

**INTERPRETATION IC 52.2-2007-1 OF
ANSI/ASHRAE STANDARD 52.2-2007
*Method of Testing General Ventilation Air-Cleaning Devices
for Removal Efficiency by Particle Size***

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Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE Standard 52.2-2007, Sections 8.1.1 and 8.1.2, regarding the determination of airflow rates for testing filters.

Background: Section 8 of ASHRAE Standard 52.2-2007 states the procedure for determining airflow rates for testing filters. Face velocities are given in Section 8.1.1 to be used in a calculation to determine airflow rates. Section 8.1.2 states that the test should be performed at 492 fpm where air velocity has not been otherwise specified.

Section 8.1.1 of ASHRAE Standard 52.2-2007 provides for a determination of airflow rates for filters using a range of face velocities and the air cleaner's face area. It appears that this approach fails to consider the depth of the filter and subsequently does not consider media velocity. A typical example to consider is one of two 24"x24" filters being tested; one at 2" depth for a commercial application and the other at 1" depth for residential application. Routinely these filters would be tested at 492 fpm and 295 fpm respectively. If both filters are produced with the same number of pleats, 15 pleats per foot, then the resulting media velocity is significantly different; 98 fpm for the 2" filter and 131 fpm for the 1" filter. If the same media is used in both constructions the results for MERV could differ and, in some cases, differ significantly. It seems that this approach could cause confusion within the industry and as filter manufacturers evaluate media in various applications with expectations based upon results in a specific filter configuration. While the intent of the instructions in the standard may be to allow for infinite choices for airflow rates, the wording seems to limit the selection to completing the calculation using the seven face velocities given in Section 8.1.1. In fact, Section 8.1.4 instructs the tester to adjust airflow rate to maintain the selected face velocity based on face dimensions.

Interpretation No.1: Instructions in Section 8.1 limit selection of test face velocities to those given in 8.1.1 and/or 8.1.2.

Question No.1: Is this interpretation correct?

Answer No.1: Yes for MERV.

Interpretation No.2: The seven face velocities given in Section 8.1.1 are an artifact of ASHRAE Standard 52.1-1992.

Question No.2: Is this interpretation correct?

Answer No.2: No, 3 from Standard 52.1 changed to 7 in Standard 52.2.

Interpretation No.3: Calculation of airflow rates as defined in Section 8.1 considers given face velocities and the air cleaner's face area but does not consider the total surface area of media or the resultant test media velocity.

Question No.3: Is this interpretation correct?

Answer No.3: Yes

Interpretation No.4: Since this testing does not consider media velocity and limits selection of face velocities to seven designated values it is not representative of conditions seen in actual HVAC systems in the field and, therefore not predictive of performance in use.

Question No.4: Is this interpretation correct?

Answer No.4: No, predictive of velocities seen in the field.