



IPC-6012F

Qualification and Performance Specification for Rigid Printed Boards

Developed by the Rigid Printed Board Performance Specifications Task Group (D-33a) of the Rigid Printed Board Committee (D-30) of IPC

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

Contact:

IPC

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Table of Contents

1	SCOPE	1	3	REQUIREMENTS	8
1.1	Statement of Scope.....	1	3.1	General	8
1.2	Purpose	1	3.2	Materials	9
1.2.1	Supporting Documentation	1	3.2.1	Laminates and Bonding Material.....	9
1.3	Performance Classification and Type	1	3.2.2	External Bonding Materials	9
1.3.1	Classification	1	3.2.3	Other Dielectric Materials.....	9
1.3.1.1	Requirement Deviations.....	1	3.2.4	Metal Foils.....	9
1.3.1.2	Space Requirement Deviations	1	3.2.4.1	Resistive Metal	9
1.3.1.3	Medical Requirement Deviations	1	3.2.5	Metal Planes/Cores.....	9
1.3.1.4	Automotive Requirement Deviations	1	3.2.6	Base Metallic Plating Depositions and Conductive Coatings.	10
1.3.2	Printed Board Type.....	1	3.2.6.1	Electroless Copper Depositions and Conductive Coatings	10
1.3.3	Selection for Procurement.....	2	3.2.6.2	Electrodeposited Copper.	10
1.3.3.1	Selection (Default)	2	3.2.6.3	Fully Additive Electroless Copper Depositions.	10
1.3.3.2	Selection System (Optional)	3	3.2.7	Surface Finish Depositions and Coatings - Metallic and Non-Metallic	10
1.3.4	Material, Plating Process and Surface Finish.....	3	3.2.7.1	Electrodeposited Tin.....	10
1.3.4.1	Laminate Material	3	3.2.7.2	Electrodeposited Tin-Lead	10
1.3.4.2	Plating Process	3	3.2.7.3	Hot Air Solder Leveling (HASL)/Solder	10
1.3.4.3	Surface Finish and Coatings	4	3.2.7.3.1	Eutectic Tin-Lead Solder Coating.....	11
1.4	Terms and Definitions	4	3.2.7.3.2	Pb-Free Solder Coating.....	11
1.4.1	Back-Drilling.....	4	3.2.7.4	Electrodeposited Nickel	11
1.4.2	Stub (Plated Hole).....	5	3.2.7.5	Electrodeposited Gold.....	11
1.4.3	Back-drill Depth.....	5	3.2.7.6	Electroless Nickel Immersion Gold (ENIG).....	11
1.4.4	Microvia.	5	3.2.7.7	Electroless Nickel/Electroless Palladium/ Immersion Gold (ENEPIG)	11
1.4.5	Design Data	5	3.2.7.8	Immersion Silver (IAg)	11
1.5	Interpretation.	5	3.2.7.9	Immersion Tin (ISn).....	11
1.6	Presentation	5	3.2.7.10	Organic Solderability Preservative (OSP) .	12
1.7	Design Data Protection	5	3.2.7.11	Other Metals and Coatings.....	12
2	APPLICABLE DOCUMENTS	6	3.2.8	Polymer Coating (Solder Mask)	13
2.1	IPC.....	6	3.2.9	Fusing Fluids and Fluxes	13
2.2	Joint Industry Standards.....	8	3.2.10	Marking Inks	13
2.3	Federal	8	3.2.11	Hole Fill Insulation Material.....	13
2.4	Other Publications	8	3.2.12	Heatsink Planes, External	13
2.4.2	Underwriters Lab.....	8	3.2.13	Via Protection.	13
2.4.3	National Electrical Manufacturers Association	8	3.2.14	Embedded Passive Materials.....	13
2.4.4	American Society for Quality	8	3.3	Visual Examination	13
2.4.5	AMS	8	3.3.1	Edges	14
2.4.6	American Society of Mechanical Engineers	8			
2.4.7	SAE	8			

