IPC-4204A

with Amendment 1

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Flexible Metal-Clad Dielectrics for Use in Fabrication of Flexible Printed Circuits

Supersedes IPC-4204A
October 2011

A standard developed by IPC

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- Minimize time to market
- Contain simple (simplified) language
- Just include spec information
- Focus on end product performance
- Include a feedback system on use and problems for future improvement

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- Increase time-to-market
- Keep people out
- Increase cycle time
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Flexible Metal-Clad Dielectrics for Use in Fabrication of Flexible Printed Circuitry

Developed by the Flexible Circuits Base Materials Subcommittee (D-13) of the Flexible Circuits Committee (D-10) of IPC

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Users of this publication are encouraged to participate in the development of future revisions.

Contact:

IPC
3000 Lakeside Drive, Suite 309S
Bannockburn, Illinois
60015-1249
Tel 847 615.7100
Fax 847 615.7105

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Peter D. Veese, Underwriters Laboratories Inc.

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Joseph DiPalermo, M-Flex/Pica Sales & Engineering

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C. Don Dupriest, Lockheed Martin Missiles and Fire Control

Jim Edmonds Shin-Etsu MicroSi

Theodore Edwards, Dynaco Corp.

Alan Exley, Raytheon Company

Thomas Farrell, Thomas G. Farrell Associates

David Fellows, Medtronic Microelectronics Center

Jason Ferguson, NSWC Crane

Mark Finstad, Flexible Circuit Technologies, Inc.

Terry Fischer, Hitachi Chemical Co. America, Ltd.

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Lionel Fullwood, WKK Distribution Ltd.

Mahendra Gandhi, Northrop Grumman Aerospace Systems

Thomas Gardeski, Gemini Sciences, LLC

Donna Gardner, DuPont

Marc Goudreau, Vulcan Flex Circuit Corporation

Ty Gragg, Unicircuit Inc.

Michael Green, Lockheed Martin Space Systems Company

Russell Griffith, Flexible Circuits Inc.

Alisha Groop, Lockheed Martin Space Systems Company

William Hazen, Raytheon Company

Todd Henninger, DDi Corp.

Scott Herrmann, DuPont

Rocky L. Hilburn, Insulectro

William Jacobi, William Jacobi & Associates

Michael J. Jawitz, Boeing Research & Development

John Jephson, Circuit Foil Trading, Inc.

Tamotsu Kitagawa, ABC Corp.

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Toru Koizumi, JPCA-Japan Electronics Packaging and Circuits Association

Nick Koop, Minco Products Inc.

Toshiaki Kuroiwa, UBE

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John Leschisin, Minco Products Inc.

Dr. Yanmei Li, Schlumberger Well Services

Anne Lamonte, Draeger Medical Systems, Inc.

Duane B. Mahnke, Mahnke Consulting

Kenneth Manning, Raytheon Company

John Marke, Underwriters Laboratories Inc.

Martha Martinez, Underwriters Laboratories Inc.

Eric Matuska, ALL Flex LLC

Dr. Thomas McCarthy, Taconic Advanced Dielectric Division

Peter Menuez, L-3 Communications - Cincinnati Electronics

Roger J. Meidico, Raytheon Company

Steve Morton, Exopack Advanced Coatings

Steve A. Musante, Raytheon Missile Systems

Michael L. Musich, Musich Consulting.

Bob Neves, Microtek Laboratories

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Dominique Numakura, DKN Research

Debora Obitz, Trace Laboratories - Baltimore

Yuri Okazaki, Toray

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Dr. Arvind Partha, Somers Thin Strip

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Anthony Plemel, PFC Flexible Circuits Ltd.

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Matthew Saari, Multek Flexible Circuits, Inc.

Sakaguchi, Shin-Etsu Chemical Co., Ltd.

Jerome S. Sallo, Sallo Consulting Services

Edward Sandor, Taconic Advanced Dielectric Division

Kenji Sasahara, Kyosha Company, Ltd.

Takeshi Sasaki, Nippon Steel Chemical Company

Rolland Savage, High Performance Copper Foil Inc.

Charles Scharnberg, Raytheon Missile Systems

Dr. Michael Schen, NIST

Joseph Schmid, Raytheon Missile Systems

Julie Scopel, Underwriters Laboratories Inc.

Gilbert Shelby, Raytheon Missile Systems

Robert Sheldon, Pioneer Circuits Inc.

