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DIVISION: 06 00 00 – WOOD, PLASTICS, AND COMPOSITES

Section: 06 05 23 – Wood, Plastic, and Composite Fastenings

1. Product Evaluated:

- 1.1. SFS intec ConnexTite™ fasteners
- 1.2. For the most recent version of this Technical Evaluation Report (TER), visit drjengineering.org. For more detailed state professional engineering and code compliance legal requirements and references, visit drjengineering.org/statelaw. DrJ is fully compliant with all state professional engineering and code compliance laws.
- 1.3. This TER can be used to obtain product approval in any country that is an IAF MLA Signatory (all countries found [here](#)) and covered by an [IAF MLA Evaluation](#) per the [Purpose of the MLA](#) (as an example, see [letter to ANSI](#) from the Standards Council of Canada). Manufacturers can go to jurisdictions in the U.S., Canada and other [IAF MLA Signatory Countries](#) and have their products readily approved by authorities having jurisdiction using [DrJ's ANSI accreditation](#).
- 1.4. Building code regulations require that evaluation reports are provided by an approved agency meeting specific requirements, such as those found in [IBC Section 1703](#). Any agency accredited in accordance with ANSI ISO/IEC 17065 meets this requirement within ANSI's scope of accreditation. For a list of accredited agencies, visit ANSI's [website](#). For more information, see drjcertification.org.

DrJ is a Professional Engineering Approved Source

 **Learn more about DrJ's Accreditation**

- DrJ is an ISO/IEC 17065 accredited product certification body through ANSI Accreditation Services.
- DrJ provides certified evaluations that are signed and sealed by a P.E.
- DrJ's work is backed up by professional liability insurance.
- DrJ is fully compliant with IBC Section 1703.

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- 1.5. Requiring an evaluation report from a specific private company (i.e., ICC-ES, IAPMO, CCMC, DrJ, etc.) can be viewed as discriminatory and is a violation of international, federal, state, provincial and local anti-trust and free trade regulations.
- 1.6. DrJ's code compliance work:
 - 1.6.1. Conforms to code language adopted into law by individual states and any relevant consensus based standard such as an ANSI or ASTM standard.
 - 1.6.2. Complies with accepted engineering practice, all professional engineering laws and by providing an engineer's seal DrJ takes professional responsibility for its specified scope of work.

2. Applicable Codes and Standards:¹

- 2.1. 2012, 2015 and 2018 International Building Code (IBC)
- 2.2. 2012, 2015 and 2018 International Residential Code (IRC)
- 2.3. ASTM A510 – Standard Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel
- 2.4. ASTM A153 – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- 2.5. ASTM D1761 – Standard Test Methods for Mechanical Fasteners in Wood
- 2.6. ASTM F1575 – Standard Test Method for Determining Bending Yield Moment of Nails
- 2.7. AISI S904 – Standard Test Methods for Determining the Tensile and Shear Strength of Screws
- 2.8. AWC NDS – National Design Specification for Wood Construction

3. Performance Evaluation:

- 3.1. SFS intec ConnexTite™ carbon steel fasteners were tested and evaluated to determine their structural resistance properties, which are used to develop reference design values for allowable stress design (ASD). The following conditions were evaluated:
 - 3.1.1. Withdrawal strength in accordance with ASTM D1761.
 - 3.1.2. Bending yield in accordance with ASTM F1575.
 - 3.1.3. Tensile strength in accordance with AISI S904.
 - 3.1.4. Head pull-through in accordance with NDS.
 - 3.1.5. Lateral resistance in accordance with ASTM D1761.
- 3.2. Use in wet service conditions is outside the scope of this TER.
- 3.3. Any code compliance issues not specifically addressed in this section are outside the scope of this TER.

