4	2 1/2	1.25	0.460	0.174	0.155	0.239	180,000	780	1,170
		4	2.00							
		6								
Power Pro TrussTite Screws	5/16	2 7/8	1.50	0.500	0.204	0.181	0.284	180,000	970	1,460
		3 3/8								
		4								
		4 1/2								
		5								
		6								
		6 3/4								
Power Pro Structural Lag Screws	1/4	2 1/2	1.58	0.540	0.174	0.155	0.239	180,000	780	1,170
		3	1.80							
		3 1/2	1.96							
		4	2.38							
		5								
		6								

Table 1. Fastener Specifications

Fastener Name	Nominal Diameter (in)	Length[1] (in)	Thread Length[2] (in)	Head Diameter[3] (in)	Unthreaded Shank Diameter (in)	Thread Diameter (in)		Nominal Bending Yield[4] (psi)	Tensile Strength (lbf)	
						Minor	Major		ASD	LFRD
Power Pro Structural Lag Screws	5/16	2 1/2	1.50	0.630	0.204	0.181	0.284	180,000	970	1,460
		3	2.10							
		3 1/2	2.20							
		4	2.60							
		5	3.50							
		6	4.00							
Power Pro TimberWood Structural Screws	5/16	2 1/2	1.50	0.630	0.204	0.181	0.284	180,000	970	1,460
		3	2.10							
		4	2.60							
		5	3.50							
		6	4.00							

SI: 1 in = 25.4 mm, 1 psi = 0.00689 MPa, 1 lbf = 4.448 N

1. Measured from the underside of the head to the tip.
2. Includes tip.
3. Nominal diameter of the washer head.

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

3 Definitions[4]

3.1 New Materials[5] are defined as building materials, equipment, appliances, systems, or methods of construction, not provided for by prescriptive and/or legislatively adopted regulations, known as alternative materials.[6] The design strength and permissible stresses shall be established by tests[7] and/or engineering analysis.[8]

3.2 Duly authenticated reports[9] and research reports[10] are test reports and related engineering evaluations that are written by an approved agency[11] and/or an approved source.[12]

3.2.1 These reports utilize intellectual property and/or trade secrets to create public domain material properties for commercial end-use.

3.2.1.1 This report protects confidential Intellectual Property and trade secretes under the regulation, 18.US.Code.90, also known as Defend Trade Secrets Act of 2016 (DTSA).[13]

3.3 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is accredited and listed in the ANAB directory.

3.4 An approved source is *"approved"* when a professional engineer (i.e., Registered Design Professional, hereinafter RDP) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.[14]

3.5 Testing and/or inspections conducted for this duly authenticated report were performed by an ISO/IEC 17025 accredited testing laboratory, an ISO/IEC 17020 accredited inspection body, and/or a licensed RDP.

3.5.1 The Center for Building Innovation (CBI) is ANAB[15] ISO/IEC 17025 and ISO/IEC 17020 accredited.

3.6 The regulatory authority shall enforce[16] the specific provisions of each legislatively adopted regulation. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in writing[17] stating the nonconformance and the path to its cure.

3.7 The regulatory authority shall accept duly authenticated reports from an approved agency and/or an approved source with respect to the quality and manner of use of new materials or assemblies as provided for in regulations regarding the use of alternative materials, designs, or methods of construction.[18]

3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) signatory. Therefore, recognition of certificates and validation statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope shall be approved.[19] Thus, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent,[20] and can be used in any country that is an MLA signatory found at this link: https://iaf.nu/en/recognised-abs/

3.9 Approval equity is a fundamental commercial and legal principle.[21]

4 Applicable Local, State, and Federal Approvals; Standards; Regulations[22]

4.1 *Local, State, and Federal*

4.1.1 Approved in all local jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured local jurisdictions: Austin, Baltimore, Broward County, Chicago, Clark County, Dade County, Dallas, Detroit, Denver, DuPage County, Fort Worth, Houston, Kansas City, King County, Knoxville, Las Vegas, Los Angeles City, Los Angeles County, Miami, Nashville, New York City, Omaha, Philadelphia, Phoenix, Portland, San Antonio, San Diego, San Jose, San Francisco, Seattle, Sioux Falls, South Holland, Texas Department of Insurance, and Wichita.[23]

4.1.2 Approved in all state jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured states: California, Florida, New Jersey, Oregon, New York, Texas, Washington, and Wisconsin.[24]

4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[25] and Part 3280[26] pursuant to the use of ISO/IEC 17065 duly authenticated reports.

4.1.4 Approved means complying with the requirements of local, state, or federal legislation.

4.2 *Standards*

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

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

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

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

4.3 *Regulations*

4.3.1 *IBC – 18, 21, 24: International Building Code®*

4.3.2 *IRC – 18, 21, 24: International Residential Code®*

4.3.3 *IECC – 18, 21, 24: International Energy Conservation Code®*

5 Listed[27]

5.1 Equipment, materials, products, or services included in a List published by a nationally recognized testing laboratory (i.e., CBI), an approved agency (i.e., CBI and DrJ), and/or and approved source (i.e., DrJ), or other organization(s) concerned with product evaluation (i.e., DrJ), that maintains periodic inspection (i.e., CBI) of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

6 Tabulated Properties Generated from Nationally Recognized Standards

6.1 Power Pro Structural Wood Screws are used for attaching multi-ply wood members including trusses, sawn lumber, and Structural Composite Lumber (SCL) products.

