品质承认书
Quality Specification

客户 Customer: 供应商：广东东溢新材料科技有限公司 Supplier: GUANGDONG DONGYI HIGH-TECH MATERIAL SCIENCE&TECHNOLOGY CO., LTD.		
产品类型 Product type：无卤丙烯酸纯胶 Acrylic Ester Resin based Bonding Sheet		
材料品名 Material name：P-A 系列		
编号 NO:B050 版本 Ver：C3 制作日期 Date of production:2023/12/05		
客户确认 Customer:		
采购 Purchase:	品质 Quality:	工程 Engineering:
职务 Position:	职务 Position:	职务 Position:
备注 Note:（盖章 Seal）		
广东东溢新材料科技有限公司 GUANGDONG DONGYI HIGH-TECH MATERIAL SCIENCE&TECHNOLOGY CO., LTD.		
业务 Marketing: 赵礼雄	品质 Quality: 陈伟志	技术 Technical:侯松斌
职务 Position:总监	职务 Position:经理	职务 Position: 经理
备注 Note:（盖章 Seal）		

地址：广东省中山市南区昌盛路 22 号、板芙镇智创路 1 号
Address: No. 22 Changsheng Road South District, Zhongshan City, Guangdong Province/ No. 1 zhichuang Road, Banfu Town
电话 TEL：0760-88892754 88895714 23336599 传真 FAX：0760-23336558

产品名称 Product Name

序号 No	东溢型号 ProductModel	胶厚(um) AD Thickness	涂布基材类型 CoatedFilmType	胶系 AD Type	包装规格 Packing Spec.
1	P15-250A1(A)	15	PET	A1	250mm*200m
2	P25-250A1(A)	25	PET	A1	250mm*200m
3	P25-247A1(A)	25	PET	A1	247mm*200m
4	P35-250A1(A)	35	PET	A1	250mm*200m
5	P35-247A1(A)	35	PET	A1	247mm*200m
6	P40-250A1(A)	40	PET	A1	250mm*200m
7	P40-247A1(A)	40	PET	A1	247mm*200m
8	P50-250A1(A)	50	PET	A1	250mm*200m
9	P15-250A1	15	离型纸	A1	250mm*200m
10	P25-250A1	25	离型纸	A1	250mm*200m
11	P25-250A1(01)	25	离型纸	A1	250mm*200m
12	P40-250A1(01)	40	离型纸	A1	250mm*200m
13	P15-250A1(03)	15	离型纸	A1	250mm*200m
14	P25-250A1(03)	25	离型纸	A1	250mm*200m
15	P35-250A1(03)	35	离型纸	A1	250mm*200m
16	P12.5-250A(A)	12.5	PET	A0	250mm*200m
17	P15-250A(A)	15	PET	A0	250mm*200m
18	P25-250A(A)	25	PET	A0	250mm*200m
19	P25-247A(A)	25	PET	A0	247mm*200m
20	P35-250A(A)	35	PET	A0	250mm*200m
21	P35-500A(A)	35	PET	A0	500mm*200m
22	P40-250A(A)	40	PET	A0	250mm*200m
23	P50-250A(A)	50	PET	A0	250mm*200m
24	P50-500A(A)	50	PET	A0	500mm*100m
25	P25-500A1(A)	25	PET	A1	500mm*100m
26	P35-500A1(A)	35	PET	A1	500mm*100m
27	P40-500A1(A)	40	PET	A1	500mm*100m

28	P50-500A1(A)	50	PET	A1	500mm*100m
29	P100-250A1(A)	100	PET	A1	250mm*200m

目前东溢丙烯酸纯胶分为A（A）胶（低初粘性纯胶）和A1（A）胶（高初粘性），A（A）胶适用于需要移动对位的非金属背胶贴合，A1（A）胶适合于一般非金属补强板产品的背胶贴合。
At present, Dongyi provides two types ofacrylic adhesive bonding sheet: Type A (A) (low initial adhesion) and Type A1 (A) (high initial adhesion). Type A (A) adhesive is suitable for non-metallic surface lamination, whichrequires moving alignmentand Type A1 (A) adhesive is suitable for general non-metallicstiffener lamination.

