

STRUCTURECRAFT BUILDERS INC. TEST REPORT

SCOPE OF WORK

REPORT OF TESTING 4 IN. STRUCTURECRAFT SPF DOWELLAM DLT PANELS FOR COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF THE FOLLOWING CRITERIA: ASTM E84-20 STANDARD TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS.

REPORT NUMBER

104467889COQ-001 R0

TEST DATE(S)

10/29/20 - 10/29/20

ISSUE DATE

10/30/20

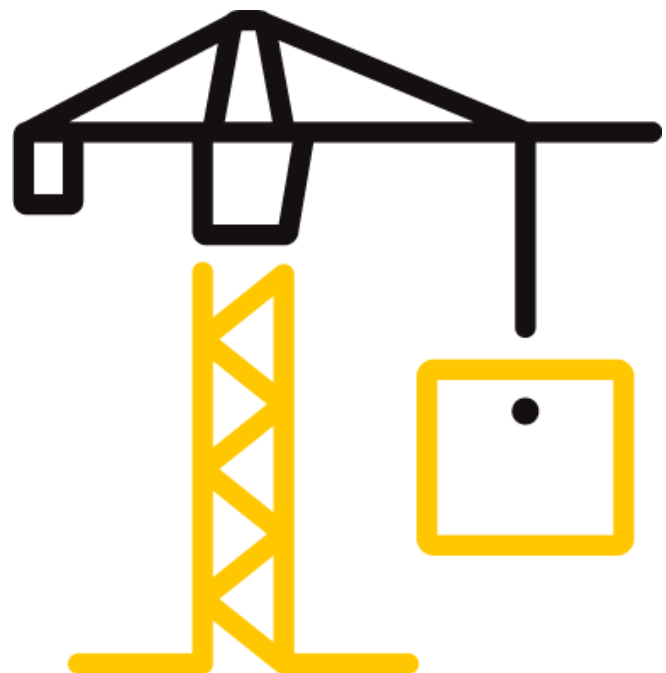
PAGES

11

DOCUMENT CONTROL NUMBER

GFT-OP-10c (AUGUST 27, 2018)

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TEST REPORT FOR STRUCTURECRAFT BUILDERS INC.

Report No.: 104467889COQ-001 R0

Date: 10/30/20

REPORT ISSUED TO

StructureCraft Builders INC.
1929 Foy Street
Abbotsford, BC V2F 6B1 CAN

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by StructureCraft Builders Inc. to perform testing in accordance with ASTM E84-20 Standard Test Method for Surface Burning Characteristics of Building Materials on their 4 in. thick StructureCraft SPF Dowellam DLT Panels. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek Testing Services NA Ltd. (Intertek) test facility in Coquitlam, BC Canada.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.


SECTION 2

SUMMARY OF TEST RESULTS

The samples of 4 in. thick StructureCraft SPF Dowellam DLT Panels submitted by StructureCraft Builders Inc. were tested in accordance with ASTM E84-20 Standard Test Method for Surface Burning Characteristics of Building Materials.

The product test results are presented in Section 10 of this report.

For INTERTEK B&C:

REPORTED BY:	Sean Fewer
TITLE:	Technician – B&C
SIGNATURE:	
DATE:	10/30/20

REVIEWED BY:	Greg Philp
TITLE:	Reviewer – B&C
SIGNATURE:	
DATE:	10/30/20

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SECTION 3

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

ASTM E84-20 Standard Test Method for Surface Burning Characteristics of Building Materials.

SECTION 4

MATERIAL SOURCE/INSTALLATION

Samples were submitted to Intertek directly from the client and were not independently selected for testing and Intertek accepts no responsibility for any inaccuracies provided.

SECTION 5

EQUIPMENT

ASSET #	DESCRIPTION	MODEL	CAL DUE DATE
WH 2189	Photocell	Huygen 856	02/28/21
WH 2190	Smoke Opacity Meter	Huygen	02/28/21
WH 1052	Data Logger	Phidgets DAQ 2020	02/28/21

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Sean Fewer	Intertek B&C

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SECTION 7

TEST CALCULATIONS

TEST STANDARD

The results of the tests are expressed by indexes, which compare the characteristics of the sample under tests relative to that of select grade red oak flooring and inorganic-cement board.