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

6.3 *Design*

6.3.1 Design of Power Pro Structural Wood Screws are governed by the applicable code and the provisions for dowel type fasteners in NDS.

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

6.4 *Multi-Ply Connection Design Values*

6.4.1 Power Pro Structural Wood Screws for Multi-ply Truss and Sawn Lumber Assemblies

6.4.1.1 Sawn lumber design values are provided for assemblies with two, three, or four plies in **Table 2** through **Table 6**.

6.4.1.1.1 An example of two assemblies is presented in **Figure 6**.

6.4.1.1.2 Assembly conditions are detailed in **Figure 7**.

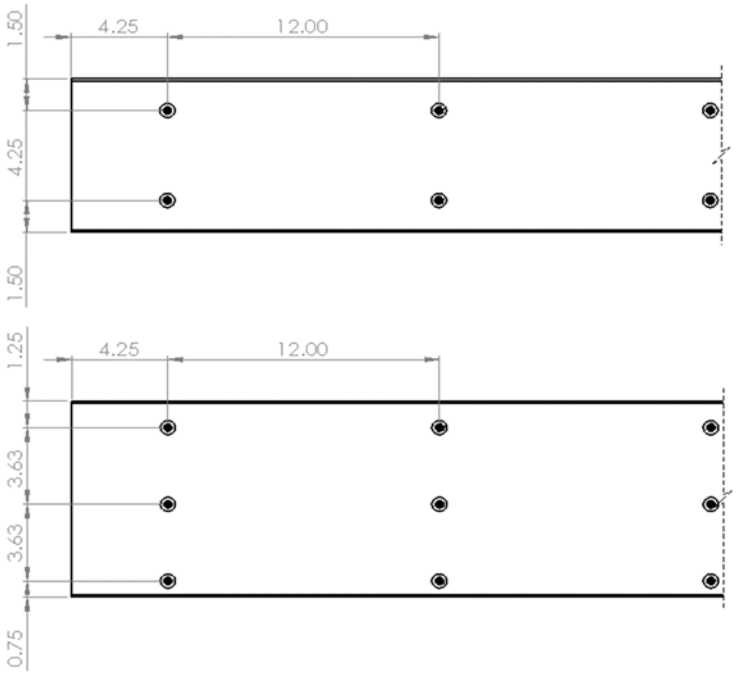

Figure 6. Fastener Spacing Diagram (values are in inches)

Table 2. Allowable Lateral Design Values (plf) for LumberTite Fasteners in Multi-Ply Truss and Sawn Lumber Assemblies[2,3,4,5,6]

Fastener	Assembly	Members	Fastener Length[1] (in)	SPF/HF (0.42)						DF/SP (0.50)					
				12" o.c.		16" o.c.		24" o.c.		12" o.c.		16" o.c.		24" o.c.	
				Number of Rows of Fasteners											
				2	3	2	3	2	3	2	3	2	3	2	3
LumberTite	A	2-ply 1½"	2⅞	880	1,320	660	990	440	660	1,160	1,740	870	1,305	580	870
	B	3-ply 1½"	4½	660	990	495	745	330	495	870	1,305	655	985	435	655
	C	4-ply 1½"	6	585	880	440	660	295	445	775	1,165	585	880	390	585

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

1. Fastener length is measured from the underside of the head to the tip.
2. Wood framing shall be any species with SG of 0.42 or greater. For wood species with an assigned SG between 0.42 and 0.50, use the tabulated values for SG of 0.42. For wood species with an assigned SG greater than 0.50, use the tabulated values for SG of 0.50.
3. Allowable design values are based on a load duration factor C_D = 1.0 and shall be multiplied by all applicable adjustment factors per the NDS.
4. The tabulated allowable design loads may be applied to either side of the beam (head or point side of the fastener). Where loads are applied to both sides of the beam simultaneously, the total load applied to the beam shall not exceed the tabulated load.
5. For top-loaded members with even loading across the width of the entire assembly, fasteners shall be installed in two (2) rows with a maximum distance of 32" o.c. between fasteners in the same row.
6. Tabulated loads are for the connection strength. Beams and framing members shall be independently checked by a registered design professional.

Table 3. Allowable Lateral Design Values (plf) for TimberTite Fasteners in Multi-Ply Truss and Sawn Lumber Assemblies[2,3,4,5,6]

Fastener	Assembly	Members	Fastener Length[1] (in)	SPF/HF (0.42)						DF/SP (0.50)					
				12" o.c.		16" o.c.		24" o.c.		12" o.c.		16" o.c.		24" o.c.	
				Number of Rows of Fasteners											
				2	3	2	3	2	3	2	3	2	3	2	3
TimberTite	A	2-ply 1½"	2½	580	870	435	655	290	435	820	1,230	615	925	410	615
	B	3-ply 1½"	4	435	655	325	490	220	330	615	925	460	690	310	465
	C	4-ply 1½"	6	385	580	290	435	195	295	545	820	410	615	275	415

