



# TEST REPORT

5001 East Philadelphia Street  
Ontario, California – USA 91761-2816

Ph: 909.472.4100 | Fax: 909.472.4243  
<http://www.iapmortl.org>

**Report Number:** 2295-19249 **Project Number:** 32689-002

**Report Issued:** August 28, 2019

**Report To:** ASSE International

**Tested For:** Ningbo Eastpure Environmental Techmology  
Room 707 Langmudasha Bldg  
Baishalu Street  
Cixi City, Ningbo, Zhejiang China

**Code/Standard:** NSF/ANSI 42 - 2018, NSF International Standard / American National Standard – Drinking Water Treatment Units- Aesthetic Effects

**Product(s) Tested:** Model: MP99

**Test Date(s):** August 13,2019-August 19,2019

**Test Location:** IAPMO 5001 East Philadelphia Ontario CA 91761

**Conclusion:** The sample identified above COMPLIED with the requirements described in section 5.4.2, Hydrostatic Test and with section 5.4.4 Cycle test of NSF/ANSI 42-2018.

**Report Status:** **COMPLIED**

Tested By:

Victor Soria  
Technician

Reviewed / Submitted

Sal Aridi  
Director

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## 1.0 INTRODUCTION

The objective of this test project was to determine if the unit model MP99 met the Structural Integrity requirements of Section 5 of NSF/ANSI 42-2018.

## 2.0 TEST PROCEDURES

All tests and evaluations were conducted in accordance with the written procedures specified in the referenced standard.

## 3.0 TEST PROGRAM

Tested as a complete system with a vessel diameter < 8 in per Table 5.1 of NSF/ANSI 42-2018, clauses tested / evaluated:

- Section 5.4.2: Hydrostatic pressure test
- Section 5.4.4: Cycle Test

## 4.0 TEST SPECIMENS

The test specimens were shipped to the IAPMO R&T Lab in Ontario, CA by Ningbo and received in good condition on August 12, 2019.

## 5.0 STRUCTURAL PERFORMANCE

### 5.1.1 General

The purpose for testing structural integrity performance is to evaluate the materials, design, and fabrication quality of the complete water treatment system.

### 5.2 Acceptance

Each test of structural integrity (cyclic pressure and hydrostatic pressure) shall be performed on a separate system. If the complete water treatment system is tested, a separate test of the system pressure vessel is not required.

Complete systems, pressure vessels, and components shall be tested for structural integrity in accordance with 5.4 at the pressures specified in Table 5.1. When more than one pressure is specified in table 5.1, testing shall be done at the higher pressure.

Complete systems, pressure vessels, and components shall be watertight when tested for structural integrity under 5.4.

*NOTE — Weepage shall be considered acceptable at the beginning of a test, but weepage shall not begin in the middle of a test.*

### 5.3 Working Pressure



5.3.1 The pressure vessel(s) and all other components of the water treatment system that are subjected to line pressure constructed to maintain structural integrity at the pressure of 690 kPa (100 psi) or the maximum working pressure, whichever is greater.

5.3.2 Portable Systems not designed for direct connection to a pressurized supply line shall be designed and constructed to maintain structural integrity under the maximum pressure of the intended end-use.

#### 5.4.1 Structural integrity test methods

##### 5.4.1 Apparatus

An enclosure shall be provided for each system tested to prevent injury to personnel or property damage if the system fails. An apparatus that may be used for the cyclic and hydrostatic test is shown schematically in figure 1 of the standard. Pressure measuring instruments shall have a precision and accuracy of 2% at the point of measurement.

##### 5.4.2 Hydrostatic pressure test – COMPLIED

Systems designed to operate only at atmospheric pressure shall be exempt from the hydrostatic pressure test but shall be watertight in normal use. Components downstream of the system on/off valve that are not subject to pressure under the off mode, and that either contain no media subject to plugging or are not designed to contain media, shall be exempt from the hydrostatic pressure test but shall be watertight in normal use. Components that are downstream of the system on/off valve but upstream of media subject to clogging shall meet the requirements of this section. The following procedure shall be used for the hydrostatic pressure testing of other complete systems:

- a) Water at a temperature of 13 to 24 °C (55 to 75 °F) was used. The test water was adjusted to a temperature at which condensation did not form on the surface of the test unit.
- b) The inlet of the test system was connected to the apparatus as shown in figure 1 of the standard. The system was in conformance with its normal state of use, with the option of plugging drain lines.
- c) The test system was filled with water and flushed to purge air from the system. The system outlet was closed, and the control valve was placed in the service position. All parts of the unit, including inlet and outlet fittings that may be subject to line pressure in normal operation, were pressurized.
- d) The hydrostatic pressure was raised at a constant rate so that the test pressure specified in Table 5.1 was reached within 5 minutes. The rate of pressure increase did not exceed 690 kPa (100 psig) per second.
- e) The test pressure should have maintained for 15 minutes. The system was inspected periodically through the end of the test period to check whether the system is watertight.

Sample	Testing Criteria (Table 5.1)	Hydrostatic Test Pressure (psi)	Result
MP99	300 psi	300	Pass

5.4.3 Hydrostatic Pressure Test – Metallic Pressure Vessels (NOT APPLICABLE)

5.4.4 Cycle test – **Complied**

The following procedure shall be used for the cyclic testing:

- a) Water at a temperature of  $20 \pm 3$  °C ( $68 \pm 5$  °F) was used throughout the test. The test water was adjusted to a temperature at which condensation did not form on the surface of the test unit.
- b) The inlet of the test system was connected to the test apparatus as shown in figure 1. The system was in conformance with its normal state of use, with the option of plugging drain lines.
- c) The test system was filled with water and flushed to purge air from the system. All parts of the unit, including inlet and outlet fittings that may be subject to line pressure in normal operation, were pressurized
- d) The counter was set to zero, or its initial reading recorded and pressure cycling initiated. The pressure rise was  $\geq 1$  s and the pressure in the test unit was configured to return to  $< 14$  kPa (2 psig) before the initiation of another cycle.
- e) The pressure was cycled as specified in Table 5.1 of the reference standard. The system was inspected periodically through the end of the test period to check whether the system was watertight.

Sample	Testing Criteria (Table 5.1)	Cyclic Test Pressure (psi)	Result
MP99	100,000 cycles at 0 to 150 psi	0-150	Pass

## 6.0 PHOTOGRAPHS

### Unit tested

