Table of Contents

Section I 1
1.0 General 1
1.1 Application 1
1.2 Scope 1
1.3 Reference Standards 2

Section II 3
2.0 Test Specimens 3
2.1 Samples Submitted for Test 3
2.2 Samples Tested 3
2.3 Drawings 3
2.4 Rejection 3

Section III 4
3.0 Performance Requirements and Compliance Testing 4
3.1 Hydrostatic Testing of Complete Device 4
Figure 1 4
3.2 Deterioration at Extremes of Manufacturer's Temperature and Pressure Range 5
3.3 Back Pressure of Downstream Check 5
3.4 Tightness of Checks 5
3.5 Atmospheric Vent Valve Leakage 6
3.6 Backflow Through the Inlet Check 6
Figure 2 7
3.7 Backflow Through Outlet Check 7
3.8 Back Siphonage 7
Figure 3 8
Figure 4 8
Figure 5 8
3.9 Back Siphonage Back Pressure 8
Figure 6 9
3.10 Flow and Pressure Loss 9

Section IV 10
4.0 Detailed Requirements 10
4.1 Materials 10
4.2 Markings 11
4.3 Installation and Maintenance Instructions 11

Section V 12
5.0 Definitions 12

Performance Requirements for Laboratory Faucet Backflow Preventers

Laboratory Faucet Backflow Preventers are designed to protect the potable water supply from pollutants or contaminants which enter the system by backflow due to back siphonage or back pressure.

1.2.1 Description

This standard applies only to those devices classified as backflow preventers that are designed for installation on laboratory faucets on the discharge side of the last shut-off valve. These devices are not for use under constant pressure conditions. These devices consist of two independently acting check valves, force loaded or biased to a normally closed position, and between the check valves a means for automatically venting to atmosphere, force loaded or biased to normally open position.

1.2.2 Working Pressure

The devices shall be designed for a minimum working pressure of not less than 125.0 psi (861.9 kPa).

1.2.3 Temperature Range

The devices shall be designed for flow temperatures between 33.0 °F to 180.0 °F (0.6 °C to 82.2 °C).

1.2.4 Minimum Flow Capacity

The device shall have a minimum flow capacity of 4.0 GPM (15.0 L/min) with a maximum pressure loss through the device of 20.0 psi (137.9 kPa).

1.2.5 Connections

Connections shall be suitable for laboratory faucets. (Inlet and/or outlet connections are permitted to be different when required for special installations.)

1.2.6 Flow Way Open Area

The least total cross-sectional area of the air flow ways, including the seat area of the air vent valve, shall be not less than the least total cross-sectional area of the waterflow passage or passages upstream from the air vent valve. The minimum cross-sectional dimensions of any air port or flow way, not including the valve lift, shall not be less than 3/32” (2.4 mm). These requirements shall be verified by the testing agency.

1.2.7 Atmospheric Vent

a. The atmospheric vent shall be constructed so that it will open when the supply pressure is atmospheric or below.
b. The atmospheric vent shall be constructed so that under a back pressure condition it will open.
c. The atmospheric vent shall be constructed to provide vacuum breaking ability.

1.2.8 Repairability

a. The internal parts of the device shall be accessible for inspection, repairs or replacements.
b. All replaceable parts of the device of the same size and model shall be interchangeable with the original parts.

Reference to industry standards shall be to the edition specified below.

- ANSI/ASME B 1.20.1-83 – *Pipe Threads, General Purpose, (inch)*
- ANSI/ASME B1.20.3-76 – *Dryseal Pipe Threads, (inch)*
- CFR Title 21, Section 177 – *Food and Drugs: Indirect Food Additives: Polymers*
- ANSI/ISA 75.02-96 – *Control Valve Capacity Test Procedures*