

Durostone®

Fibre reinforced plastics

PCB solder pallet materials

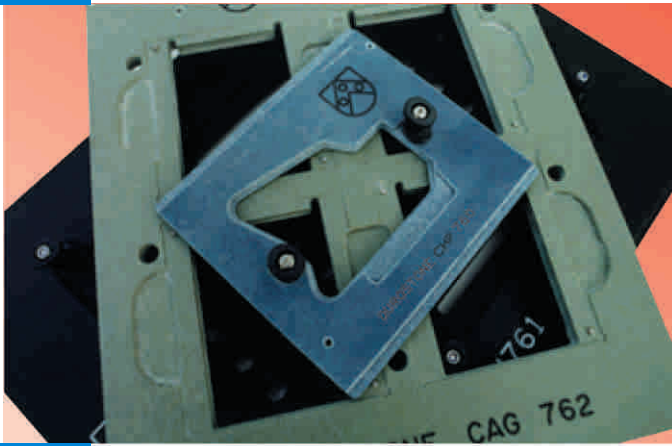


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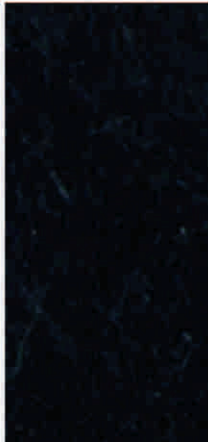


Durostone® materials are glass fibre composites specifically designed to meet the various challenges of the PCB assembly process.

Three grades are available to suit all needs, CHP760 the standard grade for general use, CAS761 an anti-static grade and CAG762 an anti-static grade with light reflection properties, suitable for infra red and optical sensors.



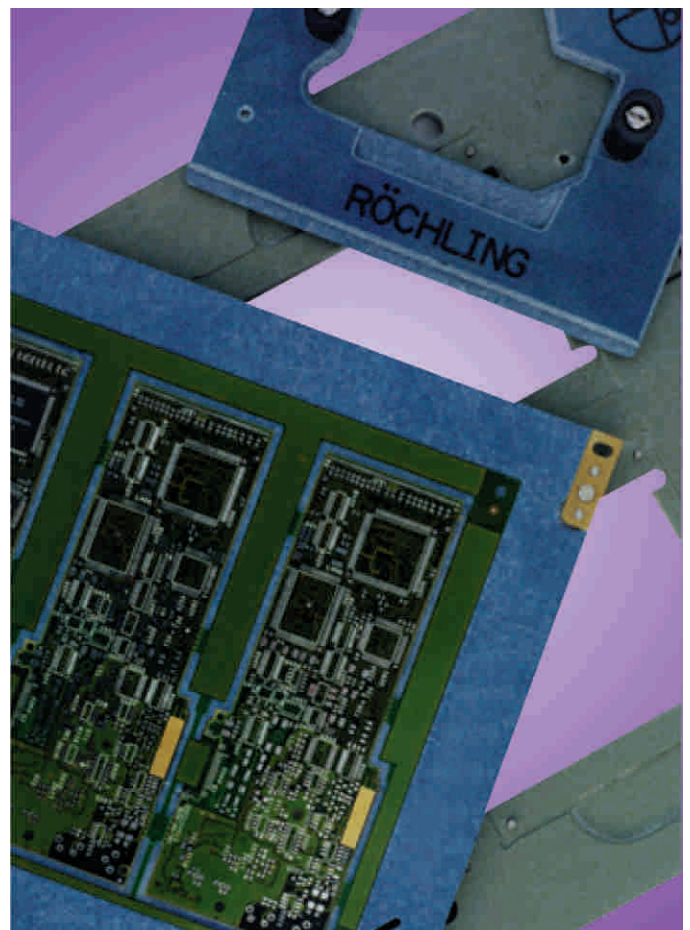
CHP760



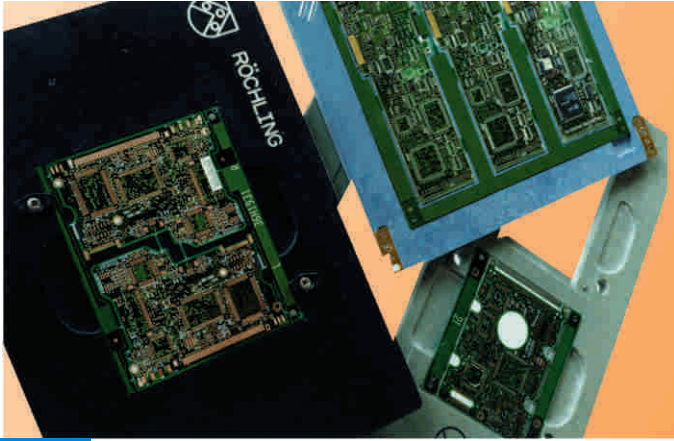
CAS761



CAG762



SMT Assembly



Durostone® has proven successful in all aspects of the SMT assembly process. It can be machined to the tolerances required for accurate SMT placement and retains its flatness through continued cycling in reflow ovens.

