



## Vero Technologies Ltd

Unit 25 : Solent Industrial Estate : Hedge End : Hants : SO30 2FY UK

Tel : +44(0) 870-2259505  
 Fax: +44(0) 1489-776938

Email : sales@verotech.co.uk  
 web site: www.verotl.com

### This data sheet covers all PCB products made with blue glass fibre material

Limited Fire Hazard Electrical Laminate	Grade: CEM-30	Data Sheet	Issue: 2005-01
---	---------------	------------	----------------

#### DESCRIPTION

MICAM's CEM-30, is a UL recognised, blue CEM-3 composite laminate

**Characteristics** Excellent electrical, punching and flame retardant properties

**Colour** Blue

**Thickness** 1.5/1.6mm standard. Other thicknesses in range 0.8mm to 3.2 mm available on request

**Sheet Size** 1220 x 914mm standard, 1220 x 1060 mm on request & cut to size panels on request.

Properties of JTC Copper Foils	UNIT	35 MICRON	70 MICRON	STANDARD
Substance Weight	g/m <sup>2</sup>	295	590	IPC 4562
Peel Strength	N/mm	> 1.88	> 2.44	IPC 4562
Pull Off Strength	N	> 90	> 115	IPC 4562
Elongation	%	4 – 15	7 – 15	IPC 4562
Tensile Strength	N/mm <sup>2</sup>	320 – 420	320 – 430	IPC 4562
Rz matte side	Microns	– 5.0	3.0 – 5.5	IPC 4562

General Properties on Substrate	Units	EN Spec.	CEM-30	NEMA Spec	CEM-30
Flexural Strength	MN/m <sup>2</sup>	250	275		
Shear Strength	MN/m <sup>2</sup>	-	40		
Water Absorption (1/16")	%	-	-	0.25	0.15
Flammability	UL 94	-	-	V- 0	V- 0
Solder Float at 260 deg. C	s	-	-	20	>30

Electrical Properties	Units	EN Spec.	CEM-30	NEMA Spec	CEM-30
Volume Resistivity after damp heat	MΩm	2 x 10 <sup>4</sup>	10 <sup>6</sup>		
Surface Resistance after damp heat	MΩcm			10 <sup>6</sup>	2 x 10 <sup>6</sup>
Dissipation Factor at 1 MHz	MΩ	5 x 10 <sup>4</sup>	2 x 10 <sup>6</sup>	10 <sup>4</sup>	2 x 10 <sup>6</sup>
Permittivity at 1 MHz	-	0.040	0.022	0.035	0.022
Dielectric Breakdown	kV	5.5	4.2	5.4 (ASTM 5.4 )	4.2
		-	-	45 (ASTM 40 )	50

Electrical Properties	Units	CEM-30
CTI (Comparative Tracking Index) Test		
Test Method IEC 112 / DIN 53480 Kc	V	> 200
Test Method DIN 53480 Kb / VDE 0110	V	200

Typical properties for 1.6 mm 35 micron Copperclad Laminate

#### CEM-30 complies with the following specifications

- BS EN 60249-2 10:1994
- IEC 249-2-10: 1987
- NEMA LI - 1998 CEM- 3

#### SYSTEM & PRODUCT APPROVALS

Approved by NSAI to I.S. EN ISO 9001:2000 Reg. No. 19.0675.  
 Product recognised by Underwriters Laboratories Inc., laminate file reference E53727 (M)