



IPC-6012FS

**Space and Military Avionics
Applications Addendum to
IPC-6012F, *Qualification and
Performance Specification
for Rigid Printed Boards***

If a conflict occurs
between the English
language and translated
versions of this document,
the English version will
take precedence.

Developed by the IPC-6012 Aerospace Addendum Task Group (D-33AS)
of the Rigid Printed Board Committee (D-30) of IPC

Supersedes:
IPC-6012ES – April 2020

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

Contact:

IPC
3000 Lakeside Drive, Suite 105N
Bannockburn, Illinois
60015-1249
Tel 847 615.7100
Fax 847 615.7105

Space and Military Avionics Applications Addendum to IPC-6012F *Qualification and Performance Specification for Rigid Printed Boards*

Table of Contents

The following topics are addressed in this Addendum.

- 0.1 Scope
 - 0.1.1 Purpose
 - 0.1.2 Precedence
 - 0.1.3 Existing or Previously Approved Designs
 - 0.1.4 Use of this Addendum
 - 0.1.5 Superseded Specifications

The following reference numbers are to IPC-6012F Clauses that are modified or added in this Addendum.

3.2.4	Metal Foils
3.2.6	Base Metallic Plating Depositions and Conductive Coatings
3.2.6.2	Electrodeposited Copper
3.2.7.2 & Table 3-3	Electrodeposited Tin-Lead
3.3	Visual Examination
3.3.2.1	Measling
3.3.2.2	Crazing
3.3.2.3	Delamination/Blistering
3.3.3	Plating and Coating Voids in the Hole
3.3.6 (Surface)	Solderability
3.4.2	Annular Ring and Breakout (External)
3.4.3	Bow and Twist
3.5	Conductor Definition
3.5.4.5	Dewetting
	Additional Addendum Requirement
3.6	Structural Integrity
3.6.2.1	Plating Integrity
3.6.2.2	Plating Voids
3.6.2.11	Hole Copper Plating
3.6.2.11.2	Copper Cap Plating of Filled Holes
3.6.2.11.3	Plated Copper Filled Vias (Through, Blind, Buried and Microvia)
3.6.2.19	Material Fill of Through, Blind and Buried Vias and Microvias
3.7	Solder Mask Requirements
3.7.2	Solder Mask Cure and Adhesion
3.7.3	Solder Mask Thickness
3.8.2	Electrical Continuity and Isolation Resistance
3.10.7	Thermal Shock
3.10.12	Destructive Physical Analysis
3.11	Repair

0.1 Scope This addendum provides requirements to be used in addition to, and in some cases, in place of, those published in IPC-6012F to ensure the reliability of printed boards that must survive the vibration, ground testing, and thermal cycling environments of space and military avionics.

0.1.1 Purpose When required by procurement documentation/drawings, this Addendum replaces specifically identified requirements of IPC-6012F.

0.1.2 Precedence The procurement documentation takes precedence over this Addendum and referenced standards. In the event of a conflict between this Addendum and the applicable documents cited herein, this Addendum takes precedence. Where referenced criteria of this addendum differ from the published IPC-6012F, this Addendum takes precedence.

0.1.3 Existing or Previously Approved Designs This Addendum **shall not** constitute the sole cause for the redesign of previously approved designs. When drawings for existing or previously approved designs undergo revision, they should be reviewed and changes made that allow for compliance with the requirements of this Addendum.

0.1.4 Use of this Addendum This addendum **shall not** be used as a stand-alone document.

Where criteria are not modified through change or addition, the Class 3 requirements of IPC-6012F **shall** apply. Where IPC-6012F criteria are supplemented or new criteria are added by this Addendum, the clause is listed in IPC-6012FS, Table 1, Space and Military Avionics Applications Requirements, and the entire IPC-6012F clause and its associated Table 4-3 entry is replaced by this Addendum except as specifically noted.

The clauses modified by this Addendum do not include subordinate clauses unless specifically stated (i.e., changes made to 3.5 do not affect 3.5.1 unless 3.5.1 is also addressed in this Addendum.)

0.1.5 Superseded Specifications This addendum supersedes and replaces IPC-6012ES.