

Listing

A Duly Authenticated Report from an Approved Agency

Report No: 2502-121



Issue Date: April 15, 2026

Revision Date: April 15, 2026

Subject to Renewal: July 1, 2027

Stark Truss Floor Truss to Rated Wall Intersection Designs for Type IIIA Construction

Trade Secret Report Holder:
Stark Truss Company, Inc.

Phone: 800-933-2258

Website: www.starktruss.com

Email: info@starktruss.com

CSI Designations:

DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES

Section: 06 11 00 - Wood Framing

1 Designs Evaluated¹

1.1 Floor Truss to Fire-Rated Wall Intersections in Type IIIA Construction

2 Product Description and Materials

2.1 The innovative designs evaluated in this report are shown in **Figure 1** and **Figure 2**.

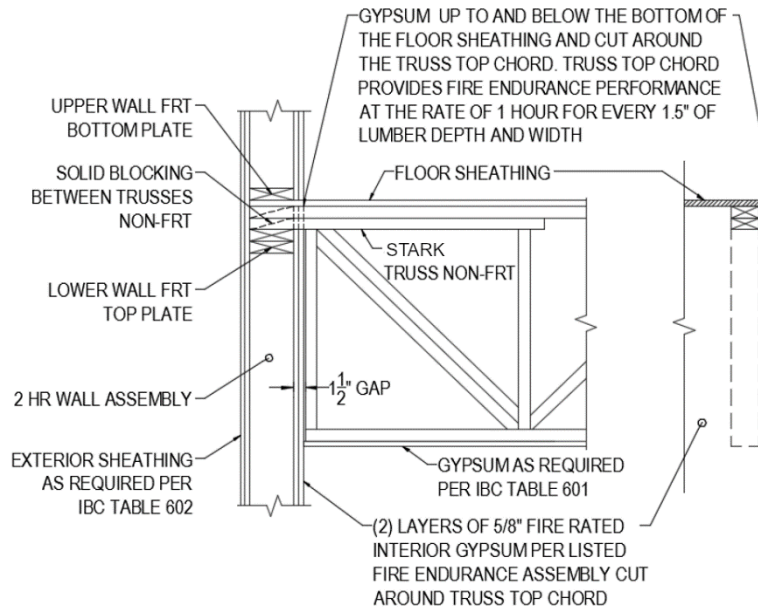


Figure 1. 2-Hour Fire-Rated Assembly using Top Chord Bearing Truss Intersecting Type IIIA Wall Assembly for IBC Section 715 Code Compliance

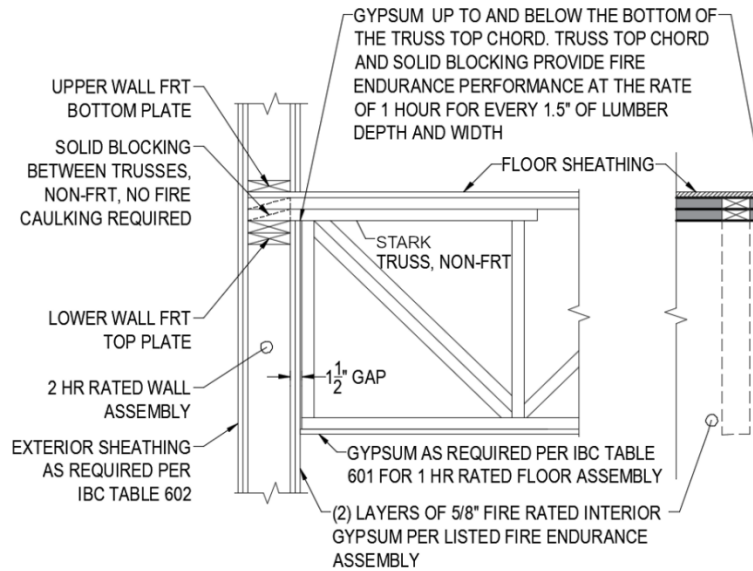


Figure 2. 2-Hour Fire-Rated Assembly using Top Chord Bearing Truss Intersecting Type IIIA Wall Assembly with Solid Blocking for IBC Section 715 Code Compliance

