ASSE Standard #1019-2011(R2016)
ASSE Board Approved: November 2016
ANSI Approved: January 2017

ASSE International

Performance Requirements for

Wall Hydrant with Backflow Protection and Freeze Resistance

An American National Standard

General Information

Instructions for receiving authorization to display the ASSE Seal are available from the ASSE International office. Organizations wishing to adopt or list any ASSE standard should print the ASSE standard number on the cover page first in equal or larger type to that of the adopting or listing organization.

ASSE International
Mokena, Illinois

Foreword

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

ASSE product standards are developed in the interest of consumer safety.

ASSE International is dedicated to the preservation of public health and safety through its guiding principle, “Prevention Rather Than Cure.”

ASSE’s Product Standards Program systematically evaluates new technologies through formal requests and addresses the development and promulgation of performance standards designed to safeguard public health and safety.

Standards for the performance of plumbing system components are considered by ASSE International to be of great value in the development of improved plumbing systems for increased protection of public health and safety.

To accomplish this, ASSE, through its Product Standards Committee, encourages manufacturers to develop performance standards and testing procedures for their products. These standards have the consensus of manufacturers and others who have pertinent interests in plumbing systems and are acceptable to this society.

ASSE recognized that the common garden or utility hose, when connected to a potable water supply by means of hose threaded outlet, constitutes a potential non-potable cross-connection and that a performance standard for preventive means, the vacuum breaker wall hydrant, was warranted. ASSE Standard #1019, Wall Hydrants Vacuum Breakers Frost Proof Automatic Draining Types, was developed and issued to fulfill this requirement.

Plumbing codes now stipulate that hose connections shall be protected by approved vacuum breakers that conform to the performance requirements of ASSE Standard #1011. Accordingly, hose bibbs, sill cocks, lawn faucets, frost-free wall hydrants and the like must be so equipped. Frost resistant wall hydrants equipped with hose connection vacuum breakers pose a restriction to the post closure drainage, which is essential for frost prevention. Such vacuum breakers must be manually triggered to permit drainage, thereby, in effect, negating the frost proof feature of these hydrants that rely on automatic drainage. Thus, it becomes readily apparent to manufacturers of frost proof hydrants that resolution of this matter would involve the development of hydrants that incorporate vacuum breakers and retain the automatic draining provisions essential to frost resistant design.

During the 1988 revision of ASSE Standard #1019, ASSE recognized the need to consider two types of wall hydrants for backflow protection. Specifically, test criteria was developed for frost proof and automatic draining type wall hydrants. In 1995, a request was made to revise the standard to include a third type of wall hydrant for backflow protection, which holds pressure versus relieving pressure.

The life cycle tests contained in this product performance standard represent the average expected life of the product.

Although many of the material specifications are detailed within Section IV of this standard, it is the responsibility of the manufacturer to comply with the requirements of the Safe Drinking Water Act, United States Public Law 93-523.

The 1019 Working Group, which developed this standard revision, was set up within the framework of the Product Standards Committee of ASSE International. Recognition is made of the time volunteered by members of this working group and of the support of the manufacturers who participated in meetings for this standard. The standard does not imply ASSE's endorsement of a product that conforms to these requirements.

Compliance with this standard does not imply acceptance by any code body. Plumbing codes mandate how and where these devices are installed. However, this standard was promulgated using a specific set of installation requirements and conditions for the purpose of providing reasonable performance requirements and compliance testing. It is recommended that these devices be installed consistent with local codes by qualified and trained professionals.

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

This edition was reaffirmed by the ASSE Board of Directors on November 22, 2016 as an ASSE standard.