Terry Shepler, Electro-Materials, Inc.

Lowell Sherman, Defense Supply Center Columbus

HyunJoon Shin, UL Korea Ltd.

Caroline Simonian-Owens, Underwriters Laboratories Inc.

Carl Siviter, Induflex NV

Joseph Slanina, Honeywell FM & T

Douglas J. Sober, Kaneka Texas Corporation

Vern Solberg, Solberg Technical Consulting

Valerie A. St. Cyr, Teradyne Inc.

Herb Stark, Flexible Circuits Inc.

Darin Stotz, Northfield Automation Systems Inc.

Brent Sweitzer, Multek Flexible Circuits, Inc.

Dung Q. Tiet, Lockheed Martin Space Systems Company

John Tobin, Underwriters Laboratories Inc.

Randy E. Tolbert, NSWC Crane

Crystal E. Vanderpan, Underwriters Laboratories Inc.

Steve J. Vetter, NSWC Crane

Nicholas Watts, Intel Corporation

Vern Weik, Molex Copper Flex Products

Dewey Whittaker, Honeywell Inc. Air Transport Systems

Jay Wu, Taiflex Scientific Co., Ltd.

Katsuya Yamada, Sumitomo Electric Printed Circuits Inc

Miou Yamaoka, Meiko Electronics Co. Ltd.

Ricky Yeung, Meadville Holdings Limited

George Zahr, DuPont

Sarah Zarrin, Seagate Technology

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Flexible Metal-Clad Dielectrics for Use in Fabrication of Flexible Printed Circuitry

1 SCOPE

This standard establishes the classification system, the qualification and quality conformance requirements for flexible metal-clad dielectric materials to be used for the fabrication of flexible printed circuitry and flexible flat cable.

1.1 Classification System The system described in 1.1.1 through 1.1.2.7 identifies flexible metal-clad dielectric

1.1.1 Nonspecific Designation A nonspecific designation is intended for use by ***designers*** on master drawings to designate their material choice. At the end of this standard is a series of material specification sheets identified by specification sheet numbers. Each sheet outlines engineering and performance data for a flexible metal-clad dielectrics, indicating base material type, adhesive type and method of reinforcement.

Example of nonspecific designation:
IPC-4204/1, *where "1" refers to the specification sheet detailing copper-clad polyimide dielectric with acrylic adhesive.* If further material specification details (such as dielectric, adhesive or copper thicknesses) are required, they should be highlighted in cross sectional views or notes on the master drawing.

1.1.2 Specific Designation The specific designation should be in the form shown in the following example, and is intended for use on material purchase orders by ***fabricators*** (see 6.1). The specific designation should not be used by designers on master drawings to indicate their material selection, as the designation is lengthy and requires fabricator level knowledge in making the detailed selections.

NOTE: The alpha character "Z" replaces and is entirely equivalent to the alpha character "O" (ref: Table 1-5) in the original release (prior revision) of this IPC standard. This interchange of characters within the designation will help alleviate confusion from using both the alpha character "O" and the digit "0" from the original release of this IPC standard. Legacy designs that utilize a designation and material description from the original release of this IPC standard [alpha character "O" (from Table 1-5)] may continue to be used. Supplier material certifications will reflect the current IPC standard's revision, and accordingly, the alpha character "Z" in the designation.

Example of specific designation:
IPC-4204/1 – E1E2M2/2 CU-W7-1P/1P

Where:
IPC-4204/1 – *Nonspecific Designation (see 1.1.1) specifying copper-clad dielectric with acrylic adhesive*
E – *Base Dielectric Type Designation (see 1.1.2.1) specifying polyimide*
1 – *Reinforcement Method Designation (see 1.1.2.2) specifying non-reinforced*
E – *Reinforcement Type Designation (see 1.1.2.3) specifying non-reinforced film*
2 – *Base Dielectric Thickness Designation (see 1.1.2.4) specifying 50microns [0.002 in]*
M – *Adhesive Type Designation (see 1.1.2.5) specifying acrylic adhesive*
2/2 – *Adhesive Thickness Designation (see 1.1.2.6) specifying 50 micron both sides (Not used for adhesiveless product)*
CU-W7-1P/1P – *Metal Cladding Designation (see 1.1.2.7) specifying wrought rolled annealed copper, 35 microns both sides with no treatment*

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