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Adding Lead Free to IPC-7711/7721

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Overview

- Common Procedures
- 7711 Procedures
- 7721 Procedures
- Other changes

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Changes to Common Procedures

- Paragraph 1.9.9
- References to IPC documents
  - J609 supersedes 1066 labeling

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Paragraph 1.9.9

- Rework of circuit boards assembled using lead free is similar
- Proper training
- Understanding the differences

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Paragraph 1.9.9 cont.

- Differences
  - o Lead Free alloys have a higher liquidus or melting temperature than traditional Tin/Lead solder alloys, therefore those alloys may require different dwell times and temperatures to create the solder joint.

Paragraph 1.9.9 cont.

- Lead Free alloys may utilize different fluxes and may require special cleaning processes as necessary
- Wetting times are generally extended
- Solderability indicators such as wetting angles, joint appearance etc., will generally different

Paragraph 1.9.9 cont

- Higher melting temperature and longer dwell times may increase oxidation
- Component lead frames as well as circuit board finishes must be compatible with the solder alloy

Paragraph 1.9.9 cont

- For both conductive and convective assembly rework/repair, the use of inert atmosphere (such as nitrogen) should be considered to facilitate the process

7711 Procedures

- Adding a symbol/text stating applicable for lead free
- Caution note on solder fountain rework
  - Copper dissolution may be an issue

7721 Procedures

- Where applicable adding information stating applicable for lead free

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Other changes

- Renumbering of procedures to distinguish between 7711/7721
- Adding generic inspection criteria
  - 7711/7721 is not tied to any specification

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Questions ???

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