

ASSE/IAPMO/ANSI Series 12000

ASSE Board Approved: September 2018

ANSI Approved: October 2018

ASSE International

Professional Qualifications Standard for

Infection Control Risk Assessment for All Building Systems

An American National Standard

This is a preview of "ASSE/IAPMO/ANSI Seri...". [Click here to purchase the full version from the ANSI store.](#)

TABLE OF CONTENTS

Professional Qualifications Standard for Infection Control Risk Assessment for All Building Systems

Copyright Information	iv	Standard #12010	5
Foreword	v	<i>Biological Pathogens Professional Qualifications Standard for Construction and Maintenance Personnel</i>	
Professional Qualifications Standards Committee	vi	10-1.1 Scope	5
ASSE Series 12000 Working Group	vii	10-1.2 Purpose	5
Standard #12001	1	10-1.3 Limitations	5
<i>References</i>		10-1.4 References, Industry Standards and Codes	5
01-1.1 References, Industry Standards and Codes	1	10-2.1 General Knowledge	5
01-1.2 Abbreviations and Standards Development Organizations	2	10-2.2 Vaccination Knowledge	6
Standard #12005	3	10-2.3 Exposure Control Plan	6
<i>Professional Qualifications Standard for the Health and Safety of Construction and Maintenance Generalist</i>		10-2.4 Precautionary Measures	6
5-1.1 Scope	3	10-2.5 Documenting and Recording	6
5-1.2 Purpose	3	10-3.1 Terminology	6
5-1.3 Limitations	3	10-4.1 Certification	6
5-1.4 References, Industry Standards and Codes	3	10-4.2 Recertification	6
5-2.1 General Knowledge	3	Standard #12020	7
5-2.2 Pathogens, Biohazards and Other Potentially Infectious Materials	4	<i>Biological Pathogens Professional Qualifications Standard for Construction and Maintenance Employers</i>	
5-2.3 Pathogens, Biohazards and Other Potentially Infectious Disease Regulations	4	20-1.1 Scope	7
5-3.1 Terminology	4	20-1.2 Purpose	7
5-4.1 Certificate	4	20-1.3 Limitations	7
		20-1.4 References, Industry Standards and Codes	7
		20-2.1 General Knowledge	7
		20-2.2 Exposure Control Plan	8
		20-2.3 Engineering and Work Practice Controls	8
		20-2.4 Precautionary Measures	8
		20-2.5 Documenting and Recording	8
		20-3.1 Terminology	8
		20-4.1 Certification	8
		20-4.2 Recertification	8

