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**ASSE International**

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Performance Requirements for

# **Hose Connection Vacuum Breakers**

*An American National Standard*

# General Information

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# Foreword

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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 its guiding principle, "Prevention Rather Than Cure." ASSE standards are developed in the interest of consumer safety.

ASSE's 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 the increased protection of public health and safety.

Cross-connections between the potable water supply and a possible source of contaminated liquids in a plumbing system are recognizable potential hazards to health and safety. Much research and educational work has been done by this organization in the search for adequate preventive means.

One of the many hazards, which is generally ignored, is that created by connecting the common garden hose to the potable water supply by means of a hose threaded outlet. In this application, backsiphonage, due to the creation of a vacuum in the supply line, or backpressure, due to the terminal end of a hose being at an elevation above the hose connection of a system simultaneously with a loss of supply pressure, can cause contaminants to flow into the potable supply. Another hazard is created by attaching insecticide or agricultural spraying devices and other types of dispensers containing toxic materials to a hose. All of these are highly dangerous conditions to which persons may be exposed unless means are applied to protect the potable water in the system.

This standard is tailored specifically for hose threaded outlet (hose bibb or sill cock) faucets in potable water supply systems.

Although many of the material specifications are detailed within Section 4.1 of this standard, it is the responsibility of the manufacturer and the installer to comply with the relevant jurisdictional requirements.

Recognition is made of the time volunteered by members of this working group and of the support of manufacturers, who also participated in meetings for this standard.

The standard does not imply ASSE's endorsement of a product which 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).

# ASSE Vacuum Breaker Standards

ASSE Standard Number	Standard Name	Typical Use	Highlights
1001	Atmospheric Type Vacuum Breakers	<ul style="list-style-type: none"> <li>Faucet with hose thread spout</li> <li>Water closet fill valve</li> </ul>	Prevents Backsiphonage: <ul style="list-style-type: none"> <li>Outlet is open to atmosphere</li> <li>Not subjected to backpressure</li> <li>Not be subjected to more than twelve (12) hours of continuous water pressure</li> </ul>
1011	Hose Connection Vacuum Breakers	<ul style="list-style-type: none"> <li>Hose connections, such as hose bib, wall hydrant, yard hydrant</li> </ul>	<ul style="list-style-type: none"> <li>Prevents backflow by use of a SINGLE CHECK valve</li> <li>Prevents backsiphonage by use of AIR PORTS</li> <li>Prevents backpressure by use of check valve and relief of backpressure through air ports. i.e. relieves pressure in the hose.</li> <li>Non-removable and non-testable</li> </ul>
1020	Pressure Vacuum Breakers	<ul style="list-style-type: none"> <li>Irrigation systems</li> <li>Industrial processes</li> </ul>	Prevents Backsiphonage: <ul style="list-style-type: none"> <li>Uses a SINGLE CHECK</li> <li>Not subjected to backpressure</li> <li>Can be subjected to continuous water pressure in excess of twelve (12) hours</li> </ul>
1052	Hose Connection Backflow Preventers	<ul style="list-style-type: none"> <li>Hose connections, such as hose bib, wall hydrant, yard hydrant</li> </ul>	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 vales becomes atmospheric. Device is non-removable but is testable.
1056	Spill Resistant Vacuum Breakers	<ul style="list-style-type: none"> <li>Indoor plumbing assemblies</li> <li>Medical equipment</li> </ul>	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 Hose Connection Vacuum Breakers

## Section I

### 1.0 General

#### 1.1 Application

Hose Connection Vacuum Breakers, herein referred to as “device,” shall provide protection of the potable water supply against pollutants or contaminants that can enter the system through backpressure equal to the force created by an elevated hose from 6.0 inches (15.2 cm) to 10.0 feet (3.0 meters) in height and backsiphonage through the hose threaded outlets.

#### 1.2 Scope

##### 1.2.1 Description

This standard applies only to those devices which are designed to be installed on the discharge side of the hose bibb, hydrant, or faucet which is fitted with hose threads. The design embraces a check valve member force loaded, or biased, to a closed position, and an atmospheric vent valve, force loaded, or biased, to an open position when the device is not under pressure. This device shall not be subjected to more than twelve (12) hours of continuous water pressure. This device shall only be used on systems where the only source of low head back pressure comes from an elevated hose equal to or less than 10.0 feet (3.0 meters) in height.

##### 1.2.2 Sizes

Sizes shall include ½ NH, ¾ NH and 1 NH male hose threaded outlets.

##### 1.2.3 Pressure

The devices shall be designed for a working pressure of at least 125 psi (862 kPa).

##### 1.2.4 Temperature Range

The devices shall be designed for flow temperatures of 33 °F to 180 °F (0.56 °C to 82 °C).

##### 1.2.5 Mechanical Function

The devices shall be designed for flow temperatures of 33 °F to 180 °F (0.56 °C to 82 °C).

##### 1.2.5.1 Atmospheric Vent

- a) The atmospheric vent shall be open when the supply pressure is at atmospheric as defined in Section 3.7.
- b) The atmospheric vent shall open when subjected to conditions defined in Section 3.9.
- c) The atmospheric vent ports shall be of a size that cannot be threaded for iron pipe size or connected with tubing either internally or externally.

##### 1.2.6 Repairability

- a) Devices shall be permitted to be repairable or non-repairable.
- b) All replacement parts of the devices of the same size and model shall be interchangeable with the original parts.