

When specifying the test procedures, specifications and acceptance criteria for Cleanroom performance tests – the owner, end user and the builder or contractor need to have a basic understanding of the tests involved and the various reference documents available. However, in many cases certain assumptions are made and various factors overlooked. Some of the common assumptions made due to an oversight entail:

- “*test according to FS209E and / or IES ...*” is not sufficient for certification – the test procedures, the specifications, the acceptance criteria and any variations in test methods need to be highlighted in detail
- Similarly, “*... according to FS209E and / or IES’s criteria*” is a WRONG phrase – many recommended practices do not establish the acceptance criteria – this has to be agreed upon between the buyer and the seller (owner and certifier / builder).
- Factory Scanned Filters do not eliminate Filter Installation Leak Test
- Filter Efficiency Test is not the same as Filter Installation Leak Test; it is *possible* for a filter to pass one test and not the other. Filter efficiency test is performed by the filter manufacturer in the factory. Filter installation test on the other hand is done at site by the certifier / tester to detect leaks not only in the filter but the installation as well. This ensures that leaks occurring due to improper handling, transportation or installation show up and do not go unnoticed.
- Particle Count Test does not replace Filter Installation Leak Test – Filter installation leak test is carried out to detect leaks from the filter and the peripheral areas whereas the Airborne particle count test is done to establish the cleanliness class of the Cleanroom.
- Cleanliness Class must be qualified by the appropriate particle size(s) and room’s status – this must be clearly stated in the specifications and in the Cleanroom certification report
- *Minimum sampling volume* (hence sampling time) must be noted
- Fed Std 209 *only* establishes cleanliness classes and *stipulates* the verification method – this standard does not specify any of the other parameters like airflow velocity, temperature/RH, room pressurization, lighting Level, sound pressure level etc.
- Filter face velocity of 0.45 m/s is a *recommended value only*
- There is no such thing as a Class XXX equipment – however that equipment should be evaluated in a Cleanroom or within the appropriate Class XXX enclosure to ascertain whether it contributes particles. This helps to ascertain the level of contamination from the equipment. However, the material and composition of the equipment needs to be ascertained as well for possible outgassing issues amongst other aspects. However, if the proper evaluation has been done, with supporting data, then it is perfectly fine to state that “*This equipment is Cleanroom compatible*”.
- During scanning of filters with a particle counter, *not all high counts are due to a leak at that location*.