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IPC-2223A

Sectional Design Standard for Flexible Printed Boards

Developed by the Flexible Circuits Design Subcommittee (D-11) 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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1 SCOPE

This standard establishes the specific requirements for the design of flexible printed circuit applications and its forms of component mounting and interconnecting structures. The flexible materials used in the structures are comprised of insulating films, reinforced and/or nonreinforced, dielectric in combination with metallic materials. These interconnecting boards may contain single, double, multilayer, or multiple conductive layers and can be comprised wholly of flex or a combination of both flex and rigid.

1.1 Purpose The requirements contained herein are intended to establish specific design details that **shall** be used in conjunction with IPC-2221 and may also be used in conjunction with IPC-2222 for the rigid sections of rigid-flex circuits.

1.2 Classification of Products Classification type and use of products **shall** be in accordance with IPC-2221 and as stated in 1.2.1 and 1.2.2.

1.2.1 Board Type

Type 1 Single-sided flexible printed wiring containing one conductive layer, with or without stiffener (see Figure 1-1).

Type 2 Double-sided flexible printed wiring containing two conductive layers with plated-through holes, with or without stiffeners (see Figure 1-2).

Type 3 Multilayer flexible printed wiring containing three or more conductive layers with plated-through holes, with or without stiffeners (see Figure 1-3).

Type 4 Multilayer rigid and flexible material combinations containing three or more conductive layers with plated-through holes (see Figure 1-4).

Type 5 Flexible or rigid-flex printed wiring containing two or more conductive layers without plated-through holes (see Figure 1-5).

1.2.2 Installation Uses Flexible circuit designs are unique in each application: however, the following are some typical classes of use. It is recommended that the intended use be specified on the fabrication drawing. It may be necessary to define specific tests for design verification on the master drawing. These categories can be used individually or in a combination.

Use A Capable of withstanding flex during installation (flex-to-install) (see 5.2.3.2).

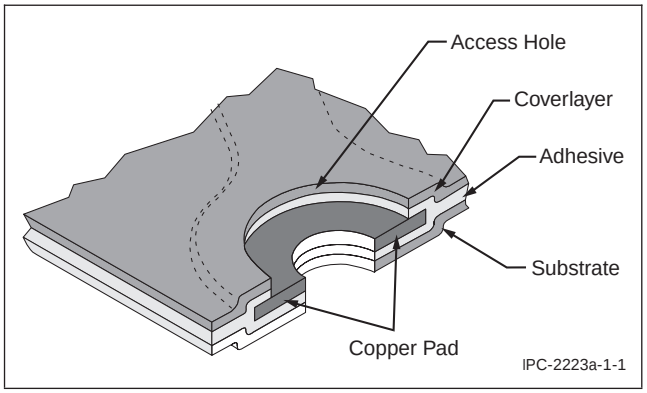

Figure 1-1 Board Type 1

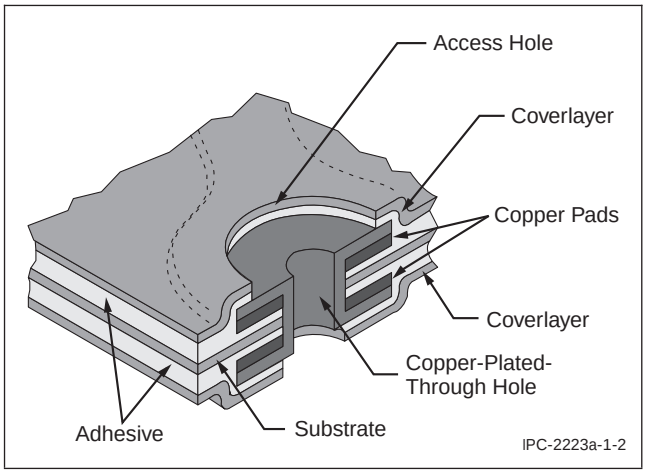

Figure 1-2 Board Type 2

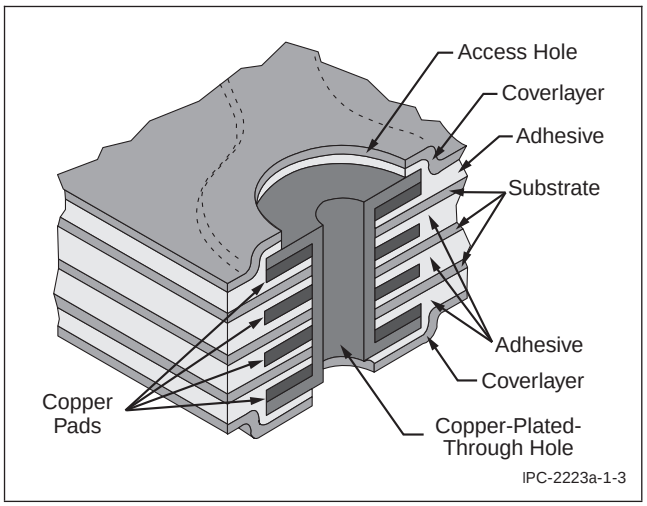

Figure 1-3 Board Type 3

Use B Capable of withstanding continuous flexing for the number of cycles as specified on the master drawing (dynamic flex) (see 5.2.3.2).