

TECHNICAL NEWS

For flex-rigid PCBs & Multi-layer flexible PCBs

Glass Epoxy Bonding Sheets (Low Flow Prepregs)

Halogen-free Epoxy type

R-1551 LW

Feb, 2009.
Panasonics Electric Works Electronic
Materials Taiwan Co.,Ltd

Material proposal for flex-rigid PCB

<Structural example>

Rigid PCB part

Build-up Multi-layer
PCB material

- ① Resin coated Copper foil/ARCC
- ② Prepreg for laser process

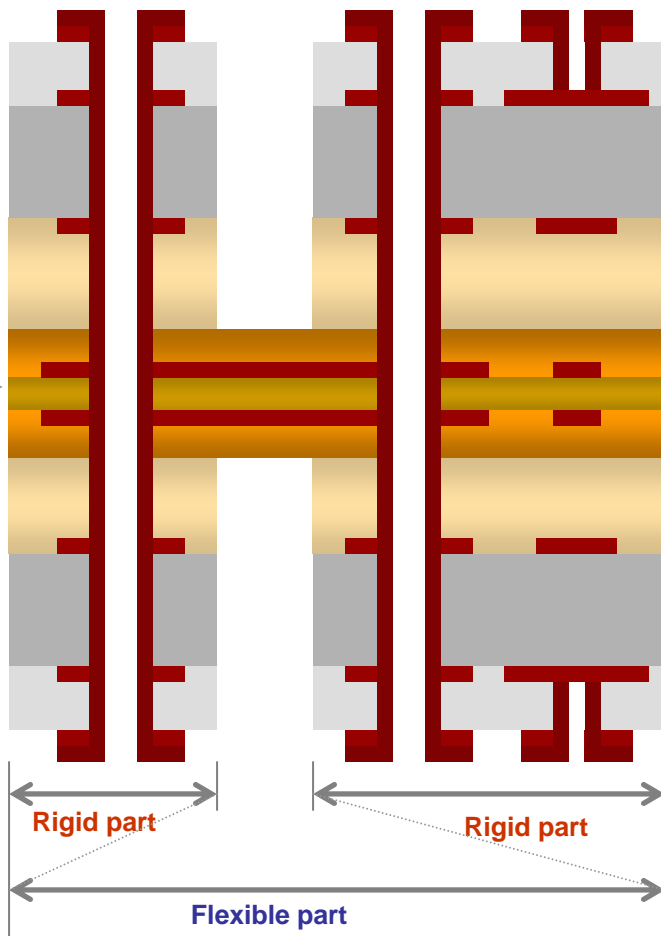
Panasonic
Proposal

Low Flow Prepregs

Halogen free
glass epoxy multi

R-1551 LW

Flexible CCL



Rigid part

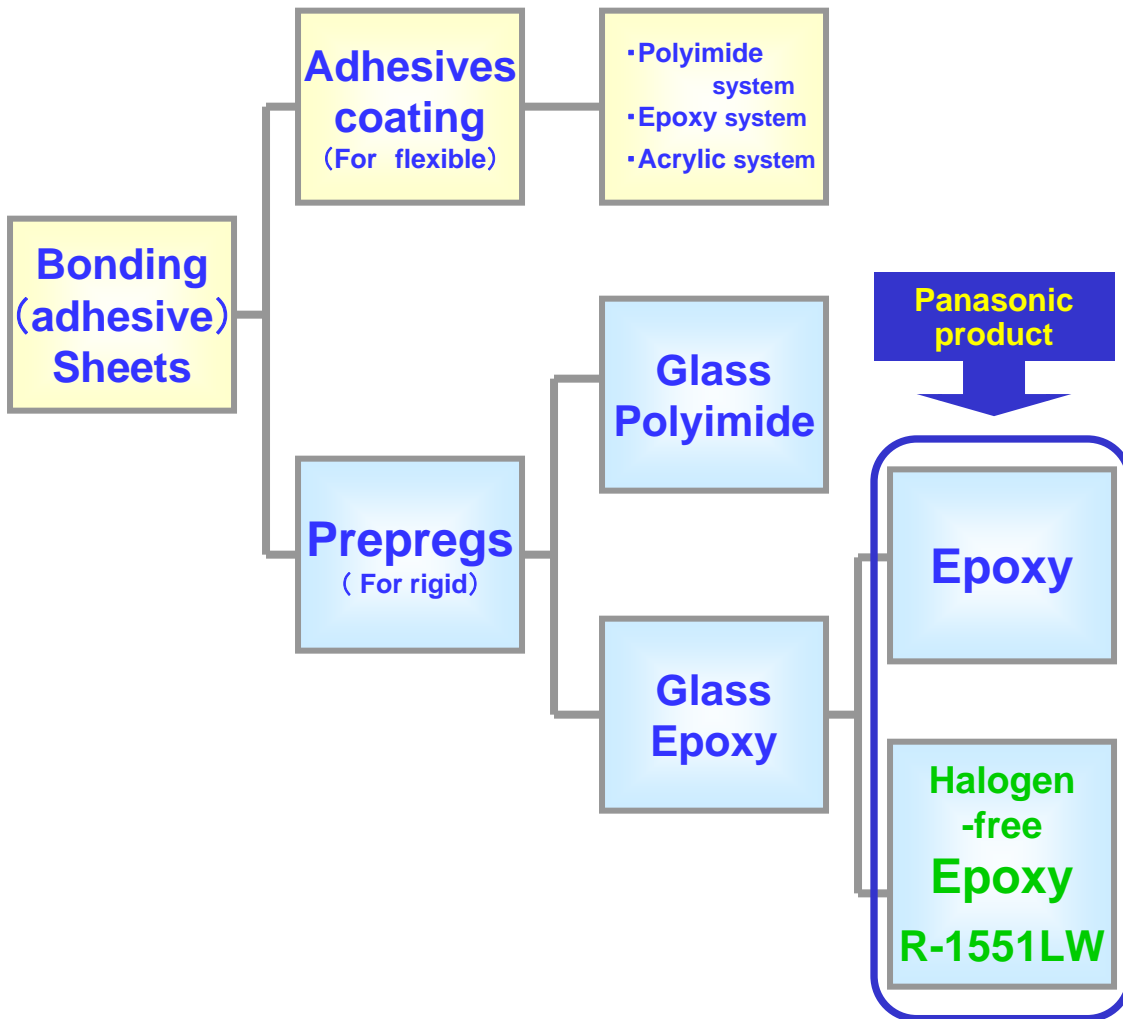
Rigid part

Flexible part

■ The main kinds of Bonding Sheets

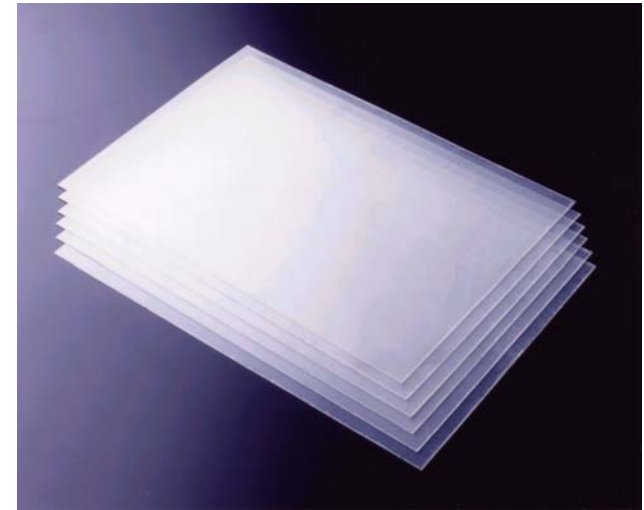
■ Comparison of main Bonding Sheets

(Image)



