

# **INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY**

---

---

## **Contamination Control Division Recommended Practice 026.2**

### **IEST-RP-CC026.2**

---

## **Cleanroom Operations**

---

---

#### **INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY**

---

Arlington Place One  
2340 S. Arlington Heights Road, Suite 100  
Arlington Heights, IL 60005-4516  
Phone: (847) 981-0100 • Fax: (847) 981-4130  
E-mail: [iest@iest.org](mailto:iest@iest.org) • Web: [www.iest.org](http://www.iest.org)



COPYING IS ILLEGAL

---

This Recommended Practice is published by the INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY to advance the technical and engineering sciences. Its use is entirely voluntary, and determination of its applicability and suitability for any particular use is solely the responsibility of the user.

This Recommended Practice was prepared by and is under the jurisdiction of Working Group 026 of the IEST Contamination Control Division.

Copyright © 2004 by the **INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY**

Second printing, September 2004

Validated August 2008

ISBN 978-1-877862-97-7

**PROPOSAL FOR IMPROVEMENT:** The Working Groups of the INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY are continually working on improvements to their Recommended Practices and Reference Documents. Suggestions from those who use these documents are welcome. If you have a suggestion regarding this document, please use the online Proposal for Improvement form found on the IEST website at [www.iest.org/proposal/form.html](http://www.iest.org/proposal/form.html).

**INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY**

Arlington Place One

2340 S. Arlington Heights Road, Suite 100

Arlington Heights, IL 60005-4516

Phone: (847) 981-0100 • Fax: (847) 981-4130

E-mail: [iest@iest.org](mailto:iest@iest.org) • Web: [www.iest.org](http://www.iest.org)

COPYING IS ILLEGAL

# Cleanroom Operations

## IEST-RP-CC026.2

### CONTENTS

#### SECTION

1	SCOPE AND LIMITATIONS.....	7
2	REFERENCES .....	7
3	TERMS AND DEFINITIONS.....	8
4	BACKGROUND AND PURPOSE.....	8
5	ANCILLARY OPERATIONS.....	9
6	METHODS FOR VERIFYING CLEANLINESS.....	13

#### FIGURE

1	CONTINUOUS FLOWING DUCT METHOD.....	15
2	TEST CHAMBER SCHEMATIC FOR RESERVOIR METHOD.....	17
3	RELATIVE PARTICLE CONCENTRATION IN THE RESERVOIR DURING THE RESERVOIR TEST METHOD.....	17

#### APPENDIX

A	BIBLIOGRAPHY.....	23
---	-------------------	----

COPYING IS ILLEGAL

**INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY**  
**Contamination Control Division**  
**Recommended Practice 026.2**

# Cleanroom Operations

## IEST-RP-CC026.2

### 1 SCOPE AND LIMITATIONS

This Recommended Practice (RP) provides guidance for maintaining the integrity of the cleanroom during ancillary operations.

#### 1.1 Scope

Ancillary operations include:

- a) Preparation of supplies and materials
- b) Modification of the facility
- c) Installation and repair of equipment

Procedures are given for verifying the cleanliness of the equipment, the workstation, and the area, following these ancillary operations.

#### 1.2 Limitations

This Recommended Practice does not address the effect of contamination from the equipment or facility upon the product under manufacture, nor does it specify limits of acceptance for operational conditions. It does, however, recommend standard terminology for specifying desired limits.

### 2 REFERENCES

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 Standards and recommended practices

*ASTM-D3154-00 Standard Test Method for Average Velocity in a Duct (Pitot Tube Method)*

*ASTM-F24: Standard Method for Measuring and Counting Particulate Contamination on Surfaces*

*IEST-RP-CC003: Garment System Considerations for Cleanrooms and Other Controlled Environments*

*IEST-RP-CC004: Evaluating Wiping Materials Used in Cleanrooms and Other Controlled Environments*

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

*IEST-RP-CC012: Considerations in Cleanroom Design*

*IEST-RP-CC018: Cleanroom Housekeeping—Operating and Monitoring Procedures*

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

#### 2.2 Sources

##### ASTM

American Society for Testing and Materials  
100 Barr Harbor Drive  
West Conshohocken, Pennsylvania 19428-2959 USA  
www.astm.org

##### IEST

Institute of Environmental Sciences and Technology  
2340 S. Arlington Heights Road, Suite 100  
Arlington Heights, IL 60005-4516 USA  
www.iest.org

##### ISO

U.S. Member Body for document orders:  
IEST  
2340 S. Arlington Heights Road, Suite 100  
Arlington Heights, IL 60005-4516 USA  
www.iest.org