3.3.2	Laminate Imperfections	14	3.5.4.3	Wire Bond Pad (WBP).....	22
3.3.2.1	Measling	14	3.5.4.4	Board Edge Connector Lands	22
3.3.2.2	Crazing	14	3.5.4.5	Dewetting	23
3.3.2.3	Delamination/Blistering	14	3.5.4.6	Nonwetting	23
3.3.2.4	Foreign Inclusions	14	3.5.4.7	Surface Finish Coverage	23
3.3.2.5	Weave Exposure.....	15	3.5.4.7.2	Tin-Lead under Solder Mask (Areas not to be soldered).....	23
3.3.2.6	Mechanically Induced Disrupted Fibers....	15	3.5.4.8	Cap Plating of Filled Holes.....	23
3.3.2.7	Scratches, Dents, and Tool Marks.....	15	3.5.4.9	Copper Filled Microvias	23
3.3.2.8	Surface Voids.....	15	3.5.4.10	Nonfunctional Lands.....	23
3.3.2.9	Color Variations in Bond Enhancement.....	15	3.6	Structural Integrity	23
3.3.2.10	Pink Ring.....	15	3.6.1	Thermal Stress Testing.....	24
3.3.3	Plating and Coating Voids in the Hole.....	15	3.6.1.1	Thermal Stress Testing, Method 2.6.8	24
3.3.4	Lifted Lands	15	3.6.1.1.1	Thermal Stress Testing, Method 2.6.8 (Microvias).....	24
3.3.5	Marking	15	3.6.1.2	Thermal Stress Testing, Method 2.6.27 (230 °C)	24
3.3.5.1	Etched Marking	15	3.6.1.3	Thermal Stress Testing, Method 2.6.27 (260 °C)	24
3.3.5.2	Ink Marking.....	16	3.6.1.4	Deviations to Thermal Stress Testing	24
3.3.5.3	Ink Marking Adhesion	16	3.6.2	Requirements for Microsectioned Coupons or Printed Boards.....	24
3.3.6	Solderability	16	3.6.2.1	Plating Integrity.....	25
3.3.7	Plating Adhesion	16	3.6.2.2	Copper Plating Voids.....	26
3.3.8	Edge Printed Board Contact, Junction of Gold Plate to Solder Finish	16	3.6.2.3	Laminate Voids	27
3.3.9	Back-Drilled Holes	17	3.6.2.4	Laminate Cracks	27
3.3.10	Printed Board Cavities	17	3.6.2.5	Delamination or Blistering.....	27
3.3.11	Workmanship.....	18	3.6.2.6	Etchback	28
3.4	Printed Board Dimensional Requirements.....	18	3.6.2.6.1	Evidence of Etchback (When Specified) ..	28
3.4.1	Hole Size, Hole Pattern Accuracy and Pattern Feature Accuracy	18	3.6.2.6.2	Copper Penetration.....	28
3.4.2	Annular Ring and Breakout (External).....	18	3.6.2.7	Smear Removal.....	29
3.4.3	Bow and Twist.....	21	3.6.2.8	Negative Etchback.....	29
3.5	Conductor Definition	21	3.6.2.9	Annular Ring and Breakout in a Microsection Evaluation	29
3.5.1	Conductor Width and Thickness.....	21	3.6.2.9.1	Annular Ring and Breakout (External).....	29
3.5.2	Conductor Spacing	21	3.6.2.9.2	Annular Ring and Breakout (Internal).....	30
3.5.3	Conductor Imperfections.....	21	3.6.2.9.2.1	Breakout (Internal) Conditions	31
3.5.3.1	Conductor Width Reduction	21	3.6.2.9.2.2	Microvia to Target Land.....	31
3.5.3.2	Conductor Thickness Reduction.....	21	3.6.2.10	Lifted Lands	31
3.5.4	Conductive Surfaces.....	21	3.6.2.11	Hole Copper Plating.....	31
3.5.4.1	Nicks and Pinholes in Ground or Voltage Planes.....	21	3.6.2.11.1	Copper Wrap Plating.....	33
3.5.4.2	Solderable Surface Mount Lands.....	21	3.6.2.11.2	Copper Cap Plating of Filled Holes	33
3.5.4.2.1	Rectangular Surface Mount Lands	22	3.6.2.11.3	Plated Copper Filled Vias (Through, Blind, Buried and Microvia).....	35
3.5.4.2.2	Round Surface Mount Lands (BGA Pads)	22			

