

Durostone®

PCB Solder Pallet Materials

High performance composite materials specifically designed for the PCB assembly process

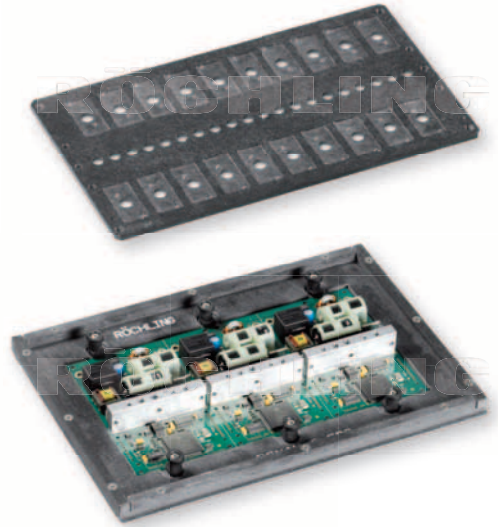


Electronics

PCB Solder Pallet Materials

Durostone® materials have been developed for all procedures within the PCB assembly process. There are three main grades which are suitable for use in the SMT reflow and wave soldering processes, **Durostone® CHP760, CAS761 and CAG762**. These materials offer the following features:

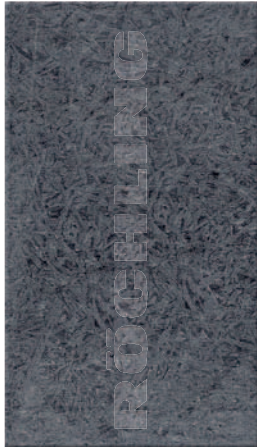
- Excellent mechanical properties at elevated temperatures including the lead-free process.
- Low thermal conductivity.
- Excellent machining properties enabling the manufacture of complex design solder pallets.
- Good resistance to chemicals used in modern fluxes.



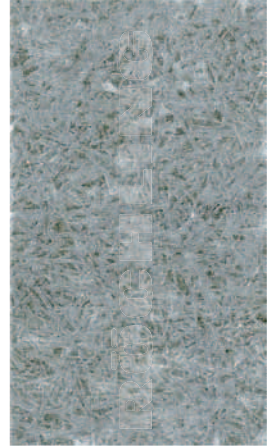
CHP760



CAS761



CAG762



Harsh environments

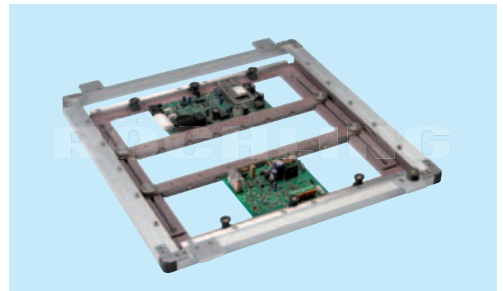
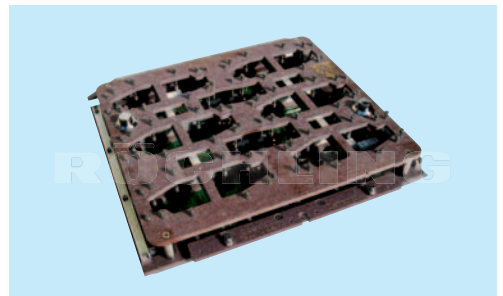
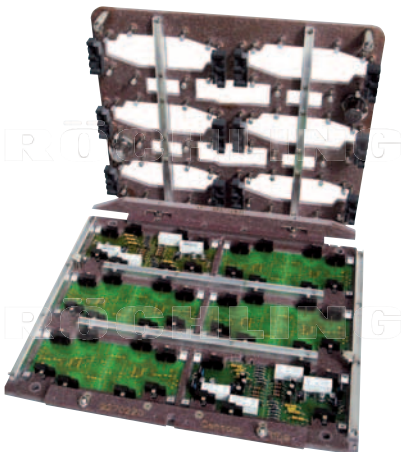
A combination of flux, temperature and process cycles can result in the degradation of the standard Durostone® grades of material.

The solution is **Durostone® CFR767** which has been specifically formulated for use with aggressive fluxes and high process temperatures.

