

Initial Draft for Public Input

Title: ICC/THIA 1215 - 202x

Design, Construction and Regulation of Tiny Houses for Permanent Occupancy

ICC/THIA Design, Construction and Regulation of Tiny Houses for Permanent Occupancy

FOREWORD

[The information contained in this foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. As such, this foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to this standard.]

This Standard will not address tiny houses used for temporary or seasonal occupancy, tiny houses installed on temporary foundations, or tiny house community development or microgrids.

Introduction

In March of 2023 the International Code Council (ICC) and the Tiny Home Industry Association (THIA) initiated a joint project to write a standard for the design, construction and regulation of tiny houses. A standard development committee was appointed by the ICC Board of Directors in November 2023, and the first meeting of that committee was in January of 2024. The scope of this standard is to provide minimum requirements for the design, construction, inspection, certification and regulatory compliance of tiny houses used for permanent occupancy to assure public safety, sustainability and resilience. This standard includes: consensus definitions for tiny houses and related terminology; prescriptive and performance-based compliance methods for tiny house permanent foundations and chassis; and plan review, inspection and certification requirements for tiny houses constructed on-site and off-site. This standard addresses tiny houses built on a foundation and those with wheels and a permanent chassis intended for permanent occupancy. This standard is written in mandatory code-intended language to support use by manufacturers and adoption by jurisdictions globally.

Off-site construction techniques continue to gain favor among contractors as a departure from conventional construction processes. In the simplest of terms, off-site construction entails the planning, design, fabrication and assembly of building elements at a location other than the location where they were fabricated. Components of a structure can be assembled in a factory-like setting and transported to the

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building site for final assembly. Subsequently, the finished construction is required to comply with the model building code adopted by the local authority having jurisdiction. This standard is part of ICC's series of off-site construction standards developed to address the challenges of a model regulatory program and offers a path to compliance necessary to support the off-site construction industry.

Development

This is the first edition of the International Code Council (ICC) and Tiny Home Industry Association (THIA) *Design, Construction and Regulation of Tiny Houses for Permanent Occupancy*. This standard was developed by the ICC/THIA Off-Site Construction Tiny Houses Standard Consensus Committee (IS-OSMTH) that operates under ANSI Approved ICC Consensus Procedures for the development of ICC Standards. The consensus process of ICC for promulgating standards is accredited by ANSI. The Off-Site Construction Tiny Houses Standard Consensus Committee, identified as IS-OSMTH, is a balanced committee formed and operated in accordance with ICC council policies and procedures.

The meetings of the ICC/THIA IS-OSMTH Consensus Committee were open to the public and interested individuals and organizations from across the country participated. The technical content of currently published documents on off-site and modular construction, including the 2021 International Residential Code (including Appendix AQ), and ICC/MBI Standards 1200 and 1205 served as the initial base documents with references to other existing standards was reviewed and considered by the committee. The information from these documents helped form a basis for the regulations installed in this standard, but the exact provisions adopted by the committee were determined based upon the scope and intent of this standard. The requirements of ICC/THIA 1215 are based on the intent to establish provisions consistent with the scope of the ICC family of codes and standards that are written to adequately protect public health, safety, and welfare; provisions that do not necessarily increase construction costs; provisions that do not restrict the use of new materials, products or methods of construction; and provisions that do not give preferential treatment to particular types or classes of materials, products, or methods of construction.

Adoption

ICC/THIA 1215 *Design, Construction and Regulation of Tiny Houses for Permanent Occupancy* is available for adoption and use by jurisdictions throughout the United States. Its use within a governmental jurisdiction is intended to be accomplished through adoption by reference in accordance with proceedings establishing the jurisdiction's laws. At the time of adoption, jurisdictions should insert the appropriate information in provisions requiring specific local information, such as the name of the jurisdiction.

Ordinance

The *I-Codes* are designed and promulgated to be adopted by reference by ordinance. Specific *ICC Standards* may also be adopted by reference by ordinance. Jurisdictions wishing to adopt the 202X edition of ICC/THIA 1215, *Design, Construction and Regulation of Tiny Houses for Permanent*

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Occupancy as an enforceable regulation governing structures and premises should ensure that certain factual information is included in the adopting ordinance at the time adoption is being considered by the appropriate governmental body. The following sample adoption ordinance addresses several key elements of a code adoption ordinance, including the information required for insertion into the code text.

**SAMPLE ORDINANCE FOR ADOPTION OF
ICC/THIA 1215, DESIGN, CONSTRUCTION AND REGULATION OF TINY HOUSES FOR
PERMANENT OCCUPANCY**

ORDINANCE NO. _____

An ordinance of the **[JURISDICTION]** adopting the 202X edition of ICC 1215/THIA, Design, Construction and Regulation of Tiny Houses for Permanent Occupancy regulating and governing the conditions and maintenance of off-site construction; by providing the standards for supplied utilities and facilities and other physical things and conditions essential to ensure that structures are safe, sanitary and fit for occupation and use in the **[JURISDICTION]**; providing for the issuance of permits and collection of fees therefor; repealing Ordinance No. _____ of the **[JURISDICTION]** and all other ordinances and parts of the ordinances in conflict therewith.

The **[GOVERNING BODY]** of the **[JURISDICTION]** does ordain as follows:

Section 1. That a certain document, three (3) copies of which are on file in the office of the **[TITLE OF JURISDICTION'S KEEPER OF RECORDS]** of **[NAME OF JURISDICTION]**, being marked and designated as 202X edition of ICC/THIA 1215, *Design, Construction and Regulation of Tiny Houses for Permanent Occupancy*, including any Appendix Chapters, **[FILL IN THE APPENDIX CHAPTERS BEING ADOPTED, IF ANY]**, as published by the International Code Council, be and is hereby adopted as Building Code of the **[JURISDICTION]**, in the State of **[STATE NAME]** for regulating and governing the conditions and maintenance of off-site construction by providing for the issuance of permits and collection of fees therefor; and each and all of the regulations, provisions, penalties, conditions and terms of said Building Code on file in the office of the **[JURISDICTION]** are hereby referred to, adopted, and made a part hereof, as if fully set out in this ordinance.

