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IPC J-STD-001H

Requirements for Soldered Electrical and Electronic Assemblies

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

Developed by the J-STD-001 Task Group (5-22A), J-STD-001 Task Group – Europe (5-22A-EU), J-STD-001 Task Group – China (5-22ACN) of the Assembly and Joining Committees (5-20) of IPC

Supersedes:

J-STD-001G - October 2017
J-STD-001F WAM1 - February 2016
J-STD-001F - July 2014
J-STD-001E - April 2010
J-STD-001D - February 2005
J-STD-001C - March 2000
J-STD-001B - October 1996
J-STD-001A - April 1992

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

Contact:

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Table of Contents

1.0 GENERAL 1
1.1 Scope 1
1.2 Purpose 1
1.3 Classification 1
1.4 Measurement Units and Applications 1
1.4.1 Verification of Dimensions 2
1.5 Definition of Requirements 2
1.5.1 Hardware Defects and Process Indicators 2
1.5.2 Material and Process Nonconformance 2
1.5.3 Procedures for Specialized Technologies 2
1.6 Process Control Requirements 3
1.6.1 Opportunities Determination 3
1.6.2 Statistical Process Control 3
1.7 Order of Precedence 4
1.7.1 Appendices 4
1.8 Terms and Definitions 4
1.8.1 Circumferential Solder Separation (Area Void of Solder) 4
1.8.2 Diameter 4
1.8.3 Disposition 4
1.8.4 Electrical Clearance 4
1.8.5 Engineering Documentation 4
1.8.6 FOD (Foreign Object Debris) 4
1.8.7 High Voltage 4
1.8.8 Manufacturer 5
1.8.9 Objective Evidence 5
1.8.10 Process Control 5
1.8.11 Proficiency 5
1.8.12 Solder Destination Side 5
1.8.13 Solder Source Side 5
1.8.14 Solder Void 5
1.8.15 Supplier 5
1.8.16 Tempered Leads 5
1.8.17 User 5
1.8.18 Wire Overlap 5
1.8.19 Wire Overwrap 5
1.9 Requirements Flowdown 6
1.10 Personnel Proficiency 6
1.10.1 X-Ray Specific Personnel Proficiency 6
1.11 Acceptance Requirements 6
1.12 Inspection Methodology 6
1.12.1 Process Verification Inspection 6
1.12.2 Visual Inspection 6
1.13 Facilities 7
1.13.1 Environmental Controls 7
1.13.2 Field Assembly Operations 8
1.13.3 Health and Safety 8
1.14 Electrostatic Discharge (ESD) 8

2.0 APPLICABLE DOCUMENTS 9
2.1 IPC 9
2.2 JEDEC 9
2.3 Joint Industry Standards 10
2.4 ASTM 10
2.5 EOS/ESD Association, Inc. 10
2.6 International Electrotechnical Commission 10
2.7 SAE International 10
2.8 Military Standards 10
2.9 Aerospace Industries Association / National Aeronautics Standards 10

3.0 MATERIALS, COMPONENTS AND EQUIPMENT REQUIREMENTS 11
3.1 Materials 11
3.2 Solder 11
3.2.1 Solder – Pb-Free 11
3.2.2 Solder Purity Maintenance 11
3.3 Flux 12
3.3.1 Flux Application 12
3.4 Adhesives 12
3.5 Chemical Strippers 12
3.6 Components 13
3.6.1 Component and Seal Damage 13
3.6.2 Coating Meniscus 13
3.7 Tools and Equipment 13

4.0 GENERAL SOLDERING AND ASSEMBLY REQUIREMENTS 15
4.1 Solderability 15
4.2 Solderability Maintenance 15
4.3 Removal of Component Surface Finishes 15
4.3.1 Gold Removal 15
4.3.2 Other Metallic Surface Finishes Removal 15

This is a preview of "IPC J-STD-001H-2020". Click here to purchase the full version from the ANSI store.

