

CLIENT: UTAH FOAM
295 W. 400 S.
Nephi, UT 84648
Lynn Wilson

Test Report No: RJ0542

Date: February 10, 2010

SAMPLE ID: Test samples were randomly selected by a QAI representative at the client's manufacturing facility located at 295 W. 400 S., Nephi, UT. QAI documented the materials and manufacturing procedures in accordance with ICC-ES AC85, Section 3.1." The following test material was sampled: 500-x10324 Foam panels, nominal 2" thick.

DATE OF RECEIPT: Samples were received on January 26, 2010.

TESTING PERIOD: January 28, 2010.

AUTHORIZATION: Testing authorized and witnessed by Lynn Wilson.

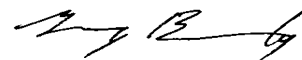
TEST REQUESTED: Perform standard flame spread and smoke density developed classification tests on the sample supplied by the Client in accordance with ASTM Designation E84-09, "Standard Method of Test for Surface Burning Characteristics of Building Materials". The foregoing test procedure is comparable to UL 723, ANSI/NFPA No. 255, and UBC No. 8-1.

TEST RESULTS: See page 2 for a summary of the results. See pages 3 through 8 for detailed results. See Conclusion no page 9.

Prepared By


Brian Ortega
Test Technician

**Signed for and on behalf of
QAI Laboratories Inc.**


Greg Banasky
Supervisor Fire Technology



PREPARATION AND CONDITIONING: The two-component foam panels were cut into pieces, 22 inches wide by 8 feet long. Nine pieces were submitted for testing.

Prior to testing, the specimen was placed in the conditioning room (maintained at $73.4 \pm 5^\circ$ F and a relative humidity of $50 \pm 5\%$) and allowed to reach moisture equilibrium.

SUMMARY OF ASTM E84 RESULTS: Because of the possible variations in reproducibility, the results are adjusted to the nearest figure divisible by 5. Smoke Developed values over 200 are rounded to the nearest figure divisible by 50.

| <u>SAMPLE IDENTIFICATION</u> | <u>FLAME SPREAD</u> | <u>SMOKE DEVELOPED</u> |
|------------------------------|---------------------|------------------------|
| 500-x10324 Foam Panels | | |
| Set No. 1 - 2" thickness | 25 | 105 |
| Set No. 2 - 2" thickness | 25 | 120 |
| Set No. 2 - 2" thickness | 25 | 110 |

SUMMARY OF ASTM E84 RESULTS: Because of the possible variations in reproducibility, the results are adjusted to the nearest figure divisible by 5. Smoke Density values over 200 are rounded to the nearest figure divisible by 50.

In order to obtain the Flame Spread Classification, the above results should be compared to the following table:

| <u>NFPA CLASS</u> | <u>IBC CLASS</u> | <u>FLAME SPREAD</u> | <u>SMOKE DEVELOPED</u> |
|-------------------|------------------|---------------------|---------------------------|
| A | A | 0 through 25 | Less than or equal to 450 |
| B | B | 26 through 75 | Less than or equal to 450 |
| C | C | 76 through 200 | Less than or equal to 450 |

BUILDING CODES CITED:

1. National Fire Protection Association, ANSI/NFPA No. 101, "Life Safety Code", 2006 Edition.
2. International Building Code, 2006 Edition, Chapter 8, Interior Finishes, Section 803.



E 84 TEST DATA SHEET:

CLIENT: Utah Foam **DATE:** 01/28/10

SAMPLE: 500-x10324 foam panels, nominal 2" thick, Set No. 1

FLAME SPREAD:

IGNITION: 3 seconds

FLAME FRONT: 6 feet maximum

TIME TO MAXIMUM SPREAD: 8 minutes, 26 seconds

TEST DURATION: 10 minutes

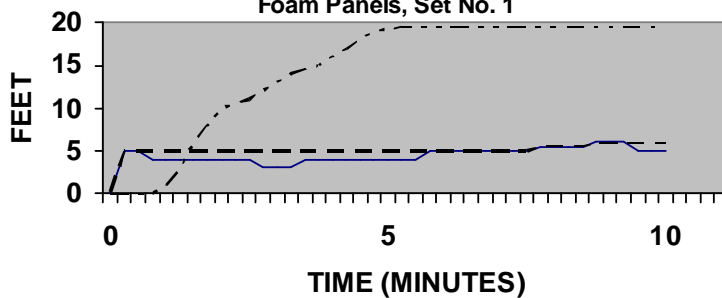
CALCULATION: 51.48 x 0.515 = 26.50

SUMMARY: FLAME SPREAD: 25 SMOKE DEVELOPED: 105

FLAME SPREAD

500-x10324

Foam Panels, Set No. 1

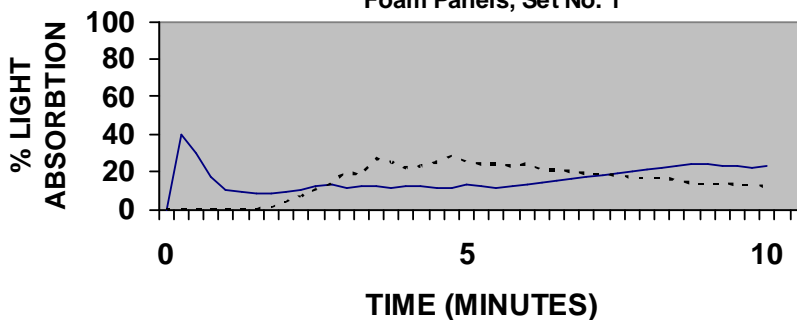


— SAMPLE - - - RED OAK - - - F.S. AREA

SMOKE DEVELOPED

500-x10324

Foam Panels, Set No. 1



— SAMPLE - - - RED OAK



E 84 TEST DATA SHEET:

CLIENT: Utah Foam **DATE:** 01/28/10

SAMPLE: 500-x10324 foam panels, nominal 2" thick, Set No. 2

FLAME SPREAD:

IGNITION: 3 seconds

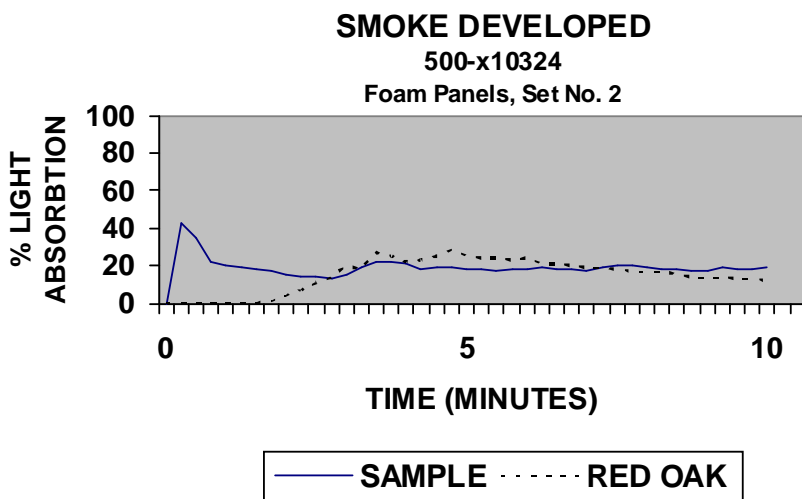
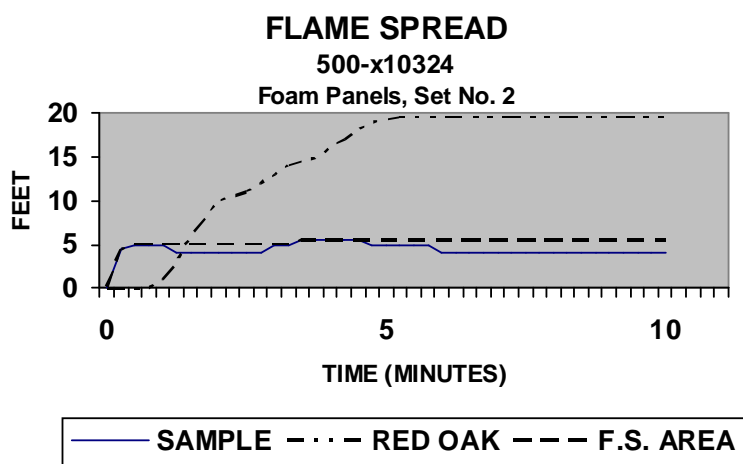
FLAME FRONT: 5.5 feet maximum

