



**HIGH PERFORMANCE PRESS TOOLING & CONSUMABLES
FOR PCB MANUFACTURING**

WELCOME TO CARDEL LTD

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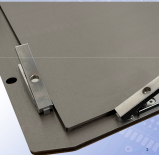
■ ■ ABOUT THE CARDEL GROUP

The Cardel Group is a leading manufacturer of high-quality products for PCB manufacturing and distribution. We're a global player with international manufacturing facilities. We offer a comprehensive range of solutions for PCB lamination, ensuring quality and precision in every layer.



CARRIER / TOP & BOTTOM PLATES

Cardell's carrier / top & bottom plates are manufactured to precise tolerances, with parallelism and flatness requirements assured. As standard, they come in a thickness of 9.5mm. Other thicknesses are available on request.



CARRIER / TOP & BOTTOM PLATES

TECHNICAL INFORMATION

Material	Hardened & tempered stainless steel EN1.4301 / AISI 304
Thickness	40 – 48 mm
Heat conductivity	30W/mK
Thermal expansion (CTE)	16.5/10 ⁻⁶ 1/K (20°C – 200°C)
Tolerances	+0.0mm / - 0.2 (mm) (Other tolerances available on request)
Surface finish	+/- 0.5mm
Squareness	+/- 0.05mm per m
Recutability	< 0.05mm
Flatness	< 1.2mm/m

SURFACE FINISH OPTIONS

Surface Finish	Ra (µm)
Standard	1.2 – 2.0

Surface finish available on request

Options and notes

- Plates include lengtheners & supplied with assembly flange

PCB SEPARATOR PLATES

Cantel PCB-4 plates are high-quality separator plates used in the manufacture of PCB's. The plates can be produced in various sizes and thicknesses, according to customer requirements. As standard, they have a hardness of 48-52 HRC and a surface finish of 0.12 Ra (ITN8). Other finishes are available on request.



SEPARATOR PLATES

Cosel PCB-F plates are high quality separator plates used in the manufacture of PCB's. The plates can be produced in various sizes and thicknesses, according to customer requirements. As standard they have dimensions of 60-60 HRC and a surface finish of 0.12 (Ra 0.76µm), although other finishes are available on request. Sets, single pieces and plate-folds can be ordered as options.

All plates are supplied with chamfered edges and rounded corners to minimise any risk of operator handling injuries.

Available plates can be supplied with a specialist coating to increase their longevity. Coating for a 300-hour anti-corrosion coating increases the hardness and strength of the plate surface substantially, reducing the possibility of scratched forming. During finish-drawing or handling and significantly extending the life of the plate.

Cosel offers a comprehensive anodic treatment service for all plates we produce, thereby extending the lifetime of the plates and reducing their environmental impact.

STANDARD PCB SEPARATOR PLATES TECHNICAL INFORMATION

Material	1.4571 or 6.9902 stainless steel
Hardness	48-52 HRC
Heat conductivity	30W/m.K
Thermal expansion (CTE)	11 to 16 x 10 ⁻⁶ (20°C - 200°C)
Thickness	3mm, 3.2-5, 5.5mm (+/- 0.1mm)
Size (thickness)	4/- 0.5mm
Squareness	+/- 0.05mm per m
Flatness	+0.05mm
Flatness	+0.2mm/m

SURFACE FINISH OPTIONS

Surface Finish	Ra (µm)	Rz (µm)
CFB1	0.06	0.4
CFB2	0.14	1.0
CFB3(P)	0.32	1.5

© Manufacturer. Alternative finishes available on request

Options available

- 300-hour anti-corrosion 3 (300-hour anti-corrosion)
- Anodic treatment (anodic treatment on request)

PCB SEPARATOR PLATES WITH FIM-LAM

Candor Fim-Lam separator plates are used with the <https://www.candor.com> for multi-layer printed circuit board (PCB) fabrication. These high-purity plates promote alignment and uniform pressure during lamination, ensuring that multiple PCB layers are properly bonded without delamination or defects.

Both Candor standard and D-Axis® anti-static coated plates can be supplied with registration holes precisely cut for Fim-Lam applications.



PCB SEPARATOR PLATES WITH DIAPHRAGM COATING TECHNICAL INFORMATION

Please use mark with horizontal staining steel and coated with Diaphragm anti-static coating. All plates are supplied with deburred edges and rounded corners to minimize the risk of operator handling injury.

Care handling	40-50 MRC
Surface hardness	14-155 (Agnes MRC 87)
Coating thickness	Agnes 20 microns side

SURFACE FINISH OPTIONS

Surface Finish	Ra (in)	Rz (in)
CPSA	0.25	0.40
CPSB	0.16	0.30
CPSA (F)	0.12	0.20

C-Standard/High Abrasivity finish available upon request

Optional features

- Matte finish (available on 8" diameter and smaller)

Please note the following maximum sizes for D-Axis Coated plates:

Maximum size: 800 × 800 × 0.062 × 0.0005

LAMINATION PRESS PADS

Cardiel's PCB-Lam press pads were created to meet the stringent demands of the OOL & PCB industries. PCB-Lam pads are a top performing alternative to kraft paper and are designed to survive prolonged cycling. They enable pressure equalisation across the surface, whilst ensuring stable control of temperature.

LAMINATION PRESS PADS

Costa PCB-109 pads exhibit excellent dimensional stability, offering uniform pressure distribution and reliable heat transfer throughout the pad's lifetime. Pads are also suitable for automated handling.



TECHNICAL INFORMATION

Construction	Phenolic with glass fiber reinforcement
Nominal thickness	3/16" (other thicknesses available on request)
Surf. tolerance	$\pm .005$
Squareness	$\pm .5$ (max per in.)
Operating temperature	Up to 250°C
Panel flexibility	100–1000 iterations cycled



For more information on our product range, or to request a quotation, contact our sales team sales@cardel.co.uk