

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

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

1.2. Description

Insulation displacing connectors are designed for straight splicing telephone cable conductors or other insulated solid copper communications 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. Unless otherwise specified, latest edition of the document applies. 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. 114-6002: Application Specification
- E. 115-6026: Engineering Specification
- F. 501-225: Test Report

3. REQUIREMENTS

3.1. Design and Construction

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

* Trademark

Product Code: 1200

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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 F. Rinehardt 4/24/81	AMP AMP Incorporated Harrisburg, PA 17105-3608		
		CHK H. Smith 4/24/81	NO 108-6011	REV F	LOC B
		APP J. Fitzpatrick 4/24/81			
F	EC 0210-0634-93	<i>B4B</i> <i>10/13/83</i>	PAGE 1 OF 7	TITLE CONNECTOR, PICABOND REGULAR & WEATHER RESISTANT	
LTR	REVISION RECORD	APP	DATE		

3.2. Materials

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

3.3. Ratings

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

3.4. Performance and Test Description

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Figure 1. All tests are performed at ambient environmental conditions per AMP Specification 109-1 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 114-6002.	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 3. 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 4. AMP Spec 109-28-4.
Breakdown voltage, AC.	2000 volts minimum breakdown voltage. 1 milliamperere leakage current trip level. See Note (b).	Apply voltage at rate of 1 kv per second. See Figure 5. AMP Spec 109-29-2.
Impulse dielectric, AC.	4000 volts minimum breakdown voltage. See Note (b).	Apply 8000 volt, 10 microsecond rise, 1000 microsecond delay pulse between 1 pairs. See Figure 5.

Figure 1 (cont)

Test Description	Requirement	Procedure
MECHANICAL		
Tensile strength.	70% 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 Note (a). See Note (d).	Subject mounted samples to 33 total days of heat age at 118°C (244°F). See Figure 7. AMP Spec 109-43.
Temperature cycling.	ΔR 2 milliohms maximum termination resistance, dry circuit. See Note (a).	Subject mounted samples to 512 cycles between -40 and 60°C (-40 and 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 and 60°C (40 and 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	ΔR 2 milliohms maximum termination resistance, dry circuit. See Note (a). See Note (c).	Subject mounted samples to 12 cycles hydrogen sulfide and thermal shock. AMP Spec 109-77.
Mixed flowing gas.		Subject mounted samples to environmental class II for 14 days. AMP Spec 109-85-2.

- (a) All values are calculated at 95% confidence level. No more than .01% (1 in 10000) of population shall be outside performance limits.
- (b) All values are calculated at 95% confidence level. No more than 1% (1 in 100) of population shall be outside performance limits.
- (c) Applicable only 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 pound to center of connector in a plane parallel to test board per Figure 7. 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. Product Qualification and Requalification Test Sequence

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 Mixed flowing gas		3(c)						

- (a) See Para 4.1.A.
- (b) Numbers indicate sequence in which tests are performed.
- (c) Applicable only to PICABOND load coil 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 through 4 shall be mounted on printed circuit boards per Figure 7 and shall 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 114-6002 and 115-6026.

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.

