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FIRE PERFORMANCE EVALUATION IN ACCORDANCE WITH UL 94-18, *TESTS FOR FLAMMABILITY OF PLASTIC MATERIALS FOR PARTS IN DEVICES AND APPLIANCES – HORIZONTAL BURNING FOAMED MATERIAL TEST (HBF)*

MATERIAL ID: 2LBF

TRADE NAME: Auralex Studiofoam

FINAL REPORT

Consisting of 7 Pages

SwRI® Project No: 01.26262.01.108

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Report Date: February 5, 2021

Prepared for:

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EXECUTIVE SUMMARY

The material identified as *2LBF* meets the acceptance criteria for UL 94 HBF as indicated in Table i below. Photographic documentation is presented in Appendix A.

Table i. Test Results.

Run No.	Flame reach 25 mm mark?	Time to 125 mm mark (s)	Flame Out (s)	Burn Length
1	No	N/A	Did not ignite	N/A
2				
3				
4				
5				

1.0 INTRODUCTION

This report describes a fire performance evaluation conducted for Auralex Acoustics in accordance with UL 94-18, *Tests for Flammability of Plastic Materials for Parts in Devices and Appliances-Horizontal Burning Foamed Material Test (HBF)*, Testing was conducted at Southwest Research Institute's (SwRI's) Fire Technology Department, located in San Antonio, Texas.

This test method should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all the factors that are pertinent to an assessment of the fire hazard of a particular end use.

This report describes the testing of the assembly tested and the results obtained. The results presented in this report apply specifically to the material tested, in the manner tested, and not to the entire production of these or similar materials, nor to the performance when used in combination with other materials.

2.0 SAMPLE DESCRIPTION

SwRI received samples on November 23, 2020, in a ready-to-test condition. The samples were conditioned for at least 48 h at $23^{\circ}\text{C} \pm 3^{\circ}\text{C}$ at $50\% \pm 5\%$ relative humidity prior to being placed into an oven for 168 ± 2 h at $70^{\circ}\text{C} \pm 2^{\circ}\text{C}$, then cooled in a desiccator for at least 4 h at room temperature, prior to testing. The sample is described below in Table 1.

Table 1. Sample Description.

Material ID:	2LBF
Trade Name:	Auralex Studiofoam
Nominal Received Dimensions:	304.8 × 304.8 × 50.8 mm
Description:	Polyurethane open cell foam
Nominal Received Mass*:	125 g
Color:	Charcoal

* Assessed by SwRI personnel.

3.0 TEST SETUP

Each 150 ± 5 mm long by 50 ± 1 mm wide specimen was marked with three lines, one at 25 mm, 60 mm, and 125 mm from one end of the specimen. The burner was adjusted to produce a blue flame 38 ± 2 mm high. The specimen was placed flat on a wire cloth the burner was positioned under the specimen so that the inner edge of the burner wing-tip was in line with the outer edge of the specimen, shown below in Figure 1. The flame was applied for $60 \text{ s} \pm 1 \text{ s}$ and then withdrawn at least 100 mm away from the specimen. The rate of burning from the 25-mm mark to the 125-mm (4.0-in.) mark was determined.