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

1. Fastener length is measured from the underside of the head to the tip.
2. Wood framing shall be any species with SG of 0.42 or greater. For wood species with an assigned SG between 0.42 and 0.50, use the tabulated values for SG of 0.42. For wood species with an assigned SG greater than 0.50, use the tabulated values for SG of 0.50.
3. Allowable design values are based on a load duration factor C_D = 1.0 and shall be multiplied by all applicable adjustment factors per the NDS.
4. The tabulated allowable design loads may be applied to either side of the beam (head or point side of the fastener). Where loads are applied to both sides of the beam simultaneously, the total load applied to the beam shall not exceed the tabulated load.
5. For top-loaded members with even loading across the width of the entire assembly, fasteners shall be installed in two (2) rows with a maximum distance of 32" o.c. between fasteners in the same row.
6. Tabulated loads are for the connection strength. Beams and framing members shall be independently checked by a registered design professional.

Table 4. Allowable Lateral Design Values (plf) for TrussTite Fasteners in Multi-Ply Truss and Sawn Lumber Assemblies[2,3,4,5,6]

Fastener	Assembly	Members	Fastener Length[1] (in)	SPF/HF (0.42)						DF/SP (0.50)					
				12" o.c.		16" o.c.		24" o.c.		12" o.c.		16" o.c.		24" o.c.	
				Number of Rows of Fasteners											
				2	3	2	3	2	3	2	3	2	3	2	3
TrussTite	A	2-ply 1½"	2⅞	680	1,020	510	765	340	510	680	1,020	510	765	340	510
	B	3-ply 1½"	4	510	765	385	580	255	385	510	765	385	580	255	385
			4½	510	765	385	580	255	385	510	765	385	580	255	385
	C	4-ply 1½"	6	455	685	340	510	230	345	455	685	340	510	230	345

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

1. Fastener length is measured from the underside of the head to the tip.
2. Wood framing shall be any species with SG of 0.42 or greater. For wood species with an assigned SG between 0.42 and 0.50, use the tabulated values for SG of 0.42. For wood species with an assigned SG greater than 0.50, use the tabulated values for SG of 0.50.
3. Allowable design values are based on a load duration factor C_D = 1.0 and shall be multiplied by all applicable adjustment factors per the NDS.
4. The tabulated allowable design loads may be applied to either side of the beam (head or point side of the fastener). Where loads are applied to both sides of the beam simultaneously, the total load applied to the beam shall not exceed the tabulated load.
5. For top-loaded members with even loading across the width of the entire assembly, fasteners shall be installed in two (2) rows with a maximum distance of 32" o.c. between fasteners in the same row.
6. Tabulated loads are for the connection strength. Beams and framing members shall be independently checked by a registered design professional.

Table 5. Allowable Lateral Design Values (plf) for ¼" Structural Lag Screws in Multi-Ply Truss and Sawn Lumber Assemblies[2,3,4,5,6]

Fastener	Assembly	Members	Fastener Length[1] (in)	SPF/HF (0.42)						DF/SP (0.50)					
				12" o.c.		16" o.c.		24" o.c.		12" o.c.		16" o.c.		24" o.c.	
				Number of Rows of Fasteners											
				2	3	2	3	2	3	2	3	2	3	2	3
¼" Structural Lag Screw	A	2-ply 1½"	2½	680	1,020	510	765	340	510	900	1,350	675	1,015	450	675
			3	680	1,020	510	765	340	510	900	1,350	675	1,015	450	675
	B	3-ply 1½"	4	510	765	385	580	255	385	675	1,015	510	765	340	510
			5	510	765	385	580	255	385	675	1,015	510	765	340	510
	C	4-ply 1½"	6	455	685	340	510	230	345	600	900	450	675	300	450

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

1. Fastener length is measured from the underside of the head to the tip.
2. Wood framing shall be any species with SG of 0.42 or greater. For wood species with an assigned SG between 0.42 and 0.50, use the tabulated values for SG of 0.42. For wood species with an assigned SG greater than 0.50, use the tabulated values for SG of 0.50.
3. Allowable design values are based on a load duration factor C_D = 1.0 and shall be multiplied by all applicable adjustment factors per the NDS.
4. The tabulated allowable design loads may be applied to either side of the beam (head or point side of the fastener). Where loads are applied to both sides of the beam simultaneously, the total load applied to the beam shall not exceed the tabulated load.
5. For top-loaded members with even loading across the width of the entire assembly, fasteners shall be installed in two (2) rows with a maximum distance of 32" o.c. between fasteners in the same row.
6. Tabulated loads are for the connection strength. Beams and framing members shall be independently checked by a registered design professional.