●产品特性 Product Features

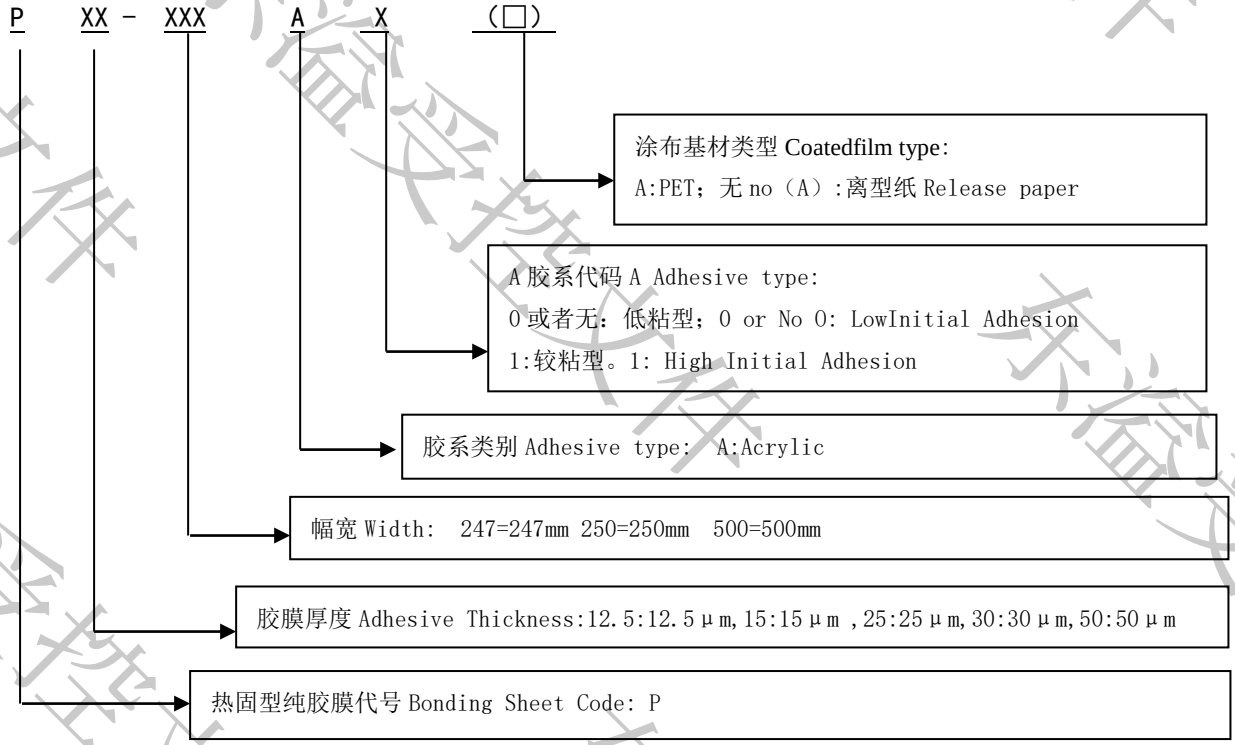
- ■ 高剥离强度 Excellent peel strength
- ■ 优异的电性能 Excellent dielectric performance
- ■ 较低的流动性和优良的加工性 Low fluidity and excellent processability
- ■ 优异的耐化学性和耐热性 Excellent chemical and thermal resistance
- ■ 符合 ROHS 环保指令 ROHS compliant

●产品结构 Product Structure

●编码原则 Product Coding Principle

品名示意图如下 The Product Coding Principle is elaborated as following:

注：□：表示英文字母 English alphabet； x：阿拉伯数字 Arabic numeral.



