HIGH PERFORMANCE PRESS TOOLING & CONSUMABLES
FOR PCB MANUFACTURING

WELCOME TO CARDEL LTD

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

Cardel's carrier / top & bottom plates are manufactured to precise tolerances, with parallelism and flatness requirements assured. As standard, they come in a thickness of 9.3mm. Other thicknesses are available on request.

CARRIER / TOP & BOTTOM PLATES

TECHNICAL INFORMATION

Material	Hardened & tempered stainless steel (DIN 1.4021 / AISI 420)
Hardness	40 - 44 HRC
Heat conductivity	30 W/m-K
Thermal expansion (CTE)	11x10-6 1/K (20C-200C)
Thickness	9.3mm (+/- 0.1mm). Other thicknesses available on request.
Size tolerance	+/- 0.5mm
Squareness	+/- 1mm per m
Parallelism	≤ 0.05mm
Flatness	≤ 1.2mm/m

SURFACE FINISH OPTIONS

Surface Finish	Ra (um)
Standard	1.2 - 2.5

Custom finishes available on request

Optional extras:
- **Holes / slots / angled corners & supplied with accessories fitted**

PCB SEPARATOR PLATES

Cardel 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 (CFN6). Other finishes are available on request.

SEPARATOR PLATES

Cardel 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 (CFN6), although other finishes are available on request. Slots, angled corners and pins/holes can be ordered as options.

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

In addition, plates can be supplied with a specialist coating to increase their longevity. Opting for a DIAplus anti-scratch coating increases the hardness and durability of the plate surface substantially, reducing the possibility of scratches forming during brush cleaning or handling and significantly extending the life of the plate.

Cardel offers a re-surfacing and/or re-coating service for all plates we produce, thereby extending the lifetime of the plates and reducing their overall environmental impact.

STANDARD PCB SEPARATOR PLATES TECHNICAL INFORMATION

Material	Hardened & tempered stainless steel (DIN 1.4021 / AISI 420)
Hardness	48-52 HRC
Heat conductivity	30 W/m-K
Thermal expansion (CTE)	11x10-61/K (20C-200C)
Thickness	1mm, 1.2 & 1.6mm (+/- 0.1mm).
Size tolerance	+/- 0.5mm
Squareness	+/- 1mm per m
Parallelism	≤ 0.05mm
Flatness	≤ 3mm/m

SURFACE FINISH OPTIONS

Surface Finish	Ra (um)	Rz (um)
CFN4	0.25	2.4
CFN5 (*)	0.14	1.5
CFN6	0.12	1.2

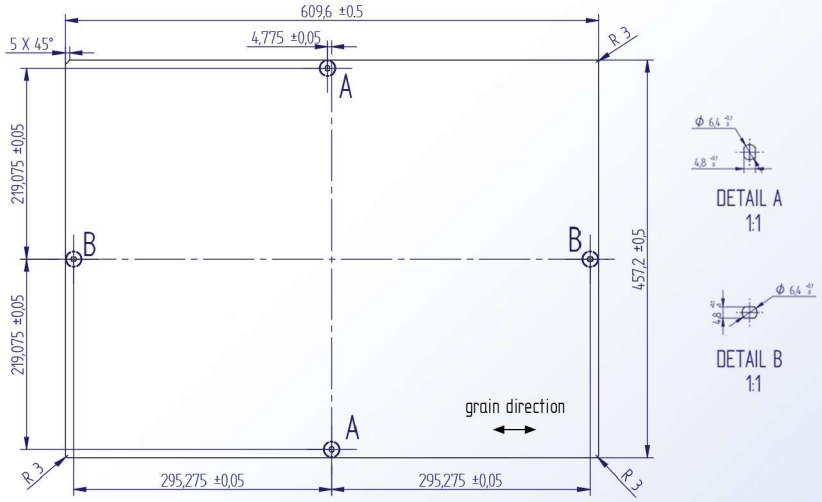
(*) Standard finish. Alternative finishes available on request

Optional extras:
- **Holes / slots / angled corners & DIAplus anti-scratch coating**
- **Personalised laser engraving available on request**

PCB SEPARATOR PLATES WITH PIN-LAM

Cardel's PinLam separator plates are used in the pin-lamination process for multi-layer printed circuit board (PCB) fabrication. These help maintain accurate alignment and uniform pressure during lamination, ensuring that multiple PCB layers are properly bonded without shifting or defects.

Both Cardel's standard and DIAplus anti-scratch coated plates can be supplied with registration holes precisely cut for PinLam applications.



PCB SEPARATOR PLATES WITH DIAPLUS COATING TECHNICAL INFORMATION

Plates are made with hardened stainless steel and coated with DIAplus anti-scratch coating. All plates are supplied with deburred edges and rounded corners to minimise any risk of operator handling injuries.