2016 Product Standards Committee

Edward J. Lyczko, Chairperson
Cleveland Clinic – Retiree
Cleveland, OH

William Briggs, Jr.
MGJ Associates
New York, NY

Terry Burger
NSF International
Ypsilanti, MI

William Chapin
Professional Code Consulting, LLC
Cullman, AL

Mark Fish
Zurn Industries, LLC
Cary, NC

Ron George
Plumb-Tech Design & Consulting Services, LLC
Newport, MI

Daniel Gleiberman
Sloan
Los Angeles, CA

John F. Higdon, P.E.
Apollo Valves / Conbraco Industries, Inc.
Matthews, NC

Gary Howard
Illinois Plumbing Inspector – Retiree
LaGrange, IL

Conrad L. Jahrling (non-voting)
ASSE International
Chicago, IL

Chuck Lott
Precision Plumbing Products
Portland, OR

Peter Marzec
United Association of Plumbers and Pipefitters
Pearl River, NY

Thomas Pitcherello
State of New Jersey
Bordentown, NJ

Daniel Rademacher
Plumbing Code and Design Consulting
Butte, MT

Shabbir Rawalpindiwala
Kohler Company
Kohler, WI

Billy Smith
American Society of Plumbing Engineers (ASPE)
Montgomery, AL

Tsan-Liang Su, PhD
Stevens Institute of Technology
Hoboken, NJ

1019 Working Group (2011)

Rand Ackroyd, Chairperson
Rand Technical Consulting, LLC
Newburyport, Massachusetts

Julius Ballanco
J.B. Engineering
Munster, Indiana

John Bertrand
Moen, Inc.
North Olmsted, Ohio

Mike Boehk
Legend Valve
Shelby Township, Michigan

Charlie Caruana
CSA International
Toronto, Ontario, Canada

Sidney Cavanaugh
Cavanaugh Consulting
Santa Fe, New Mexico

Ned Dickey
CSA International
Cleveland, Ohio

Steven Hazzard
ASSE Staff Engineer
Westlake, Ohio

Herb Hoeptner
Hoeptner Perfected Products
Gilroy, California

Cody Jackson
Woodford Mfg. Co.
Colorado Springs, Colorado

Norm Kummerlen
Consultant
Lorain, Ohio

Anthony Stanaland
Jay R. Smith Mfg. Co.
Montgomery, Alabama

Table of Contents

Performance Requirements for Wall Hydrant with Backflow Protection and Freeze Resistance

Section I

1.0 General

1.1 Application

The purpose of Wall Hydrant with Backflow Protection and Freeze Resistance (herein referred to as the "device") is to provide protection of the potable water supply from contamination due to backsiphonage or backpressure and to protect the hydrant from damage due to freezing.

1.2 Scope

1.2.1 Description

These devices shall have a permanent means to protect against backflow due to either backsiphonage or backpressure. The backflow protection shall include a minimum of two (2) mechanisms: an air inlet for preventing backsiphonage and a check valve for preventing backpressure backflow. These devices are terminal fittings that supply potable water to hose connections without danger of freezing.

These devices shall be used on systems where the only source of low head backpressure comes from an elevated hose equal to or less than 10.0 feet (3.0 meters) in height. The outlet of this device shall not be subjected to more than twelve (12) hours of continuous water pressure.

The devices shall be classified as follows:

(a) Type A devices protect against backsiphonage and backpressure. The backflow protection shall include three (3) mechanisms: 1) an air inlet for preventing backsiphonage, 2) a check valve for preventing backpressure backflow and 3) a mechanism that relieves backpressure backflow. The hose shall be removed to prevent damage to the device from freezing.

(b) Type B devices protect against backsiphonage and backpressure. The backflow protection shall include three (3) mechanisms: 1) an air inlet for preventing backsiphonage, 2) a check valve for preventing backpressure backflow and 3) a mechanism that relieves backpressure backflow and a mechanism that drains the water from the hydrant when the hose is attached and the hydrant is manually closed.

The hose need not be removed to protect the device against damage from freezing.

(c) Type C devices protect against backsiphonage and backpressure. The backflow protection shall include two (2) mechanisms; 1) an air inlet for preventing backsiphonage and 2) a check valve for preventing backpressure backflow. The hose shall be removed to protect against damage to the device from freezing.