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New Amendments to IPC-A-610F & J-STD-001F and What You Need to Know

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Topics we will be reviewing are:

- New requirements being published.
- Corrections to the existing revision currently in print.
- Impact to online testing questions and procedures.
- How to obtain these new documents.

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J-STD-001 New

Added the shuttle to the numbers and title of each section listed:

- 1.1 Scope
- 1.2 Purpose
- 1.5.1 Hardware Defects and Process Indicators
- 1.10 Personnel Proficiency
- 3.1 Materials
- 3.2 Solder

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001 Overview of major changes

- 1.5 Modified Table 1-1
- 5.12 Strand Damage; Table 5-9 was modified, new name
- 5.6.3 added document requirements for staking
- 5.6.4 rounded out the numbers for Imperial numbers
- 5.6.5.2 rephrased the section, adding the criteria for 5.4.2.2 for 30 awg wire and smaller

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001 Overview of major changes

- 5.6.6.1 Added; Wire to land interface and size of solder joint.
- Replaced Table 6-6 supported holes

Table 6-6 Supported Holes with Component Leads, Minimum Acceptable Conditions[1]

	Criteria	Class 1	Class 2	Class 3
A	Vertical solder fill for components with less than 14 leads not connected to an internal thermal plane. Notes 2 and 3 and Figure 6-4.	Not specified	75%	75%
	Vertical solder fill for components with less than 14 leads and which are connected to an internal thermal plane. Notes 2, 3, and 4.		50% or 1.2 mm [0.05 in], whichever is less	
	Vertical solder fill for components with 14 leads or more. Notes 2, 3 and 4.			

- Change Note 2 and added Note 4

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001 Overview of major changes

- Table 7-4
  - Replaced Note 5
- Table 7-7
  - Replaced Note 4
- Table7-8
  - Replaced Note 4
  - Replace Fig 7-8, improved dimensional lines for A
- Table 7-9
  - Replaced Note 4
- Table 7-10
  - Replaced Note 4

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001 Overview of major changes

Replace Figure 7-11 with the following:

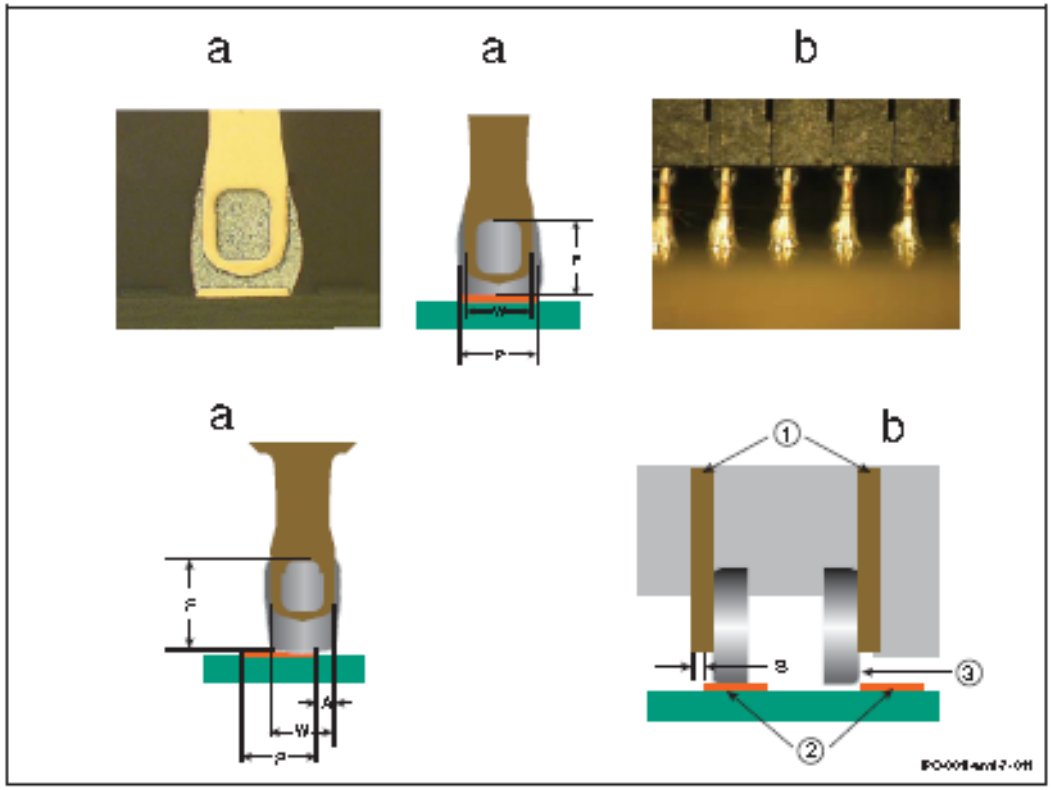

Figure 7-11 Butt Connection for Solder Charged Leads
1. Connector lead
2. Land
3. Solder charge (=solder slug)
a. Side View
b. Front View

