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## Wire Seal, Universal MATE-N-LOK Connectors

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### 1. SCOPE

#### 1.1. Content

This specification defines performance, tests, and quality requirements to establish the degree of protection provided by TE Connectivity (TE) 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. TE Documents

[108-1031](#): Product Specification  
[108-1031-1](#): Product Specification  
[114-1010](#): Application Specification  
114-133102 Application Specification  
501-XXXXX Qualification Test Report

#### 2.2. Industry Documents

IEC 60529: 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. Ratings

Temperature: -55 to 105°C

#### 3.4. Performance and Test Description

Product is designed to meet the environmental performance requirements specified herein. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per Test Specification 109-1. All tests shall be performed in 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 Application Specification 114-133102.	Visual, dimensional and functional per applicable quality inspection plan.
Environmental		
Water Immersion	No ingress of water	TE Spec 109-197. (IEC 60529 (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
Water Spray	No ingress of water	TE Spec 109-197. (IEC 60529 (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(c)	3(d)	4(d)
	Test Sequence(b)			
Examination of product	1,3	1,3	1,3	1,3
Water immersion	2		2	
Water spray		2		2

(a) See paragraph 4.1.A.

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

(c) Wires with minimum specified insulation diameter (2.03 mm).

(d) Wires with maximum specified insulation diameter (4.07 mm).

#### 4. QUALITY ASSURANCE PROVISIONS

##### 4.1. Qualification Testing

###### A. Specimen Selection

Specimens shall be prepared in accordance with applicable instruction sheets and shall be selected at random from current production. Each test group shall consist of a minimum of 5 mated specimens.

###### B. Test Sequence

Qualification inspection shall be verified by testing specimens as specified in Figure 2. Test group 1 is equivalent to IEC 60529 IP rating of X7. Test Group 2 is equivalent of IP rating of X6.

##### 4.2. Re-Qualification Testing

If changes that significantly affecting form, fit, or function are made to the product or manufacturing process, product assurance shall coordinate re-qualification 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. If product failure occurs, corrective action shall be taken and specimens re-submitted for qualification. Testing to confirm corrective action is required before re-submittal.

##### 4.4. Quality Conformance Inspection

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.