

FIRE EMISSION REPORT

TEST REPORT

Test Report Issued To:

JPL INNOVATIONS PRIVATE LIMITED
206 ,AVALON APARTMENTS 2ND FLOOR NEW MANGLAPURI,
MEHRAULI, NEW DELHI, DELHI - 110030, INDIA

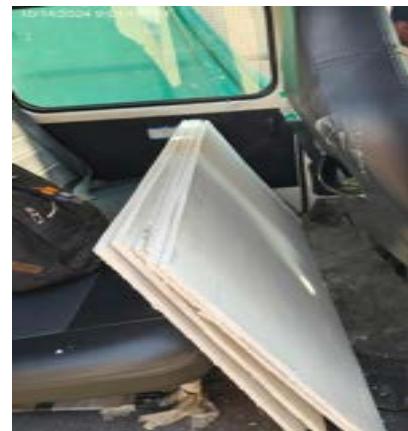
Test Report No: D241014042/D241014042-11
Issue Date: 23-Oct-2024
Sample Booking/Receipt Date: 14-Oct-2024
Test Start Date: 19-Oct-2024
Test Completion Date: 22-Oct-2024



Customer Relationship Number 81138

Sample Description :

Terrashield Coarse
Terrashield Fine



Customer Reference No :

Kind Attention : MR. ADITYA PAUL LAKHANPAL

E-Mail: projects@jplindia.com

Contact No: 9650060448

Sample Condition : Good

Sample Quantity (Approx) : 6 - Nos

Sample Size (Approx) : NA - mm

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



ULR-TC631424000014824F

Authencity of report can be verified by mail at verification@spectrolab.in
This is a Digitally Signed Report and hence doesn't require Physical Signature.

ANALYTICAL LABS
Digitally signed
by Mohit Berwal
Date: 2024.10.23
12:13:42 +05:30
Report Issued By
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Legal Entity: Spectro Analytical Labs Private Limited (formerly Spectro Analytical Labs Limited), CIN : U74220DL1998PTC092698

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TEST REPORT

Discipline: Mechanical

Group: Building Materials

TEST REPORT FOR DETERMINING THE FLAME SPREAD INDEX AND SMOKE DEVELOPED INDEX

Product Name:

Terrashield Coarse, Terrashield Fine (Name given by test sponsor)

Test Standards:

ASTM E84-2021; Standard Test Method for Surface Burning Characteristics of Building Materials.

Testing Laboratory:

Spectro Analytical Labs Pvt. Ltd.

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 : 1220 mm

Width : 600 mm

Thickness : 10 mm

Sample Preparation: The sample was 10 mm in thickness, 600 mm in width and 1220 mm in length.

Total 6 number of samples were used to spread over the tunnel to form the required specimen length. During testing the sample was self-supporting.


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Results and Discussion

Flame Spread Result

Calculated Flame Spread (CFS)	0
Flame Spread Index	0

Smoke Developed Result

Calculated Smoke Developed	214.8
Smoke Developed Index	200

Result: The tested specimen qualified for Class 1 as per IBC.

Classification Requirement as per IBC.

	Flame Spread Index	Smoke Development
Class1 or A	0 – 25	450 Maximum
Class2 or B	26 -75	450 Maximum
Class3 or C	76 – 200	450 Maximum

Correction Factor

CORRECTION FACTOR FOR CALCULATING FLAME SPREAD INDEX

- If this total area (AT) is less than or equal to 97.5 ft·min then
The flame spread index shall be $FSI = 0.515 * AT$.
- If the total area (AT) is greater than 97.5 ft·min then
The flame spread index shall be $FSI = 4900 / (195 - AT)$.
Here AT represents Total Area i.e. $AT = A1 + A2$
 $A1$ = Area Under the curve where first peak is observed.
 $A2$ = 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.

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


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Annexure A

Flame Spread Data

Time(minutes)	Distance (Feet)
1	Burner Flame
2	Burner Flame
3	Burner Flame
4	Burner Flame
5	Burner Flame
6	Burner Flame
7	Burner Flame
8	Burner Flame
9	Burner Flame
10	Burner Flame

Flame Spread data

Calculated Flame Spread (CFS) Flame Spread Index 0 0 No
 Maximum Flame Spread (Ft) Area under the Flame ignition 0
 Spread Curve (Ft. Min) ft. min.

