

### TEST REPORT

Test Report Issued To:

Test Report No: D191126046/D191126046-1

Date of Issue: 29-Nov-2019



Sample Booking/Receipt Date: 26-Nov-2019

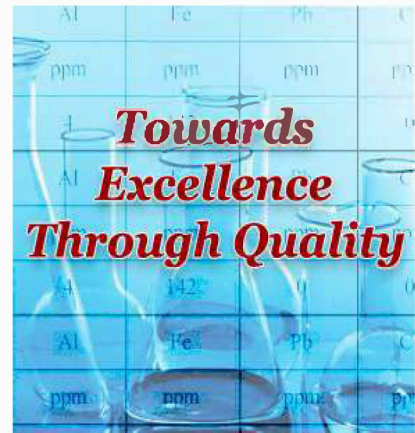
Date of Start of Testing: 28-Nov-2019

Date of Completion of Test: 28-Nov-2019

Customer Relationship Number 57424

**Sample Description :**

FRP MOLDED GRATING, 600 MM X 1000 MM



Customer Reference No :

**Kind Attention :**

E-Mail:

Contact No:

9998441964

Sample Condition : NA

Sample Quantity (Approx) : NA

Sample Size (Approx) : NA

SAMPLE NOT DRAWN BY OUR LABORATORY. THE RESULTS RELATE ONLY TO THE ITEMS TESTED

ULR-TC631419000062826F

Report Issued by

Authenticity of report can be verified by mail at [verification@spectrolab.in](mailto:verification@spectrolab.in)

This is a Digitally Signed Report and hence doesn't require Physical Signature.

Spectro Analytical Labs Limited S-1, GNEPIP, Surajpur Industrial Area,Phase-V, Kasna, Greater Noida-201308 (India)

Phone : +91-120-2341250,2341251 || URL : [www.spectro.in](http://www.spectro.in) || Email: [care@spectro.in](mailto:care@spectro.in)

BIS & DDA Approved, ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018 Certified Laboratory

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## TEST REPORT FOR DETERMINING THE SPREAD OF FLAME AND SMOKE DEVELOPED INDEX.

**Test Sponsor:**

**Product Name:**  
FRP Molded Grating



**Test Standards:**

ASTM E84-2018; Standard Test Method for Surface Burning Characteristics of Building Materials.

**Testing Laboratory:**

**Spectro Analytical Labs Limited**  
S-1 GNEPIP, Surajpur Industrial Area  
Kasna, Greater Noida, Phase – V  
Gautam Budha Nagar (U.P.)  
Pin Code: 201308  
Ph: 0120-2341251/52

**Specimen Verification:**

**Length** : 10000 mm  
**Width** : 600 mm  
**Thickness** : 40 mm

**Sample Preparation:** The sample was 40 mm in thickness, 600 mm in width and 1000 mm in length. Approx. 8 numbers of samples were used to spread over the tunnel to form the requisite specimen length. Prior to the testing, the sample was conditioned to constant weight at a temperature of  $73 \pm 5^\circ\text{F}$  ( $23 \pm 3^\circ\text{C}$ ) and a relative humidity of  $50 \pm 5\%$ . During testing the sample was self-supporting.

**Ambient Temperature**

At the time of Commencement of test the Average ambient Temperature was  $21^\circ\text{C}$ .

Analyst Signature



Testing(TC-6314)

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Authorised Signatory

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## Results and Discussion

### Flame Spread Result

Calculated Flame Spread (CFS)	7.90
Flame Spread Index	8

### Smoke Developed Result

Calculated Smoke Developed	223.3
Smoke Developed Index	200

### Result: Class 1

Note: For Further details and observations refer to Annexure A and B

### Classification Requirement

	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

### Correction Factor

#### CORRECTION FACTOR FOR CALCULATING FLAME SPREAD INDEX

- If this total area ( $A_T$ ) is less than or equal to 97.5 ft<sup>2</sup> then  
The flame spread index shall be  $FSI = 0.515 * A_T$ .
- If the total area ( $A_T$ ) is greater than 97.5 ft<sup>2</sup> then  
The flame spread index shall be  $FSI = 4900 / (195 - A_T)$ .  
Here  $A_T$  represents Total Area i.e.  $A_T = A_1 + A_2$   
 $A_1$  = Area Under the curve where first peak is observed.  
 $A_2$  = Area just above the curve in the line of First peak point.

#### CORRECTION FACTOR FOR CALCULATING SMOKE DEVELOPED INDEX

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

$$\text{Smoke Developed Index} = \frac{\text{Area under the Obscuration Curve}}{\text{Area under the Red Oak Curve}} \times 100$$



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## Annexure A

Flame Spread Data	
Time(minutes)	Distance (Feet)
1	0.9
2	1.0
3	1.3
4	1.4
5	1.9
6	1.8
7	1.6
8	1.9
9	1.7
10	1.8

### Flame Spread data

Calculated Flame Spread (CFS)	7.90
Flame Spread Index	8
Time to Ignition (sec)	11 sec
Maximum Flame Spread (Ft)	1.9 ft.
Area under the Flame Spread Curve (Ft. Min)	15.34 ft. min.