4. Product Description and Materials:

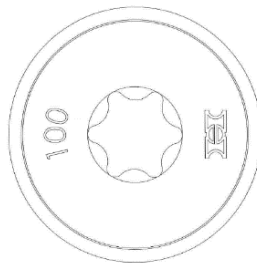


Figure 1: SFS intec ConnexTite™ Flange Head Detail

¹ Unless otherwise noted, all references in this code compliant technical evaluation report (TER) are from the 2018 version of the codes and the standards referenced therein, including, but not limited to, ASCE 7, SDPWS and WFCM. This product also complies with the 2000-2015 versions of the IBC and IRC and the standards referenced therein. As required by law, where this TER is not approved, the building official shall respond in writing, stating the reasons this TER was not approved. For variations in state and local codes, if any see [Section 8](#).

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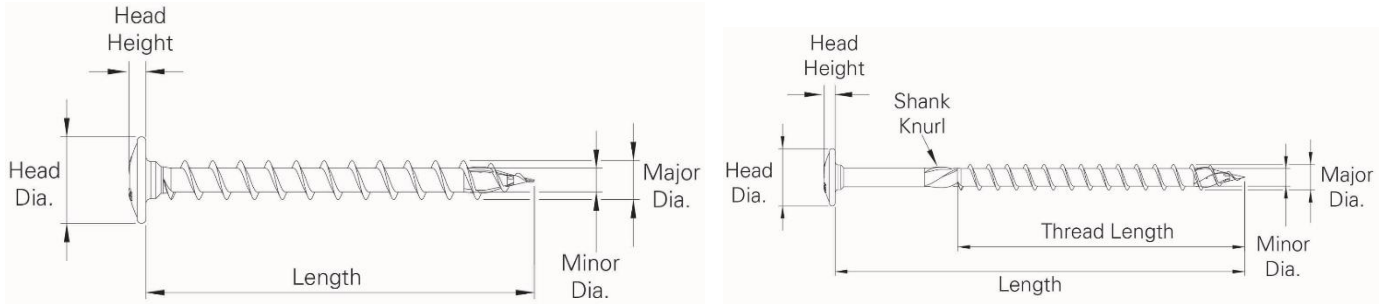


Figure 2: SFS intec ConnexTite™ Flange Head Fully Threaded and Partially Threaded Fastener Details

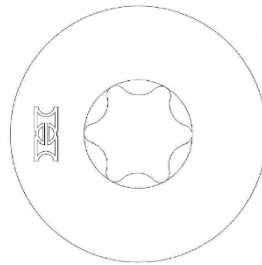


Figure 3: SFS intec ConnexTite™ Countersink Head Detail

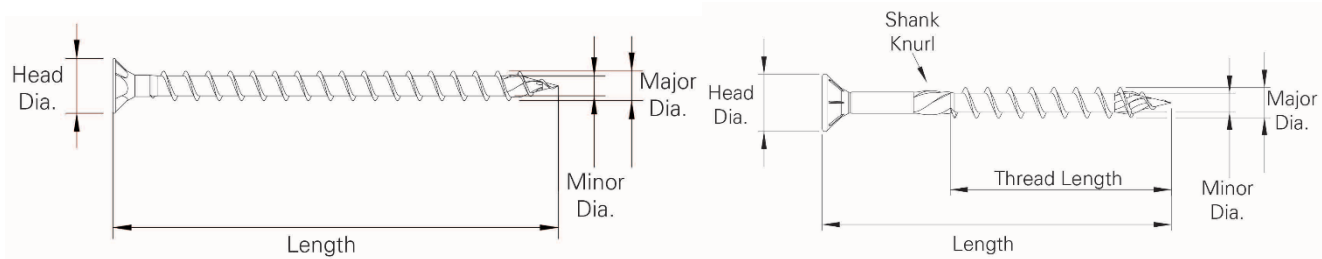


Figure 4: SFS intec ConnexTite™ Countersink Head Fully Threaded and Partially Threaded Fastener Details

