

AHRI Standard 681 (SI)

2017 Standard for

Performance Rating of Residential Air Filter Equipment



Air-Conditioning, Heating,
and Refrigeration Institute

2111 Wilson Boulevard, Suite 500
Arlington, VA 22201, USA
www.ahrinet.org

PH 703.524.8800
FX 703.562.1942

IMPORTANT

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AHRI uses its best efforts to develop standards/guidelines employing state-of-the-art and accepted industry practices. AHRI does not certify or guarantee that any tests conducted under its standards/guidelines will be non-hazardous or free from risk.

Note:

This standard supersedes ANSI/AHRI Standard 681(SI)-2015.
For I-P ratings, see AHRI Standard 680 (I-P)-2017.

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PERFORMANCE RATING OF RESIDENTIAL AIR FILTER EQUIPMENT

Section 1. Purpose

1.1 *Purpose.* The purpose of this standard is to establish for residential Air Filter Equipment: definitions; classifications; test requirements; rating requirements; minimum data requirements for Published Ratings; operating requirements; marking and nameplate data; and conformance conditions.

1.1.1 *Intent.* This standard is intended for the guidance of the industry, including manufacturers, engineers, installers, contractors and users.

1.1.2 *Review and Amendment.* This standard is subject to review and amendment as technology advances.

Section 2. Scope

2.1 *Scope.* This standard applies to factory-made Air Filter Equipment and Air Filter Media, as used in such equipment, for removing particulate matter, when used in environmental conditioning of inhabited spaces in residential facilities. The standard evaluates the “combined” performance of Air Filter Equipment in all aspects: Initial Resistance, Final Resistance, particle size efficiency, and Dust Holding Capacity. This offers both the user and specifier a complete view of the Air Filter Equipment for comparison purposes.

2.2 *Exclusions.* This standard does not apply to the following:

2.2.1 Air Filter Equipment and Air Filter Media for removing particulate matter, when used in industrial or commercial processes not associated with environmental conditioning of inhabited space.

2.2.2 Air Filter Equipment when used in removing abnormally high concentrations of specific contaminants.

2.2.3 Portable appliances which include Air Filter Equipment in combination with fans, coils, dampers, etc., but can be applied to the Air Filter Equipment as used therein.

2.2.4 Commercial and industrial Air Filter Equipment covered by ANSI/AHRI Standard 851 (SI).

Section 3. Definitions

All terms in this document will follow the standard industry definitions in the ASHRAE Terminology website (<https://www.ashrae.org/resources--publications/free-resources/ashrae-terminology>) unless otherwise defined in this Section.

3.1 *Air Filter Equipment.* Air cleaning equipment used for removing particulate matter.

3.2 *Air Filter Media.* The part of the Air Filter Equipment, which is the actual particulate removing agent. In the case of Group RII equipment (Section 4), the terms charging section and/or collecting section shall be used.

3.3 *Dust Holding Capacity.* The amount of dust captured by the Air Filter Equipment as tested per Section 5.4.3.

3.4 *Final Resistance.* The resistance of the Air Filter Equipment operating at its Maximum Rated Airflow, at which the test is terminated and result calculated.

3.5 *Initial Resistance.* The resistance of the Air Filter Equipment operating at its rated range of airflow rates with no dust load per Section 5.4.1.

3.6 *Loading Dust.* A compound synthetic dust used for Air Filter Equipment loading. It is composed, by weight, of 93.5% ISO fine test dust (ISO Standard 12103-1, A2 Fine Test Dust) and 6.5% milled cotton linters (CAS# 9004-34-6).