3.6.2.12	Microvia Target Land Contact Dimension	36	3.10.4	Mechanical Shock	43
3.6.2.13	Microvia Target Land Piercing	37	3.10.5	Impedance Testing	43
3.6.2.14	Minimum Internal Layer Copper Foil Thickness	37	3.10.6	Coefficient of Thermal Expansion (CTE).....	43
3.6.2.14.1	Plated Internal Layers	38	3.10.7	Thermal Shock	43
3.6.2.15	Minimum Surface Conductor Thickness...	38	3.10.8	Surface Insulation Resistance (As Received).....	44
3.6.2.16	Overhang	39	3.10.9	Metal Core (Horizontal Microsection)	44
3.6.2.17	Metal Cores	39	3.10.10	Rework Simulation.....	44
3.6.2.18	Dielectric Spacing	39	3.10.10.1	Through Hole Components.....	44
3.6.2.18.1	Minimum Dielectric Spacing.....	39	3.10.10.2	Surface Mount Components	44
3.6.2.19	Material Fill of Through, Blind, Buried and Microvia Structures	39	3.10.11	Bond Strength, Unsupported Component Hole Land	44
3.6.2.20	Back-Drilled Holes (Microsection Evaluation)	40	3.10.12	Destructive Physical Analysis	44
3.6.2.21	Nail Heading.....	40	3.10.13	Peel Strength Requirements (For Foil Laminated Construction Only)	44
3.7	Solder Mask Requirements	40	3.10.14	Design Data Protection	44
3.7.1	Solder Mask Coverage	40	3.10.15	Performance Based Testing for Microvia Structures.....	44
3.7.2	Solder Mask Cure and Adhesion	41	3.10.16	Conductive Anodic Filament (CAF) Migration	44
3.7.3	Solder Mask Thickness	42	3.10.17	Wire Bond Pad Surface Roughness	44
3.8	Electrical Requirements	42	3.11	Repair.....	45
3.8.1	Dielectric Withstanding Voltage.....	42	3.11.1	Circuit Repairs.....	45
3.8.2	Electrical Continuity and Isolation Resistance.....	42	3.12	Rework.....	45
3.8.3	Circuit/Plated Hole Shorts to Metal Substrate.....	42	4	QUALITY ASSURANCE PROVISIONS	45
3.8.4	Moisture and Insulation Resistance (MIR).....	42	4.1	General	45
3.8.4.1	Dielectric Withstanding Voltage After MIR.....	42	4.1.1	Qualification	45
3.9	Cleanliness.....	43	4.1.2	Sample Test Coupons	45
3.9.1	Cleanliness Prior to Solder Mask Application.	43	4.2	Acceptance Tests	46
3.9.2	Cleanliness After Solder Mask, Solder, or Alternative Surface Coating Application...	43	4.2.1	C=0 Zero Acceptance Number Sampling Plan	46
3.9.3	Cleanliness of Inner Layers After Oxide Treatment Prior to Lamination.....	43	4.2.2	Referee Tests	46
3.10	Special Requirements.....	43	4.3	Periodic Quality Conformance Testing.....	46
3.10.1	Outgassing	43	4.3.1	Coupon Selection	46
3.10.2	Fungus Resistance.....	43	5	NOTES.....	52
3.10.3	Vibration	43	5.1	Ordering Data	52
			5.2	Superseded Specifications.....	52

