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AN AMERICAN NATIONAL STANDARD

IAPMO/ANSI UMC 1-2003

UNIFORM MECHANICAL CODE™

INTERNATIONAL ASSOCIATION OF PLUMBING & MECHANICAL OFFICIALS
IAPMO
FOUNDED 1926

Approved American National Standard
ANSI

C3™ Comprehensive Consensus Codes™

SANITARY ASSE ENGINEERING

THE PLUMBERS, PIPEFITTERS & SPRINKLERFITTERS UNION UA UNITED ASSOCIATION

PHCC

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WORLD PLUMBING COUNCIL Member

REVISION MARKINGS

Code changes from the 2000 edition are marked in the margins as follows:

→ An arrow denotes a deletion.

| A vertical denotes a change.

A reference in brackets [ ] following a section or paragraph indicates material that has been extracted from another document. This reprinted material is not the complete and official position of the National Fire Protection Association on the reference subject which is represented by the standard in its entirety.

Information on referenced publications can be found in Chapter 17.

All pressures used in this code are gauge pressures unless otherwise indicated.

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2003 UMC Foreword

The *Uniform Mechanical Code*™ (UMC™) provides complete requirements for the installation and maintenance of heating, ventilating, cooling, and refrigeration systems, while at the same time allowing latitude for innovation and new technologies.

This code was first published in 1967. With the publication of the 2003 edition of the *Uniform Mechanical Code*, another significant milestone has been reached. For the first time in the history of the United States, a mechanical code developed through a true consensus process has been achieved. Contributions to the content of this code were made by every segment of the built industry, including such diverse interests as consumers, enforcing authorities, installers/maintainers, insurance, labor, manufacturers, research/standards/testing laboratories, special experts, and users.

The consensus process, accredited by the American National Standards Institute, serves as the framework for the Comprehensive Consensus™ Code (C3) set – our nation's first true set of ANSI accredited harmonized construction codes for the built industry. IAPMO's C3 partners include the National Fire Protection Association (NFPA), the Western Fire Chiefs Association (WFCA) and the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE).

The public at large is encouraged and invited to participate in IAPMO's open consensus code development process. This code is updated every three years. A code development timeline and other relevant information is available at IAPMO's website at www.iapmo.org.

The *Uniform Mechanical Code* is dedicated to all those who, in working to achieve "the ultimate mechanical code," have unselfishly devoted their time, effort, and personal funds to create and maintain this, the finest mechanical code in existence today.

The 2003 *Uniform Mechanical Code* is supported by the C3 partners as well as the American Society of Sanitary Engineering (ASSE), Mechanical Contractors Association of America (MCAA), Plumbing-Heating-Cooling Contractors National Association (PHCC-NA), the United Association (UA), and the World Plumbing Council (WPC). The presence of these logos, while reflecting support, does not imply any ownership of the copyright to the UMC which is held exclusively by IAPMO. Further, the logos of these associations indicates the support of IAPMO's open, consensus process being used to develop IAPMO's codes and standards.

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NFPA – 1 Batterymarch Park • Quincy, Massachusetts 02169 • (617) 770-3000
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UA – 901 Massachusetts Avenue NW • Washington, DC 20001 • (202) 628-5823
WFCA – 727 Center Street NE, Suite 300 • Salem, Oregon 97301 • (503) 588-7665
WPC – WPC Secretary • c/o The Institute of Plumbing • 64 Station Lane • Hornchurch Essex
RM12 6NB • United Kingdom • +44 17-08-47-27-91

COMMITTEE ON UNIFORM MECHANICAL CODE

These lists represent the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred.

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Courtney Arford, Ex -Officio IAPMO [E]*
Hari Ramanathan, IAPMO Staff Liaison

Committee Membership Classification Abbreviations

These classifications apply to Technical Committee members and represent their principal interest in the activity of a committee.

M *Manufacturer:* A representative of a maker or marketer of a product, assembly, or system, or portion thereof, that is affected by the standard.
U *User:* A representative of an entity that is subject to the provisions of the standard or that voluntarily uses the standard.
I/M *Installer/Maintainer:* A representative of an entity that is in the business of installing or maintaining a product, assembly, or system affected by the standard.
L *Labor:* A labor representative or employee concerned with safety in the workplace.
R/T *Applied Research/Testing Laboratory:* A representative of an independent testing laboratory or independent applied research organization that promulgates and/or enforces standards.
E *Enforcing Authority:* A reperesentative or an agency or an organization that promulgates and/or enforces standards.
I *Insurance:* A representative of an insurance company, broker, agent, bureau, or inspection agency.
C *Consumer:* A person who is, or represents, the ultimate purchaser of a product, system, or service affected by the standard, but who is not included in the *User* classification.
SE *Special Expert:* A person not representing any of the previous classifications, but who has special expertise in the scope of the standard or portion thereof.

FORM FOR PROPOSALS ON IAPMO UPC/UMC COMMITTEE DOCUMENT

NOTE: All proposals MUST be received by 5:00 PM PST/PDST on the published proposal-closing date.

For further information on the standards-making process, please contact Codes and Standards Administration at 909-472-4110
For technical assistance, please call IAPMO at 909-472-4111 or 909-472-4112

FOR OFFICE USE ONLY
LOG # : _____
DATE REC'D: _____

PLEASE USE SEPARATE FORM FOR EACH PROPOSAL ☐ Paper ☐ Download* ☐ CD-ROM

Please indicate in which format you wish to receive your ROP/ROC:

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Please Indicate Organization Represented (if any): _____

1. a) **IAPMO Document Title** _____ **Document Year** _____

   b) **Section/Paragraph** _____

2. **Proposal Recommends** (check one):

3. **Proposal** (Include proposed new or revised wording, or identification of wording to be deleted): [Note: Proposed text should be in legislative format: i.e., use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (~~deleted wording~~). PLEASE TYPE OR PRINT LEGIBLY IN BLACK INK.]

