



Special Instructions -

[X] Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature, C 25 ± 10      Relative Humidity, % < 75      Barometric Pressure, mBar N/A

[ ] No general environmental conditions are specified in the Standard(s) or have been identified that could affect the test results or measurements.

RISK ANALYSIS RELATED TO TESTING PERFORMANCE:

The following types of risks have been identified. Take necessary precautions. This list is not all inclusive.

<input type="checkbox"/> Electric shock	<input type="checkbox"/> Radiation
<input type="checkbox"/> Energy related hazards	<input type="checkbox"/> Chemical hazards
<input type="checkbox"/> Fire	<input type="checkbox"/> Noise
<input type="checkbox"/> Heat related hazards	<input type="checkbox"/> Vibration
<input type="checkbox"/> Mechanical	<input type="checkbox"/> Other (Specify)___



Tested by: JERMAINE ROLLING

JERMAINE ROLLING

Date 2021-03-25

Printed Name

Signature

The table below is provided to provide correlation of sample numbers to specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received	Test No.+	Sample No.	Manufacturer, Product Identification and Ratings
3645792	02/24/2021	1	1	SHINGI URJA PVT. LTD, PF350BS (Air side)

+ - If Test Number is used, the Test Number or Numbers the sample was used in must be identified on the data sheet pages or on the Data Sheet Package cover page.

Sampling Procedure -

This document contains data using color and if printed, should be printed in color to retain legibility and the information represented by the color.

### RADIANT PANEL ASTM E162-2008

Sample Description	Date	Test Number	Test Result	Ign. Time (min)	Intial Temp. (°C)	Max. Temp. (°C)	Temp. Rise (°C)	Q (CT/B)	Flame Spread Index (RP)	Dist. 3" (min.)	Dist. 6" (min.)	Dist. 9" (min.)	Dist. 12" (min.)	Dist. 15" (min.)	Test Code (number)
PF350BS	3/15/21	1 [WM]	VALID	0.07	192.8	202.9	10.1	1.3	21.1	0.38	0.48	0.75	1.37	2.03	3152103
PF350BS	3/15/21	2 [WM]	VALID	0.08	192.9	208.9	16	2.5	29.3	0.32	0.68	1.1	1.77	2.87	3152104
PF350BS	3/15/21	3 [WM]	VALID	0.12	196.3	209.8	13.5	2	34.4	0.28	0.68	0.72	1.23	1.85	3152105
PF350BS	3/15/21	4 [WM]	VALID	0.1	194.1	213.7	19.6	3.2	77.4	0.28	0.43	0.5	0.93	1.27	3152106
PF350BS	3/15/21	5 [WM]	VALID	0.08	199.6	213.2	13.6	2	41.6	0.3	0.52	0.6	0.9	1.57	3152107
PF350BS	3/15021	6 [WM]	VALID	0.05	199.1	212.6	13.5	2	39.2	0.2	0.57	0.73	1.02	1.4	3152108
Number of Valid Tests:									6						
Average Valid Test Flame Index [ RP ]:									40.5						
Average Valid Test Flame Index - Rounded to the nearest multiple of five [RP]:									40						
Maximum Valid Test Flame Index [ RP ]:									77.4						

**ASTM E162-2008**

Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source

Date: 2021-03-15 Project Handler 46262 Technician: 46262

Client: SHINGI URJA PVT. LTD

Project No.: 4789760205 File No.: E520209 CCN: N/A

Sample Description: PF350BS

Sample Ticket No: 3645792 Test Location: NORTHBROOK

Work Order ID No: WON0009165 Test Room RADIANT PANEL

Panel Set Point Test Code: 03152101 Asbestos Cement Board Test Code: 03152102

Test Code Number: 03152103

Sample Dimensions (in.): 6 X 18 X 0.010 Sample Color white  
 Sample pre-dried at 60°C for 24 hours, then conditioned at 23 +/- 3 °C and 50 +/- 5% Relative humidity to equilibrium weight. Constant weight was achieved in 7 days.

