

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers the performance, tests and quality requirements for the PICABOND* mini, regular and weather resistant connectors.

1.2. Description

Insulation displacing connectors are designed for straight splicing telephone cable conductors or other insulated solid copper communication wires.

1.3. Qualification

When tests are performed on the subject product line, the procedures specified in AMP 109 series specifications shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1. AMP Documents

- A. 109-1: General Requirements for Test Specifications
- B. 109 Series: Test Specifications as indicated in Figure 1. (Comply with MIL-STD-202, MIL-STD-1344 and EIA RS-364)
- C. Corporate Bulletin 401-76: Cross-reference between AMP Test Specifications and Military or Commercial Documents
- D. 114-6012 : Application Specification
- E. 115-6026 : Wire, Standard Telephone
- E. 501-107 : Test Report

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

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Product Code: 1205

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				CHK H. Smith 4/27/81			
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				NO 108-6009		REV J	LOC B
J	Revise per ECN AA-7028	<i>JK</i>	10/16 90	PAGE 1 OF 7		TITLE CONNECTOR, PICABOND, MINI, REGULAR AND WEATHER RESISTANT	
LTR	REVISION RECORD	APP	DATE				

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3.2. Material

- A. Terminal: Phosphor bronze
- B. Insulation: Polyester
- C. Sealant (Weather resistant connectors only): Applied over slotted terminal lances.

3.3. Ratings

- A. Operating voltage: 400 vdc
- B. Operating temperature: -40° to 60°C (-40° to 140°F)
- C. Current: Signal application only

3.4. Performance and Test Description

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. All tests are performed at ambient temperature unless otherwise specified.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of Product	Meets requirements of product drawing and AMP Spec 114-6012.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Termination Resistance, Dry Circuit	Used to determine ΔR in subsequent tests	Subject connector mounted on printed circuit board to 20 mv dc open circuit at 100 ma maximum, see Figure 7; AMP Spec 109-6-6.
Insulation Resistance, D.C. (b)	20×10^3 megohms minimum 1 minute hold.	Apply 1000 vdc between connector body and foil with 4 psi compression force, see Figure 3; AMP Spec 109-28-5.
Breakdown Voltage, A.C. (b)	3000 volts minimum breakdown voltage. 1 milliamperage leakage current trip level.	Connectors shall be paired as indicated in Figure 4; AMP Spec 109-29-2; apply voltage at a rate of 500 volts per second.
Impulse Dielectric A.C. (b)	5000 volts minimum breakdown voltage	Connectors shall be paired as indicated in Figure 4; AMP Spec 109-6014.

Figure 1 (cont)

AMP

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PAGE NO

2

108-6009

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Test Description	Requirement	Procedure
MECHANICAL		
Tensile Strength (b)	75% minimum breaking strength of wire.	AMP Spec 109-16 as indicated in Figure 6, at a rate of 1 inch/min.
ENVIRONMENTAL		
Heat Age (a) (d)	ΔR of 2 milliohms maximum termination resistance, dry circuit.	Subject mounted samples to 33 total days of heat age at 118°C (244°F); AMP Spec 109-43, level 9 duration I.
Temperature Cycling (a)	ΔR of 2 milliohms maximum termination resistance, dry circuit	Subject mounted samples to 512 cycles between -40° to 60°C (-40° to 140°F); AMP Spec 109-75-1.
Temperature Cycling with High Humidity (a)	ΔR of 2 milliohms maximum termination resistance, dry circuit.	Subject mounted samples to 300 temperature-humidity cycles between 4° to 60°C (40° to 140°C) 95% RH minimum; samples shall be air dried 24 hours before termination resistance measurements; AMP Spec 109-76-2.
Hydrogen Sulfide and Thermal Shock (a)(c)	ΔR of 2 milliohms maximum termination resistance, dry circuit.	Subject mounted samples to 12 cycles of hydrogen sulfide and thermal shock; AMP Spec 109-77.
<p>Notes:</p> <p>(a) All values are calculated at a 95% confidence level. No more than .01% (1 in 10,000) of the population shall be outside of the performance limits.</p> <p>(b) All values are calculated at a 95% confidence level. No more than 1% (1 in 100) of the population shall be outside of the performance limits.</p> <p>(c) Only applicable to PICABOND mini weather resistant connectors.</p> <p>(d) After 1, 2, 4, 8, 16 and 33 days, samples shall be removed from the oven and stabilized at room ambient temperature, and disturbed by applying a momentary force of .5 pounds to the center of the connector, in a plane parallel to the test board, as indicated in Figure 5. Termination resistance measurements shall be taken initially and after disturbance on the 8th, 16th and 33rd days only. At no time shall the samples remain out of the oven for more than 1 day.</p>		
Figure 1 (end)		