### Smoke Data

Calculated Smoke Developed	223.3
Smoke Developed Index	200
Area under the Smoke Curve (Ft. Min)	165.02
Area under Red Oak Curve (Ft. Min)	73.87

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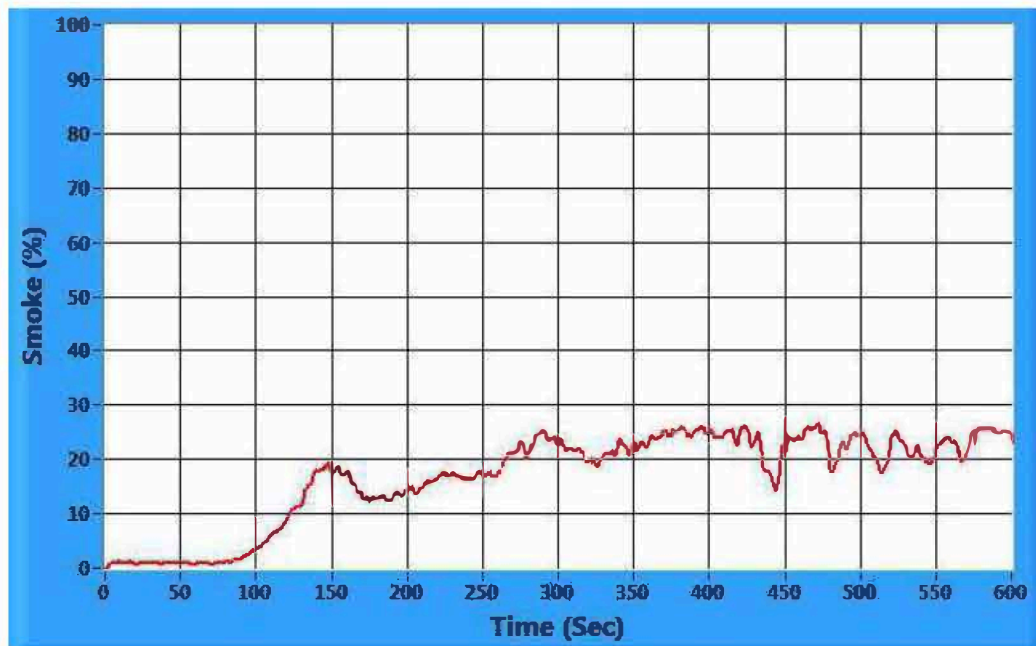
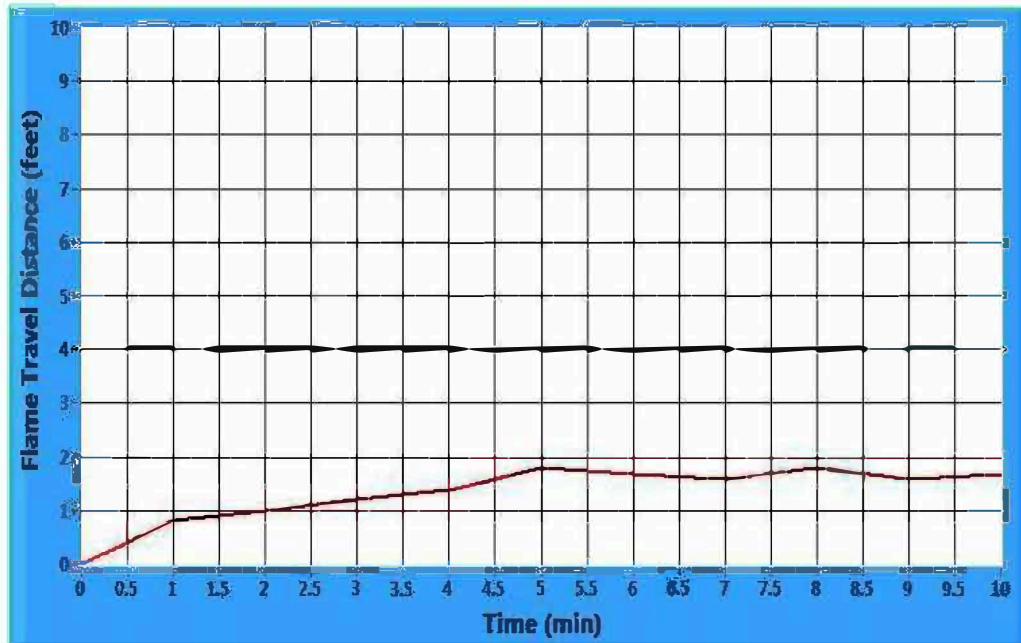


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## Annexure B

### GRAPHS



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## Photographs



Before Test



After Test

-- End of Test Report --

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