4.4 Thermal Protection ... 15
4.5 Rework of Nonsolderable Parts ... 16
4.6 Preprocessing Cleanliness Requirements ... 16
4.7 General Part Mounting Requirements ... 16
4.7.1 General Requirements ... 16
4.7.2 Lead Deformation Limits ... 16
4.8 Hole Obstruction ... 16
4.9 Metal-Cased Component Isolation ... 16
4.10 Adhesive Coverage Limits ... 16
4.11 Mounting of Parts on Parts (Stacking of Components) ... 16
4.12 Connectors and Contact Areas ... 16
4.13 Handling of Parts ... 16
4.13.1 Preheating ... 17
4.13.2 Controlled Cooling ... 17
4.13.3 Drying/Degassing ... 17
4.13.4 Holding Devices and Materials ... 17
4.14 Machine Soldering ... 17
4.14.1 Nonreflow Soldering ... 17
4.14.2 Reflow Soldering ... 17
4.15 Solder Connection ... 17
4.15.1 Exposed Surfaces ... 18
4.15.2 Solder Connection Anomalies ... 18
4.15.3 Partially Visible or Hidden Solder Connections ... 18
4.16 Heat Shrinkable Soldering Devices ... 18
4.17 Threaded Fasteners ... 19
4.18 Torque ... 20

5.0 WIRES AND TERMINAL CONNECTIONS ... 21
5.1 Wire and Cable Preparation ... 21
5.1.1 Insulation Damage ... 21
5.1.2 Strand Damage ... 21
5.1.3 Tinning of Stranded Wire – Forming ... 21
5.2 Solder Terminals ... 22
5.3 Bifurcated, Turret and Slotted Terminal Installation ... 22
5.3.1 Shank Damage ... 22
5.3.2 Flange Damage ... 22
5.3.3 Flared Flange Angles ... 22
5.3.4 Terminal Mounting – Mechanical ... 22
5.3.5 Terminal Mounting – Electrical ... 22
5.3.6 Terminal Mounting – Soldering ... 23
5.4 Mounting to Terminals ... 23
5.4.1 General Requirements ... 23
5.4.2 Turret and Straight Pin Terminals ... 24
5.4.3 Bifurcated Terminals ... 25
5.4.4 Slotted Terminals ... 26
5.4.5 Hook Terminals ... 27
5.4.6 Pierced or Perforated Terminals ... 27
5.4.7 Cup and Hollow Cylindrical Terminals – Placement ... 27
5.4.8 Series Connected ... 28
5.5 Soldering to Terminals ... 28
5.5.1 Bifurcated Terminals ... 28
5.5.2 Slotted Terminal ... 28
5.5.3 Cup and Hollow Cylindrical Terminals – Soldering ... 28
5.6 Jumper Wires ... 29
5.6.1 Insulation ... 29
5.6.2 Wire Routing ... 29
5.6.3 Wire Staking ... 29
5.6.4 Unpopulated Land or Via – Lap Soldered ... 29
5.6.5 Supported Holes ... 29
5.6.6 SMT ... 29

6.0 THROUGH-HOLE MOUNTING AND TERMINATIONS ... 31
6.1 Through-Hole Terminations – General ... 31
6.1.1 Lead Forming ... 32
6.1.2 Termination Requirements ... 32
6.1.3 Lead Trimming ... 33
6.1.4 Interfacial Connections ... 33
6.2 Supported Holes ... 33
6.2.1 Solder Application ... 33
6.2.2 Through-Hole Component Lead Soldering ... 33
6.2.3 Coating Meniscus in Solder ... 34
6.3 Unsupported Holes ... 34
6.3.1 Lead Termination Requirements for Unsupported Holes ... 34

7.0 SURFACE MOUNTING OF COMPONENTS ... 35
7.1 Surface Mount Device Lead ... 35
7.1.1 Plastic Components ... 35
7.1.2 Forming ... 35
7.1.3 Unintentional Bending ... 36
7.1.4 Flat Pack Parallelism ... 36
7.1.5 Surface Mount Device Lead Bends ... 36
7.1.6 Flattened Leads ... 36
7.1.7 Parts Not Configured for Surface Mounting ... 36

This is a preview of "IPC J-STD-001H-2020". Click here to purchase the full version from the ANSI store.

