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Acceptability of Electronic Assemblies

Developed by

Association Connecting Electronics Industries

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IPC-A-610F

Acceptability of Electronic Assemblies

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Table of Contents

1 Foreword ... 1-1

1.1 Scope ... 1-2

1.2 Purpose ... 1-3

1.3 Personnel Proficiency ... 1-3

1.4 Classification ... 1-3

1.5 Definition of Requirements ... 1-3
1.5.1 Acceptance Criteria ... 1-4
1.5.1.1 Target Condition ... 1-4
1.5.1.2 Acceptable Condition ... 1-4
1.5.1.3 Defect Condition ... 1-4
1.5.1.3.1 Disposition ... 1-4
1.5.1.4 Process Indicator Condition ... 1-4
1.5.1.4.1 Process Indicator Methodologies ... 1-4
1.5.1.5 Combined Conditions ... 1-4
1.5.1.6 Conditions Not Specified ... 1-5
1.5.1.7 Specialized Designs ... 1-5

1.6 Terms and Definitions ... 1-5
1.6.1 Board Orientation ... 1-5
1.6.1.1 *Primary Side ... 1-5
1.6.1.2 *Secondary Side ... 1-5
1.6.1.3 *Solder Source Side ... 1-5
1.6.1.4 *Solder Destination Side ... 1-5
1.6.2 *Cold Solder Connection ... 1-5
1.6.3 Electrical Clearance ... 1-5
1.6.4 FOD (Foreign Object Debris) ... 1-5
1.6.5 High Voltage ... 1-5
1.6.6 Intrusive Solder ... 1-6
1.6.7 Meniscus (Component) ... 1-6
1.6.8 *Nonfunctional Land ... 1-6
1.6.9 Pin-in-Paste ... 1-6
1.6.10 Solder Balls ... 1-6
1.6.11 Wire Diameter ... 1-6
1.6.12 Wire Overlap ... 1-6
1.6.13 Wire Overwrap ... 1-6

1.7 Examples and Illustrations ... 1-6

1.8 Inspection Methodology ... 1-6

1.9 Verification of Dimensions ... 1-6

1.10 Magnification Aids ... 1-6

1.11 Lighting ... 1-7

2 Applicable Documents ... 2-1

2.1 IPC Documents ... 2-1

2.2 Joint Industry Documents ... 2-1

2.3 EOS/ESD Association Documents ... 2-2

2.4 Electronics Industries Alliance Documents ... 2-2

2.5 International Electrotechnical Commission Documents ... 2-2

2.6 ASTM ... 2-2

2.7 Technical Publications ... 2-2

3 Handling Electronic Assemblies ... 3-1

3.1 EOS/ESD Prevention ... 3-2
3.1.1 Electrical Overstress (EOS) ... 3-3
3.1.2 Electrostatic Discharge (ESD) ... 3-4
3.1.3 Warning Labels ... 3-5
3.1.4 Protective Materials ... 3-6

3.2 EOS/ESD Safe Workstation/EPA ... 3-7

3.3 Handling Considerations ... 3-9
3.3.1 Guidelines ... 3-9
3.3.2 Physical Damage ... 3-10
3.3.3 Contamination ... 3-10
3.3.4 Electronic Assemblies ... 3-11
3.3.5 After Soldering ... 3-11
3.3.6 Gloves and Finger Cots ... 3-12

4 Hardware ... 4-1

4.1 Hardware Installation ... 4-2
4.1.1 Electrical Clearance ... 4-2
4.1.2 Interference ... 4-3
4.1.3 Component Mounting – High Power ... 4-4
4.1.4 Heatsinks ... 4-6
4.1.4.1 Insulators and Thermal Compounds ... 4-6
4.1.4.2 Contact ... 4-8
4.1.5 Threaded Fasteners and Other Threaded Hardware ... 4-9
4.1.5.1 Torque ... 4-11
4.1.5.2 Wires ... 4-13

Table of Contents (cont.)