Section 2. That Ordinance No. _____ of **[JURISDICTION]** entitled **[FILL IN HERE THE COMPLETE TITLE OF THE ORDINANCE OR ORDINANCES IN EFFECT AT THE PRESENT TIME SO THAT THEY WILL BE REPEALED BY DEFINITE MENTION]** and all other ordinances or parts of ordinances in conflict herewith are hereby repealed.

Section 3. That if any section, subsection, sentence, clause or phrase of this ordinance is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance. The **[GOVERNINGBODY]** hereby declares that it would have passed this ordinance, and each section, subsection, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses and phrases be declared unconstitutional.

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Section 4. That nothing in this ordinance or in the standard hereby adopted shall be construed to affect any suit or proceeding impending in any court, or any rights acquired, or liability incurred, or any cause or causes of action acquired or existing, under any act or ordinance hereby repealed as cited in Section 3 of this ordinance; nor shall any just or legal right or remedy of any character be lost, impaired or affected by this ordinance.

Section 5. That the [JURISDICTION'S KEEPER OF RECORDS] is hereby ordered and directed to cause this ordinance to be published. (An additional provision may be required to direct the number of times the ordinance is to be published and to specify that it is to be in a newspaper in general circulation. Posting may also be required.)

Section 6. That this ordinance and the rules, regulations, provisions, requirements, orders and matters established and adopted hereby shall take effect and be in full force and effect [TIME PERIOD] from and after the date of its final passage and adoption.

Interpretations

Requests for Formal Interpretations on the provisions of ICC/THIA 1215-202x should be addressed to: ICC, Central Regional Office, 4051 West Flossmoor Road, Country Club Hills, IL 60478.

Maintenance – Submittal of Proposals

All ICC standards are periodically updated as required by ANSI. Proposals for revising this edition are welcome. Please visit the ICC website at www.iccsafe.org for the official "Call for Proposals" announcement. A proposal form and instructions can also be downloaded from www.iccsafe.org.

ICC, its members and those participating in the development of ICC/THIA 1215-202x do not accept any liability resulting from compliance or noncompliance with the provisions of ICC/THIA 1215-202x. ICC does not have the power or authority to police or enforce compliance with the contents of this standard. Only the governmental body that enacts this standard into law has such authority.

International Code Council / Tiny Home Industry Association Off-Site Construction Tiny Houses Standard Consensus Committee (IS-OSMTH)

Consensus Committee Scope: The ICC/THIA Off-Site Construction Tiny Houses Standard Consensus Committee (IS-OSMTH) shall have primary responsibility for minimum requirements to safeguard the public health, safety and general welfare and address societal and industry challenges through design, construction, inspection, certification and regulatory compliance for tiny houses.

This standard was processed and approved for submittal to ANSI by the ICC/THIA Off-Site Construction Tiny Houses Standard Consensus Committee (IS-OSMTH). Committee approval of the standard does not necessarily imply that all committee members voted for its approval.

Representatives on the Consensus Committee are classified in one of nine voting interest categories. The committee has been formed to achieve consensus as required by the ANSI Essential Requirements. At the time it approved this standard, the IS-OSMTH Consensus Committee consisted of the following members:

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Manufacturer (a) – Builder (b) - Standards Promulgator/Testing Laboratory (c) - User (d) - Utility (e) - Consumer (f) - Public Segment (g) - Government Regulator (h) - Insurance (I)

Alex Ontiveros Aquilar [d], Pacific West Tiny Homes, Casper, WY

Thomas Campbell, JD [h], Dept. of Buisness and Professional Regulation, Tallahassee, FL

Michael Cheatham [b], Movable Roots, LLC, Melbourne, FL

Zack Giffin [f], Operation Tiny Home/Tiny House Nation, Demming, WA

Josh Harmon, CBO, CSP [d], Shums Coda Associates, Wilmington, OH

Caleb Knowles, [a], Wind River Built, Apison, TN

Vina Lustado [d], Sol Haus Design, Santa Paula, CA

Tracy Manchego-Baker [d], Tiny Building Experts, Colorado Springs, CO

Bill McKinney [h], NH Building Officials Association, Nashua, NH

Nick Mosley [a], California Tiny House, Inc., Fresno, CA

Jonathon Paradine [h], State of Michigan/Bureau of Construction Codes, Lansing, MI

Dena Paschke [h], Lompoc Fire Department, Nipomo, CA

Jay Richards [h], Board of Building Standards, State of Ohio, Reynoldsburg, OH

Matt Rozzell, CBO [h], City of Portland, Portland, OR

Abby Shank [d], Tiny Estates and Endeavor Atomic Tiny Homes, Elizabethtown, PA

David R. Tompos, P.E. [c], NTA Inc., Nappanee, IN

Alaska Wagoner [f], The Tiny House Concierge, Sequim, WA

Brad Wiseman [d], Tiny Home Industry Association, Ottawa, KS

Committee Secretary, **Karl Aittaniemi, P.E.**, Director of Standards, Codes and Standards Development, International Code Council, Country Club Hills, IL

Voting Membership in Each Category

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Category	Number
Manufacturer (a)	2
Builder (b)	1
Standards Promulgator / Testing Laboratory (c)	1
User (d)	6
Utility (e)	
Consumer (f)	2
Public Segment (g)	
Government Regulator (h)	6
Insurance (I)	
TOTAL	18

Interest Categories

Manufacturer: Individuals assigned to the Manufacturer Interest category are those who represent the interests of an entity, including an association of such entities that produces an assembly or system subject to the provisions within the committee scope.