Table 6. Allowable Lateral Design Values (plf) for $^5/_{16}$" Structural Lag Screws and $^5/_{16}$" TimberWood Structural Screws in Multi-Ply Truss and Sawn Lumber Assemblies[2,3,4,5,6]

Fastener	Assembly	Members	Fastener Length[1] (in)	SPF/HF (0.42)						DF/SP (0.50)					
				12" o.c.		16" o.c.		24" o.c.		12" o.c.		16" o.c.		24" o.c.	
				Number of Rows of Fasteners											
				2	3	2	3	2	3	2	3	2	3	2	3
$^5/_{16}$" Structural Lag Screw, and TimberWood Structural Screw	A	2-ply 1$^1/_2$"	2$^1/_2$	960	1,440	720	1,080	480	720	1,020	1,530	765	1,150	510	765
			3	960	1,440	720	1,080	480	720	1,020	1,530	765	1,150	510	765
	B	3-ply 1$^1/_2$"	5	720	1,080	540	810	360	540	765	1,150	575	865	385	580
	C	4-ply 1$^1/_2$"	6	640	960	480	720	320	480	680	1,020	510	765	340	510

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

1. Fastener length is measured from the underside of the head to the tip.
2. Wood framing shall be any species with SG of 0.42 or greater. For wood species with an assigned SG between 0.42 and 0.50, use the tabulated values for SG of 0.42. For wood species with an assigned SG greater than 0.50, use the tabulated values for SG of 0.50.
3. Allowable design values are based on a load duration factor C_D = 1.0 and shall be multiplied by all applicable adjustment factors per the NDS.
4. The tabulated allowable design loads may be applied to either side of the beam (head or point side of the fastener). Where loads are applied to both sides of the beam simultaneously, the total load applied to the beam shall not exceed the tabulated load.
5. For top-loaded members with even loading across the width of the entire assembly, fasteners shall be installed in two (2) rows with a maximum distance of 32" o.c. between fasteners in the same row.
6. Tabulated loads are for the connection strength. Beams and framing members shall be independently checked by a registered design professional.

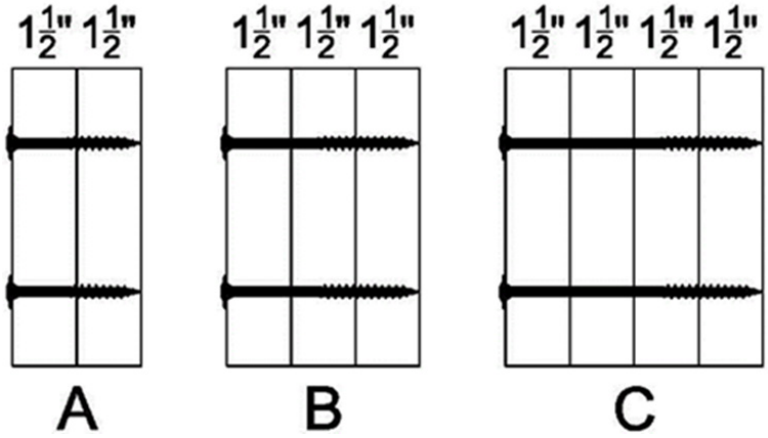

Figure 7. Truss and Sawn Lumber Assembly Configuration

6.4.2 *Power Pro Structural Wood Screws for Multi-ply Structural Composite Lumber (SCL) Assemblies:*

6.4.2.1 SCL is a family of engineered wood products that includes, but is not limited to, Laminated Veneer Lumber (LVL), Laminated Strand Lumber (LSL), Parallel Strand Lumber (PSL), and Oriented Strand Lumber (OSL).

6.4.2.2 Power Pro Structural Wood Screws SCL design values are provided for assemblies with two, three, or four plies as shown in **Table 7** through **Table 11**.

6.4.2.3 Assembly conditions are detailed in **Figure 8**.

Table 7. Allowable Lateral Design Values (plf) for LumberTite Fasteners in Multi-Ply Truss and SCL Assemblies[2,3,4,5,6]

Fastener	Assembly	Members	Fastener Length[1] (in)	12" o.c.		16" o.c.		24" o.c.	
				Number of Rows of Fasteners					
				2	3	2	3	2	3
LumberTite	A	2-ply 1 3/4"	2 7/8	1,160	1,740	870	1,305	580	870
	B	3-ply 1 3/4"	4 1/2	870	1,305	655	985	435	655
	C	4-ply 1 3/4"	7	775	1,165	585	880	390	585
	D	2-ply 1 3/4" & 3 1/2"	4 1/2	870	1,305	655	985	435	655
	E	3-ply,(2) 1 3/4"(1) and 3 1/2"	7	775	1,165	585	880	390	585
	F	2-ply 3 1/2"	6	1,160	1,740	870	1,305	580	870
			7						

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

1. Fastener length is measured from the underside of the head to the tip.
2. SCL shall have an SG of 0.50 or greater. Thicknesses listed in **Figure 8** are a minimum.
3. Allowable design values are based on a load duration factor of C_D = 1.0 and shall be multiplied by all applicable adjustment factors per the NDS.
4. The tabulated allowable design loads may be applied to either side of the beam (head or point side of the fastener). Where loads are applied to both sides of the beam simultaneously, the total load applied to the beam shall not exceed the tabulated load.
5. For top-loaded members with even loading across the width of the entire assembly, and a depth of 18" or less, fasteners shall be installed in two (2) rows with a maximum distance of 24" o.c. between fasteners in the same row. Use three (3) rows for members deeper than 18".
6. Tabulated loads are for the connection strength. Beams and framing members shall be independently checked by a registered design professional.