4.2 Jackpost Mounting 4-15

4.3 Connector Pins 4-16
4.3.1 Edge Connector Pins 4-16
4.3.2 Press Fit Pins 4-17
4.3.2.1 Soldering 4-20

4.4 Wire Bundle Securing 4-23
4.4.1 General 4-23
4.4.2 Lacing 4-26
4.4.2.1 Damage 4-27

4.5 Routing – Wires and Wire Bundles 4-28
4.5.1 Wire Crossover 4-28
4.5.2 Bend Radius 4-29
4.5.3 Coaxial Cable 4-30
4.5.4 Unused Wire Termination 4-31
4.5.5 Ties over Splices and Ferrules 4-32

5 Soldering 5-1

5.1 Soldering Acceptability Requirements 5-3

5.2 Soldering Anomalies 5-4
5.2.1 Exposed Basis Metal 5-4
5.2.2 Pin Holes/Blow Holes 5-6
5.2.3 Reflow of Solder Paste 5-7
5.2.4 Nonwetting 5-8
5.2.5 Cold/Rosin Connection 5-9
5.2.6 Dewetting 5-9
5.2.7 Excess Solder 5-10
5.2.7.1 Solder Balls 5-11
5.2.7.2 Bridging 5-12
5.2.7.3 Solder Webbing/Splashes 5-13
5.2.8 Disturbed Solder 5-14
5.2.9 Fractured Solder 5-15
5.2.10 Solder Projections 5-16
5.2.11 Lead Free Fillet Lift 5-17
5.2.12 Lead Free Hot Tear/Shrink Hole 5-18
5.2.13 Probe Marks and Other Similar Surface Conditions in Solder Joints 5-19

6 Terminal Connections 6-1

6.1 Swaged Hardware 6-2
6.1.1 Terminals 6-2
6.1.1.1 Terminal Base to Land Separation 6-2
6.1.1.2 Turret 6-3
6.1.1.3 Bifurcated 6-4
6.1.2 Rolled Flange 6-5
6.1.3 Flared Flange 6-6
6.1.4 Controlled Split 6-7
6.1.5 Solder 6-8

6.2 Insulation 6-10
6.2.1 Damage 6-10
6.2.1.1 Presolder 6-10
6.2.1.2 Post-Solder 6-12
6.2.2 Clearance 6-13
6.2.3 Flexible Sleeve 6-15
6.2.3.1 Placement 6-15
6.2.3.2 Damage 6-17

6.3 Conductor 6-18
6.3.1 Deformation 6-18
6.3.2 Damage 6-19
6.3.2.1 Stranded Wire 6-19
6.3.2.2 Solid Wire 6-20
6.3.3 Strand Separation (Birdcaging) – Presolder 6-20
6.3.4 Strand Separation (Birdcaging) – Post-Solder 6-21
6.3.5 Tinning 6-22

6.4 Service Loops 6-24

6.5 Stress Relief 6-25
6.5.1 Bundle 6-25
6.5.2 Lead/Wire Bend 6-26

6.6 Lead/Wire Placement – General Requirements 6-28

6.7 Solder – General Requirements 6-30

6.8 Turrets and Straight Pins 6-31
6.8.1 Lead/Wire Placement 6-31
6.8.2 Turret and Straight Pin – Solder 6-33

6.9 Bifurcated 6-34
6.9.1 Lead/Wire Placement – Side Route Attachments 6-34
6.9.2 Lead/Wire Placement – Staked Wires 6-37
6.9.3 Lead/Wire Placement – Bottom and Top Route Attachments 6-38
6.9.4 Solder 6-39

6.10 Slotted 6-42
6.10.1 Lead/Wire Placement 6-42
6.10.2 Solder 6-43

Table of Contents (cont.)