2.2 As needed, review material properties for design in **Section 6**.

3 Definitions²

- 3.1 New Materials³ 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.⁴ The design strength and permissible stresses shall be established by tests⁵ and/or engineering analysis.⁶
- 3.2 Duly authenticated reports⁷ and research reports⁸ are test reports and related engineering evaluations that are written by an approved agency⁹ and/or an approved source.¹⁰
 - 3.2.1 This report utilizes 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 secrets under the regulation, 18.U.S.Code.90, also known as Defend Trade Secrets Act of 2016 (DTSA).¹¹
- 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.¹²
- 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 ANAB¹³ ISO/IEC 17025 and ISO/IEC 17020 accredited.
- 3.6 The regulatory authority shall enforce¹⁴ 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 writing¹⁵ 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.¹⁶



- 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.¹⁷ Thus, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent,¹⁸ 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.¹⁹

4 Applicable Standards for the Listing²⁰

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, St. Louis County, Texas Department of Insurance, and Wichita.²¹
- 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.²²
- 4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14²³ and Part 3280²⁴ 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 *ASTM E119: Standard Test Methods for Fire Tests of Building Construction and Materials*
- 4.2.2 *ASTM E1966: Standard Test Method for Fire-Resistive Joint Systems*
- 4.2.3 *UL 263: Standard for Fire Tests of Building Construction and Materials*
- 4.2.4 *UL 2079: Tests for Fire Resistance of Building Joint Systems*
- 4.2.5 *2021 United States Department of Agriculture (USDA): The Wood Handbook: Wood as an Engineering Material*

5 Listed²⁵

- 5.1 Equipment, materials, products, or services included in a List published by a nationally recognized testing laboratory (e.g., CBI), an approved agency (e.g., CBI and DrJ), and/or and approved source (e.g., DrJ), or other organization(s) concerned with product evaluation (e.g., DrJ), that maintains periodic inspection (e.g., 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 General Design

- 6.1.1 The IBC has separate fire resistance requirements for wall and floor/ceiling assemblies as can be seen in [IBC Table 601](#). Though a wall assembly provides bearing for a floor/ceiling assembly and the two assemblies intersect, the assemblies are separate and must be treated separately with respect to the fire-resistance requirements.
- 6.1.2 [IBC Section 705.7.1](#) specifically states that the floor assembly materials that support an exterior wall above and are within the plane of the exterior wall must be fire-resistance rated to the same extent as the exterior wall. For type IIIA buildings, 2-hour fire resistance is required.
- 6.1.3 The materials used in these floor assemblies including, but not limited to, rim joists, rim boards and blocking, are permitted to use materials as required for interior building elements. Therefore, these floor assembly materials are not required to be FRT lumber.
- 6.1.4 In accordance with [IBC Section 602.3](#), lumber in the exterior wall assembly is required to be Fire-Retardant Treated (FRT). Lumber used in the floor/ceiling assembly is not required to be FRT.
 - 6.1.4.1 In accordance with the [USDA Wood Handbook](#), dimensional lumber provides fire resistance of 1-hour for each 1.5" of thickness. As such, a double top plate of standard dimensional lumber 3 1/2" wide provides a minimum 2 hours of fire resistance.

6.2 Joint System

- 6.2.1 The Floor Truss to Fire-Rated Wall Intersections require fire-resistant joint systems in accordance with [IBC Section 715.3](#).
 - 6.2.1.1 **System 1:**
 - 6.2.1.1.1 As depicted in **Figure 1**, interior gypsum shall be run up to the bottom of the floor sheathing and cut around the truss top chord. The annular space around the truss top chord shall be limited to 1" and shall be filled with an intumescent firestop sealant to match the thickness of the gypsum.
 - 6.2.1.2 **System 2:**
 - 6.2.1.2.1 As depicted in **Figure 2**, interior gypsum shall be run up the bottom side of the truss top chord with solid blocking filling the space above the top of the bearing wall and between the truss top chords. Joints in the blocking between trusses shall be constructed to act as firestops. The intersection of the truss assembly with the exterior wall shall be provided with a fire-resistance joint system in accordance with [IBC Section 715.3](#).
- 6.3 Alternative techniques shall be permitted in accordance with accepted engineering practice and experience. These provisions for the use of alternative materials, designs, and methods of construction are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed herein. This includes, but is not limited to, the following areas of engineering: mechanics of materials, structures, building science, and fire science.

