

## CBI Listing



**CL 2303-25**

Issue Date: June 23, 2023

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Subject to Renewal: July 1, 2024

## Trade Secret Owner

### Screw Products, Inc.

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DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES SECTION: 06 11 00 - Wood Framing

SECTION: 06 05 23 - Wood, Plastic, and Composite Fastenings SECTION: 06 15 00 - Wood Decking

## 1 Listed Innovative Product<sup>1,2</sup>

### 1.1 NOVA™ #16 Fasteners

1.1.1 The Innovative Product evaluated in this Listing is shown in Figure 1.



**Figure 1.** NOVA™ #16 Fastener

1.2 NOVA™ #16 Fasteners are partially threaded screws with a coin head and star drive.

1.3 NOVA™ #16 Fasteners are construction lag screws intended for structural use in timber construction.

1.4 NOVA™ #16 Fasteners are construction lag screws coated with a proprietary Zytec™ GX coating that is equivalent to the protection provided by code-approved hot dipped galvanized coatings meeting ASTM A153, Class D.

1.4.1 Zytec™ GX coating is tested and recognized for use in ground contact pressure treated lumber (MCA), exterior, freshwater, general construction applications (e.g., Ground Contact AWPA UC1-UC4A MCA).

1.4.2 Zytec™ GX coated fasteners are approved for use in FRT lumber, provided the conditions set forth by the FRT lumber manufacturer are met, including appropriate strength reductions.

<sup>1</sup> For more information, visit [cbitest.com](http://cbitest.com) or call us at 608-310-6739.

<sup>2</sup> **Federal Regulation Definition.** 24 CFR 3280.2 "Listed or certified" means included in a list published by a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection 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. **International Building Code (IBC) Definition of Listed.** Equipment, materials, products or services included in a list published by an organization acceptable to the building official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose Listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose. **IBC Definition of Labeled.** Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, approved agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.



1.5 The fasteners evaluated in this Listing are set forth in Table 1.

**Table 1. Fastener Specifications – NOVA™**

Fastener Name	Designation	Head (in)		Nominal Length <sup>1</sup> (in)	Thread Length <sup>2</sup> (in)	Shank Diameter <sup>3</sup> (in)	Thread Diameter (in)		Nominal Bending Yield, fyb (psi)	Allowable Fastener Strength (lb)	
		Diameter	Drive Type				Minor	Major		Tensile	Shear <sup>4</sup>
#16 NOVA™	16 x 3"	0.630	TX30	3	1½	0.205	0.177	0.283	178,200	1,520	1,105
	16 x 4"			4	2						

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

- Fastener length is measured from the top of the head to the tip.
- Thread length excludes the knurl.
- Shank diameter based on manufactured thickness with coating.
- Shear determined at thread diameter.

## 2 Scope of Listing<sup>3,4</sup>

2.1 NOVA™ #16 Fasteners have been tested and/or evaluated in accordance with the following Standards and Referenced Documents for use as specified herein:

- 2.1.1 *AISI S904: Standard Test Methods for Determining the Tensile and Shear Strength of Screws*
- 2.1.2 *ANSI / AWC NDS: National Design Specification (NDS) for Wood Construction*
- 2.1.3 *ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus*
- 2.1.4 *ASTM D1761: Standard Test Methods for Mechanical Fasteners in Wood*
- 2.1.5 *ASTM D2395: Standard Test Methods for Density and Specific Gravity (Relative Density) of Wood and Wood-Based Materials*
- 2.1.6 *ASTM D4442: Standard Test Methods for Direct moisture Content Measurement of Wood and Wood-Based Materials*
- 2.1.7 *ASTM F1575: Standard Test Method for Determining Bending Yield Moment of Nails*

## 3 Performance Evaluation

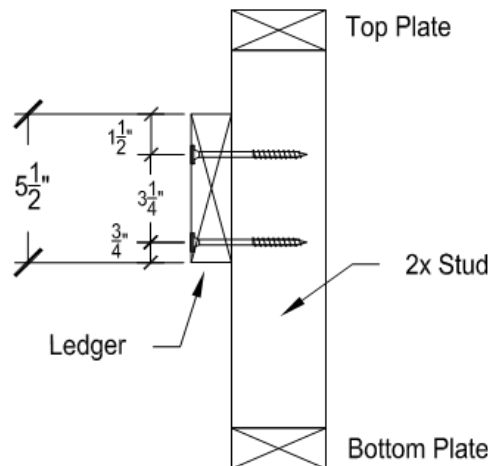
3.1 Tests, testing, test reports, research reports, duly authenticated reports and related engineering evaluations are defined as intellectual property and/or trade secrets and protected by Defend Trade Secrets Act 2018 (DTSA).<sup>5</sup>

<sup>3</sup> This Listing is a code defined research report, which is also known as a duly authenticated report, provided by an approved agency (see IBC Section 1703.1) and/or an approved source (see IBC Section 1703.4.2). An approved agency is "approved" as an approved agency when it is ANAB accredited (CBI and DrJ Engineering, LLC [DrJ] are listed in the ANAB directory). A professional engineer is "approved" as an approved source when that professional engineer is properly licensed to transact engineering commerce. Where sealed by a professional engineer, it is also a duly authenticated report certified by an approved source. (i.e., Registered Design Professional). CBI is an ANAB accredited laboratory and inspection body. DrJ is an ANAB accredited product certification body.

