

**DRUM-SIDE TREATED METAL FOIL AND LAMINATE FOR USE
IN PRINTED CIRCUIT BOARDS AND METHODS OF MANUFACTURE**

ABSTRACT

Drum or smooth side-treated metal foil can be used either as an intermediate product for use in the manufacture of laminate or as a part of the finished laminate to be used in the manufacture of multi-layer printed circuit boards (PCB) packages. By treating the drum or smooth side of metal foil with a bond strength enhancer rather than treating the matte side or rough side, or both sides, several time-consuming and costly steps can be bypassed in the manufacture of multi-layer printed circuit boards (PCB) while the integrity of the metal foil, laminate and multi-layer PCB are not compromised and are actually enhanced by way of improved impedance control and adhesion characteristics after relamination. This novel foil can be initially bonded to substrate on either side before circuit formation and can be used either as an integral foil layer or as a foil cap. The invention includes methods of manufacture of the metal foil, laminate and multi-layer printed circuit board. A variation of the invention involves a component or tool for use in manufacturing articles such as printed circuit boards. The component is a temporary laminate constructed of one or more sheets of drum-side-treated copper foil mounted on a sheet of aluminum. The copper foil, which, in a finished printed circuit board, will constitute a functional element, has a drum-side, which has been subjected to an adhesion-promoting treatment and a rough side, which has not been subject to the adhesion-promoting element. The sheet of aluminum constitutes a discardable or reusable element. Either surface (treated drum-side or untreated matte side) of each copper sheet can be bonded to the aluminum, depending on which embodiment of the basic invention is being used. The side of the copper foil not bonded to the aluminium will be bonded to the resin in the next step.

(no appropriate figure to accompany Abstract)