- 4.1. SFS intec ConnexTite™ fasteners are made of cold-formed, heat-treated, electroplated carbon steel. All fasteners are produced in accordance with the approved quality control procedures referred to in [Section 4.3](#).
- 4.2. Fasteners are available in lengths up to 19³/₄" inches.
- 4.3. Fasteners are coated with a proprietary coating system that meets or exceeds the corrosion protection of hot-dipped galvanizing per *ASTM A153* in accordance with [IBC Section 2304.10](#)² and [IRC Section R317.3](#).
 - 4.3.1. Fasteners 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.
- 4.4. In-plant quality control procedures, under which the SFS intec ConnexTite™ Flange Head fasteners are manufactured, are audited through an inspection process performed by an approved agency.
- 4.5. The fasteners evaluated in this TER are set forth in [Table 1](#). For additional fastener sizes, refer to [Appendix A](#).

² [2012 IBC Section 2304.09](#)

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Fastener Name	Nominal Fastener Diameter	Head		Shank Diameter ¹ (in.)	Thread Diameter (in.)		Nominal Bending Yield (<i>f_{yb}</i> , psi)		Allowable Fastener Strength	
		Diameter (in.)	Height (in.)		Minor ²	Major	Transition Zone	Shank	Tensile (lbs)	Shear (lbs)
SFS intec ConnexTite™ Flange Head	1/4"	0.552	0.094	0.173	0.148	0.244	201,611	237,010	970	485
	5/16"	0.709	0.148	0.228	0.207	0.315	167,894	178,866	1810	905
	3/8"	0.877	0.161	0.279	0.253	0.393	156,064	203,056	2545	1275
SFS intec ConnexTite™ Countersink Head	1/4"	.457	-	0.173	0.148	0.244	201,611	237,010	970	485
	5/16"	.583	-	0.228	0.207	0.315	167,894	178,866	1810	905
	3/8"	.728	-	0.279	0.253	0.393	156,064	203,056	2545	1275

For SI: 1" = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.895 kPa.

1. Shank diameter based on manufactured thickness. Finished dimensions are larger in the plated condition due to the proprietary coatings added.

2. Minor thread diameter value is calculated as the average of the upper and lower tolerances.

Table 1: Fastener Dimensions & Strength Details

5. Applications:

5.1. General

- 5.1.1. SFS intec ConnexTite™ fasteners are self-tapping fasteners used for connections in conventional light-frame construction and provide resistance against withdrawal, axial and shear loads. See [Section 6](#) for installation requirements.
- 5.1.2. SFS intec ConnexTite™ fasteners can be used in applications including timber construction work (staircase construction and interior finishing), structural and general timber construction work and on-rafter insulation and façade attachment.
- 5.1.3. SFS intec ConnexTite™ fasteners are installed without lead holes, as prescribed in *NDS*.
- 5.1.4. Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience and good technical judgment.
- 5.1.5. Design
 - 5.1.5.1. Design of SFS intec ConnexTite™ fasteners is governed by the applicable code and the provisions for dowel-type fasteners in *NDS*.
 - 5.1.5.2. Unless otherwise noted, adjustment of the design stresses for duration of load shall be in accordance with the applicable code.

5.2. SFS intec ConnexTite™ Fastener Reference Withdrawal Design Values

- 5.2.1. The design provisions for withdrawal noted in *NDS* Table 12.2B apply to SFS intec ConnexTite™ fasteners, unless otherwise noted in this TER. Reference withdrawal design values for SFS intec ConnexTite™ fasteners in select lumber species are specified in [Table 2](#).

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Face Grain Applications			
Nominal Fastener Diameter (in.)	Allowable Withdrawal Design Values by Species (Specific Gravity) (lbs.)		
	SPF (0.42)	DF (0.50)	SP (0.55)
1/4"	95	135	220
5/16"	120	180	255
3/8"	130	205	280

1. Values are stated in lbf/in of thread engagement.
 2. Values shall be adjusted by all applicable adjustment factors per *NDS* Section 10.3 for wood screws.
 3. Fastener penetration is the threaded length embedded in the main member, including the tip.

