

Qualification Test Report of .110 Series Ultra Fast Fully Insulated FASTON* Receptacle Terminals for 22 to 18 AWG Wire

1. INTRODUCTION

1.1. Purpose

Ultra Fast Fully Insulated FASTON* Receptacle Terminals were tested to determine if they complied with the performance requirements of Product Specification 108-1043.

1.2. Scope

Ultra Fast Fully Insulated FASTON Receptacle Terminals crimped to wire in accordance with the procedures of the Ultra Fast applicator log were subjected to the qualification test sequence listed in paragraph 3.5. of Product Specification 108-1043.

1.3. Conclusion

Ultra Fast Fully Insulated FASTON Receptacle Terminals when manufactured in accordance with Product Drawing 520083 met the performance requirements of Product Specification 108-1043.

1.4. Product Description

Ultra Fast Fully Insulated FASTON Receptacle Terminals consist of a FASTON body enclosed in a fully insulated housing which mate with FASTON tabs are used on business and commercial equipment.

1.5. Wire Characteristics

Stranded, tin plated wire, with 600 volt black insulation, conforming to UL 1015 as described in Customer Restricted Specification 116-1142 was used for testing.

1.6. Test Specimens

Test specimens were representative of normal production lots. Specimens identified with the following part numbers were used for test:

<u>Quantity</u>	<u>Part Number</u>	<u>Description</u>
225	2-520083-2	Receptacle
25	62061-2	.110 X .020 tab
30	62628-2	.110 X .020 tab

2. QUALIFICATION TEST SEQUENCE

The test sequence of paragraph 3.5. of Product Specification 108-1043 was followed as shown below:

<u>Examination or Test Nomenclature</u>	<u>Requirement and Method Paragraph</u>
<u>Test Group 1</u> Examination of Product	3.4.
<u>Test Group II</u> Secureness Heating Pull out	3.4.
<u>Test Group III</u> Engagement and Disengagement	3.4
<u>Test Group IV</u> Dielectric Withstanding, Test Condition A	3.4.
<u>Test Group V</u> Dielectric Withstanding, Test Condition C	3.4.
<u>Test Group VI</u> Dielectric Withstanding, receptacle, tab entry portion	3.4.
<u>Test Group VII</u> Heat Age, 136°C Dielectric Withstanding, Test Condition A	3.4.
<u>Test Group VIII</u> Heat age, 100°C Humidity Dielectric Withstanding, Test Condition A	3.4.

3. SUMMARY OF TEST RESULTS

3.1. Test Group I (5 samples tested)

Examination of Product - Paragraph 3.4.

All receptacles selected for test were found to comply with the material, construction, physical dimensions and workmanship requirements of the specification.

3.2. Test Group II (60 samples tested)

A. Secureness - Paragraph 3.4.

Twenty receptacles each crimped to 22, 20 and 18 AWG wire were subjected to 1 hour of mechanical flexing under load in accordance with the specification. Loads were 1 pound for both 22 and 20 AWG wire, and 2.0 pounds for 18 AWG wire.

All receptacles tested were found to comply with the requirements of the specification. The joint between the receptacle and the wire remained intact.

B. Heating - Paragraph 3.4.

Twenty receptacles each crimped to 22, 20 and 18 AWG wire were subjected to a heating (temperature rise) test in accordance with the specification. Samples were stabilized at the specified current and temperature rise and measured and recorded. Specification maximum temperature rise was 20°C.

All receptacles tested were found to comply with the requirements of the specification. Maximum individual temperature rise values were as follows:

Wire Size (AWG)	Current (amperes)	Maximum Individual Temperature Rise (°C)
22	3.0	4.1
20	4.0	4.0
18	7.0	9.5

3.3. Test Group III (20 samples tested)

Engagement and Disengagement - Paragraph 3.4.

Receptacles and tabs were engaged and disengaged 6 times in accordance with the specification. Specification requirements were as tabulated below:

First engagement	individual maximum	12 pounds
First disengagement	individual maximum	14 pounds
	average minimum	3 pounds
	individual minimum	2 pounds
Sixth disengagement	average minimum	2 pounds
	individual minimum	1 pound

All receptacles tested were found to comply with the requirements of the specification. Applicable value were as tabulated below:

First engagement	individual maximum	6.2 pounds
First disengagement	individual maximum	7.8 pounds
	average minimum	6.2 pounds
	individual minimum	5.1 pounds
Sixth disengagement	average minimum	6.2 pounds
	individual minimum	4.2 pounds

3.4. Test Group IV (60 samples tested)

Dielectric Withstanding, Test Condition A - Paragraph 3.4.

Twenty receptacles each crimped to 22, 20 and 18 AWG wire were subjected to dielectric withstanding Test Condition A for a duration of 1 minute in accordance with the specification. A 3400 volt AC potential was applied between the wire and a container of number 12 lead shot in which the receptacle was embedded.

All receptacles tested were found to comply with the requirements of the specification. There was no breakdown or flashover noted.

3.5. Test Group V (20 samples tested)

Dielectric Withstanding, Test Condition C - Paragraph 3.4.

Twenty receptacles were subjected to dielectric withstanding Test Condition C for a duration of 1 minute in accordance with the specification. A 3000 volt AC potential was applied between the receptacle and a flat metal plate as shown in Figure 4 of the specification.

All receptacles tested were found to comply with the requirements of the specification. There was no breakdown or flashover noted.

3.6. Test Group VI (20 samples tested)

Dielectric Withstanding, Receptacle, Tab Entry Portion - Paragraph 3.4.

Twenty receptacles were subjected to dielectric withstanding for a duration of 1 minute in accordance with the specification. A 1000 volt AC potential was applied between the receptacle and a flat metal plate as shown in Figure 5 of the specification.

All receptacles tested were found to comply with the requirements of the specification. There was no breakdown or flashover noted.

3.7. Test Group VII (20 samples tested)

A. Heat Age - Paragraph 3.4.

Twenty receptacles were subjected to an elevated temperature of 136°C for 7 days.

B. Dielectric Withstanding, Test Condition A - Paragraph 3.4.

After heat age, 20 receptacles were subjected to dielectric withstanding Test Condition A for a duration of 1 minute in accordance with the specification. A 3400 volt AC potential was applied between the wire and a container of number 12 lead shot in which the receptacle was embedded.

All receptacles tested were found to comply with the requirements of the specification. There was no breakdown or flashover noted.

3.8. Test Group VIII (20 samples tested)

A. Heat Age - Paragraph 3.4.

Twenty uncrimped receptacles were subjected to an elevated temperature of 100°C for 7 days.

B. Humidity - Paragraph 3.4.

Twenty uncrimped receptacles were subjected to a humidity test for 24 hours. The RH was 85% and the temperature was 30°C for 7 days. After humidity, samples were crimped to the appropriate wire.

C. Dielectric Withstanding, Test Condition A - Paragraph 3.4.

After heat age, 20 receptacles were subjected to dielectric withstanding Test Condition A for a duration of 1 minute in accordance with the specification. A 3400 volt AC potential was applied between the wire and a container of number 12 lead shot in which the receptacle was embedded.

All receptacles tested were found to comply with the requirements of the specification. There was no breakdown or flashover noted.