		Copper foil peel strength	Water absorption	Intensity (Rigidity)	Bending resistance	Thickness	Cost performance
	Adhesives coating (PI system)	×	×	×	○	○	×
	Glass Polyimide	×	×	○	×	△	×
Glass Epoxy	Epoxy	○	○	○	×	○	○
	H/F Epoxy	○	○	○	×	○	○

1. Greatly reduced possibility of resin flow
Which reduces conduction failure by minimizing the resin flow in the hinge section
2. Excellent water absorption, copper foil peel strength and cost performance
(Compared with glass-polyimide and polyimide adhesive)
3. Suitable for the reinforcement of multi-layered FPC because glass-cloth is used as the base material
4. The product line also includes environmentally friendly, halogen-free materials (R-1551 LW)
5. UL94V-0 flame resistance



■ The period of guarantee of product

Epoxy type
: After shipment 60days

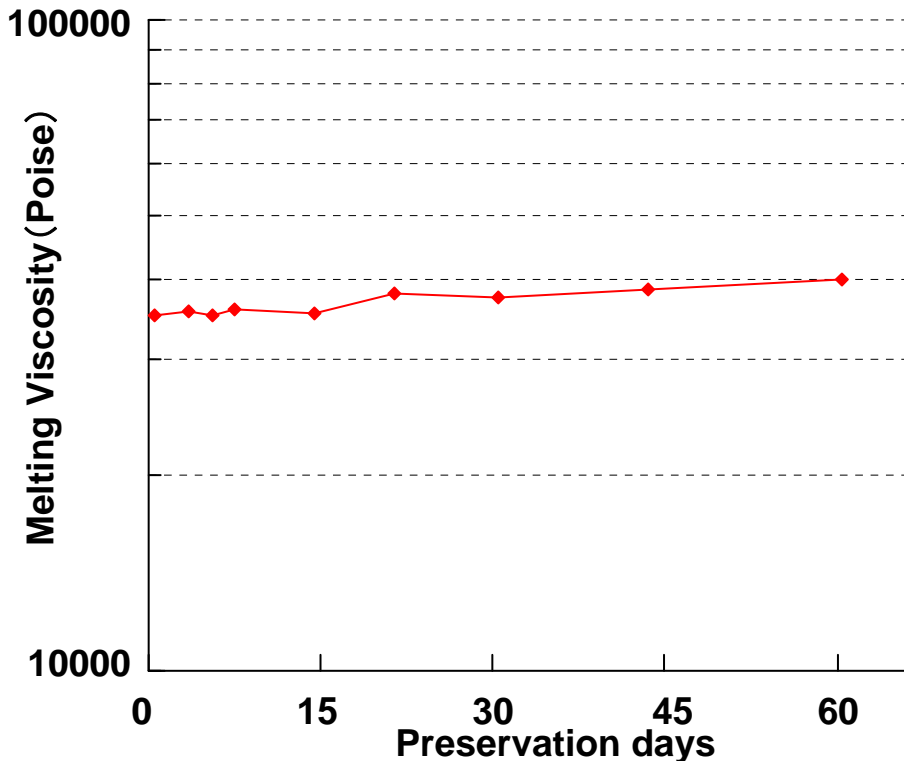
Halogen-free Epoxy type
: After shipment 45days

Preservability evaluation

(Melting viscosity progress change)