Table 2: SFS intec ConnexTite™ Fastener Reference Withdrawal Design Values

5.3. SFS intec ConnexTite™ Fastener Head Pull-Through Design Values

5.3.1. The reference design values for head pull-through for SFS intec ConnexTite™ fasteners are specified in [Table 3](#).

Min. Side Member Thickness (in.)	Nominal Fastener Diameter (in.)	Head Diameter Measured (in.)	Head Pull-Through Design Value (lbs.)					
			SPF (0.42)		DF (0.50)		SP (0.55)	
			Flange	Countersink	Flange	Countersink	Flange	Countersink
3/4"	1/4"	0.552	155	130	220	185	265	225
	5/16"	0.705	195	165	275	235	335	280
	3/8"	0.877	250	205	355	290	430	355
1 1/2"	1/4"	0.552	310	265	440	370	535	450
	5/16"	0.705	390	330	550	465	670	565
	3/8"	0.877	500	410	710	585	860	705

1. Values shall be adjusted by all applicable adjustment factors per *NDS* Section 10.3 for withdrawal of wood screws.

Table 3: SFS intec ConnexTite™ Fastener Reference Head Pull-Through Design Values

5.4. SFS intec ConnexTite™ Fastener Reference Lateral Design Values – Face Grain Applications

5.4.1. The reference lateral design values for shear load perpendicular and parallel to grain for SFS intec ConnexTite™ fasteners are specified in [Table 4](#) and [Table 5](#).

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Dimensional Lumber										
Fastener Head Type	Nominal Fastener Diameter (in.)	Fastener Length (in.)	Side Member Thickness (in.)	Min. Penetration into Main Member (in.)	Lateral Design Values (lbs.) by Species (Specific Gravity) & Load Orientation					
					SPF (0.42)		DF (0.50)		SP (0.55)	
					Z Para	Z Perp	Z Para	Z Perp	Z Para	Z Perp
Flange	1/4"	2 ³ / ₈ "	1 ¹ / ₂ "	7/8"	115	90	140	110	160	125
		2 ³ / ₄ "		1 ¹ / ₄ "	130	105	165	135	190	155
		3 ¹ / ₈ "		1 ¹ / ₂ "	145	115	175	140	190	155
		4"		2 ¹ / ₂ "	145	115	175	140	190	155
		≥4 ³ / ₄ "		3 ¹ / ₄ "	145	115	175	140	190	155
	5/16"	2 ³ / ₄ "		1 ¹ / ₄ "	155	125	215	170	525	550
		3 ¹ / ₈ "		1 ⁵ / ₈ "	175	140	245	195	525	550
		4"		2 ¹ / ₂ "	195	155	245	195	525	550
		4 ³ / ₄ "		3 ¹ / ₄ "	195	155	245	195	525	550
		≥5 ¹ / ₂ "		4"	195	155	245	195	525	550
	3/8"	3 ¹ / ₈ "		1 ⁵ / ₈ "	180	145	250	200	300	240
		4"		2 ¹ / ₂ "	220	175	280	220	315	255
		4 ³ / ₄ "		3 ¹ / ₄ "	220	175	280	220	315	255
		≥5 ¹ / ₂ "		4"	220	175	280	220	315	255
	Countersink	1/4"		2 ³ / ₈ "	7/8"	115	90	140	110	160
2 ³ / ₄ "			1 ¹ / ₄ "	130	105	165	135	190	155	
3 ¹ / ₈ "			1 ⁵ / ₈ "	145	115	175	140	190	155	
3 ¹ / ₂ "			2"	145	115	175	140	190	155	
≥4"			2 ¹ / ₂ "	145	115	175	140	190	155	
5/16"		3 ¹ / ₈ "	1 ⁵ / ₈ "	175	140	245	195	285	225	
		3 ¹ / ₂ "	2"	195	155	245	195	285	225	
		≥4"	2 ¹ / ₂ "	195	155	245	195	285	225	
3/8"		3 ¹ / ₈ "	1 ⁵ / ₈ "	180	145	250	200	300	240	
		4"	2 ¹ / ₂ "	220	175	280	220	315	255	
		≥4 ³ / ₄ "	3 ¹ / ₄ "	220	175	280	220	315	255	

1. Reference lateral design values apply to two-member single shear connections where both members are of the same specific gravity, and the fastener is oriented perpendicular to grain. Where the members are of different specific gravities, use the lower of the two.
 2. Values shall be adjusted by all applicable adjustment factors per *NDS*.