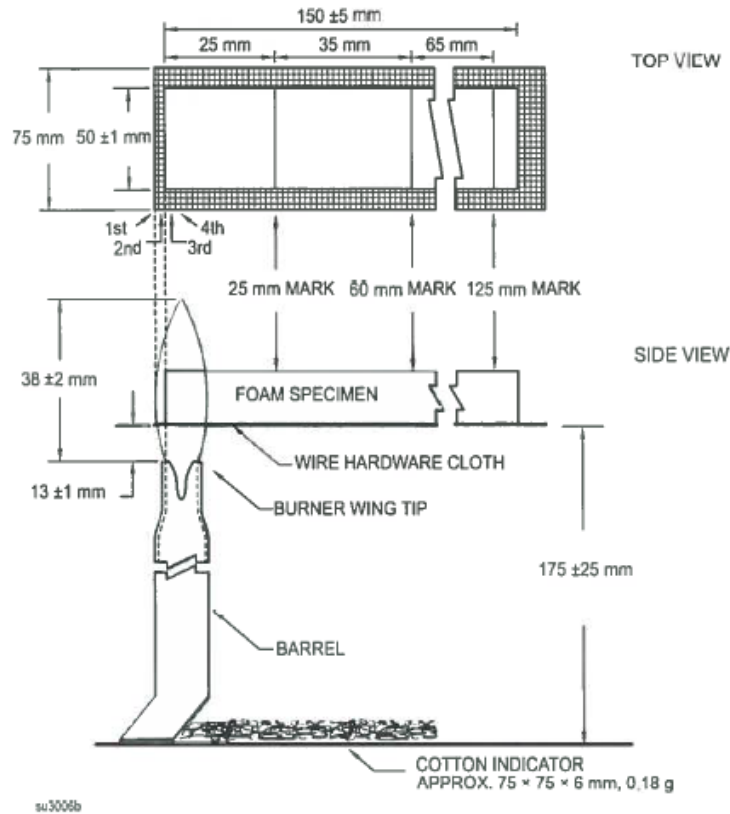


Figure 1. Test Setup.

4.0 TEST RESULTS

According to the test criteria specified in UL 94-18 a material classified HBF shall:

- a) Not have a burning rate exceeding 40 mm per minute over a 100 mm span, or
- b) Cease to burn before flaming or flowing reaches the 125 mm gauge mark.

Note: Five specimens are to be tested. If only one specimen from a set of five specimens does not comply with the requirements, another set of five specimens is to be tested. All specimens from this second set shall comply with the requirements in order for the material in that thickness to be classified HBF.

The material identified as *2LBF* **meets** the acceptance criteria for UL 94 HBF as indicated in Table 2 below. Photographic documentation is presented in Appendix A.

Table. 2 Test Results.

Run No.	Flame reach 25 mm mark?	Time to 125 mm mark (s)	Flame Out (s)	Burn Length
1	No	N/A	Did not ignite	N/A
2				
3				
4				
5				

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION
(CONSISTING OF 2 PAGES)



Figure A-1. Test setup.