The resin used to produce Durostone® CFR767 can withstand temperatures up to 300 °C. The decision to use Durostone® CFR767 over one of the standard grades is made when the solder bath temperature exceeds 265 °C and the bottom side PCB pre-heat exceeds 140 °C.

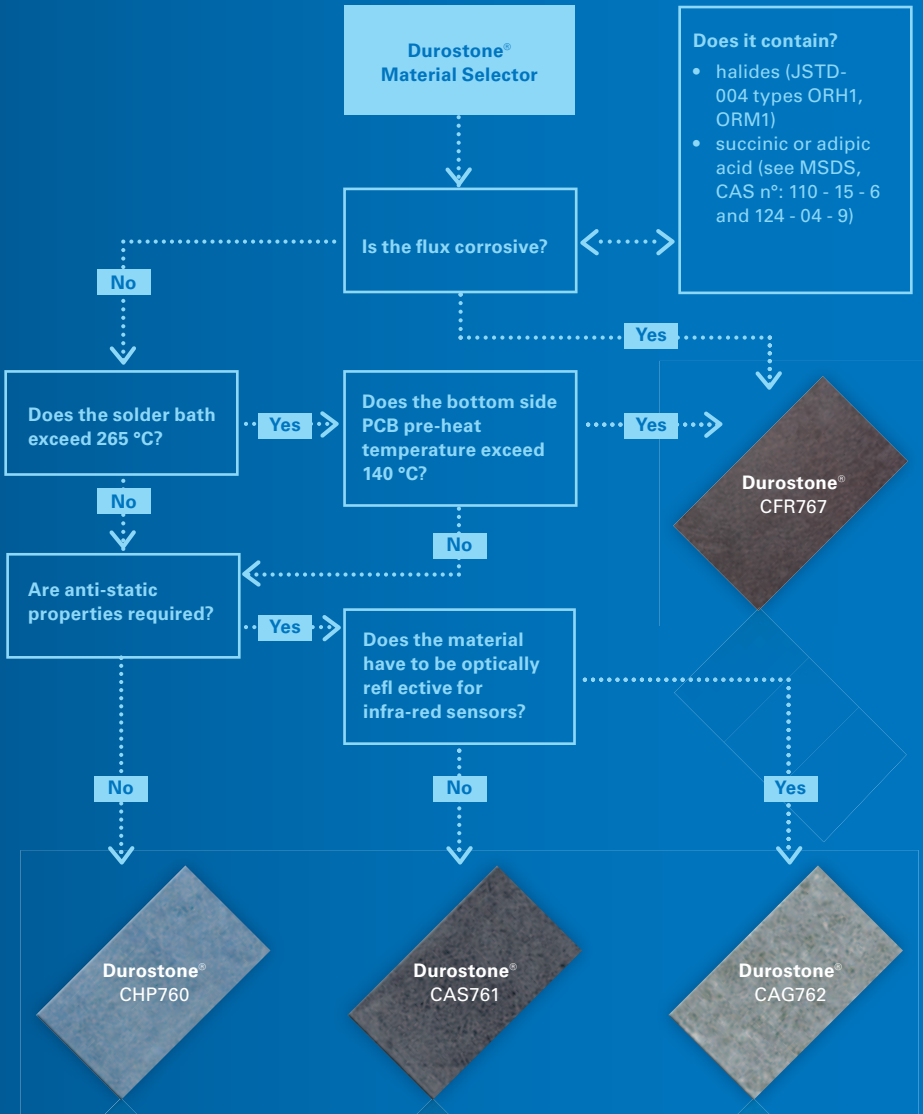
Durostone® CFR767 has excellent flux resistance. When fluxes containing halides or dicarboxylic acids are used in high volume production the lifespan of the standard grades of material can be reduced so Durostone® CFR767 is an ideal solution.

CFR767



Material Selector

The following flow chart enables the correct choice of material grade depending on the process parameters.