Table 4: SFS intec ConnexTite™ Fastener Reference Lateral Design Values Using Dimensional Lumber

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Engineered Lumber							
Fastener Head Type	Nominal Fastener Diameter (in.)	Fastener Length (in.)	Side Member Thickness (in.)	Min. Penetration into Main Member (in.)	Lateral Design Values (lbs.) by Species (Specific Gravity) & Load Orientation		
					LVL or LSL (0.50)		
					Z Para	Z Perp	
Flange	1/4"	2"	1 1/4"	3/4"	135	105	
		2 3/8"		1 1/8"	155	125	
		2 3/4"		1 1/2"	165	135	
		2 3/4"	1 1/2"	1 1/4"	165	135	
		4"		2 1/2"	175	140	
		3 1/8"		1 3/8"	175	140	
	5/16"	2 3/4"	1 1/4"	1 1/2"	215	170	
		2 3/4"	1 1/2"	1 1/4"	215	170	
		4"		2 1/2"	245	195	
		5 1/2"		4"	245	195	
		3 1/8"	1 3/4"	1 3/8"	235	190	
		4 3/4"		3"	270	215	
	3/8"	4"	1 1/2"	2 1/2"	280	220	
		5 1/2"		4"	280	220	
		4 3/4"	1 3/4"	3"	300	240	
	Countersink	1/4"	2 3/8"	1 1/4"	1 1/8"	155	125
			2 3/4"		1 1/2"	165	135
			2 3/4"	1 1/2"	1 1/4"	165	135
3 1/2"			2"		175	140	
4 3/8"			2 7/8"		175	140	
5 7/8"			4 3/8"		175	140	
3 1/8"			1 3/4"	1 3/8"	175	140	
3 1/2"				1 3/4"	175	140	
3 1/8"		1 1/4"		175	140		
5/16"		4"	1 1/2"	2 1/2"	245	195	
		5 1/2"		4"	245	195	
		3 1/8"		1 3/8"	235	190	
		3 1/2"	1 3/4"	1 3/4"	270	215	
		4 3/4"		3"	270	215	
		3/8"	3 1/8"	1 1/4"	1 7/8"	260	205
4"			1 1/2"	2 1/2"	280	220	
5 1/2"				4"	280	220	
3 1/2"			1 3/4"	1 3/4"	280	225	
4 3/4"				3"	300	240	

1. Reference lateral design values apply to two-member single shear connections where both members are of the same specific gravity, and the fastener is oriented perpendicular to grain. Where the members are of different specific gravities, use the lower of the two.
 2. Values shall be adjusted by all applicable adjustment factors per NDS.

Table 5: SFS intec ConnexTite™ Fastener Reference Lateral Design Values Using Engineered Lumber

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5.5. SFS intec ConnexTite™ Fastener Reference Lateral Design Values – Metal Side Plate

5.5.1. The reference lateral design values for shear load perpendicular and parallel to grain with a metal side plate for SFS intec ConnexTite™ fasteners are specified in [Table 6](#).

Side Member (Metal Plate) Thickness (in.)	Nominal Fastener ² Diameter (in.)	Lateral Design Values (lbs.) by Species and Load Direction ^{1,3}	
		DF (G=0.5)	
		Zpara	Zperp
0.105 (12 gage)	5/16	565	595
0.134 (10 gage)			
0.179 (7 gage)			
0.239 (3 gage)			
0.25			

1. Reference lateral design values apply to two-member single shear connections, where the main member is wood with a specific gravity greater than or equal to 0.50, the side member is a metal side plate (ASTM A36), and the fastener is oriented perpendicular to grain.
 2. Minimum fastener length is 2-3/4".
 3. Values shall be adjusted by all applicable factors per NDS.