6.11 Pierced/Perforated 6-44
6.11.1 Lead/Wire Placement 6-44
6.11.2 Solder 6-46

6.12 Hook 6-47
6.12.1 Lead/Wire Placement 6-47
6.12.2 Solder 6-49

6.13 Solder Cups 6-50
6.13.1 Lead/Wire Placement 6-50
6.13.2 Solder 6-52

6.14 AWG 30 and Smaller Diameter Wires – Lead/Wire Placement 6-54

6.15 Series Connected 6-55

6.16 Edge Clip – Position 6-56

7 Through-Hole Technology 7-1

7.1 Component Mounting 7-2
7.1.1 Orientation 7-2
7.1.1.1 Orientation – Horizontal 7-3
7.1.1.2 Orientation – Vertical 7-5
7.1.2 Lead Forming 7-6
7.1.2.1 Bend Radius 7-6
7.1.2.2 Space between Seal/Weld and Bend 7-7
7.1.2.3 Stress Relief 7-8
7.1.2.4 Damage 7-10
7.1.3 Leads Crossing Conductors 7-11
7.1.4 Hole Obstruction 7-12
7.1.5 DIP/SIP Devices and Sockets 7-13
7.1.6 Radial Leads – Vertical 7-15
7.1.6.1 Spacers 7-16
7.1.7 Radial Leads – Horizontal 7-18
7.1.8 Connectors 7-19
7.1.8.1 Right Angle 7-21
7.1.8.2 Vertical Shrouded Pin Headers and Vertical Receptacle Connectors 7-22
7.1.9 Conductive Cases 7-23

7.2 Component Securing 7-23
7.2.1 Mounting Clips 7-23
7.2.2 Adhesive Bonding 7-25
7.2.2.1 Adhesive Bonding – Nonelevated Components 7-26
7.2.2.2 Adhesive Bonding – Elevated Components 7-29
7.2.3 Other Devices 7-30

7.3 Supported Holes 7-31
7.3.1 Axial Leaded – Horizontal 7-31
7.3.2 Axial Leaded – Vertical 7-33
7.3.3 Wire/Lead Protrusion 7-35
7.3.4 Wire/Lead Clinches 7-36
7.3.5 Solder 7-38
7.3.5.1 Vertical Fill (A) 7-41
7.3.5.2 Solder Destination Side – Lead to Barrel (B) 7-43
7.3.5.3 Solder Destination Side – Land Area Coverage (C) 7-45
7.3.5.4 Solder Source Side – Lead to Barrel (D) 7-46
7.3.5.5 Solder Source Side – Land Area Coverage (E) 7-47
7.3.5.6 Solder Conditions – Solder in Lead Bend 7-48
7.3.5.7 Solder Conditions – Touching Through-Hole Component Body 7-49
7.3.5.8 Solder Conditions – Meniscus in Solder 7-50
7.3.5.9 Lead Cutting after Soldering 7-52
7.3.5.10 Coated Wire Insulation in Solder 7-53
7.3.5.11 Interfacial Connection without Lead – Vias 7-54
7.3.5.12 Board in Board 7-55

7.4 Unsupported Holes 7-58
7.4.1 Axial Leads – Horizontal 7-58
7.4.2 Axial Leads – Vertical 7-59
7.4.3 Wire/Lead Protrusion 7-60
7.4.4 Wire/Lead Clinches 7-61
7.4.5 Solder 7-63
7.4.6 Lead Cutting after Soldering 7-65

7.5 Jumper Wires 7-66
7.5.1 Wire Selection 7-66
7.5.2 Wire Routing 7-67
7.5.3 Wire Staking 7-69
7.5.4 Supported Holes 7-71
7.5.4.1 Supported Holes – Lead in Hole 7-71
7.5.5 Wrapped Attachment 7-72
7.5.6 Lap Soldered 7-73

Table of Contents (cont.)