Standard #12030	9	Standard #12061	16
<i>Waterborne Pathogens Professional Qualifications Standard for Construction and Maintenance Personnel</i>		<i>Water Quality Program Professional Qualifications Standard for Plumbers</i>	
30-1.1 Scope	9	61-1.1 Scope	16
30-1.2 Purpose	9	61-1.2 Purpose	16
30-1.3 Limitations	9	61-1.3 Limitations.....	16
30-1.4 References, Industry Standards and Codes	9	61-1.4 References, Industry Standards and Codes.....	16
30-2.1 General Knowledge	9	61-2.1 General Knowledge.....	16
30-2.2 Exposure Control Plan	9	61-2.2 Potable Water Systems.....	17
30-2.3 Engineering and Work Practice Controls	10	61-2.3 Water Quality Program	17
30-2.4 Precautionary Measures	10	61-2.4 Precautionary Measures	17
30-2.5 Documenting and Recording	10	61-2.5 Documenting and Recording	17
30-3.1 Terminology	10	61-3.1 Terminology.....	17
30-4.1 Certification	11	61-4.1 Certification.....	17
30-4.2 Recertification	11	61-4.2 Recertification.....	18
Standard #12040	12	Standard #12062	19
<i>Professional Qualifications Standard for Construction and Maintenance Personnel for Contamination/Infection Prevention Procedures to Protect Facility Occupants and Operations</i>		<i>Water Quality Program Professional Qualifications Standard for Pipefitters and HVAC Technicians</i>	
40-1.1 Scope	12	62-1.1 Scope	19
40-1.2 Purpose	12	62-1.2 Purpose	19
40-1.3 Limitations	12	62-1.3 Limitations	19
40-1.4 References, Industry Standards and Codes	12	62-1.4 References, Industry Standards and Codes	19
40-2.1 General Knowledge	12	62-2.1 General Knowledge	19
40-2.2 Engineering and Work Practice Controls	12	62-2.2 Water Systems	20
40-2.3 Precautionary Measures	13	62-2.3 Water Quality Program	20
40-2.4 Documenting and Recording	13	62-2.4 Precautionary Measures.....	20
40-3.1 Terminology	13	62-2.5 Documenting and Recording	20
40-4.1 Certification	13	62-3.1 Terminology	20
40-4.2 Recertification	13	62-4.1 Certification	20
		62-4.2 Recertification.....	20
Standard #12060	14	Standard #12063	21
<i>Water Quality Program Professional Qualifications Standard for Employers and Designated Representatives</i>		<i>Water Quality Program Professional Qualifications Standard for Sprinkler Fitters</i>	
60-1.2 Purpose	14	63-1.1 Scope	21
60-1.3 Limitations.....	14	63-1.2 Purpose	21
60-1.4 References, Industry Standards and Codes.....	14	63-1.3 Limitations	21
60-2.1 General Knowledge.....	14	63-1.4 References, Industry Standards and Codes	21
60-2.2 Water Systems.....	15	63-2.1 General Knowledge	21
60-2.3 Water Quality Program	15	63-2.2 Water Systems	22
60-2.4 Precautionary Measures.....	15	63-2.3 Water Quality Program	22
60-2.5 Documenting and Recording.....	15	63-2.4 Precautionary Measures.....	22
60-3.1 Terminology.....	15	63-2.5 Documenting and Recording	22
60-4.1 Certification.....	15	63-3.1 Terminology	22
60-4.2 Recertification.....	15	63-4.1 Certification	22
		63-4.2 Recertification	22

Appendix A	23
<i>Personal Protective Equipment</i>	
Appendix B	24
<i>Infection Prevention/Control Risk Assessment</i>	
Appendix C	28
<i>Vocabulary and Definitions</i>	
Appendix D	34
<i>Reference Documents</i>	
Appendix E	35
<i>WICRA Forms</i>	

COPYRIGHT INFORMATION

Professional Qualifications Standard for Infection Control Risk Assessment for All Building Systems

Neither this standard, nor any portion thereof, may be reproduced without the written consent of ASSE International.

Organizations wishing to adopt or list any ASSE Standard should print the ASSE Standard number on the cover page first and in equal or larger type to that of the adopting or listing organization.

ASSE International
Mokena, Illinois
Copyright © 2018, 2014
All rights reserved.

FOREWORD

Professional Qualifications Standard for Infection Control Risk Assessment for All Building Systems

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

ASSE International is a membership organization dedicated to the preservation of public health and safety through the use of proper plumbing, piping and mechanical practices. This is accomplished in the spirit of its century-old motto, "Prevention Rather Than Cure."

Although pathological diseases are as old as mankind, the evolving nature of bloodborne pathogens and how they affect pipe trade workers, maintenance personnel, and other construction craftspeople has basically been ignored. While there is an abundance of professional organizations representing various factions of the piping and mechanical fields, ASSE International is one of very few addressing the critical nature of bloodborne pathogens (and other infectious diseases) and the dangerous roles they play throughout our industry.

To address this potentially hazardous situation, ASSE International has developed the voluntary consensus ASSE Series 12000, *Professional Qualifications Standard for Infection Control Risk Assessment for All Building Systems*. This unique standard series sets minimum criteria for the training and certification of pipe trades craftspeople, and other construction and maintenance personnel, on how to safely work in an environment with the potentially deadly diseases that may be present within their worksites.

This standard series addresses the need for all construction and maintenance personnel and employers, especially within the pipe trades, to become proficient in identifying and managing potential situations where they may be exposed to bloodborne pathogens.

