

Australian Standard[®]

Cleanrooms, workstations, and safety cabinets—Methods of test

Method 6: Determination of integrity of terminally mounted HEPA filter installations

1 SCOPE. This Standard sets out the method for determining the overall integrity of a terminally mounted HEPA filter installation in a cleanroom, workstation, or safety cabinet.

NOTE: A test method for determination of the overall integrity of HEPA filter installations which are not terminally mounted is specified in AS 1807.7.

2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

AS

1386 Cleanrooms and clean workstations

1386.1 Part 1: Principles of clean space control

1807 Cleanrooms, workstations, and safety cabinets—Methods of test

1807.0 Part 0: List of methods and apparatus

1807.1 Method 1: Determination of air velocity and uniformity of air velocity in clean workstations and laminar flow safety cabinets

1807.3 Method 3: Determination of air velocity and uniformity of air velocity in laminar flow cleanrooms

1807.7 Method 7: Determination of integrity of HEPA filter installations not terminally mounted

3 DEFINITIONS. For the purpose of this Standard the definitions given in AS 1386.1 and AS 1807.0 apply.

4 PRINCIPLE. A polydisperse aerosol at room temperature is fed to the upstream side of the HEPA filter installation at a specified flow rate, and the downstream surface of the entire filter bank is scanned with an aerosol photometer to determine percentage penetration.

5 APPARATUS. The following apparatus as specified in AS 1807.0 is required:

- (a) Anemometer.
- (b) Cold DOP aerosol generator with aerosol delivery hose and sparge fitting.
- (c) Aerosol photometer and photometer probe tip for filter integrity testing.

6 PROCEDURE. The procedure shall be as follows:

NOTE: The test operator should avoid inhalation of and exposure to heavy concentration of the test aerosol. It is recommended that a suitable mask or respirator be worn for the duration of this test.

- (a) With the filter guard removed, and using the anemometer, where possible in a freestanding mode, ensure that all velocities fall below 0.6 m/s, and record the location and value of the highest air velocity for each filter.

NOTES:

1. Airflow is determined in accordance with AS 1807.1 or AS 1807.3 as appropriate. It may be necessary to fit a temporary enclosure around the filter to reduce external influences on the anemometer readings.
 2. If the highest air velocities fall outside the specified limit or if the filter guard cannot be removed, the test may be performed, but these deviations are to be reported.
- (b) Set the air pressure on the cold DOP aerosol generator to 140 ± 5 kPa and introduce the aerosol via a sparge arrangement so that it is evenly distributed across the air entry. Record the number of Laskin nozzles used.