



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

DLS Report #: 14CA019 Rev 1
Manufacturer: Spider Tracks Limited
Product Type: Plastic Enclosure
Part # Tested: 6000.S3 & 6000.S5

Tested by: Jim Scocchera
Date Tested: 3/19/14
Report Revision Date: 9/14/2015, DLS Project # 15CA117
Plastic Manufacturer & Type: Bayer, Makrolon 2807

FLAMMABILITY TEST REPORT

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

Standard References: RTCA / DO-160G, 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 that is used in Spider Tracks Limited Models Spider S3, Spider S5, Spider S6, and Spider S7 for compliance to the RTCA / DO-160G, 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-160G, Section 26, Category C: Flammability, Vertical Bunsen Burner Test requirements.

Tested models Spider 3 and Spider S5 are representative of untested models Spider S6 and Spider S7 and all models comply with the requirements for RTCA / DO-160G, Section 26, Category C.

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, and 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 figures 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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Revision History

3/19/2014 - Original Issue

9/14/2015 - Rev 1, Add Spider Tracks Models S6 & S7 as additional models using Makrolon 2807

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



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



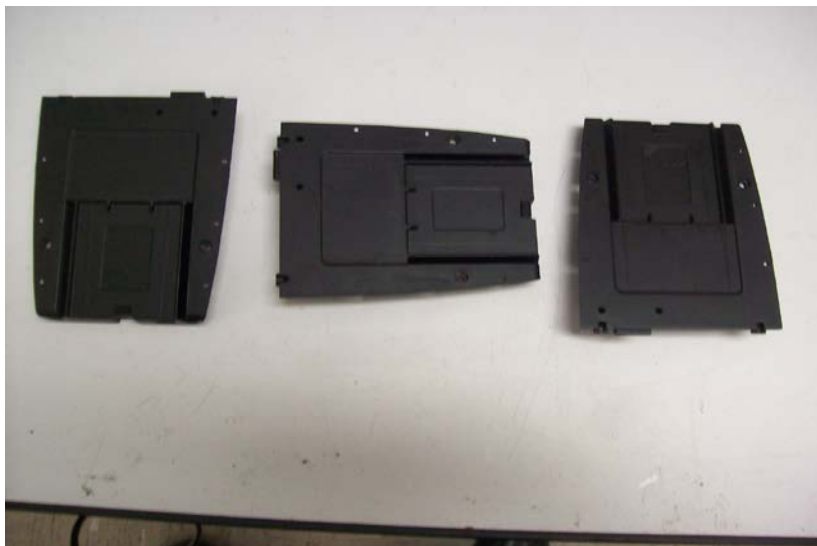
Label, Model S5 (Part # 6000.S5) Serial Number QQ7KM44LW3

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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

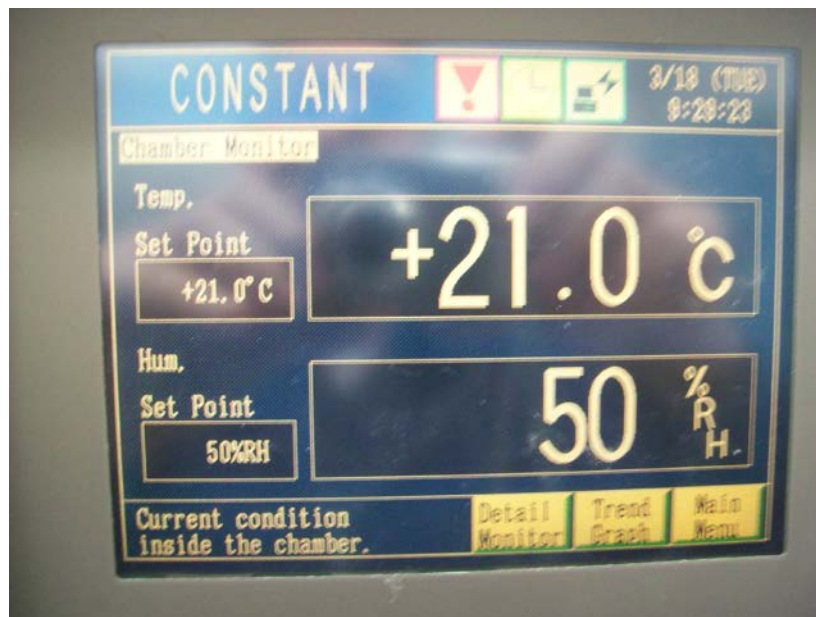


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24 Hour Conditioning of Test Specimens in Environmental Chamber @ 21° C, 50 % RH



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12 Second Flame Applied, Enclosure Top



12 Second Flame Applied, Enclosure Bottom

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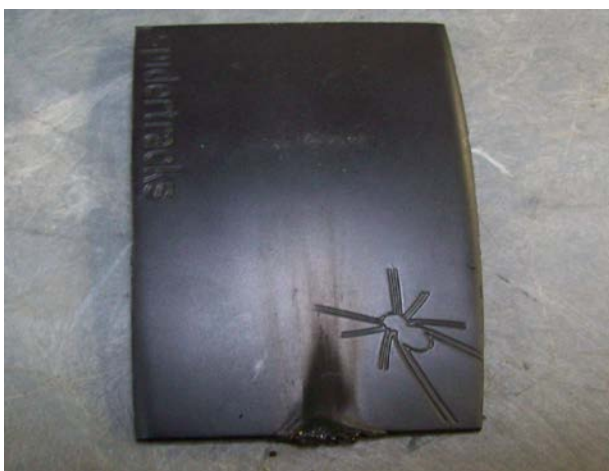
Flame Time, Enclosure Top



Flame Time, Enclosure Bottom

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Burn Length, Enclosure Top



Burn Length, Enclosure Bottom

END of REPORT