Builder: Individuals assigned to the Builder Interest category are those who represent the interests of an entity, including an association of such entities that builds, installs or maintains an assembly or system subject to the provisions within the committee scope.

Standards Promulgator/Testing Laboratory: Individuals assigned to the Standards Promulgator/Testing Laboratory Interest category are those who represent the interests of an entity, including an association of such entities that provides independent standards promulgation or laboratory testing of an assembly or system subject to the provisions within the committee scope.

User: Individuals assigned to the User Interest category are those who represent the interests of an entity, including an association of such entities, which is subject to the provisions or voluntarily utilize the provisions within the committee scope, including designers, architects, consultants and building owners.

Utility: Individuals assigned to the Utility category are those who represent the interests of an entity, including an association of such entities, which supplies power or water or accepts wastewater from an assembly or system subject to the provisions within the committee scope.

Consumer: Individuals assigned to the Consumer Interest category are those who represent the interests of an entity, including an association of such entities that represent the ultimate purchaser of the assembly or system subject to the provisions within the committee scope.

Public Segment: Individuals assigned to the Public Segment Interest category are those who represent the interests of an entity, including an association of such entities that represent a particular group of the public that benefits from the assembly or system subject to the provisions within the committee scope.

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Government Regulator: Individuals assigned to the Government Regulator Interest category are those who represent the interests of an entity, including an association of such entities, representing the entities that promulgate or enforce the provisions within the committee scope.

Insurance: Individuals assigned to the Insurance Interest category are those who represent the interests of an entity, including an association of such entities, that insure subject to the provisions or voluntarily utilize the provisions within the committee scope, including insurance related inspection agencies.

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Table of Contents

Chapter 1 Application and Administration 10

Section

101 Administrative Provisions 10
102 General Requirements 11
103 Submittal Documents 12
104 Inspections 13
105 Compliance Documentation..... 14

Chapter 2 Definitions 15

Section

201 General 15
202 Definitions 15

Chapter 3 Design 20

Section

301 General 20
302 Fire and Smoke Protection Features..... 20
303 Mechanical 21
304 Electrical 21
305 Plumbing 21
306 Fire Protection and Life Safety Systems..... 22
307 Exterior Walls..... 22
308 Structural Design 22
309 Sleeping Lofts 25

Chapter 4 Special Requirements (Reserved) 26

Chapter 5 (Reserved)..... 27

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Chapter 6 (Reserved)	28
Chapter 7 Transportation and Storage	29
<u>Section</u>	
701 General	29
702 Transport	29
703 Structural Support During Transportation.....	30
Chapter 8 On-site Installation	33
<u>Section</u>	
801 General	33
802 Foundation	33
803 Connections	34
Chapter 9 Referenced Standards	35

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CHAPTER 1

APPLICATION AND ADMINISTRATION

SECTION 101 ADMINISTRATIVE PROVISIONS

101.1 Purpose. The purpose of this standard is to provide minimum requirements to safeguard public health, safety, general welfare and to address societal and industry challenges for the inspection and regulatory compliance of small residential units. This standard is intended for adoption by government agencies and organizations for use in conjunction with model codes to achieve uniformity in the inspection and regulatory compliance of small residential units.

101.2 Scope. This standard applies to design, construction and regulation of small residential units, to include tiny houses for permanent occupancy.

101.3 Provisions for compliance. Where requirements are not provided by this standard, the applicable provisions of the construction codes adopted by the Authority Having Jurisdiction (AHJ), current model I-codes, or design criteria provided by a registered design professional shall apply.

101.4 Compliance alternative. Nothing in this standard is intended to prevent the use of designs, technologies or products as alternatives to any prescriptions in this standard, provided equivalence is demonstrated and approved by the AHJ. Listed and labeled components shall be installed in accordance with its listing, the manufacturer's installation instructions, and the applicable requirements of the construction codes adopted by the AHJ.

101.5 Referenced standards. The specific year, date and editions of the standards referenced by this standard are listed in Chapter 9.

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SECTION 102 GENERAL REQUIREMENTS

102.1 General. The construction of small residential units shall comply with the general requirements of this standard and the applicable provisions of the construction codes adopted by the AHJ.

102.2 Responsible parties. The AHJ shall receive the identification and relevant qualifications of the responsible parties for the following:

1. Design of onsite construction and off-site construction elements.
2. Production of off-site construction elements.
3. Onsite assembly of off-site produced elements, including volumetric modular units and panelized components.
4. Construction of site-built elements, including any items shipped loose to the site by the off-site manufacturer.
5. Compliance inspectors and certifying agencies.

102.3 Qualifications. Qualifications, including certificates and credentials, where required by this standard are noted in the appropriate section of this standard.

102.4 Conflicts. Where conflicts occur between provisions of this standard and referenced standards, the provisions of this standard shall apply.

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SECTION 103 SUBMITTAL DOCUMENTS

103.1 General requirements. The submittal documents shall meet the following requirements:

1. The submittal documents shall address the requirements of the AHJ regarding small residential units.
2. The AHJ responsible for approval of submittal documents shall determine where delineation of off-site construction components from site-built components in a set of construction documents or design package is required.

103.2 Additional requirements for non-site-specific components and buildings. Off-site construction components and small residential units that do not have site-specific design criteria shall be noted as such on the construction documents. These documents, and/or any data plates must specify the design criteria for the unit. The AHJ shall verify that the proposed building meets the design criteria and requirements for its site location.

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SECTION 104 INSPECTIONS

104.1 General. Inspections shall include off-site inspections or on-site inspections approved by the AHJ as required. Inspections shall be in accordance with the applicable building codes and including ICC/MBI 1205.

104.2 Off-site Inspections. Off-site inspections performed on components and portions of the small residential units, when not part of an approved state-certified modular or offsite inspection program, shall be performed by an approved third-party inspection agency and/or the AHJ to verify that construction is compliant with the approved construction documents.