AMP AMP Incorporated Harrisburg, PA 17105-3608	PAGE	NO	REV	LOC
	3	108-6009	J	B

3.6. Connector Tests and Sequences

Test or Examination	Test Group (a)(d)							
	1	2	3	4	5	6	7	8
	Test Sequence (b)							
Examination of Product	1	1	1	1	1	1	1	1
Termination Resistance, Dry Circuit	2,4	2,4	2,4	2,4				
Insulation Resistance, D.C.						2		
Breakdown Voltage, A.C.							2	
Impulse Dielectric A.C.								2
Tensile Strength					2			
Heat Age	3							
Temperature Cycling			3					
Temperature Cycling with High Humidity				3				
Hydrogen Sulfide, Thermal Shock (c)		3						

(a) See Para 4.1.A.

(b) Numbers indicate sequence in which tests are performed.

(c) Only applicable to PICABOND mini weather resistant connectors.

(d) All test groups are separate evaluations

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Connectors shall be selected at random from current production. Test groups 1 thru 4 shall be mounted on printed circuit boards as indicated in Figure 5 and consist of 24 samples per wire combination. Test group 5 and 6 shall consist of 24 samples per wire combination. Test group 7 and 8 shall consist of 48 samples per wire combination. All connectors shall be applied to PIC wire, meeting the requirements of AMP Specification 115-6026, in accordance with AMP Specification 114-6012.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 2.

4.2. Retention of Qualification

If, in a five-year period, no changes to the product or process occur, the product shall be subjected to the two groups 6 and 7 of the testing described in the test sequence, see Figure 2. Justification for exceeding this time limit must be documented and approved by the division manager.

AMP

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PAGE NO

4

108-6009

REV

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4.3. Requalification Testing

If changes significantly affecting form, fit, or function are made to the product or to the manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality, and reliability engineering.

4.4. Acceptance

Acceptance is based on verification that the product meets the requirements of Figure 1. Failures attributed to equipment, test setup, or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.5. Quality Conformance Inspection

The applicable AMP quality inspection plan will specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.

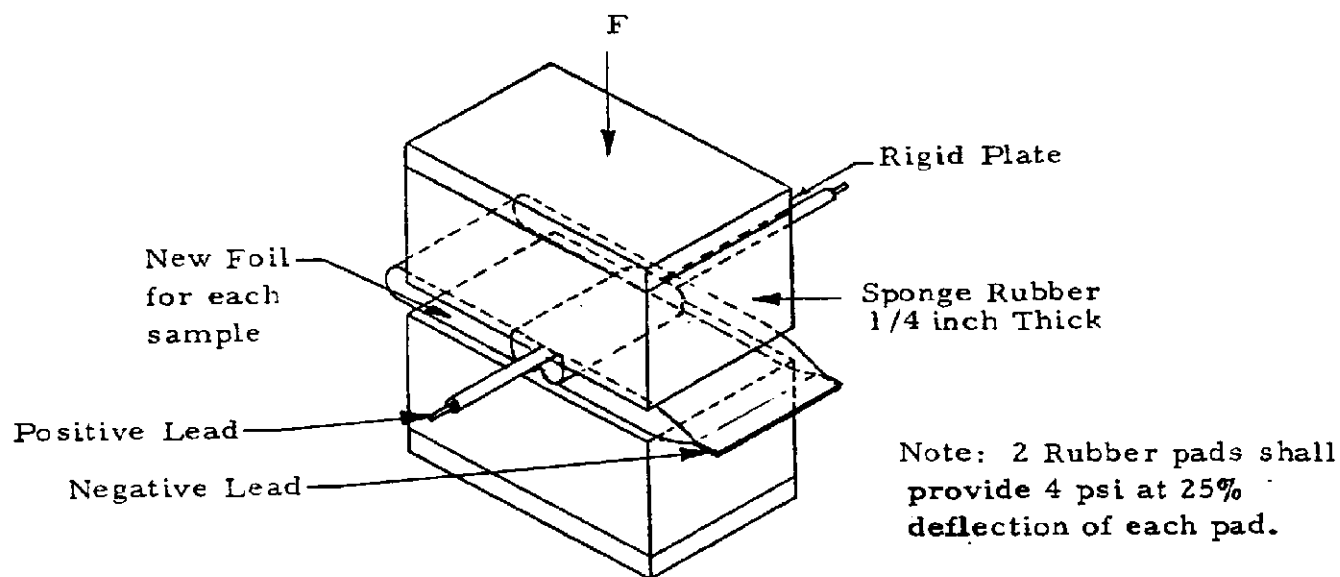


Figure 3
Insulation Resistance Test Method

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PAGE NO

5

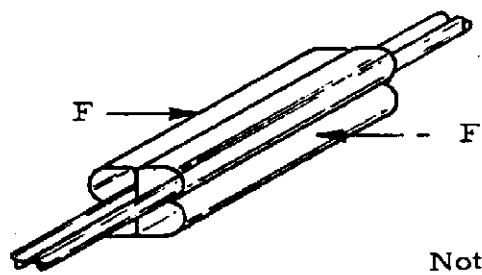
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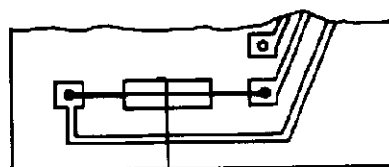
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Note: $F = 1/2$
pound force
equally applied.

