ASSE LEC 2012-2021

Listing Evaluation Criteria for

Packaged Plumbing and Mechanical Systems for Continuous Microbiological Mitigation

ASSE Board Approved: February 2021
ICS Codes: 13 060 99 | 97 100 01

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General Information

No product may be said to be ASSE listed unless the manufacturer has applied to ASSE International, has had its product tested according to the applicable standards or listing evaluation criteria (LEC), 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 to any ASSE standard or LEC should print the ASSE 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 listing evaluation criteria (LEC); however, it is offered to provide background information.

ASSE International standards and LECs are developed in the interest of consumer safety. ASSE considers LEC's to be of great value in the development of improved plumbing systems.

The working group that developed this LEC was set up within the framework of the Product Standards Committee of ASSE International.

Water-borne pathogens such as Legionella, Pseudomonas, and Non-Tuberculosis Mycobacterium infect humans regularly, whether or not symptoms manifest. Existing technologies can mitigate the replication of and infection ability of microorganisms. These products on their own are specified by plumbing and mechanical engineers as part of a complete system design. This LEC covers system packages that have combined technologies of ultraviolet disinfection per NSF 55, and water heaters with thermal disinfection controls that follow current best practices.

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

This LEC does not imply ASSE's endorsement of a product which conforms to these requirements. Compliance with this LEC 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. It is recommended that these devices be maintained and serviced per the manufacturer's recommendation, filters are replaced at regular intervals per the manufacturer's instructions.

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Section I

1.0 General

1.1 Application

Packaged Plumbing and Mechanical Systems (PPMS), also known as skid systems, combine devices that are typically located in a commercial or industrial building's mechanical room or basement.

1.2 Scope

1.2.1 Description

This LEC covers PPMS's that are designed to inactivate and disinfect waterborne pathogens and microorganisms within hot water distribution systems from replicating and infecting humans. These PPMS's include a water heater and distribution mixing valve, or water heater with integral temperature control device, an ultraviolet treatment system that treats incoming and recirculating water, filters, an anti-scaling device, chemical injection connections, and a connection to drain.

NOTE: The temperature and pressure relief valve required for water heater installations is a part of the water heater sub-assembly.

The PPMS shall include a programmable controller that manages the disinfection and control of the PPMS. The controller includes:

- Ability to send regular and as-needed maintenance alerts;
- Ability to send local and remote alerts;
- Connectivity to external building automation systems (e.g. MODBUS and BACnet).

1.2.2 Connections

Pipe threads and other connections shall conform to the applicable standards.

- Tapered pipe threads shall comply with ASME B1.20.1.
- Dry seal pipe threads shall comply with ASME B1.20.3.
- Compression assemblies shall comply with SAE J512.
- Soldered connections shall comply with ASME B16.18 or ASME B16.22.
- Push fit connections shall comply with ASSE 1061.
- Press connections shall comply with ASME B16.51.

1.2.3 Minimum Heating Capacity

Integral water heaters capacities shall be 399,000 BTU/hr (118kW) and greater. Heating output shall be determined by ANSI Z21.10.3/CSA 4.3 or UL1995.