Table 8. Allowable Lateral Design Values (plf) for TimberTite Fasteners in Multi-Ply Truss and SCL Assemblies[2,3,4,5,6]

Fastener	Assembly	Members	Fastener Length[1] (in)	12" o.c.		16" o.c.		24" o.c.	
				Number of Rows of Fasteners					
				2	3	2	3	2	3
TimberTite	D	2-ply 1 3/4" Side Member and 3 1/2" Main Member	4	615	925	460	690	310	465
	F	2-ply 3 1/2"	6	820	1230	615	925	410	615

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

1. Fastener length is measured from the underside of the head to the tip.
2. SCL shall have an SG of 0.50 or greater. Thicknesses listed in **Figure 8** are a minimum.
3. Allowable design values are based on a load duration factor of C_D = 1.0 and shall be multiplied by all applicable adjustment factors per the NDS.
4. The tabulated allowable design loads may be applied to either side of the beam (head or point side of the fastener). Where loads are applied to both sides of the beam simultaneously, the total load applied to the beam shall not exceed the tabulated load.
5. For top-loaded members with even loading across the width of the entire assembly, and a depth of 18" or less, fasteners shall be installed in two (2) rows with a maximum distance of 32" o.c. between fasteners in the same row. Use three (3) rows for members deeper than 18".
6. Tabulated loads are for the connection strength. Beams and framing members shall be independently checked by a registered design professional.

Table 9. Allowable Lateral Design Values (plf) for TrussTite Fasteners in Multi-Ply Truss and SCL Assemblies[2,3,4,5,6]

Fastener	Assembly	Members	Fastener Length[1] (in)	12" o.c.		16" o.c.		24" o.c.	
				Number of Rows of Fasteners					
				2	3	2	3	2	3
TrussTite	A	2-ply 1 3/4"	2 7/8	680	1,020	510	765	340	510
			3 3/8						
	B	3-ply 1 3/4"	4 1/2	510	765	385	580	255	385
			5						
	C	4-ply 1 3/4"	6 3/4	455	685	340	510	230	345
	D	2-ply 1 3/4" and 3 1/2"	4 1/2	510	765	385	580	255	385
	E	3-ply,(2) 1 3/4"(1) and 3 1/2"	6	455	685	340	510	230	345
			6 3/4						
	F	2-ply 3 1/2"	6	680	1,020	510	765	340	510
			6 3/4						

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

1. Fastener length is measured from the underside of the head to the tip.
2. SCL shall have an SG of 0.50 or greater. Thicknesses listed in **Figure 8** are a minimum.
3. Allowable design values are based on a load duration factor of C_D = 1.0 and shall be multiplied by all applicable adjustment factors per the NDS.
4. The tabulated allowable design loads may be applied to either side of the beam (head or point side of the fastener). Where loads are applied to both sides of the beam simultaneously, the total load applied to the beam shall not exceed the tabulated load.
5. For top-loaded members with even loading across the width of the entire assembly, and a depth of 18" or less, fasteners shall be installed in two (2) rows with a maximum distance of 24" o.c. between fasteners in the same row. Use three (3) rows for members deeper than 18".
6. Tabulated loads are for the connection strength. Beams and framing members shall be independently checked by a registered design professional.

Table 10. Allowable Lateral Design Values (plf) for 1/4" Structural Lag Screws in Multi-Ply Truss and SCL Assemblies[2,3,4,5,6]

Fastener	Assembly	Members	Fastener Length[1] (in)	12" o.c.		16" o.c.		24" o.c.	
				Number of Rows of Fasteners					
				2	3	2	3	2	3
1/4" Structural Lag Screw	A	2-ply 1 3/4"	3	900	1,350	675	1,015	450	675
			3 1/2						
	B	3-ply 1 3/4"	5	675	1,015	510	765	340	510
	D	2-ply 1 3/4" Side Member and 3 1/2" Main Member	4	675	1,015	510	765	340	510
			5						
	F	2-ply 3 1/2"	6	900	1,350	675	1,015	450	675

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

1. Fastener length is measured from the underside of the head to the tip.
2. SCL shall have an SG of 0.50 or greater. Thicknesses listed in **Figure 8** are a minimum.
3. Allowable design values are based on a load duration factor of C_D = 1.0 and shall be multiplied by all applicable adjustment factors per the NDS.
4. The tabulated allowable design loads may be applied to either side of the beam (head or point side of the fastener). Where loads are applied to both sides of the beam simultaneously, the total load applied to the beam shall not exceed the tabulated load.
5. For top-loaded members with even loading across the width of the entire assembly, and a depth of 18" or less, fasteners shall be installed in two (2) rows with a maximum distance of 24" o.c. between fasteners in the same row. Use three (3) rows for members deeper than 18".
6. Tabulated loads are for the connection strength. Beams and framing members shall be independently checked by a registered design professional.