8 Surface Mount Assemblies 8-1

8.1 Staking Adhesive 8-3
8.1.1 Component Bonding 8-3
8.1.2 Mechanical Strength 8-4

8.2 SMT Leads 8-6
8.2.1 Plastic Components 8-6
8.2.2 Damage 8-6
8.2.3 Flattening 8-7

8.3 SMT Connections 8-7

8.3.1 Chip Components – Bottom Only Terminations 8-8
8.3.1.1 Side Overhang (A) 8-9
8.3.1.2 End Overhang (B) 8-10
8.3.1.3 End Joint Width (C) 8-11
8.3.1.4 Side Joint Length (D) 8-12
8.3.1.5 Maximum Fillet Height (E) 8-13
8.3.1.6 Minimum Fillet Height (F) 8-13
8.3.1.7 Solder Thickness (G) 8-14
8.3.1.8 End Overlap (J) 8-14

8.3.2 Rectangular or Square End Chip Components – 1, 3 or 5 Side Terminations 8-15
8.3.2.1 Side Overhang (A) 8-16
8.3.2.2 End Overhang (B) 8-18
8.3.2.3 End Joint Width (C) 8-19
8.3.2.4 Side Joint Length (D) 8-21
8.3.2.5 Maximum Fillet Height (E) 8-22
8.3.2.6 Minimum Fillet Height (F) 8-23
8.3.2.7 Solder Thickness (G) 8-24
8.3.2.8 End Overlap (J) 8-25
8.3.2.9 Termination Variations 8-26
8.3.2.9.1 Mounting on Side (Billboarding) 8-26
8.3.2.9.2 Mounting Upside Down 8-28
8.3.2.9.3 Stacking 8-29
8.3.2.9.4 Tombstoning 8-30
8.3.2.10 Center Terminations 8-31
8.3.2.10.1 Solder Width of Side Termination 8-31
8.3.2.10.2 Minimum Fillet Height of Side Termination ... 8-32

8.3.3 Cylindrical End Cap Terminations 8-33
8.3.3.1 Side Overhang (A) 8-34
8.3.3.2 End Overhang (B) 8-35
8.3.3.3 End Joint Width (C) 8-36
8.3.3.4 Side Joint Length (D) 8-37
8.3.3.5 Maximum Fillet Height (E) 8-38
8.3.3.6 Minimum Fillet Height (F) 8-39
8.3.3.7 Solder Thickness (G) 8-40
8.3.3.8 End Overlap (J) 8-41

8.3.4 Castellated Terminations 8-42
8.3.4.1 Side Overhang (A) 8-43
8.3.4.2 End Overhang (B) 8-44
8.3.4.3 Minimum End Joint Width (C) 8-44
8.3.4.4 Minimum Side Joint Length (D) 8-45
8.3.4.5 Maximum Fillet Height (E) 8-45
8.3.4.6 Minimum Fillet Height (F) 8-46
8.3.4.7 Solder Thickness (G) 8-46

8.3.5 Flat Gull Wing Leads 8-47
8.3.5.1 Side Overhang (A) 8-47
8.3.5.2 Toe Overhang (B) 8-51
8.3.5.3 Minimum End Joint Width (C) 8-52
8.3.5.4 Minimum Side Joint Length (D) 8-54
8.3.5.5 Maximum Heel Fillet Height (E) 8-56
8.3.5.6 Minimum Heel Fillet Height (F) 8-57
8.3.5.7 Solder Thickness (G) 8-58
8.3.5.8 Coplanarity 8-59

8.3.6 Round or Flattened (Coined) Gull Wing Leads 8-60
8.3.6.1 Side Overhang (A) 8-61
8.3.6.2 Toe Overhang (B) 8-62
8.3.6.3 Minimum End Joint Width (C) 8-62
8.3.6.4 Minimum Side Joint Length (D) 8-63
8.3.6.5 Maximum Heel Fillet Height (E) 8-64
8.3.6.6 Minimum Heel Fillet Height (F) 8-65
8.3.6.7 Solder Thickness (G) 8-66
8.3.6.8 Minimum Side Joint Height (Q) 8-66
8.3.6.9 Coplanarity 8-67

