



COMMONWEALTH AIRCRAFT CORPORATION LIMITED

MELBOURNE

VICTORIA

MATERIAL SPECIFICATION

TITLE

PRINTED CIRCUIT BOARD MATERIALS;

COPPER-CLAD.

ISSUE	DATE	APPROVAL			
		WRITTEN BY	C.A.C.	RAAF	
B	July 1971	M.R.C.	M.R.C.	S.N.R.	
C	Nov. 1976	M.R.C.	<i>[Signature]</i>	<i>[Signature]</i>	

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## 1. DESCRIPTION

This specification covers two types of printed circuit board material.

The two types endorse the specifications listed in the following classification :

CA.Spec Dash No.	Type	Specifications
CA.444-1	Phenolic resin bonded paper laminate	BS 4584 EP-GC-Cu3 DIN 40802 (Jan. 1967) Type C N.E.M.A. L1-1-1971 FR 2  THERMAL CLASSIFICATION: BS2757-1956 Class E (120°C)
CA.444-2	Epoxy resin bonded continuous filament glass cloth (Glass epoxy).	MIL P 13949 E Type GF BS 4584 Type EP-GC-Cu-3 N.E.M.A. L1-1-1971 Type FR4 DIN 40802 (January 1967) Type D UL File No. E42147  THERMAL CLASSIFICATION: BS2757 (1956) Class B (130°C)

Unless otherwise specified, the material shall be supplied copper-clad on one side only. Material which is copper-clad on both sides shall be further designated CA.444-1B and CA.444-2B, respectively.

## 2. APPLICATION

The material covered by this specification is intended for the production of printed circuit boards.

CA.444-1 has good blanking and piercing characteristics at approximately 20°C and can be gold plated from acid and alkaline plating solutions.

CA.444-2 has flame retardance, easy machinability and excellent plating from acid and alkaline cyanide solutions. In addition, this type possesses greater mechanical strength than -1 material.

## 3. COPPER CLADING

Unless otherwise specified, the weight of copper per side shall be 2 ozs/sq.ft (0.0030") which is equivalent to a 70 microns Foil.

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4. COLOUR OF BASE LAMINATE

- CA.444-1 Brown
- CA.444-2 Pale Green

5. SURFACE FINISH

- CA.444-1 Satin
- CA.444-2 Lustre

6. PROPRIETARY PRODUCTS

CA.444-1 Formica Paper/Phenolic copper-clad laminate Grade CCL.850 E.

CA.444-2 Formica Glass/Epoxy copper-clad laminate, Grade CFG 83.\*

Supplier: E.C. Menzies Electrical Pty. Ltd.,  
29-31 Hardware Street,  
MELBOURNE.

Note: These products shall be purchased to, and released against, this specification and dash no. or one of the endorsed specification numbers.

\* Formerly designated CGE.80 and CFG.80.

7. PROCUREMENT

Purchase orders shall call for each delivery of material to be accompanied by an acceptable certificate of conformity.

Where material is required copper-clad on both sides, purchase orders shall quote the designation CA.444-1B or CA.444-2B, as appropriate.

Purchase orders should also state the required weight of copper, viz. 2 ozs/sq ft (70 microns).

FOR INFORMATION ONLY - STORAGE

To prevent damage during storage prior to use, it is recommended that the supplied sheets be laid flat in the store. Storing vertically in racks will lead to buckling and distortion of this material.

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