ANSI/AMCA Standard 550-15

Test Method for High Velocity Wind Driven Rain Resistant Louvers

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AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL INC.

The International Authority on Air System Components

ANSI/AMCA Standard 550-15

Test Method for High Velocity Wind Driven Rain Resistant Louvers

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Authority

AMCA Standard 550-15 was adopted by the membership of the Air Movement and Control Association International Inc. on October 26, 2015. It was approved by the American National Standards Institute on December 3 , 2015.

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Related AMCA Documents

Related Publications	AMCA Publication 501	*Application Manual for Louvers*
	AMCA Publication 511	*Certified Ratings Program - Product Rating Manual for Air Control Devices*
	AMCA Publication 512	*AMCA Listing Label Program*
Related Standards	ANSI/AMCA Standard 500-L	*Laboratory Methods of Testing Louvers for Rating*
	ANSI/AMCA Standard 540	*Test Method for Louvers Impacted by Wind Borne Debris*

Contents

Test Method for High Velocity Wind Driven Rain Resistant Louvers

1. Purpose

This standard establishes uniform laboratory test methods and minimum performance ratings for water rejection capabilities of louvers intended to be used in high velocity wind conditions.

2. Scope

Tests conducted in accordance with the requirements of this standard are intended to demonstrate the acceptability of the louver in which water infiltration must be kept to manageable amounts during a high velocity wind driven rain event. The test specimen can be approved in either an open or closed position as stated in Section 5.

3. Units of Measurement

3.1 System of units

SI units (The International System of Units, *Le Systéme International d'Unités*) are the primary units employed in this standard, with I-P units (inch-pound) given as the secondary reference. SI units are based on the fundamental values of the International Bureau of Weights and Measures, and I-P values are based on the values of the National Institute of Standards and Technology which are, in turn, based on the values of the International Bureau.

3.2 Basic units

The SI unit of length is the meter (m) or millimeter (mm); the I-P unit of length is the foot (ft) or the inch (in.). The SI unit of mass is the kilogram (kg); the I-P unit of mass is the pound mass (lbm). The unit of time is either the minute (min) or the second (s). The SI unit of temperature is either the degree Celsius (°C) or kelvin (K); The I-P unit of temperature is either the degree Fahrenheit (°F) or the degree Rankine (°R).

3.3 Airflow rate and velocity

3.3.1 Airflow rate

The SI unit of volumetric airflow rate is the cubic meter per second (m^3/s); the I-P unit of volumetric flow rate is the cubic foot per minute (cfm).

3.3.2 Airflow velocity

The SI unit of airflow velocity is the meter per second (m/s); the I-P unit of airflow velocity is the foot per minute (fpm).

3.4 Water flow rate

The SI unit of liquid volume is the liter (L); the I-P unit of liquid volume is the gallon (gal). The SI unit of liquid flow rate is the liter per second (L/s); the I-P unit is the gallon per minute (gpm).

3.5 Dimensionless groups

Various dimensionless quantities appear in the text. Any consistent system of units may be employed to evaluate these quantities unless a numerical factor is included, in which case units must be as specified.

3.6 Physical constants

The density of distilled water at saturation pressure shall be taken as 998.278 kg/m^3 (62.3205 lbm/ft^3) at 20 °C (68 °F). The density of mercury at saturation pressure shall be taken at 13595.1 kg/m^3 (848.714 lbm/ft^3) at 0 °C (32°F). The specific weights in kg/m^3 (lbm/ft^3) of these fluids under standard gravity in a vacuum are numerically equal to their densities at corresponding temperatures.

4. Definitions

4.1 Louver

A louver is a device comprised of multiple blades. When mounted in an opening, a louver permits the flow of air but inhibits the entrance of other elements.

4.2 Specimen

The test specimen is a representative sample of the louver model design and is intended to evaluate the water rejection capability of the louver model.

4.3 Performance variables

4.3.1 Water infiltration

The amount of water passing through a louver during the test.

4.3.2 Rain fall simulation

As calculated in Section 7.2.3 and Section 7.2.5.

4.3.3 Wind stream velocity

The movement rate of air generated during the test.