8.3.7 J Leads 8-68
8.3.7.1 Side Overhang (A) 8-68
8.3.7.2 Toe Overhang (B) 8-70
8.3.7.3 End Joint Width (C) 8-70
8.3.7.4 Side Joint Length (D) 8-72
8.3.7.5 Maximum Heel Fillet Height (E) 8-73
8.3.7.6 Minimum Heel Fillet Height (F) 8-74
8.3.7.7 Solder Thickness (G) 8-76
8.3.7.8 Coplanarity 8-76

Table of Contents (cont.)

8.3.8 Butt/I Connections 8-77
8.3.8.1 Modified Through-Hole Terminations 8-77
8.3.8.2 Solder Charged Terminations 8-78
8.3.8.3 Maximum Side Overhang (A) 8-79
8.3.8.4 Maximum Toe Overhang (B) 8-80
8.3.8.5 Minimum End Joint Width (C) 8-81
8.3.8.6 Minimum Side Joint Length (D) 8-82
8.3.8.7 Maximum Fillet Height (E) 8-82
8.3.8.8 Minimum Fillet Height (F) 8-83
8.3.8.9 Solder Thickness (G) 8-84

8.3.9 Flat Lug Leads 8-85

8.3.10 Tall Profile Components Having Bottom Only Terminations 8-86

8.3.11 Inward Formed L-Shaped Ribbon Leads 8-87

8.3.12 Surface Mount Area Array 8-89
8.3.12.1 Alignment 8-90
8.3.12.2 Solder Ball Spacing 8-90
8.3.12.3 Solder Connections 8-91
8.3.12.4 Voids 8-93
8.3.12.5 Underfill/Staking 8-93
8.3.12.6 Package on Package 8-94

8.3.13 Bottom Termination Components (BTC) 8-96

8.3.14 Components with Bottom Thermal Plane Terminations 8-98

8.3.15 Flattened Post Connections 8-100
8.3.15.1 Maximum Termination Overhang – Square Solder Land 8-100
8.3.15.2 Maximum Termination Overhang – Round Solder Land 8-101
8.3.15.3 Maximum Fillet Height 8-101

8.3.16 P-Style Connections 8-102
8.3.16.1 Maximum Side Overhang (A) 8-103
8.3.16.2 Maximum Toe Overhang (B) 8-103
8.3.16.3 Minimum End Joint Width (C) 8-104
8.3.16.4 Minimum Side Joint Length (D) 8-104
8.3.16.5 Minimum Fillet Height (F) 8-105

8.4 Specialized SMT Terminations 8-106

8.5 Surface Mount Connectors 8-107

8.6 Jumper Wires 8-108
8.6.1 SMT 8-109
8.6.1.1 Chip and Cylindrical End Cap Components 8-109
8.6.1.2 Gull Wing 8-110
8.6.1.3 J Lead 8-111
8.6.1.4 Castellations 8-111
8.6.1.5 Land 8-112

9 Component Damage 9-1

9.1 Loss of Metallization 9-2

9.2 Chip Resistor Element 9-3

9.3 Leaded/Leadless Devices 9-4

9.4 Ceramic Chip Capacitors 9-8

9.5 Connectors 9-10

9.6 Relays 9-13

9.7 Transformer Core Damage 9-13

9.8 Connectors, Handles, Extractors, Latches 9-14

9.9 Edge Connector Pins 9-15

9.10 Press Fit Pins 9-16

9.11 Backplane Connector Pins 9-17

9.12 Heat Sink Hardware 9-18

9.13 Threaded Items and Hardware 9-19

Table of Contents (cont.)