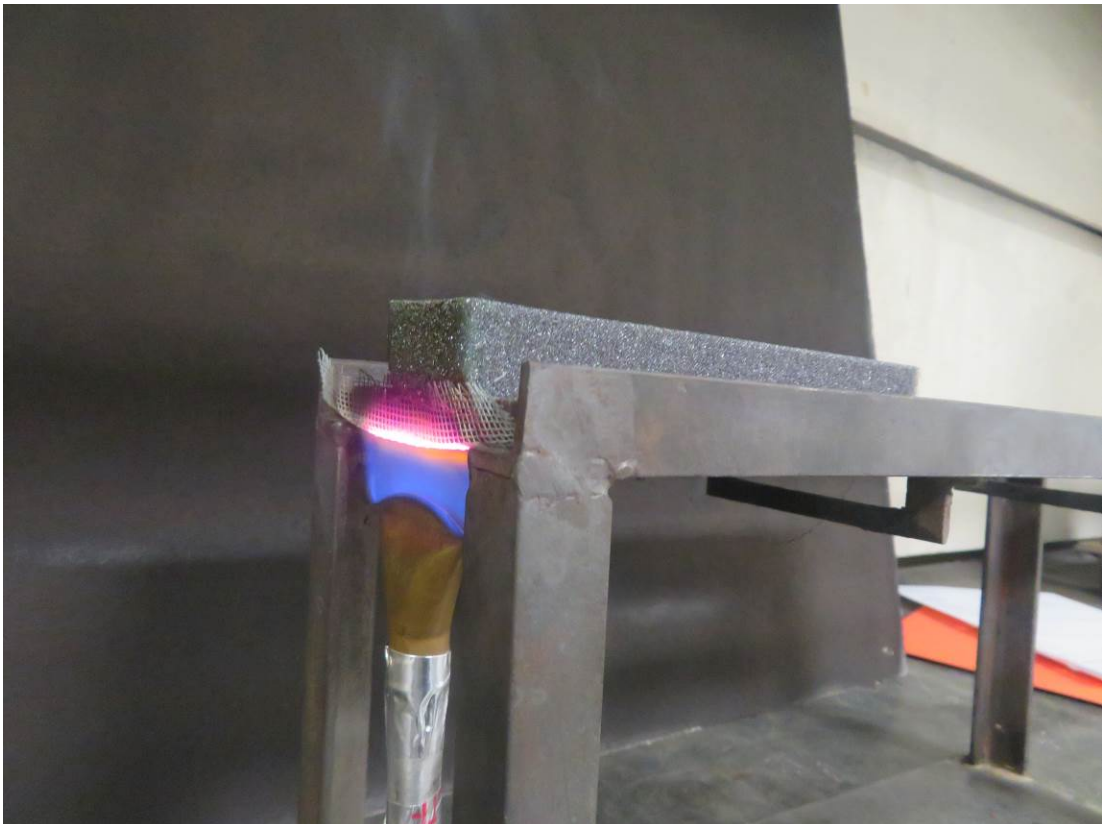


Figure A-2. Typical flame application.

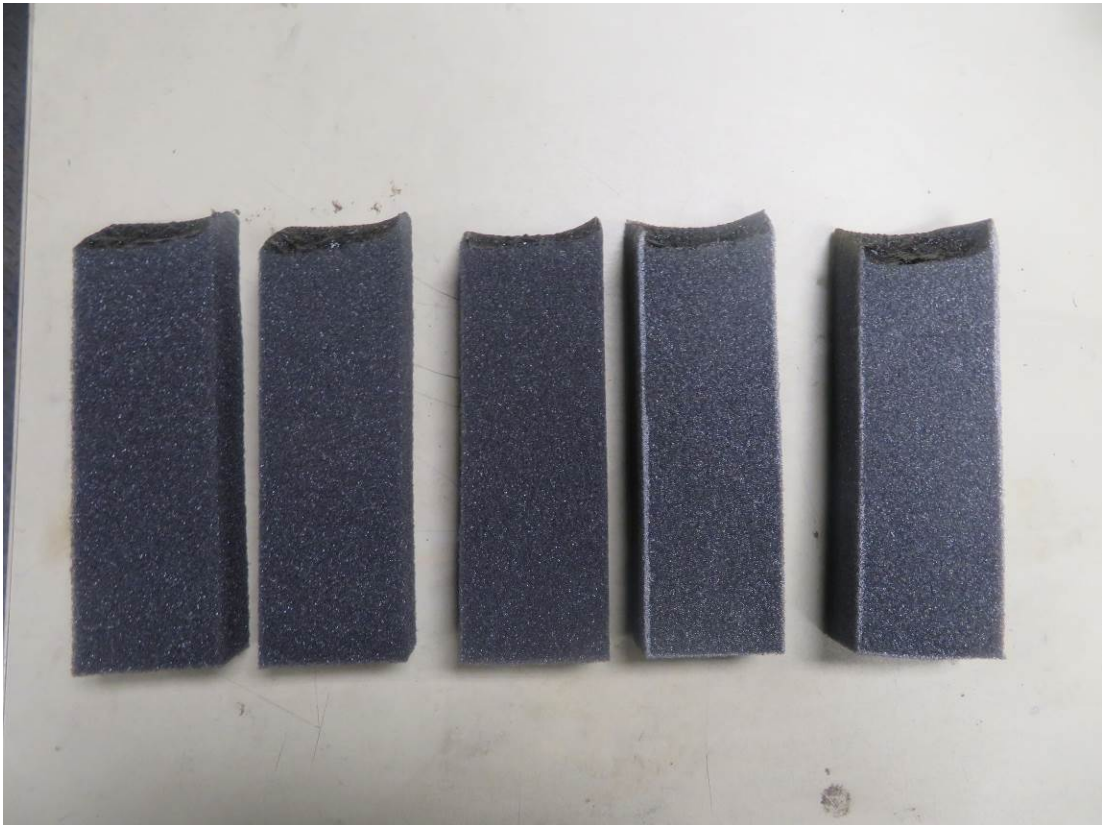


Figure A-3. Samples 1-5 after fire exposure.