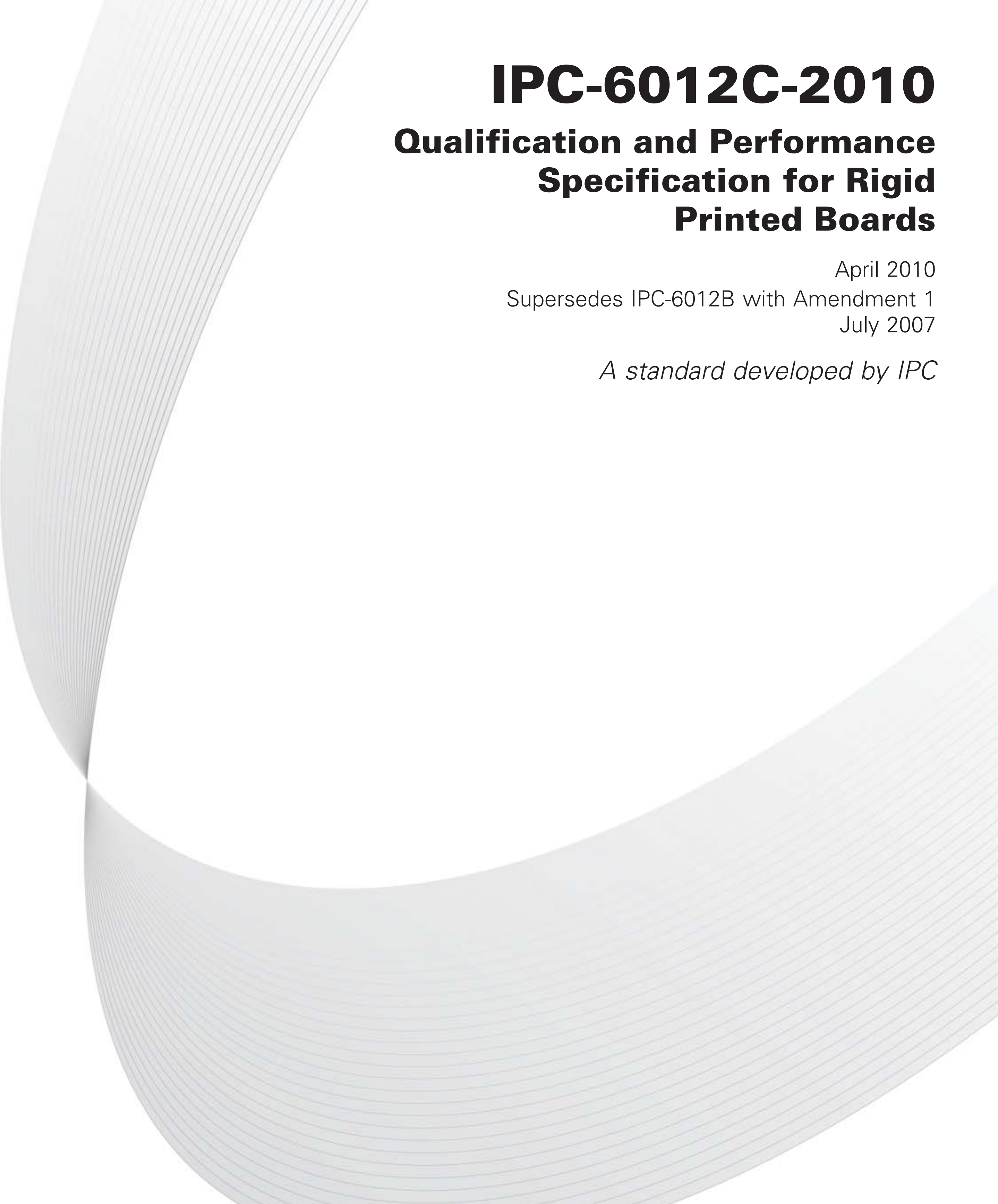
IPC-6012C-2010

Qualification and Performance Specification for Rigid Printed Boards

April 2010

Supersedes IPC-6012B with Amendment 1
July 2007

A standard developed by IPC



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- Focus on end product performance
- Include a feedback system on use and problems for future improvement

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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

Supersedes:
IPC-6012B with
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IPC-6012B - August 2004
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Users of this publication are encouraged to participate in the development of future revisions.