<sup>4</sup> Unless otherwise noted, all references in this Listing are from the 2021 version of the codes and the standards referenced therein. This material, product, design, service and/or method of construction also complies with the 2000-2021 versions of the referenced codes and the standards referenced therein.

<sup>5</sup> <https://www.law.cornell.edu/uscode/text/18/part-ll/chapter-90>. Given our professional duty to inform, please be aware that whoever, with intent to convert a trade secret (TS), that is related to a product or service used in or intended for use in interstate or foreign commerce, to the economic benefit of anyone other than the owner thereof, and intending or knowing that the offense will, injure any owner of that trade secret, knowingly without authorization copies, duplicates, sketches, draws, photographs, downloads, uploads, alters, destroys, photocopies, replicates, transmits, delivers, sends, mails, communicates, or conveys such information; shall be fined under this title or imprisoned not more than 10 years, or both. 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. As the National Society of Professional Engineers states, "Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve." Therefore, to protect intellectual property (IP) and TS, and to achieve compliance with public records and trade secret legislation, requires approval through the use of Listings, certified reports, technical evaluation reports, duly authenticated reports and/or research reports prepared by approved agencies and/or approved sources. For more information, please review this website: Intellectual Property and Trade Secrets.

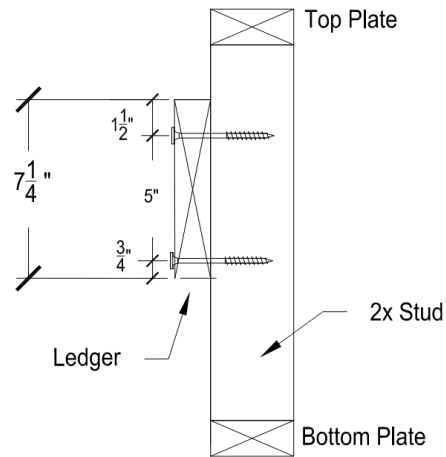
- 3.2 Testing and/or inspections conducted for this Listing were performed by CBI, an ISO/IEC 17025 accredited testing laboratory<sup>6</sup> and ISO/IEC 17020 accredited inspection body,<sup>7</sup> which are internationally recognized accreditations through International Accreditation Forum (IAF).
- 3.3 Independent testing and/or inspections conducted for this Listing were performed by an ISO/IEC 17025 accredited testing laboratory, ISO/IEC 17020 accredited inspection body, and/or a licensed Registered Design Professional (RDP).
- 3.4 #16 NOVA™ Wood Screws can be used for attaching ledger boards to wall studs with zero, one, or two layers of gypsum wallboard (GWB) between the ledger and the wall studs.
- 3.5 Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience, and technical judgment.
- 3.6 *General*
  - 3.6.1 NOVA™ #16 Fasteners are installed without lead holes, as prescribed in NDS.
  - 3.6.2 NOVA™ #16 Fasteners are governed by the applicable code and the provisions for dowel-type fasteners in NDS.
  - 3.6.3 NOVA™ #16 Fasteners may be used where screws are required to exhibit corrosion resistance when exposed to adverse environmental conditions and/or in chemically treated wood.
  - 3.6.4 NOVA™ #16 Fasteners are subject to the limitations of this report and are approved as alternatives to hot-dipped galvanized screws with a coating weight in compliance with ASTM A153, Class D.
  - 3.6.5 Unless otherwise noted, adjustment of the design stresses for duration of load shall be in accordance with the applicable code.
- 3.7 *Reference Lateral Design Values for Deck Ledger to Stud Attachment*
  - 3.7.1 *Without GWB Interlayer*
    - 3.7.1.1 Installation details for ledger to stud connections without GWB for 2"x6", 2"x8", and 2"x10" ledgers are shown in Figure 2, Figure 3, and Figure 4, respectively.



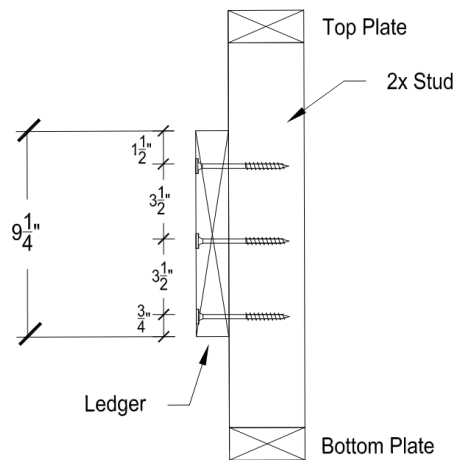
**Figure 2. 2"x6" Ledger Directly Attached to Stud**

<sup>6</sup> Internationally recognized accreditations are performed by members of the International Accreditation Forum (IAF). Accreditation Body and Regional Accreditation Group Members of IAF are admitted to the IAF MLA only after a stringent evaluation of their operations by a peer evaluation team, which is charged to ensure that the applicant complies fully with both international standards and IAF requirements. Once an accreditation body is a signatory of the IAF MLA, it is required to recognize certificates and validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope.

