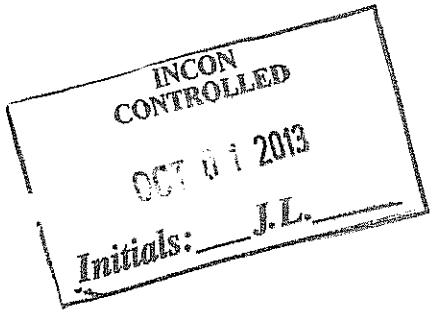
INCON, Inc.

Revision Record

Revision Number	Date	ECO	Change
K	3/11/98	ECN 146291	Rewritten sections 00 through 05
L	1/5/10	ECO 10044	Updated all sections, added passivation specification
M	4/16/10	ECO 10098	Updated Plating Specifications
N	6/19/13	ECO 10560	Add new Selective Plating Code



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Section 00 - General Plating Specification

SCOPE:

This specification covers all product requirements relative to plating metal contacts and components used to manufacture Connector products.

REFERENCE DOCUMENTS:

MIL-DTL-55302 Connector, printed circuit subassembly & accessories
SAE-AMS-2418 / ASTM B734 Copper Plating, Electrodeposited
ASTM B488 / MIL-DTL-45204 Gold Plating, Electrodeposited
SAE-AMS-P-81728 Tin/Lead Plating, Electrodeposited
MIL-DTL-38999, Appendix A / SAE-AMS-QQ-N-290 Nickel Plating, Electrodeposited
ASTM B545 Tin Plating, Electrodeposited
SAE-AMS2700 Type 2 Passivation of Corrosion Resistant Steels
ASTM A967 Chemical Passivation Treatment for Stainless Steel parts

SPECIFICATION:

Part plating or passivation requirements on drawings or purchase orders will be specified by the part number suffix which will correspond to this document. (I.E. – "G4", "T2", "N2", "P1", Etc)

Refer to individual sections of this document for specific plating instructions & requirements

CERTIFICATION:

At a minimum, each lot of plated or passivated components will be accompanied by a Certificate of Conformance.

- **Gold Plating:**
  - All Gold plating supplied by the Vendor shall be certified to (and list) both the ASTM B488 and the MIL-DTL-45204 specifications. The Type & Grade will be listed as specified in Section 01.

- **Nickel Plating:**
  - All Nickel plating supplied by the Vendor shall be certified to (and list) both the MIL-DTL-38999, Appendix A and SAE-AMS-QQ-N-290. The Class will be listed as specified in Sections 01, 02, & 03.

By definition, a lot shall consist of components of the same basis material, type, grade, and class, plated or passivated under the same conditions and of approximately the same size and shape, submitted for delivery at one time.

Section 01 - Gold Plating Specification

REQUIREMENTS:
Unless otherwise specified, the finish plate will be Gold plating per ASTM B488 / MIL-DTL-45204 and the under plate will be Nickel plate per MIL-DTL-38999 Appendix A / SAE-AMS-QQ-N-290.

PLATING THICKNESS:
Unless otherwise noted, the plating thickness is to be considered as the minimum allowable thickness

WORKMANSHIP:
Gold plating will be smooth, fine grained, adherent, and free from exposed base metal or under plate, visible blisters, pits, nodules, porosity, indications of burning, excessive edge build-up and other detrimental defects. Correction of a burned condition by burnishing or tumbling is not acceptable.

Additional workmanship requirements may be found in the Incon Workmanship Specification WSM-001, Sect 7.

SOLDERABILITY:
Plated components will meet the requirements for solderability per MIL-STD-202, Method 208, with an 8-hour steam aging. This requirement does not apply to plating type G21 of this document.

CERTIFICATION:
In addition to the Certificate of Conformance, each lot will be accompanied by a minimum of 20 Gold plate and 10 Nickel plate thickness readings that reflect conformance to the specification.

Supplier is to certify that solderability test has been completed and that the results are in accordance with MIL-STD-202, Method 208. At a minimum the certification should note the lot number and the date the test was completed.

INCON CONTROLLED
OCT 0 1 2013
Initials: J.L.

