

ASSE International

Hydronic Systems Professional Qualifications Standard

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Mokena, Illinois
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FOREWORD

Hydronic Systems Professional Qualifications Standard

This foreword shall not be considered a part of the standard. However, it is offered to provide background information.

ASSE International is dedicated to the preservation of public health and safety through the use of proper practices and approved materials. In 2014, the ASSE Board of Directors approved the development of a professional qualifications standard for hydronic system designers and installers due to the proliferation of hydronic systems being designed and installed in compliance with the Uniform Solar Energy and Hydronics Code.

ASSE International has developed the voluntary consensus ASSE/IAPMO/ANSI Series 19000, *Hydronic Systems Professional Qualifications Standard*. This unique standard series contains the uniform minimum requirements for qualified installers and designers of hydronic heating and cooling systems, as well as for qualified installers of solar water heaters. This standard was developed in the spirit of ASSE's century-old motto, "Prevention Rather Than Cure."

The integration of renewable fuel sources, such as solar and geothermal, requires that designers and installers be prepared to deliver energy-efficient systems that are safe to the public. People can become gravely ill and even die due to poor-performing systems. Designing and installing hydronic systems is a tremendous responsibility and there are few second chances to do the job right. Certification to this standard will help ensure the safety of building occupants where this technology is being deployed, delivering comfort and efficiency using state of the art hydronic delivery systems.

The Series 19000 is now part of the ASSE International portfolio of professional qualifications standards, which includes ASSE/IAPMO/ANSI Series 5000, *Cross-Connection Control Professional Qualifications Standard*, and ASSE/IAPMO/ANSI Series 6000, *Professional Qualifications Standards for Medical Gas Systems Personnel*. These standards protect the lives of people every day.

This voluntary, consensus standard was promulgated in accordance with procedures developed by the American National Standards Institute (ANSI).

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Donald Summers Jr., Chairperson

*UA Local 562
St. Louis, MO*

Kenneth Borski

*UA Local 68 JAC
Houston, TX*

Philip Campbell

*United Association
Annapolis, MD*

Laurence T. Coleman

*UA Local 597
Mokena, IL*

Dana Colombo

*National Inspection Testing & Certification (NITC)
Metairie, LA*

Robert L. Cross

*UA Local 68 JAC
Houston, TX*

Edward Lyczko

*Cleveland Clinic - Retiree
Cleveland, OH*

Matthew Marciniak (non-voting)

*International Association of Plumbing and
Mechanical Officials (IAPMO)
Milwaukee, WI*

Douglas Marian

*UA Local 78
Los Angeles, CA*

Barry Pines, CPD

*C & R Plumbing
Shelby Township, MI*

Richard J. Prospal

*Prospal Consulting Services Inc.
Brunswick, OH*

Daniel Rademacher

*Plumbing Code & Design Consulting
Butte, MT*

Philip Roach

*Mazzetti
Portland, OR*

Kenneth Schneider

*United Association ITF
St Louis, MO*

Jason Shank

*UA Local 55
Cleveland, OH*

Jaime Valdivia

*National Inspection Testing & Certification (NITC)
Los Angeles, CA*

Marianne Waickman (non-voting)

*ASSE International
Mokena, IL*

ASSE SERIES 19000 WORKING GROUP

Hydronic Systems Professional Qualifications Standard

Mark A. Eatherton, Chairperson

*Radiant Professionals Alliance (RPA)
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John Ruhnke

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Norwalk, CT*

Kurt Albershardt

*Southwest Energy Integrators
Silver City, NM*

John Sullivan

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Philip Campbell

*United Association
Annapolis, MD*

Steve Swanson

*Uponor
Apple Valley, MN*

Dan Foley

*Foley Mechanical, Inc.
Lorton, VA*

Mike Tierney

*Aspen Solar, Inc.
Aspen, CO*

Scott Hamilton (Non-voting)

*ASSE International
Mokena, IL*

Clay Thornton

*Thornton Plumbing and Heating, Inc.
Midvale, UT*

Sherard Jones

*International Association of Plumbing and
Mechanical Officials (IAPMO)
Mokena, IL*

Marianne Waickman (Non-voting)

*ASSE International
Mokena, IL*

Thomas Lane

*ECS Solar Energy Systems
Gainesville, FL*

Warren Lupson

*Air Conditioning Heating and Refrigeration
Institute (AHRI)
Arlington, VA*

Bill Melvin

*Legend Valve
Auburn Hills, MI*

Professional Qualifications Standard for the Solar Water Heating System Installer

110-1.1 Scope

This standard applies to the individual who installs and maintains solar water heating systems in accordance with the designer's layout, specified component details and calculations, and manufacturers' recommendations and requirements.

110-1.2 Purpose

The purpose of this standard is to provide minimum performance criteria, identified by industry consensus, for Solar Water Heater System Installers (herein referred to as the "installer") to ensure compliance with the referenced standards in Section 110-1.4.

110-1.3 Limitations

This standard applies to installers only. Compliance with this standard in itself shall not constitute compliance with the requirements for a solar water heater system designer. Compliance with this standard in itself shall not constitute compliance with the requirements for a Hydronic Heating and Cooling Installer (ASSE 19210) or Hydronic Heating and Cooling Designer (ASSE 19220).

- 110-1.3.1 This standard shall apply to installers of solar water heating systems, such as those identified in the Uniform Solar Energy and Hydronics Code, and other internationally recognized plumbing and mechanical codes.

110-1.4 Reference and Industry Standards and Codes

See Appendix A.

110-2.1 General Knowledge

- 110-2.1.1 The installer shall be able to identify and demonstrate knowledge of the applicable laws, codes, rules, listing agencies and regulations from the federal, state and local levels pertaining to the installation and maintenance of solar water heating systems.
- 110-2.1.2 The installer shall be able to identify the proper procedures regarding compliance with all of the Authorities Having Jurisdiction (AHJ).
- 110-2.1.3 The installer shall be able to demonstrate knowledge of the following concepts:
- a) Commissioning
 - b) Control functions
 - c) Cross-connection control
 - d) Efficiency requirements
 - e) Equipment standards
 - f) Fluid distribution
 - g) Freeze protection
 - h) Industry standards
 - i) Manufacturer specifications
 - j) Over temperature
 - k) Piping systems
 - l) Safety
 - m) Safety standards
 - n) Seismic restraints
 - o) Service and maintenance
 - p) Site assessment
 - q) Solar collection
 - r) Solar water heating methods
 - s) Sustainability
 - t) System sizing
 - u) System standards
 - v) Thermal expansion
 - w) Wiring layouts