



ASSOCIATION CONNECTING
ELECTRONICS INDUSTRIES®

IPC-4203

Adhesive Coated Dielectric Films for Use as Cover Sheets for Flexible Printed Circuitry and Flexible Adhesive Bonding Films

Developed by the Flexible Circuits Base Materials Subcommittee (D-13)
of the Flexible Circuits Committee (D-10) of IPC

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Users of this standard are encouraged to participate in the
development of future revisions.

Contact:

IPC
2215 Sanders Road
Northbrook, Illinois
60062-6135
Tel 847 509.9700
Fax 847 509.9798

Table of Contents

1 SCOPE	1	3.6	Dimensional Requirements	4
1.1 Classification System	1	3.6.1	Sheet Width and Length	4
1.1.1 Nonspecific Designation	1	3.6.2	Roll Width	4
1.1.2 Specific Designation	1	3.6.3	Roll Length	5
1.1.2.1 Base Dielectric Material Type	1	3.6.4	Dielectric Thickness	5
1.1.2.2 Reinforcement Method	1	3.6.5	Adhesive Thickness	5
1.1.2.3 Reinforcement Type	1	3.7	Physical Requirements	5
1.1.2.4 Base Dielectric Material Thickness	2	3.7.1	Dimensional Stability	5
1.1.2.5 Adhesive Type	2	3.7.2	Peel Strength	5
1.1.2.6 Adhesive Thickness	2	3.7.2.1	Peel Strength As Received	5
1.2 Qualification	2	3.7.2.2	Peel Strength After Solder Float	5
1.3 Quality Conformance	2	3.7.2.3	Peel Strength After Temperature Cycling	5
1.4 Material Characteristics	2	3.7.3	Flow	5
1.5 New Materials	2	3.7.4	Volatile Content	5
2 APPLICABLE DOCUMENTS	2	3.8	Chemical Requirements	5
2.1 IPC	2	3.8.1	Chemical Resistance	5
2.2 American Society for Testing and Materials (ASTM)	3	3.8.2	Solder Float	5
2.3 NCSL International	3	3.9	Electrical Requirements	5
2.4 ISO	3	3.9.1	Dielectric Constant	5
3 REQUIREMENTS	3	3.9.2	Dissipation Factor	6
3.1 Terms and Definitions	3	3.9.3	Volume Resistivity (Damp Heat)	6
3.1.1 Qualification Testing	3	3.9.4	Surface Resistance (Damp Heat)	6
3.1.2 Quality Conformance Testing	3	3.9.5	Dielectric Strength	6
3.1.3 User Inspection Lot	3	3.10	Environmental Requirements	6
3.1.4 Vendor Inspection Lot	3	3.10.1	Fungus Resistance	6
3.1.5 Structurally Similar Construction	3	3.10.2	Moisture Absorption	6
3.1.6 Void	3	3.10.3	Flammability	6
3.1.7 Inclusions	3	3.10.4	Service Temperature	6
3.2 Specification Sheets	3	3.10.5	Moisture and Insulation Resistance	6
3.3 Conflict	4	3.11	Workmanship	6
3.4 Materials	4	3.12	Cleaning Procedure	6
3.4.1 Base Material	4	4 QUALITY ASSURANCE PROVISIONS	6	
3.4.2 Adhesive	4	4.1	Responsibility for Inspection	6
3.4.3 Sheet Material	4	4.2	Test Equipment and Inspection Facilities	6
3.4.4 Roll Material	4	4.3	Preparation of Samples	6
3.5 Visual Requirements	4	4.4	Standard Laboratory Conditions	7
3.5.1 Marking	4	4.5	Tolerances	7
3.5.2 Wrinkles, Creases, Streaks and Scratches	4	4.6	Classification of Inspections	7
3.5.3 Inclusions	4	4.7	Materials Inspection	7
3.5.4 Voids	4	4.8	Qualification Inspection	7
3.5.5 Holes, Tears and Delaminations	4	4.8.1	Characterization Testing	7
		4.8.2	Frequency	7
		4.9	Quality Conformance Inspection	7

4.9.1	Inspection of Product for Delivery	7	6 NOTES	15
4.9.2	Sample Unit	7	6.1 Ordering Data	15
4.9.3	Group A Inspection	7	6.2 Specific Chemical Exposure	15
4.9.3.1	Sampling Plan	7	6.3 Storage/Shelf Life	15
4.9.3.2	Failures	9	6.4 References	15
4.9.3.3	User Sampling Plan	9		
4.9.3.4	Rejected Lots	9		
4.9.4	Group B Inspection	9		
4.9.4.1	Sampling Plan	9		
4.9.4.2	Failures	9		
4.9.4.3	Noncompliance of Material	9		
4.9.5	Group C Inspection	9		
4.9.5.1	Sampling Plan	9		
4.9.5.2	Failures	9		
4.9.5.3	Noncompliance of Material	9		
4.10	Statistical Process Control (SPC)	10		
4.10.1	Parameter Identification	10		
4.10.2	Parameter Diagnostics	10		
4.10.3	Parameter Control	10		
4.10.4	Parameter Capability Assessment	10		
4.10.5	Parameter Analysis	10		
4.10.6	Reduction of Quality Conformance Testing ...	10		
4.10.6.1	Conditions for Reduced Testing	15		
4.10.6.2	Reduced Testing Sample Size	15		
4.10.6.3	Conditions for Audited Control Plan	15		
5 PREPARATION FOR DELIVERY		15		
5.1	Packaging	15		

