Institute of Environmental Sciences and Technology

IEST-RP-CC003.4

Contamination Control Division
Recommended Practice 003.4

Garment System Considerations for Cleanrooms and Other Controlled Environments

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1 SCOPE AND LIMITATIONS

1.1 Scope

This Recommended Practice (RP) addresses the gowning of personnel as an important aspect of cleanroom contamination control. It provides non-mandatory guidance for the selection, specification, maintenance, and testing of apparel and accessories appropriate for use in non-aseptic and aseptic cleanrooms and other controlled environments. Included with this RP is the supplement, *Guide to Measuring Cleanroom Garments*, which provides recommended garment measurement specifications.

1.2 Limitations

This RP does not prescribe design or performance requirements for garments, or control limits for specific cleanroom applications such as food processing. It does not address personal protection or health and safety requirements as related to cleanroom apparel and accessories. Limitations, applicability, precision and interpretation of data obtained from recommended testing as presented in Appendix B should be considered.

2 REFERENCES

The cited editions of the following documents are incorporated into this Recommended Practice to the extent specified herein. Users should apply the most recent editions of the references.

2.1 American Association of Textile Chemists and Colorists (AATCC)

AATCC Test Method 22: Water Repellency: Spray Test

AATCC Test Method 118: Oil Repellency: Hydrocarbon Resistance Test

AATCC Test Method 127: Water Resistance: Hydrostatic Pressure Test

2.2 Association of the Nonwoven Fabrics Industry (INDA)

INDA Standard Test Method: IST 80.8—Alcohol Repellency

2.3 ASTM International

ASTM D737: Standard Test Method for Air Permeability of Textile Fabrics

ASTM D2261: Standard Test Method for Tearing Strength of Fabrics by the Tongue (Single Rip) Procedure (Constant-Rate-of-Extension Tensile Testing Machine)

ASTM D3776: Standard Test Methods for Mass per Unit Area (Weight) of Fabric

ASTM D3786/D3786M - 09: Standard Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method

ASTM D3884: Standard Guide for Abrasion Resistance of Textile Fabrics (Rotary Platform, Double-Head Method)

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ASTM D3885: Standard Test Method for Abrasion Resistance of Textile Fabrics (Flexing and Abrasion Method)

ASTM D5034: Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)

ASTM D5035: Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)

ASTM D6193: Standard Practice for Stitches and Seams (supersedes FED-STD-751A)

ASTM E96/E96M–05: Standard Test Methods for Water Vapor Transmission of Materials

ASTM E284: Standard Terminology of Appearance

ASTM F50: Standard 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

2.4 Institute of Environmental Sciences and Technology (IEST)

IEST-RP-CC005: Gloves and Finger Cots Used in Cleanrooms and Other Controlled Environments

IEST-RP-CC022: Electrostatic Charge in Cleanrooms and Other Controlled Environments

IEST-RP-CC027: Personnel Practices and Procedures in Cleanrooms and Controlled Environments

IEST-STD-CC1246D: Product Cleanliness Levels and Contamination Control Program

2.5 International Organization for Standardization (ISO)

ISO 14644-1: Cleanrooms and associated controlled environments—Part 1: Classification of air cleanliness

ISO 14644-2: Cleanrooms and associated controlled environments—Part 2: Specifications for testing and monitoring to prove continued compliance with ISO 14644-1

2.6 Occupational Safety and Health Administration (OSHA)

OSHA 29 CFR 1910.1200: OSHA Standard for Hazard Communication, Subpart Z, Toxic and Hazardous Substances

OSHA 29 CFR 1910.1030: OSHA Standard for Bloodborne Pathogens, Subpart Z, Toxic and Hazardous Substances

2.7 SAE International (SAE)

SAE ARP 901A: Bubble-Point Test Method

2.8 Technical Association of the Pulp and Paper Industry (TAPPI)

TAPPI T425 om-06: Opacity of paper (15/d geometry, illuminant A/2°, 89% reflectance backing and paper backing)

2.9 Sources and Addresses

AATCC
American Association of Textile Chemists and Colorists
1 Davis Drive, P.O. Box 12215
Research Triangle Park, North Carolina 27709-2215
USA
www.aatcc.org

ASTM International
American Society for Testing and Materials
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, Pennsylvania 19428-2959
USA
www.astm.org

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INDA
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1100 Crescent Green, Suite 115
Cary, North Carolina 27518
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ISO
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Outside U.S.: Documents available from representative ISO member body organization

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