

# TEST REPORT

## REACTION TO FIRE TEST

### TEST SPONSOR:

**Engineering Building Materials Co. WLL**  
P.O. Box: 8639, Street No. 13  
Wakalat Street, Industrial Area, Doha, Qatar  
T: +974 4419 9840, F: +974 4419 9887  
Website: [www.embcqatar.com](http://www.embcqatar.com)

### TESTED MATERIAL/ASSEMBLY:

14mm thick Hanex Solid Surface

### TEST STANDARD:

ASTM E84-16: Standard Test Method for Surface Burning Characteristics of Building Materials



**THOMAS BELL-WRIGHT  
INTERNATIONAL CONSULTANTS**

Test Date: 23-Feb-17  
Issue Date: 7-Mar-17  
Test Reference No.: QL109

PO BOX 26385, DUBAI UAE

T +971 (0)4 333 2692

[fire@bell-wright.com](mailto:fire@bell-wright.com)

[www.bell-wright.com](http://www.bell-wright.com)

DUBAI

ABU DHABI

DOHA



## Accreditation

ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories with:

United Kingdom Accreditation Service (UKAS) - Testing Laboratory: **4439**

[www.ukas.com](http://www.ukas.com)



GCC Accreditation Center (GAC) – Testing Laboratory: **ATL-0017**

[www.GCC-accreditation.org](http://www.GCC-accreditation.org)



## Memberships

Members of European Group of Organization for Fire Testing, Inspection and Certification

[www.egolf.org.uk](http://www.egolf.org.uk)

Member of International Trade Council

[www.thetradecouncil.com](http://www.thetradecouncil.com)

Member of Association for Specialist Fire Protection

[www.asfp.org.uk](http://www.asfp.org.uk)

Member of Centre for Window and Cladding Technology

[www.cwct.co.uk](http://www.cwct.co.uk)



The work which is the subject of this report falls wholly or partly under the accreditations of **ISO 17025 UKAS and ISO 17025 GAC**.



## Table of Contents

1. INTRODUCTION .....	4
2. SPONSOR.....	4
3. TESTING LABORATORY .....	4
4. DATE OF TEST .....	4
5. SPECIMEN DESCRIPTION .....	5
6. METHOD OF TEST.....	5
6.1. Placing of test specimen .....	5
6.2. Test Method.....	5
6.3. Conditioning.....	5
7. OBSERVATION .....	6
8. SUMMARY OF RESULTS.....	6
9. CLASSIFICATIONS .....	7
10. LIMITATIONS .....	8
11. APPENDIX 1- GRAPHS.....	9
12. APPENDIX 2- PICTURES .....	10

EGY STONE



## 1. INTRODUCTION

Determination of the flame spread index and the smoke developed index of 14mm thick Hanex Solid Surface as per ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

## 2. SPONSOR

Name: Engineering Building Materials Co. WLL  
Address: P.O. Box: 8639, Street No. 13  
Wakalat Street, Industrial Area  
Doha, Qatar  
T: +974 4419 9840  
F: +974 4419 9887  
Website: [www.embcqatar.com](http://www.embcqatar.com)

## 3. TESTING LABORATORY

Name: Thomas Bell-Wright International Consultants (TBWIC)  
Address: Corner of 46<sup>th</sup> and 47<sup>th</sup> Streets,  
Jebel Ali Industrial Area 1  
Dubai, United Arab Emirates  
T: +971 4 821 5777 | +971 4 333 2692  
Website: [www.bell-wright.com](http://www.bell-wright.com)

## 4. DATE OF TEST

Sample received: 16-Feb-17  
Test date: 23-Feb-17

The test has not been witnessed by the Sponsor.



## 5. SPECIMEN DESCRIPTION

The description of the specimen given below has been prepared from information provided by the Sponsor.