7.2 Leaded Component Body Clearance 36

7.2.1 Axial-Leaded Components 36

7.3 Parts Configured for Butt/I Lead Mounting 36

7.4 Installation of Surface Mount Components 36

7.5 Soldering Requirements 36

7.5.1 Misaligned Components 37

7.5.2 Unspecified and Special Requirements 37

7.5.3 Bottom Only Chip Component Terminations ... 38

7.5.4 Rectangular or Square End Chip Components – 1, 2, 3 or 5 Side Termination(s) 39

7.5.5 Cylindrical End Cap Terminations 41

7.5.6 Castellated Terminations 43

7.5.7 Flat Gull Wing Leads 44

7.5.8 Round or Flattened (Coined) Gull Wing Leads 45

7.5.9 J Lead Terminations 46

7.5.10 Butt/I Terminations 47

7.5.11 Flat Lug Leads 49

7.5.12 Tall Profile Components Having Bottom Only Terminations 50

7.5.13 Inward Formed L-Shaped Ribbon Leads 51

7.5.14 Surface Mount Area Array Packages 52

7.5.15 Bottom Termination Components (BTC).......... 55

7.5.16 Components with Bottom Thermal Plane Terminations (D-Pak) 56

7.5.17 Flattened Post Terminations 57

7.5.18 P-Style Terminations 58

7.5.19 Vertical Cylindrical Cans with Outward L-Shaped Lead Terminations 59

7.5.20 Wrapped Terminals 61

7.5.21 Flexible and Rigid-Flex Printed Circuitry with Flat Unformed Leads 62

7.6 Specialized SMT Terminations 62

8.0 CLEANING AND RESIDUE REQUIREMENTS 63

8.1 Qualified Manufacturing Process 63

8.1.1 Cleaning Designator 63

8.2 Ionic Process Monitoring 63

8.2.1 Sampling Plan 63

8.2.2 Control Limits 63

8.2.3 Exceeding the Control Limits 64

8.3 Re-qualification Requirements 64

8.3.1 Level 1 – Major Changes Requiring Validation 64

8.3.2 Level 2 – Minor Changes with Supporting Objective Evidence 64

8.4 Foreign Object Debris (FOD) 64

8.5 Visible Residues 65

8.6 Non-ionic Residues 65

8.7 Ultrasonic Cleaning Processes 65

8.8 Guidance Documents 65

9.0 PRINTED BOARD REQUIREMENTS 67

9.1 Printed Board Damage 67

9.1.1 Blistering/Delamination 67

9.1.2 Weave Exposure/Cut Fibers 67

9.1.3 Haloing 67

9.1.4 Edge Delamination 67

9.1.5 Land/Conductor Separation 67

9.1.6 Land/Conductor Reduction in Size 67

9.1.7 Flexible Circuitry Delamination 67

9.1.8 Flexible Circuitry Damage 67

9.1.9 Burns 67

9.1.10 Non-Soldered Edge Contacts 67

9.1.11 Measles 67

9.1.12 Crazing 68

9.2 Marking 68

9.3 Bow and Twist (Warpage) 68

9.4 Depanelization 68

10.0 COATING, ENCAPSULATION AND STAKING (ADHESIVE) 69

10.1 Conformal Coating 69

10.1.1 Materials 69

10.1.2 Masking 69

10.1.3 Application 69

10.1.4 Thickness 69

10.1.5 Uniformity 69

10.1.6 Bubbles and Voids 69

10.1.7 Delamination 70

10.1.8 Foreign Objects Debris 70

10.1.9 Other Visual Conditions 70

10.1.10 Inspection 70

10.1.11 Rework or Touchup 70

10.2 Encapsulation 70

10.2.1 Application 70

10.2.2 Performance Requirements 70

This is a preview of "IPC J-STD-001H-2020". Click here to purchase the full version from the ANSI store.