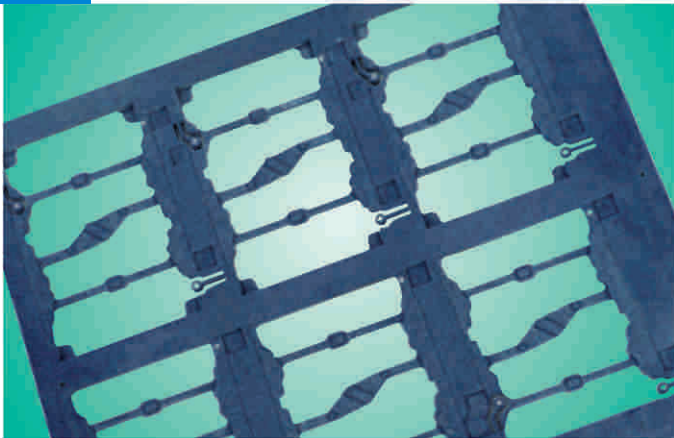
The low thermal conductivity of the materials prevents heat sinking from the PCB, ensuring adequate reflow of the solder paste.

Durostone® materials can be used for the following applications in the SMT assembly process.

- Solder Paste Printing
- SMT Placement
- Reflow

SMT pallets manufactured in Durostone® can,

- Support thin PCB's or flexible circuits.
- Allow processing of odd shaped PCB's
- Increase line throughput by carrying multiple PCB's
- Prevent bowing of the PCB during reflow.



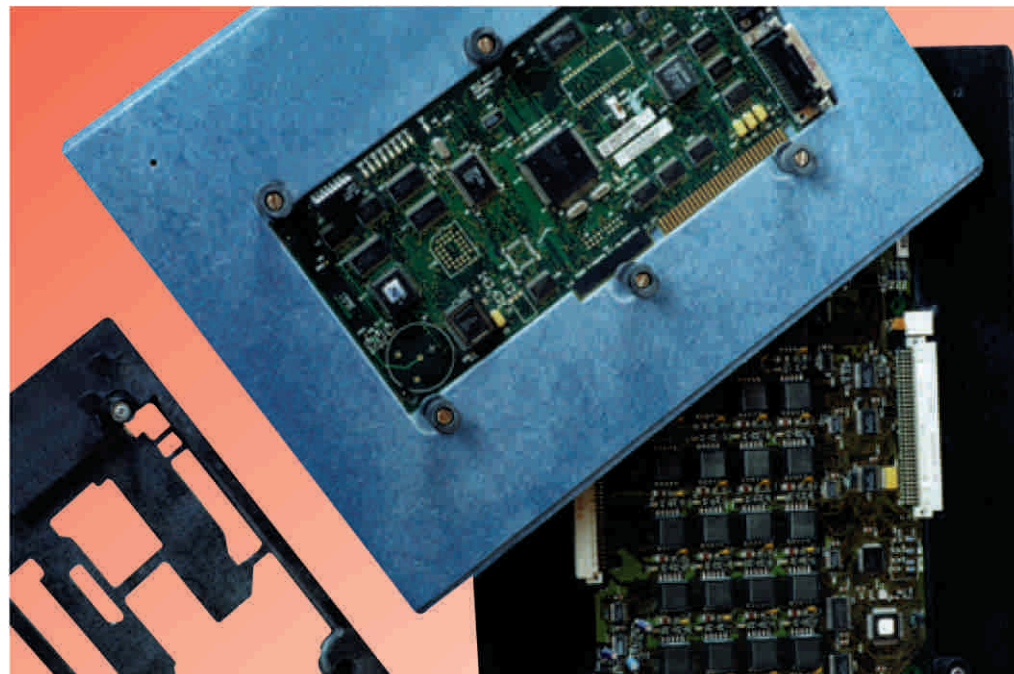
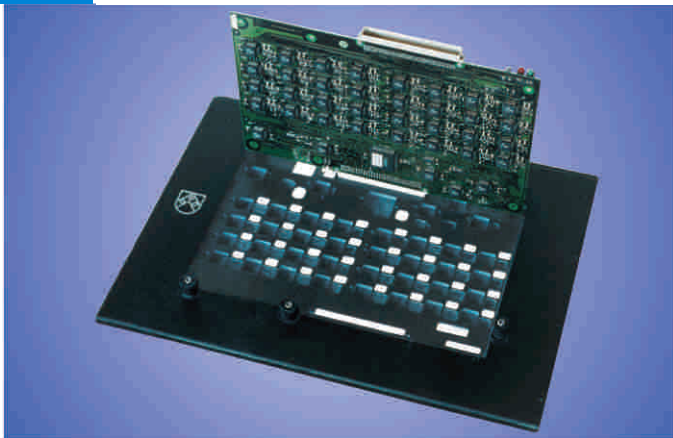
Wave Soldering