<b>Product Tested</b>	14mm thick Hanex Solid Surface	
<b>Fire side</b>	One side of Hanex Solid Surface smooth surface	
<b>Product Description</b>	Hanex Solid Surface, green in colour	
<b>Product Details</b>	Product Name	Hanex Solid Surface
	Manufacturer	Hanwha Living & Creative Corporation Seoul, Korea
	Components	>30 %w Polymethylmethacrylate <70 %w Alumina Trihydrate <1 %w Methylmethacrylate
	Colour Reference	Green (observed)
	Thickness	14mm (measured)
	Density	1.78 g/cm <sup>2</sup>
<b>Dimensions per panel</b>	1225 x 600 x 14mm (l x w x thk) (measured)	
<b>No. of panel</b>	6	
<b>Total dimension</b>	7350 x 600 x 14mm (l x w x thk) (measured)	
<b>Specimen placement</b>	Six (6) sections of 14mm thick Hanex Solid Surface were butt jointed end-to-end. The test specimen was placed directly to the tunnel ledges with the smooth surface towards the flame source.	

The test specimen was sampled by Mr. Azel Joquino of TBWIC on 13 February 2017 and was submitted by the Sponsor for testing as part of product certification process.

## 6. METHOD OF TEST

### 6.1. Placing of test specimen

The test specimen consisted of six (6) sections of 14mm thick Hanex Solid Surface. The dimension per panel was 1225 x 600 x 14mm (l x w x thk.) and was butt jointed end-to-end. The total dimensions of the specimen were 7350 x 600 x 14mm (l x w x thk).

Several sections of cement board butt jointed end-to-end with overall dimensions of 7350 x 600mm (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 smooth surface of the specimen (fire side) was exposed to a flaming exposure during the 10 minute test duration.

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 16-Feb-17, the specimen was stored in room temperature for 7 days prior to the test ranging from 20.2 to 25.8°C and 45 to 55% relative humidity.



## 7. OBSERVATION

### Test Data and Observation

Observations	
Ignition Time (min:sec)	01:03
Time to maximum flame front advance (min:sec)	09:53
Maximum flame spread (ft)	8.7
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)	615/325
Dripping (min:sec)	None
Flaming on the floor (min:sec)	None
After flame on the top (min:sec)	00:37
After flame on the floor (min:sec)	None
Delamination (min:sec)	None
Sagging (min:sec)	03:15
Shrinkage (min:sec)	None
Fallout (min:sec)	None
FS*Time Area (ft*min)	36.65
Smoke Area (%A*min)	10.47
Red Oak Smoke Area (%A*min)	89.2

## 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:

<b>FLAME SPREAD INDEX (FSI)</b>	<b>20</b>
<b>SMOKE DEVELOPED INDEX (SDI)</b>	<b>10</b>

Results are valid for the tested configuration only.



## 9. CLASSIFICATIONS

The following information is designed to help put these test results into context. Flame Spread Index and Smoke Developed Index results from an ASTM E84 test are often used by regulatory agencies to approve materials for various applications. For example, the International Building Code 2015, Section 803.1.1 requires that:

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.

Note that the above example is the IBC requirement for interior wall and ceiling finishes only; your application may be different.

EGY STONE



## 10. LIMITATIONS

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/Tested By:

Romano Parungao  
Fire Testing & Inspection Engineer

Reviewed By:

Fredilyn Paragoso  
Fire Testing Support Engineer

Approved By:

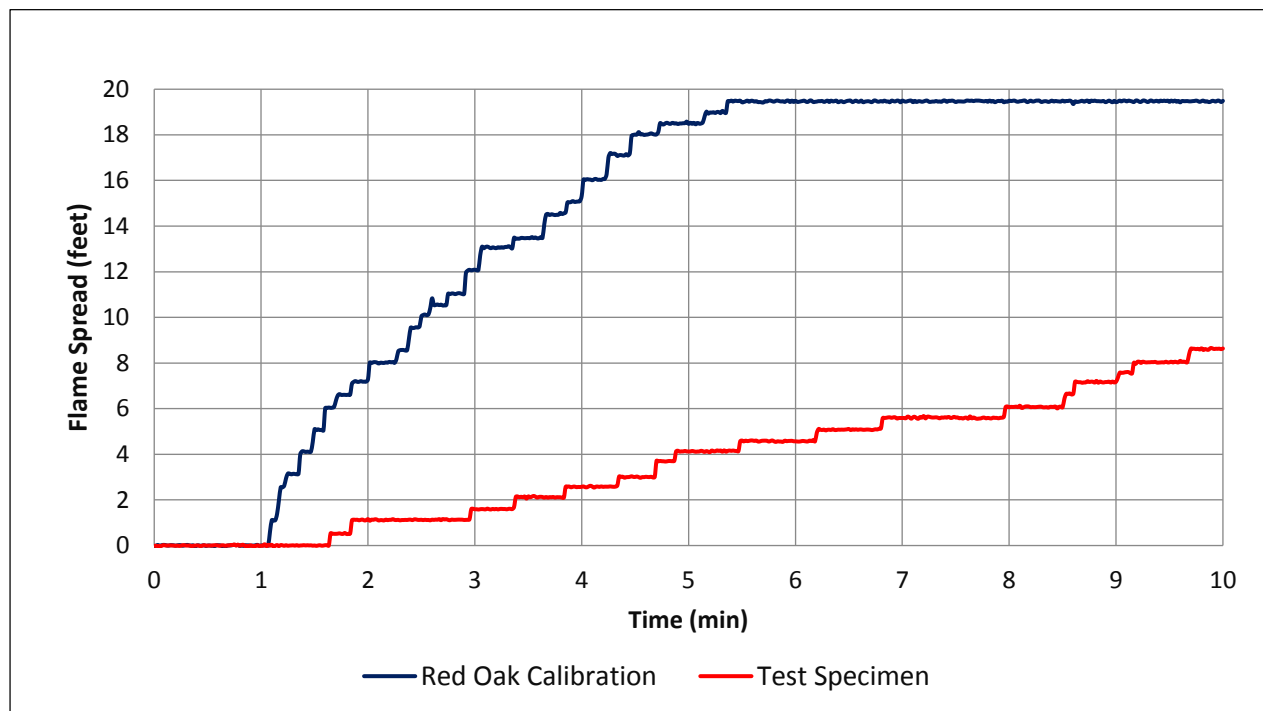
David Campbell, GFireE  
Regional Director of Fire Compliance