Table 6: SFS intec ConnexTite™ Fastener Reference Lateral Design Values Using Dimensional Lumber

5.6. SFS intec ConnexTite™ Fastener Spacing Requirements

5.6.1. Minimum fastener spacing requirements for SFS intec ConnexTite™ fasteners are as follows in [Table 7](#).

Nominal Fastener Diameter	Shank Diameter	Minimum Edge Distance (in.)		Minimum End Distance (in.)			Minimum On-Center Spacing (in.)			
		Load Parallel to Grain	Load Perp. to Grain	Load Parallel to Grain		Load Perp. to Grain	Between Fasteners in a Row		Between Rows	
				Load Toward Fastener	Load Away From Fastener		Parallel to Grain	Perp. to Grain	Parallel to Grain	Perp. to Grain
1/4"	0.173	3/8	1	1	1-3/4	1	See 2015 NDS Table 12.5.1D	3/8	1-1/4	
5/16"	0.228	1/2	1-1/4	1-1/4	2-1/4	1-1/4		1-1/4	1/2	1-5/8
3/8"	0.279	5/8	1-1/2	1-1/2	2-3/4	1-1/2		1-1/2	5/8	2

1. Fastener spacing follows requirements of 2015 NDS Section 12.5.
 2. Heavy or medium concentrated loads shall not be suspended below the neutral axis of a single sawn lumber or structural glued laminated timber beam except where mechanical or equivalent reinforcement is provided to resist tension stresses perpendicular to grain.
 3. Always space fasteners to avoid splitting of wood.

Table 7: SFS intec ConnexTite™ Minimum Fastener Spacing Requirements

6. Installation:

- 6.1. SFS intec ConnexTite™ fasteners shall be installed in accordance with the applicable code, the approved construction documents, this TER, the [manufacturer's installation instructions](#), NDS, and standard framing practice as applied to wood fasteners.
- 6.2. In the event of a conflict between the manufacturer's installation instructions and this TER, the more restrictive shall govern.
- 6.3. All fastener spacing, edge distance, and end distance shall be as determined in 2015 NDS, Section 12.5.
- 6.4. Installed using Torx® bit by turning. Pre-drilling of pilot holes is not required but may be used where lumber is prone to splitting.

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6.5. Minimum penetration is 1" unless otherwise stated in this TER.

7. Test and Engineering Substantiating Data:

- 7.1. Testing for withdrawal by SBCRI, under contract with Qualtim, Inc., in accordance with *ASTM D1761*.
- 7.2. Testing for bending yield by SBCRI, under contract with Qualtim, Inc., in accordance with *ASTM F1575*.
- 7.3. Testing for tensile strength by SBCRI, under contract with Qualtim, Inc., in accordance with *AISI S904*.
- 7.4. Testing for lateral strength by SBCRI, under contract with Qualtim, Inc., in accordance with *ASTM D1761*.
- 7.5. *ASTM A153 – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware*.
- 7.6. National Design Specification for Wood Construction (*NDS*).
- 7.7. The product(s) evaluated by this TER fall within the scope of one or more of the model, state or local building codes for building construction. The testing and/or substantiating data used in this TER is limited to buildings, structures, building elements, construction materials and civil engineering related specifically to buildings.
- 7.8. The provisions of model, state or local building codes for building construction do not intend to prevent the installation of any material or to prohibit any design or method of construction. Alternatives shall use consensus standards, performance-based design methods or other engineering mechanics based means of compliance. This TER assesses compliance with defined standards, accepted engineering analysis, performance-based design methods, etc. in the context of the pertinent building code requirements.
- 7.9. Some information contained herein is the result of testing and/or data analysis by other sources, which DrJ relies on to be accurate, as it undertakes its engineering analysis.
- 7.10. DrJ has reviewed and found the data provided by other professional sources are credible. The information in this TER conforms with DrJ's procedure for acceptance of data from approved sources.
- 7.11. DrJ's responsibility for data provided by approved sources conforms with [IBC Section 1703](#) and any relevant professional engineering law.
- 7.12. Where appropriate, DrJ relies on the derivation of design values, which have been codified into law through codes and standards (e.g., *IRC, WFCM, IBC, SDPWS, NDS, ACI, AISI, PS-20, PS-2*, etc.). 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, concrete, etc.), DrJ relies upon grade/properties provided by the raw material supplier to be accurate and conforming to the mechanical properties defined in the relevant material standard.