Sample Number: 1 Sample Orientation: Millboard / Aluminum foil / Wire Mesh

Distance [ inches ]	Time [ minutes ]	Time Difference [ minutes ]	Recip. of difference [ 1 / minutes ]
3	0.38	0.38	Skip Point
6	0.48	0.10	8.33
9	0.75	0.27	3.70
12	1.37	0.62	1.61
15	2.03	0.66	1.52
Sum:			15.2
Fs =			16.2

Initial Stack Temperature 379.1 [ °F ] 192.8 [ °C ]

Maximum Stack Temperature 397.2 [ °F ] 202.9 [ °C ]

Specimen Maximum Stack Temperature Rise: 10.1 [ °C ]

Asbestos Cement Board Rise: 3.9 [ °C ]

Net Stack Temperature Rise: 6.2 [ °C ]

Q = CT/B 1.3

Flame Spread Index: 21.1 [RP]

**TEST OBSERVATIONS:**

Flashing [mins]:	N/A
Melting [mins]:	0.15
Flaming Drips [mins]:	0.13 GREATER THEN 10 DRIPS PER 10 SECONDS
Non Flaming Drips [mins]:	N/A
Ignition Time [mins]:	0.07
Exposure Time [mins]	2.03
<b>Test Results [valid or invalid]:</b>	VALID
<b>Comments:</b>	

**ASTM E162-2008**

Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source

Date: 2021-03-15 Project Handler 46262 Technician: 46262

Client: SHINGI URJA PVT. LTD

Project No.: 4789760205 File No.: E520209 CCN: N/A

Sample Description: PF350BS

Sample Ticket No: 3645792 Test Location: NORTHBROOK

Work Order ID No: WON0009165 Test Room RADIANT PANEL

Panel Set Point Test Code: 03152101 Asbestos Cement Board Test Code: 03152102

Test Code Number: 03152104

Sample Dimensions (in.): 6 X 18 X 0.010 Sample Color white  
 Sample pre-dried at 60°C for 24 hours, then conditioned at 23 +/- 3 °C and 50 +/- 5% Relative humidity to equilibrium weight. Constant weight was achieved in 7 days.

Sample Number: 2 Sample Orientation: Millboard / Aluminum foil / Wire Mesh

Distance [ inches ]	Time [ minutes ]	Time Difference [ minutes ]	Recip. of difference [ 1 / minutes ]
3	0.32	0.32	3.13
6	0.68	0.36	2.78
9	1.10	0.42	2.38
12	1.77	0.67	1.49
15	2.87	1.10	0.91
Sum:			10.7
Fs =			11.7

Initial Stack Temperature 379.3 [ °F ] 192.9 [ °C ]

Maximum Stack Temperature 408 [ °F ] 208.9 [ °C ]

Specimen Maximum Stack Temperature Rise: 16 [ °C ]

Asbestos Cement Board Rise: 3.9 [ °C ]

Net Stack Temperature Rise: 12.1 [ °C ]

Q = CT/B 2.5

Flame Spread Index: 29.3 [RP]

**TEST OBSERVATIONS:**

Flashing [mins]:	N/A
Melting [mins]:	0.27
Flaming Drips [mins]:	0.13 GREATER THEN 10 DRIPS PER 10 SECONDS
Non Flaming Drips [mins]:	N/A
Ignition Time [mins]:	0.08
Exposure Time [mins]	2.88
<b>Test Results [valid or invalid]:</b>	VALID
<b>Comments:</b>	

**ASTM E162-2008**

Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source

Date: 2021-03-15 Project Handler 46262 Technician: 46262

Client: SHINGI URJA PVT. LTD

Project No.: 4789760205 File No.: E520209 CCN: N/A

Sample Description: PF350BS

Sample Ticket No: 3645792 Test Location: NORTHBROOK

Work Order ID No: WON0009165 Test Room RADIANT PANEL

Panel Set Point Test Code: 03152101 Asbestos Cement Board Test Code: 03152102

Test Code Number: 03152105

Sample Dimensions (in.): 6 X 18 X 0.010 Sample Color white  
 Sample pre-dried at 60°C for 24 hours, then conditioned at 23 +/- 3 °C and 50 +/- 5% Relative humidity to equilibrium weight. Constant weight was achieved in 7 days.

Sample Number: 3 Sample Orientation: Millboard / Aluminum foil / Wire Mesh

Distance [ inches ]	Time [ minutes ]	Time Difference [ minutes ]	Recip. of difference [ 1 / minutes ]
3	0.28	0.28	3.57
6	0.68	0.40	Skip Point
9	0.72	0.04	9.09
12	1.23	0.51	1.96
15	1.85	0.62	1.61
Sum:			16.2
Fs =			17.2

Initial Stack Temperature 385.3 [ °F ] 196.3 [ °C ]

Maximum Stack Temperature 409.7 [ °F ] 209.8 [ °C ]

Specimen Maximum Stack Temperature Rise: 13.5 [ °C ]

Asbestos Cement Board Rise: 3.9 [ °C ]