(A) Flame Spread Index:

This index relates to the rate of progression of a flame along a sample in the 25 foot tunnel. A natural gas flame is applied to the front of the sample at the start of the test and drawn along the sample by a draft kept constant for the duration of the test. An observer notes the progression of the flame front relative to time.

The test apparatus is calibrated such that the flame front for red oak flooring passes out the end of the tunnel in five minutes, thirty seconds (plus or minus 15 seconds).

(B) Smoke Developed:

A photocell is used to measure the amount of light, which is obscured by the smoke passing down the tunnel duct. When the smoke from a burning sample obscures the light beam, the output from the photocell decreases. This decrease with time is recorded and compared to the results obtained for red oak, which is defined to be 100.

SECTION 8

TEST SPECIMEN DESCRIPTION

Upon receipt of the samples at the Intertek Coquitlam laboratory they were placed in a conditioning room where they remained in an atmosphere of $23 \pm 3^{\circ}\text{C}$ ($73.4 \pm 5^{\circ}\text{F}$) and $50 \pm 5\%$ relative humidity.

The sample material was identified by the client as StructureCraft Dowellam DLT (Dowel Laminated Timber) mass timber panel, nominal 4 in. deep, SPF species, complete with OSB sheathing on the topside.

For this trial run, three 24 in. wide by 8 ft. long sample panels were placed on the upper ledge of the flame spread tunnel to form the required 24 ft. sample length. A layer of 6 mm reinforced cement board was placed over top of the sample material, the tunnel lid was lowered into place, and the samples were then tested in accordance with ASTM E84-20.

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SECTION 9**TEST RESULTS****(A) Flame Spread**

The resultant flame spread Indexes are as follows:
(Indexes rounded to nearest 5)

Sample Material	Flame Spread	Flame Spread Index
4 in. thick StructureCraft SPF DowelLam DLT Panels	34	35

(B) Smoke Developed

The areas beneath the smoke developed curve and the related indexes are as follows:
(For smoke developed indexes 200 or more, index is rounded to the nearest 50. For smoke developed indexes less than 200, index is rounded to nearest 5)

Sample Material	Smoke Developed	Smoke Developed Index
4 in. thick StructureCraft SPF DowelLam DLT Panels	69	70

(C) Observations

During the test, the sample surface ignited at approximately 10 seconds; the flame began to progress along the sample until it reached the maximum flame spread.

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COMMENTARY ON CLASSIFICATION

Neither ASTM E84 nor UL 723 include classification criteria for the results obtained from testing. The International Building Code® (IBC), NFPA 101: Life Safety Code® (NFPA 101), and NFPA 5000: Building Construction and Safety Code® (NFPA 5000) all describe a set of classification criteria required for interior wall and ceiling finish materials based on Flame Spread Index and Smoke Developed Index when tested in accordance with ASTM E84 or UL 723. The classification criteria for all three model codes is the same:

Class	Flame Spread Index	Smoke Developed Index
A	0-25	0-450
B	26-75	0-450
C	76-200	0-450

Note that classification under this scheme for interior wall and ceiling finishes does not strictly apply to all products or materials tested in accordance with ASTM E84 or UL 723 because not all products or materials are recommended or suitable for use as interior wall or ceiling finish materials in buildings, regardless of the surface burning characteristics. Consult with the product manufacturer and the local authority having jurisdiction (AHJ) regarding specific applications of a given product or material.

**SECTION 10
CONCLUSION**

The samples 4 in. thick StructureCraft SPF Dowellam DLT Panels submitted by StructureCraft Builders Inc. exhibited the following flame spread characteristics when tested in accordance with ASTM E84-20 Standard Test Method for Surface Burning Characteristics of Building Materials.