●物性指标 General Properties

序号 Item	性能项目 Test Item	单位 Unit	测试条件 TestCondition	标准 Standard	测试方法 Test Method
1	厚度 Thickness	um	<25um	±2	东溢规范 Dongyi Method
			25~30um	±3	
			>30	±10%	
2	幅宽 Width	mm	A	标准 Standard+2/-0	东溢规范 Dongyi Method
3	剥离强度 Peel Strength	kgf/cm	A	≧1.0	IPC-TM-650-2.4.9
4	耐化学品性 Chemical Resistance	%	HCl&NaOH 2mol/L	≦20	IPC-TM-650-2.3.2
5	焊锡耐热性 Soldering Resistance	---	265℃/10S	无分层、起泡 No delamination, sparkling	IPC-TM-650-2.4.13
6	吸水率	%	A	≤2.0	IPC-TM-650-2.6.2

注 Note ：A 代表常态“A” Means normal。

东溢检测方式：当两块单面聚酰亚胺覆铜箔基材 PI 面与 PI 面贴合时，剥离强度≧1.0 N/mm ，耐焊性 265℃。注：PI 膜表面能必须≧42 达因值/cm²；在与胶膜贴合前，先把两块单面基材用丙酮擦干净，确保无硅油、油污等有机污染，然后放在 125℃烘干 10-15 分钟（因为 PI 膜有很强的吸湿性）。

Dongyi’s Test Method: When the PI surface of two single-sided copper-clad foils fits with the PI surface, peeling strength is≧1.0 N/mm, and the soldering resistance is 265℃. Note: the PI film surface binding force must be ≧42 dyne value / cm². Before bonding with the bonding sheet, wipe two single-sided copper-clad foils fits with acetone, Ensure that no silicone oil, grease and other organic pollution, then bake them at 125 ℃ for 10-15 minutes (PI filmhas stronghygroscopicity).

●外观管控 Appearance requirement

异常类型 Abnormal Type	异常大小 Abnormal size	允许个数 Allowed value（250*400mm）
杂质 Impurity	0.1～0.5mm ≦8 个 dots 0.5～1mm ≦1 个 dots ≧1mm 不允许 Not Allowed	
垫伤 Cushion wound		
气泡 Bubble		
接头 Joint	≦3 个	

注 Note:产品边缘 3mm 以内的异常不作管控要求。 Abnormalities within 3mm of product edge are not controlled.

●储存 Storage

1.温度＜30℃、湿度＜70% RH、真空包装、无腐蚀性气体的室内，制造日期后

保存 6 个月。Temperature ＜30℃, humidity ＜ 70% RH, airproof vacuumed packaging, no corrosive gas chamber for 6 months since the date of manufacture.

2. 分切后温度＜30℃、湿度＜70% RH、加干燥剂密封储存，制造日期后保存 6 个月。After slicing, Temperature ＜30℃, humidity ＜ 70% RH, The product shelf-life of PH bonding sheet under normal temperature is 6 months, and the product is sealed with desiccant for storage

3. 产品背胶转移后，温度＜30℃、湿度＜70% RH，加干燥剂密封储存，储存周期为一个月。After lamination of the bonding sheet on the product, the storage period is 1 month at: temperature ＜30℃, humidity ＜70% RH. and the product is sealed with desiccant for storage（储存周期是指产品从开箱背胶到压合固化前整个过程。Storage cycle refers to the period of time from the lamination of the bonding sheet on the product prior to the pre-curing process of the product.）

4. 在贮存过程中，随着温度的高低及存放时间的长短，纯胶膜有缓慢变黄的可能，这种现象属于正常现象，不会影响到胶膜的性能。In the process of storage, with the effect of the temperature and the length of storage time, the bonding sheet will undergo a slow yellowing process. This phenomenon is normal and will not affect mechanical properties of the bonding sheet.

●包装规范 Packaging Specification

1. 每一卷成品用纸管卷取。每批出货的每个规格提供一份品质检验报告 Each roll of finished product is coiled in paper tube. A quality inspection report is provided for each specification of each batch of product.

2. 每一卷成品用纸箱包装，避免在运输上碰撞。产品采用防潮、干燥、密封包装，成卷装入纸箱。Each roll of finished products is packed in cartons to avoid collision in transportation. Products are packed in moisture-proof, dry and sealed packages and packed into cartons in rolls.