Section 01 - Gold Plating Specification, Cont'd

Type	Finish Plate		Underplate	
	Thickness Microinch	Description	Thickness Microinch	Description
G4	50 Min.	Type II, Grade C Nickel Hard	50 / 150	Class 2 Nickel
G5	50 Min.	Type II, Grade C Nickel Hard	50 / 150	**Class 1 Nickel**
G8	20 +50 -0	Type III, Grade A Pure Soft Gold	50 / 150	Class 2 Nickel
G11 3 pc Assy		Combination of G8 on studs & G21 on Springs		
G21		Gold Plate per Sheet 10	50 / 150	Class 2 Nickel
G22		Combination of G4 on studs & G21 On springs		
G23		Gold Plate per Sheet 10	50 / 150	**Class 1 Nickel**
G24		Combination of G30 On studs & G21 On springs		
G29		Combination of G8 On studs & G30 On springs		
G30	50	Type II, Grade C Cobalt Hard	50 / 150	Class 2 Nickel
G40 Selective Plating Right Angle Pin Contacts	Engagement Area = **50 Min.** Termination & Non-functional Areas = **20 + 50 - 0**	Type II, Grade C Nickel Hard Plate Zones Per Sheet 11	50 / 150	Class 2 Nickel

Section 01 - Gold Plating Specification, Cont'd

Type	Finish Plate		Underplate	
	Thickness Microinch	Description	Thickness Microinch	Description
G50 Selective Plating Straight Pin Contacts	Engagement Area = **50 Min.**	Type II, Grade C Nickel Hard	50 / 150	Class 2 Nickel
	Termination & Non-functional Areas = **20 + 50 - 0**	Plate Zones Per Sheet 12		

Section 02 – Tin Lead Plating Specification

REQUIREMENTS:

Unless otherwise specified, the finish plate will be Tin-Lead plating per SAE-AMS-P-81728. Undercoat may be Nickel per the requirements of MIL-DTL-38999 Appendix A / SAE-AMS-QQ-N-290 or Copper plate per SAE-AMS-2418 or ASTM B734. Where Tin Plate only is specified it will meet the requirements of ASTM-B545.

PLATING THICKNESS:

Unless otherwise noted, the plating thickness is to be considered as the minimum allowable thickness.

WORKMANSHIP:

The Tin-Lead plating shall be smooth, fine grained, adherent, continuous, free from visible blisters, pits, nodules, indications of burning, excessive build-up, staining, and other defects.

Plating must adhere to the basis metal without peeling, cracking, or crazing after being baked at 125 deg Centigrade for four (4) hours and being bent around a 2T radius.

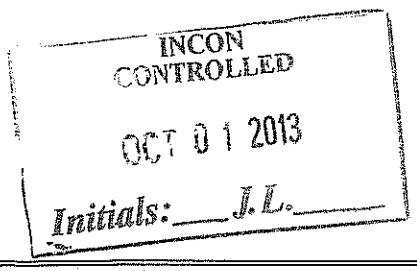
Plating coverage requirements, refer to drawing Z9524-10

SOLDERABILITY:

Plated components will meet the requirements for Solderability per MIL-STD-202, Method 208.

Section 02 – Tin Lead Plating Specification, Cont'd

Type	Finish Plate		Underplate	
	Thickness Microinch	Description	Thickness Microinch	Description
T2	200 / 400	Bright Tin-Lead 60 / 40 Composition	30 MAX.	Copper
T3	150 / 300	Bright Tin-Lead 60 / 40 Composition		
T4	200 / 300	Bright Tin-Lead 60 / 40 Composition	50	Copper
T7	50 / 150	Matte Tin-Lead 90 / 10 Composition		Copper Flash
T8	100 / 200	Matte Tin-Lead 90 / 10 Composition	30	Copper
T12	200 / 400	Tin-Lead 90 / 10 Composition	50	Class 2, Nickel
T13	200 / 400	Tin-Lead 90 / 10 Composition		
T15	Tin-Lead 55 / 65 Composition		30 / 100	Class 2, Nickel
T16	Tin-Lead 55 / 65 Composition		30 / 150	Class 2, Nickel
T17	Tin-Lead 55 / 65 Composition		30 / 150	Class 2, Nickel
T18	150 / 300	Tin-Lead 63 / 37 Composition	50 / 150	Class 2, Nickel



Section 03 – Nickel Plating Specification

REQUIREMENTS:

Unless otherwise specified, the finish plate will be Nickel plating per the requirements of MIL-DTL-38999, Appendix A / SAE-AMS-QQ-N-290.

PLATING THICKNESS:

Unless otherwise noted, the plating thickness is to be considered as the minimum allowable thickness.

