

IAPMO Uniform Codes Highlights

The International Association of Plumbing and Mechanical Officials (IAPMO) continues to protect the industry through its ANSI-approved process. In early 2018, IAPMO published the 2018 *Uniform Plumbing Code*® (UPC) and the 2018 *Uniform Mechanical Code*® (UMC). The 2018 editions of the *Uniform Solar, Hydronics and Geothermal Code*™ (USHGC) and the *Uniform Swimming Pool, Spa and Hot Tub Code*® (USPSHTC) are set to be published in September. The *Uniform Codes* maintain the necessary balance between prescriptive requirements and allowable performance standards; they detail exactly how a system needs to go together to protect the public's health and safety.



Some of the key provisions of the 2018 UPC, and changes from the 2015 edition include:

- New sound transmission provisions for plumbing piping systems.

309.5 Sound Transmission. *Plumbing piping systems shall be designed and installed in conformance with sound limitations as required in the building code.*

Section 309.5 was added to address building codes' specific requirements to reduce sound transmission in residential structures. With the changing societal living preferences toward luxury apartments and condominiums reflected in the current construction industry, the change was added to assist design professionals and authorities having jurisdiction. Furthermore, the change correlates the *UPC* with accepted engineering practices and building codes.

- New product standards for such plumbing products as wall-hung fixtures, waste fittings, lavatories, showers, bathtubs and whirlpool bathtubs, flushometer valves, sinks and eyewash stations; and signage for single use toilet facilities.

Chapter 4 has been updated to include the appropriate reference standards to assist the end user and the authority having jurisdiction for enforcement purposes. Standards included in the IAPMO codes are written in mandatory language and all have been rigorously vetted through the committee.

- New backflow protection provisions for chemical dispensers and new pressure testing for hot- and cold-water supply systems.

603.5.21 Chemical Dispensers. *The water supply to chemical dispensers shall be protected against backflow.*

The chemical dispenser shall comply with ASSE 1055 or the water supply shall be protected by one of the following methods:

- (1) Air gap
- (2) Atmospheric vacuum breaker (AVB)
- (3) Pressure vacuum breaker backflow prevention assembly (PVB)
- (4) Spill-resistant pressure vacuum breaker (SVB)
- (5) Reduced-pressure principle backflow prevention assembly (RP)

ASSE 1055 regulates backflow preventers for chemical dispensing systems. The chemical dispenser requirements include backflow protection for the water supply to chemical dispensers.

- New provisions for engineered storm drainage systems.

1106.0 Engineered Storm Drainage System.

1106.1 General. *The design and sizing of a storm drainage system shall be permitted to be determined by accepted engineering practices. The system shall be designed by a registered design professional and approved in accordance with Section 301.5.*

1106.2 Siphonic Roof Drainage Systems. *The design of a siphonic roof drainage system shall comply with ASPE 45.*

1106.3 Siphonic Roof Drains. *Siphonic roof drains shall comply with ASME A112.6.9.*

Section 1106.0 was added to address siphonic roof drainage systems, which have been in use for decades. The engineering science of application of such systems exceeds all other roof drainage systems previously in the code. The preceding edition of the *UPC* had no guidelines for an alternate engineered design for storm drainage. Reference to the ASPE standard will give the authorities having jurisdiction the tools to enforce the engineered designed of siphonic roof drainage systems.

- New peak water demand method and calculator for estimating demand loads for water supply of single- and multi-family dwellings with water conserving plumbing fixtures, fixture fittings and appliances.

A new Appendix M (Peak Water Demand Calculator) was added to provide a method for estimating the demand load for the building water supply and principal branches. The computational method presented in Appendix M is the result of a task group's five-year study reported in a peer-reviewed paper.



Some key provisions of the 2018 UMC, and changes from the 2015 edition include:

- New provisions for Type I and Type II exhaust systems and product-conveying ducts.
- Chapter 6 (Duct Systems) was updated to address new sizing provisions for duct systems, duct leakage testing requirements, and installation and closure requirements for flexible air ducts.
- References to refrigerants have been upgraded to include the latest requirements, such as A2L and B2L refrigerants.

IAPMO's commitment to the industry led to the development of lower flammability refrigerant (A2L and B2L) safety provisions in the *UMC*. The addition of the A2L and B2L provisions makes the *UMC* the first enforceable document in the nation to address safety provisions for lower flammability refrigerants.



Some key provisions of the 2018 USHGC, and changes from the 2015 edition include:

- Updated the hydronics provisions to coincide with the industry.
- The solar photovoltaic system requirements have been updated to correlate with 2017 edition of NFPA 70, Article 690.
- The geothermal energy provisions have been vastly improved to include the latest requirements for geothermal systems.

The *USHGC* committee updated the 2018 *USHGC* to make it the only all-inclusive stand-alone code that addresses solar pv, solar thermal, hydronics, and geothermal energy systems. The

geothermal chapter was vastly updated, which could not come at a better time as the U.S. Congress this year reinstated the tax credits for ground source heat pumps (GHP) through Jan. 1, 2022, cutting costs by thousands of dollars. Jurisdictions, manufacturers, and installers throughout the nation should turn to the *USHGC* for the minimum safety requirements.

Development of the 2021 editions of the codes is underway

This May, the *UPC* and *UMC* technical committee met to act on proposals submitted for the 2021 editions of these codes.

The *UPC* committee acted on 247 proposals and generated three committee proposals. Topics generating the most debate included rehabilitation of existing building sewers, Legionella risks, and circuit venting, the latter prompting the technical committee to discuss potential language to clarify sizing guidance and what combinations of fixtures are most applicable.

Due to compelling arguments regarding Legionella risks, the technical committee requested that a Legionella Task Group be formed to address mitigation of the waterborne pathogen and associated scald risk provisions in the appendices of the *UPC*. This task group's scope includes reviewing and developing recommendations, if appropriate, on item No. 228 of the *UPC* to determine methods available to address the health and safety impacts of water temperature on Legionella and scald risks. Their recommendations will be forwarded to the *UPC* technical committee for consideration.

The *UMC* committee acted on 194 proposals and generated one committee proposal. A2L systems and duct systems were hotly debated, with numerous A2L refrigerant and duct system proposals submitted. The committee expressed concern about the amount of research still needed for such systems. More specifically on duct systems, heavy debate ensued on plastic piping within plenums, combustibles within plenums, fiberglass reinforced plastics (frp), and thermoplastics.

On Aug. 20, the *Report on Proposals (ROP)* was published and includes all proposals submitted to the *UPC* and *UMC*; as well as all committee actions and balloting results.

The next 12 months are crucial

Public comments to the *UPC* and *UMC ROP* are due by Jan. 3, 2019. On Oct. 2, IAPMO members will have their voices heard on committee actions as published in the *ROP* during the annual Assembly Consideration sessions in Philadelphia. All successful motions will be forwarded to the technical committee for consideration during the comments hearing in Denver, April 29-May 2, 2019.

The revision process to generate the 2021 editions of the *USHGC* and the *USPSHTC* is set to begin on Nov. 1 with the call for proposals. The latest information regarding the IAPMO *Uniform Code* development process, including timelines, can be obtained at the [IAPMO Codes page](#).

The *Uniform Codes* are published utilizing IAPMO's proven "turn-key" philosophy, placing as much of the necessary information concerning installations as possible in one codebook. This philosophy eliminates the problems and confusion caused by using multiple codes to install or inspect the plumbing or mechanical provisions of a single installation or system.