Smoke Data

Calculated Smoke Developed Smoke Developed 214.8
 Index Area under the Smoke Curve (% Obsc. - 200
 Min) Area under Heptane Curve (% Obsc. - Min) 162.68
 The test duration was 10 minutes. 75.71


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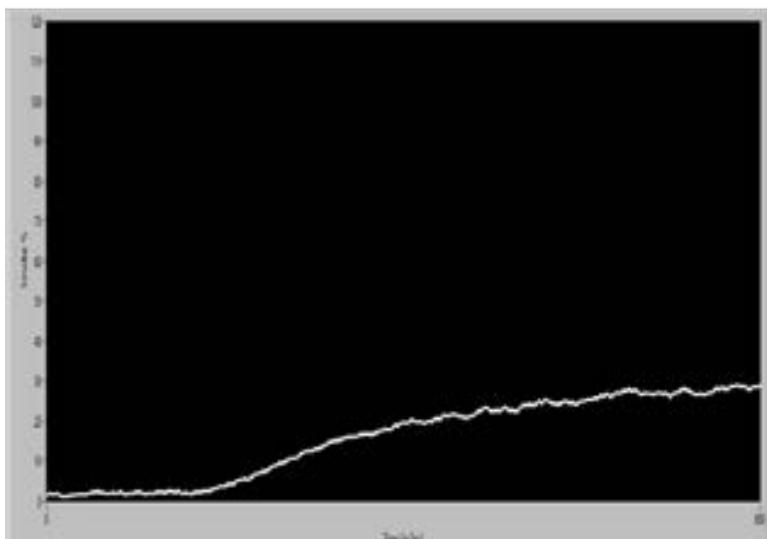
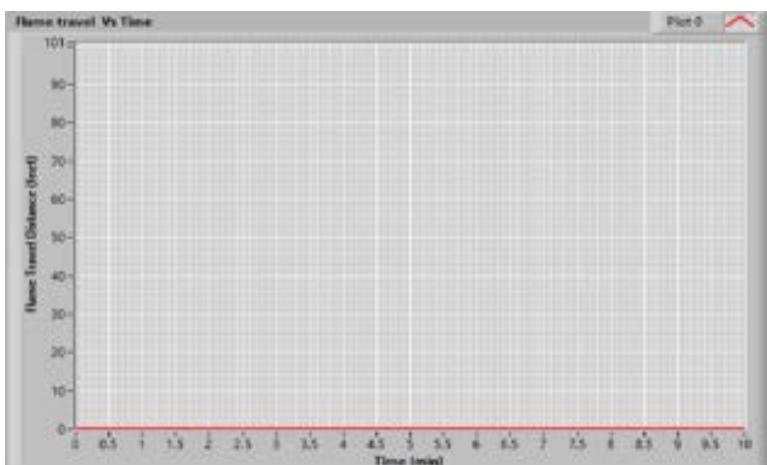
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Annexure B

GRAPHS




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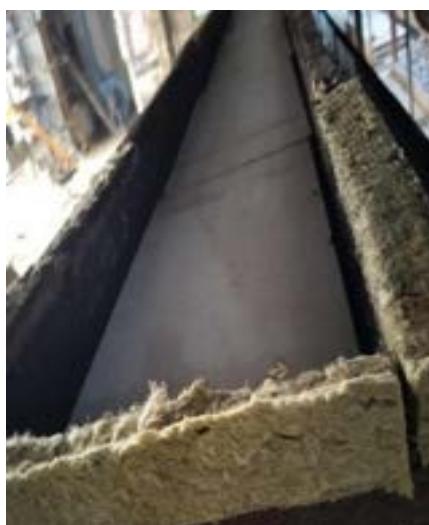
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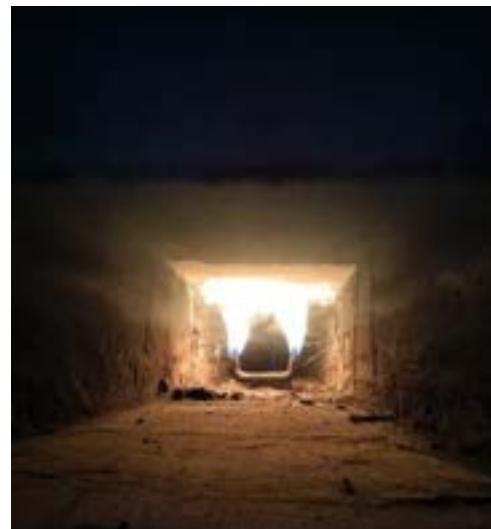
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TEST REPORT

