IPC-4563

Resin Coated Copper Foil for Printed Boards Guideline

Developed by the Resin Coated Foils Task Group (3-12c) of the Printed Board Base Materials Committee (3-10) of IPC

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

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Resin Coated Copper Foil for Printed Boards Guideline

1 SCOPE

This guideline covers the requirements for resin coated copper foil intended for use in the formation of high density interconnect surface microvias for printed boards and printed board assemblies.

1.1 Classification The system shown below identifies resin coated copper foils.

XXX	PRODUCT DESIGNATOR
C	C-STAGE LAYER DESIGNATOR
YY	C-STAGE LAYER THICKNESS (microns)
R	C-STAGE RESIN TYPE
/	
B	B-STAGE LAYER DESIGNATOR
ZZ	B-STAGE LAYER THICKNESS (microns)
T	B-STAGE RESIN TYPE
β	COPPER THICKNESS
Φ	COPPER TYPE
δ	COPPER PROFILE
AA	SPECIFICATION SHEET #

Example for laminate base materials where IPC-4563 is referenced:

XXX Material Supplier Designator (see 1.1.1)

C C-Stage Layer, if applicable (see 1.1.2)

YY Thickness [μm] of C-Stage Layer, if applicable (see 1.1.3 and Table 1–1)

R Resin Type of C-Stage Layer, if applicable (see 1.1.4)

/ Separator in nomenclature to define C-Stage versus B-Stage Layer (see 1.1.5)

B B-Stage Layer (see 1.1.6)

ZZ Thickness [μm] of B-Stage Layer (see 1.1.7 and Table 1–1)

T Resin Type of B-Stage Layer, (see 1.1.8)

β Copper Foil Thickness (see 1.1.9 and Table 1–2)

Φ Copper Foil Type (see 1.1.10 and Table 1–3)

δ Copper Foil Profile (see 1.1.11 and Table 1–4)

AA Example Material Property Sheet Number (see 1.1.12) – As agreed between user and supplier (AABUS)

1.1.1 Material Supplier Designator The grade designator for the coated copper foil is as described in the supplier's product information.

1.1.2 C-Stage Resin Layer The C-Stage resin designator will have one of two codes: Either a "C" that indicates that the coated resin includes a cured C-stage resin layer as a component or an "O" that indicates that there is no C-stage resin layer component in the coated resin. If the "C" is present, the two codes that follow it but precede the "/" (slash) pertain to this fully cured C-stage layer portion. If the "O" is present, there will be no characters appearing prior to the "/" (slash). Figure 1–1 illustrates the structure of resin coated copper foil that includes both C-stage resin and B-stage resin. The cured C-stage resin layer provides a consistent minimum thickness, while the B-stage resin layer provides flow and fill of the circuit pattern.

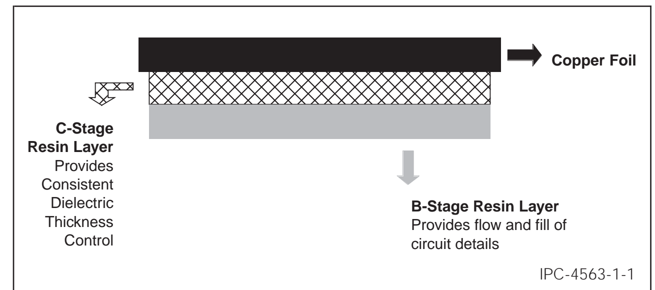

Figure 1–1 Resin Coated Copper Foil with Both C-Stage and B-Stage Resins

1.1.3 Thickness of the C-Stage Layer The nominal thickness is identified by two digits, with the thickness units in microns. However, if no C-Stage layer is present and an "O" appears, no characters should be present for this thickness designator (see 1.1.2). Figure 1–2 illustrates resin coated copper foil without a C-stage layer; only a B-stage layer. The conversion chart shown in Table 1–1 lists the standard thicknesses covered by this guideline.

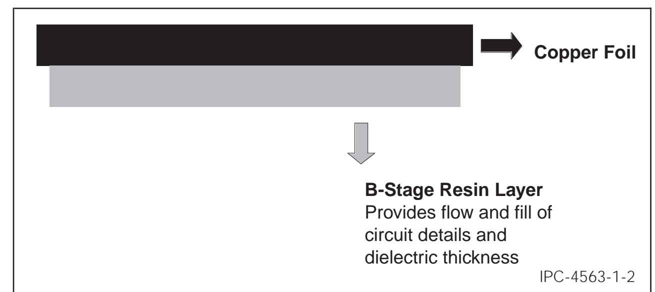

Figure 1–2 Resin Coated Copper Foil with B-Stage Resin Only

1.1.4 Resin Type of the C-Stage Layer The resin system of the C-Stage layer should be a single character, AABUS. If the "O" appears in the designator position for