



Glow Wire Evaluation on FASTON* Housings

1. INTRODUCTION

1.1 Purpose

Testing was performed on the TE Connectivity FASTON housings to evaluate its performance during Glow Wire Testing.

1.2 Scope

This report covers the glow wire performance of the FASTON housing. Testing was performed at the Harrisburg Electrical Components Test Laboratory (HECTL) between May 14, 2018 and May 18, 2018. Detailed test results are stored in HECTL under EA20180195T.

1.3 Conclusion

All specimens in Test Sets 1, 2 and 3 conformed to the maximum allowable flame duration of 2 seconds as specified in IEC 60335-1, Edition 5.2, 2016-05, when tested at 750°C.

1.4 Test Specimens

The specimens submitted for testing are identified in Table 1.

Table 1 – Specimen Identification

Test Set	Quantity	Part Number	Description
1	3	1969632-1	FASTON Receptacle Housing, Back Vertical Orientation
2	3	1969632-1	FASTON Receptacle Housing, Back Horizontal Orientation
3	3	1969632-1	FASTON Receptacle Housing, Side Horizontal Orientation

1.5 Test Sequence

The specimens in Table 1 were subjected to the testing outlined in Table 2.

Table 2 – Specimen Test Sequence

Test or Examination	Test Set
	1,2,3
	Test Sequence (a)
Glow Wire at 750°C	1

(a) The numbers indicate sequence in which tests were performed

1.6 Environmental Conditions

Unless otherwise stated, the following environmental conditions prevailed during testing:

Temperature: 15°C to 35°C
Relative Humidity: 20% to 80%

2. SUMMARY OF TESTING

2.1 Glow Wire at 750°C

All specimens conformed to IEC 60335-1 Edition 5.2, 2016-05 when tested at 750°C with a maximum allowable flame duration of 2 seconds. Tables 3 through 5 show the results of the testing and Figures 1 through 3 show the specimens after testing.

Table 3 – Test Set 1 Glow Wire Results

Specimen	Point of Glow Wire Application	Temperature (°C)	Ti (sec)	Te (sec)	Tr (sec)	Flame Height (cm)	Drops (yes/no)	Light Tissue Paper Burns (yes/no)	Pass/Fail
1-1	Back Vertical	750	0	0	30	0	No	No	Pass
1-2	Back Vertical	750	0	0	30	0	No	No	Pass
1-3	Back Vertical	750	0	0	30	0	No	No	Pass

Note: Ti – Time of Ignition, Te – Time of Flame Extinguish from test start, Tr – Time removed from heated element

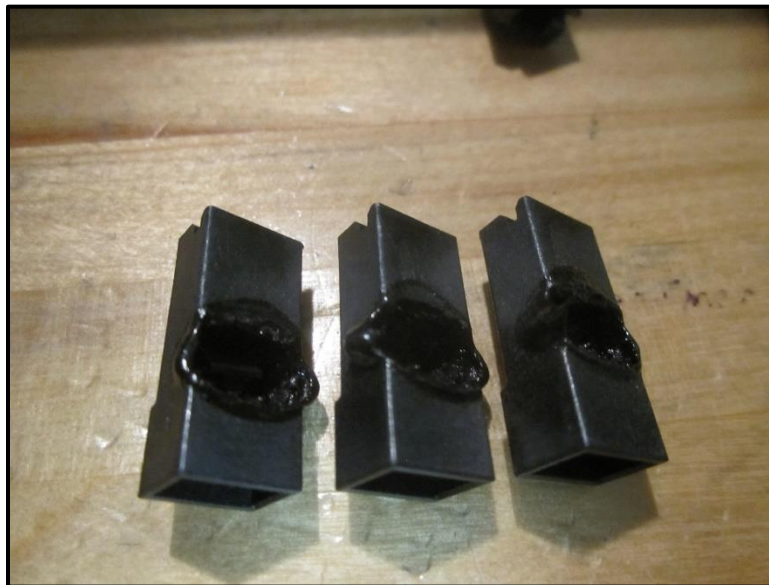


Figure 1 – Test Set 1 Following Testing

Table 4 – Test Set 2 Glow Wire Results

Specimen	Point of Glow Wire Application	Temperature (°C)	Ti (sec)	Te (sec)	Tr (sec)	Flame Height (cm)	Drops (yes/no)	Light Tissue Paper Burns (yes/no)	Pass/Fail
2-1	Back Horizontal	750	0	0	30	0	No	No	Pass
2-2	Back Horizontal	750	0	0	30	0	No	No	Pass
2-3	Back Horizontal	750	0	0	30	0	No	No	Pass

