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Copper Clad PI Flex Laminates and Coverlays

TAIFLEX

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TAIFLEX FLEXIBLE **BASE** MATERIALS

Taiflex is a Taiwanese company with production facilities in Taiwan and China. They are focused on the production of flexible materials based on polyimide. The products are thin and flexible laminates with single and double side copper clad. These laminates are available with a bonding layer of epoxy between copper and polyimide, but also adhesiveless for enhanced thermal properties. Supplementary there are several polyimide coverlays available, also with epoxy adhesive. Finally also pure epoxy based bond plies are available.
All products are halogen free and can be processed with lead free soldering.

Taiflex is certified for various quality and environmental management systems. Many OEMs have qualified this material for flex applications and specify it in their documents.

SYSTEM CERTIFICATION ISO 9001 SGS

SYSTEM CERTIFICATION ISO 14001 SGS

SYSTEM CERTIFICATION ISO/TS 16969 SGS

The products are listed at UL and fulfill the requirements of REACH and ROHS.

E193078

ROHS konform

PRODUCT OVERVIEW

Product description	Taiflex product designation	Copper	Dielectric	Adhesive	Remark
1s, 2s laminate	THK ...	ED, RA	Polyimide	Epoxy	with Epoxy adhesive
1s laminate 2s laminate	2LP ... 2FP ... 2UP ...	ED, RA	Polyimide	-	adhesiveless
Coverlay	FHK ... FHW ... FHB ...	-	Polyimide	Epoxy	yellow white black
Bond Ply	BB ... BT ... BH ...	-	-	Epoxy	longer shelflife high Tg, Standardlam Quicklam
Composite film	MHK ...	-	Polyimide	Epoxy	-
Stiffener	RH ...	-	Polyimide	Epoxy	-

All products are halogen free.
Further information (storage conditions, shelflife etc.) are available in our separate technical datasheets.

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Parameter	Unit	THKD050513 2S-laminate	2FPDE0505 2S-laminate	2UPDE1003 2S-laminate	2LPSE0505 1S-laminate	FHK0525 Coverlay	BT25 Bond ply	Test method TM-650 (IPC)
Build up	µm	Cu-ED: 18/18 Epoxy: 13 PI:12	Cu-ED: 18/18 ----- PI:12	Cu-ED: 12/12 ----- PI:25	Cu-ED: 18/00 ----- PI:12	----- Epoxy: 25 PI:12	----- Epoxy: 25 -----	
Peel strength	N/mm	≥ 0.8	≥ 0.7	≥ 0.7	≥ 0.7	≥ 0.7	≥ 0.1	2.4.9
Dimension stab. MD/TD	%	± 0.15	± 0.10	± 0.10	± 0.10	± 0.10 / ± 0.15	NA	2.2.4
Solder shock (300°C)	sec.	> 30	> 30	> 30	> 30	> 30	> 30	2.4.13
CTI	Plc	3	3	4	4	NA	NA	IEC-60112
Tensile strength	Mpa	> 120	> 160	> 160	> 300	> 100	> 35	2.4.19
Elongation	%	45-50	50-55	50-55	23-27	53-58	35-40	2.4.19
Modulus	Gpa	> 1.5	> 3.2	> 3.2	> 6.0	> 1.6	> 1.5	2.4.19
Dielect. const. (1 MHz)	-----	3.6-3.8	3.5-3.8	3.5-3.8	3.6-3.8	3.6-3.8	4.0-4.2	2.5.5.3
Dissip. factor (1 MHz)	-----	0.04-0.06	0.02-0.04	0.02-0.04	0.01-0.03	0.03-0.05	0.05-0.07	2.5.5.3
Volume resistivity	Ωcm	≥ 1.0E+14	≥ 1.0E+14	≥ 1.0E+14	≥ 1.0E+14	≥ 1.0E+14	NA	2.5.17
Surface resistivity	Ω	≥ 1.0E+13	≥ 1.0E+13	≥ 1.0E+13	≥ 1.0E+13	≥ 1.0E+13	NA	2.5.17
Tg (DMA)	°C	70-80 (Epoxy)	340-350 (PI)	330-340 (PI)	330-340 (PI)	65-75 (Epoxy)	100-120	DMA
CTE (TMA 25-200 °C)	ppm/°C	200-250	15-18	16-19	20-25	200-250	180-200	2.4.24
Flammability	-----	VTM0	VTM0	VTM0	VTM0	VTM0	NA	UL94
Resin flow	mm	NA	NA	NA	NA	< 0.125	≤ 0.25	2.3.17.1