Sample Material	Flame Spread Index	Smoke Developed Index
4 in. thick StructureCraft SPF Dowellam DLT Panels	35	70

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.



Total Quality. Assured.

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Report No.: 104467889COQ-001 R0

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1500 Brigantine Drive
Coquitlam, BC V3K 7C1

Telephone: 604-520-3321
www.intertek.com/building

SECTION 11

TEST DATA (2 PAGES)

TEST REPORT FOR STRUCTURECRAFT BUILDERS INC.

Report No.: 104467889COQ-001 R0

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ASTM E84-20 DATA SHEETS

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Standard: ASTM E84-20/UL723

Lab ID: Intertek Coquitlam Fire Laboratory
Client: Structure Craft
Date: 29 Oct 2020
Project Number: 104467889
Test Number: 1
Operator: Sean Fewer

Specimen ID and Description:

4 in. SPF DLT

TEST RESULTS

FLAMESPREAD INDEX: 35.000
SMOKE DEVELOPED INDEX: 70.000

SPECIMEN DATA

Time to Ignition (sec): 38.638
Time to Max Flame Spread (min): 2.344
Maximum Flame Spread (mm): 7.900
Time to 527 C / 980 F (sec): 0.000
Max Temperature (deg F or C as per test standard): 611.636
Time to Max Temperature (sec): 557.638
Total Fuel Burned (cubic feet): 43.437

Flame Spread*Time Area (M*min): 67.217
Smoke Area (%A*min): 31.085
Unrounded FSI: 34.617
Unrounded SDI: 68.842

CALIBRATION DATA

Time to Ignition of Last Red Oak (sec): 9.961
Calibrated Smoke Area (%A*min): 45.153

15 point Heptane average for E84-20
5 point Red Oak average for S102

Tested by: SI

Reviewed by: [Signature]

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ASTM E84-20 DATA SHEETS

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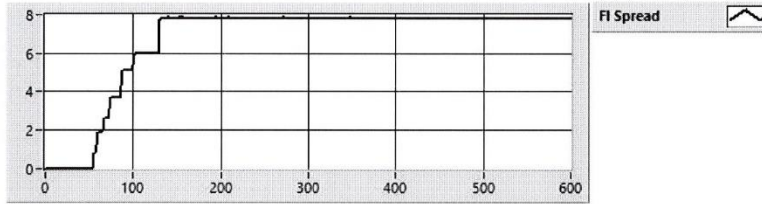
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Project Number: 104467889

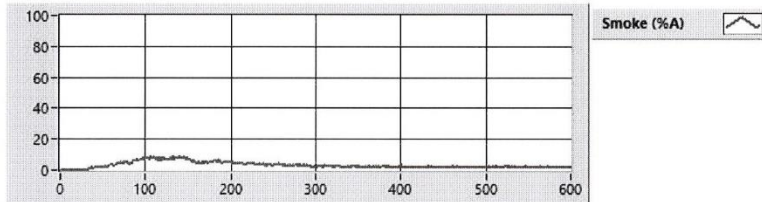
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Test Standard: ASTM E84-20/UL723

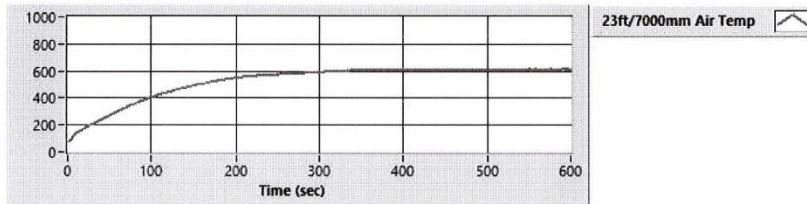
FLAME SPREAD



SMOKE (%A)



TEMPERATURE



Tested by: SF

Reviewed by: [Signature]

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SECTION 12

PHOTOGRAPHS



Photo No. 1
Pre-Test



Photo No. 2
Post-Test

SECTION 13

REVISION LOG



Total Quality. Assured.

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