10.2.3 Rework of Encapsulant Material 70
10.2.4 Encapsulant Inspection 70
10.3 Staking 70
10.3.1 Staking – Application 71
10.3.2 Staking – Adhesive 73
10.3.3 Staking (Inspection) 73

11.0 WITNESS (TORQUE/ANTI-TAMPERING) STRIPE 75

12.0 REWORK AND REPAIR 77
12.1 Rework 77
12.2 Repair 77
12.3 Post Rework/Repair Cleaning 77

APPENDIX A Guidelines for Soldering Tools and Equipment 79

APPENDIX B Minimum Electrical Clearance – Electrical Conductor Spacing 81

APPENDIX C J-STD-001 Guidance on Objective Evidence of Material Compatibility 83

APPENDIX D X-Ray Guidelines 87

Figures

Figure 1-1 Wire Overlap 5
Figure 1-1 Wire Overwrap 5
Figure 4-1 Hole Obstruction 16
Figure 4-2 Acceptable Wetting Angles 18
Figure 4-3 Hardware Sequence and Orientation 19
Figure 4-4 Example of Hardware Sequence and Orientation 19
Figure 5-1 Insulation Thickness 21
Figure 5-2 Flange Damage 22
Figure 5-3 Flared Flange Angles 22
Figure 5-4 Terminal Mounting – Mechanical 22
Figure 5-5 Terminal Mounting – Electrical 23
Figure 5-6 Insulation Clearance Measurement 23
Figure 5-7 Service Loop for Lead Wiring 23
Figure 5-8 Stress Relief Examples 24
Figure 5-9 Insulation Sleeving 24
Figure 5-10 Wire and Lead Placement 24
Figure 5-11 Bifurcated Terminal Side Route Placement with Wrap 25
Figure 5-12 Bifurcated Terminal Side Route Placement – Straight Though and Staked 25
Figure 5-13 Bifurcated Terminal Top and Bottom Route Connection 26
Figure 5-14 Slotted Terminal 26
Figure 5-15 Hook Terminal Wire Placement 27
Figure 5-16 Acceptable Pierced or Perforated Terminal Wire Placement 27
Figure 5-17 Wires on Intermediate Turret, Bifurcated, and Pierced Terminals 28
Figure 5-18 Solder Depression 28
Figure 5-19 Cup and Hollow Cylindrical Terminals – Vertical Fill of Solder 29
Figure 6-1 Component Lead Stress Relief Examples 31
Figure 6-2 Lead Bends 32
Figure 6-3 Lead Trimming 33
Figure 6-4 Vertical Fill Example 34
Figure 7-1 Surface Mount Device Lead Forming 35
Figure 7-2 Surface Mount Device Lead Forming 35
Figure 7-3 Bottom Only Terminations 38
Figure 7-4 Rectangular or Square End Chip Components 39
Figure 7-4A Rectangular or Square End Chip Components – 1, 2, 3 or 5 Side Termination(s) Center Termination (When Present) 40
Figure 7-5 Cylindrical End Cap Terminations 41
Figure 7-5A Cylindrical End Cap Terminations Center Termination (When Present) 42
Figure 7-6 Castellated Terminations 43
Figure 7-7 Flat Gull Wing Leads 44
Figure 7-8 Round or Flattened (Coined) Gull Wing Leads 45
Figure 7-9 J Leads 46
Figure 7-10 Butt/I Terminations for Modified Through-Hole Leads 47
Figure 7-11 Butt/I Terminations for Solder Charged Leads 48
Figure 7-12 Flat Lug Leads 49
Figure 7-12A SMD-4 LED 49
Figure 7-13 Tall Profile Components Having Bottom Only Terminations 50
Figure 7-14 Inward Formed L-Shaped Ribbon Lead 51
Figure 7-15 BGA Solder Ball Clearance 53
Figure 7-16 Bottom Termination Component 55
Figure 7-17 Bottom Thermal Plane Termination 56
Figure 7-18 Flattened Post Termination 57
Figure 7-19 P-Style Termination 58
Figure 7-20 Examples of Vertical Cylindrical Cans with Outward L-Shaped Lead Terminations 60
Figure 7-21 Vertical Cylindrical Cans with Outward L-Shaped Lead Terminations 60
Figure 7-22 Wrapped Terminal – SMT Inductor – Bottom View 61

This is a preview of "IPC J-STD-001H-2020". Click here to purchase the full version from the ANSI store.