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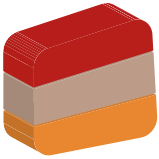
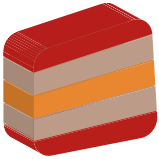
THK...

FLEXIBLE POLYIMIDE LAMINATE WITH EPOXY ADHESIVE

Single side copper (1s)



Double side copper (2s)

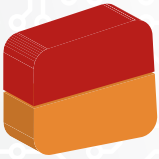


T	Product name
H	H=halogen free
K	PI-film type (K=Kapton)
S	S: single side - D: double side (copper clad)
10	PI-film thickness: 05=12 µm; 10=25 µm; 20=50 µm
05	Cu-foil thickness: 03=12 µm; 05=18 µm; 10=35 µm; 20=70 µm
20	Epoxy adhesive thickness: 13 µm; 20 µm; 50 µm
ME	Type of copper: ME/WP/MW/WD/JE means ED-copper; JY/JA/JC/JD means RA-copper
0	Definition of roll width: 0=500 mm; 1=250 mm

2LP ... / 2FP ... / 2UP ...

FLEXIBLE POLYIMIDE LAMINATE ADHESIVELESS

Single side copper (1s)



2LP: copper foil coated with polyimide resin and thermally cured

Double side copper (2s)

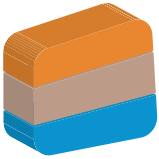
2FP/2UP: copper foil laminated with thermoplastic polyimide (TPI)

2FP	Product name: 2LP; 2FP; 2UP
S	S: single side - D: double side (copper clad)
E	Type of copper: E=ED copper; R=RA copper
10	PI-film thickness: 05=12 µm; 10=25 µm; 20=50 µm
10	Cu-foil thickness: 03=12 µm; 05=18 µm; 10=35 µm
ME	Type of copper: ME/WP/WD/MW/JE means ED-copper; JY/JA/JC/JD means RA-copper
0	Definition of roll width: 0=500 mm; 1=250 mm

FHK... / FHB... / FHW...

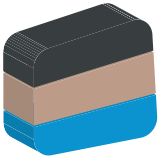
POLYIMIDE COVERLAY WITH EPOXY ADHESIVE

FHK-yellow



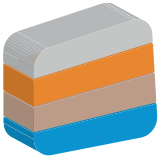
Polyimide (yellow)
Epoxy (B-stage)
Release paper

FHB-black



Polyimide (black)
Epoxy (B-stage)
Release paper

FHW-white (separate ink layer)



White ink
Polyimide (yellow)
Epoxy (B-stage)
Release paper

F	Product name
H	H=halogen free
K	PI-film type: K=yellow (Kapton); B=black (PI); W=white
05	PI-film thickness: 05=12 µm; 10=25 µm; 20=50 µm
25	Epoxy adhesive (B-stage) thickness: 15=15 µm; 25=25 µm; 35=35 µm

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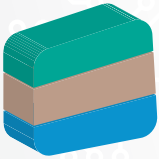
BB... / BT... / BH...

BOND PLY MADE OF EPOXY RESIN



PET film (protection)
Epoxy (B-stage)
Release paper

B	Product name
B	B=longer shelflife; T=high Tg standard press; H=Quicklam
15	Epoxy resin (B-stage) thickness: 15=15 µm; 25=25 µm; 35=35 µm

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