104.3 On-site Inspections. On-site inspections of site-built and off-site constructed components shall verify installation is compliant with supplied installation instructions. On-site inspections shall be conducted by the AHJ or an approved third-party inspector.

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SECTION 105 COMPLIANCE DOCUMENTATION

105.1 General. The AHJ or an approved third-party inspection agency shall indicate that the construction is compliant with the approved design documents and this standard.

105.1.1 Approved Forms. Approved forms shall include item a; and one of items b, c, d or e:

- a. Data plates as specified in ICC/MBI 1205 and Appendix A of this standard.
- b. Certification label as specified in ICC/MBI 1205.
- c. Certification by approved registered design professional.
- d. Certification of state-wide modular construction program.
- e. Record of Approved Final Inspection by the AHJ or an entity recognized by the AHJ.

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CHAPTER 2 DEFINITIONS

SECTION 201

GENERAL

201.1 General. For the purposes of this standard, the terms listed in Section 202 shall have the indicated meaning.

201.2 Undefined terms. The terms not specifically defined in this standard or in standards referenced herein shall have ordinarily accepted meanings such as the context implies.

SECTION 202

DEFINITIONS

Abbreviations. The following abbreviations, when used in this standard, shall have the following meanings, unless the context clearly indicates otherwise.

- (1) AHJ – Authority having jurisdiction
- (2) APA—The Engineered Wood Association
- (3) ASTM – American Society for Testing and Materials
- (4) DOT – Department of Transportation
- (5) DRA—Design review agency
- (6) IBC – International Building Code
- (7) ICC – International Code Council, Inc.
- (8) IRC – International Residential Code
- (9) MBI – Modular Building Institute
- (10) NEC – National Electrical Code
- (11) NFPA--National Fire Protection Association
- (12) QA – Quality assurance
- (13) SRU – Small residential unit

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(14) TPI—Third-party inspector

(15) TPIA—Third-party inspection agency

APPLICABLE BUILDING CODE. The versions of the building code that have been adopted by the state or jurisdiction in which a **SMALL RESIDENTIAL UNIT** is to be constructed.

ASSEMBLY. A collection of components assembled into a whole or partial module or **SMALL RESIDENTIAL UNIT**.

AUTHORITY HAVING JURISDICTION (AHJ). Organization, political subdivision, office, building official or individual charged with the responsibility of administering and enforcing the provisions of the applicable building code

BUILDER. The individual or entity responsible for construction.

BUILDING SHELL. The structural framework, exterior walls and cladding that make up the building envelope, excluding the electrical, mechanical or plumbing systems.

CERTIFICATION LABEL. A decal or insignia.

CHASSIS. The entire transportation system comprising of the drawbar and coupling mechanism, frame, running gear assembly and lights.

PERMANENT CHASSIS. A foundation and transportation system, to include drawbar, coupling mechanism, frame, running gear assembly and lights; for modular buildings designed to meet the applicable building code. In use as a permanent foundation system, anchorage of the building to the foundation is provided to resist the uplift and sliding forces that result from the application of the prescribed loads.

COMPLIANCE CONTROL PROGRAM. Procedures that state the guiding principles and define the framework for ensuring that construction documents approved by a design review agency, or that small residential unit or components inspected by a **THIRD-PARTY INSPECTION AGENCY**, comply with the applicable building codes.

CONSTRUCTION DOCUMENTS. Designs, plans, and specifications, including written, graphic, and pictorial documents, prepared or assembled for describing the design, location and physical characteristics of the **SMALL RESIDENTIAL UNITS** or components necessary to show compliance with the applicable building codes.

DATA PLATE. A plate attached by the **MANUFACTURER** or **BUILDER**, to a **SMALL RESIDENTIAL UNIT**, or component that contains identifying information allowing code officials or end users to determine if the structure is suitable for installation in their jurisdiction, location, project or special conditions.

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DESIGN PACKAGE. The aggregate of all construction documents, including on-site documentation, and the compliance control program, to be submitted by the **MANUFACTURER** or **BUILDER** to the design review agency, or required by the design review agency for compliance review. A design package shall include model- or project-specific plans and calculations, typical system packages and calculations, or any combination thereof. Unique on-site construction details and site-specific foundation drawings prepared for specific projects are not a part of the design package.

INSTALLATION. The assembly of a **SMALL RESIDENTIAL UNIT**, component or **PANELIZED SYSTEM** on site and the process of affixing the modular building, **MODULAR COMPONENT** or **PANELIZED SYSTEM** to land, a foundation, or an existing building.

MANUFACTURER. The entity responsible for the manufacturing of assemblies, **SMALL RESIDENTIAL UNITS**, components or **PANELIZED SYSTEMS**.

MODULAR COMPONENT. A sub-assembly, subsystem, or combination of elements, including **PANELIZED SYSTEMS**, **BUILDING SHELLS** or bathroom pods, for use as a part of a modular building that is not structurally independent, but is a part of structural, plumbing, mechanical, electrical, fire protection, or other systems affecting life safety.

MODULE. A three-dimensional, volumetric section of a building designed and approved to be transported as a single section independent of other sections, to a site for **ON-SITE CONSTRUCTION**.

OFF-SITE CONSTRUCTION. A **SMALL RESIDENTIAL UNIT**, component or panelized system which is designed and constructed in compliance with this standard and is wholly or in substantial part fabricated or assembled by a **MANUFACTURER** or **BUILDER** on a separate building site and has been constructed in such a manner that all parts or processes cannot be inspected at the installation site without disassembly, damage to, or destruction thereof.

ON-SITE CONSTRUCTION. Preparation of the site, foundation construction, construction of the supporting structure, assembly, and connection of off-site or **OPEN CONSTRUCTION** elements and completion of site-related construction in accordance with the construction documents and details as approved by the AHJ.

