

**INTERPRETATION IC 52.2-2007-2 OF
ANSI/ASHRAE STANDARD 52.2-2007**
*Method of Testing General Ventilation Air-Cleaning Devices
for Removal Efficiency by Particle Size*

Approval Date: April 15, 2013

Request from: Michael Corbat (mcorbat@filtrationgroup.com), Filtration Group, LLC., 912 E. Washington Street, Joliet, IL 60433.

Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE Standard 52.2-2007, Section 4.6.1, regarding particle counters.

Background: Recently received communiqué regarding the use of Aerosol Particle Sizer approved in use by ASHRAE Standard 52.2-2012.

Interpretation No.1: ASHRAE 52.2-2012 is an approved standard.

Question No.1: Is this interpretation correct?

Answer No.1: NO with qualifications.

Comments No.1: At the time of the writing of the communiqué in question (October 22, 2012) and at the time of the writing of the interpretation request ASHRAE 52.2-2012 was not an approved standard. Therefore the answer to Question 1) must be NO. However, at the time of the writing of this interpretation (February 2013), ASHRAE 52.2-2012 is an approved standard. Hence the qualification is added to the NO answer.

Interpretation No.2: An Aerosol Particle Sizer meets the requirements of a Particle Counter as listed in Section 4.6 of Standard 52.2-2007.

Question No.2: Is this interpretation correct?

Answer No.2: NO with qualifications.

Comments No.2: ASHRAE Standard 52.2, Section 4.6.1 does allow "... optical particle counters (OPCs) with wide angle collection optics or other counters demonstrating good correlation in measuring particle size efficiencies, such as aerodynamic particle counters (APCs) ...". However in the communiqué in question, good correlation is not demonstrated. The lack of correlation - the significantly different results obtained with the Aerosol Particle Sizers (Aerosizer®)¹ - is the primary subject of the communiqué in question. Therefore the Aerosol Particle Sizer as used in the tests described in the communiqué is not allowed by ASHRAE Standard 52.2 and the answer to Question 2 is NO. The possibility that Aerodynamic Particle Counters may demonstrate good correlation to optical particle counters with wide angle collection optics, requires this qualification of the NO answer.

¹ Additional information presented at the January 2013 meeting of SSPC 52.2 identified Aerosol Particle Sizer mentioned in the communiqué as an Aerosizer® which not the same as an aerodynamic particle counter.

Notes to Comments to Question 2:

Note 1 - It should be noted that an Aerosol Particle Sizer (Aerosizer®) mentioned in the communiqué is not the same instrument as an aerodynamic particle counter mentioned in ASHRAE 52.2, section 4.6.1. The two instruments use different physical phenomena for particle size differentiation and use different signal processing methods.

Note 2 - It should also be noted that SSPC 52.2 has approved an addendum that significantly changes section 4.6.1. That addendum will go out for public review in 2013.

Note 3 - Additional information presented at the January 2013 meeting of SSPC 52.2 made it appear that high concentration of the efficiency test aerosol causing filter loading during the efficiency measurement may have contributed to the lack of correlation. Filter loading during efficiency tests is not an issue specifically raised by this interpretation request. However it does need to be addressed by SSPC 52.2.