8. Findings:

- 8.1. When used in accordance with the provisions of this TER and the provisions of the applicable building codes defined in [Section 2](#), SFS intec ConnexTite™ fasteners have the reference design value properties defined herein and are approved for use as an alternative to those fasteners prescribed by the applicable code.
- 8.2. [IBC Section 104.11](#) ([IRC Section R104.11](#) and [IFC Section 104.9](#) are similar) state:

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 with 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 that are applicable to this evaluation, they are listed here:
 - 8.3.1. No known variations

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8.4. This TER uses professional engineering law, the building code, ANSI/ASTM consensus standards and generally accepted engineering practice as its criteria for all testing and engineering analysis. DrJ's professional engineering work falls under the jurisdiction of each state Board of Professional Engineers, when signed and sealed.

9. Conditions of Use:

- 9.1. Where required by 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.
- 9.2. Any generally accepted engineering calculations needed to show compliance with this TER shall be submitted to the code official for review and approval.
- 9.3. 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, Registered Design Professional, etc.).
- 9.4. The SFS intec ConnexTite™ fasteners covered in this TER shall be installed in accordance with this TER and the manufacturer's installation instructions.
- 9.5. For conditions not covered in this TER, connections shall be designed in accordance with generally accepted engineering practice. When the capacity of a connection is controlled by fastener metal strength rather than wood strength, the metal strength must not be multiplied by the adjustment factors specified in the *NDS*.
- 9.6. Manufacturer's installation instructions shall be followed as provided in [Section 6](#).
- 9.7. SFS intec ConnexTite™ fasteners products are produced by SFS intec at its facilities located in Schramberg, Germany and Campia Turzii, Romania.
- 9.8. SFS intec ConnexTite™ fasteners are produced under a quality control program subject to periodic inspections performed by an approved agency in accordance with [IBC Section 1703.5.2](#).
- 9.9. Design
 - 9.9.1. Building Designer Responsibility
 - 9.9.1.1. Unless the AHJ allows otherwise, the Construction Documents shall be prepared by a Building Designer for the Building and shall be in accordance with [IRC Section R106](#) and [IBC Section 107](#).
 - 9.9.1.2. The Construction Documents shall be accurate and reliable and shall provide the location, direction and magnitude of all applied loads and shall be in accordance with [IRC Section R301](#) and [IBC Section 1603](#).
 - 9.9.2. Construction Documents
 - 9.9.2.1. Construction Documents shall be submitted to the Building Official for approval and shall contain the plans, specifications and details needed for the Building Official to approve such documents.
- 9.10. Responsibilities
 - 9.10.1. The information contained herein is a product, material, detail, design and/or application TER evaluated in accordance with the referenced building codes, testing and/or analysis through the use of accepted engineering practice, experience and technical judgment.
 - 9.10.2. DrJ TERs provide an assessment of only those attributes specifically addressed in the Products Evaluated or Code Compliance Process Evaluated sections.
 - 9.10.3. The engineering evaluation was performed on the dates provided in this TER, within DrJ's professional scope of work.
 - 9.10.4. This product is manufactured under a third-party quality control program in accordance with [IRC Section R104.4](#) and [R109.2](#) and [IBC Section 104.4](#) and [110.4](#).
 - 9.10.5. 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, and the TER shall be reviewed for code compliance by the Building Official.
 - 9.10.6. 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

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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. SFS intec ConnexTite™ fasteners described in this TER are identified by a label on the packaging material bearing the manufacturer's name, product name, certification mark, and other information to confirm code compliance. Individual fasteners are marked with a stylized head stamp and fastener diameter as shown in [Figure 1](#) and [Figure 3](#).
- 10.2. Additional technical information can be found at sfsintecusa.com.