OPEN CONSTRUCTION. **MODULAR COMPONENT** or **PANELIZED SYSTEM** constructed in such a manner that all portions can be readily inspected at the building site without disassembly, damage or destruction thereof.

PANEL. A distinct, sectional element in a **PANELIZED SYSTEM**.

PANELIZED SYSTEM. Wall, roof or floor components that are constructed at a location other than the building site in a manner that prevents the component from being inspected at the building site without disassembly, damage or destruction thereof.

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PERMANENT FOUNDATION SYSTEM. A foundation system for **SMALL RESIDENTIAL UNITS** designed to meet the applicable building code to accommodate all loads and transmitting resulting loads to the supporting soil.

PERSON. An individual, partnership, company, corporation, association, or any other legal entity, however organized.

PUBLIC. The people of the state, including individuals, companies, corporations, associations or other groups, however organized, and governmental agencies.

REGISTERED DESIGN PROFESSIONAL. An individual who is registered or licensed to practice their design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.

SMALL RESIDENTIAL UNIT (SRU). A dwelling unit that is 1,200 square feet or less constructed as a permanent residential structure with or without a **PERMANENT CHASSIS** system.

THIRD-PARTY INSPECTION AGENCY. An approved **PERSON** determined by this standard or applicable states statutory requirements to be qualified by reason of facilities, personnel, experience, demonstrated reliability, and independence of judgment to inspect **SMALL RESIDENTIAL UNITS**, and panelized components for compliance with the **CONSTRUCTION DOCUMENTS, COMPLIANCE CONTROL PROGRAM**, and applicable codes.

THIRD-PARTY INSPECTOR. An approved person determined by applicable statutory requirements to be qualified by reason of experience, demonstrated reliability, and independence of judgment to inspect **SMALL RESIDENTIAL UNITS**, building and portions thereof, for compliance with the construction documents, **COMPLIANCE CONTROL PROGRAM**, and applicable building code. A third-party inspector may work under the direction of a **THIRD-PARTY INSPECTION AGENCY**.

TINY HOUSE. A **SMALL RESIDENTIAL UNIT** 400 square feet or less with or without a **PERMANENT CHASSIS** system.

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CHAPTER 3 DESIGN

SECTION 301 GENERAL

301.1 Application. The design of off-site construction shall be in accordance with the provisions of the applicable codes and standards adopted by the AHJ. The requirements in this standard shall be in addition to the requirements of the applicable codes and standards.

301.2 Alternative materials, design and methods of construction and equipment. The provisions of this standard are not intended to prevent the use of alternate materials and methods permitted by Section 104.11 of the IBC or Section R104.11 of the IRC.

301.3 Transportation. Transportation considerations shall be in accordance with Chapter 7.

301.4 Tiny Houses. Tiny houses shall comply with this standard and/or Appendix BB of the IRC.

301.5 Use of Shipping Containers Repurposed as Buildings and Building Components. A structure incorporating shipping containers shall be designed and constructed to comply with the IBC Chapter 16 and ICC Guideline G5, *Guideline for the Safe Use of ISO Intermodal Shipping Containers Repurposed as Buildings and Building Components*.

SECTION 302 FIRE AND SMOKE PROTECTION FEATURES

302.1 Scope. The provisions of this chapter shall govern the materials, systems and assemblies used for structural fire-resistance and fire-resistance rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

302.2 Application. The design and installation of fire and smoke protection features shall be in accordance with the provisions of the applicable codes and standards adopted by the AHJ.

302.3 Construction Documents. Construction documents shall be submitted to the AHJ.

302.4 Inspections. Inspections shall be in accordance with applicable codes and standards and/or State certification programs, including ICC/MBI 1205.

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SECTION 303 MECHANICAL

303.1 Scope. The provisions of this section shall govern the design and installation of mechanical and fuel gas systems for on-site and off-site construction.

303.2 Application. The design and installation of mechanical and fuel gas systems shall be in accordance with the provisions of the mechanical and fuel gas codes and standards adopted by the AHJ. The requirements in this section shall be in addition to the requirements of the applicable codes and standards.

303.3 Construction Documents. The design documentation shall describe and delineate the portions of the systems that are to be constructed off-site from those that are to be constructed on-site.

SECTION 304 ELECTRICAL

304.1 Scope. The provisions of this section shall govern the design and installation of electrical systems for off-site and on-site construction.

304.2 Application. The design and installation of electrical systems shall be in accordance with Article 552 and other applicable sections of NFPA 70 National Electrical Code (NEC) and standards adopted by the AHJ.

304.3 Construction Documents. The design documentation shall describe and delineate the portions of the systems that are to be constructed off-site from those that are to be constructed on-site.

SECTION 305 PLUMBING

305.1 Scope. The provisions of this section shall govern the design and installation of plumbing systems for off-site and on-site construction.

305.2 Application. The design and installation of plumbing systems shall be in accordance with the provisions of the plumbing codes and standards adopted by the AHJ.

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305.3 Construction documents. The design documentation shall describe and delineate the portions of the systems that are to be constructed off-site from those that are to be constructed on-site.

SECTION 306 FIRE PROTECTION AND LIFE SAFETY SYSTEMS

306.1 Scope. The provisions of this section shall govern the design, installation and operation of fire protection systems for off-site and on-site construction.

306.2 Application. The design and installation of fire protection systems shall be in accordance with the provisions of the fire protection codes and standards adopted by the AHJ.

306.3 Construction Documents. The design documentation shall describe and delineate the portions of the systems that are to be constructed off-site from those that are to be constructed on-site.

SECTION 307 EXTERIOR WALLS

307.1 Scope. The provisions of this chapter shall govern the minimum requirements for exterior walls; exterior wall coverings; exterior wall openings; exterior windows and doors; and architectural trim.