<sup>7</sup> Ibid.



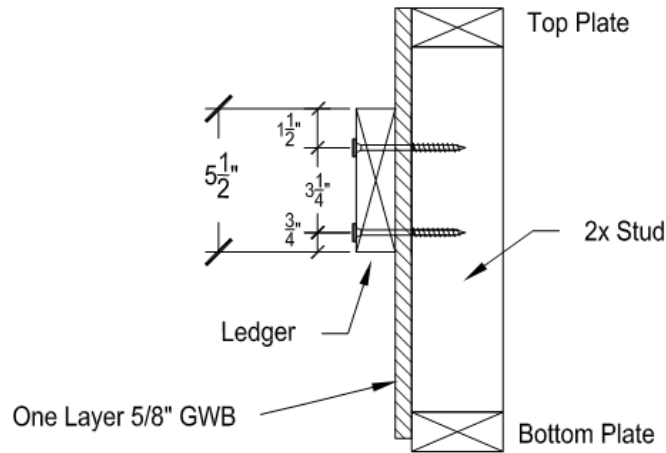
**Figure 3. 2"x8" Ledger Directly Attached to Stud**



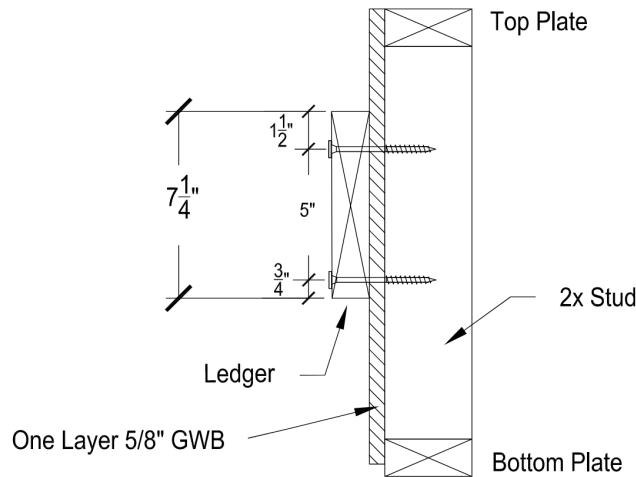
**Figure 4. 2"x10" Ledger Directly Attached to Stud**

**3.7.2 With One Layer GWB Interlayer**

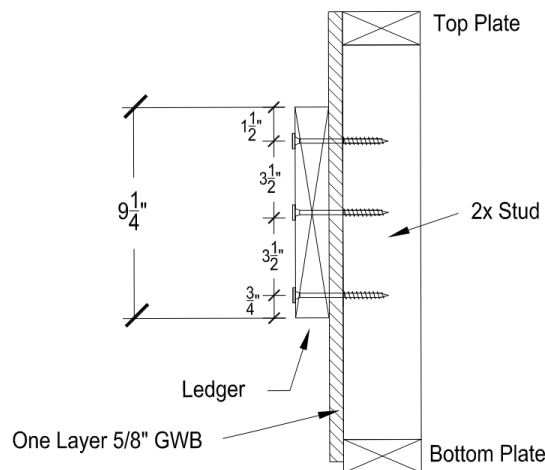
3.7.2.1 Installation details for ledger to stud connections with a single layer of GWB for 2"x6", 2"x8", and 2"x10" ledgers are shown in Figure 5, Figure 6, and Figure 7, respectively.



**Figure 5.** 2"x6" Ledger Attached to Stud Through One Layer of GWB



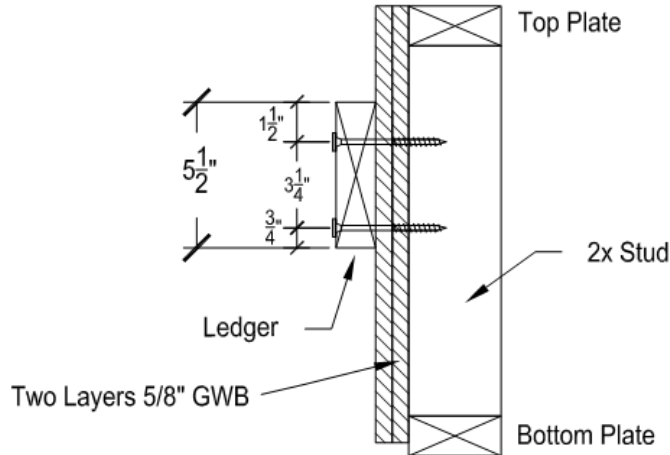
**Figure 6.** 2"x8" Ledger Attached to Stud Through One Layer of GWB



