

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for 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 subject product line, procedures specified in AMP 109 series specifications shall be used. All inspections shall be performed using 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 requirements of this specification and product drawing, product drawing shall take precedence. In the event of conflict between requirements of this specification and 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. 114-6025: Application Specification
- E. 115-6026: Engineering Specification
- F. 501-149: Test Report

3. REQUIREMENTS

3.1. Design and Construction

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

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Product Code: 1205

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CONTROLLED DOCUMENT This specification is a controlled document per AMP Specification 102-21. It is subject to change and Corporate Standards should be contacted for latest revision.				DR <i>Brent Beckley 3/1/93</i>	CHK <i>AMM 3/3/93</i>	AMP AMP Incorporated Harrisburg, PA 17105-3608		
J	Revise per EC 0140-8832-92	<i>B4B</i>	<i>3/1/93</i>	APP <i>Day 3/1/93</i>	NO 108-6008	REV J	LOC B	
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3.2. Material

- A. Terminal: Brass, tin plated
- B. Insulation: Polyester
- C. Sealant (weather resistant connectors only): Applied over slotted terminal lances.

3.3. Ratings

- A. Operating voltage: 48 vdc
- B. Operating temperature: -40 to 140°F (-40 to 60°C)

3.4. Performance and Test Description

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Figure 1.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing and AMP Spec 114-6025.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Termination resistance, dry circuit.	Used to determine ΔR in subsequent tests. See Note (a).	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, DC.	20 x 10^3 megohms minimum. 1 minute hold. See Note (b).	Apply 1000 vdc between connector body and foil with 4 psi compression force. See Figure 3. AMP Spec 109-28-5.
Breakdown voltage, AC.	3000 volts minimum breakdown voltage. 1 milliamper leakage current trip level. See Note (b).	Connectors shall be paired per Figure 4. Apply voltage at rate of 500 volts per second. AMP Spec 109-29-2.
Impulse dielectric, AC.	5000 volts minimum breakdown voltage. See Note (b).	Connectors shall be paired per Figure 4. AMP Spec 109-6014.

Figure 1 (cont)

Test Description	Requirement	Procedure
MECHANICAL		
Tensile strength.	75% minimum breaking strength of wire. See Note (b).	Test at rate of 1 inch per minute. See Figure 6. AMP Spec 109-4.
ENVIRONMENTAL		
Heat age.	ΔR 2 milliohms maximum termination resistance, dry circuit. See Notes (a) and (d).	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.	ΔR 2 milliohms maximum termination resistance, dry circuit. See Note (a).	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.	ΔR 2 milliohms maximum termination resistance, dry circuit. See Note (a).	Subject mounted samples to 300 temperature-humidity cycles between 4 to 60°C (40 to 140°F at minimum of 95% RH). Samples shall be air dried 24 hours before termination resistance measurements. AMP Spec 109-76-2.
Hydrogen sulfide and thermal shock. OR Mixed flowing gas.	ΔR 2 milliohms maximum termination resistance, dry circuit. See Notes (a) and (c).	Subject mounted samples to 12 cycles hydrogen sulfide and thermal shock. AMP Spec 109-77. Subject mounted samples to environmental class II for 14 days. AMP Spec 109-85-2.

- (a) All values are calculated at a 95% confidence level. No more than .01% (1 in 10,000) of population shall be outside performance limits.
- (b) All values are calculated at a 95% confidence level. No more than 1% (1 in 100) of population shall be outside performance limits.
- (c) Only applicable to PICABOND mini weather resistant connectors.
- (d) After 1, 2, 4, 8, 16 and 33 days, samples shall be removed from oven and stabilized at room ambient temperature, and disturbed by applying momentary force of .5 pounds to center of connector in a plane parallel to test board per Figure 5. Termination resistance measurements shall be taken initially and after disturbance on 8th, 16th and 33rd days only. At no time shall samples remain out of oven for more than 1 day.

Figure 1 (end)

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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, DC						2		
Breakdown voltage, AC							2	
Impulse dielectric AC								2
Tensile strength					2			
Heat age	3							
Temperature cycling			3					
Temperature cycling w/high humidity				3				
Hydrogen sulfide, thermal shock OR		3(c)						
Mixed flowing gas								

(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 per Figure 5 and consist of 24 samples per wire combination. Test groups 5 and 6 shall consist of 24 samples per wire combination. Test groups 7 and 8 shall consist of 48 samples per wire combination. All connectors shall be applied to PIC wire meeting requirements of AMP Specifications 115-6026 and 114-6025.

