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TEST REPORT FOR REACTION TO FIRE TEST (ASTM E84)

TEST SPONSOR:

DNSM Timber Trading LLC

P.O Box 115605

Dubai, UAE

T: +971 4 551 6816 F: +971 4 551 6817

Website: www.dnsmllc.com

TESTED MATERIAL/ASSEMBLY:

Star Solid Surface (100% acrylic) – 12mm thick

TEST STANDARD:

ASTM E84 – Standard Test Method For Surface Burning Characteristics of Building Materials



Test Date: 18-Jun-15

Issue Date: 7-Apr-16

Reference No: PF041 (Rev.01)





ACCREDITED by the UNITED KINGDOM ACCREDITATION SERVICE Testing Laboratory No. 4439 & EMIRATES NATIONAL ACCREDITATION SYSTEM Registration Number: NAL008

Under ISO/IEC 17025:2005 General Requirements for the competence of testing and calibration laboratories.

For the following tests and standards:

EN 1363-1:2012	Fire resistance tests - Part 1: General requirements
EN 1363-2:1999	Fire resistance tests - Part 2: Alternative and additional procedures
EN 1364-1:1999	Fire resistance tests for non-loadbearing elements - Part 1: Walls
EN 1364-3:2006	Fire resistance tests for non-loadbearing elements - Part 3: Curtain Walling - Full Configuration (Complete Assembly)
EN 1364-4:2014	Fire resistance tests for non-loadbearing elements - Part 4: Curtain Walling - Part Configuration
EN 1634-1:2014	Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware - Part 1: Fire resistance tests for doors, shutters and openable windows.
BS 476-20:1987	Fire tests on building materials and structures - Part 20: Method for determination of the fire resistance of elements of construction (general principles)
BS 476-22:1987	Fire tests on building materials and structures - Part 22: Methods for determination of the fire resistance of non-loadbearing elements of construction
ISO 834-1:2012	Fire resistance tests - Elements of building construction - Part 1: General Requirements
ISO 834-8:2002	Fire resistance tests - Elements of building construction - Part 8: Specific requirements for non-loadbearing vertical separating elements
ISO 3008:2007	Fire resistance tests - Door and shutter assemblies
ISO 3009:2003	Fire resistance tests - Elements of building construction - Glazed elements

Opinions and interpretations expressed in this document are outside the scope of UKAS and ENAS accreditations.



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For the following tests and standards:

ASTM E119-14	Standard Test Method for Fire Tests of Building Construction and Materials
ASTM E2226-12	Standard Practice for Application of Hose Stream
UL 10B:2008	Fire Tests of Door Assemblies
UL 10C:2009	Positive Pressure Fire Tests of Door Assemblies
UL 263:2011	Fire Tests of Building Construction and Materials
UL 555:2006	Fire Dampers (Fire Test only)
NFPA 251:2006	Standard Methods of Tests of Fire Resistance of Building Construction and Materials
NFPA 252:2012	Standard Methods of Fire Tests of Door Assemblies
NFPA 257:2012	Standard Methods of Fire Tests for Window and Glass Block Assemblies
ASTM E814-14	Standard Test Method for Fire Tests of Penetration Firestop Systems
UL 1479, 3 rd Ed., 2003	Fire Tests of Through - Penetration Firestops
ASTM E84-14	Standard Test Method for Surface Burning Characteristics of Building Materials
UL 723, 10 th Ed., 2008	Test for Surface Burning Characteristics of Building Materials
IMO FTP Code 2010:2012 Edition	Fire Resistance Tests for "A", "B" and "F" Class Divisions
EN 13501-2:2007 +A1:2009	Fire classification using data from fire resistance tests, excluding ventilation services

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1. INTRODUCTION

Determination of the flame spread index and the smoke developed index of acrylic solid surface as per ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

2. SPONSOR(S)

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Website: www.dnsmllc.com

3. TESTING LABORATORY

Name: Thomas Bell-Wright International Consultants

Address: 25b Street Ras Al Khor Industrial Area

P.O.Box 26385

Dubai, U.A.E.

4. DATE OF TEST

Sample received: 17-Jun-15

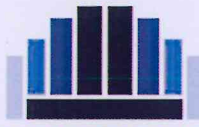
Test date: 18-Jun-15

The test has not been witnessed by the Sponsor.