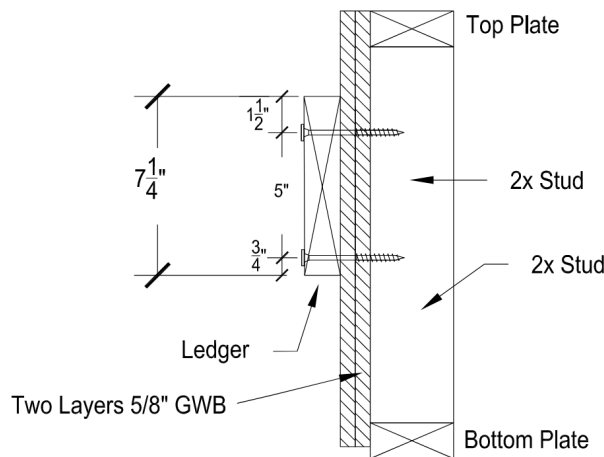
**Figure 7.** 2"x10" Ledger Attached to Stud Through One Layer of GWB

3.7.3 With Two Layers GWB Interlayer

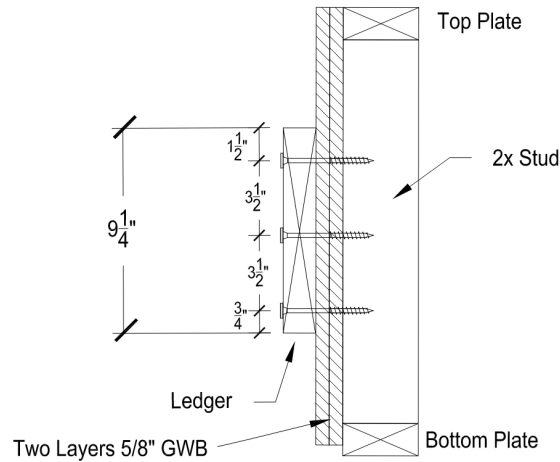
3.7.3.1 Installation details for ledger to stud connections with a double layer of GWB for 2"x6", 2"x8", and 2"x10" ledgers are shown in Figure 8, Figure 9, and Figure 10, respectively.



**Figure 8.** 2"x6" Ledger Attached to Stud Through Two Layers of GWB



**Figure 9.** 2"x8" Ledger Attached to Stud Through Two Layers of GWB



**Figure 10.** 2"x10" Ledger Attached to Stud Through Two Layers of GWB

3.7.4 Reference lateral design values for the deck ledger to stud connections detailed in Figure 2 through Figure 10 are provided in Table 2. The values in Table 2 apply where the ledger is applied either directly over the studs or with up to two layers of 5/8" GWB between the ledger and studs.

**Table 2.** Design Values for Ledger to Stud Attachment

Fastener Designation	Minimum Thread Penetration into Main Member (in)	Layers of GWB <sup>8</sup>	Allowable Load per Stud Connection <sup>3,4,5,6,7</sup> (lb)		
			Ledger Size <sup>1,2</sup>		
			2x6	2x8	2x10
#16 x 3"	1½	0	615	615	1025
#16 x 4"	1⅞	1	570	570	865
	1¼	2	415	415	570

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

- Two fasteners are required for 2x6 and 2x8 ledger connections. Three fasteners are required for 2x10 ledger connections. Additional fasteners prohibited.
- SPF ledger with minimum specific gravity of 0.42.
- The tabulated values apply where the ledger is installed either directly over the studs or with up to two layers of 5/8" gypsum between the ledger and studs.
- Allowable loads shall be limited to parallel-to-grain loaded solid sawn main members (minimum 2" nominal). Wood side members shall be loaded perpendicular to grain.
- Allowable loads are shown at the wood load duration factor of  $C_D = 1.00$ . Loads may be increased for load duration as permitted by the building code up to a  $C_D = 1.60$ . All adjustment factors shall be applied per NDS. For in-service moisture content greater than 19%, use Wet Service Factor ( $C_M$ ) = 0.70.
- For LRFD values, the reference connection design values shall be adjusted in accordance with NDS Section 11.3.
- Fasteners shall be centered in the stud and spaced as shown in Figure 2 through Figure 10. The stud minimum end distance is 6¾" when loaded toward the end and 4" when loaded away from the end. The ledger end distance is 6" for full values. For ledger end distances under 6", the reference connection design values shall be adjusted in accordance with NDS Section 12.5.
- Gypsum wallboard (GWB) must be attached as required per the building code.



- 3.8 Any building code and/or accepted engineering evaluations (i.e., research reports, duly authenticated reports, etc.) that are conducted for this Listing were performed by DrJ Engineering, LLC (DrJ), an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDPs / approved sources. DrJ is qualified<sup>8</sup> to practice product and code compliance services within its scope of accreditation and engineering expertise, respectively.

## 4 Installation

- 4.1 Installation shall comply with the manufacturer installation instructions, this Listing, the approved construction documents, and the applicable building code.
- 4.2 In the event of a conflict between the manufacturer installation instructions, this Listing, the approved construction documents and the applicable building code, the most restrictive shall govern.
- 4.3 *Installation Procedure*
- 4.3.1 Fasteners shall be installed with an appropriate rotating powered driver.
- 4.3.2 Fasteners shall not be struck with a hammer during installation.
- 4.3.3 Lead holes are not required but may be used where lumber is prone to splitting.
- 4.3.4 For ledger to stud connections, fasteners shall be centered in the stud and spaced as shown in Figure 2 through Figure 10.
- 4.3.4.1 The stud minimum end distance is 6¾" when loaded toward the end and 4" when loaded away from the end.
- 4.3.4.2 The fasteners shall be installed with a minimum 6" end distance on the ledger.

