



## The IAPMO Group

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### **2021 IAPMO Solar, Hydronics and Geothermal, Swimming Pool, Spa and Hot Tub Codes Now Available**

Ontario, Calif. (Feb. 12, 2021) — The International Association of Plumbing and Mechanical Officials (IAPMO®) has released hardcopy and digital versions of its 2021 editions of the [Uniform Solar, Hydronics and Geothermal Code® \(USHGC\)](#) and [Uniform Swimming Pool, Spa and Hot Tub Code® \(USPSHTC\)](#). Both the hardcopy and eBook (viewable on computers, tablets and smart phones) versions can be purchased and downloaded via the IAPMO web store. These codes will be available on the IAPMO Codes mobile app soon.

The *USHGC* is a model code developed by IAPMO to govern the installation and inspection of solar, hydronic, and geothermal energy systems as a means of promoting the public's health, safety and welfare. The 2021 *USHGC* addresses the latest provisions and technology paving the road to zero net energy and for the safe installation of solar, hydronics and geothermal energy systems.

Key provisions of the 2021 *USHGC* and changes from the 2018 edition include:

- New requirements for additives and chemicals installed in hydronic systems
- New requirements for terminal units installed with hydronic systems
- New maximum allowable oxygen permeation rate for PEX and PE-RT tubing in hydronic systems
- Additional material standards for hydronic and solar thermal system piping, tubing and fittings
- New requirements for both water source and air source heat pumps
- New solar thermal system piping and tubing insulation requirements
- Additional expansion tank requirements including methods for calculating maximum volume of forced and diaphragm type tanks
- New requirements for design and installation of geothermal energy systems, including open-loop, closed-loop and direct-exchange (DX) systems
- New applicable material standards for geothermal plastic ground source loop piping and fittings
- New requirements for pressure relief and shutoff valves installed in geothermal energy systems
- New requirements for geothermal system installation, such as trenching, markings, setbacks, and testing
- New listing requirements for solar PV equipment
- Updated solar photovoltaic (PV) provisions to correlate with the latest *NFPA 70-2020*
- New *Appendix D – (IAPMO IS 34) Installation Standard for Residential Solar Photovoltaic and Energy Storage Systems*

IAPMO first developed and published the *Uniform Solar Energy Code* in 1976 in response to a growing interest in residential and commercial solar energy systems. Just like the 2009, 2012, 2015 and 2018 editions of this code, the 2021 *USHGC* was developed using the American National Standards Institute (ANSI)-accredited open consensus process.

The *USPSHTC* is a model code developed by IAPMO to govern the installation and inspection of both public and private swimming pools, spas, and hot tubs to increase the safety of their operation. The 2021 *USPSHTC* addresses the latest provisions and technology for the safe installation of swimming pools, spas and hot tubs.

Key provisions of the 2021 *USPSHTC* and changes from the 2018 edition include:

- Additional requirements for flood resistant design and construction for flood hazard areas
- Inclusion of additional applicable material standards for building supply, water distribution, and circulation systems
- Additional requirements and applicable standards for tracer wires
- New design and installation requirements for both manual and electrically powered pool lifts for accessibility
- New requirements for slip-resistant walkway surfaces, including a new appendix for sample calculations (*Appendix C*)
- New design and installation requirements for islands (including island markers), lazy rivers and bridges
- New structural design requirements for concrete, fiberglass, stainless steel, tile and vinyl
- New design requirements for vanishing edge pools, including methods for determining catch basin volume and minimum operating level
- New requirements for decks and drain covers
- New and updated ventilation requirements for indoor aquatic facilities, including design parameters for humidity, exhaust air, supply air and return air
- New requirements for turnover times and maximum bather load per day
- Modifications to installation and design requirements for ladders, steps and stairs
- New design and installation requirements for handrails
- Updates to signage requirements at entrances to swimming pools and at specific locations
- New requirements for entrapment prevention, including suction outlets, safety vacuum release systems, suction-limiting vent systems, automatic pump shutoff systems, gravity drainage systems and main drain disablement
- New requirements for interactive aquatic play equipment
- New *Appendix A – Method for Determining Latent Evaporation Loads of Natatoriums*
- New *Appendix B – Standard Water Temperatures for Indoor Aquatic Facilities*

For questions about the *USHGC* or the *USPSHTC*, contact Taylor Costea by phone at (909) 218-8126 or by email at [taylor.costea@iapmo.org](mailto:taylor.costea@iapmo.org).

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*Sponsor of the Uniform Codes, IAPMO® – The International Association of Plumbing and Mechanical Officials – works in concert with government and industry for safe, sanitary plumbing and mechanical systems. Learn more about IAPMO at [www.iapmo.org](http://www.iapmo.org).*