

**INTERNATIONAL ASSOCIATION OF PLUMBING
AND MECHANICAL OFFICIALS**

**IAPMO GUIDE CRITERIA
FOR**

ODOR REMOVING TOILET WITH VENTILATION FAN SYSTEM

IAPMO IGC 45-2006 (R2013)

1. PURPOSE

- 1.1** The purpose of this standard is to establish generally acceptable guidelines for odor removing water closets. Such products are equipped with fan ventilation and ducting system to discharge bowl odors to an approved location outside of the building. Its purpose is to serve as a guide for producers, distributors, architects, engineers, contractors, installers, inspectors and users; to promote understanding regarding materials, manufacture and installation; and to provide for identifying odor removing water closets complying with 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 requirements for odor removing close coupled water closet bowl and tank combination. This standard covers physical requirements and other significant properties, in addition to methods of marking and identification.

3. REFERENCED STANDARDS

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

ASME A112.19.2	Vitreous China Plumbing Fixtures
CSA B45.1	Ceramic Plumbing Fixtures

4. GENERAL REQUIREMENTS

- 4.1** Workmanship and finish shall be in compliance with ANSI/ASME A112.19.2 and CSA B45.1.
- 4.2** All electrical components shall be listed by a recognized electrical product listing agency for its intended use.

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- 4.3** Dimensions and tolerances shall meet the manufacturer's requirements. Figures shown in this standard are for information only and are shown for convenience and for locating typical dimensions only. Unless specially referenced in this standard, the figures shall not be used to indicate additional standard or required designs, and the manufacturer's specifications shall take precedence.

5. TESTING REQUIREMENTS

- 5.1** The water closet shall comply with the applicable performance requirements within ASME A112.19.2 and CSA B45.1.

5.2 Static Venting Clearance

- 5.2.1 Externally Vented.** Mount the water closet bowl so that the top of the bowl rim is level. Pour water into flushing chamber through the toilet bowl neck "S" until it begins to enter the toilet bowl by means of the rim wash holes "T". See Figure 1. There shall be no less than 5/16 inch clearance between the water and the roof of the flushing chamber "U". See Figure 1. Measure the depth of the vent channel "D" at the base and back side of the water tank. It should be no less than 3/8 inch in depth. See Figure 2.

- 5.2.2 Internally Vented.** Mount the water closet bowl so that the top of the bowl rim is level. Pour water into the flushing chamber through the toilet bowl neck "S" until it begins to enter the toilet bowl by means of the rim wash holes "T". See Figure 1. There shall be no less than 5/16 inch clearance between the water and the roof of the flushing chamber "U". See Figure 1.

- 5.3 Dynamic Venting Clearance.** Dynamic venting test of cubic feet per minute (CFM) airflow through the whole venting system shall be as described in Section 5.3.1 or 5.3.2. The special fan used shall be a type listed by a recognized electrical product listing agency.

5.3.1 Externally Vented

- 5.3.1.1 For ventilation through tank:** Mount the water tank onto the toilet bowl with two mounting bolts. Using 1-1/2" approved duct, insert a three inch long piece into rubber seal ring "M" in opening "G" of vent channel "D" on the back of the water tank. Add 90° elbow; add 3' long pipe; add 90° elbow; add 3' long pipe; insert fan on pipe; add 4" piece of pipe; add 90° elbow; add 2' piece of pipe. Test airflow in CFM. Preferably not to exceed 13 CFM as that is unnecessary and is in a stage where it cools the bottom of the user.

Repeat the above test. In the process use maximum of 8 elbows and 80 feet of pipe. Test airflow. Airflow when vented through tank shall not to be less than 4 CFM.

- 5.3.1.2 For ventilation through bowl:** For this type of toilet, the mounting of the tank is not required. Using 1-1/2" approved duct insert a three inch long piece of duct into a 90° elbow; add 3' long pipe; add 90° elbow; add 3' long pipe; insert fan on pipe; add 4" piece of pipe; add 90° elbow; add 2' piece of pipe. Test airflow in CFM at inlet end of the duct

with the fan system in the on position. Preferably not to exceed 45 CFM as that is unnecessary and is in a stage where it cools the bottom of the user.

Repeat the above tests. In the process use a maximum of 8 elbows and 80 feet of pipe. Test airflow. Airflow when vented through bowl shall not to be less than 6 CFM.

5.3.2 Internally Vented

5.3.2.1 Test airflow in CFM. Preferably not to exceed 13 CFM as that is unnecessary and is in a stage where it cools the bottom of the user. Not to be less than 7 CFM.

6. MARKING AND IDENTIFICATION

6.1 Marking on the toilet shall be permanently and legibly marked with the following:

- (a) Manufacturer's name or trademark;
- (b) Model number; and
- (c) Any other required marking.

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