



Standard Practice for Aerospace Cleanrooms and Associated Controlled Environments—Cleanroom Operations¹

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1. Scope

1.1 This practice specifies basic requirements, procedures, and practices for operating aerospace cleanrooms and controlled environments and precautions associated with the facility and equipment used.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

- D737** Test Method for Air Permeability of Textile Fabrics
- E595** Test Method for Total Mass Loss and Collected Volatile Condensable Materials from Outgassing in a Vacuum Environment
- E1216** Practice for Sampling for Particulate Contamination by Tape Lift
- E1234** Practice for Handling, Transporting, and Installing Nonvolatile Residue (NVR) Sample Plates Used in Environmentally Controlled Areas for Spacecraft
- E1235** Test Method for Gravimetric Determination of Nonvolatile Residue (NVR) in Environmentally Controlled Areas for Spacecraft
- E1549** Specification for ESD Controlled Garments Required in Cleanrooms and Controlled Environments for Spacecraft for Non-Hazardous and Hazardous Operations
- E1559** Test Method for Contamination Outgassing Characteristics of Spacecraft Materials
- E1560** Test Method for Gravimetric Determination of Nonvolatile Residue From Cleanroom Wipers

- E1731** Test Method for Gravimetric Determination of Nonvolatile Residue from Cleanroom Gloves
- E2042** Practice for Cleaning and Maintaining Controlled Areas and Clean Rooms
- E2088** Practice for Selecting, Preparing, Exposing, and Analyzing Witness Surfaces for Measuring Particle Deposition in Cleanrooms and Associated Controlled Environments
- E2217** Practice for Design and Construction of Aerospace Cleanrooms and Contamination Controlled Areas
- F25** Test Method for Sizing and Counting Airborne Particulate Contamination in Cleanrooms and Other Dust-Controlled Areas
- F50** Practice for Continuous Sizing and Counting of Airborne Particles in Dust-Controlled Areas and Clean Rooms Using Instruments Capable of Detecting Single Sub-Micrometre and Larger Particles
- F51** Test Method for Sizing and Counting Particulate Contaminant In and On Clean Room Garments
- F318** Practice for Sampling Airborne Particulate Contamination in Cleanrooms for Handling Aerospace Fluids

2.2 Government Standards:³

- Federal Standard 209E** Airborne Particulate Cleanliness Classes in Cleanroom and Clean Zones (cancelled Nov. 29, 2001)
- NASA-STD-6001, Test #7** Flammability, Odor, Offgassing and Compatibility Requirements and Test Procedures for Materials in Environments That Support Combustion

2.3 Other Technical Society Standards:

- IEST-RP-CC003** Garments Required in Cleanrooms and Controlled Environments⁴
- IEST-RP-CC004** Evaluating Wiping Materials Used in Cleanrooms and Other Controlled Environments⁴
- IEST-RP-CC005** Cleanroom Gloves and Finger Cots⁴
- IEST-RP-CC018** Cleanroom Housekeeping—Operating and Monitoring Procedures⁴

¹ This practice is under the jurisdiction of ASTM Committee E21 on Space Simulation and Applications of Space Technology and is the direct responsibility of Subcommittee E21.05 on Contamination.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401.

⁴ Available from Institute of Environmental Sciences and Technology (IEST), Arlington Place One, 2340 S. Arlington Heights Rd., Suite 100, Arlington Heights, IL 60005-4516, <http://www.iest.org>.