American National Standard

ASSE 1081-2014(R2020)

Performance Requirements for

Backflow Preventers with Integral Pressure Reducing Boiler Feed Valve and Intermediate Atmospheric Vent Style for Domestic and Light Commercial Water Distribution Systems

ASSE Board Approved: February 2020
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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, has had its product tested according to the applicable standards and, when the product has passed the test, displays 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 and 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. The ASSE International Product Standards Committee encourages manufacturers to participate in the development of performance requirement 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 organization.

This standard was developed to provide performance standards and testing procedures for a pressure reducing boiler feed valve that offers protection of potable water within a premises by means of an integral backflow preventer with intermediate atmospheric vent.

Serious contamination of the potable water supply within a premises can be hazardous to the health of occupants therein unless every potentially offending outlet is protected. Within every occupancy there are piped systems fed by potable water inlets that could potentially cause backflow and be sources of contamination.

The devices covered by this standard are designed to reduce and maintain a preset pressure at the boiler inlet and give protection against low hazard backflow resulting from backpressure and/or back-siphonage at the potable water inlet or boiler feed location. They are not designed, nor intended, for building-isolation or high hazard conditions, which could find full protection only by the reduced pressure backflow preventer.

These devices are fill valves intended for maintaining a minimum pressure in closed systems. Due to the fact that the devices are fill valves, and that the proximity of the two sets of valve internals affect pressure drops across the device, consideration is not given to maintaining strict requirements for minimum flow capacity. The devices are used for maintaining a set pressure and for backflow prevention by way of intermittent flow only. They are not free flowing pressure reducers; therefore, flow capacity is of little significance other than for purposes of comparison. Measurement and published flow capacity will not be addressed as a functional requirement and, if published, will be the responsibility of the manufacturer.

It is assumed that the potable water feeding the boiler line through the device will be at a temperature consistent with the requirements of local codes and will not reach the upper limits of the device (Section 1.2.4). The exhaust of the device will experience an elevated temperature due to the heat from the circulating water in the boiler system. The device will cool once flow begins in order to maintain the set pressure. The temperature performance requirements of Section 3.14 are written with this use case in mind.

Testing procedures and test equipment diagrams have been added to this standard to enable uniform testing by certified testing agencies with adequate facilities and qualified personnel. The testing methods and equipment required are intended to reflect the requirements and intent of the standards listed below.

The intent of this standard is to clarify the interdependent performance characteristics of two separate devices, now in close proximity in one housing. If the devices were not in close proximity, they would be independently governed by:

- ASSE 1003-2009, *Performance Requirements for Water Pressure Reducing Valves for Domestic Water Distribution Systems*
- ASSE 1012-2009, *Performance Requirements for Backflow Preventers with an Intermediate Atmospheric Vent*

ASSE 1081-2014, *Performance Requirements for Backflow Preventers with Integral Pressure Reducing Boiler Feed Valve and Intermediate Atmospheric Vent Style for Domestic and Light Commercial Water Distribution Systems*, must be reviewed periodically and upgraded as research, field conditions and experience suggest. The policy of ASSE International is to review each standard on a five-year cycle for revisions or reaffirmation.

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, if and when the product is intended to be installed in potable water service lines. The intent of the standard, however, is to provide performance standards for boiler feed and not intended for potable water service.

The ASSE 1081 working group, which developed this standard, 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 meetings for this standard.

This standard does not imply ASSE International'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).

This edition of the standard was approved by the ASSE International Board of Directors on Dec. 19, 2014 as an ASSE standard.

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