ASSE PQ STANDARDS COMMITTEE

Professional Qualifications Standard for Infection Control Risk Assessment for All Building Systems

Donald Summers Jr., Chairman

*UA Local 562
St. Louis, MO*

Raymond Boyd

*United Association
Annapolis, MD*

Chris Check

*UA District Council 16
Los Angeles, CA*

Dana Colombo

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

Robert L. Cross

*UA Local 68
Houston, TX*

Scott Hamilton (non-voting)

*IAPMO
Mokena, IL*

Gary Howard

La Grange, IL

Edward Lyczko

*Cleveland Clinic - Retiree
Cleveland, OH*

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*

Debbie Vukovich

*Dallas JAC Local 100
Garland, TX*

Marianne Waickman (non-voting)

*ASSE International
Mokena, IL*

ASSE SERIES 12000 WORKING GROUP

Professional Qualifications Standard for Infection Control Risk Assessment for All Building Systems

Kurt Steenhoek, Chairman
*United Association
Annapolis, MD*

Gregory Ballay, RN, BSN
*Allegheny Valley Hospital
Natrona Heights, PA*

Anthony Barbano
*Emcor Mesa Energy Systems
Riverside, CA*

Chuck Berra
*Sprinkler Filtrators Local 268
St. Louis, MO*

Gary Bittner
*Sprinkler Filtrators LU 669 UA
Somerset, PA*

Manuel Ferrer
*Steamfitters Industry Training Center
Steamfitters Local 638
NYC & Long Island, NY*

Othon Guillen V
*Houston Area Plumbing JAC
Houston, TX*

Scott Hamilton (non-voting)
*IAPMO
Mokena, IL*

Paul Hopkins
*The Enterprise Assn. of Steamfitters Local 638
New York, NY*

Kevin McDonough
*Plumbers & Pipefitters Local 562
St Louis, MO*

Rita Neiderheiser
*UA Local 669
Denver, Colorado*

Richard J. Prospal
*Prospal Consulting Services, Inc.
Brunswick, Ohio*

J.J. Richards
*UA Local 189
Columbus, OH*

John P. Sullivan
*Plumbers Local 1 Training Center
Long Island City, NY*

Victor Stateman
*Pipefitters LU 597 Training Fund
Mokena, IL*

Donald Summers Jr.
*UA Local 562
St. Louis, MO*

Marianne Waickman (non-voting)
*ASSE International
Mokena, IL*

Glenn Wattley
*Aquaflex Holdings LLC
Marstons Mill, MA*

Allan Wishnoff
*Plumbers Local 1 Training Center
Long Island City, NY*

ASSE SERIES 12000 • STANDARD #12001

References

01-1.1 References, Industry Standards and Codes

The following list of references, industry standards and codes are part of the requirements of all Standards within the Series 12000.

