



CONFORMITY ASSESSMENT, INC.

200 E. MARQUARDT DRIVE, WHEELING, IL 60090-6454 • PHONE 847-537-6400 • FAX 847-537-6499 • www.dlsemc.com

DLS Report #: 14CA019  
Manufacturer: Spider Tracks Limited  
Product Type: Plastic Enclosure  
Part #: 6000.S3 & 6000.S5

Tested by: Jim Scocchera  
Date Tested: 3/19/14  
Plastic Manufacturer & Type: Bayer, Makrolon 2807

## **FLAMMABILITY TEST REPORT**

### **RTCA / DO-160G, SECTION 26, CATEGORY C**

**Standard References:** RTCA / DO-1670, Section 26, Category C: Flammability,  
Sub-clauses: 26.3.3, 26.6.1, 26.6.2, & 26.6.2.1 - 26.6.2.8

#### **Required Flammability Rating & Test Purpose**

The purpose of this test is to evaluate the Bayer, Makrolon 2807 enclosure material used in Models Spider S3 and Spider S5, for compliance to the RTCA / DO-1670, Section 26, Category C: Flammability, Vertical Bunsen Burner Test requirements.

#### **SUMMARY - TEST RESULTS**

The test specimens that were cut from the enclosure top and enclosure bottom of models Spider S3 and Spider S5 were tested and found to comply with the requirements for RTCA / DO-1670, Section 26, Category C: Flammability, Vertical Bunsen Burner Test requirements.

The ignition time for the flame applied to the test specimen was 12 seconds.

The average burn flame time is 4.2 seconds, and does not exceed the 15 second time limit requirement, for self extinguishing of the flame. - PASS

The average drip flame time did not exceed the 5 second time limit, and measured 0 seconds (No Drip) - PASS

The average burn length is 0.35 inches, and did not exceed 8 inches limit. - PASS



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## **METHOD**

### **Test Specimen Size**

The size of the Model/Part # 6000.S3 & 6000.S5 equipment enclosure measures 4.2 inches long, 3.3 inches wide, 1.0 inches high and has a minimum 0.08 inch thickness.

Test specimens from the enclosure bottom were cut to 4.2 inches long and 2.0 inches wide.

Test specimens from the enclosure top were cut to 4.0 inches long and 2.0 inches wide.

Test Specimens were cut from:

Model S3 (Part # 6000.S3) Serial Number 9TY5CB4Z7Z

Model S3 (Part # 6000.S3) Serial Number TN85V5H2F6

Model S5 (Part # 6000.S5) Serial Number QQ7KM44LW3

(See appended photos of the Test Specimens and Labels)

### **Test Specimen Conditioning**

Test specimens were conditioned at 21° +/- 3° Celsius and 50% +/-5% relative humidity, for minimum 24 hrs (per sub clause 26.6.2.4).

### **Flame Burner Requirements**

The Flame burner was adjusted to provide a 38 mm (1.5 inch) flame, using 99 % pure methane gas.

### **Test Setup for Flame Burner and Specimen Locations**

Clamp the specimens so the lower end of the specimen is 14 inches above the bottom of the flame cabinet. (Per Figure 26.3)

Adjust the Methane burner for a flame height of 1.5 inches.

Position the burner height so that the flame impinges on the free end of the specimen to a depth of 3/4 inches

Close the door of test cabinet (Per figure 26-4 & 26.5) (Per sub clauses 26.6.2.2.1 & 26.6.2.6)

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### **Test Methods & Acceptance Criteria**

**Ignition Time** - Apply the flame to the test specimen for 12 seconds (Ignition Time) then remove the burner.  
(Per sub clause 26.6.2.6)

**Flame Time** - Start the timing device after removal of the flame, and continue to measure the flame time, until the flame self extinguishes.  
Report the flame time for each specimen tested.  
Determine and record the average value for flame time of all specimens tested.  
The average flame time for all specimens shall not exceed 15 seconds.  
(Per sub clauses 26.6.2.6 & 26.6.2.8.1)

**Drip Flame Time** - If flaming material falls from the test specimen, determine the flame drip time for the specimen.  
If there is more than one drip, the drip flame time is reported as the longest flaming drip.  
If succeeding flaming drips reignite earlier drips that flamed, the drip flame time is reported as the total of all flaming drips.  
The average drip extinguishing time for all specimens tested shall not exceed 5 seconds.  
(Per sub clause 26.6.2.8.2)

**Burn Length** - Report the burn length to the nearest 0.1 inch for each specimen tested.  
Determine and record the average value for burn length.  
The average burn length for all the specimens shall not exceed 8 inches.  
(Per sub clause 26.6.2.8.3)

