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INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS

IAPMO GUIDE CRITERIA FOR

ODOR REMOVING DEVICE FOR WATER CLOSETS

IGC 248-2007

1. PURPOSE

- 1.1** The purpose of this standard is to establish an acceptable standard for an odor removing device for water closets. Its purpose is to serve as a guide for producers, distributors, architects, engineers, contractors, installers, inspectors and users; to promote an understanding regarding materials, manufacture and installation and to provide for identifying air filtration devices that conform to this standard.
- 1.2** The provisions of this standard are not intended to prevent the use of any alternate material or method of construction, provided any such alternate meets the intent and requirements of this document and changes are amended to this standard.

2. SCOPE

- 2.1** This standard covers definitions, general and testing requirements, and requirements for installation instructions and markings for an odor removing device for water closets.
- 2.2** Odor removing devices may be a device designed for connection to the overflow pipe within a water closet tank assembly. The device shall have a provision for securing onto the overflow pipe and can be installed and replaced without damage to the pipe and tank trim functions and/or maintenance must not be compromised.

3. REFERENCE STANDARDS

- 3.1** All standards referenced herein shall be the current edition of that standard as published.

ASME A112.19.2	Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals
ASME A112.19.19	Vitreous China Nonwater Urinals
ASTM G 21	Determining Resistance of Synthetic Polymeric Materials to Fungi
UL 969	Marking and Labeling Systems

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4. GENERAL REQUIREMENTS

- 4.1 Material.** The body of device, adaptors and components shall be made of a rigid material to comply with the testing requirements of Section 5.5 of this standard. The body of the device shall have a minimum wall thickness of 0.04 inches (1.1 mm).
- 4.2 Fan.** The fan shall be powered by ultra low voltage capable of extracting a minimum air flow capacity of 13.74 gal/min (52 L/min).
- 4.3 Electrical Components.** All electrical components which maybe exposed to water shall comply with Section 5.4 of this standard. All AC electrical parts shall comply with the applicable UL Standard and/or listed with UL.
- 4.4 Activated Carbon.** The material in the filter shall contain 0.187 lb/ft^3 (3000 g/m^3) $\pm 10\%$ activated carbon, a total weight of 0.250 lb/ft^3 (4000 g/m^3) $\pm 15\%$, bulk density of $2.6 \times 10^{-5} - 3.4 \times 10^{-5} \text{ lb/ft}^3$ ($0.42\text{-}0.55 \text{ g/cm}^3$), and a minimum thickness of 1.50 in (38 mm).
- 4.5 Sealants.** The tanks sealants shall be and spacers shall be made of non-corrosive waterproof material
- 4.6 Sensor.** The sensor design and location shall ensure that the fan is activated when the toilet seat is occupied and includes means for attaching the unit to wall.

5. TESTING REQUIREMENTS

- 5.1 Overflow Test.** Install the device in accordance with the manufacturer's installation instructions. The water closet with device shall be tested in accordance with Section 8.9 of ASME A112.19.2. This test shall be preformed on 3 different types of water closets in various tank shapes.
 - 5.1.1 Performance Requirements.** There shall be no signs of leakage or discharge outside of the tank. The test sample shall not interfere with normal operation of water closet functions of refilling tank and bowl.
- 5.2 Odor Test.** Install the device in accordance with the manufacturer's installation instructions. Remove water closet seat/lid if one is present. Use Table 1 below to record readings and use an ammonia reader similar to that in Section 6.5.1.4 in ASME A112.19.19 for collecting ppm readings. Ensure that after installation that the water trap in bowl is full.

Part 1 Air Test: Prepare the test mix solution using household ammonia and water so that the final concentration is 0.72%. eg if the original NH_3 1.8% concentration then a 40% dilution will give a final concentration of 0.72%. 120 mL of 1.8% ammonia and 180 mL of water will give a final concentration of 0.72%

When setting up the airflow tests, ensure that the air outlet from the filter is vented externally from the test area to remove any risk of ammonia (NH_3) build up in the room. The tests are carried out under still conditions. Measure and record any presence of NH_3 before introducing solution.