10 Printed Circuit 10-1

10.1 Non-Soldered Contact Areas 10-2
10.1.1 Contamination 10-2
10.1.2 Damage 10-4

10.2 Laminate Conditions 10-4
10.2.1 Measling and Crazing 10-5
10.2.2 Blistering and Delamination 10-7
10.2.3 Weave Texture/Weave Exposure 10-9
10.2.4 Haloing 10-10
10.2.5 Edge Delamination, Nicks and Crazing 10-12
10.2.6 Burns 10-14
10.2.7 Bow and Twist 10-15
10.2.8 Depanelization 10-16

10.3 Conductors/Lands 10-18
10.3.1 Reduction 10-18
10.3.2 Lifted 10-19
10.3.3 Mechanical Damage 10-21

10.4 Flexible and Rigid-Flex Printed Circuitry 10-22
10.4.1 Damage 10-22
10.4.2 Delamination/Blister 10-24
10.4.2.1 Flex 10-24
10.4.2.2 Flex to Stiffener 10-25
10.4.3 Solder Wicking 10-26
10.4.4 Attachment 10-27

10.5 Marking 10-28
10.5.1 Etched (Including Hand Printing) 10-30
10.5.2 Screened 10-31
10.5.3 Stamped 10-33
10.5.4 Laser 10-34
10.5.5 Labels 10-35
10.5.5.1 Bar Coding/Data Matrix 10-35
10.5.5.2 Readability 10-36
10.5.5.3 Labels – Adhesion and Damage 10-37
10.5.5.4 Position 10-37
10.5.6 Radio Frequency Identification (RFID) Tags 10-38

10.6 Cleanliness 10-39
10.6.1 Flux Residues 10-40
10.6.2 Foreign Object Debris (FOD) 10-41
10.6.3 Chlorides, Carbonates and White Residues 10-42
10.6.4 Flux Residues – No-Clean Process – Appearance 10-44
10.6.5 Surface Appearance 10-45

10.7 Solder Mask Coating 10-46
10.7.1 Wrinkling/Cracking 10-47
10.7.2 Voids, Blisters, Scratches 10-49
10.7.3 Breakdown 10-50
10.7.4 Discoloration 10-51

10.8 Conformal Coating 10-51
10.8.1 General 10-51
10.8.2 Coverage 10-52
10.8.3 Thickness 10-54
10.8.4 Electrical Insulation Coating 10-55
10.8.4.1 Coverage 10-55
10.8.4.2 Thickness 10-55

10.9 Encapsulation 10-56

11 Discrete Wiring 11-1

11.1 Solderless Wrap 11-2
11.1.1 Number of Turns 11-3
11.1.2 Turn Spacing 11-4
11.1.3 End Tails and Insulation Wrap 11-5
11.1.4 Raised Turns Overlap 11-7
11.1.5 Connection Position 11-8
11.1.6 Wire Dress 11-10
11.1.7 Wire Slack 11-11
11.1.8 Wire Plating 11-12
11.1.9 Damaged Insulation 11-13
11.1.10 Damaged Conductors and Terminals 11-14

12 High Voltage 12-1

Appendix A Electrical Conductor Spacing A-1

Index Index-1

Foreword

The following topics are addressed in this section:

1.1 Scope 1-2

1.2 Purpose 1-3

1.3 Personnel Proficiency 1-3

1.4 Classification 1-3

1.5 Definition of Requirements 1-3
1.5.1 Acceptance Criteria 1-4
1.5.1.1 Target Condition 1-4
1.5.1.2 Acceptable Condition 1-4
1.5.1.3 Defect Condition 1-4
1.5.1.3.1 Disposition 1-4
1.5.1.4 Process Indicator Condition 1-4
1.5.1.4.1 Process Indicator Methodologies 1-4
1.5.1.5 Combined Conditions 1-4
1.5.1.6 Conditions Not Specified 1-5
1.5.1.7 Specialized Designs 1-5