5. SPECIMEN DESCRIPTION

Product Tested	Star Solid Surface (100% Acrylic)
ProductName	Star Solid Surface
Fireside	Exposed surface of Star 100% acrylic solid surface
Product Description	Star Solid Surface (100% Acrylic) 12mm thickness/ DS201-Milkywhite color
Dimensions per panel	3660 x 600 x 12mm (lx w x thk)(measured)
No. of panel	2 Nos.
Total dimension	7320 x 600 x 12mm (lx w x thk)(measured)
Specimen placement	2 nos. of Star solid surface were butt jointed end-to-end.

The test specimen was submitted by the client and TBWIC has not been involved in the selection and configuration of the specimen.



6. METHOD OF TEST

6.1 Placing the test specimen

The test specimen consisted of 2 nos. of Star solid surface. The dimension per panel was 3660 x 600 x 12mm (l x w x thk.) and was butt jointed end-to-end. The total dimensions of the specimen were 7320 x 600 x 12mm (l x w x thk.).

Several sections of cement board butt jointed end-to-end with overall dimensions of 7350 x 600 mm (l x w), were placed at the back of the sample to protect the furnace lid assembly.

6.2 Test Method

The specimen was installed horizontally in the Steiner Tunnel and supported by the ledges. The exposed surface of Star solid surface (fire side) was exposed to a flaming exposure during 10minutes.

Flame spread and density of the smoke are measured and recorded while the results are computed against the standard calibration materials (cement board and red oak flooring).

6.3 Conditioning

After delivery on 17 June 2015, the specimen was stored in room temperature for 1 day prior to the test at 20.2-25.8°C and 45-55% relative humidity.



7. OBSERVATION

Test Data and Observation

Observations	
Ignition Time (min:sec)	2:00
Time to maximum flame front advance (min:sec)	10:00
Maximum flame spread (ft)	8:3
Time to end of tunnel reached (min:sec)	Not Reached
Maximum temp recorded at the exposed thermocouple located near the end of the tunnel (°F / °C)	647/342
Dripping (min:sec)	None
Flaming on the floor (min:sec)	None
After flame on the top (min:sec)	1:00
After flame on the floor (min:sec)	None
Delamination (min:sec)	None
Sagging (min:sec)	None
Shrinkage (min:sec)	None
Fallout (min:sec)	None
FS*Time Area (ft*min)	25.86
Smoke Area (%A*min)	3.63
Red Oak Smoke Area (%A*min)	85.8

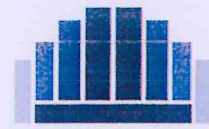
8. SUMMARY OF RESULTS

The test specimen has been evaluated in accordance with ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

The test results are:

FLAME SPREAD INDEX (FSI)	15
SMOKE DEVELOPED INDEX (SDI)	5

Results are valid for the tested configuration only.



9. CLASSIFICATIONS

Flame Spread Index and Smoke Developed Index results from an ASTM E84 test are often used by code officials, regulatory agencies and authorities having jurisdiction in order to approve/accept interior finish materials for various application. An example of classification is given in the International Building Code 2012, Section 803.1.1 Interior wall and ceiling finish materials. Interior wall and ceiling finish materials shall be classified in accordance with ASTM E84 or UL 723-10th Ed. 2008. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

Class A: Flame spread index 0 - 25; smoke-developed index 0 - 450.

Class B: Flame spread index 26 - 75; smoke-developed index 0 - 450.

Class C: Flame spread index 76 - 200; smoke-developed index 0 - 450.

The above Classification applies only for Interior Wall and Ceiling Finish Materials, and may not be applicable for materials used in other areas of a building as other requirements in regards to results of flame spread and smoke developed index may apply.

10. LIMITATION

Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by the testing materials that remain in place

Thomas Bell-Wright International Consultants recommend that the relevance of test reports should be considered after a period of five years.

This test report is respectfully submitted by: Thomas Bell-Wright International Consultants

Prepared By:


Fredilyn Paragoso
Fire Testing Engineer

Reviewed By:


Ryan Tolentino
Fire Testing Engineer

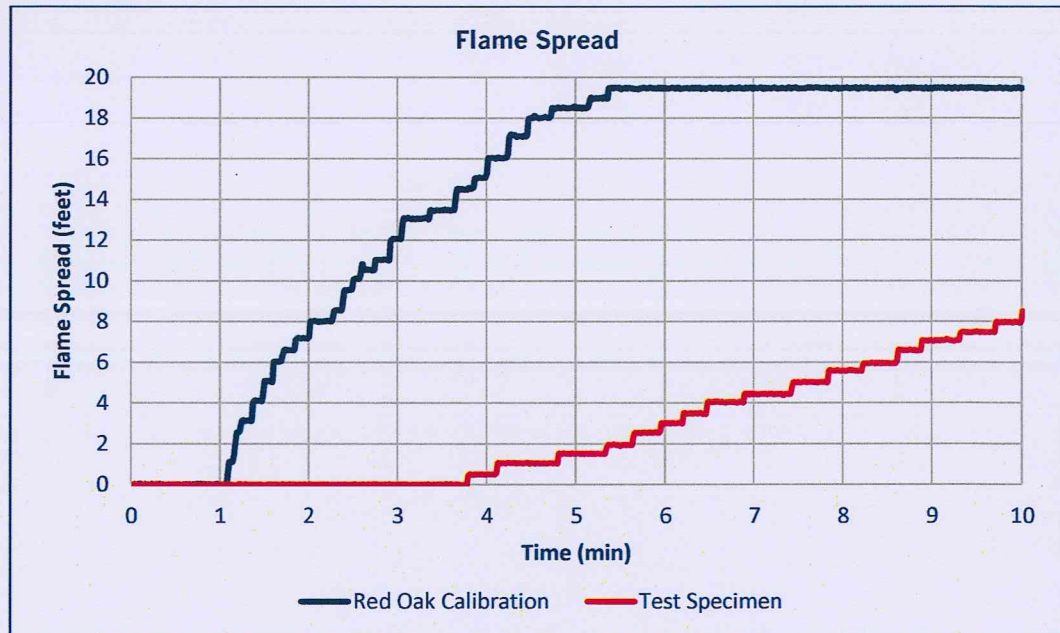
Approved By:


David Campbell, GFireE
Regional Director of Fire Compliance

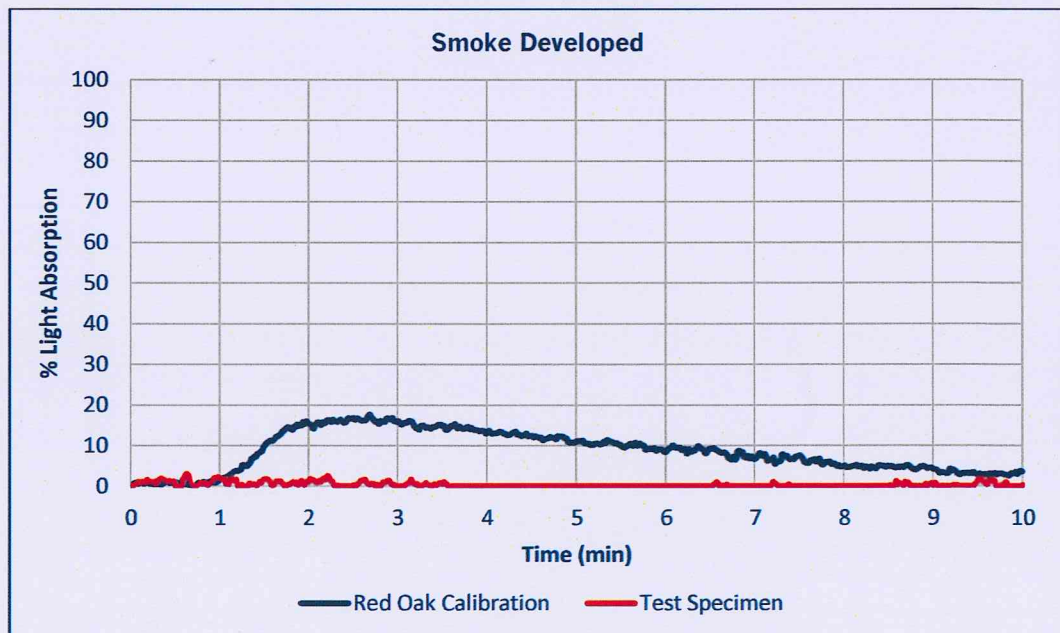




11. APPENDIX 1 – GRAPHS



Graph 1– Flame Spread



Graph 2– Smoke Developed



12. APPENDIX 2 – PICTURE



Pictures 1 – Specimen before the test



Picture 2: Specimen located at
the exhaust end



Picture 3: Specimen located on
top of the fire source

Pictures 2 & 3 – Specimen after the test

---End of test report---