Figure 7-23 Wrapped Terminal – SMT Inductor – Top View 61
Figure 7-24 Wrapped Terminal – SMT Component 61
Figure 7-25 Wrapped Terminals 61
Figure 7-26 Flexible and Rigid-Flex Circuitry with Flat Unformed Leads 62
Figure 10-1 Radial Leaded Components Whose Height Is Greater Than or Equal to Their Length or Diameter – Individual Rectangular Shaped Component 71
Figure 10-2 Radial Leaded Components Whose Height Is Greater Than or Equal to Their Length or Diameter – Individual Cylindrically Shaped Component 72
Figure 10-3 Radial Leaded Components Whose Longest Dimension Is Their Diameter or Length, e.g., TO5 Semiconductors 72
Figure 10-4 Radial Leaded Components Whose Height Is Greater Than or Equal to Their Length or Diameter – Closely Spaced Arrays 72
Figure 11-1 Torque Stripe on Fastener – Acceptable 75
Figure 11-2 Torque Stripe on Fastener – Defect 75
Figure D-1 Circumferential Solder Separation 87
Figure D-2 Solder Voids 87

Tables

Table 1-1 Design, Fabrication and Acceptability Specifications 1
Table 1-2 Magnification Aid Applications for Solder Connections 7
Table 1-3 Magnification Aid Applications for Wires and Wire Connections, Note 1 7
Table 1-4 Magnification Aid Applications – Other 7
Table 3-1 Maximum Limits of Solder Bath Contaminant 12
Table 4-1 Solder Connection Anomalies 18
Table 5-1 Allowable Strand Damage, Notes 1, 2, 3 21
Table 5-2 Terminal Mounting Minimum Soldering Requirements 23
Table 5-3 Turret and Straight Pin Wire Wrap 24
Table 5-4 AWG 30 and Smaller Wire Wrap 25
Table 5-5 Bifurcated Terminal Wire Placement – Side Route with Wrap 25
Table 5-6 Bifurcated Terminal Side Route Straight-Through Staking 25
Table 5-7 Bifurcated Terminal Wire Placement – Bottom Route 26
Table 5-8 Hook Terminal Wire Placement 27
Table 5-9 Pierced or Perforated Terminal Wire Placement 27
Table 5-10 Solder Requirements Lead/Wire to Post 28
Table 6-1 Component to Land Clearance 31
Table 6-2 Components with Spacers 31
Table 6-3 Lead Bend Radius 32
Table 6-4 Protrusion of Leads in Supported Holes 33
Table 6-5 Protrusion of Leads in Unsupported Holes 33
Table 6-6 Supported Holes with Component Leads, Minimum Acceptable Conditions, Note 1 34
Table 6-7 Unsupported Holes with Component Leads, Minimum Acceptable Conditions, Notes 1, 4 34
Table 7-1 SMT Lead Forming Minimum Lead Length (L) 35
Table 7-2 Surface Mount Components Soldering Requirements 37
Table 7-3 Dimensional Criteria – Bottom Only Chip Component Terminations 38
Table 7-4 Dimensional Criteria – Rectangular or Square End Chip Components – 1, 2, 3 or 5 Side Termination(s) 39
Table 7-4A Dimensional Criteria – Center Termination (When Present) – Rectangular or Square End Chip Components – 1, 2, 3 or 5 Side Termination(s) 40
Table 7-5 Dimensional Criteria – Cylindrical End Cap Terminations 41
Table 7-5A Dimensional Criteria – Center Termination (When Present) – Cylindrical End Cap Terminations 42
Table 7-6 Dimensional Criteria – Castellated Terminations 43
Table 7-7 Dimensional Criteria – Flat Gull Wing Leads 44
Table 7-8 Dimensional Criteria – Round or Flattened (Coined) Gull Wing Leads 45
Table 7-9 Dimensional Criteria – J Leads 46
Table 7-10 Dimensional Criteria – Butt/I Connections 47
Table 7-11 Dimensional Criteria – Butt/I Terminations – Solder Charged Terminations 48
Table 7-12 Dimensional Criteria – Flat Lug Leads, Note 5 49
Table 7-13 Dimensional Criteria – Tall Profile Components Having Bottom Only Terminations 50
Table 7-14 Dimensional Criteria – Inward Formed L-Shaped Ribbon Leads, Note 5 51
Table 7-15 Dimensional Criteria – Ball Grid Array Components with Collapsing Balls 53
Table 7-16 Ball Grid Array Components with Noncollapsing Balls 54
Table 7-17 Column Grid Array 54
Table 7-18 Dimensional Criteria – BTC 55
Table 7-19 Dimensional Criteria – Bottom Thermal Plane Terminations 56

This is a preview of "IPC J-STD-001H-2020". Click here to purchase the full version from the ANSI store.