- | | |
|---|--|
| <p>01-1.1.1 AAALAC, <i>National Research Council Guide for the Care and Use of Laboratory Animals</i>, 8th Edition</p> <p>01-1.1.2 ASHRAE 188, <i>Legionellosis: Risk Management for Building Water Systems</i>, 2015</p> <p>01-1.1.3 ASHRAE, Guideline 12, <i>Minimizing the Risk of Legionellosis Associated with Building Water Systems</i>, 2000R</p> <p>01-1.1.4 ASSE Series 6000, <i>Professional Qualification Standard for Medical Gas Systems Personnel</i></p> <p>01-1.1.5 CDC, <i>Biosafety in Microbiological and Biomedical Laboratories</i>, 5th Edition</p> <p>01-1.1.6 CDC, <i>Guidelines for Immunizations</i></p> <p>01-1.1.7 CDC, <i>Immunization Schedules</i>, http://www.cdc.gov/vaccines/schedules/</p> <p>01-1.1.8 CDC, <i>Developing a Water Management Program to reduce Legionella Growth & Spread in Buildings</i>, www.cdc.gov/legionella/downloads/toolkit.pdf</p> <p>01-1.1.9 CDC and AWWA, <i>Emergency Water Supply Planning Guide for Hospitals and Healthcare Facilities</i>, 2012</p> <p>01-1.1.10 CTI, <i>Legionellosis, Guideline: Best Practices for Control of Legionella</i>, 2008</p> <p>01-1.1.11 IAPMO, <i>Uniform Plumbing Code</i>, 2018</p> <p>01-1.1.12 IAPMO, <i>Uniform Mechanical Code</i>, 2018</p> <p>01-1.1.13 IAPMO, <i>Uniform Swimming Pool, Spa and Hot Tub Code</i>, 2018</p> <p>01-1.1.14 ICC, <i>International Building Code</i>, 2018</p> <p>01-1.1.15 ICC, <i>International Fire Code</i>, 2018</p> <p>01-1.1.16 ICC, <i>International Mechanical Code</i>, 2018</p> <p>01-1.1.17 ICC, <i>International Plumbing Code</i>, 2018</p> | <p>01-1.1.18 ICC, <i>International Private Sewage Disposal Code</i>, 2018</p> <p>01-1.1.19 ICC, <i>International Residential Code for One and Two-Family Dwellings</i>, 2018</p> <p>01-1.1.20 ICC, <i>International Swimming Pool and Spa Code</i>, 2018</p> <p>01-1.1.21 NFPA 99, <i>Health Care Facilities Code</i>, 2018</p> <p>01-1.1.22 NFPA Standards</p> <ol style="list-style-type: none"> 1) NFPA 3, <i>Standard for Commissioning of Fire Protection and Life Safety Systems</i>, 2018 Edition 2) NFPA 4, <i>Standard for Integrated Fire Protection and Life Safety System Testing</i>, 2018 Edition 3) NFPA 13, <i>Standard for the Installation of Sprinkler Systems</i>, 2016 Edition 4) NFPA 13D, <i>Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes</i>, 2016 Edition 5) NFPA 13R, <i>Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies</i>, 2019 Edition 6) NFPA 14, <i>Standard for the Installation of Standpipe and Hose Systems</i>, 2016 Edition 7) NFPA 15, <i>Standard for Water Spray Fixed Systems for Fire Protection</i>, 2017 Edition 8) NFPA 16, <i>Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems</i>, 2019 Edition 9) NFPA 20, <i>Standard for the Installation of Stationary Pumps for Fire Protection</i>, 2019 Edition 10) NFPA 22, <i>Standard for Water Tanks for Private Fire Protection</i>, 2018 Edition 11) NFPA 24, <i>Standard for the Installation of Private Fire Service Mains and Their Appurtenances</i>, 2019 Edition 12) NFPA 25, <i>Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems</i>, 2017 Edition 13) NFPA 150, <i>Standard on Fire and Life Safety in Animal Housing Facilities</i>, 2016 Edition- |
|---|--|

14)	NFPA 214, <i>Standard on Water-Cooling Towers</i> , 2016 Edition	CSA	Canadian Standards Association, 8501 East Pleasant Valley Road, Cleveland, OH 44131
15)	NFPA 750, <i>Standard on Water Mist Fire Protection Systems</i> , 2019 Edition	CTI	Cooling Tower Institute, 3845 FM 1960, Houston, TX 77068
16)	NFPA 1142, <i>Standard on Water Supplies for Suburban and Rural Fire Fighting</i> , 2017 Edition	EPA	Environmental Protection Agency, 1200 Pennsylvania Ave, Washington, DC 20460
17)	NFPA 1581, <i>Standard on Fire Department Infection Control Program</i> , 2015 Edition	IAPMO	International Association of Plumbing and Mechanical Officials, 5001 E. Philadelphia Street, Ontario, CA 91761
18)	NFPA 5000, <i>Building Construction and Safety Code</i> , 2018 Edition	ICC	International Code Council, 500 New Jersey Ave, 6th floor, Washington, DC 20001
01-1.1.23	NIOSH N-95, <i>Particulate Filtering Facepiece Respirators</i>	NFPA	National Fire Protection Association, P.O. Box 9101, 1 Batterymarch Park, Quincy, MA 02269
01-1.1.24	OSHA 1910, <i>Occupational Health and Safety Standards</i>	NIOSH	National Institute for Occupational Safety and Health, see CDC
01-1.1.25	OSHA 1910,120, <i>Hazardous Waste Operations and Emergency Response</i>	NSF	NSF International, 789 N. Dixboro Rd, Ann Arbor, MI 48105
01-1.1.26	OSHA 1910,141, <i>Sanitation</i>	OSHA	National Institute for Occupational Safety and Health, 1600 Clifton Rd, Atlanta, GA 30333
01-1.1.27	OSHA 1910, 1030, <i>Bloodborne Pathogens</i>	US DOL	United States Department of Labor, Occupational Safety and Health Administration, 200 Constitution Avenue, NW, Washington, D.C. 20210
01-1.1.28	OSHA 1926, <i>Safety and Health Regulations for Construction</i>	WHO	World Health Organization, Avenue Appia 20, 1211 Geneva 27, Switzerland
01-1.1.29	OSHA <i>Technical Manual</i> , Section 3, Chapter 7		
01-1.1.30	US DOL, 29 CFR 1910.1030		
01-1.1.31	US DOL, 29 CFR 1926.21(b)(2)		
01-1.1.32	US DOL, 29 CFR 1926.25		
01-1.1.33	US DOL, 29 CFR 1926.28		