## 5 Findings

- 5.1 As described in Section 3, NOVA™ #16 Fasteners have performance characteristics that were tested and/or meet pertinent standards and is suitable for use pursuant to its specified purpose.
- 5.2 When used and installed in accordance with this Listing and the manufacturer installation instructions, NOVA™ #16 Fasteners shall be approved:
- 5.2.1 To connect ledger boards to studs through zero, one, or two layers of gypsum.
- 5.3 Unless exempt by state statute, when NOVA™ #16 Fasteners is 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.
- 5.4 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Screw Products, Inc.
- 5.5 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.10<sup>9</sup> are similar) in pertinent part states:

**104.11 Alternative materials, design and methods of construction and equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code. 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.

<sup>8</sup> 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. CBI is an ANAB accredited laboratory and inspection body. DrJ is an ANAB accredited product certification body.

<sup>9</sup> 2018 IFC Section 104.9





- 5.6 **Approved:**<sup>10</sup> Building codes require that the building official shall accept duly authenticated reports<sup>11</sup> or research reports<sup>12</sup> from approved agencies and/or approved sources (i.e., licensed RDP) with respect to the quality and manner of use of new products, materials, designs, services, assemblies, or methods of construction.
- 5.6.1 Acceptance of an approved agency, by a building official, is performed by verifying that the agency is accredited by a recognized accreditation body of the International Accreditation Forum (IAF).
- 5.6.2 Acceptance of a licensed RDP by a building official is performed by verifying that the RDP and/or their business entity is listed by the licensing board of the relevant jurisdiction.
- 5.7 CBI is an approved agency through its ISO/IEC 17025 testing and an ISO/IEC 17020 inspection accreditation. CBI employs RDPs and is accredited by ANAB.<sup>13</sup>
- 5.8 Through ANAB accreditation and the IAF Multilateral Agreements, this Listing can be used to obtain innovative product approval in any jurisdiction or country that has IAF MLA Members and Signatories to meet the Purpose of the MLA – “*certified once, accepted everywhere.*” IAF specifically says, “*Once an accreditation body is a signatory of the IAF MLA, it is required to recognise certificates and validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope.*”<sup>14</sup>

## 6 Conditions of Use

- 6.1 Performance characteristics are specified in Section 3.
- 6.2 As defined in Section 3, where material 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.
- 6.3 As listed herein, NOVA™ #16 Fasteners shall not be used:
- 6.3.1 If design properties exceed those described in Section 3.
- 6.3.2 If loading in ledger to stud applications exceeds the values listed in Table 2.
- 6.4 When required by adopted legislation and enforced by the building official (AHJ)<sup>15</sup> in which the project is to be constructed:
- 6.4.1 This Listing and the installation instructions shall be submitted at the time of permit application.
- 6.4.2 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.
- 6.4.3 This Innovative Product has an internal quality control program and a third-party quality assurance program.
- 6.4.4 At a minimum, this Innovative Product shall be installed per Section 4 of this Listing.
- 6.5 The approval of this Listing by the AHJ shall comply with IBC Section 1707.1, where legislation states in pertinent part, “*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 104.11*”, all of IBC Section 104, and IBC Section 105.4.

<sup>10</sup> 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 where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

<sup>11</sup> <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1707.1>

<sup>12</sup> <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1703.4.2>

<sup>13</sup> Please see the ANAB directories and search for Center for Building Innovation - <https://anab.ansi.org/laboratory-accreditation> and <https://anab.ansi.org/inspection-body-accreditation>

<sup>14</sup> <https://iaf.nu/en/about-iaf-mla/#:~:text=required%20to%20recognise>

<sup>15</sup> Also known as the Authority Having Jurisdiction (AHJ)



- 6.6 This Innovative Product has an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.4, IBC Section 110.4, IBC Section 1703, IRC Section R104.4, and IRC Section R109.2.
- 6.7 The application of this Innovative Product, in the context of this Listing, 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.
- 6.8 The actual design, suitability, and use of this Listing for any particular building is the responsibility of the owner or the owner's authorized agent.
- 6.9 Any required design loads shall be provided by the building designer (i.e., owner or RDP) and/or determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed.
- 6.10 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies (i.e., ANAB accredited agencies), approved sources (i.e., RDPs), and/or professional engineering regulations. Accuracy of external test data and resulting analysis is relied upon.
- 6.11 Where pertinent, testing and/or engineering analysis is based upon state or local code and/or standard provisions that have been codified into law through legislation. The developers of the codes and standards are legally responsible for the accuracy of any legislatively adopted material properties and/or analytical methods. Any testing and/or engineering mechanics-based analysis may use legislatively and/or code adopted provisions as the control condition. The use of a control condition to compare to a test condition establishes equivalency to that prescribed in the adopted legislation with respect to quality, strength, effectiveness, fire resistance, durability, and safety.
- 6.12 The reliability of the attributes provided herein may be dependent upon published design properties by others. These properties are defined by the grade mark, grade stamp, mill certificate, Listings, certified reports, duly authenticated reports, and/or research reports prepared by approved agencies and/or approved sources furnished by suppliers of products, materials, designs, assemblies, and/or methods of construction. These are presumed to be minimum properties and relied upon to be accurate.
- 6.13 Testing and engineering analysis: 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.<sup>16</sup>
- 6.14 Where additional condition of use and/or code compliance information is required, please search for NOVA™ #16 Fasteners on the DrJ Engineering website.