Table 11. Allowable Lateral Design Values (plf) for 5/16" Structural Lag Screws and 5/16" TimberWood Structural Screws in Multi-Ply Truss and SCL Assemblies[2,3,4,5,6]

Fastener	Assembly	Members	Fastener Length[1] (in)	12" o.c.		16" o.c.		24" o.c.	
				Number of Rows of Fasteners					
				2	3	2	3	2	3
5/16" Structural Lag Screw and TimberWood Structural Screw	A	2-ply 1 3/4"	3	1,020	1,530	765	1,150	510	765
			3 1/2						
	B	3-ply 1 3/4"	5	765	1,150	575	865	385	580
	D	2-ply 1 3/4" Side Member and 3 1/2" Main Member	4	765	1,150	575	865	385	580
			5						
	F	2-ply 3 1/2"	6	1,020	1,530	765	1,150	510	765

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

1. Fastener length is measured from the underside of the head to the tip.
2. SCL shall have a specific gravity, SG, of 0.50 or greater. Thicknesses listed in **Figure 8** are a minimum.
3. Allowable design values are based on a load duration factor of C_D = 1.0 and shall be multiplied by all applicable adjustment factors per the NDS.
4. The tabulated allowable design loads may be applied to either side of the beam (head or point side of the fastener). Where loads are applied to both sides of the beam simultaneously, the total load applied to the beam shall not exceed the tabulated load.
5. For top-loaded members with even loading across the width of the entire assembly, and a depth of 18" or less, fasteners shall be installed in two (2) rows with a maximum distance of 24" o.c. between fasteners in the same row. Use three (3) rows for members deeper than 18".
6. Tabulated loads are for the connection strength. Beams and framing members shall be independently checked by a registered design professional.

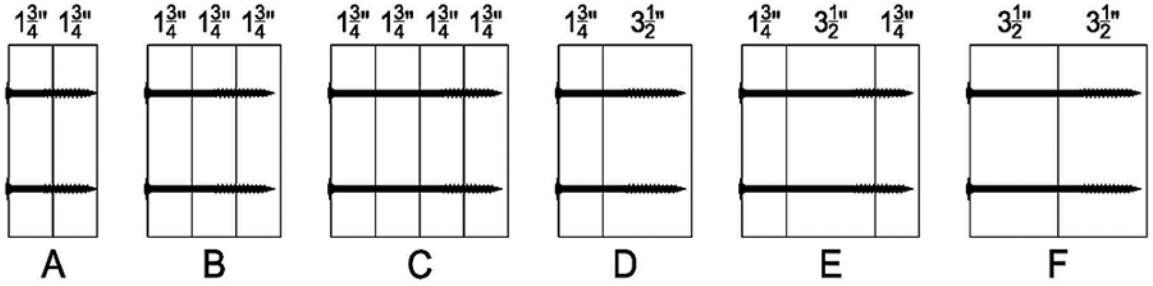

Figure 8. SCL Assembly Configurations

6.5 Where the application falls outside of the performance evaluation, conditions of use, and/or installation requirements set forth herein, alternative techniques shall be permitted in accordance with accepted engineering practice and experience. This includes but is not limited to the following areas of engineering: mechanics or materials, structural, building science, and fire science.

7 Certified Performance[28]

7.1 All construction methods shall conform to accepted engineering practices to ensure durable, livable, and safe construction and shall demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.[29]

7.2 The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur.[30]

8 Regulatory Evaluation and Accepted Engineering Practice

8.1 Power Pro Structural Wood Screws comply with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:

8.1.1 Power Pro Structural Wood Screws were evaluated to determine their ability to provide multi-ply attachment in trusses, sawn lumber, and engineered wood applications using the methodology and provisions in the NDS.

8.2 Any building code, regulation and/or accepted engineering evaluations (i.e., research reports, duly authenticated reports, etc.) that are conducted for this Listing were performed by DrJ, which is an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDP or approved sources. DrJ is qualified[31] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[32] respectively.

8.3 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise, which is also its areas of professional engineering competence.

8.4 Any regulation specific issues not addressed in this section are outside the scope of this report.

9 Installation

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

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

9.3 *General Installation Procedure*

9.3.1 Fasteners shall be installed with a $^1/_2$" (12.7 mm), low rpm/high torque electric drill (450 rpm).

9.3.2 Fasteners shall be installed with the topside of the head flush to the surface of the wood member. Fasteners shall not be overdriven.

9.3.3 Fasteners shall not be struck with a hammer during installation.

9.3.4 Lead holes are not required but may be used where lumber is prone to splitting using the provisions in the NDS.

9.4 *Spacing, Edge Distance, and End Distance*

9.4.1 LumberTite, TimberTite, and $^1/_4$" Structural Lag Screws spacing, edge distance, and end distances shall be as specified in **Figure 9** and **Table 12**.