307.2 Application. The requirements for exterior walls shall be in accordance with the provisions of the codes and standards adopted by the AHJ.

SECTION 308 STRUCTURAL DESIGN

308.1 Scope. The provisions of this chapter shall govern the minimum requirements for structural design.

308.2 Application. Structural design shall be in accordance with the provisions of the codes and standards adopted by the AHJ.

308.3 Floor Systems. Floor systems shall be suitable to support the design loads of the SRU. Floor loads shall meet sections R301.4 and R301.5 of the IRC.

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308.3.1 Chassis. SRUs can be built with or without a permanent chassis.

308.4 Connection of SRU to Chassis. Connections shall be in accordance with Chapter 7, Section 704.

308.5 Conditions for Prescriptive Requirements. The prescriptive requirements of section 308.6 shall apply to exterior bracing where the following conditions are met:

1. The following applies to the location where the building is sited:
 - a. Ultimate design wind speeds (V_{ult}) not greater than 130 mph.
 - b. Classified Exposure B or C.
 - c. Seismic Design Category (SDC) classified as A,B, or C.
2. Length of the structure not greater than 50 feet or tributary span not greater than 25 feet.
3. Base wall section height not greater than 96 inches.
4. Roof slope not greater than 4:12.
5. Building width 8 feet or greater.

Option: An additional wall section 48 inches in height to provide for a loft where the loft floor system is continuous across the width of the unit at a height not greater than 96 inches.

If the conditions of this section are not met, the provisions of Section R 301.1 of the IRC shall apply.

308.6 Exterior Bracing Prescriptive Requirements. The exterior bracing shall conform with Section R602.10 Wall Bracing of the IRC or with the following:

1. The exterior end walls shall have 2 wall segments each 24 inches (minimum) in length, or 1 – 48 inch wall segment. Maximum stud spacing shall be 16" O.C.
2. The exterior end wall covering shall be a 7/16 inch thick wood structural sheathing with a span rating of 24/0, Exposure 1 (or equivalent).
3. The sheathing shall be fastened as follows:
 - a. 0.131 inch by 2 inch nail (8d) 4 inch O.C. edges, 6 inch O.C. field or,
 - b. 0.148 inch by 2 inch nail (10d) 6 inch O.C. edges, 6 inch O.C. field or,

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- c. 16 gauge (minimum) staple 1 inch penetration 3 inch O.C. edges, 6 inch O.C. field.

Option: Alternative materials that have a designed shear value of 350 PLF can be used when installed in accordance with manufacturer’s instructions.

4. Holdowns, straps or other uplift device having a minimum service design capacity of 2800 pound uplift shall be provided at each end of each end wall panel.

5. The roof diaphragm shall be 7/16 inch thick wood structural sheathing with a span rating of 24/0, Exposure 1 or equivalent.

6. Sheathing attached to wood trusses/rafters spaced 24 inch O.C. (max) with:

- a. 7/16 inch by 1 ½ by 16 gauge (minimum) staples 6 inch O.C. edges and 12 inch O.C. field or,
- b. 0.113, 0.120, or 0.131 by 2 inch nails spaced 6 inch O.C. edges and 12 inch O.C. field.

Option: 7/16 inch thick, wood structural sheathing with a span rating of 24/0, Exposure 1 or equivalent attached to steel trusses/rafters spaced 24 inch O.C. (max) with #8 screws 6” O.C. edges, 12” O.C. field.

7. For a wood truss/rafter with 7/16 inch thick, wood structural sheathing with a span rating of 24/0, Exposure 1 or equivalent, the roof diaphragm shall have a maximum span of 50 feet.

8. The steel truss/rafter with 7/16 inch thick, wood structural sheathing with a span rating of 24/0, Exposure 1 or equivalent shall not exceed the aspect ratio (length/width) of 3:1 for unblocked diaphragms and 4:1 for blocked diaphragms. Blocking for diaphragms shall be strapping 3 inches wide with a minimum thickness of 33 mils installed on top or below the sheathing.

9. The wall to floor and wall to roof has a minimum service design value of 350 PLF with fasteners placed in the shearwall. The following shall be the fastener capacity:

a. Wood Screw Capacity (pounds)

Screw Size	(sp/D-fir)	(spf/H-fir)
#8	147	125
#10	187	158

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#12 235 200

b. Self-tapping Screw Capacity (pounds)

Screw Size	20 ga steel (33 mil thick)	2x Plate (spf/H-fir min)	Note i and ii
#8	300#	129#	147#
#10	420#	140#	186#
#12	601#	147#	224#

- i) Minimum thickness of chassis steel 12 ga (.1017 in) 97 mil
- ii) Minimum thickness of top track 20 ga (.0346 in) 33 mil

Penetration of screw through joined material shall not be less than three exposed threads.

10. The design of the connection of the endwall/shearwall into the soil shall meet local conditions where required by the AHJ.

**SECTION 309
SLEEPING LOFTS**

309.1 Sleeping lofts. Sleeping lofts shall comply with IRC section R.315.

Exception. Where applicable, provisions of Appendix BB shall replace provisions of IRC section R.315.

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CHAPTER 4 SPECIAL REQUIREMENTS

(Reserved)

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CHAPTER 5 (Reserved)

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CHAPTER 7 TRANSPORTATION

SECTION 701 GENERAL

701.1 General. Transportation of units which have been manufactured or constructed off-site shall comply with the provisions of this chapter. An SRU constructed off-site and its transportation system shall be built to withstand the effects of highway movement such that the home is transported and installed as a habitable dwelling.

701.2 Chassis. SRUs are permitted to be built with or without a permanent chassis.

701.3 Size. SRUs are permitted to be transported with or without permanent chassis or on a separate trailer suitable to support the weight and size of the transported load.