11. Review Schedule:

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



- [Mission and Professional Responsibilities](#)
- [Product Evaluation Policies](#)
- [Product Approval – Building Code, Administrative Law and P.E. Law](#)

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Appendix A

Fastener Name	Nominal Diameter	Head		Fastener Length (in.)	Thread Length (in.)	Shank Diameter (in.)	Thread Diameter (in.)	
		Diameter (in.)	Thickness (in.)				Minor	Major
SFS intec ConnexTite™ Flange Head	1/4"	0.552	0.094	1-1/2"	1-1/4"	0.173	0.155	0.244
				2"	1-5/8"			
				2-3/8"	2"			
				2-3/4"	2-3/8"			
				3-1/8"	2-3/4"			
				4"				
				4-3/4"				
				5-1/2"				
				6-1/4"				
				7-1/8"				
				7-7/8"				
				8-5/8"				
				9-3/8"				
				10-1/4"				
				11"				
	11-3/4"							
	5/16"	0.705	0.148	2-3/4"	2-1/2"	0.228	0.214	0.315
				3-1/8"	2-3/4"			
				4"	2-3/4"			
				4-3/8"	4"			
				5-1/2"				
				6-1/4"				
				7-1/8"				
				7-7/8"				
				8-5/8"				
				9-3/8"				
				10-1/4"				
				11"				
				11-3/4"				
				12-5/8"				
				13-3/8"				
	14-1/8"							
	15"							
	15-3/4"							
	3/8"	0.877	0.161	3-1/8"	2-3/4"	0.279	0.262	0.393
				4"	3-1/2"			
				4-3/4"	4"			
				5-1/2"				
				6-1/4"				
				7-1/8"				
				7-7/8"				
				8-5/8"				
				9-3/8"				
				10-1/4"				
				11"				
11-3/4"								
12-5/8"								
13-3/8"								
14-1/8"								
15"								
15-3/4"								

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Fastener Name	Nominal Diameter	Head	Fastener Length (in.)	Thread Length (in.)	Shank Diameter (in.)	Thread Diameter (in.)		
		Diameter (in.)				Minor	Major	
SFS intec ConnexTite™ Countersink Head	1/4"	0.457	2-3/8"	1-3/8"	0.173	0.155	0.244	
			2-3/4"	1-1/2"				
			3-1/8"	1-3/4"				
			3-1/2"	2-1/8"				
			4"	2-3/8"				
			4-3/8"					
			4-3/4"					
			5-1/2"					
			5-7/8"					
			6-1/4"					
			7-1/8"					
			7-7/8"					
			8-5/8"					
			9-3/8"					
			10-1/4"					
	11"							
	11-3/4"							
	5/16"	0.583	0.583	3-1/8"	2-3/8"	0.228	0.214	0.315
				3-1/2"	2-3/8"			
				4"	2-3/4"			
				4-3/4"				
				5-1/2"	4"			
				6-1/4"				
				7-1/8"				
				7-7/8"				
				8-5/8"				
				9-3/8"				
				10-1/4"				
				11"				
				11-3/4"				
				12-5/8"				
				13-3/8"				
	14-1/8"							
	15"							
	15-3/4"							
	16-1/2"							
	18-1/8"							
	19-3/4"							
	3/8"	0.728	0.728	3-1/8"	2-3/8"	0.279	0.262	0.393
				4"	3-1/8"			
				4-3/4"				
				5-1/2"	4"			
				6-1/4"				
				7-1/8"				
				7-7/8"				
8-5/8"								
9-3/8"								
10-1/4"								
11"								
11-3/4"								
12-5/8"								
13-3/8"								
14-1/8"								
15"								
15-3/4"								
16-1/2"								
18-1/8"								
19-3/4"								