



IPC-HDBK-001E

# Handbook and Guide to Supplement J-STD-001

Developed by the IPC-HDBK-001 Task Group (5-22F) of the Assembly and Joining Process Committee (5-20) of IPC

***Supersedes:***

IPC-HDBK-001 w/Amendments  
1 & 2 - October 2005  
IPC-HDBK-001 w/Amendment 1 -  
December 2000  
IPC-HDBK-001 - March 1998

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

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# Handbook and Guide to Supplement J-STD-001

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## 0.1 GENERAL

**0.1.1 Scope** This Handbook is a companion reference to the J-STD-001 *Requirements for Soldered Electrical and Electronic Assemblies* and is intended to provide supporting information.

Additional detailed information can be found in documents referenced within the Standard (and this Handbook). Users are encouraged to reference those documents to better understand the applicable subject areas.

Although this Handbook uses mandatory terminology (e.g., **shall**, must, etc.), nothing within this Handbook is considered mandatory unless otherwise specified as a mandatory requirement in the contract documentation.

The intent of this Handbook is to capture “how and why” information and give more background for the specification limits and how they were derived. In addition, other supporting information is provided to give a broader understanding of the process considerations needed for the production of acceptable hardware. The target user of this Handbook is a process or manufacturing engineer.

**0.1.2 Purpose** This Handbook describes materials, methods, and verification criteria that, when applied as recommended or required, will produce quality soldered electrical and electronic assemblies. The intent of this Handbook is to explain the “how-to,” the “why,” and fundamentals for these processes, in addition to implementing control over processes rather than depending on end-item inspection to determine product quality.

The J-STD-001 and the IPC-HDBK-001 do not exclude any acceptable process used to make the electrical connections, as long as the methods used will produce completed solder joints conforming to the acceptability requirements of the Standard.

## 0.2 FORMAT (Using This Handbook)

This Handbook provides guidance on the J-STD-001E requirements. The clause numbers in this Handbook refer and correspond to the clause numbers in J-STD-001E. However, the information provided in this Handbook is applicable to Users of any previous version of J-STD-001.

The text of J-STD-001E includes a space shuttle symbol where the requirements are different in J-STD-001ES *Space Applications Electronic Hardware Addendum to IPC J-STD-001E Requirements for Soldered Electrical and Electronic Assemblies*, but it has been removed from the text of this Handbook. Although this document will not provide discussion on each of the differences between J-STD-001 and J-STD-001ES, it will provide information on certain topics addressed in J-STD-001ES, i.e., lead-free mitigation, that may need to be considered in a general soldering process. This information will be included in the applicable section of this Handbook and not highlighted in any manner.

A cross reference listing, provided as Appendix C to this Handbook, will assist Users with identifying related paragraphs in previous revisions of J-STD-001. This cross reference listing includes identification of the associated Space Applications Electronic Hardware Addendum paragraphs for revisions E (ES) and D (DS).

Where used verbatim, text that is directly quoted from a standard is italicized. In this Handbook, the word “Standard” refers specifically to J-STD-001 Revision E.

**NOTE:** References in the text of this Handbook (not text quoted from a Standard) refer only to sections, tables, and figures in this Handbook and will be followed by “of the Standard” unless otherwise noted (see Example 1). If the reference is to a section, table, or figure a designator of the revision being referenced will follow it (see Example 2).

**Example 1:** For more information on lead trimming, see 5.2.0.5.

**Example 2:** For more information on surface mount components, see Table 7-2 of the Standard.