ANSI/AMCA Standard 610-19

Laboratory Methods of Testing Airflow Measurement Stations for Performance Rating

An American National Standard
Approved by ANSI on April 9, 2019

Air Movement and Control Association International

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AMCA Standard

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Contents

Laboratory Methods of Testing
Airflow Measurement Stations for Performance Rating

1. Purpose and Scope

This standard covers field-installed airflow measurement stations for heating, ventilating and air-conditioning applications.

This standard establishes uniform test methods for the determination of the performance characteristics and accuracy of airflow measurement stations under varied airflow rates and conditions.

It is not the purpose of this standard to specify testing procedures to be used for design, production or in-field measurement practice.

Only tests that do not violate the mandatory requirements of this standard shall be designated as tests conducted in accordance with this standard.

2. Normative References

The following standards contain provisions that, through specific reference in this text, constitute provisions of AMCA Standard 610 At the time of publication, the editions indicated were valid. All standards are subject to periodic revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standard(s) listed below.

ANSI/AMCA Standard 99, Standards Handbook, Air Movement and Control Association International, Inc., 30 West University Drive, Arlington Heights, IL, 60004-1893, U.S.A.
ANSI/AMCA Standard 210, Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating, Air Movement and Control Association International, Inc., 30 West University Drive, Arlington Heights, IL, 60004-1893, U.S.A.
ANSI/AMCA Standard 500-D, Laboratory Methods of Testing Dampers for Rating, Air Movement and Control Association International, Inc., 30 West University Drive, Arlington Heights, IL, 60004-1893, U.S.A.
SMACNA HVAC Systems Duct Design, 3rd edition. SMACNA HVAC Systems Duct Design, 3rd edition, Sheet Metal and Air Conditioning Contractors' National Association, Inc., 4201 Lafayette Center Drive, Chantilly, VA, 20151-1219, U.S.A.

3. Definitions/Units of Measure/Symbols

3.1 Definitions

3.1.1 Airflow Measurement Station (AMS)
A single- or multiple-point sensing device used to measure the airflow rate in a duct system or fan appurtenance. It may consist of a single sensor or an array of sensors in permanent position in the air system. It may be supplied as a probe to be inserted into a ductwork or in a casing approximating the size of the air system in which it is installed.

3.1.2 AMS — Differential (velocity) pressure output type
A type of AMS that converts air velocity into a differential (velocity) pressure signal that correlates to the velocity or volume of air flowing through a duct.

3.1.3 AMS — Electronic output type
A type of AMS that converts air velocity into an electronic signal that correlates directly and proportionately to the air volume flowing through a duct.

3.1.4 Test reference airflow rate
The calculated airflow rate at a measurement plane.