3. 包箱标签 Package Label

无卤标签 Halogen free label: 环保标签 Green Label: 合格标签 Inspection Tag:

产品标签 Product Label:

月份标签 Month Label:

一月 Jan.	二月 Feb.	三月 Mar.	四月 Apr.	五月 May.	六月 June.	七月 July.	八月 Aug.	九月 Sept.	十月 Oct.	十一月 Nov.	十二月 Dec.
1	2	3	4	5	6	7	8	9	10	11	12

●检验报告Product Inspection Report每批提供一份质量检验报告，如下表（报告模版仅供参考）:Each batch of product will be providedwith a quality inspection report as following (Report format for reference only):

東溢 DONGYI 广东东溢新材料科技有限公司
GUANGDONG DONGYI HIGH-TECH MATERIAL SCIENCE&TECHNOLOGY CO., LTD.

纯胶膜出厂检验报告 编号：JL-Q-02-004-11

日期（Date）： 客户（customer）：

品名(Material spec)			
批号（Lot No.）			
保存期限(Shelf life)		<30℃, <70%RH保存6个月 (Below 30℃, 70%RH for 6 months)	
检验项目 (Test item)	检验方法 (Test method)	品质标准 (Quality Spec)	测试结果 (Test Result)
Adhesive厚度 (Adhesive thickness)	东溢规范 (Unit: μm)		
幅宽 (Width)	东溢规范 (Unit:mm)		
剥离强度 (Peel Strength)	IPC-TM-650 2.4.9 (Unit:kgf/cm)		
转移性	东溢规范	在120℃-150℃下，通过塑封机转移，胶膜应能转移于覆铜箔聚酰亚胺薄膜面上，揭掉载体纸（膜）而不破坏胶膜。	
焊锡耐热性 (Solder Float Resistance) 265℃/10sec	IPC-TM-650 2.4.13	无分层起泡 (No Blistering or Delamination)	
产品判定结果			

备注：
1. 以上测试数据仅供参考。
2. 上述产品不含[RoHS]所规定的禁用物质。
3. 在贮存过程中，纯胶膜有缓慢变黄的可能，纯胶膜泛黄属正常现象。
4. 如产品被放置于低温储存环境，建议客户在使用前将产品静置回暖直至产品温度回升至室温（20-30℃）后方才使用，以确保最佳产品使用特性。同时也避免将产品放置在阳光直接照射及高温环境下。
5. 在背胶前，如接触界面做表面清洁，须保证接触界面干燥及不残留溶剂（如酸碱、油污等）。
6. 压合后的产品建议使用千层架烘烤，如无千层架建议叠层张数不超过20PNL，以避免叠层太多而影响产品固化效果。

地址：广东省中山市南区昌盛路22号 电话：0760-23338784 传真：0760-23336558 邮编：528455
审核(Approved by)： 检验员(Checker)：

●建议压合工艺 Recommendations for Pressing Process

1. 背胶工艺 Lamination Process:

过塑机 Lamination Machine: 用 120-150℃过塑，最佳温度 120℃，速度 1.0±0.5m/min。Laminate with 120-150 ℃, the suggested optimal temperature of lamination is 120 ℃, Speed 1.0±0.5m/min.

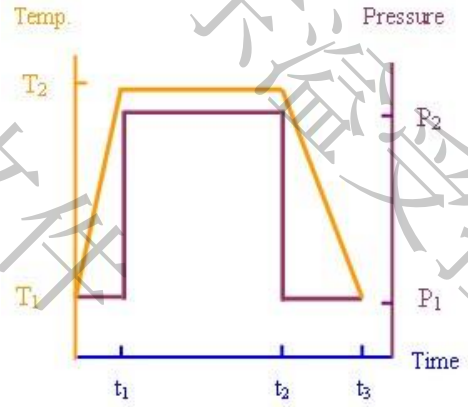
干膜机 Dry film machine: 上下温度：135±15℃、压力：5±1MPa、速度：5-7格（1.0±0.5m/min）。Upper and lower temperature: 135±15℃, suggested pressure: 5±1MPa, suggested speed: 5-7 lattice (1.0±0.5m/min).