**Exhaust Hood** – Clear the test cabinet of smoke after testing each specimen.



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**TEST DETAILS & RESULTS**

Specimen # & Cut Location	Flame Burn Time (Seconds)	Drip Flame Time (Seconds)	Burn Length (Inches)	Comments
# 1 Cut from the Enclosure Top	2	0-No Drip	0.30	Bayer Makrolon 2807 material self extinguishes with no flaming drips
# 2 Cut from the Enclosure Top	8	0-No Drip	0.48	
# 3 Cut from the Enclosure Top	4	0-No Drip	0.38	
# 4 Cut from the Enclosure Bottom	2	0-No Drip	0.33	
# 5 Cut from the Enclosure Bottom	3	0-No Drip	0.25	
# 6 Cut from the Enclosure Bottom	6	0-No Drip	0.42	

Test Results				
	Time (Seconds)	Time (Seconds)	Length (Inches)	Comments
Average	4.2	0	0.35	Pass
	Pass/Fail	Pass/Fail	Pass/Fail	
Pass/Fail Results	Pass	Pass	Pass	--



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### TEST EQUIPMENT USED

Test equipment type: Digital Caliper Micrometer (For flame height and specimen size)  
Manufacturer/model: Mitutoyo  
Last calibration: 10/14/13

Test equipment type: Timer, Digital Stopwatch  
Manufacturer/model: Cole Parmer, Model CP47469  
Last calibration: 2/13/14

Test equipment type: Environmental Chamber (For specimen conditioning)  
Manufacturer/model: ESPEC, Model ESX-3CA  
Last calibration: 8/29/13

Tested By: Signature: Date: 3/19/14

*Jim Scocchera*

Jim Scocchera  
Title: Product Safety Engineer



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## PHOTOS



**Model S3**



**Model S5**

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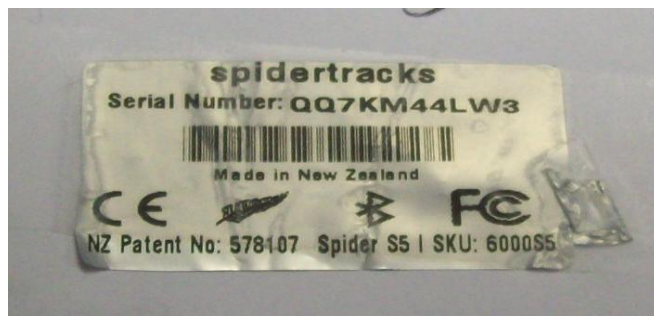
Tested by: Jim Scocchera  
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Label, Model S3 (Part # 6000.S3) Serial Number 9TY5CB4Z7Z



Label, Model S3 (Part # 6000.S3) Serial Number TN85V5H2F6



Label, Model S5 (Part # 6000.S5) Serial Number QQ7KM44LW3



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**Enclosure Tops Removed from S3 & S5 Units**



**Enclosure Bottoms Removed from S3 & S5 Units**





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Test Specimens – Cut From S3 & S5 Enclosure Tops



Test Specimens – Cut From S3 & S5 Enclosure Bottoms



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**24 Hour Conditioning of Test Specimens in Environmental Chamber @ 21° C, 50 % RH**



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**12 Second Flame Applied, Enclosure Top**



**12 Second Flame Applied, Enclosure Bottom**

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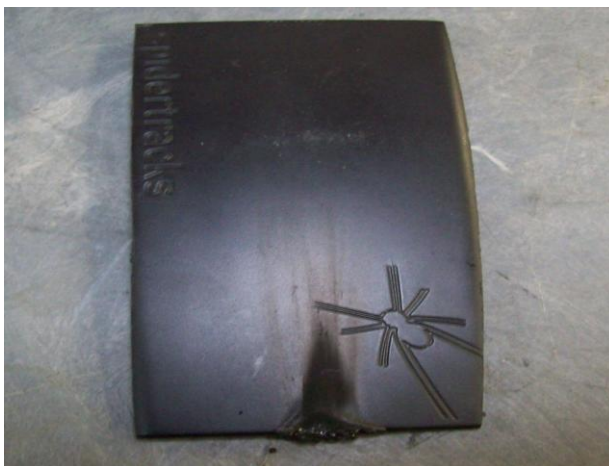
**Flame Time, Enclosure Top**



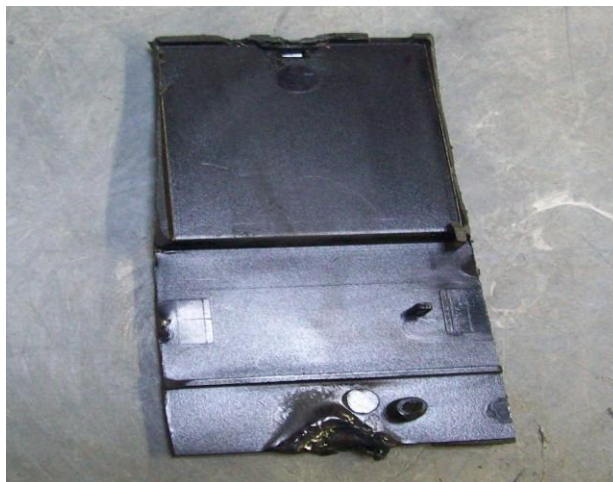
**Flame Time, Enclosure Bottom**

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**Burn Length, Enclosure Top**



**Burn Length, Enclosure Bottom**

**END of REPORT**