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Testing, calibrating, advising

ASTM E 84 Surface Burning Characteristics of "Austin Fire Fighter, Lincoln Fire Fighter, Platinum Plus Fire Fighter & Kingsa FR" 12 mm FR Plywood

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Report No.	16-002-728 4 Pages
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ACCREDITATION To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

SPECIFICATIONS OF ORDER

Determine the Flame Spread and Smoke Developed Indices based upon a single test conducted in accordance with ASTM E 84-16, as per Exova Metallurgical Services reference Purchase Order No. POI-003386-V1 dated December 12, 2016.

SAMPLE IDENTIFICATION

(Exova sample identification number 16-002-S0728)

Plywood panel, approximately 0.47 inches (12 mm) in thickness, described as, "12 mm Fire Retardant Plywood; Batch No: 01/12/2016; Date of Mfg: 01/12/2016", identified as:
"Austin Fire Fighter, Lincoln Fire Fighter, Platinum Plus Fire Fighter & Kingsa FR""

TEST PROCEDURE

The method, designated as ASTM E 84-16 "Standard Method of Test for Surface Burning Characteristics of Building Materials", is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results are expressed in terms of Flame Spread Index (FSI) and Smoke Developed Index (SDI).

Although the procedure is applicable to materials, products and assemblies used in building construction for development of comparative surface spread of flame data, the test results may not reflect the relative surface burning characteristics of tested materials under all building fire conditions.

SAMPLE PREPARATION

The test specimen consisted of a total of 6 sections of material, each approximately 21 inches (533 mm) in width by 48 inches (1219 mm) in length. The sections were butted together to create the requisiste specimen length. Prior to testing, the specimen was conditioned to constant weight at a temperature of 73 ± 5°F (23 ± 3°C) and a relative humidity of 50 ± 5%. During testing, the specimen was self-supporting.

The testing was performed on: 2017-01-04

SUMMARY OF TEST PROCEDURE

The tunnel is preheated to 150 ± 5°F (66 ± 2.8°C), as measured by the floor-embedded thermocouple located 23.25 feet (7087 mm) downstream of the burner ports, and allowed to cool to 105 ± 5°F (40.5 ± 2.8°C), as measured by the floor-embedded thermocouple located 13 feet (3962 mm) from the burners. At this time the tunnel lid is raised and the test sample is placed along the ledges of the tunnel so as to form a continuous ceiling 24 feet (7315 mm) long, 12 inches (305 mm) above the floor. Three 8 foot (2438 mm) sections of 0.25 inch (6 mm) cement board are then placed on the back side of the sample end-to-end, to protect the tunnel lid, and the lid is then lowered into place.

SUMMARY OF TEST PROCEDURE (continued)

Upon ignition of the gas burners, the flame spread distance is observed and recorded every second. Flame spread distance versus time is plotted. Calculations ignore all flame front recessions and Flame Spread Index (FSI) is determined by calculating the total area under the curve for the test sample. If the area under the curve (A) is less than or equal to 97.5 min·ft, then FSI = 0.515·A; if greater, FSI = 4900/(195-A). FSI is then rounded to the nearest multiple of 5.

Smoke Developed Index (SDI) is determined by dividing the total area under the obscuration curve by that of red oak, and multiplying by 100. SDI is then rounded to the nearest multiple of 5 if less than 200. SDI values over 200 are rounded to the nearest multiple of 50.

TEST RESULTS

	Flame Spread Index (FSI)	Smoke Developed Index (SDI)
"Austin Fire Fighter, Lincoln Fire Fighter, Platinum Plus Fire Fighter & Kingsa FR""	20	160

Observations of Burning Characteristics

- The specimen ignited approximately 115 seconds after exposure to the test flame.
- The flame front propagated to a maximum distance of 10 feet (3.0 metres) at approximately 546 seconds.

Authorities having jurisdiction usually refer to these categories:

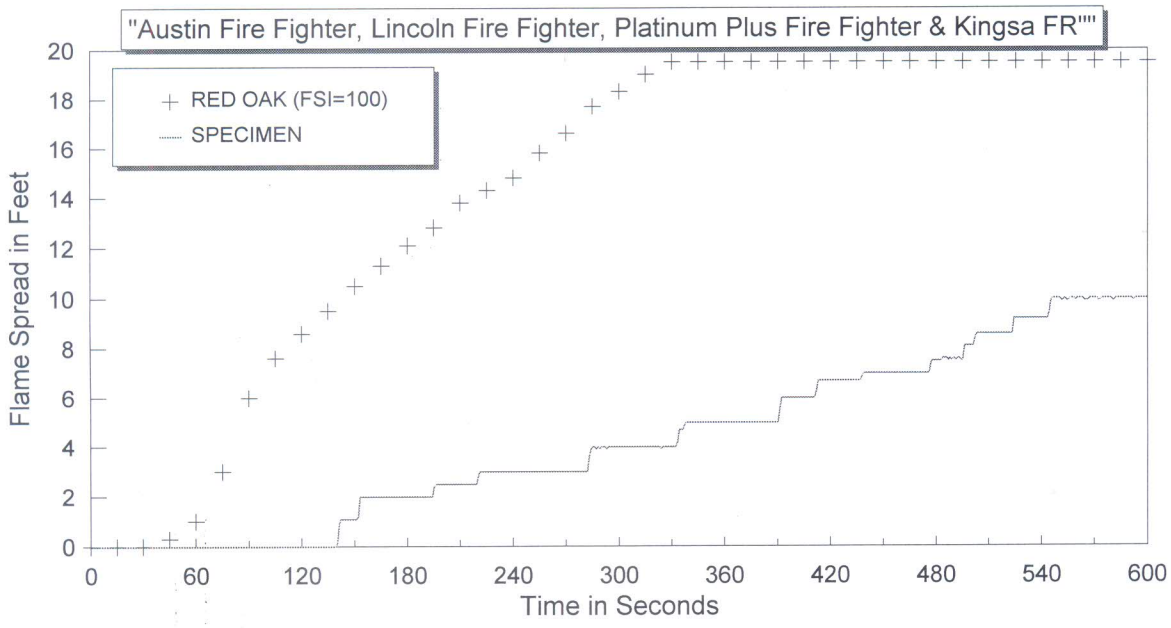
	Flame-Spread Index	Smoke Development
Class 1 or A	0 - 25	450 Maximum
Class 2 or B	26 - 75	450 Maximum
Class 3 or C	76 - 200	450 Maximum

Curtis Lavigne,
Technician.

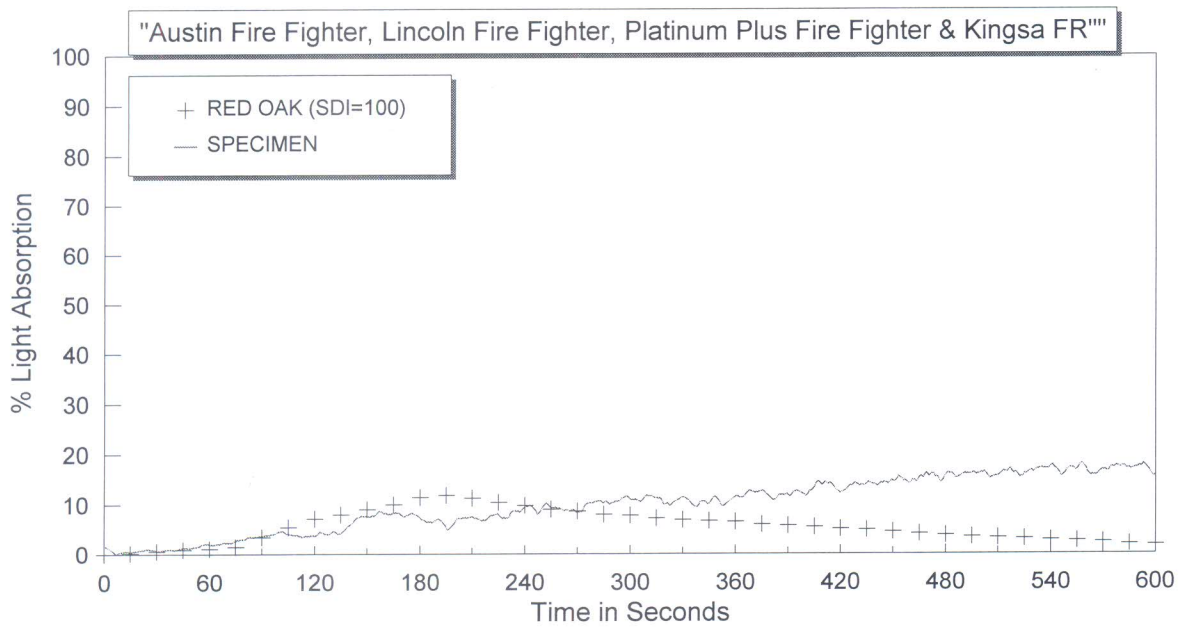
Ian Smith,
Technical Manager.

Note: This report and service are covered under Exova Canada Inc. Standard Terms and Conditions of Contract which may be found on the Exova website (www.exova.com), or by calling 1-866-263-9268.

FLAME SPREAD



SMOKE DEVELOPED



Flame Spread Index (FSI)	Smoke Developed Index (SDI)	Maximum Air Temperature (°F)
20	160	759