

Matrix Plus XF/Plus FR Coverlay and Bond-Ply

MATRIX
PLUSXF

MATRIX
PLUSFR

The **Matrix Plus XF** and **Plus FR** Coverlay and Bond-Ply composites are made from B-staged modified acrylic coatings on high quality polyimide films. These materials are designed for flex circuit applications where soldering and high temperature resistance are key.

These materials are manufactured in North America under rigid quality specification*.

Benefits

- Excellent dielectric performance with high bond strength and good dimensional stability
- 150°C thermal performance rating for service temperature for Matrix Plus FR
- Certified to IPC 4203 /1/18
- Fire Retardant — UL 94 VTM-0 (Plus FR only)
- Manufactured under ISO 9001-2008, 16949, and 14000 standards
- RoHS compliant
- Consistent and predictable adhesive flow and fill, XF offer improved adhesive flow
- Universal compatibility with polyimide dielectric films
- Industry standard lamination and processing parameters
- Supported by large local inventory stocks

Product Line

COVERLAY							
Plus	Adhesive		Polyimide		Adhesive		Plus FR
	mil	µm	mil	µm	mil	µm	
MCL Plus .550	0.7	17.5	0.5	12.5	0	0	MCL Plus FR .550
MCL Plus 110	1	25	1	25	0	0	MCL Plus FR 110
MCL Plus 210	2	50	1	25	0	0	MCL Plus FR 210
MCL Plus 120	1	25	2	50	0	0	MCL Plus FR 120
MCL Plus 130	1	25	3	75	0	0	MCL Plus FR 130
MCL Plus 250	2	50	5	125	0	0	MCL Plus FR 250

BOND-PLY							
Plus	Adhesive		Polyimide		Adhesive		Plus FR
	mil	µm	mil	µm	mil	µm	
MBP Plus 111	1	25	1	25	1	25	MBP Plus FR 111
MBP Plus 121	1	25	2	50	1	25	MBP Plus FR 121
MBP Plus 212	2	50	1	25	2	50	MBP Plus FR 212

ADHESIVE-PLY							
Plus	Adhesive		Polyimide		Adhesive		Plus FR
	mil	µm	mil	µm	mil	µm	
MAP Plus 70	0.7	17.5	0	0	0	0	
MAP Plus 100	1	25	0	0	0	0	MAP Plus FR 100
MAP Plus 200	2	50	0	0	0	0	MAP Plus FR 200

- Available in 24" x 328' (610mm x 100m) rolls. Cut panels by request.
- Other adhesive/film combinations available by request.

Composition

	Release Liner	Adhesive	Polyimide	Adhesive	Carrier
MCL Plus XF	●	●	●		
MBP Plus XF	●	●	●	●	●*
MAP Plus XF	●	●			●*
MCL Plus FR	●	●	●		
MBP Plus FR	●	●	●	●	●*
MAP Plus FR	●	●			●*

* Note: These materials have an additional carrier film. Please remove both before using/lamination.

Processing

The Matrix Coverlay, Bond-ply and Adhesive products are compatible with most industry standard lamination press cycles.

Pressure: 300-400 psi
 Temperature: 365-385 °F (185-195 °C)
 Time: 50-60 minutes at temperature
 Cool under pressure: ≤ 120 °F (48 °C)

Typical Properties

Coverlay	Units	Test Method	Plus	Plus FR
Peel Strength	lb/in (N/mm)	IPC-TM-650 2.4.9D		
		Method A	9.0 (1.57)	
		Method B	12.0 (2.10)	
		Method D	12.0 (2.10)	
		Method F	12.0 (2.10)	
Dimensional Stability	%	IPC-TM-650 2.2.4A	0.06	
Adhesive Flow	mil/mil	IPC-TM-650 2.3.17.1	5	
Volatile Content	%	IPC-TM-650 2.3.37	1	
Solder Float	288°C/10 sec.	IPC-TM-650 2.4.13	Pass	
Moisture Absorption	%	IPC-TM-650 2.6.2	4.5*	
Dielectric Strength	KV/mm	ASTM-D-149	157*	
Service Temperature	1000hr/150°C	-	-	PASS*
Chemical Resistance	%	IPC-TM-650 2.3.2	90	
Fungus Resistance	NA	IPC-TM-650 2.6.1	Non-nutrient	
Dielectric Constant	MHz	IPC-TM-650 2.5.5.3	3.4*	
Dissipation Factor	MHz	IPC-TM-650 2.5.5.3	0.0036*	
Volume Resistivity	MΩ - cm	IPC-TM-650 2.5.17	10 ³ *	
Surface Resistivity	MΩ	IPC-TM-650 2.5.17	10 ⁸ *	

*Based on film alone at 1 mil (25 µm thickness)

Storage

Matrix Coverlay and Bond-ply materials should be stored in an office environment with humidity less than 70% and temperature of 50-80 °F. Product should be kept in original packaging, kept clean, dry, and away from direct sunlight. Matrix Plus shelf life is one year from receipt.



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