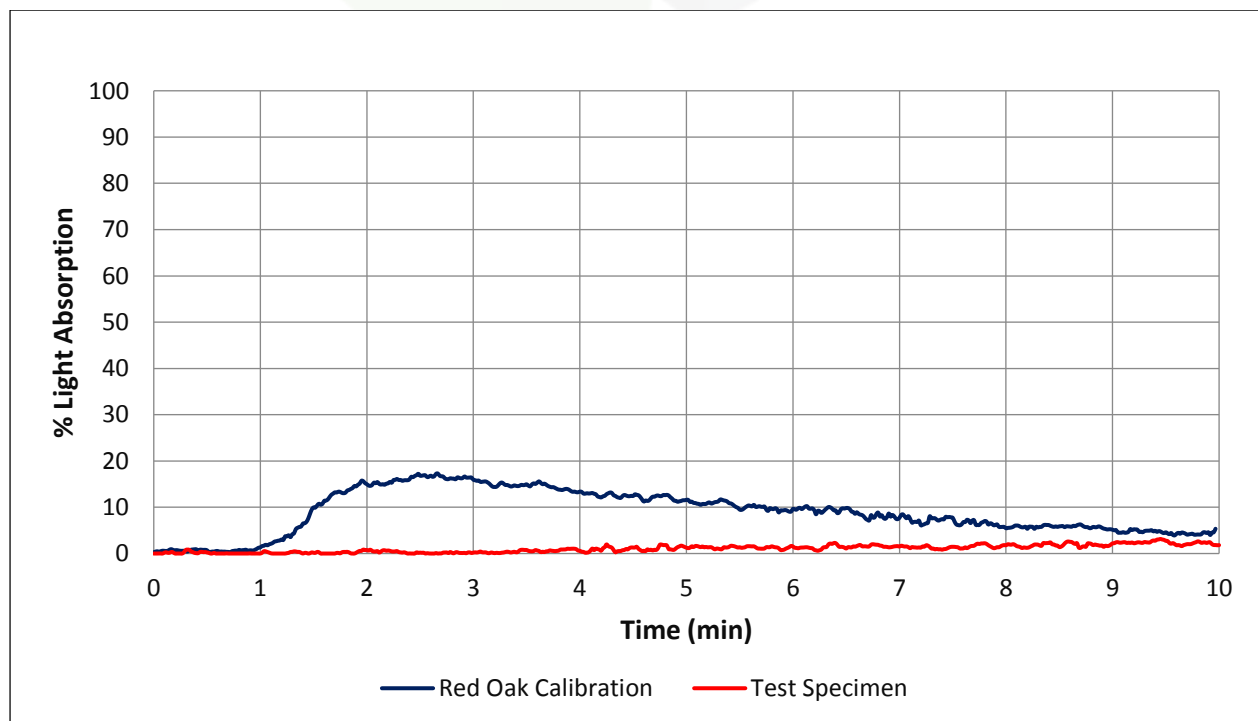




## 11. APPENDIX 1- GRAPHS



Graph 1: Flame Spread Index (FSI)



Graph 2: Smoke Developed Index (SDI)



## 12. APPENDIX 2- PICTURES

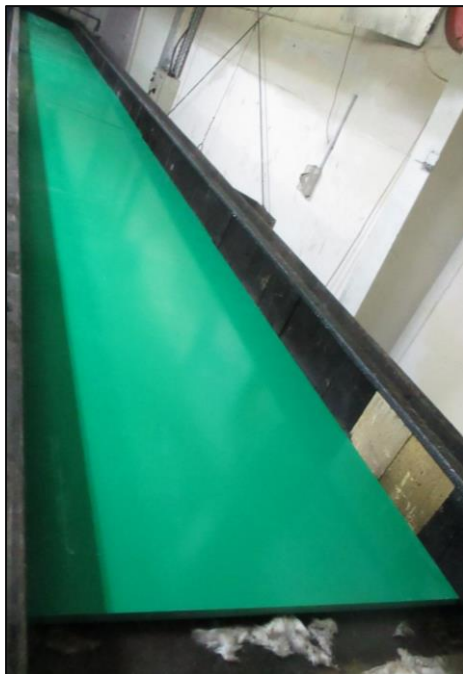


Photo 1: Specimen before the test  
(Non-fire side)

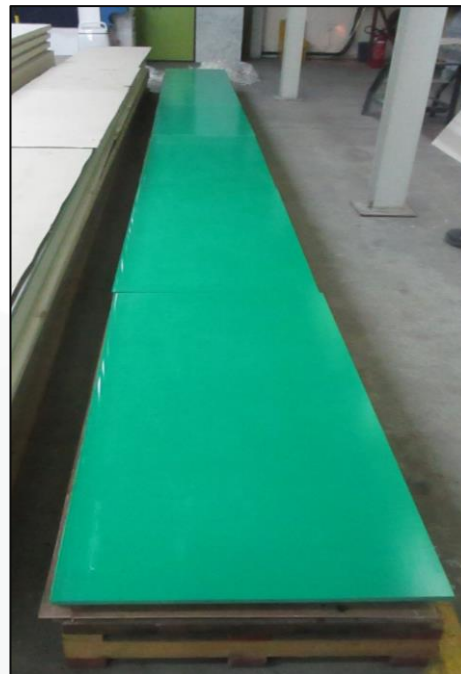


Photo 2: Specimen before the test  
(Fire side)



Photo 3: Specimen after the test  
(located near the fire end)



Photo 4: Specimen after the test  
(located near the exhaust end)

- End of test report -