## 7 Identification

- 7.1 Labeling<sup>17,18</sup> shall include, but not be limited to, the manufacturer name, manufacturing location/identifier, and the CBI Listing number.
- 7.2 Labeling may include, but not be limited to, the CBI mark and any other numerical designations related to layout locations for a given project.

<sup>16</sup> See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition.

<sup>17</sup> LABEL: An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material and the name and identification of an approved agency, and that indicates that the representative sample of the product or material has been tested and evaluated by an approved agency (see IBC Section 1703.5, "Manufacturer designation" and "Mark").

<sup>18</sup> LABELED: Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, approved agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.



## 8 Review Schedule

- 8.1 This Listing is subject to periodic review and revision. For the most recent version, visit [cbitest.com](http://cbitest.com).
- 8.2 For information on the status of this Listing, contact [CBI](http://CBI).

## 9 Approved for Use Pursuant to US and International Legislation Defined in Appendix A

- 9.1 NOVA™ #16 Fasteners are included in this [list](#) published by an [approved agency](#) concerned with evaluation of products or services that maintains periodic inspection of production of listed materials or periodic evaluation of services and whose Listing states either that the material, product, or service meets identified standards or has been tested and found suitable for a specified purpose. This Listing meets the legislative intent and definition of being acceptable to the AHJ.



## Appendix A

### 1 Innovation Legislation that Mandates Approval by any AHJ

- 1.1 **Fair Competition:** Many state legislatures have adopted regulations for the examination and approval of both building codes referenced and alternative materials, products, designs, services, and/or methods of construction that:
  - 1.1.1 Advance innovation,
  - 1.1.2 Promote competition so all businesses have the opportunity to compete on price and quality in an open market on a level playing field unhampered by anticompetitive constraints, and
  - 1.1.3 Benefit consumers through lower prices, better quality, and greater choice.
- 1.2 **Adopted Legislation:** The following local, state, and federal regulations affirmatively authorize NOVA™ #16 Fasteners to be found acceptable to AHJs, delegates of building departments, and/or delegates of an agency of the federal government:
  - 1.2.1 Interstate commerce is governed by the Federal Department of Justice to encourage the use of innovative materials, products, designs, services, and/or methods of construction. The goal is to “protect economic freedom and opportunity by promoting free and fair competition in the marketplace.”
  - 1.2.2 Title 18 US Code Section 242 affirms and regulates the right of individuals and businesses to freely and fairly have alternative to code-referenced materials, products, services, designs, and/or methods of construction approved for use in commerce. Disapproval of alternative to code applications shall be based upon specific provisions of adopted legislation and shall be provided in writing stating the reasons why the alternative was not approved with reference to legislation violated.
  - 1.2.3 The federal government and each state have a public records act. In addition, each state also has legislation that mimics the federal Defend Trade Secrets Act 2016 (DTSA),<sup>19</sup> where providing test reports, engineering analysis and/or other related Intellectual Property (IP)/Trade Secrets (TS), is subject to prison of not more than 10 years<sup>20</sup> and/or a \$5,000,000 fine or 3 time the value of<sup>21</sup> the IP and TS.
    - 1.2.3.1 Compliance with public records and trade secret legislation requires approval through the use of Listings, certified reports, duly authenticated reports from approved agencies, valid research reports prepared by approved agencies and/or approved sources, and/or Technical Evaluation Reports.
  - 1.2.4 For new materials that are not specifically provided for in any building code, the design strengths and permissible stresses shall be established by tests, where suitable load tests simulate the actual loads and conditions of application that occur.
  - 1.2.5 The design strengths and permissible stresses of any structural material....shall conform to the specifications and methods of design using accepted engineering practice....<sup>22</sup>
  - 1.2.6 The commerce of approved sources (i.e., registered PEs) is regulated by professional engineering legislation. Professional engineering commerce shall always be approved by AHJs, except where there is evidence, provided in writing, that specific legislation has been violated by an individual registered PE.
  - 1.2.7 The AHJ 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 IBC Section 104.11.<sup>23</sup>

<sup>19</sup> <http://www.drjengineering.org/AppendixC> and <https://www.drjcertification.org/cornell-2016-protection-trade-secrets>

<sup>20</sup> <https://www.law.cornell.edu/uscode/text/18/1832#:~:text=imprisoned%20not%20more%20than%2010%20years>

