

ASHRAE Technical FAQ

ID 68

Question How are HEPA filters certified?

Test procedures for HEPA filters are discussed in [2016 ASHRAE Handbook - HVAC Systems and Equipment](#), Chapter [S29](#). Certification may be done by the manufacturer and by a professional in the field as a part of a complete system test. IEST - The Institute of Environmental Sciences and Technologies is generally recognized for providing the testing standards relating to HEPA filters. (www.IEST.org) Underwriters Laboratories (UL) also provides guidance as to HEPA filter testing. (www.ul.com)

Answer

By definition all HEPA filters are individually certified as to conformance with their target efficiency and higher efficiency filters are 100% scanned for leaks. The data from the testing is provided on a label on every filters stating test airflow, resistance to airflow and penetration (the inverse of efficiency). Originally HEPA filters were tested per Mil Std 282 using condensation aerosols of dioctylphthalate (DOP), a suspected carcinogen per some studies, as prescribed in the original military testing standard (MIL STD 282) authored to address HEPA filter performance. Today, manufacturers test each HEPA filter according to methodologies as outlined in Recommended Practices (RP) as published by the Institute of Environmental Sciences and Technologies ([IEST](#)) and filter test methods by the International Organization for Standardization (ISO). Filters are challenged with particles or aerosols of specific size and the penetration of each filter is so recorded.

Because a HEPA manufacturer cannot be responsible for transportation of the filters to the user or handling and installation, many applications require additional in-place testing to ensure the installed integrity of the HEPA filter. This in-situ certification involves the use of cold atomized poly-dispersed DOP or poly alpha olefin (PAO) to scan for filter leaks. This method can reveal leaks in the HEPA filter and frame or housing gaskets and/or seals. Other methods are also being developed.

This is especially important in systems that involve filtration of hazardous or infectious materials.

Additional information on test procedures for HEPA filters is discussed in [2016 ASHRAE Handbook - HVAC Systems and Equipment](#), Chapter [S29](#). Certification may be done by the manufacturer and by a professional in the field as a part of a complete system test.

ASHRAE Standard [ASHRAE Standard 52.2-2017](#) does not cover HEPA filters.

The handbook and standards may be purchased and/or individual chapters of the handbook may be purchased and downloaded on-line at our website, www.ashrae.org or by calling 1-800-527-4723 in the USA and Canada or 1-404-636-8400 worldwide.

The following organizations may provide additional guidance:

[IEST](#)- Institute of Environmental Sciences and Technology - www.iest.org

[NAFA](#) - National Air Filtration Association - www.nafahq.org

[UL](#) - Underwriters Laboratory - www.ul.com

[ASHRAE Standard 52.1-1992](#), plus [ASHRAE BOD approved addenda](#).

ASHRAE Pubs [ASHRAE Standard 52.2-2017](#), plus [ASHRAE BOD approved addenda](#).

[2016 ASHRAE Handbook - HVAC Systems and Equipment](#), Chapter [S29](#)

Topic References HEPA filters

	Cognizant ASHRAE Committees	Refer to Organization
1	TC 2.4	IEST
2		NAFA
3		UL
4		US Dept. of Defense
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