Net Stack Temperature Rise: 9.6 [ °C ]

Q = CT/B 2

Flame Spread Index: 34.4 [RP]

**TEST OBSERVATIONS:**

Flashing [mins]:	N/A
Melting [mins]:	0.25
Flaming Drips [mins]:	0.23 GREATER THEN 10 DRIPS PER 10 SECONDS
Non Flaming Drips [mins]:	N/A
Ignition Time [mins]:	0.12
Exposure Time [mins]	1.87
<b>Test Results [valid or invalid]:</b>	VALID
<b>Comments:</b>	



**ASTM E162-2008**

Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source

Date: 2021-03-15 Project Handler 46262 Technician: 46262

Client: SHINGI URJA PVT. LTD

Project No.: 4789760205 File No.: E520209 CCN: N/A

Sample Description: PF350BS

Sample Ticket No: 3645792 Test Location: NORTHBROOK

Work Order ID No: WON0009165 Test Room RADIANT PANEL

Panel Set Point Test Code: 03152101 Asbestos Cement Board Test Code: 03152102

Test Code Number: 03152106

Sample Dimensions (in.): 6 X 18 X 0.010 Sample Color white  
 Sample pre-dried at 60°C for 24 hours, then conditioned at 23 +/- 3 °C and 50 +/- 5% Relative humidity to equilibrium weight. Constant weight was achieved in 7 days.

Sample Number: 4 Sample Orientation: Millboard / Aluminum foil / Wire Mesh

Distance [ inches ]	Time [ minutes ]	Time Difference [ minutes ]	Recip. of difference [ 1 / minutes ]
3	0.28	0.28	Skip Point
6	0.43	0.15	Skip Point
9	0.50	0.07	18.00
12	0.93	0.43	Skip Point
15	1.27	0.34	5.19
Sum:			23.2
Fs =			24.2

Initial Stack Temperature 381.3 [ °F ] 194.1 [ °C ]

Maximum Stack Temperature 416.7 [ °F ] 213.7 [ °C ]

Specimen Maximum Stack Temperature Rise: 19.6 [ °C ]

Asbestos Cement Board Rise: 3.9 [ °C ]

Net Stack Temperature Rise: 15.7 [ °C ]

Q = CT/B 3.2

Flame Spread Index: 77.4 [RP]

**TEST OBSERVATIONS:**

Flashing [mins]:	N/A
Melting [mins]:	0.22
Flaming Drips [mins]:	0.25 GREATER THEN 10 DRIPS PER 10 SECONDS
Non Flaming Drips [mins]:	N/A
Ignition Time [mins]:	0.10
Exposure Time [mins]	1.30
<b>Test Results [valid or invalid]:</b>	VALID
<b>Comments:</b>	

**ASTM E162-2008**

Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source

Date: 2021-03-15 Project Handler 46262 Technician: 46262

Client: SHINGI URJA PVT. LTD

Project No.: 4789760205 File No.: E520209 CCN: N/A

Sample Description: PF350BS

Sample Ticket No: 3645792 Test Location: NORTHBROOK

Work Order ID No: WON0009165 Test Room RADIANT PANEL

Panel Set Point Test Code: 03152101 Asbestos Cement Board Test Code: 03152102

Test Code Number: 03152107

Sample Dimensions (in.): 6 X 18 X 0.010 Sample Color white  
 Sample pre-dried at 60°C for 24 hours, then conditioned at 23 +/- 3 °C and 50 +/- 5% Relative humidity to equilibrium weight. Constant weight was achieved in 7 days.

Sample Number: 5 Sample Orientation: Millboard / Aluminum foil / Wire Mesh

Distance [ inches ]	Time [ minutes ]	Time Difference [ minutes ]	Recip. of difference [ 1 / minutes ]
3	0.30	0.30	Skip Point
6	0.52	0.22	Skip Point
9	0.60	0.08	15.00
12	0.90	0.30	3.33
15	1.57	0.67	1.49
Sum:			19.8
Fs =			20.8

Initial Stack Temperature 391.2 [ °F ] 199.6 [ °C ]

Maximum Stack Temperature 415.7 [ °F ] 213.2 [ °C ]

Specimen Maximum Stack Temperature Rise: 13.6 [ °C ]

Asbestos Cement Board Rise: 3.9 [ °C ]

Net Stack Temperature Rise: 9.7 [ °C ]

Q = CT/B 2

Flame Spread Index: 41.6 [RP]

