American National Standard

ASSE 1001-2021

Performance Requirements for

Atmospheric Type Vacuum Breakers

ASSE Board Approved: November 2021
ANSI Approved: November 2021
ICS Code: 23.060.99, 91.140.60

Approved American National Standard ANSI

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General Information

No product may be said to be listed by ASSE unless the manufacturer has applied to ASSE International, had its product tested by an official ASSE recognized independent laboratory according to the applicable standard, passed the tests, and had its documentation reviewed and approved by the consensus ASSE Seal Control Board. Having completed the aforementioned, the manufacturer may display the ASSE Seal on the product.

Instructions for receiving the authorization to display the 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 standards are developed in the interest of consumer safety. ASSE considers product performance standards to be of great value in the development of improved plumbing systems.

To accomplish this, ASSE, through its Product Standards Committee, encourages manufacturers to assist in the development of performance and testing procedures. Realizing the need for a uniform standard that manufacturers and laboratory personnel could use in testing and evaluating the performance of anti-siphon vacuum breakers installed in potable water supply systems, ASSE formed a committee to develop such a standard in 1958. The committee consisted of directors and personnel of plumbing testing laboratories in Chicago, Detroit and Los Angeles, as well as a representative of the Bureau of Water Register of the New York City Department of Water Supply. Through the Product Standards Committee, with the cooperation of interested manufacturers, a standard was developed – Performance Requirements and Test Methods for Atmospheric Type, Anti-Siphon Devices.

At the 1962 ASSE Annual Meeting in Little Rock, Ark., the work of the committee culminated in the acceptance of the standard, which was assigned the official number ASSE 1001.

The working group that developed this standard revision was set up within the framework of the ASSE International Product Standards Committee. Recognition is made of the time volunteered by members of this working group and of the support of manufacturers, who also participated in the meetings for this standard. This 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.

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).

ASSE Vacuum Breaker Standards

ASSE Standard Number	Standard Name	Typical Use	Highlights
1001	Atmospheric Type Vacuum Breakers	• Faucet with hose thread spout • Water closet fill valve	Prevents Backsiphonage: • Outlet is open to atmosphere • Not subjected to backpressure • Not be subjected to more than twelve (12) hours of continuous water pressure
1011	Hose Connection Vacuum Breakers	• Hose connections, such as hose bib, wall hydrant, yard hydrant	• Prevents backflow by use of a SINGLE CHECK valve • Prevents backsiphonage by use of AIR PORTS • Prevents backpressure by use of check valve and relief of backpressure through air ports. i.e. relieves pressure in the hose. • Non-removable and non-testable
1020	Pressure Vacuum Breakers	• Irrigation systems • Industrial processes	Prevents Backsiphonage: • Uses a SINGLE CHECK • Not subjected to backpressure • Can be subjected to continuous water pressure in excess of twelve (12) hours
1052	Hose Connection Backflow Preventers	• Hose connections, such as hose bib, wall hydrant, yard hydrant	Same as a 1011 device except there are two check valves. One check valve holds the pressure in the hose. The Intermediate chamber between check valves becomes atmospheric. Device is non-removable but is testable.
1056	Spill Resistant Vacuum Breakers	• Indoor plumbing assemblies • Medical equipment	Same as 1020 but does not spill water when pressurized.

Standard No.	Dual Check	Air Ports	Backflow	Backsiphonage	Backpressure	Frost Free	Removable	Testable	High Hazard
1001	N	Y	N	Y	N	N	Y	N	Y
1011	N	Y	Y	Y	Y	N	N	N	Y
1020	N	Y	N	Y	N	N	Y	Y	Y
1052	Y	Y	Y	Y	Y	N	N	Y	Y
1056	N	Y	N	Y	N	N	Y	Y	Y

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Performance Requirements for **Atmospheric Type Vacuum Breakers**

Section I

1.0 General

1.1 Application

This standard applies to atmospheric type vacuum breakers (herein referred to as the "device") that are single pipe-applied, flushometer-applied, or integrally-applied (does not apply to water closet tank ballcocks or similar devices that depend on float-operated valves to control flow). The purpose of these devices is to provide protection of the potable water supply against pollutants or contaminants that enter the system due to backsiphonage through the outlet. Under backsiphonage conditions, a small amount of water is permitted to exit through the air ports.

The device shall:

1) Have its outlet open to atmosphere
2) Not be subjected to backpressure; mitigated by one of the following means:
   a. Be installed with its critical level (CL) not less than 6 inches (152.4 mm) above all downstream piping and the flood level rim of the fixture or appliances served
   b. Deck mounted/equipment mounted atmospheric vacuum breakers shall be installed in accordance with the manufacturer's instructions, with its critical level (CL) not less than 1 inch (25.4 mm) above the flood level rim of the fixture or appliance served
   c. If the appurtenance serviced has an integral bleed valve the dimension restrictions in a and b above do not apply to the location of the appliance
3) Not be subjected to more than twelve (12) hours of continuous water pressure

1.2 Scope

1.2.1 Description

Vacuum breakers shall be classified in two general types:

- Atmospheric type, as described herein
- Pressure type (See ASSE Standard 1020, *Performance Requirements for Pressure Vacuum Breaker Assemblies*, and ASSE Standard 1056, *Performance Requirements for Spill Resistant Vacuum Breaker Assemblies*)

The atmospheric type design shall consist of:

a) A check valve member
b) An air inlet valve that is closed when the check valve member is open, and normally open when the check valve member is normally closed

The atmospheric type design can be further classified into three categories, depending on use:

1) Pipe-applied
2) Flushometer-applied
3) Integrally-applied

Devices shall include an air inlet shield.