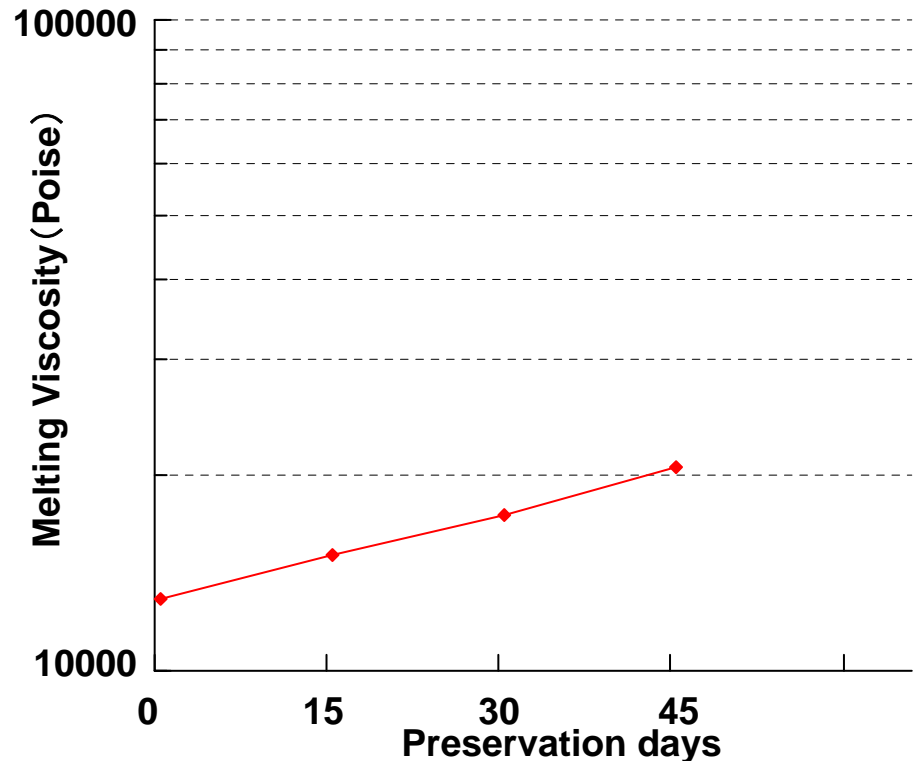
1 Epoxy type Prepregs

Storage conditions	Temperature : 20°C
	Humidity : 50% \geq



2 Halogen-free Epoxy type Prepregs

Storage conditions	Temperature : 20°C
	Humidity : 50% \geq

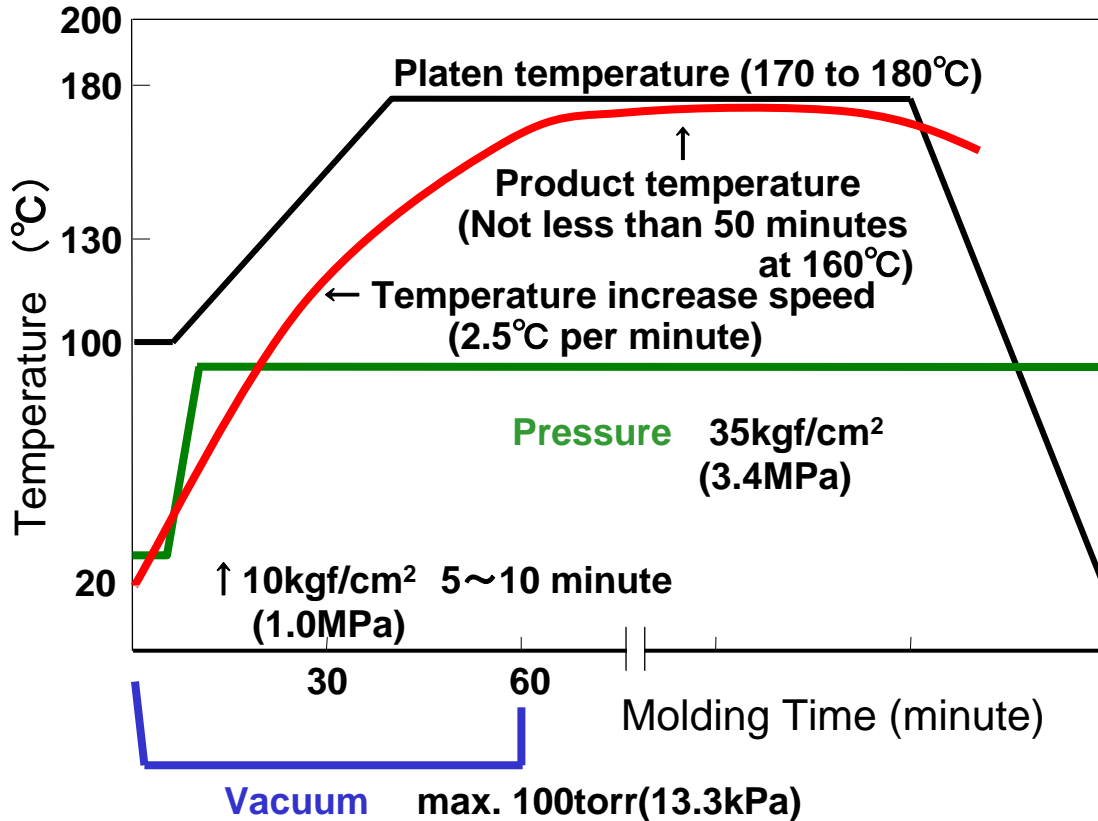


* The above data are our actual values and not assured values.

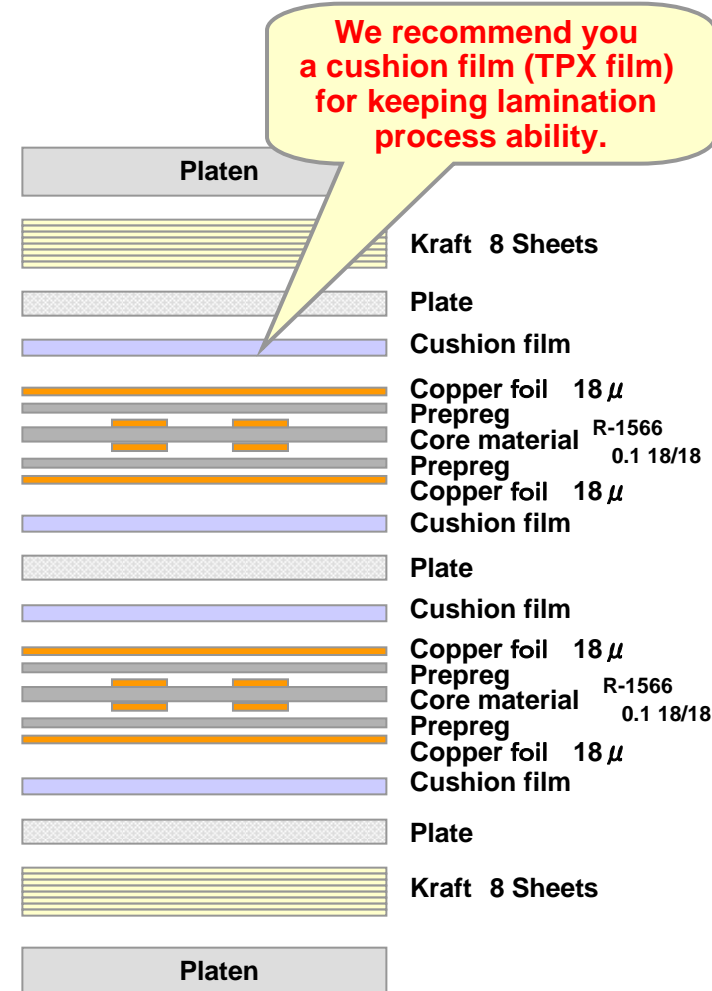
Standard lamination molding condition

(Epoxy type , Halogen-free type)

Example of molding condition



Structural in the stage



R1551LW : Halogen Free Low Flow Prepreg

Glass Style	Type	Resin Content (%)	Calculate Thickness (μm) (Copper Residue 100%)
2116	LWMF	57 ± 3	130
1080	LWSF	71 ± 3	95
	LWMF	63 ± 3	70
106	LWSF	78 ± 3	67
	LWHF	76 ± 3	60
	LWMF	73 ± 3	53
1067	LWHF	75 ± 3	73
	LWMF	73 ± 3	67
	LWLF	71 ± 3	60
	LWFF	69 ± 3	57
1037	LWMF	70 ± 3	45
	LWLF	68 ± 3	40

※ The calculate thickness is the reference value not the assured value.