



DUPONT™ PYRALUX® FR BOND PLY

FLEXIBLE COMPOSITES

PRODUCT DESCRIPTION

DuPont™ Pyralux® FR bond ply is constructed of DuPont™ Kapton® polyimide film, coated on both sides with a proprietary, flame-retardant, B-staged acrylic adhesive. Bond ply is used to encapsulate two etched details for environmental protection and electrical insulation. Using bond ply can eliminate a layer of Kapton® and a layer of adhesive in low layer count multilayer constructions.

CONSTRUCTION

Bond ply is available in a variety of film and adhesive thicknesses. **Table 1** lists typical constructions.

The product code must be used when ordering sheet adhesive from DuPont.

PACKAGING

Pyralux® bond ply composites are supplied on 24 in (610 mm) wide by 250 ft (76 m) long rolls, on nominal 3 in (76 mm) cores. Narrower widths or cut sheets are also available by special order.

TYPICAL DATA

Each manufactured lot, except the bond ply constructions noted in **Table 1**, is certified to IPC specifications and tested according to IPC Test Method TM-650. See **Table 2**.

Table 1. Bond Ply Product Codes

Product Code	Adhesive	Kapton®	IPC
	mil (µm)	mil (µm)	Certification*
FR0111	1 (25)	1 (25)	Yes
FR0121	1 (25)	2 (51)	Yes
FR0131	1 (25)	3 (76)	Yes
FR0212	2 (51)	1 (25)	Yes
FR7021	1/2 (13)	1/2 (13)	No
FR7016	1 (25)	1/2 (13)	No
FR7081	2 (76)	1/2 (13)	No
FR1515	1/2 (13)	1 (25)	Yes

*Certified to IPC-4203/1: "Adhesive Coated Dielectric Films for Use as Cover Sheets for Flexible Printed Circuits and Flexible Adhesive Bonding Films."

Exception: The DuPont flow requirement, using IPC-TM-650, Method 2.3.17.1, is 10.0 mils/mil of adhesive thickness.

Table 2. Pyralux® FR Bond Ply Properties

Property	Typical Coverlay Value	Test Method
Flammability*	VTM-0	UL94
Meets UL746E Direct Support Requirements	Yes	UL746E
Peel Strength**	–	IPC-TM-650, No. 2.4.9
After lamination	1.6 N/mm (9 lb/in)	Method B
After soldering	1.6 N/mm (9 lb/in)	Method D
Solder Float Resistance 10 sec at 288°C (550°F)	Pass	IPC-TM-650, No. 2.4.13 Method B
Adhesive Flow, µm/µm (mil/mil)	4.0	IPC-TM-650, No. 2.3.17.1
Thickness Tolerance	±10%	IPC-TM-650, No. 4.6.2
Dimensional Stability	-0.03%	IPC-TM-650, No. 2.2.4 Method A
Dielectric Constance (at 1 MHz)	3.5	IPC-TM-650, No. 2.5.5.3
Dissipation Factor (at 1 MHz)	0.02	IPC-TM-650, No. 2.5.5.3
Dielectric Strength	137 kV/mm (3500 V/mil)	ASTM D-149
Insulation Resistance (at ambient)	10 ⁶ megohms	IPC-TM-650, No. 2.6.3.2
Volume Resistivity (at ambient)	10 ⁹ megohm-cm	ASTM D-257
Surface Resistance (at ambient)	10 ⁷ megohms	ASTM D-257

*Laminating Conditions: 14 kg/cm² (200 psi), 182°C (360°F), 1 hour to treated side of 1 oz RA copper foil.

The values in Table 2 represent a typical 1 oz. RA copper foil, 1 mil adhesive and 1 mil Kapton® construction.