TIME TO MAXIMUM SPREAD: 3 minutes, 49 seconds

TEST DURATION: 10 minutes

CALCULATION: 52.27 x 0.515 = 26.91

SUMMARY: FLAME SPREAD: 25 SMOKE DEVELOPED: 120





E 84 TEST DATA SHEET:

CLIENT: Utah Foam **DATE:** 01/28/10

SAMPLE: 500-x10324 foam panels, nominal 2" thick, Set No. 3

FLAME SPREAD:

IGNITION: 3 seconds

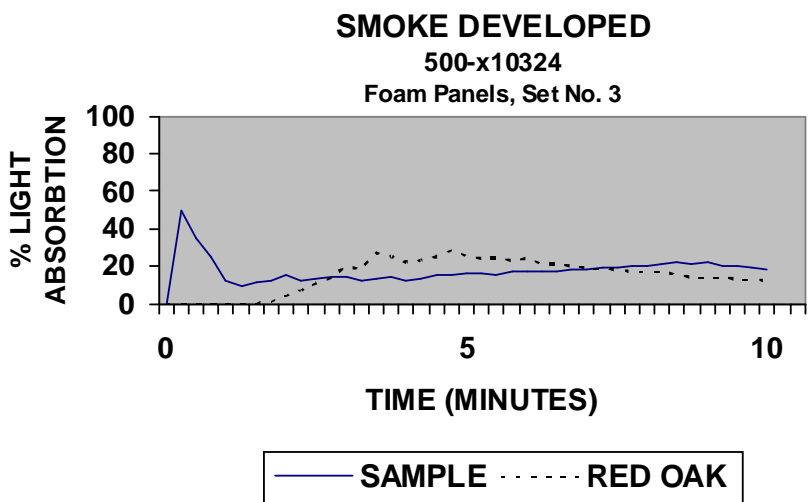
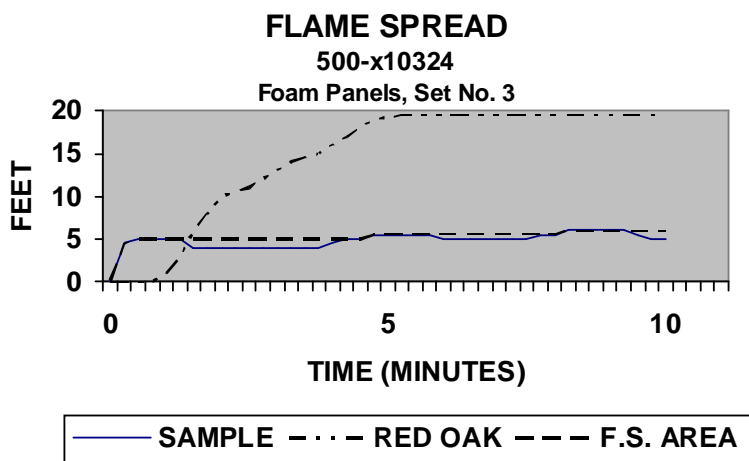
FLAME FRONT: 6 feet maximum

TIME TO MAXIMUM SPREAD: 8 minutes, 15 seconds

TEST DURATION: 10 minutes

CALCULATION: $57.73 \times 0.515 = 27.15$

SUMMARY: FLAME SPREAD: 25 SMOKE DEVELOPED: 110





CONCLUSION: The following averaged results were calculated using the technique for averaging multiple test data described in the ASTM E84-09 X3. Guide to Handling Multiple Test Data.

| Material Thickness | Flame-Spread Index (FSI) | Smoke-Developed Index (SDI) |
|--------------------|--------------------------|-----------------------------|
| 4" | 25 | 110 |