<sup>21</sup> <https://www.law.cornell.edu/uscode/text/18/1832#:~:text=Any%20organization%20that,has%20thereby%20avoided>

<sup>22</sup> [IBC 2021, Section 1706.1 Conformance to Standards](#)

<sup>23</sup> [IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General](#)



- 1.3 **Approval by Los Angeles:** The Los Angeles Municipal Code (LAMC) states in pertinent part that the provisions of LAMC are not intended to prevent the use of any material, device, or method of construction not specifically prescribed by LAMC. The Department shall use Part III, Recognized Standards in addition to Part II, Uniform Building Code Standards of Division 35, Article 1, Chapter IX of the LAMC in evaluation of products for approval where such standard exists for the product or the material and may use other approved standards which apply. Whenever tests or certificates of any material or fabricated assembly are required by Chapter IX of the LAMC, such tests or certification shall be made by a testing agency approved by the Superintendent of Building to conduct such tests or provide such certifications. The Superintendent of Building 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 the California Building Code (CBC) Section 104.11. The testing agency shall publish the scope and limitation(s) of listed material or fabricated assembly.<sup>24</sup> The Superintendent of Building roster of approved testing agencies is provided by the Los Angeles Department of Building and Safety (LADBS).
- 1.4 **Approval by Chicago:** The Municipal Code of Chicago (MCC) states in pertinent part that an Approved Agency is a Nationally Recognized Testing Laboratory (NRTL) acting within its recognized scope and/or a certification body accredited by the American National Standards Institute (ANSI) acting within its accredited scope. Construction materials and test procedures shall conform to the applicable standards listed in the MCC. Sufficient technical data shall be submitted to the building official to substantiate the proposed use of any product, material, or assembly. Supporting technical data to assist in the approval of products, materials, or assemblies not specifically provided for in MCC, shall consist of valid research reports from approved sources (i.e., MCC defined Approved Agencies).
- 1.5 **Approval by New York City:** The NYC Building Code 2022 (NYCBC) states in pertinent part that an approved agency shall be deemed<sup>25</sup> an approved testing agency via ISO/IEC 17025 accreditation, an approved inspection agency via ISO/IEC 17020 accreditation, and an approved product evaluation agency via ISO/IEC 17065 accreditation. Accrediting agencies, other than federal agencies, must be members of an internationally recognized cooperation of laboratory and inspection accreditation bodies subject to a mutual recognition agreement<sup>26</sup> (i.e., ANAB, International Accreditation Forum (IAF), etc.).
- 1.6 **Approval by Florida:** Statewide approval of products, methods, or systems of construction shall be approved, without further evaluation, by 1) A certification mark or listing of an approved certification agency, 2) A test report from an approved testing laboratory, 3) A product evaluation report based upon testing or comparative or rational analysis, or a combination thereof, from an approved product evaluation entity; 4) A product evaluation report based upon testing or comparative or rational analysis, or a combination thereof, developed and signed and sealed by a professional engineer or architect, licensed in Florida. For local product approval, products or systems of construction shall demonstrate compliance with the structural wind load requirements of the Florida Building Code (FBC) through one of the following methods; 1) A certification mark, listing, or label from a commission-approved certification agency indicating that the product complies with the code; 2) A test report from a commission-approved testing laboratory indicating that the product tested complies with the code; 3) A product-evaluation report based upon testing, comparative or rational analysis, or a combination thereof, from a commission-approved product evaluation entity which indicates that the product evaluated complies with the code; 4) A product-evaluation report or certification based upon testing or comparative or rational analysis, or a combination thereof, developed and signed and sealed by a Florida professional engineer or Florida registered architect, which indicates that the product complies with the code; 5) A statewide product approval issued by the Florida Building Commission. The Florida Department of Business and Professional Regulation (DBPR) website provides a listing of companies certified as a Product Evaluation Agency (i.e., EVL13692), a Product Certification Agency (i.e., CER10642), and as a Florida Registered Engineer (i.e., ANE13741).

<sup>24</sup> Los Angeles Municipal Code, SEC. 98.0503. TESTING AGENCIES

<sup>25</sup> New York City, The Rules of the City of New York, § 101-07 Approved Agencies

<sup>26</sup> New York City, The Rules of the City of New York, § 101-07 Approved Agencies