注 Note: 快压前用冷过塑机先对贴好的胶膜过塑一遍，以利于胶膜与基板贴合更紧密,并防止背胶气泡和快压后手指有凹凸印(补强板)。Prior to quick pressing, laminate the FCCL bonded with the bonding sheet with the laminator, as a way to ensure the close bonding of the bonding sheet and the FCCL and to prevent air bubbles and gravure printing on the FCCL.

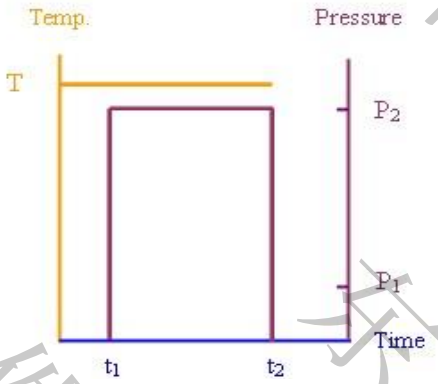
2. 压合工艺 Pressing Process:

A、传统压合方式 Traditional Lamination　B、快速压合方式 Quick Lamination

温度 Temp　　压力 Pressure



温度 Temp　　压力 Pressure



传压工艺 Traditional pressing:

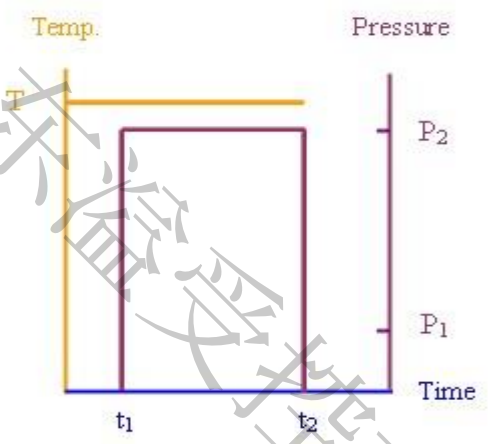
第一段：温度 Temp T1　40℃～165±5℃
StageI压力 Pressure p1　15±5kgf/cm 2
时间 Time　t1　40±10min
第二段：温度 TempT2　165±5℃
StageII压力 Pressure p2　25～40kgf/cm 2
时间 Timet1～t2　60±20 min
第三段:　温度 TempT2～T1
StageIII压力 Pressure p1　15±5kgf/cm 2
时间 Time　t2～t3　45±15 min

快压工艺 The quick pressing:

第一段：温度 Temp: 180±5℃
StageI压力 Pressure: 0Kgf/cm2
时间 Time:5～20Sec
第二段：温度 Temp: 180±5℃
StageII压力 Pressure: 110±10Kgf/cm2
时间 Time:135±15Sec
固化 Curing Process:
温度 Temp: 165±5℃;
时间 Time: 90±30min.

C、真空快速压合方式 Compression with Vacuumed Quick Laminator

温度 Temp　压力 Pressure



快压工艺 The quick pressing:

第一段：温度 Temp: 180±5℃

StageI压力 Pressure: 0Kgf/cm2

时间 Time:10±5Sec

第二段：温度 Temp: 180±5℃

StageII压力 Pressure: ≥18Kgf/cm2

时间 Time:120±30Sec

固化 Curing Process:

温度 Temp: 170±10℃;

时间 Time: 90±30min.

注 Note: 以上为建议压合参数，鉴于各厂家机台及生产工艺都有差异，故如上作业参数仅供参考。 The above pressing parameters are for reference only. Due to difference in pressing facilities and production process, the most appropriate pressing parameters should be determined by practical examinations.