Figures

Figure 1-1	Example of a Back-drilled Hole (Not to Scale)	5	Figure 3-27	Surface Copper Wrap Measurement for Filled Holes (Over Laminate)	33
Figure 1-2	Example of a Shallow Back-drill (Not to Scale)	5	Figure 3-28	Surface Copper Wrap Measurement for Non-Filled Holes	33
Figure 1-3	Microvia Definition	5	Figure 3-26	Surface Copper Wrap Measurement for Filled Holes (Over Foil)	33
Figure 3-1	Examples of Printed Board Cavities (Type 2 on Left and Type 3 on Right).....	18	Figure 3-29	Wrap Copper (Acceptable)	34
Figure 3-3	Breakout of 90° and 180°	20	Figure 3-30	Wrap Copper Removed by Excessive Processing, e.g., Sanding/Planarization/ Etching (Not Acceptable).....	34
Figure 3-4	External Conductor Width Reduction.....	20	Figure 3-31	Copper Cap Thickness	34
Figure 3-5	Example of Intermediate Target Land in a Microvia	20	Figure 3-32	Copper Cap Filled Via Height (Bump)	34
Figure 3-2	Annular Ring Measurement (External)	20	Figure 3-33	Copper Cap Depression (Dimple).....	35
Figure 3-6	Rectangular Surface Mount Lands	21	Figure 3-34	Copper Cap Plating Voids	35
Figure 3-7	Round Surface Mount Lands	22	Figure 3-35	Nonconforming Via fill Between Copper Cap Plating Layers	35
Figure 3-8	Printed Board Edge Connector Lands	22	Figure 3-36	Acceptable Via Fill Between Copper Cap Plating Layers.....	35
Figure 3-9	Dewetting	23	Figure 3-37	Example of Acceptable Voiding in a Cap Plated, Copper Filled Via	36
Figure 3-10	Edge Pull Back.....	23	Figure 3-38	Example of Acceptable Voiding in a Copper Filled Microvia without Cap Plating.....	36
Figure 3-11	Plated Hole Microsection (Grinding/ Polishing) Tolerance.....	25	Figure 3-39	Example of Nonconforming Void in a Cap Plated, Copper Filled Microvia	36
Figure 3-12	An Example of Plating to Target Land Separation.....	25	Figure 3-40	Example of Nonconforming Void in a Copper Filled Microvia	36
Figure 3-13	Copper Crack Definition	27	Figure 3-41	Microvia Contact Dimension.....	36
Figure 3-14	Separations at External Foil	27	Figure 3-42	Exclusion of Separations in Microvia Target Land Contact Dimension	36
Figure 3-15	Plating Folds/Inclusions – Minimum Measurement Points	28	Figure 3-43	Unintended Piercing of Microvia Target Land (Laser Drilled).....	37
Figure 3-16	Examples of Thermal Zones for Microsection Evaluation of Laminate Attributes	28	Figure 3-45	Overhang	39
Figure 3-17	Measurement for Etchback	29	Figure 3-46	Metal Core to Plated Hole Spacing.....	39
Figure 3-18	Measurement for Copper Penetration	29	Figure 3-47	Measurement of Minimum Dielectric Spacing	39
Figure 3-19	Measurement for Negative Etchback.....	30	Figure 3-48	Fill Material in Blind/Through Vias When Cap Plating Not Specified.....	40
Figure 3-20	Annular Ring Measurement (External, Filled, Microsection Evaluation).....	30	Figure 3-49	Void in Fill Material at Hole Wall Interface	40
Figure 3-21	Annular Ring Measurement (Internal).....	30			
Figure 3-22	Microsection Rotations for Breakout Detection.....	31			
Figure 3-23	Comparison of Microsection Rotations.....	31			
Figure 3-24	Example of Non-Conforming Dielectric Spacing Reduction Due to Breakout at Microvia Target Land.....	31			
Figure 3-25	Example Measurement Locations for Hole Copper Plating.....	32			