Photographs



Before test



During test



After test


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Test report for Surface Spread of Flame:

Product Name:

Terrashield Coarse Terrashield Fine (Name declared by test sponsor)

Test Standard:

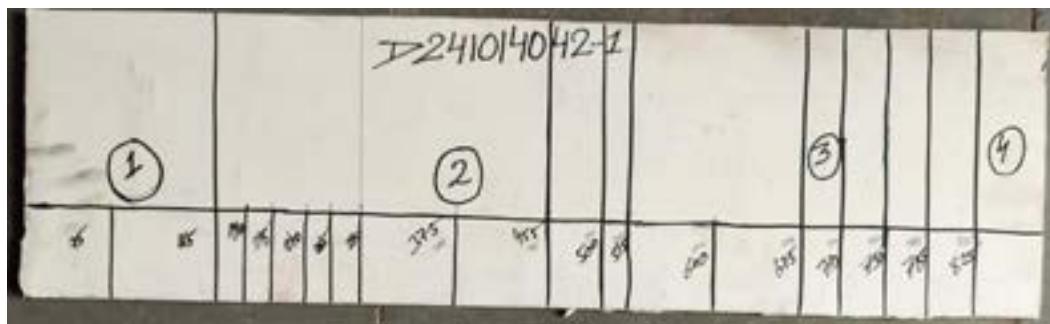
BS 476 Part 7;1997. Method of test to determine the classification of the surface spread of flame of products.

Specimen Definition: Test specimen was sent by test sponsor, Spectro Lab was not involved in the selection and of test specimen.

Specimen preparation: Test specimen were prepared from a sheet provided by test sponsor.

Verification of Test Specimen

The construction has been verified by Spectro based on a detailed survey and with the analysis of product supplied by test sponsor.



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TC-6314



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Spread of Flame**Performance Criteria for Spread of Flame****Classification Criteria for Spread of Flame**

Classification	Spread of Flame at 1.5 Minutes		Final Spread of Flame	
	Limit	Limit for one specimen in sample (mm)	Limit	Limit for one specimen in sample (mm)
Class 1	165	+25	165	+25
Class 2	215	+25	455	+45
Class 3	265	+25	710	+75
Class 4	Exceeding the Limit of Class 3			

Criteria for using Suffix and Prefix in the Classification

1. A prefix D is added, if tested material is not complying with the surface characteristics specified in the standard.
2. A suffix Y is added, if any other behaviour of material affects the flame spread.


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Summary of Results

The system has been evaluated in accordance with BS 476 Part 7

Observations

Specimen No.	1	2	3	4	5	6
Distance, mm	Time to travel distance (Min.: Sec.)					
75	No Flame	No Flame	No Flame	No Flame	No Flame	No Flame
165	No Flame	No Flame	No Flame	No Flame	No Flame	No Flame
190	No Flame	No Flame	No Flame	No Flame	No Flame	No Flame
215	No Flame	No Flame	No Flame	No Flame	No Flame	No Flame
240	No Flame	No Flame	No Flame	No Flame	No Flame	No Flame
265	No Flame	No Flame	No Flame	No Flame	No Flame	No Flame
455	No Flame	No Flame	No Flame	No Flame	No Flame	No Flame
710	No Flame	No Flame	No Flame	No Flame	No Flame	No Flame

	Flame Spread, mm					
Specimen No.	1	2	3	4	5	6
At 1.5 Minutes	No Flame	No Flame	No Flame	No Flame	No Flame	No Flame
Final Flame Spread (in mm)	No Flame	No Flame	No Flame	No Flame	No Flame	No Flame

Result: The tested specimen qualified for Class 1 as per BS 476 Part 7.

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Photograph During test



Note: The test results relate only to the behavior of the test specimens of the product under the particular conditions of test; they are not intended to be the sole Criterion for assessing the potential fire hazard of the product in use.


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