WORKMANSHIP:

The Nickel plating shall be smooth, fine grained, adherent, uniform in appearance, free from visible blisters, pits, nodules, excessive edge build-up, and other defects.

Type	Finish Plate		Underplate	
	Thickness Microinch	Description	Thickness Microinch	Description
N1	50 / 100	Nickel, Class 2		
N2	50 / 150	Nickel, Class 2		
N3	100 / 150	Nickel, Class 2		
N4	30 / 300	Nickel, Class 2		
N5	50 / 150	Nickel, Class 1		

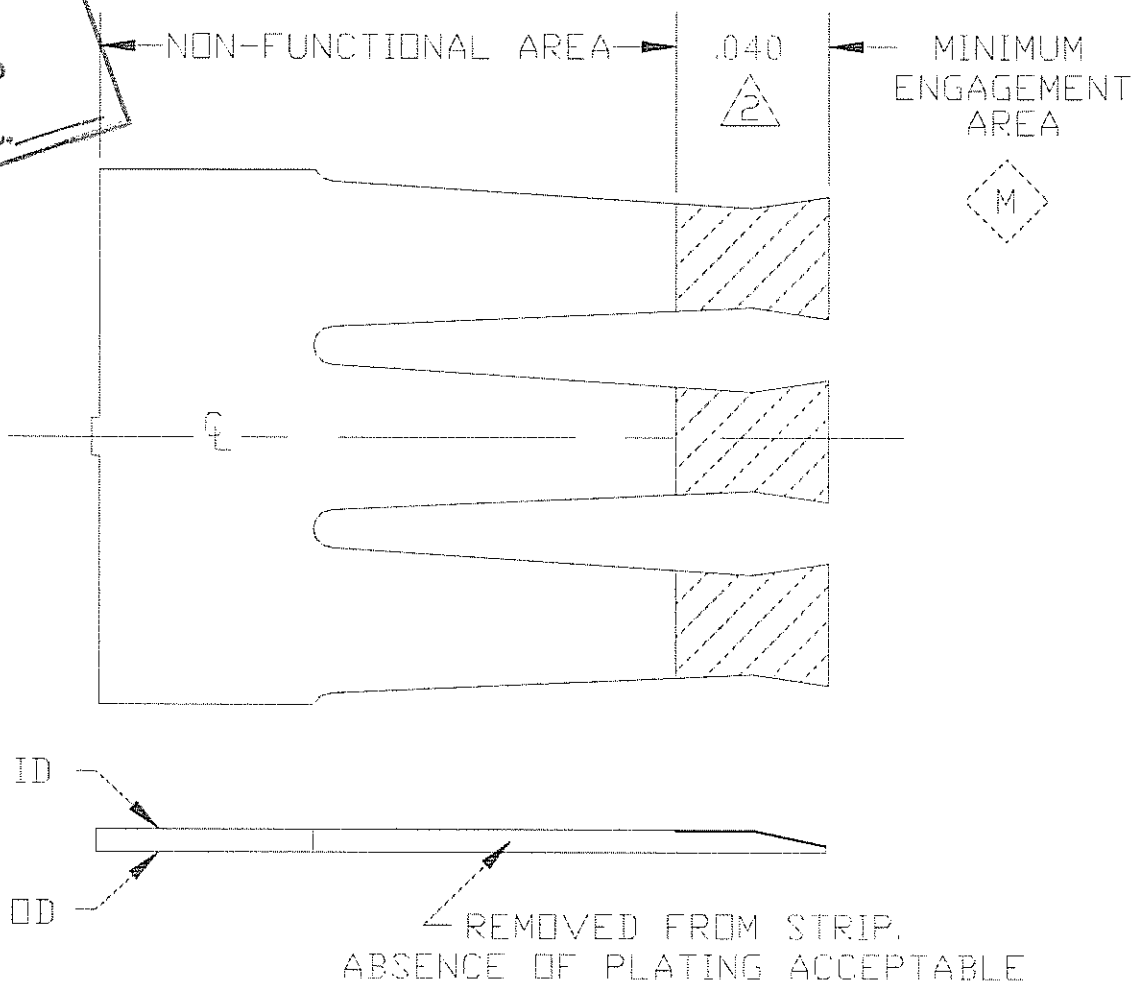
Section 04 – Passivation Specification

REQUIREMENTS:

Unless otherwise specified, all corrosion resistant steels will be passivated per the requirements of SAE-AMS2700.

