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Association Connecting Electronics Industries

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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.

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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 dielectrics.

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.

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 50 microns [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 microns 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*