Figures

Figure 4-1	Control Plan	11
Figure 4-2	Process Flow and Control/Inspection Points Chart	12
Figure 4-3	Parameter to Process Correlation Chart	13
Figure 4-4	Quality Conformance Test Reduction Chart ...	14

Tables

Table 1-1	Base Dielectric Type Designation	1
Table 1-2	Reinforcement Method Designation	1
Table 1-3	Reinforcement Type Designation	2
Table 1-4	Base Dielectric and Adhesive Thickness Designation	2
Table 1-5	Adhesive Type Designation	2
Table 3-1	Allowable Deviation from Nominal Thickness of Base Dielectric	5
Table 3-2	Allowable Deviation from Nominal Thickness of Adhesive	5
Table 4-1	Cleaning Process for Bright Copper	8
Table 4-2	Test Method Frequency	8
Table 4-3	Sampling Plan for Group A and Group B Inspection for Sheet Goods	9
Table 4-4	Sampling Plan for Group A and Group B Inspection for Roll Goods	9

Adhesive Coated Dielectric Films for Use as Cover Sheets for Flexible Printed Circuitry and Flexible Adhesive Bonding Films

1 SCOPE

This standard establishes the classification system, the qualification and quality conformance requirements for dielectric films coated with an adhesive on one side, which are to be used as cover sheets for flexible printed circuitry, dielectric films coated on one side or two sides with adhesive and unsupported adhesive films to be used in the fabrication of flexible printed circuitry.

This specification supersedes IPC-FC-232C and IPC-FC-233A and the requirements herein meet or exceed the requirements for Class 3 in these superseded documents. Note that conformance to Class 3 met or exceeded conformance to Classes 1 and 2. IPC-4203 no longer utilizes the 3-class system.

1.1 Classification System The system described in 1.1.1 through 1.1.2.6 identifies adhesive coated dielectric films and flexible adhesive bonding films.

1.1.1 Nonspecific Designation A nonspecific designation is intended for use by designers on master drawings to designate their material choice. Further specification details may be indicated by using the specific designation in drawing notes and purchase documents. At the end of this standard is a series of material specification sheets designated by individual nonspecific designators. Each sheet outlines engineering and performance data for a flexible cover sheet and bonding film indicating base material type, adhesive type and method of reinforcement. The sheets are provided with a number for ordering purposes. For example, if a user wishes to order from specification sheet number 1, the number "1" would be substituted for the "S" in the designation example (i.e., IPC-4203/1).

Example of nonspecific designation:

IPC-4203/S

Where *S* is specification sheet number

1.1.2 Specific Designation The specific designation shall be as shown in the following example and is intended for use on purchase orders (see 6.1). The specific designation shall not be used by designers on master drawings to indicate their material selection. Master drawings shall indicate the material design by the nonspecific designation, supplemented in notes with the material specification details as defined by the specific designation. This procedure is necessary because the specific designation is normally lengthy and will not fit the field for most computer cataloging.

Example of specific designation:

IPC-4203/S - C1E2M3/3

Where:

IPC-4203/S – Nonspecific Designation (see 1.1.1)

C – Base Dielectric Type Designation (see 1.1.2.1)

1 – Reinforcement Method Designation (see 1.1.2.2)

E – Reinforcement Type Designation (see 1.1.2.3)

2 – Base Dielectric Thickness Designation (see 1.1.2.4)

M – Adhesive Type Designation (see 1.1.2.5)

3/3 – Adhesive Thickness Designation (see 1.1.2.6)

Note: The letter "X" shall be entered into the designation where an item is not specified (e.g., dielectric thickness).

1.1.2.1 Base Dielectric Material Type The type of dielectric material shall be specified per Table 1-1.

Table 1-1 Base Dielectric Type Designation

Designation	Base Dielectric Type
A	Polyvinylfluoride (PVF)
B	Polyethylene Terephthalate Polyester (PET)
C	Fluorinated Ethylene-Propylene Copolymer (FEP)
D	Polytetrafluorethylene (PTFE)
E	Polyimide
F	Aramid
G	Polyamide-imide
H	Epoxy
J	Polyetherimide
K	Polysulfone
L	Polyethylene Naphthalate (PEN)
M	Thermotropic Liquid Crystal Polymer
O	No dielectric film (unsupported)

1.1.2.2 Reinforcement Method The reinforcement method shall be specified per Table 1-2.

Table 1-2 Reinforcement Method Designation

Designation	Reinforcement Method
0	No supporting dielectric film
1	Non-reinforced
2	Nonwoven reinforcement
3	Woven reinforcement
4	Combination woven and nonwoven reinforcement

1.1.2.3 Reinforcement Type The reinforcement type shall be specified per Table 1-3.