Note: Ti – Time of Ignition, Te – Time of Flame Extinguish from test start, Tr – Time removed from heated element

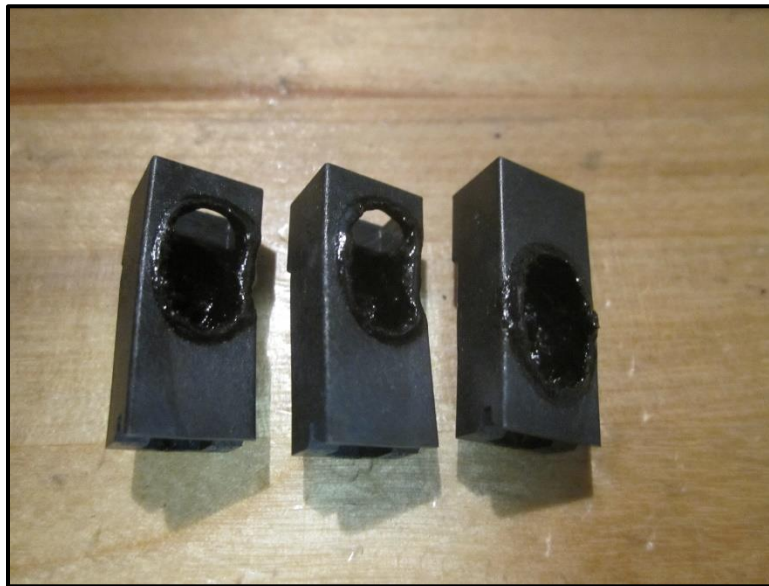


Figure 2 - Test Set 2 Following Testing

Table 5 – Test Set 3 Glow Wire Results

Specimen	Point of Glow Wire Application	Temperature (°C)	Ti (sec)	Te (sec)	Tr (sec)	Flame Height (cm)	Drops (yes/no)	Light Tissue Paper Burns (yes/no)	Pass/Fail
3-1	Side Horizontal	750	0	0	30	0	No	No	Pass
3-2	Side Horizontal	750	0	0	30	0	No	No	Pass
3-3	Side Horizontal	750	0	0	30	0	No	No	Pass

Note: Ti – Time of Ignition, Te – Time of Flame Extinguish from test start, Tr – Time removed from heated element



Figure 3 - Test Set 3 Following Testing

3. TEST METHODS

3.1 Glow Wire at 750°C

All specimens were preconditioned at a temperature of 25°C and relative humidity of 60% for a minimum of 24 hours before being subjected to the Glow Wire test. The duration of the test was thirty seconds at 750°C \pm 10°C with a glow wire penetration depth of 7 mm. Test specimens were tested in three orientations as shown in Figures 4 through 6. Test specimens were orientated whereas not to impede the material from burning up the test specimen or dripping down to the specified layer (wrapping tissue paper). The tester observed each test specimen for flame height, flame duration, and burning of the specified layer beneath the specimen under test. All testing was performed in accordance with IEC 60335-1 Edition 5.2, 2016-05 and IEC 60695-2-11, Edition 2.0, 2014-01.