- 1.7 **Approval by Miami Dade (i.e., Notice of Acceptance [NOA]):** A Florida statewide approval is an NOA. An NOA is a Florida local product approval. By Florida law, Miami Dade shall accept the statewide and local Florida Product Approval as provided for in Florida legislation [553.842](#) and [553.8425](#).
- 1.8 **Approval by New Jersey:** Pursuant to Building Code 2018 of New Jersey in [Section 1707.1 General](#)<sup>27</sup> says: *“In the absence of approved rules or other approved standards, ...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 the administrative provisions of the [Uniform Construction Code \(N.J.A.C. 5:23\)](#)”*.<sup>28</sup> § 5:23-3.7 Municipal approvals of alternative materials, equipment, or methods of construction. (a) Approvals: Alternative materials, equipment, or methods of construction **shall be approved** by the appropriate subcode official provided the proposed design is satisfactory and that the materials, equipment, or methods of construction are suitable for the intended use and are at least the equivalent in quality, strength, effectiveness, fire resistance, durability and safety of those conforming with the requirements of the regulations. 1. A field evaluation label and report or letter issued by a nationally recognized testing laboratory verifying that the specific material, equipment, or method of construction meets the identified standards or has been tested and found to be suitable for the intended use, **shall be accepted** by the appropriate subcode official as meeting the requirements of (a) above. 2. Reports of engineering findings issued by nationally recognized evaluation service programs, such as, **but not limited to**, the Building Officials and Code Administrators (BOCA), the International Conference of Building Officials (ICBO), the Southern Building Code Congress International (SBCCI), the International Code Council (ICC), and the National Evaluation Service, Inc., **shall be accepted** by the appropriate subcode official as meeting the requirements of (a) above. The [New Jersey Department of Community Affairs](#) has confirmed that reports of engineering findings from any accredited entity listed by [ANAB](#) meets the requirements of item 2 given the listed entities no longer exist.
- 1.9 **Code of Federal Regulations Manufactured Home Construction and Safety Standards Approval:** Pursuant to Title 24, Subtitle B, Chapter XX, [Part 3282](#)<sup>29</sup> and [Part 3280](#)<sup>30</sup>, *“the Department encourages innovation and the use of new technology in manufactured homes”* and the design and construction of a manufactured home shall conform to the provisions of this standard where key approval provisions in mandatory language follow; *“All construction methods shall be in conformance with accepted engineering practices”, “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”, and “the design stresses of all materials shall conform to accepted engineering practice”*.
- 1.10 **Other US Local and State Approval Processes:** In all other local and state jurisdictions, the adopted building code legislation states in pertinent part that:
- 1.10.1 For [new materials](#) that are not specifically provided for in this code, the [design strengths and permissible stresses](#) shall be established by tests.<sup>31</sup>
- 1.10.2 For [innovative alternative products, materials, designs, services and/or methods of construction](#), in the absence of approved rules or other approved standards...the building official shall accept [duly authenticated reports](#) (i.e., listing and/or research report) from [approved agencies](#) with respect to the quality and manner of use of [new materials or assemblies](#).<sup>32</sup> A building official [approved agency](#) is deemed to be approved via certification from an [accreditation body](#) that is listed by the [International Accreditation Forum](#),<sup>33</sup> or the equivalent.

<sup>27</sup> [https://up.codes/viewer/new\\_jersey/lbc-2018/chapter/17/special-inspections-and-tests#1707.1](https://up.codes/viewer/new_jersey/lbc-2018/chapter/17/special-inspections-and-tests#1707.1)

<sup>28</sup> <https://www.nj.gov/dca/divisions/codes/codereg/ucc.html>

<sup>29</sup> <https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14>

<sup>30</sup> <https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280>

<sup>31</sup> [IBC 2021, Section 1706 Design Strengths of Materials, 1706.2 New Materials](#). Adopted law pursuant to IBC model code language 1706.2.

<sup>32</sup> [IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General](#). Adopted law pursuant to IBC model code language 1707.1.

<sup>33</sup> Please see the [ANAB directory](#) for building official approved agencies.



- 1.10.3 The design strengths and permissible stresses of any structural material...shall conform to the specifications and methods of design of accepted engineering practice performed by an approved source.<sup>34</sup> An approved source is defined as a PE subject to professional engineering laws, where a research and/or a technical evaluation report, certified by a PE, shall be approved.
- 1.11 **International Approval Process:** The USMCA and GATT agreements provide for approval of innovative materials, products, designs, services, and/or methods of construction through the Technical Barriers to Trade agreements and the International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA), where these agreements state in pertinent part:
- 1.11.1 Permit participation of conformity assessment bodies located in the territories of other Members under conditions no less favourable than those accorded to bodies located within their territory or the territory of any other country.
- 1.11.2 Conformity assessment procedures (i.e., ISO/IEC 17020, 17025, 17065, etc.) are prepared, adopted, and applied so as to grant access for suppliers of like products originating in the territories of other Members under conditions no less favourable than those accorded to suppliers of like products of national origin or originating in any other country, in a comparable situation.
- 1.11.3 Conformity assessment procedures are not prepared, adopted, or applied with a view to or with the effect of creating unnecessary obstacles to international trade. This means that conformity assessment procedures shall not be more strict or be applied more strictly than is necessary to give the importing Member adequate confidence that products conform to the applicable technical regulations or standards.
- 1.11.4 **International Approval:** The purpose of the IAF MLA is to ensure mutual recognition of accredited certification and validation/verification statements between signatories to the MLA, and subsequently acceptance of accredited certification and validation/verification statements in many markets based on one accreditation for the timely approval of innovative materials, products, designs, services, and/or methods of construction. Accreditations granted by IAF MLA signatories are recognized worldwide based on their equivalent accreditation programs, therefore reducing costs and adding value to businesses and consumers.

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<sup>34</sup> IBC 2021, Section 1706 Design Strengths of Materials, 1706.1 Conformance to Standards Adopted law pursuant to IBC model code language 1706.1.