

# ORIGINAL BUNGARD

## PRESENSITIZED BOARD

The name **ORIGINAL BUNGARD** stands for highest quality and processing safety of pre-sensitized laminates. Like no other comparable product, this material allows a fast, flexible and faultless production of PCBs in small series and prototypes.

We use first-choice laminates approved and certified by UL, NEMA, DIN, IEC and others.

Several types of laminates, i.e. FR2, FR3, CEM1, FR4 and PTFE are available in thicknesses of 0.5, 0.8, 1.0, 1.6, 2.0 and 2.5 mm with either 18, 35 or 70 microns copper. The max. panel size is 510 x 1150 mm. Our cutting service provides sheets down to 50 x 50 mm min. size, with an accuracy of 0.1 mm.

## PHOTORESIST

We coat the laminates with a special positive working liquid resist made according to our own recipe. The resist features highest exposure sensitivity, short processing turns and large processing latitude. The equal and dust-free coating has a defined thickness of 5 µm. The maximum spectral response is in the range of 350 - 400 nm. The line resolution is limited only by the type of exposure unit. Typical exposure times are 90 seconds on a set with fluorescent neon tubes. The resist allows multiple exposure.

Referring to our special developer, at 20 °C the developing time is less than 45 seconds.

On the other hand, the resist is absolutely stable for more than 5 minutes in the developer. It is resistant to acid etching or galvanic chemicals and even permits alkaline etching at a pH-level less than 9.5.

The boards are protected against mechanical damage and unwanted exposure by a special, blue coloured adhesive foil. Due to this protective foil, no flitters appear when cutting or milling the boards.

Each board is subjected to chemical and physical controls and tests before and after coating.

A shelf live of more than 1 year under normal storage conditions is guaranteed. Even 10 year old boards still work.

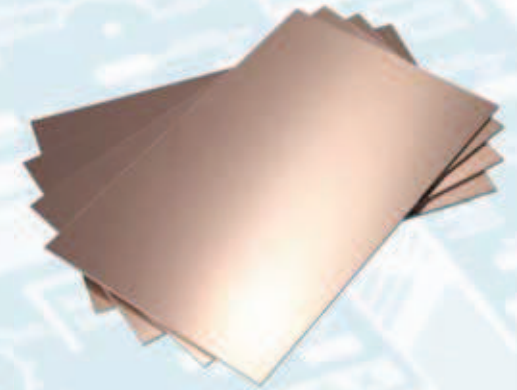
## PRE-SENSITIZING SERVICE

We can coat boards that you supply with photoresist. The max. board size is 530 x 1160 mm, the min. board thickness is 0.3 mm. Our pre-sensitizing service includes cleaning, double sided coating in dip technology, pre-aging, optical control and protection foil. Attention: dip rim 10mm on top and drip rim of 10 mm at the bottom will reduce usable size by 20 mm on the short side (530 mm will go down to 510 mm). The rim is on request removed without charge.

## STANDARD CUTTINGS FR4

### Format (mm)

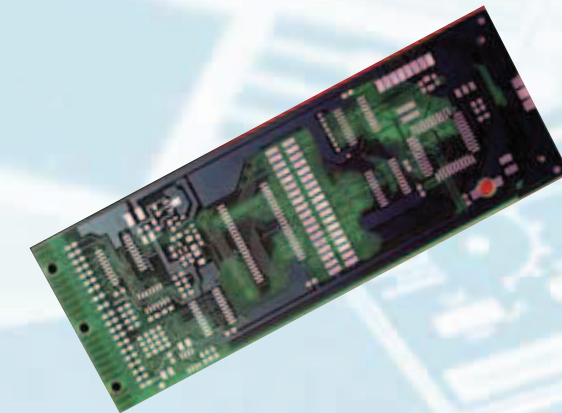
1.5 mm 35 µm Cu	1.5 mm 70 µm Cu
210 x 300	210 x 300
200 x 250	200 x 250
150 x 250	150 x 250
160 x 233.4	160 x 233.4
150 x 200	150 x 200
125 x 175	125 x 175
100 x 160	100 x 160
75 x 100	75 x 100



## PANELS FR4

### Format (mm)

0.5 - 1.5 mm 18 µm Cu	0.5 - 2.5 mm 35 µm Cu	0.5 - 2.5 mm 70 µm Cu	1.5 mm 105 µm Cu	1.5 mm FR4 blue/black 35 µm
510 x 1150 x 0.5	510 x 1150 x 0.5	510 x 1150 x 0.5	510 x 1150 x 1.5	510 x 1150 x 1.5
510 x 570 x 0.5	510 x 570 x 0.5	510 x 570 x 0.5		
510 x 1150 x 0.8	510 x 1150 x 0.8	510 x 1150 x 0.8		
510 x 570 x 0.8	510 x 570 x 0.8	510 x 570 x 0.8		
510 x 1150 x 1.0	510 x 1150 x 1.0	510 x 1150 x 1.0		
510 x 570 x 1.0	510 x 570 x 1.0	510 x 570 x 1.0		
510 x 1150 x 1.5	510 x 1150 x 1.5	510 x 1150 x 1.5		
510 x 570 x 1.5	510 x 570 x 1.5	510 x 570 x 1.5		
	510 x 1150 x 2.0	510 x 1150 x 2.0		
	510 x 570 x 2.0	510 x 570 x 2.0		
	510 x 1150 x 2.5	510 x 1150 x 2.5		
	510 x 570 x 2.5	510 x 570 x 2.5		



## PANELS FR2

Format 480 x 1000 x 1.5 mm  
35 µm Cu single or double sided

## PANELS FR3

Format 510 x 1150 x 1.5 mm  
35 µm Cu double sided

## PANELS CEM1

Format 510 x 1150 x 1.5 mm  
35 µm single sided

## CUTTING SERVICE

We cut down all boards to non-standard sizes on request. The maximum board size is 510 x 1150 mm, the minimum size is 50 x 50 mm. Remains will be included. Boards >= 2 mm will be cut by saw. Saw cutting loss will be 3 mm per piece.