●使用注意事项 Matters Require YourAttention

1. 如产品被放置在低于 10 度以下储存环境，建议客户在使用前将产品静置 4 小时以上回暖直至产品温度回升至室温温度（20--30℃）后方才使用、以确保最佳产品使用特性，同时也应避免放置在阳光直接照射及高温环境下 Ifthe product is placed under the temperature below 10℃for storage, it is recommended that customers keep the product for more than 4 hours before use and warm it up until the product temperature rises to room temperature(20--30℃) as a way to ensure the best product features. At the same time, the product should be avoided to place in direct sunlight and high temperature environment.

2. 在背胶前，如接触界面做表面清洁，须保证接触界面干燥及不残留溶剂（如酸碱、油污等）。Before lamination, please ensure the cleanliness of the lamination surface, especially the lamination surface must be dry and clean and should not contain solvent residuals (e.g. acidic substances, alkalinesubstances, grease, etc.)

3. 压合后的产品建议使用千层架烘烤，如无千层架建议叠层张数不超过 20PNL，以避免叠层太多而影响产品固化效果。Pressed products are recommended to be baked on a multi-layer rack. If there is no multi-layer rack, in order to ensure curing effect, it is recommended that the number of laminated sheets should not exceed 20PNL.

4. 目前东溢丙烯酸纯胶分为 A0 胶（低初粘性纯胶）和 A1 胶（高初粘性），A0 胶适用于需要移动对位的非金属背胶贴合，A1 胶适合于一般非金属补强板产品的背胶贴合。At present, Dongyi provides two types ofacrylic adhesive bonding sheet: Type A0 (low initial adhesion) and Type A1 (high initial adhesion). Type A0 adhesive is suitable for non-metallic surface lamination, whichrequires moving alignment and Type A1 adhesive is suitable for general non-metallicstiffener lamination.

5. 纯胶膜开料后建议 30 天内完成压合固化。未固化纯胶在生产加工的整个材料的存储和转序过程中，需要用 PET 密封袋防护好材料，同时温度不应超过 30℃，湿度＜70% RH。
It is strongly recommended that the compression curing be completed within 30 days after the lamination of the bonding sheet. In the process of storage and circulation of the product during production and processing processes, we need to use PET seal bags to protect the product under 30℃ temperature and 70% RH humidity.

6. SMT 前烘烤处理，温度 120℃，时间 2-4 小时。
SMT pre baking treatment, temperature 120℃, time 2-4 H。
7. 此规格书中表述的所有测试数据以及建议之工艺条件和参数仅供参考，产品使用方需要按照自身实际生产设备及产品要求等因素自行确认最优生产工艺及作业参数。特此声明！
Hereby declared that all test data and recommended process conditions and operating parameters presented in this technical datasheet are for informational purposes only. Product users need to confirm the optimal production process and operating parameters according to their actual production equipment and product requirements.

●物性测试方法 PropertiesTest Method

剥离强度检验方法 Peel Test Method

1、范围 The range:
本检验方法适用本公司纯胶产品剥离强度之量测。
This test method is suitable for peeling strength measurement of the bonding sheet.

2、检测仪器 Testing instruments:
剥离强度测试仪 Peel strength testing instruments

3、样品制作 Sample Preparation:
a) 切取两块半对半单面板，切取 10cm×10cm 大小，先用 120℃烘烤 5～10 分钟，然后待用（注：必要时用丁酮轻擦一遍再烘干）。Cut two pieces of single-sided FCCL，cut into the size of 10cm×10cm,bakeat120℃for 5 to 10 minutes, and then stand by. (Note: Rub it gently with MEK and dry it again if necessary).
b) 切取一块大小相同的纯胶膜，先与一块覆铜箔 PI 面进行贴合，放在 120℃过塑机上过一遍，冷却后撕掉涂胶基材，再与另外一块覆铜箔 PI 膜贴合，再放在 120℃过塑机上过一遍。Cut a piece of bonding sheet of the same size, to laminate with the PI side of a piece of FCCL, press with a laminator at120℃,peel off the FCCL after cooling, and then laminate with the PI side of another FCCL, and then press with a laminator at 120℃ again.
c)快压：温度 180℃、压力 100kgf/cm2、预热 10s、成型 90s；熟化：160 ℃ × 60min;Quick press: temperature 180℃, pressure 100 kgf/cm2, Time: 10s, 90s; Cure: 160 ℃ x 60 min.