Table 7-20 Dimensional Criteria – Flattened Post Terminations 57
Table 7-21 Dimensional Criteria – P-Style Terminations 58
Table 7-22 Dimensional Criteria – Vertical Cylindrical Cans with Outward L-Shaped Lead Terminations 59
Table 7-23 Dimensional Criteria – Wrapped Terminals.... 61
Table 7-24 Dimensional Criteria – Flexible and Rigid-Flex Circuitry with Flat Unformed Leads 62
Table 8-1 Designation of Surfaces to be Cleaned 63
Table 8-2 Residue Testing For Process Control 63
Table 8-3 Maximum Acceptable Rosin, Note 1 65
Table 10-1 Coating Thickness 69

This is a preview of "IPC J-STD-001H-2020". Click here to purchase the full version from the ANSI store.

Requirements for Soldered Electrical and Electronic Assemblies

1.0 GENERAL

1.1 Scope This standard describes materials, methods and acceptance criteria for producing soldered electrical and electronic assemblies. The intent of this document is to rely on process control methodology to ensure consistent quality levels during the manufacture of products. It is not the intent of this standard to exclude any procedure, such as for component placement or for applying flux and solder used to make the electrical connection.

The soldering operations, equipment, and conditions described in this document are based on electrical/electronic circuits designed and fabricated in accordance with the specifications listed in Table 1-1.

Table 1-1 Design, Fabrication and Acceptability Specifications

Board Type	Design	Fabrication/Acceptability Specification
Generic Requirements	IPC-2221	IPC-6011
Rigid Printed Boards	IPC-2222	IPC-6012 IPC-A-600
Flexible Circuits	IPC-2223	IPC-6013
Rigid Flex Board	IPC-2222 IPC-2223	IPC-6013

1.2 Purpose This standard prescribes material requirements, process requirements, and acceptability requirements for the manufacture of soldered electrical and electronic assemblies. For a more complete understanding of this document's recommendations and requirements, one may use this document in conjunction with IPC-HDBK-001, IPC-AJ-820 and IPC-A-610. Standards may be updated at any time, including with the addition of amendments. The use of an amendment or a newer revision is not automatically required.

1.3 Classification This standard recognizes that electrical and electronic assemblies are subject to classifications by intended end-item use. Three general end-product classes have been established to reflect differences in manufacturability, complexity, functional performance requirements, and verification (inspection/test) frequency.

Use of this standard requires agreement on the class to which the product belongs. The User has the responsibility for identifying the class to which the assembly is produced. The product class should be stated in the procurement documentation package. If the User does not establish and document the acceptance class, the Manufacturer may do so.

CLASS 1 General Electronic Products
Includes products suitable for applications where the major requirement is function of the completed assembly.

CLASS 2 Dedicated Service Electronic Products
Includes products where continued performance and extended life is required, and for which uninterrupted service is desired but not critical. Typically the end-use environment would not cause failures.

CLASS 3 High Performance/Harsh Environment Electronic Products
Includes products where continued high performance or performance-on-demand is critical, equipment downtime cannot be tolerated, end-use environment may be uncommonly harsh, and the equipment must function when required, such as life support or other critical systems.

1.4 Measurement Units and Applications This standard uses International System of Units (SI) units per ASTM SI10, IEEE/ASTM SI 10, Section 3 [Imperial English equivalent units are in brackets for convenience]. The SI units used in this standard are millimeters (mm) [in] for dimensions and dimensional tolerances, Celsius (°C) [°F] for temperature and temperature tolerances, grams (g) [oz] for weight, and lux for illuminance.

Note: This standard uses other SI prefixes (ASTM SI10, Section 3.2) to eliminate leading zeroes (for example, 0.0012 mm becomes 1.2 µm) or as alternative to powers-of-ten (3.6 x 10^3 mm becomes 3.6 m).