Figure 4
Breakdown Voltage and Impulse Dielectric



1/2 Pound

Figure 5
Mounting Method and Disturbance Procedure

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PAGE	NO
6	

108-6009

REV	LOC
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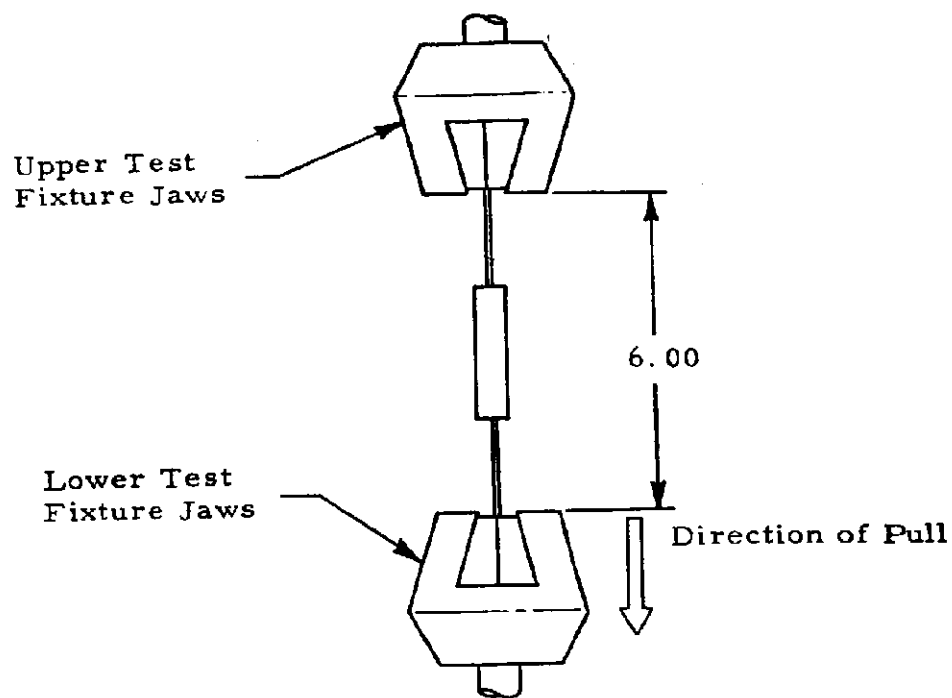


Figure 6
Tensile Strength

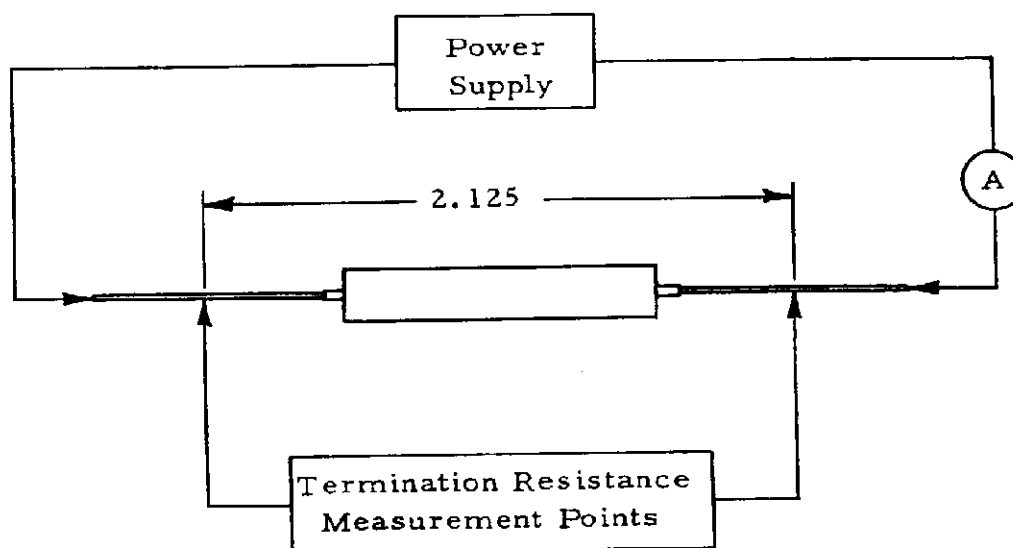


Figure 7
Termination Resistance Measurement Points