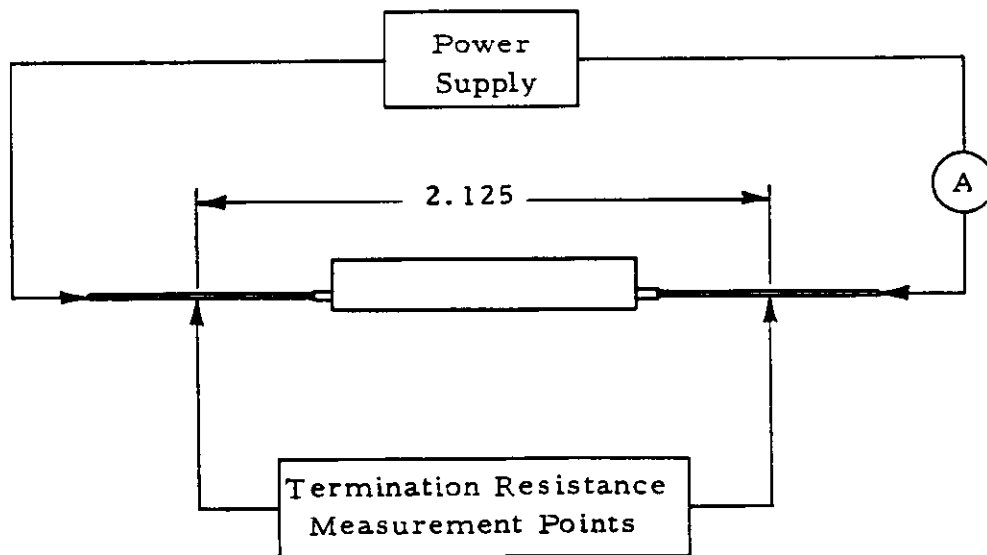


Figure 3
Termination Resistance Measurement Points

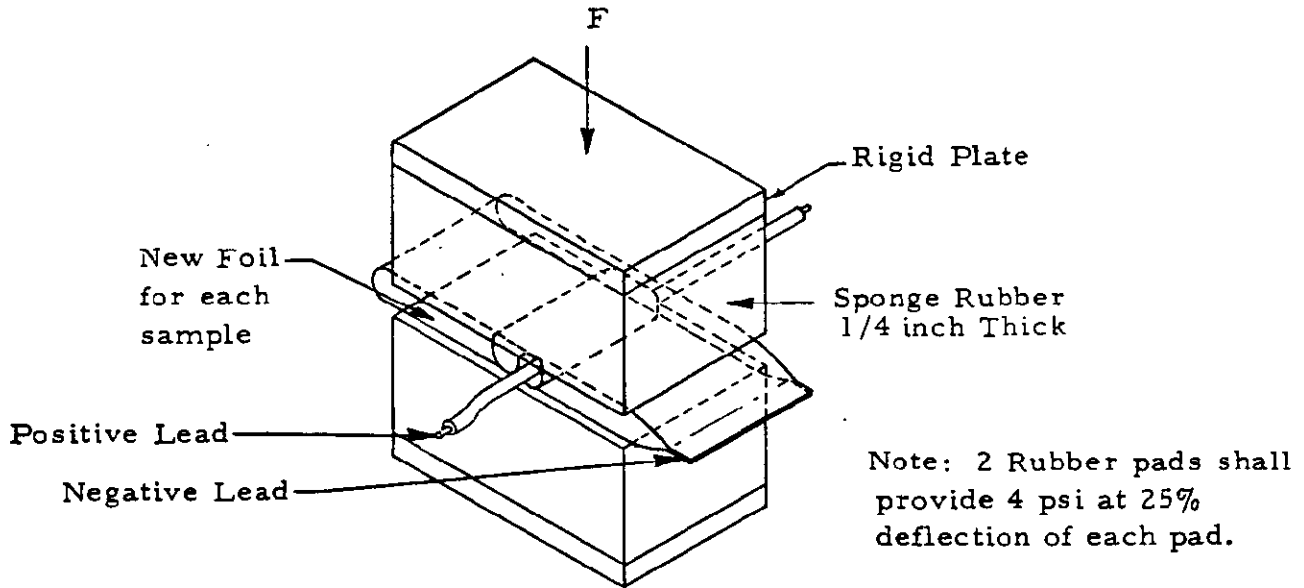


Figure 4
Insulation Resistance Test Method

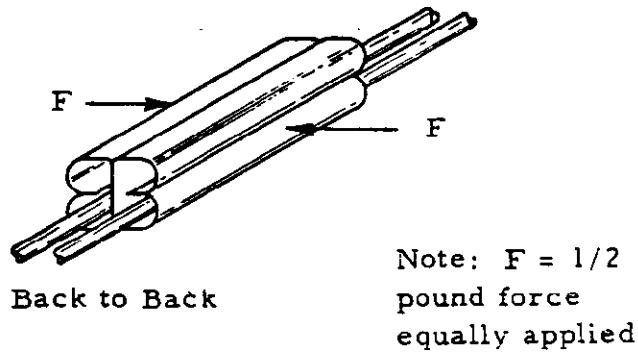


Figure 5
Breakdown Voltage & Impulse Dielectric

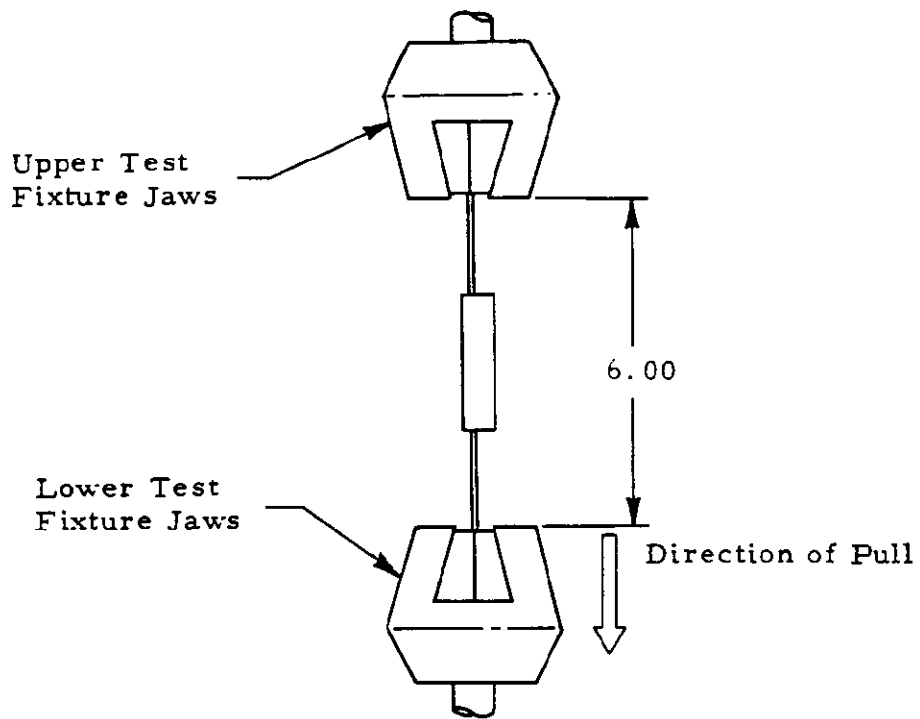


Figure 6
Tensile Strength

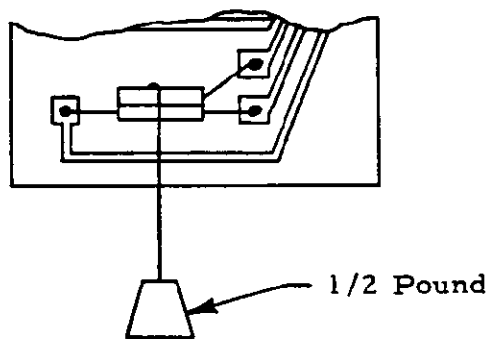


Figure 7
Mounting Method & Disturbance Procedure