Technical Data

		CHP760	CAS761	CAG762	CFR767
Grade		Standard	Anti-Static	Anti-Static Optical	Flux Resistant
Colour		Blue	Black	Grey	Brown
Density (g/cm ³)		1.85	1.85	1.85	1.80
Flexural Strength	@ 23 °C	360	360	360	380
3 point support (MPa)	@ 150 °C	180	180	180	260
	@ 185 °C	–	–	–	150
Modulus of Elasticity (MPa)	@ 23 °C	18,000	18,000	18,000	18,000
	@ 150 °C	9,000	9,000	9,000	14,000
	@ 185 °C	–	–	–	10,000
Water Absorption (%)		< 0.20	< 0.20	< 0.20	< 0.20
Coefficient of Linear Expansion (10 ⁻⁶ /K) between 30 °C and 200 °C		13	11	11	11
Thermal Conductivity (W/m ² K)		0.25	0.25	0.25	0.23
Maximum Operating Temperature (°C) 10 - 20 seconds		300	300	300	380
Standard Operating Temperature (°C)		260	260	260	300
Surface Resistivity (ohms)		–	10 ⁵ - 10 ⁹	10 ⁵ - 10 ⁹	10 ⁵ - 10 ⁹
Chemical Resistance		Good	Good	Good	Excellent
Sheet Size (mm)		2440 x 1220			
Thickness' available (mm)		3, 4, 5, 6, 8, 10, 12			
Thickness Tolerance	3 mm	-0 / +0.10			
	4 - 12 mm	-0 / +0.20			
Flatness Tolerance (for a panel size of 300 x 300 mm)		0.20			
Parallelism (mm)		0.10			

- All the values are average values.
- Material is considered as not electrostatic dissipative (ESD) if more than 5 measurements / m² are insulative (10¹² Ω). According to JEDEC standard JESD625B, a static dissipative material is a material having a surface resistance between 10⁴ and 10¹¹ Ω.
- Cosmetic defects are not considered as non-conformities. Due to the nature of glass fiber composite, the colour repartition is not guaranteed.



RÖCHLING

Europe

Germany

Röchling Lützen SE & Co. KG

Planckstr. 3
06686 Lützen
Tel. +49 34 444 308-200
Fax +49 34 444 308-100
kontakt@roechling-luetzen.de
www.roechling-luetzen.de

France

Röchling Permali Composites S.A.S.

8, Rue André Fruchard
B.P.12, Maxéville
54527 LAXOU Cedex
Tel. +33 383 34 24 24
Fax +33 383 32 23 18
info@roechling-permali.fr
www.permali.com

Great Britain

Röchling Engineering Plastics (UK) Ltd.

Waterwells Drive | Quedgeley
Gloucester GL2 2AA
Tel. +44 1452 72-7900
Fax +44 1452 72-8056
sales@roechling-plastics.co.uk
www.roechling-plastics.co.uk

Italy

Röchling Machined Plastics

Italia s.r.l.

Via Morena 66 | 28024 Gozzano
Tel. +39 0322 95421
Fax +39 039 93335
compositi@roechling.it
www.roechling.it

Spain

Röchling Plásticos Técnicos S.A.U.

Ctra. Villena, s/n. - Apartado 34
46880 Bocairant
Tel. +34 962 350 165
Fax +34 962 351 025
comercial@roechling-plastics.es
www.roechling-plastics.es

North America

USA

Röchling Machined Plastics

161 Westec Drive
15666 Mount Pleasant PA
Tel. +1 724 696-5200
Fax +1 724 696-5300
rmp@roechling.biz
www.roechling-machined.us

Asia

China

Röchling International (Shanghai) Co., Ltd.

No. 448 Chang Yang Street
Suzhou Industrial Park
215024 Suzhou | P.R. China
Tel. +86 512 6265 2899
Fax +86 512 6265 2699
ris@roechling-plastics.com.cn
www.roechling-plastics.cn

India

Röchling Engineering Plastics (India) Pvt. Ltd.

701, A Wing, Leo Building
24th Road, Khar West | 400 052 Mumbai
Tel. +91 22 4217-8787
Fax +91 22 4217-8700
durostone@roechling-india.com

Singapore

Röchling Engineering Plastics Pte. Ltd.

No. 14 Tuas Avenue 8
Singapore 639229
Tel. +65 6 863 18 77
Fax +65 6 863 17 66
rep@roechling.com.sg
www.roechling-asia.com



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www.roechling.com