SECTION 702 TRANSPORTATION

702.1 Chassis. All chassis shall be built in compliance with DOT requirements as described below:

1. A chassis with an inspection record by DOT inspection.
2. A QA process that verifies compliance with DOT requirements.
3. A QA process approved by the AHJ.

702.2 Axles. Axles, and their connecting hardware, shall be capable of supporting the static running gear design loads as recommended by the axle manufacturer. The number of axles necessary to provide a safe tow shall not be less than those required to support the actual imposed design loads without exceeding the maximum allowable stresses for design axle life as recommended by the axle manufacturer.

702.2.1 Recycled axles. Before reuse, all axles, including component parts, shall be inspected and reconditioned as required pursuant to an acceptable quality control program or listed or labeled by a nationally recognized inspection agency or a DOT inspection or a quality assurance process approved by the AHJ.

702.3 Spring assemblies. Spring assemblies (spring assemblies, hangers, shackles, and bolts) shall be capable of supporting the running gear design loads, as recommended by the spring assembly manufacturer.

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702.4 Tires. Tires shall be sized and fitted so the static loads imposed on the axle do not exceed the gross axle weight rating determined by the SRU manufacturer or builder.

702.4.1 Inflation pressure. The load and cold inflation pressure imposed on the tires and rims shall not exceed the tire or rim manufacturer's instructions and checked by the SRU manufacturer or builder when the unit is completed.

702.4.2 Installation. Tires and rims shall be installed by applying the proper torque as specified in accordance with the tire and rim manufacturer's instructions and checked by the Small Residential Unit manufacturer or builder when the unit is completed.

702.5 Coupling mechanism. The coupling mechanism shall have a certified load rating capable of carrying the actual imposed design static load, determined by the SRU manufacturer or builder, when installed in accordance with the coupler's instructions. As part of the coupling mechanism there shall be an approved breakaway braking system.

702.6 Location. The location of the running gear shall be determined by engineering analysis or SRU manufacturer or builder's experience, taking into account the gross weight (including all contents), and total length of unit to meet or exceed the actual imposed loads on the coupling mechanism and the running gear are not exceeded. Weight of the home shall be checked in a level position ready for transportation.

702.7 Lighting. Lighting and associated hardware must comply with the requirements of Federal Motor Vehicle Safety Standard 108.

SECTION 703 STRUCTURAL SUPPORT DURING TRANSPORTATION

703.1 Connection to chassis. Connection of the SRU to the chassis for in-transit conditions shall comply with 703.1.1 and 703.1.2 or shall comply with 703.2.

703.1.1 Design weight. The summation as shown in Equation 703.1.1(a) or 703.1.1(b) of the design loads (1) through (3) of this section shall be used to determine the adequacy of the connection of the SRU to the chassis for in-transit conditions.

1. Vertical dead load of all structural and non-structural components at the time of shipment of the SRU above the chassis or 500 pounds per linear foot.
2. Live load for additional non-structural elements in place during transport.

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3. Dynamic loading factor

$$\text{EQ. 703.1.1(a) } TDW = (DL_{SRU} + LL_3) \times (1+dL)$$

Or

$$\text{EQ. 703.1.1(b) } TDW = (UW_{SRU} \times UL_{SRU} + LL_3) \times (1+dL)$$

Where,

TDW = Total Design Weight

DL_{SRU} = Calculated weight of the Small Residential Unit

UW_{SRU} = Weight of Small Residential Unit per linear foot (500 lbs/lf minimum)

UL_{SRU} = Small Residential Unit length

LL₃ = Live load during transport (3 lbs/square foot minimum)

dL = Dynamic loading factor (25% minimum)

**Table 703.1.1
FASTENER CAPACITY**

(Lag screw or through bolt capacity - lbs)

LAG/BOLT DIAMETER (inches)	D.FIR/S.PINE	HEM-FIR/S-P-F
3/8	400#	370#
1/2	762#	700#
5/8	1200#	1120#

(Self-tapping screw capacity - lbs)

Screw Size	20 ga (33 mil) Track	2x Plate (SPF/HF min)
#8	300#	184#
#10	420#	232#
#12	601#	280#

Notes:

- A. Minimum thickness of chassis steel 12 gauge (0.1017 inch) 97 mil
- B. Penetration of screws through joined materials shall not be less than three exposed threads.
- C. Thread locking shall be provided as required by the fastener manufacturer to maintain the holding capacity.

703.1.2 Number of fasteners. The total number of fasteners required for in-transit condition shall equal the total design weight divided by the fastener capacity.

Notes:

1. Total number of lags or through bolts to be distributed over the length of the unit.
2. Any combination of lags, through bolts, or self-tapping screws can be considered to connect the SRU to the chassis.

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703.2 Alternative connection. The connection of the SRU to the chassis shall be in accordance with acceptable engineering practice.

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CHAPTER 8 ON-SITE INSTALLATION

SECTION 801 GENERAL

801.1 General. The manufacturer or builder shall provide submittal documents that shall be in accordance with Section 107 of the IBC or Section R105.3 or R106 of the IRC or in accordance with the regulations imposed by the AHJ at the site where the building is to be placed.

SECTION 802 FOUNDATION

802.1 Foundation. Foundation shall be constructed in accordance with Chapter 4 of the IRC.

802.2 Loads. The foundation shall be designed to support the building, all live and dead loads, and all construction loads. The foundation shall be designed to consider all geotechnical limits placed on the building and foundation at the site.

802.3 Footings. Footings shall be in accordance with section R403 of the IRC.

802.3.1 Depth. Footing depth shall be in accordance with section R403.1.4 of the IRC.

Exceptions:

1. The footing of the SRU shall not be required to be placed below the frost line when the underside of the unit is protected with a foundation wall or skirting having an insulation value of R-6 minimum from the underside of the unit to grade.
2. A monolithic slab is permitted above the frost line where site-specific conditions including soil characteristics, site preparation, ventilation and insulative properties of the under-floor enclosure are considered.

