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**Splash Proof Seal, Universal MATE-N-LOK\* Connectors**

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**1. SCOPE**

## 1.1. Content

This specification covers performance, tests and quality requirements to establish the degree of protection provided by Universal MATE-N-LOK\* connector splash proof seals.

## 1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 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. Unless otherwise specified, the latest edition of the document applies. 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. Tyco Electronics Documents

- 109-1: General Requirements for Test Specifications
- 109 Series: Test Specifications as indicated in Figure 1
- 108-1031: Product Specification
- 114-1010: Application Specification
- 408-3392: Instruction Sheet
- 110-213-1: Test Report

## 2.2. Commercial Standard

IEC 529: Degrees of Protection Provided by Enclosures (IP Code)

**3. REQUIREMENTS**

## 3.1. Design and Construction

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

## 3.2. Materials

Materials used in the construction of this product shall be as specified on the applicable product drawing.

## 3.3. Rating

Temperature: -55 to 105°C

3.4. Performance and Test Description

Product is designed to meet the environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per Test Specification 109-1. All tests shall be performed in the free hanging condition with little or no wire dress.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing and AMP Spec 114-1010.	Visual, dimensional and functional per applicable quality inspection plan.
ENVIRONMENTAL		
Water immersion.	No ingress of water.	AMP Spec 109-191-7. (IEC 529 (2) paragraph 14.2.7.) Immerse mated samples in water for 30 minutes with the lowest point of the sample 1 meter below the surface. 8 inch minimum tank diameter.
Dust tightness.	No ingress of dust.	AMP Spec 109-190-5. (IEC 529 (2) paragraph 13.4.) Subject mated samples to 8 hours of circulating talcum powder dust. 2 kg of powder per cubic meter of test chamber shall be used.
Water spray.	No ingress of water.	AMP Spec 109-191-6. (IEC 529 (2) paragraph 14.2.6.) Subject mated samples to 3 minutes of water spray at a flow rate of 100 ± 5% liter per minute.

Figure 1

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)	
	1(c)	2(d)
	Test Sequence (b)	
Examination of product	1,4	1,5
Water immersion	2	2
Dust tightness	3	4
Water spray		3

**NOTE**

- (a) See paragraph 4.1.A.
- (b) Numbers indicate sequence in which tests are performed.
- (c) For wires with insulation diameters .060 thru .109 inches.
- (d) For wires with insulation diameters .110 thru .130 inches.

Figure 2

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**4. QUALITY ASSURANCE PROVISIONS**

## 4.1. Qualification Testing

## A. Sample Selection

Samples shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. All test groups shall each consist of a minimum of 5 mated samples.

## B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 2. Test group 1 is equivalent to IEC 529 IP rating of 5/7. Test group 2 is equivalent to IEC 529 IP rating of 5/6.

## 4.2. Requalification Testing

If changes significantly affecting form, fit or function are made to the product or 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.

## 4.3. 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.

## 4.4. Quality Conformance Inspection

- I The applicable quality inspection plan shall 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.