NOTE: All questions related to applicability shall be directed to the Authority Having Jurisdiction (AHJ).

01-1.2 Abbreviations and Standards Development Organizations

AAALAC	Association for Assessment and Accreditation of Laboratory Animal Care International, 5283 Corporate Drive, Suite 203, Frederick, MD 21703
ANSI	American National Standards Institute, Inc., 25 W. 42nd Street, 4th Floor, New York, NY 10036
ASHRAE	American Society of Heating, Refrigeration and Air-Conditioning Engineers, 1791 Tullie Circle, N.E. Atlanta, GA 30329
ASSE	ASSE International, 18927 Hickory Creek Dr, Suite 220, Mokena, IL 60448
AWWA	American Water Works Association, 6666 West Quincy Ave, Denver, CO 80235
CDC	Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333

ASSE SERIES 12000 • STANDARD #12005

Professional Qualifications Standard for the Health and Safety of the Construction and Maintenance Generalist

5-1.1 Scope

This standard provides general knowledge of pathogens, biohazards and infectious diseases for plumbing, piping, and mechanical systems workers, or any individual who has the potential for exposure to pathogens, biohazards or other potentially infectious material (OPIM), with the objective of providing continuing education. Eligible individuals include any person with an interest in pathogens, biohazards and infectious diseases.

5-1.2 Purpose

The purpose of this standard is to provide minimum criteria, identified by an industry consensus, for construction and maintenance personnel to ensure compliance with the referenced standards in Section 5-1.4.

5-1.3 Limitations

Compliance with this standard in itself shall not constitute compliance with the requirements for the construction and maintenance personnel as defined by ASSE 12010, 12020, 12030, 12040, 12060, 12061, 12062, or 12063.

5-1.4 References, Industry Standards and Codes

The references, industry standards and codes listed in ASSE Standard 12001 are a part of this standard.

5-2.1 General Knowledge

5-2.1.1 The individual who has completed training to the ASSE 12005 shall be able to identify and show knowledge of the applicable laws, codes, rules, listing agencies and regulations from the federal, state and local levels pertaining to pathogens, biohazards and infectious disease.

5-2.1.2 The individual who has completed training to the ASSE 12005 shall be able to identify and describe the basic concepts pertaining to:

- a) Appropriate method for recognizing tasks and activities which may involve exposure
- b) Criteria for the selection, use, cleaning, maintenance, storage, disposal and limitations of personal protective equipment (PPE)
- c) Cryptosporidium
- d) Emergency procedures involving pathogens or OPIM
- e) Employer responsibilities
- f) Epidemiology of pathogens, biohazards and infectious disease
- g) Explanation of an exposure control plan
- h) Exposure protocols
- i) Fecal coliform and Escherichia coli (E. coli)
- j) Fecal indicators (Enterococci or coliphage)
- k) Giardia lamblia
- l) Hepatitis B
- m) Hepatitis B virus (HBV) vaccine protocols
- n) Hepatitis C
- o) Legionnaires Disease
- p) Modes of transmission of pathogens, biohazards and infectious diseases
- q) Mold
- r) Naegleria Fowleri (brain eating amoeba)
- s) Post exposure protocols
- t) Sign and labeling regulations
- u) Total coliforms