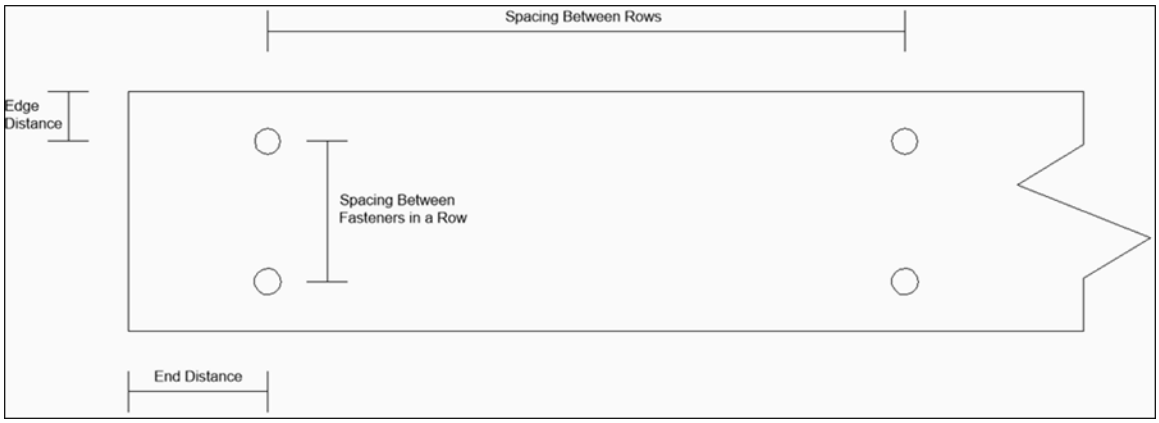

Figure 9. Minimum Screw Spacing Reference

Table 12. LumberTite, TimberTite, and 1/4" Structural Lag Screws Screw Spacing, Edge Distance, and End Distance Requirements[1,2]

Connection Geometry	Minimum Spacing (in)
Edge Distance – Loaded edge	1 1/4
Edge Distance – Unloaded edge	3/4
End Distance – Load parallel to grain, toward end	3 5/8
End Distance – Load perpendicular to grain, away from end	2 3/8
End Distance – Load perpendicular to grain	2 3/8
Spacing between Fasteners in a Row – Parallel to grain	3 5/8
Spacing between Fasteners in a Row – Perpendicular to grain	2 3/8
Spacing between Rows of Fasteners – In-line	1 1/4
Spacing between Rows of Fasteners – Staggered[2]	3/4

SI: 1 in = 25.4 mm

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

9.4.2 5/16" Structural Lag and TrussTite fastener spacing, edge distance, and end distances shall be as specified in **Figure 9** and **Table 13**.

Table 13. 5/16" Structural Lag and TrussTite Screw Spacing, Edge Distance and End Distance Requirements[1,2]

Connection Geometry	Minimum Spacing (in)
Edge Distance – Loaded edge	1 1/2
Edge Distance – Unloaded edge	3/4
End Distance – Load parallel to grain, toward end	4 1/4
End Distance – Load perpendicular to grain, away from end	2 7/8
End Distance – Load perpendicular to grain	2 7/8
Spacing between Fasteners in a Row – Parallel to grain	4 1/4
Spacing between Fasteners in a Row – Perpendicular to grain	2 7/8
Spacing between Rows of Fasteners – In-line	1 1/2
Spacing between Rows of Fasteners – Staggered[2]	3/4

SI: 1 in = 25.4 mm

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

10 Substantiating Data

10.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:

10.1.1 Connection design value calculations by DrJ Engineering, LLC in accordance with NDS and accepted engineering practice, and

10.1.2 Properties for Power Pro Structural Wood Screws from approved sources.

10.2 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies, approved sources, and/or an RDP. Accuracy of external test data and resulting analysis is relied upon.

10.3 Where applicable, testing and/or engineering analysis are based upon provisions that have been codified into law through state or local adoption of regulations and standards. The developers of these regulations and standards are responsible for the reliability of published content. DrJ's engineering practice may use a regulation-adopted provision as the control. A regulation-endorsed control versus a simulation of the conditions of application to occur establishes a new material as being equivalent to the regulatory provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.

10.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, or duly authenticated reports from approved agencies and/or approved sources provided by the supplier. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this duly authenticated report, may be dependent upon published design properties by others.

10.5 *Testing and Engineering Analysis*

10.5.1 The strength, rigidity, and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.[33]

10.6 Where additional condition of use and/or regulatory compliance information is required, please search for Power Pro Structural Wood Screws on the DrJ Certification website.

11 Findings

11.1 As outlined in **Section 6**, Power Pro Structural Wood Screws have performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.

11.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, Power Pro Structural Wood Screws shall be approved for the following applications:

11.2.1 To provide multi-ply attachment in trusses, sawn lumber and SCL assemblies.

11.3 Unless exempt by state statute, when Power Pro Structural Wood Screws are to be used as a structural and/or building envelope component in the design of a specific building, the design shall be performed by an RDP.

11.4 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from The Hillman™ Group.

11.5 IBC Section 104.2.3[34] (IRC Section R104.2.2[35] and IFC Section 104.2.3[36] are similar) in pertinent part state:

> **104.2.3 Alternative Materials, Design and Methods of Construction and Equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative is not specifically prohibited by this code and has been approved.

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

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

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

11.6.3 Federal law, Title 18 US Code Section 242, requires that, where the alternative product, material, service, design, assembly, and/or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. Denial without written reason deprives a protected right to free and fair competition in the marketplace.

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

11.8 Through the IAF Multilateral Arrangement (MLA), this duly authenticated report can be used to obtain product approval in any jurisdiction or country because all ANAB ISO/IEC 17065 duly authenticated reports are equivalent.[39]

12 Conditions of Use

12.1 Material properties shall not fall outside the boundaries defined in **Section 6**.

12.2 As defined in **Section 6**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.

12.3 As listed herein, Power Pro Structural Wood Screws can be used in:

12.3.1 Chemically (pressure preservatives and fire-retardants) treated wood with no limitations with respect to moisture content of the treated wood.