4、样品测试 The sample test:
a)取熟化过后之样片，裁切 1cm 宽度，烧开使得 FCCL 与纯胶分开然后用手

撕开约 3cm。After curing, cut the sample 1 cm wide and boil to separate the FCCL from the bonding sheet, then tear it apart by hand for about 3 cm.

b)把样品FCCL面用双面胶固定在测试仪的滚轮上,用夹具夹住FCCL一端,与滚轮垂直,然后匀速上升,每隔1秒,按打印机一次,共打印出15～30个数据即可,取打印数据的平均值作为此条样品的剥离强度值。Fix the sample FCCL surface on the roller of the peel strength testing instrument with double-sided tape. Clamp one end of FCCL with fixture, perpendicular to the roller, and then rise uniformly.For each second, press the printer once and print out 15-30 data, take the average value of the printed data as the peeling strength value of this sample.

c)注意事项:剥离机上升速度:50mm/min,剥离距离:10～20mm;拉铜箔、样品与滚轮垂直。Note: machine rise: 50 mm/min, stripping distance: 10 ~ 20 mm; Pull copper foil, and is pulled perpendicular to the roller.

5、公式计算Formula to calculate:

$$\text{剥离强度 Peel strength} = \frac{\text{拉力 Tensile force (kgf)}}{\text{宽度 The width (cm)}}$$

注:以上规范参考 IPC-TM-650,Method 2.4.9.Note: The above specification reference IPC - TM - 650, Method 2.4.9.

焊锡耐热性检验方法 Soldering ResistanceTest Method

1. 范围 The range:

本检验方法适用于东溢公司纯胶产品焊锡耐热性之量测。This test method is suitable for soldering resistance measurement of the bonding sheet.

检测设备 Testing instruments:

锡炉。Wave Solder

2. 样品制作 Sample Preparation:

- a) 切取两块半对半单面板,切取10cm×10cm大小,先用120℃烘烤5～10分钟,然后待用(注:必要时用丁酮轻擦一遍再烘干)。Cut two pieces of single-sided FCCL , cut into the size of 10cm×10cm, bake at 120℃ for 5 to 10 minutes, and then stand by. (Note: Rub it gently with MEK and dry it again if necessary).
- b) 切取一块大小相同的纯胶膜,先与一块覆铜箔PI面进行贴合,放在120℃过

塑机上过一遍，冷却后撕掉涂胶基材，再与另外一块覆铜箔 PI 膜贴合，再放在 120℃过塑机上过一遍。Cut a piece of bonding sheet of the same size, to laminate with the PI side of a piece of FCCL, press with a laminator at 120℃, peel off the FCCL after cooling, and then laminate with the PI side of another FCCL, and then press with a laminator at 120℃ again.

- c)快压:温度 180℃、压力 100kgf/cm2、预热 10s、成型 90s;熟化:160 ℃× 60min; Quick press: temperature 180℃, pressure 100 kgf/cm2, Time: 10s, 90s; Cure: 160 ℃ x 60 min.

4. 样品测试The sample test:

将固化好的样品立即裁成 3cm×3cm 大小三块,用镊子夹住浸入恒温焊锡液中,焊锡液温度 265℃,每个样品浸锡 10S,然后拿出观察其表面是否有分层或起泡.以上测试请务必在 5 分钟完成,以防止再次吸湿影响测试结果。Cut the cured sample into three pieces of 3cm *3cm size immediately, clamp the cured sample with tweezers in immersed solder solution at constant temperature, and the solder liquid temperature is at 265℃, dip each cured sample for 10S, then take out the dipped sample to observe the surface for traces of delamination or blistering. The above test must be completed in 5 minutes to prevent further hygroscopicity from affecting the test results.

注：以上参考 IPC-TM-650，Method 2.4.13。 Note: The above specification reference IPC - TM - 650, Method 2.4.13.