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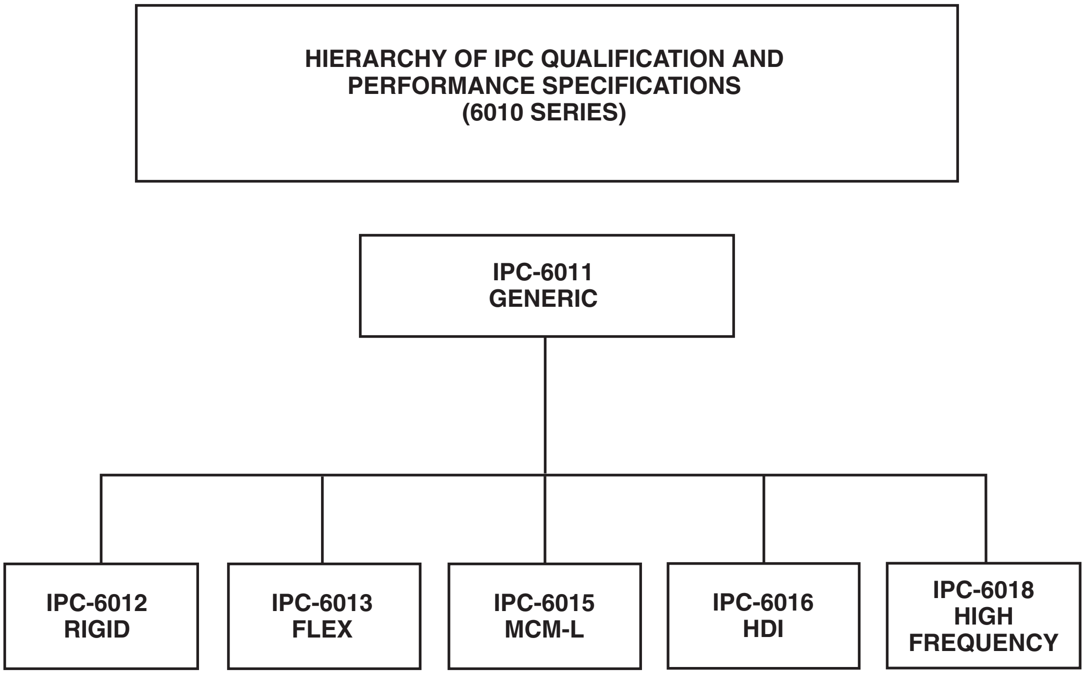

FOREWORD

This specification is intended to provide information on the detailed performance criteria of rigid printed boards. It supersedes IPC-6012B and was developed as a revision to those documents. The information contained herein is also intended to supplement the generic requirements identified in IPC-6011. When used together, these documents should lead both manufacturer and customer to consistent terms of acceptability.

IPC's documentation strategy is to provide distinct documents that focus on specific aspects of electronic packaging issues. In this regard, document sets are used to provide the total information related to a particular electronic packaging topic. A document set is identified by a four digit number that ends in zero (0) (i.e., IPC-6010).

Included in the set is the generic information, which is contained in the first document of the set. The generic specification is supplemented by one or multiple performance documents, each of which provide a specific focus on one aspect of the topic or the technology selected.

Failure to have all information available prior to building a board may result in a conflict in terms of acceptability.

As technology changes, a performance specification will be updated, or new focus specifications will be added to the document set. The IPC invites input on the effectiveness of the documentation and encourages user response through completion of ''Suggestions for Improvement'' forms located at the end of each document.

Acknowledgment

Any document involving a complex technology draws material from a vast number of sources. While the principal members of the Rigid Printed Board Performance Specifications Task Group (D-33a) of the Rigid Printed Board Committee (D-30) are shown below, it is not possible to include all of those who assisted in the evolution of this standard. To each of them, the members of the IPC extend their gratitude.

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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:

- Single-sided, double-sided printed boards with or without plated-through holes (PTHs).
- Multilayer printed boards with PTHs with or without buried/blind vias.
- Multilayer printed boards containing build up High Density Interconnect (HDI) layers conforming to IPC-6016.
- Active embedded passive 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 nonactive.

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 and Military Avionics Deviations Space and Military Avionics performance classification deviations are defined and listed in Appendix A of this specification. These are commonly referred to as Class 3/A.

1.3.2 Printed Board Type Printed boards without PTHs (Type 1) and with PTHs (Types 2-6) are classified as follows:

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
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

1.3.3 Selection for Procurement Performance class **shall** be specified in the procurement documentation.

The procurement documentation **shall** provide sufficient information to fabricate the printed board and ensure that the user receives the desired product. Information that should be included in the procurement documentation is to be in accordance with IPC-D-325.