12.3.2 Untreated wood with no limitation with respect to moisture content of the untreated wood.

12.4 When installed in preservative-treated wood or fire-retardant treated wood, connections shall be designed using the treatment manufacturer reductions for connections.

12.5 For conditions not covered in this report, connections shall be designed in accordance with generally accepted engineering practices. When the capacity of a connection is controlled by fastener strength rather than wood strength, the metal strength value shall be not increased by the adjustment factors specified in the NDS.

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

12.6.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.

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

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

12.6.4 At a minimum, these innovative products shall be installed per **Section 9**.

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

12.6.6 These innovative products have an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.7.2, IBC Section 110.4, IBC Section 1703, IRC Section R104.7.2, and IRC Section R109.2.

12.6.7 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, inspection as required by IBC Section 110.3, IRC Section R109.2, and any other regulatory requirements that may apply.

12.7 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, *"the building official shall make, or cause to be made, the necessary tests and investigations; or the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 104.2.3"*, all of IBC Section 104, and IBC Section 105.3.

12.8 Design loads shall be determined in accordance with the regulations adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., owner or RDP).

12.9 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.

13 Identification

13.1 Power Pro Structural Wood Screws, as listed in **Section 1.1**, are identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.

13.2 Additional technical information can be found at www.hillmangroup.com.

14 Review Schedule

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

14.2 For information on the status of this report, please contact DrJ Certification.

Notes

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

2 2021 IRC Section R317.3

3 2021 IRC Section R317.3

4 Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of TPI 1, the NDS, AISI S202, US professional engineering law, Canadian building code, Canada professional engineering law, Qualtim External Appendix A: Definitions/Commentary, Qualtim External Appendix B: Project/Deliverables, Qualtim External Appendix C: Intellectual Property and Trade Secrets, definitions created within Design Drawings and/or definitions within Reference Sheets. Beyond this, terms not defined shall have ordinarily accepted meanings as the context implies. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

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

6 Alternative Materials, Design and Methods of Construction and Equipment: The provisions of any regulation code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by a regulation. Please review https://www.justice.gov/atr/mission and https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3

7 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests

8 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design of accepted engineering practice. https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.1:~:text=Conformance%20to%20Standards-,The%20design%20strengths%20and%20permissible%20stresses,-of%20any%20structural

9 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1:~:text=the%20building%20official%20shall%20make%2C%20or%20cause%20to%20be%20made%2C%20the%20necessary%20tests%20and%20investigations%3B%20or%20the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%20and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.2.3.

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

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

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

13 https://www.law.cornell.edu/uscode/text/18/1832 (b) Any organization that commits any offense described in subsection (a) shall be fined not more than the greater of $5,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. The federal government and each state have a public records act. To follow DTSA and comply state public records and trade secret legislation requires approval through ANAB ISO/IEC 17065 accredited certification bodies or approved sources. For more information, please review this website: Intellectual Property and Trade Secrets.

14 https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional AND https://apassociation.org/list-of-engineering-boards-in-each-state-archive/

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

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

17 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3 AND https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#105.3.1

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

19 https://iaf.nu/en/about-iaf-mla/#:~:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%2C%20it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope

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

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

22 Unless otherwise noted, the links referenced herein use un-amended versions of the 2024 International Code Council (ICC) 2024 International Code Council (ICC) model codes as foundation references. Mississippi versions of the IBC 2024 and the IRC 2024 are un-amended. This material, product, design, service and/or method of construction also complies with the 2000-2012 versions of the referenced codes and the standards referenced therein. As pertinent to this technical and code compliance evaluation, CBI and/or DrJ staff have reviewed any state or local regulatory amendments to assure this report is in compliance.

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

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

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

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

27 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2(Listed%20or%20certified); https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#listed AND https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#labeled

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

29 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=All%20construction%20methods%20shall%20be%20in%20conformance%20with%20accepted%20engineering%20practices%20to%20insure%20durable%2C%20livable%2C%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the%20various%20trades

[30] https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=The%20strength%20and%20rigidity%20of%20the%20component%20parts%20and/or%20the%20integrated%20structure%20shall%20be%20determined%20by%20engineering%20analysis%20or%20by%20suitable%20load%20tests%20to%20simulate%20the%20actual%20loads%20and%20conditions%20of%20application%20that%20occur

[31] Qualification is performed by a legislatively defined Accreditation Body. ANSI National Accreditation Board (ANAB) is the largest independent accreditation body in North America and provides services in more than 75 countries. DrJ is an ANAB accredited product certification body.

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

[33] See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition: https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

[34] 2021 IBC Section 104.11

[35] 2021 IRC Section R104.11

[36] 2018: https://up.codes/viewer/wyoming/ifc-2018/chapter/1/scope-and-administration#104.9 AND 2021: https://up.codes/viewer/wyoming/ibc-2021/chapter/1/scope-and-administration#104.11

[37] Approved is an adjective that modifies the noun after it. For example, Approved Agency means that the Agency is accepted officially as being suitable in a particular situation. This example conforms to IBC/IRC/IFC Section 201.4 (https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#201.4) where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

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

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