Core hardness	48-52 HRC
Surface hardness	HV 900 (Approx HRC 67)
Coating thickness	Approx. 25 um per side

SURFACE FINISH OPTIONS

Surface Finish	Ra (um)	Rz (um)
CFN4	0.25	2.40
CFN5	0.14	1.50
CFN6 (*)	0.12	1.20

(*) Standard finish. Alternative finishes avilable on request

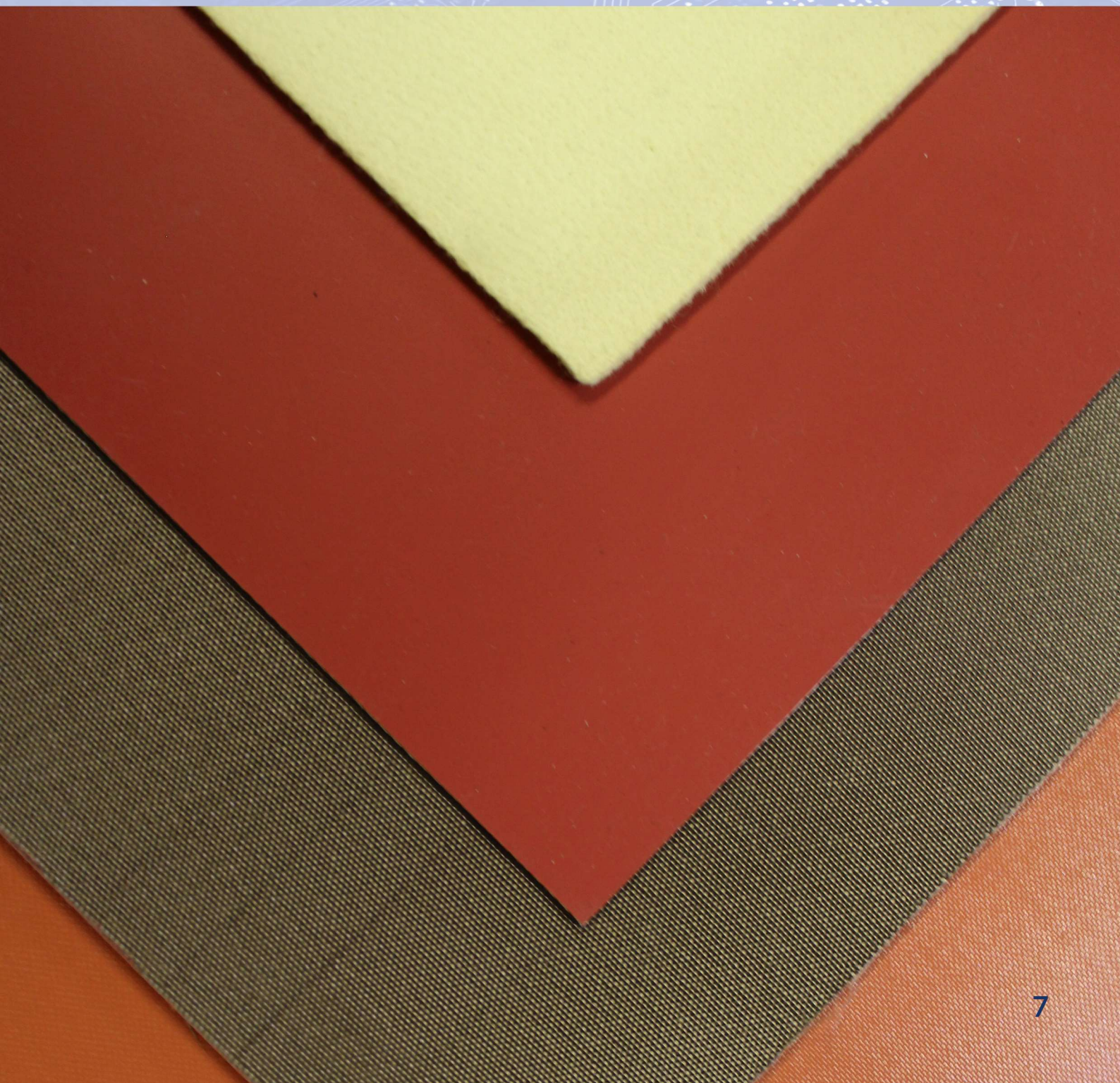
Optional extras:
- **Holes / slots / angled corners & DIAplus anti-scratch coating**

Please note the following maximum sizes for DIAplus coated plates:

Maximum size: 800 - 850 x 650 - 700mm

LAMINATION PRESS PADS

Cardel's PCB-Lam press pads were created to meet the stringent demands of the CCL & 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

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

TECHNICAL INFORMATION

Construction	Fluororesin with glass fibre reinforcement
Nominal thickness	3.5mm (other thicknesses available on request)
Size tolerance	+/- 1mm
Squareness	+/- 2mm per m
Operating temperature	Up to 260C
Typical durability	600 - 800 lamination cycles

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