Tables

Table 1-1	Technology Adders	2	Table 3-12	Hole Copper Plating Minimum Requirements for Buried Cores (2 layers) ..	32
Table 1-2	Default Requirements	2	Table 3-13	Cap Plating Requirements for Filled Holes .	33
Table 3-1	Metal Planes/Cores	10	Table 3-14	Depression and Protrusions in Copper Filled Microvias	35
Table 3-2	Maximum Limits of Solder Bath Contaminant.....	11	Table 3-15	Microvia Contact Dimension (Laser Drilled).....	37
Table 3-3	Final Finish, Plating and Coating Requirements	12	Table 3-16	Microvia Contact Dimension (Mechanically Drilled)	37
Table 3-4	Plating and Coating Voids in the Hole.....	15	Table 3-17	Internal Layer Copper Thickness after Processing	38
Table 3-5	Edge Printed Board Contact Gap	16	Table 3-18	Thickness of External Conductor of the Finished Printed Board after Plating	38
Table 3-6	Plating and Coating Voids in the Cavity Wall(s).....	17	Table 3-19	Solder Mask Adhesion.....	41
Table 3-7	Minimum Annular Ring	19	Table 3-20	Dielectric Withstanding Voltages	42
Table 3-8	Plated Hole Integrity After Stress.....	26	Table 3-21	Insulation Resistance	42
Table 3-9	Negative Etchback Allowance	29	Table 4-1	Qualification Test Coupons	45
Table 3-10	Surface and Hole Copper Plating Minimum Requirements for Buried Vias > 2 Layers, Through-Holes, and Blind Vias	32	Table 4-2	C=0 Sampling Plan per Lot Size	47
Table 3-11	Hole Copper Plating Minimum Requirements for Microvias (Blind and Buried)	32	Table 4-3	Acceptance Testing and Frequency	47
			Table 4-4	Periodic Quality Conformance Testing	52

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Qualification and Performance Specification for Rigid Printed Boards

1 SCOPE

1.1 Statement of Scope This specification establishes and defines the qualification and performance requirements for the fabrication of rigid printed boards.

1.2 Purpose The purpose of this specification is to provide requirements for qualification and performance of rigid printed boards based on the following constructions and/or technologies. These requirements apply to the finished product unless otherwise specified:

- Single-sided, double-sided printed boards with or without plated-through holes (PTHs).
- Multilayer printed boards with PTHs with or without buried/blind vias/microvias.
- Active/passive embedded circuitry printed boards with distributive capacitive planes and/or capacitive or resistive components.
- Metal core printed boards with or without an external metal heat frame, which may be active or non-active.

1.2.1 Supporting Documentation

1.2.1 Supporting Documentation IPC-A-600, which contains figures, illustrations and photographs that can aid in the visualization of externally and internally observable acceptable/nonconforming conditions, may be used in conjunction with this specification for a more complete understanding of the recommendations and requirements.

1.3 Performance Classification and Type

1.3.1 Classification This specification establishes acceptance criteria for the performance classification of rigid printed boards based on customer and/or end-use requirements. Printed boards are classified by one of three general Performance Classes as defined in IPC-6011.

1.3.1.1 Requirement Deviations Requirements deviating from these heritage classifications **shall** be as agreed between user and supplier (AABUS).

1.3.1.2 Space Requirement Deviations Space performance classification deviations are provided in the IPC-6012XS Addendum (where “X” is applicable revision published at time of procurement) and is applicable when the addendum is specified within the procurement documentation. Any amendments to the base IPC-6012 published after an Addendum do not extend to that Addendum.

1.3.1.3 Medical Requirement Deviations Medical performance classification deviations are provided in the IPC-6012XM Addendum (where “X” is applicable revision published at time of procurement) and is applicable when the addendum is specified within the procurement documentation. Any amendments to the base IPC-6012 published after an Addendum do not extend to that Addendum.

1.3.1.4 Automotive Requirement Deviations Automotive performance classification deviations are provided in the IPC-6012XA Addendum (where “X” is applicable revision published at time of procurement) and is applicable when the addendum is specified within the procurement documentation. Any amendments to the base IPC-6012 published after an Addendum do not extend to that Addendum.

1.3.2 Printed Board Type Printed boards without PTHs (Type 1) and with PTHs (Types 2-6) are classified as follows and may include technology adders as described in Table 1-1.

Type 1—Single-Sided Printed Board

Type 2—Double-Sided Printed Board

Type 3—Multilayer Printed Board without blind or buried vias

Type 4—Multilayer Printed Board with blind and/or buried vias (may include microvias)

Type 5—Multilayer metal core Printed Board without blind or buried vias

Type 6—Multilayer metal core Printed Board with blind and/or buried vias (may include microvias)