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QUANTUM TECHNICAL SERVICES

TEST REPORT

REPORT ISSUED TO
Quantum Technical Services
15 Riel Drive
St Albert, AB T8N 3Z2 CAN

SCOPE OF WORK
Report of testing SafeCoat® Clear II applied to 3/8 in. thick Douglas Fir Plywood for compliance with the applicable requirements of the following criteria: ASTM E84-18 Standard Test Method for Surface Burning Characteristics of Materials.

REPORT NUMBER
103770254COQ-001

ISSUE DATE
17-December-2018
REVISION DATE
05-September-2019
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TEST REPORT FOR QUANTUM TECHNICAL SERVICES

REPORT NO.: 103770254
REVISION DATE: SEPTEMBER 5, 2019

CONCLUSION

The samples of SafeCoat® Clear II applied to 3/8 in. thick Douglas Fir Plywood submitted by Quantum Technical Services were tested in accordance with ASTM E84-18 Standard Test Method for Surface Burning Characteristics of Materials.

The product test results are presented in Section 7 of this report.

Sean Fewer
TECHNICIAN
BUILDING PRODUCTS

Greg Philp
Reviewer
BUILDING PRODUCTS CANADA

SECTION 1
INDEX

SECTION 2
OBJECTIVE

Intertek Testing Services NA Ltd. (Intertek) has conducted testing for Quantum Technical Services to evaluate the surface burning characteristics of SafeCoat® Clear II applied to 3/8 in. thick Douglas Fir Plywood. Testing was conducted in accordance with the standard methods of ASTM E84-18 Standard Test Method for Surface Burning Characteristics of Materials.

This evaluation began December 17, 2018 and was completed December 17, 2018.

SECTION 3
SAMPLE SELECTION

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. The sample materials were received at the Evaluation Center on November 30, 2018.

SECTION 4
SAMPLE ASSEMBLY AND 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 ± 3°C (73.4 ± 5°F) and 50 ± 5% relative humidity.

The sample consisted of coated Douglas Fir panels. Each panel measured 24 in. wide by 8 ft. long. The sample was described by the client as SafeCoat® Clear II applied at 200 ft² per gallon to ⅜ in. thick Douglas Fir plywood.

For this trial run, three 8 ft. long by 24 in. wide sample panels were butted together and 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 E84-18.

SECTION 5
TESTING AND EVALUATION METHODS

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 6
RESULTS AND OBSERVATIONS

(A) Flame Spread

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

Sample Material	Flame Spread	Flame Spread Index
SafeCoat® Clear II applied at 200 ft² per gallon to ⅜ in. thick Douglas Fir plywood	15	15

(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	Smoked Developed Index
SafeCoat® Clear II applied at 200 ft² per gallon to ⅜ in. thick Douglas Fir plywood	221	220

(C) Observations

During the tests, the sample surface ignited at approximately 24 seconds; the flame began to progress along the sample until it reached the maximum flame spread. There was no evidence of continued progressive combustion.

SECTION 7
CONCLUSION

The samples of SafeCoat® Clear II applied at 200 ft² per gallon to ⅜ in. thick Douglas Fir plywood submitted by Quantum Technical Services exhibited the following flame spread characteristics when tested in accordance with ASTM E84-18 Standard Test Method for Surface Burning Characteristics of Materials.

Sample Material	Flame Spread Index	Smoke Developed Index
SafeCoat® Clear II applied at 200 ft² per gallon to ⅜ in. thick Douglas Fir plywood	15	220

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.

SECTION 8

APPENDIX A: TEST DATA (2 PAGES)

ASTM E84-18 DATA SHEETS

ASTM E84

Client: Quantum Chemical
Date: 12 17 2018
Project Number: 103770254
Test Number: 1
Operator: Sean Fewer

Specimen ID: Safe coat clear applied at 200 square feet per gallon (4.9m^2/L) to 3/8in. douglas fir plywood

TEST RESULTS

FLAMESPREAD INDEX: 15

SMOKE DEVELOPED INDEX: 200

SPECIMEN DATA . . .

Time to Ignition (sec): 24
Time to Max FS (sec): 427
Maximum FS (feet): 4.6
Time to 980 F (sec): Never Reached
Time to End of Tunnel (sec): Never Reached
Max Temperature (F): 556
Time to Max Temperature (sec): 598
Total Fuel Burned (cubic feet): 45.50

FS*Time Area (ft*min): 29.4
Smoke Area (%A*min): 165.6
Unrounded FSI: 15.1
Unrounded SDI: 221.1

CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 44.0
Red Oak Smoke Area (%A*min): 74.9

Tested by: SF

REVIEWED BY

ASTM E84-18 DATA SHEETS

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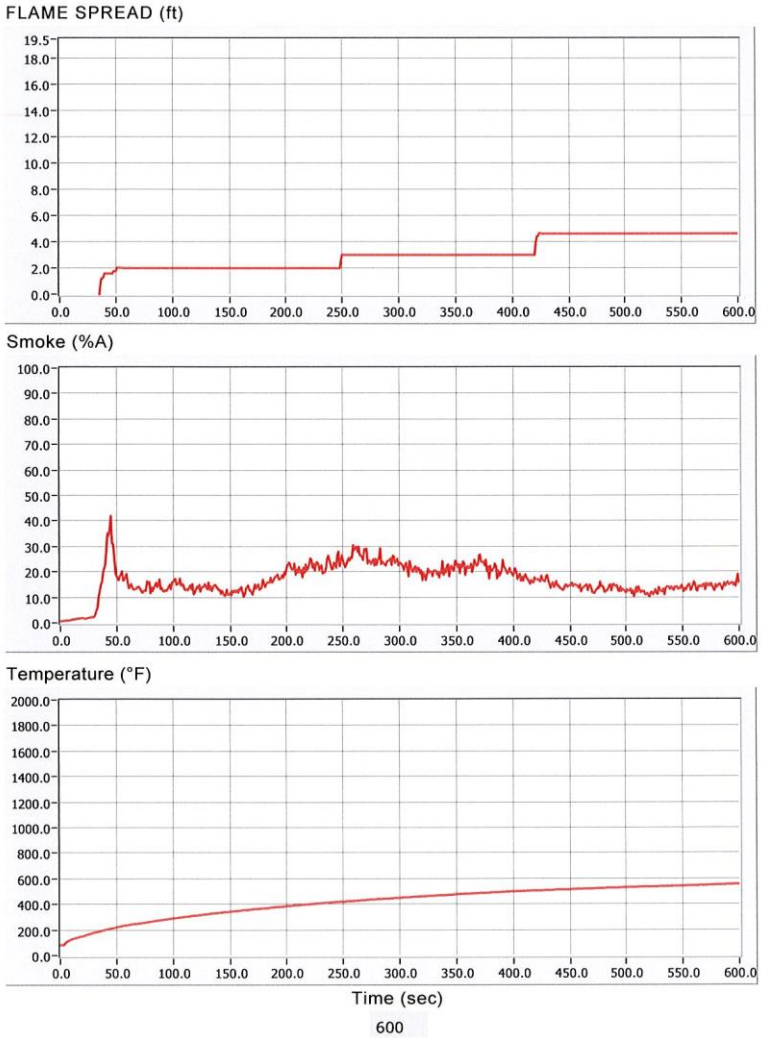

Tested by: SF

REVISION SUMMARY

DATE	PAGE	SUMMARY
December 17, 2018	All	Original Issue Date
September 5, 2019	**C,2,4,6,7**	**Changed Product Name From SafeCoat® Clear to SafeCoat® Clear II**