B. Test Sequence

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

4.2. Requalification Testing

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

4.3. Acceptance

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

4.4. Quality Conformance Inspection

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

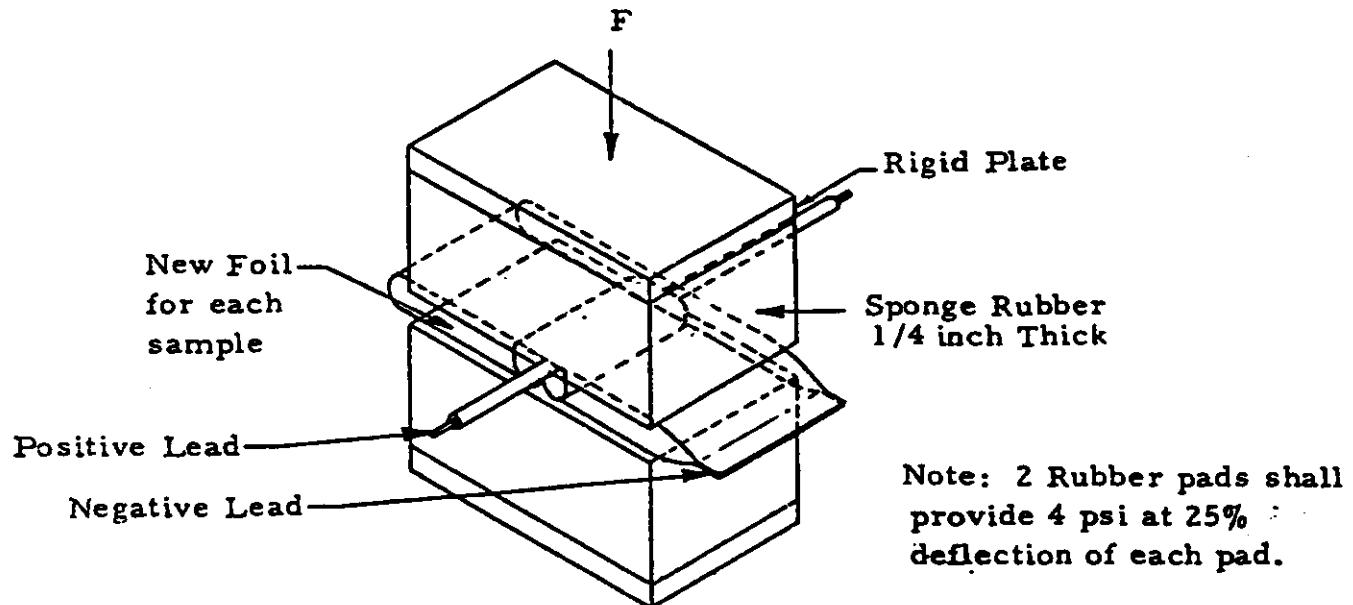
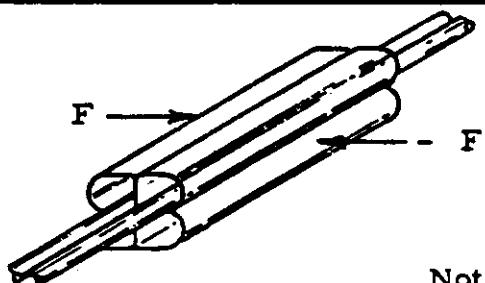