**TEST OBSERVATIONS:**

Flashing [mins]:	0.28
Melting [mins]:	0.22
Flaming Drips [mins]:	0.23 GREATER THEN 10 DRIPS PER 10 SECONDS
Non Flaming Drips [mins]:	N/A
Ignition Time [mins]:	0.08
Exposure Time [mins]	1.60
<b>Test Results [valid or invalid]:</b> VALID	
<b>Comments:</b>	

**ASTM E162-2008**

Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source

Date: 2021-03-15 Project Handler 46262 Technician: 46262

Client: SHINGI URJA PVT. LTD

Project No.: 4789760205 File No.: E520209 CCN: N/A

Sample Description: PF350BS

Sample Ticket No: 3645792 Test Location: NORTHBROOK

Work Order ID No: WON0009165 Test Room RADIANT PANEL

Panel Set Point Test Code: 03152101 Asbestos Cement Board Test Code: 03152102

Test Code Number: 03152108

Sample Dimensions (in.): 6 X 18 X 0.010 Sample Color white  
 Sample pre-dried at 60°C for 24 hours, then conditioned at 23 +/- 3 °C and 50 +/- 5% Relative humidity to equilibrium weight. Constant weight was achieved in 7 days.

Sample Number: 6 Sample Orientation: Millboard / Aluminum foil / Wire Mesh

Distance [ inches ]	Time [ minutes ]	Time Difference [ minutes ]	Recip. of difference [ 1 / minutes ]
3	0.20	0.20	5.00
6	0.57	0.37	Skip Point
9	0.73	0.16	7.55
12	1.02	0.29	3.45
15	1.40	0.38	2.63
Sum:			18.6
Fs =			19.6

Initial Stack Temperature 390.4 [ °F ] 199.1 [ °C ]

Maximum Stack Temperature 414.6 [ °F ] 212.6 [ °C ]

Specimen Maximum Stack Temperature Rise: 13.5 [ °C ]

Asbestos Cement Board Rise: 3.9 [ °C ]

Net Stack Temperature Rise: 9.6 [ °C ]

Q = CT/B 2

Flame Spread Index: 39.2 [RP]

**TEST OBSERVATIONS:**

Flashing [mins]:	N/A
Melting [mins]:	0.15
Flaming Drips [mins]:	0.15 GREATER THEN 10 DRIPS PER 10 SECONDS
Non Flaming Drips [mins]:	N/A
Ignition Time [mins]:	0.05
Exposure Time [mins]	1.42
<b>Test Results [valid or invalid]:</b>	VALID
<b>Comments:</b>	

Data current at 09:36:56 on 2021-03-29 Test date : 2021-03-29

Procedure - ASTM E-162

File No.: E520209 Assignment No.: 4789760205  
 Client : SHINGI URJA PVT. LTD Test No.: 6

Software	Release date	Version	Description	
2F05DPP /34112	2008-10-03	1.1.0	Data processing program	
Instrument	Last cal	Next cal	Range	Verified by
286F07FM /45555	2020-05-29	2021-05-31	1.5 - 4.5 M3/HX10	
157F99EPT /21308	2020-06-30	2021-06-30	Multi-range	
294F07FM /48318	2020-10-30	2021-10-31	0-20 SCFH	
135F08MC /52897	2020-03-11	2021-03-31	0-6"	
148F13CLK /81707	2020-10-30	2021-10-31	24	
140F06DAS /38505	2020-11-30	2021-11-30	Multi-range	
124F06IC /38503	2020-11-30	2021-11-30	TC comp only	

The following devices or areas were utilized for the short term (less than 24 hour) conditioning of the test sample, or for execution of this procedure. Listing of calibrated instruments used in the recording of conditions for these devices or areas, or for operation of a device, follows the list of devices and areas.

603 Fisher oven 5 - not applicable  
 597 Espec chamber 4 5 - not applicable

The following software and instruments are component parts of the above devices or environmental monitoring equipment for areas or chambers

Software	Release date	Version	Description	
29F17DLP /159202	(2017-03-13)	(1.0.0)	Data logging program	
Instrument	Last cal	Next cal	Range	Verified by
193F18CLK /171585	2020-07-31	2021-07-31	24	
146F07DAS /49764	2020-11-30	2021-11-30	Multi-range	
165F16IC /139920	2020-11-30	2021-11-30	2400	
1218170001/160611	2020-04-03	2021-04-30	K	
0823060012/41211	2020-09-25	2021-09-30	K	

Project No. 4789760205

File E520209

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Tested by: JERMAINE ROLLING

JERMAINE ROLLING

Date 2021-03-25

Printed Name

Signature

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