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001 Overview of major changes

- Change Table 7-12, min joint width to 100 %(W) for Class 3
- Change Note 5, Solder does not touch package body or end seal, see 7.1.1 for exceptions
- Changed Figure 7-14 and removed Dim K
- Change Table 7-15 "C" for "Solder balls do not violate minimum electrical clearance"
- Section 7.5.14.2 added following "…Voiding criteria for components with non-collapsing type of balls is not established." and added Note 1 on Voids

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001 Overview of major changes

Section 9.1.3, 9.1.4, 9.1.5, 9.1.8, Added and modified and replaced some of the definitions to:

- Haloing
- Edge delamination
- Land/conductor separations
- Replaced Def, for 9.1.8 Flexible circuitry Damage and Section 9.1.11 Measling
- Added section to note 9.1.11 regarding :Where to find information for visual aids in 610 and 001 Handbook

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001 Overview of major changes

- Added section on 10.3.1 conformal coating on components.

Add the following to Section 10.3.1

The adjustable portion of adjustable components, as well as electrical and mechanical mating surfaces such as connector contacts, probe points, screw threads, bearing surfaces (e.g., card guides) **shall** [D1D2D3] be uncoated as specified on the assembly drawing(s)/ documentation.

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001 Overview of major changes

Delete 10.5.1f and replace with the following:

f. Radial leaded components whose longest dimension is their diameter or length (e.g., TO5 semiconductors) - Cylindrical components **shall** [N1D2D3] be staked with at least three beads of staking material placed approximately evenly around the periphery of the component. For each bead, the staking material **shall** [N1D2D3] contact a minimum 25% to maximum 100% of the height of the component body. Slight flow of staking material under the component body is acceptable provided it does not violate 10.5.1a.

Rectangular components **shall** [N1D2D3] be staked with a bead of staking material placed at each corner of the component. For each bead, the staking material **shall** [N1D2D3] contact a minimum 25% to maximum 100% of the height of the component body. Slight flow of staking material under the component body is acceptable provided it does not violate 10.5.1a.

g. Fasteners – Fasteners identified on the drawing/documentation to be staked **shall** [D1D2D3] be staked either:

1. At two places spaced approximately opposite of each other, with each bead of staking material covering at least 25% of the perimeter of the fastener.
2. With one bead of staking material covering at least 50% of the perimeter of the fastener.

Change the word "user" in Appendix B to "User."

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610 changes

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610Highlights of Changes

- Table 1-3, added word Staking
- Table 4-1, deleted ref. for semi-rigid coax
- Table 6-3, change criteria pierced terminal
- Table 6-8, removed criteria for <90 & >90

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610 Highlights of Changes

- Sect 6.11.1, changed wording to agree with changes in Table on page 6-45, for different classes of products.
- Sect 7.2.2.1, In **Acceptable Class 1, 2, 3,** added "Staking material does not contact component body seals."
- Modified Maximum fillet height requirement
- On Glass bodied components eliminated redundant words
- Added criteria for **Acceptable Class 3**, for horizontally mounted components.

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610 Highlights of Changes

- Figure 7-58, eliminated ref. 50% of diameter
- Modified verbiage for **N1,P2,D3** relative to excessive epoxy.
- **Sect. 7.2.2.1**
- Added **Sect N1, N2, D3**
- Modified **Sect N1, D2, D3**
- Modified **Sect D1, D2, D3** to reflect previous verbiages changes.

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610 Highlights of Changes

Supported Holes -Axial Leaded -Vertical

- Section 7.3.2, Deleted A1, P2, P3
- Added new section 7.3.2 D,1 D2, D3

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610 Highlights of Changes

- Table 7-4 Added Criteria for less than 14 leads and 50% hole fill requirements
- Modified the words for Acceptable Class 2
- Change the criteria requirements for A, 1, 2, 3, to A, 2, 3.
- Changed criteria for Def Class 2 to reflect changes in Table 7-4

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610 Highlights of Changes

- Sect 7.5.3 added wire statement that the wires are not to touch any moving parts.
- Table 8-10, Changed “C” Minimum End Joint Width criteria for Class 3, joint has to be 100% of (W)
- Sect 8.3.12 added sentence “Voiding criteria for components with non-collapsing balls are not established. This also changed Table 8-14 in the Void criteria.
- Sect 10.2.4, change the criteria for haloing penetration for both the Acceptable and Defective conditions.

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Conclusions

- Need to get onto IPC web site to get to the CQI to access the notes and slides for any updates.
- The amendments are available on-line at www.Soldertraining.com
- The amendment does not change the existing exams for either 001 or 610

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Conclusions

- Questions relative to the amendment have been addressed in the electronic test.
- The newer printing of the books will have the amendment included
- All CITs must do their Due Diligence to make the class run smoothly

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- CQI News Tab

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Thank You
Any Questions?

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Further Information

For questions regarding this webinar, please contact Leo Lambert at leo@eptac.com or call at 800-643-7822 ext 215

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