7 Certified Performance²⁶

- 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.²⁷
- 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.²⁸



8 Installation

- 8.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report, and the applicable building code.
- 8.2 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 Substantiating Data

- 9.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:
 - 9.1.1 Calculations for fire-resistance per the IBC Section 722
 - 9.1.2 Tested fire-resistance rated wall and floor assemblies in accordance with ASTM E119 and UL 263
 - 9.1.3 Fire-resistant joint system testing in accordance with ASTM E1966 or UL 2079
- 9.2 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.
- 9.3 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.
- 9.4 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.
- 9.5 *Testing and Engineering Analysis*
 - 9.5.1 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.²⁹
- 9.6 Where additional condition of use and/or regulatory compliance information is required, please search for Floor Truss to Fire-Rated Wall Intersections on the DrJ Certification website.

10 Findings

- 10.1 As outlined in **Section 6**, Floor Truss to Fire-Rated Wall Intersections have performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.
- 10.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, Floor Truss to Fire-Rated Wall Intersections shall be approved for the following applications:
 - 10.2.1 As designs for intersections between 2-hour rated wall assemblies and floor/ceiling assemblies having a maximum fire-resistance rating of one hour as shown in **Figure 1** and **Figure 2**.
- 10.3 Unless exempt by state statute, when Floor Truss to Fire-Rated Wall Intersections 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.



- 10.4 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Stark Truss Company, Inc.
- 10.5 IBC Section 104.2.3³⁰ (IRC Section R104.2.2³¹ and IFC Section 104.2.3³² 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.

- 10.6 **Approved:**³³ Building regulations require that the building official shall accept duly authenticated reports.³⁴
- 10.6.1 An approved agency is “*approved*” when it is ANAB ISO/IEC 17065 accredited.
- 10.6.2 An approved source is “*approved*” when an RDP is properly licensed to transact engineering commerce.
- 10.6.3 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.
- 10.7 DrJ is a licensed engineering company, employs licensed RDPs and is an ANAB Accredited Product Certification Body – Accreditation #1131.
- 10.8 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.³⁵

11 Conditions of Use

- 11.1 The design assumptions, loading conditions, suitability and use of these designs for any particular building is the responsibility of the building designer or owner of the building.
- 11.2 This report is with respect to the fire resistance properties of the designs, and does not include an assessment of any of the related elements or structural engineering of the design.
- 11.3 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:
- 11.3.1 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.
- 11.3.2 This report and the installation instructions shall be submitted at the time of permit application.
- 11.3.3 At a minimum, these innovative designs shall be installed per **Section 8**.
- 11.3.4 The review of this report by the AHJ shall comply with IBC Section 104.2.3.2 and IBC Section 105.3.1.
- 11.3.5 The application of these innovative designs 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.
- 11.4 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.
- 11.5 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).
- 11.6 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.



12 Identification

12.1 Additional technical information for Stark Truss Floor Truss to Fire-Rated Wall Intersections in Type IIIA Construction, as shown in **Section 1.1**, can be found at www.starktruss.com.

13 Review Schedule

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

13.2 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 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.
- 3 <https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1702>
- 4 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>
- 5 <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
- 6 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
- 7 <https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1>:-:text=the%20building%20official%20shall%20make%20or%20cause%20to%20be%20made%20the%20necessary%20tests%20and%20investigations%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.
- 8 <https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4.2>
- 9 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_agency
- 10 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_source
- 11 <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](#).
- 12 <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/>
- 13 <https://www.cbiteest.com/accreditation/>
- 14 <https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.1>:-:text=directed%20to%20enforce%20the%20provisions%20of%20this%20code
- 15 <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>
- 16 <https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1>
- 17 <https://iaf.nu/en/about-iaf-mia/#>:-:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%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%20with%20the%20appropriate%20scope
- 18 True for all ANAB accredited product evaluation agencies and all International Trade Agreements.
- 19 <https://www.justice.gov/crt/deprivation-rights-under-color-law> AND <https://www.justice.gov/atr/mission>
- 20 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.
- 21 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>
- 22 See [Adoptions by Publisher](#) for the latest adoption of a non-amended or amended model code by state. <https://up.codes/codes/general>
- 23 <https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14>
- 24 <https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280>
- 25 <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>
- 26 <https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4>
- 27 <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%20livable%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the%20various%20trades
- 28 <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
- 29 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>



30 [2021 IBC Section 104.11](#)

31 [2021 IRC Section R104.11](#)

32 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>

33 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.

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

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