Type	Specification
P1	SAE-AMS2700 Type 2
P2	ASTM A967

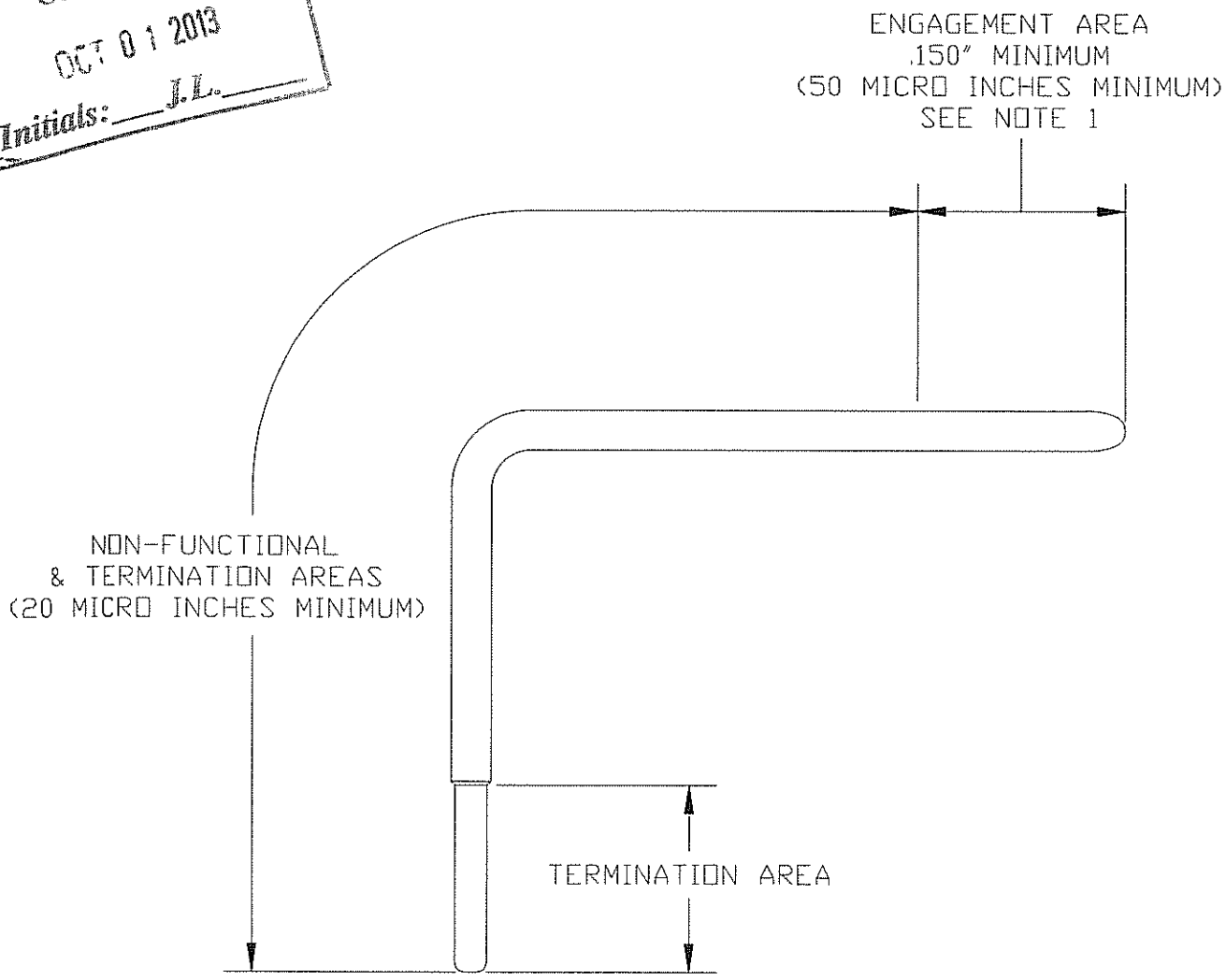
LOCALIZED GOLD PLATE SPECIFICATION FOR G21



NOTES:

1. NICKEL PLATE 50-150 MICROINCHES PER MIL-DTL-38999 APPENDIX A / SAE-AMS-QQ-N-290 ON BOTH SIDES OF STRIP.
2. LOCALIZED GOLD PLATE IN ENGAGEMENT AREA (ID SIDE OF STRIP AS SHOWN) 50 MICROINCHES MINIMUM PER MIL-DTL-45204 / ASTM B488, TYPE II, GRADE C.
3. PARTS TO HAVE GOLD STRIKE ALL OVER PER MIL-DTL-45204 / ASTM B488.

