ICC/MBI 1210–2023

Standard for Mechanical, Electrical, Plumbing Systems, Energy Efficiency and Water Conservation in Off-site Construction

American National Standard

International Code Council
200 Massachusetts Avenue, NW Suite 250
Washington, DC 20001

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American National Standards Institute
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MODULAR BUILDING INSTITUTE®

ICC INTERNATIONAL CODE COUNCIL®

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Standard for Mechanical, Electrical, Plumbing Systems,
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American National Standard

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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.]

Introduction

In February of 2019 the International Code Council (ICC) and the Modular Building Institute (MBI) initiated a joint project to write standards for the planning, design, fabrication, assembly, inspection and regulatory compliance of off-site and modular construction. The first standards development committee was created by the ICC Board of Directors in July 2019, and the first meeting of that committee was in October of 2019. Pursuant to the first committee's completed standards development, the ICC Board of Directors in October 2021 created a second committee to address requirements for the energy efficiency and water conservation of off-site construction projects and the planning, designing, fabricating, transporting, and assembling, of commercial and residential building MEP system elements. The scope of this standard is to provide minimum requirements to safeguard the public health, safety, general welfare and address societal and industry challenges in the energy efficiency and water conservation of off-site construction projects and the planning, designing, fabricating, transporting, and assembling of commercial and residential building MEP system elements.

Off-site construction techniques continue to gain favor among contractors as a departure from conventional construction processes. The off-site industry has evolved from a re-locatable modular manufacturing sector into more of a building delivery sector. In the simplest of terms, off-site (or modular) construction entails the planning, design, fabrication and assembly of building elements at a location other than the location where they were fabricated. Large components of a structure can be assembled in a factory-like setting and transported to the 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 provides planning and preparation requirements such as: the role of the architect/modular manufacturer/construction manager/general contractor, location of plant vs construction site, engagement early on in the process, material procurement and lead times. This Standard also provides requirements for a controlled manufacturing environment, supply chain integration, non-structural modular (e.g. bathroom pods), the fabrication process and on-site assembly such as: staging area for construction materials, placing modules, structural connections, utilities (PMG) and weather considerations.

Development

This is the first edition of the International Code Council (ICC) and Modular Building Institute's (MBI) *Standard for Mechanical, Electrical, Plumbing Systems, Energy Efficiency and Water Conservation in Off-site Construction*. This standard was developed by the ICC/MBI Off-Site Construction Mechanical Electrical and Plumbing Standard Consensus Committee (IS-OSMEP) 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 Mechanical Electrical and Plumbing Standard Consensus Committee, identified as IS-OSMEP, is a balanced committee formed and operated in accordance with ICC rules and procedures.

The meetings of the ICC/MBI IS-OSMEP 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 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/MBI 1210 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/MBI 1210 *Standard for Mechanical, Electrical, Plumbing Systems, Energy Efficiency and Water Conservation in Off-site Construction* 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 2021 edition of ICC/MBI 1210, *Standard for Mechanical, Electrical, Plumbing Systems, Energy Efficiency and Water Conservation in Off-site Construction* 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/MBI 1210, STANDARD FOR MECHANICAL, ELECTRICAL, PLUMBING SYSTEMS, ENERGY EFFICIENCY AND WATER CONSERVATION IN OFF-SITE CONSTRUCTION ORDINANCE NO._____

An ordinance of the **[JURISDICTION]** adopting the 2021 edition of ICC/MBI 1210, Standard for Mechanical, Electrical, Plumbing Systems, Energy Efficiency and Water Conservation in Off-site Construction 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 2021 edition of ICC 1210, *Standard for Mechanical, Electrical, Plumbing Systems, Energy Efficiency and Water Conservation in Off-site Construction*, 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 [**GOVERNING BODY**] 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.

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/MBI 1210-202X 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/MBI 1210-202X do not accept any liability resulting from compliance or noncompliance with the provisions of ICC/MBI 1210-202X. 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/Modular Building Institute Off-Site Construction Mechanical Electrical and Plumbing Standard Consensus Committee (IS-OSMEP)

Consensus Committee Scope: The ICC/MBI Off-Site Construction Mechanical Electrical and Plumbing Standard Consensus Committee (IS-OSMEP) shall have primary responsibility for minimum requirements to safeguard the public health, safety and general welfare through requirements for the energy efficiency and water conservation of off-site construction projects and the planning, designing, fabricating, transporting and assembling of commercial and residential building MEP system elements.

This standard was processed and approved for submittal to ANSI by the ICC/MBI Off-Site Construction Mechanical Electrical and Plumbing Standard Consensus Committee (IS-OSMEP). 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 ANSI Essential Requirements. At the time it approved this standard, the IS-OSMEP Consensus Committee consisted of the following members:

Manufacturer (a) - Builder (b) - Standards Promulgator/Testing Laboratory (c) - User (d) -

Utility (e) - Consumer (f) - Public Segment (g) - Government Regulator (h) - Insurance (I)

Amit Ghosh, P.E. [h], City of Columbus, Columbus, OH

Jon Hannah-Spacagna [d], Modular Building Institute, Charlottesville, VA

Christopher Jensen [c], Underwriters Laboratories LLC, Logan, UT

Kevin D. Kalakay [h], State of Michigan Bureau of Constructions, Lansing, MI

Lawrence Kotewa, P.E. [d], Elevate, Chicago, IL

Kimberly Llewellyn [a], Mitsubishi Electric Trane US, Austin, TX

Andie Lorenz, CBO [h], Adams County, Othello, WA

James D. Morse, JD [b], Nationwide Homes, Martinsville, VA

Shanti Pless, LEED AP [c], National Renewable Energy Laboratory, Golden, CO

Ralph Tavares, P.E. [d], R&S Tavares Associates, Inc., San Diego, CA

Jeremy Zeedyk [b], National Energy Management Institute Committee, Cromwell, CT

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

Category	Number
Manufacturer (a)	1
Builder (b)	2
Standards Promulgator/Testing Laboratory (c)	2
User (d)	3
Utility (e)	
Consumer (f)	
Public Segment (g)	
Government Regulator (h)	3
Insurance (i)	
TOTAL	11

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 Interest 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.

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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