1.6 Terms and Definitions 1-5
1.6.1 Board Orientation 1-5
1.6.1.1 *Primary Side 1-5
1.6.1.2 *Secondary Side 1-5
1.6.1.3 *Solder Source Side 1-5
1.6.1.4 *Solder Destination Side 1-5
1.6.2 *Cold Solder Connection 1-5
1.6.3 Electrical Clearance 1-5
1.6.4 FOD (Foreign Object Debris) 1-5
1.6.5 High Voltage 1-5
1.6.6 Intrusive Solder 1-6
1.6.7 Meniscus (Component) 1-6
1.6.8 *Nonfunctional Land 1-6
1.6.9 Pin-in-Paste 1-6
1.6.10 Solder Balls 1-6
1.6.11 Wire Diameter 1-6
1.6.12 Wire Overlap 1-6
1.6.13 Wire Overwrap 1-6

1.7 Examples and Illustrations 1-6

1.8 Inspection Methodology 1-6

1.9 Verification of Dimensions 1-6

1.10 Magnification Aids 1-6

1.11 Lighting 1-7

Foreword (cont.)

1.1 Scope This standard is a collection of visual quality acceptability requirements for electronic assemblies. This standard does not provide criteria for cross-section evaluation.

This document presents acceptance requirements for the manufacture of electrical and electronic assemblies. Historically, electronic assembly standards contained a more comprehensive tutorial addressing principles and techniques. 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 J-STD-001.

The criteria in this standard are not intended to define processes to accomplish assembly operations nor is it intended to authorize repair/modification or change of the customer's product. For instance, the presence of criteria for adhesive bonding of components does not imply/authorize/require the use of adhesive bonding, and the depiction of a lead wrapped clockwise around a terminal does not imply/authorize/require that all leads/wires be wrapped in the clockwise direction.

Users of this standard should be knowledgeable of the applicable requirements of the document and how to apply them.

Objective evidence of the demonstration of this knowledge should be maintained. Where objective evidence is unavailable, the organization should consider periodic review of personnel skills to determine visual acceptance criteria appropriately.

IPC-A-610 has criteria outside the scope of IPC J-STD-001 defining handling, mechanical and other workmanship requirements. Table 1-1 is a summary of related documents.

Table 1-1 Summary of Related Documents

Document Purpose	Specification Number	Definition
Design Standard	IPC-2220 (Series) IPC-7351 IPC-CM-770	Design requirements reflecting three levels of complexity (Levels A, B, and C) indicating finer geometries, greater densities, more process steps to produce the product. Component and Assembly Process Guidelines to assist in the design of the bare board and the assembly where the bare board processes concentrate on land patterns for surface mount and the assembly concentrates on surface mount and through-hole principles which are usually incorporated into the design process and the documentation.
PCB Requirements	IPC-6010 (series) IPC-A-600	Requirements and acceptance documentation for rigid, rigid flex, flex and other types of substrates.
End Item Documentation	IPC-D-325	Documentation depicting bare board specific end product requirements designed by the customer or end item assembly requirements. Details may or may not reference industry specifications or workmanship standards as well as customer's own preferences or internal standard requirements.
End Item Standards	IPC J-STD-001	Requirements for soldered electrical and electronic assemblies depicting minimum end product acceptable characteristics as well as methods for evaluation (test methods), frequency of testing and applicable ability of process control requirements.
Acceptability Standard	IPC-A-610	Pictorial interpretive document indicating various characteristics of the board and/or assembly as appropriate relating to desirable conditions that exceed the minimum acceptable characteristics indicated by the end item performance standard and reflect various out-of-control (process indicator or defect) conditions to assist the shop process evaluators in judging need for corrective action.
Training Programs (Optional)		Documented training requirements for teaching and learning process procedures and techniques for implementing acceptance requirements of either end item standards, acceptability standards, or requirements detailed on the customer documentation.
Rework and Repair	IPC-7711/7721	Documentation providing the procedures to accomplish conformal coating and component removal and replacement, solder resist repair, and modification/repair of laminate material, conductors, and plated-through holes.