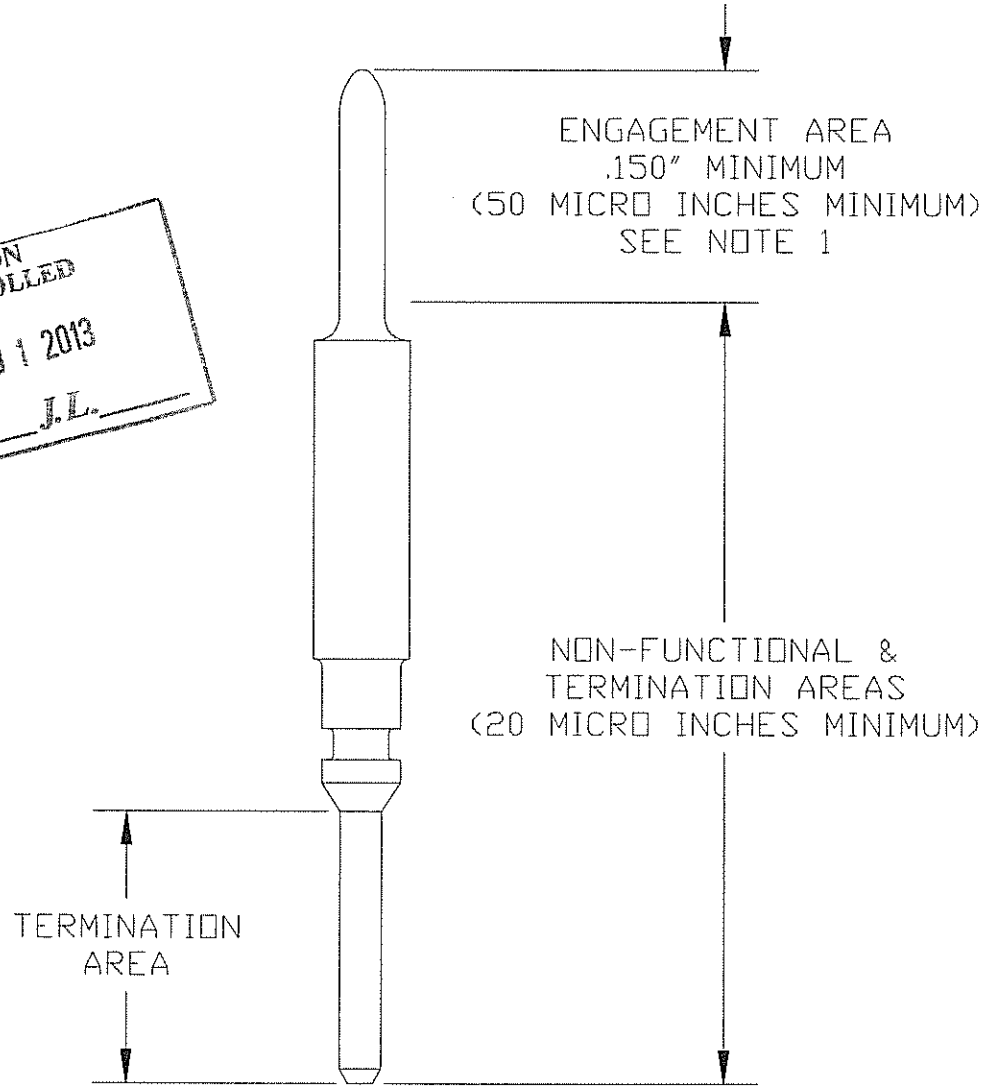
LOCALIZED GOLD PLATE SPECIFICATION FOR G40



NOTES:

1. PLATING THICKNESS TO BE MEASURED .060 +/-.010" FROM THE START OF THE ENGAGEMENT AREA.

LOCALIZED GOLD PLATE SPECIFICATION FOR G50



NOTES:

1. PLATING THICKNESS TO BE MEASURED .060 +/-.010" FROM THE START OF THE ENGAGEMENT AREA.