4. **Statement of Problem and Substantiation for Proposal**: [Note: State the problem that will be resolved by your recommendations; give the specific reason for your proposal, including copies of tests, research papers, etc. If more than 200 words, it may be abstracted for publication.]

5. ☐ **This proposal is original material.** [Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.]
   ☐ **This proposal is not original material, its source (if known) is as follows**: _____

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I hereby grant IAPMO all and full rights in copyright, in this proposal, and I understand that I acquire no rights in any publication of IAPMO in which this proposal appears in this or another similar or analogous form.

Signature (**Required**): _____

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INSTRUCTIONS FOR SUBMITTING PROPOSALS

– PLEASE READ CAREFULLY –

1. Type or print in BLACK ink.

2. Indicate the title of the document and the document year. Also indicate the specific section or paragraph that the proposed amendment applies to.

3. Check the appropriate box to indicate whether this proposal recommends adding new text, revising existing text, or deleting text.

4. In the space identified as “Proposal”, indicate the exact wording you propose as new or revised text, or the text you propose be deleted.

5. In the space title “Statement of Problem and Substantiation for Proposal”, state the problem which will be resolved by your recommendation and give the specific reason for your proposal. Include copies of test results, research papers, fire experience, or other materials that substantiate your recommendation. [See note below, item (f).]

6. Check the appropriate box to indicate whether or not this proposal is original material, and if it is not, indicate the source of the material.

7. Sign the proposal.

If supplementary material (photographs, diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee. The technical committee is authorized to abstract the “Statement of Problem and Substantiation for Proposal” if it exceeds 200 words for publication in the Report on Proposals.

NOTE: The IAPMO Regulations Governing Committee Projects in Paragraph 4-3.3 state: Each proposal shall be submitted to the Council Secretary and shall include: (a) identification of the submitter and his or her affiliation (i.e., technical committee, organization, company), where appropriate; (b) identification of the document, edition of the document, and paragraph of the document to which the proposal is directed; (c) the proposed text of the proposal, including the wording to be added, revised (and how revised), or deleted; (d) a statement of the problem and substantiation for proposal; (e) the signature of the submitter; and (f) two copies of any document(s) (other than an IAPMO document) being proposed as a reference standard or publication (see 3-3.7).

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CHAPTER 1

ADMINISTRATION

Part I — General

101.0 Title.

These regulations shall be known as the *Uniform Mechanical Code,* may be cited as such, and will be referred to herein as "this code."

102.0 Purpose.

The purpose of this code is to provide minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation, and maintenance or use of heating, ventilating, cooling, and refrigeration systems; incinerators; and other miscellaneous heat-producing appliances within this jurisdiction.

The purpose of this code is not to create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefited by the terms of this code.

103.0 Scope.

The provisions of this code shall apply to the addition to or erection, installation, alteration, repair, relocation, replacement, use, or maintenance of any heating, ventilating, cooling, refrigeration systems; incinerators; or other miscellaneous heat-producing appliances within this jurisdiction.

Additions, alterations, repairs to, and replacement of equipment or systems shall comply with the provisions for new equipment and systems, except as otherwise provided in Section 104.0 of this code.

Where, in any specific case, different sections of this code specify different materials, methods of construction, or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

The design and testing of equipment regulated by this code shall be subject to the approval of the Authority Having Jurisdiction.

The standards contained in Appendix A shall be considered as part of this code. Appendices B and C contain recommended practices that shall not apply unless specifically adopted. Appendix D contains conversion tables and a table for determining the approximate minimum thickness for carbon sheet steel.

104.0 Application to Existing Mechanical Systems.

104.1 Additions, Alterations, or Repairs. Additions, alterations, or repairs may be made to any mechanical system without requiring the existing mechanical system to comply with all the requirements of this code, provided the addition, alteration, or repair conforms to that required for a new mechanical system. Additions, alterations, or repairs shall not cause an existing system to become unsafe or create unhealthy or overloaded conditions.

Minor additions, alterations, and repairs to existing mechanical systems may be installed in accordance with the law in effect at the time the original installation was made, when approved by the Authority Having Jurisdiction.

104.2 Existing Installations. Mechanical systems lawfully in existence at the time of the adoption of this code may have their use, maintenance, or repair continued if the use, maintenance, or repair is in accordance with the original design and location and no hazard to life, health, or property has been created by such mechanical systems.

104.3 Changes in Building Occupancy. Mechanical systems that are a part of any building or structure undergoing a change in use or occupancy, as defined in the Building Code, shall comply with all requirements of this code that may be applicable to the new use or occupancy.

104.4 Maintenance. All mechanical systems, materials, and appurtenances, both existing and new, and all parts thereof shall be maintained in proper operating condition in accordance with the original design and in a safe and hazard-free condition. All devices or safeguards that are required by this code shall be maintained in conformance with the code edition under which installed. The owner or the owner's designated agent shall be responsible for maintenance of mechanical systems and equipment. To determine compliance with this subsection, the Authority Having Jurisdiction may cause a mechanical system or equipment to be reinspected.

104.5 Moved Buildings. Mechanical systems or equipment that is a part of buildings or structures moved into or within this jurisdiction shall comply with the provisions of this code for new installations.

105.0 Alternate Materials and Methods of Construction.

The provisions of this code are not intended to prevent the use of any material or method of construction not