The ability to retain its mechanical properties at elevated temperatures has enabled Durostone® to perform to the highest standards in the wave soldering process without distortion. With a short term operating temperature of 350°C and a standard operating temperature of 260°C, Durostone® can withstand the rigors of the soldering process without de-lamination.

Durostone® materials can improve the efficiency of the wave soldering process by,

- Eliminating the need for hand masking, such as gold finger contacts.
- Masking bottom side SMT components enabling selective soldering using standard wave soldering equipment.
- Preventing bowing of the PCB.
- Standardising production line widths.
- Increasing throughput using multi-aperture fixtures
- Preventing flooding of the solder over the top of the PCB.



TECHNICAL DATA	DUROSTONE® CHP760	DUROSTONE® CAS761	DUROSTONE® CAG762
Grade	Standard	Anti-Static	Anti-Static (Optical)
Colour	Blue	Black	Grey
Density (g/cm³)	1.85	1.85	1.85
Flexural Strength (MPa) - perpendicular 3 point support	360	360	360
Water Absorption (%)	< 0.20	< 0.20	< 0.20
Coefficient of Linear Expansion (10 ⁻⁶ /K) between 30°C & 200°C	13	11	11
Thermal Conductivity (W/m ² K)	0.25	0.25	0.25
Maximum Operating Temperature (°C), 10 - 20 seconds	350	350	350
Standard Operating Temperature (°C)	260	260	260
Surface Resistivity (ohms)	---	10 ⁵ - 10 ⁸	10 ⁵ - 10 ⁸
Modulus of Elasticity (Mpa)	18,000	18,000	18,000
Specific Heat Capacity (J/kg K)	930	930	930
Sheet Size (mm)	2440 x 1220	2440 x 1220	2440 x 1220
Thicknesses available	3mm, 4mm, 5mm,	6mm, 8mm,	10mm, 12mm
Thickness Tolerance		± 0.10mm	
Flatness Tolerance - for a typical panel size of 300mm x 300mm		± 0.10mm	
Parallelism		± 0.10mm	

The above mentioned values are average values based on random tests.

- Durostone® materials have excellent mechanical properties at elevated temperatures.
- All materials are dimensionally stable and retain their flatness through repeated cycling in the PCB assembly process.
- The low thermal conductivity of Durostone® ensures optimal thermal distribution across the PCB.

- The resin system used in Durostone® provides resistance to the chemicals used in modern fluxes and also prevents solder pick-up.
- PCB assembly tooling can be manufactured to fine tolerances with Durostone® materials.

- The materials are easier to handle in the production process than most others used for PCB tooling due to the low density of the material.

Internet web site :
<http://www.permali.com/pallets>

Engineering plastics and ideas for the future

Range of products:

Semi-finished products
(sheets, panels, rods, profiles)
as well as machined parts made from

- Fibre reinforced plastics
- Laminated compressed wood
- Thermoplastics



Companies in the Röchling Haren group:

EUROPE

Röchling Haren KG, Haren/Germany
Röchling Materials Ltd., Gloucester/Great Britain
Röchling Engineering Sarl, Maxéville/Lyon France
Permal Composites S.A., Maxéville/France
Röchling Technische Kunststoffe KG, Lützen/Germany
Leripa Kunststoff GmbH & Co. KG, Rohrbach/Austria
Blumer Srl, Arcisate/Italy

USA

Röchling Engineered Plastics/USA West/East
Röchling Machined Plastics, Greensburg/USA

FAR EAST

Röchling Engineering Plastics, Singapore



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