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## IPC-4562 with Amendment 1

# Metal Foil for Printed Wiring Applications

Developed by the Metallic Foils Task Group (3-12a) of the Strategic Components of Base Materials Subcommittee (3-12) 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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# Metal Foil for Printed Wiring Applications

## 1 SCOPE

This specification covers metal foils supported by carrier films and unsupported foils suitable for subsequent use in printed boards. Unless otherwise agreed upon between user and supplier, metal foils **shall** be considered acceptable, so long as the requirements in this specification are met.

**1.1 Purpose** This specification addresses the requirements for procurement of metal foils used only in printed wiring applications.

**1.2 Foil Designation** The foil designation **shall** be in the following forms:

| | | | |
|---|---|---|---|
| IPC-4562/X<br>Where X is the specification sheet number (See 1.2.1) | CU<br>Foil Metal (See 1.2.2) | E<br>Foil Type (See 1.2.3) | 3<br>Foil Grade (See 1.2.4) |
| 2<br>Foil Thickness (See 1.2.5) | S<br>Bond Enhancement Treatment (See 1.2.6) | XS<br>Foil Profile (See 1.2.7) | 3<br>Quality Classification (See 1.3) |

**1.2.1 Specification Sheet Description** At the end of this document is a series of specification sheets. Each sheet outlines engineering and performance data for a metal foil. The sheets are provided with a number for ordering purposes. For example, if a user wishes to order from specification sheet 1, the number ''1'' would be substituted for the ''X'' in the above designation example (e.g., IPC-4562/1).

The metal foils contained in this standard represent known materials. As new foils become available, they will be added to future revisions. Users and material developers are encouraged to supply information on new materials for review by the Metallic Foils Task Group (3-12a). Users who wish to invoke this specification for metal foils not listed **shall** list a 0 (zero) for the specification sheet number (e.g., IPC-4562/0).

This specification provides quality classes (see 1.2.3 through 1.2.7) for requirements to reflect functional performance (see Appendix A) and testing properties. The reference of a single class does not preclude invoking specific requirements defined in other classes.

**1.2.2 Foil Metal** The metal foil **shall** be designated by a suitable two- or three-letter code:

CU - Copper

NI - Nickel

XX - Other

**1.2.3 Foil Type** Metal foil types **shall** be distinguished by their process of manufacture and **shall** be designated as:

E - Electrodeposited

W - Wrought (rolled)

O - Other

**1.2.4 Foil Grade**

**1.2.4.1 Foil Grades** Foil grades **shall** be distinguished according to the following foil grade designations:

1. Standard electrodeposited (STD-Type E)
2. High ductility electrodeposited (HD-Type E)
3. High temperature elongation electrodeposited (HTE-Type E)
4. Annealed electrodeposited (ANN-Type E)
5. As rolled-wrought (AR-Type W)
6. Light cold rolled-wrought (LCR-Type W)
7. Annealed-wrought (ANN-Type W)
8. As rolled-wrought low temperature annealable (LTA-Type W)
9. Nickel, standard electrodeposited
10. Electrodeposited low temperature annealable (LTA-Type E)
11. Electrodeposited annealable (A-Type E)

**1.2.4.2 Other Metal Foil Grades** Other metal foil grades will be designated as the need arises.

**1.2.5 Foil Weight and Thickness**

**1.2.5.1 Copper Foil Area Weight** The area weight and nominal thickness for copper **shall** be as identified in Table 1-1.

**1.2.5.2 Thickness of Foils Other than Copper** Thickness of all other metals **shall** be indicated by dimensions to the nearest 0.025 mm [0.0009843 in].

**1.2.6 Bond Enhancement Treatment** The bond enhancement treatment used on the metal foil **shall** be designated as one of the following:

N - No treatment; no stain proofing

P - No treatment; stain proofing both sides

S - Single-sided bond enhancement treatment (matte side); stain proofing on both sides