Figure 3
Insulation Resistance Test Method



Back to Back

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

Figure 4
Breakdown Voltage & Impulse Dielectric

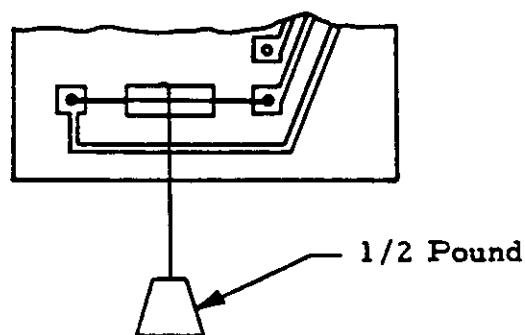


Figure 5
Mounting Method & Disturbance Procedure

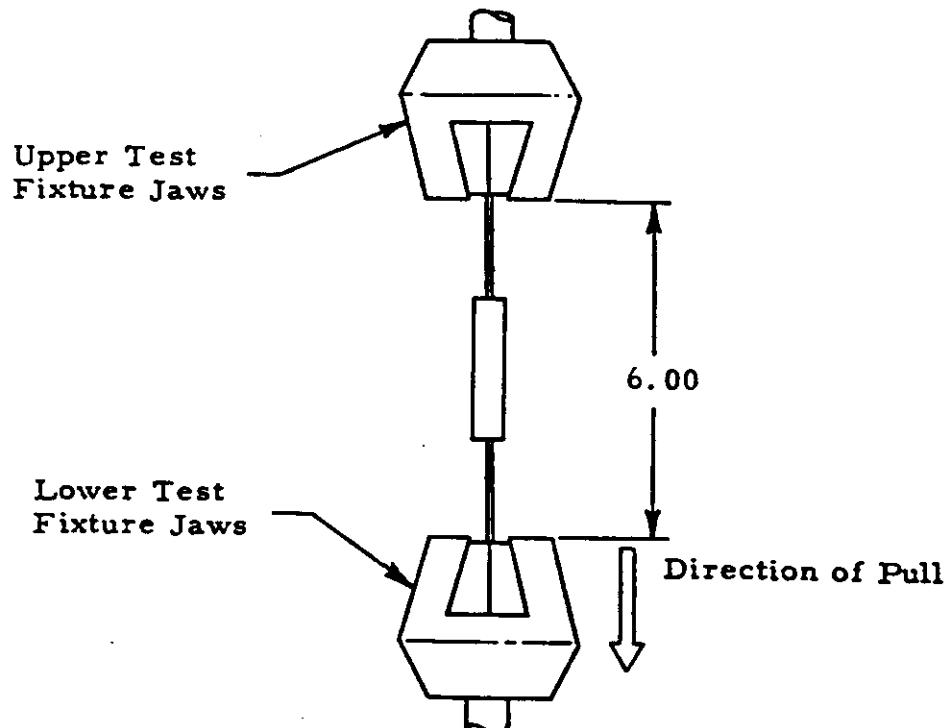


Figure 6
Tensile Strength

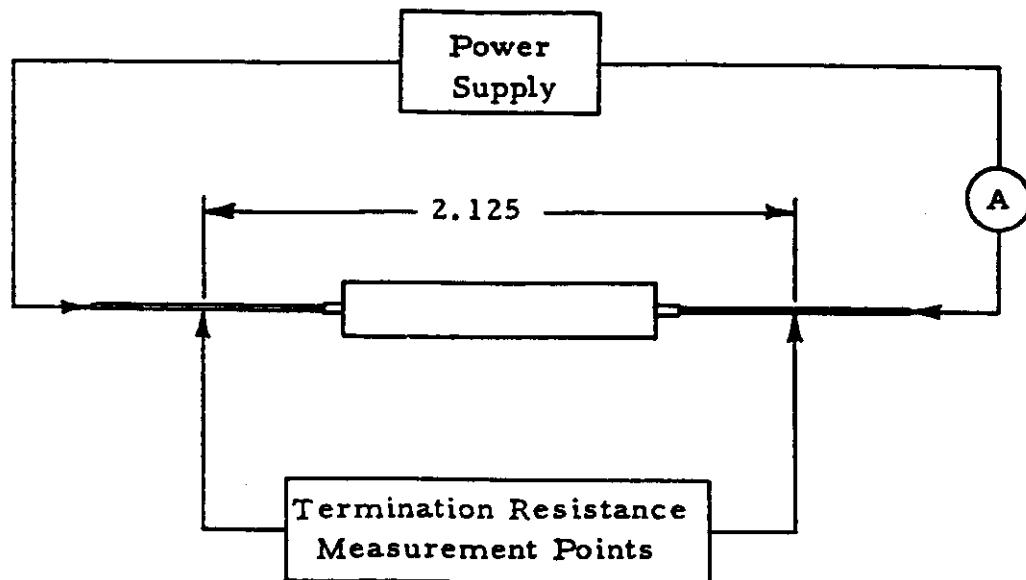


Figure 7
Termination Resistance Measurement Points