802.3.2 Material. Footing material shall provide equal load bearing capacity and resistance to decay. Footing material shall be one of the following:

1. Four-inch nominal precast concrete pads meeting ASTM C 90-23.
2. Six inch minimum poured in place concrete pads, slabs, or ribbons with at least a 28-day compressive strength of 3000 pounds per square inch.
3. Pressure treated plywood is to be rated exposure 1 or exterior sheathing in accordance with PS-1-95.
4. ABS footing pads that are listed or labeled for the required load capacity for use in the soil classification at the site.
5. Other materials that are certified by a registered design professional and accepted by the local AHJ.

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802.3.3 Ground Moisture Control. Ventilation shall be in compliance with section R408 of the IRC.

802.4 Piers. Piers shall be capable of transmitting the vertical live and dead loads to the footing or foundation. Piers shall be one of the following:

1. Concrete block (open or closed cell) meeting ASTM C90-23, 8 inches x 8 inches x 16 inches single layer maximum 36 inches high and double interlocked blocks maximum 67 inches high. Mortar is not required unless written in the installation instructions or required by the design professional or the AHJ.
2. Metal or other approved piers shall be listed or labeled and installed in compliance with the manufacturer's installation instructions.
3. Other materials that are certified by a registered design professional and accepted by the local AHJ.

802.5 Anchorage. Anchorage systems shall comply with one of the following:

1. IRC, section R403.1.6.
2. Designed by a registered design professional.
3. Requirements of the local AHJ.

802.5.1 Ground anchors. Where ground anchors are used, the anchor shall be listed by the manufacturer of the anchor or certified by a registered design professional for the soil condition and installed in compliance with the manufacturer's instructions.

SECTION 803 CONNECTIONS

803.1 Manufacturer instructions. The manufacturer or builder shall provide instructions that describe the details for:

1. Foundation loads, anchorage details and required capacity of anchorage devices.
2. Maximum foundation support, spacings, and any additional information necessary for the proper support of the building.
3. Information on the connection of building or plumbing, gas, electrical services.
4. Installation of all other items necessary to complete the SRU on site.

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CHAPTER 9 REFERENCED STANDARDS

This chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title, and the section or sections of this document that reference the standard.

Promulgating Agency And Standard Reference Number	Title	Referenced in standard section number
APA PS-1-95	Construction and Industrial Plywood	802.3.2
ASTM C90-23	Standard Specification for Loadbearing Concrete Masonry Units	802.3.2, 802.4
Federal Motor Vehicle Safety Standard 108	Lamps, Reflective Devices and Associated Equipment	702.7
IBC - 2024	International Building Code	301.2, 302.6.1, 801.1
IRC - 2024	International Residential Code	301.2, 301.4, 308.3, 309.1, 801.1, 802.1, 802.3, 802.3.1, 802.3.3, 802.5
ICC/MBI 1205 -2021	Standard for Off-Site Construction: Inspection and Regulatory Compliance	104.1, 105.1.1, 302.4, 508.3
NFPA 70	National Electric Code	304.2

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Appendix A - OSMTH 802.4

The Size and Capacity for Unreinforced Cast-in-Place Footings

(Table to [§ 3285.312](#) from CFR Title 24 part 3285)

Soil capacity	Minimum footing size	8 in. × 16 in. pier		16 in. × 16 in. pier	
		Maximum footing capacity	Unreinforced cast-in-place minimum thickness	Maximum footing capacity	Unreinforced cast-in-place minimum thickness
(psf)	(in.)	(lbs.)	(in.)	(lbs.)	(in.)
1,000	16 × 16	1,600	6	1,600	6
	20 × 20	2,600	6	2,600	6
	24 × 24	3,700	6	3,700	6
	30 × 30	5,600	8	5,800	6
	36 × 36	7,900	10	8,100	8
	42 × 42	4	10	10,700	10
	48 × 48	4	12	13,600	10
1,500	16 × 16	2,500	6	2,500	6
	20 × 20	4,000	6	4,000	6
	24 × 24	5,600	8	5,700	6
	30 × 30	4	10	8,900	8
	36 × 36	4	10	12,600	8
	42 × 42	4	12	4	10
	48 × 48	4	14	4	12
2,000	16 × 16	3,400	6	3,400	6
	20 × 20	5,300	6	5,300	6
	24 × 24	7,600	8	7,700	6
	30 × 30	4	10	11,900	8
	36 × 36	4	15	4	10
	42 × 42	4	18	4	12

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2,500	16 × 16	4,300	6	4,300	6
	20 × 20	6,700	6	6,700	6
	24 × 24	⁴	8	9,700	6
	30 × 30	⁴	10	15,000	8
	36 × 36	⁴	12	⁴	10
3,000	16 × 16	5,200	6	5,200	6
	20 × 20	8,100	8	8,100	6
	24 × 24	⁴	10	11,700	6
	30 × 30	⁴	12	⁴	8
	36 × 36	⁴	14	⁴	10
4,000	16 × 16	7,000	6	7,000	6
	20 × 20	⁴	8	10,900	6
	24 × 24	⁴	10	15,600	8
	30 × 30	⁴	12	⁴	10

Notes:

1. The footing sizes shown are for square pads and are based on the area (in.²), shear and bending required for the loads shown. Other configurations, such as rectangular or circular configurations, can be used, provided the area and depth is equal to or greater than the area and depth of the square footing shown in the table, and the distance from the edge of the pier to the edge of the footing is not less than the thickness of the footing.
2. The 6 in. cast-in-place values can be used for 4 in. unreinforced precast concrete footings.
3. The capacity values listed have been reduced by the dead load of the concrete footing.
4. A registered professional engineer or registered architect must prepare the design, if the design loads exceed the capacity for single or double stack concrete block piers shown in footnote 4.

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