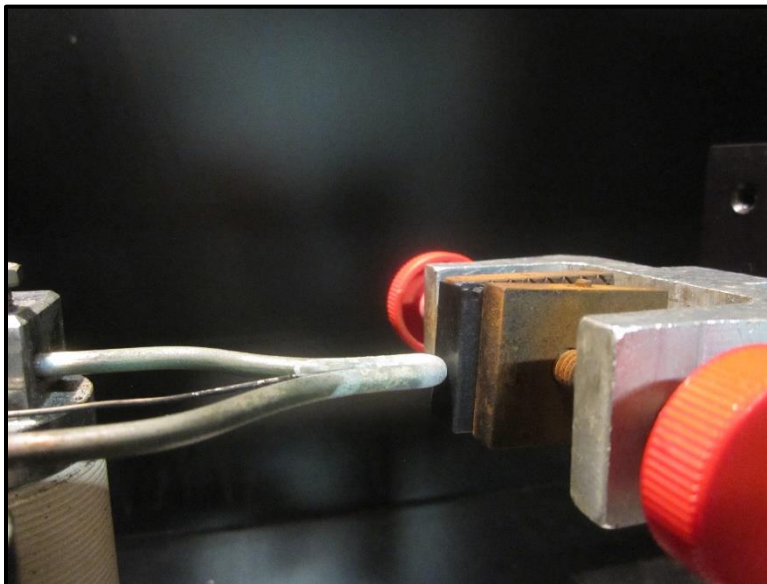


Figure 4 – Back Vertical Test Setup

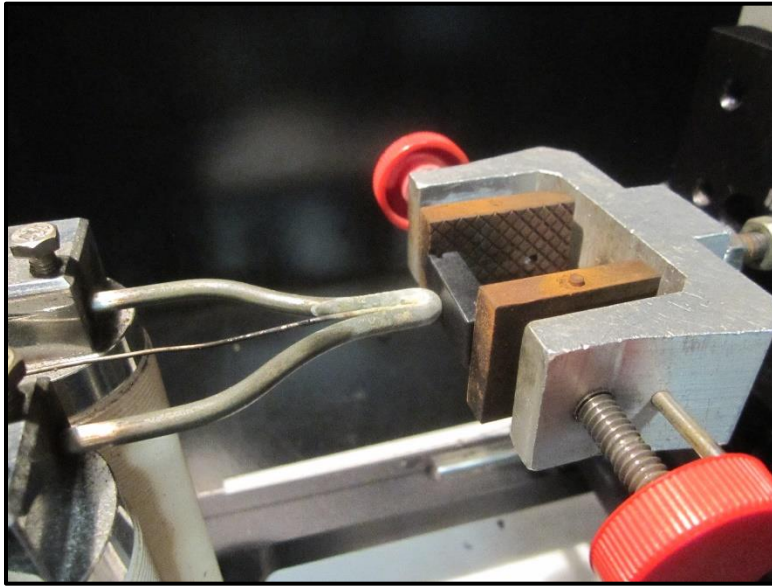


Figure 5 – Back Horizontal Test Setup

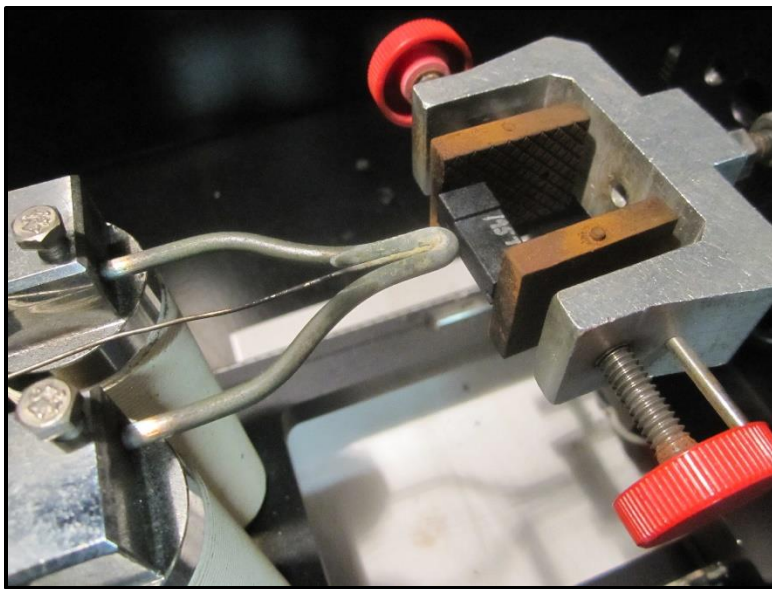


Figure 6 – Side Horizontal Test Setup