

# **INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY**

---

**Contamination Control Division  
Recommended Practice 020.2**

---

**IEST-RP-CC020.2**

---

**Substrates and Forms  
for Documentation  
in Cleanrooms**

---

**INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY**

---

1827 Walden Office Square, Suite 400 |  
Schaumburg, IL 60173 USA  
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)



---

Please note that in regard to references herein to *Federal Standard 209 (FED-STD-209), Airborne Particulate Cleanliness Classes in Cleanrooms and Clean Zones*, the U.S. General Services Administration issued the following NOTICE OF CANCELLATION of FED-STD-209 on November 29, 2001: “Federal Standard 209E dated September 11, 1992 is hereby canceled and superseded by International Organization for Standardization (ISO) Standards. International Standards for Cleanrooms and associated controlled environments, ISO 14644-1 Part 1: Classification of air cleanliness; and ISO 14644-2 Part 2: Specifications for testing and monitoring to prove continued compliance with ISO 14644-1.”

Copies of ISO Standards 14644-1 Part 1, and 14644-2 Part 2, may be obtained from the Institute of Environmental Sciences and Technology (IEST), 5005 Newport Drive, Suite 506, Rolling Meadows, IL 60008-3841. Phone: 1-847-255-1561, Fax: 1-847-255-1699, Website: [www.iest.org](http://www.iest.org), E-mail: [publicationsales@iest.org](mailto:publicationsales@iest.org).

This Recommended Practice is published by the **INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY** to advance contamination control technology and 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 document was prepared by and is under the jurisdiction of Working Group 020 of the Standards and Practices Committee of the Institute’s Contamination Control Division.

It supersedes IES-RP-CC-020-88T.

Copyright© 1996 by the **INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY**.

Seventh printing, July 2017.

ISBN 978-1-877862-48-9

**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**  
1827 Walden Office Square, Suite 400 | Schaumburg, IL 60173 USA  
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)

---

# Substrates and Forms for Documentation in Cleanrooms

## IEST-RP-CC020.2

### CONTENTS

1	SCOPE AND LIMITATIONS .....	5
2	REFERENCES .....	5
3	TERMS AND DEFINITIONS.....	6
4	BACKGROUND AND PURPOSE .....	6
5	TESTS FOR STRUCTURAL PROPERTIES .....	7
6	TEST FOR RELEASED PARTICLES.....	8
7	TESTS FOR EXTRACTABLE MATTER.....	9

---

Currently in preview, click buy full version

# Substrates and Forms for Documentation in Cleanrooms IEST-RP-CC020.2

## 1 SCOPE AND LIMITATIONS

### 1.1 Scope

This Recommended Practice (RP) applies to substrates and forms used in cleanrooms for the purpose of documentation. Specifically included are: copy paper, writing paper, labels, tags, self-adhesive notes, perforated and punched forms, envelopes, bound materials, and all printed versions thereof. This RP provides appropriate methods for assessing the cleanliness of these items insofar as their suitability for use in cleanrooms is concerned.

### 1.2 Limitations

Contamination resulting from the use of items such as pens and clipboards, as well as contamination from printers and copiers, is beyond the scope of this document except where their use in conjunction with the items listed under Scope may increase the generation of particles from those items. Users are referred to Recommended Practice IEST-RP-CC015 (Cleanroom Production and Support Equipment) for that information as well as for proper procedures for handling such items and equipment.

This Recommended Practice does not, nor should it, categorize substrates according to their suitability for use in particular applications. Rather, it offers rational and permanent tests for those characteristics of substrates and forms that are generally acknowledged to be important. The results from these tests permit quantitative assessment of the merits of various documentation materials according to the combination of properties important

to the individual user.

## 2 REFERENCES

The following list of publications refers to the most recent editions in print.

### 2.1 American Society for Testing and Materials (ASTM)

*ASTM-D39: Trapezoidal Tear Test*

*ASTM-D1193: Standard Specification for Reagent Water*

*ASTM-D1894: Standard Test Method for Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting*

*ASTM-F311: Standard Practice for Processing Aerospace Liquid Samples for Particulate Contamination Analysis Using Membrane Filters*

*ASTM-F312: Standard Methods for Microscopical Sizing and Counting Particles from Aerospace Fluids on Membrane Filters*

### 2.2 General Services Administration (Federal Standards)

*FED-STD-209E: Airborne Particulate Cleanliness Classes in Cleanrooms and Clean Zones*

### 2.3 Institute of Environmental Sciences and Technology (IEST)

*IEST-RP-CC002: Laminar Flow Clean-Air Devices*

*IEST-RP-CC015: Cleanroom Production and Support Equipment*