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BASF CORPORATION

FIRE TEST REPORT

SCOPE OF WORK
NFPA 286 TESTING ON NEOPORE 5200 PANELS WHEN INSTALLED ON INTERIOR WALLS AND CEILING

REPORT NUMBER
103341001SAT-039

TEST DATE(S)
09/27/19

ISSUE DATE **REVISED DATE**
09/27/19 N/A

RECORD RETENTION END DATE
09/27/29

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16

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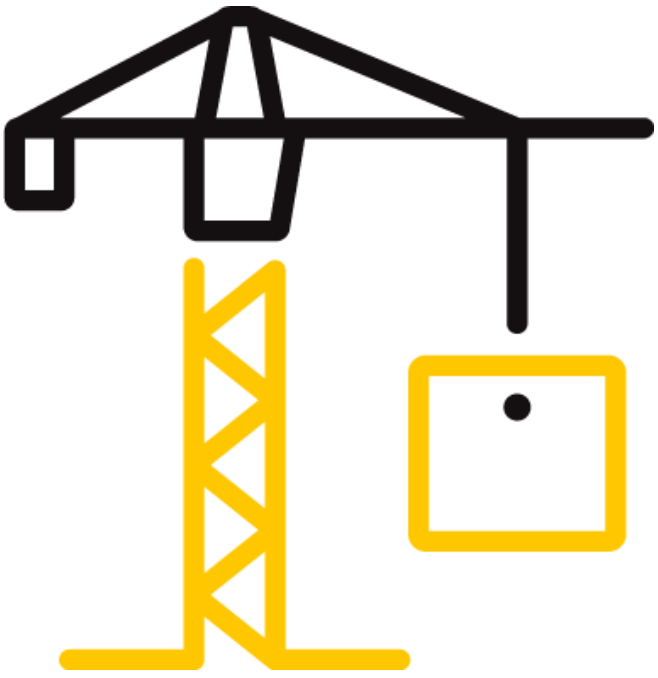

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TEST REPORT FOR BASF CORPORATION
Report No.: 103341001SAT-039
Date: 09/27/19

REPORT ISSUED TO
BASF Corporation
1609 Biddle Ave.
Wyandotte, MI 48192

SECTION 1
SUMMARY

Intertek Building & Construction (B&C) was contracted by **BASF Corporation,** 1609 Biddle Ave. Wyandotte, MI 48192 to evaluate the contribution of wall interior finish to room fire growth of an assembly containing Neopore 5200 Plus Type XI material panels, HALO facer double side laminate. Results obtained are tested values and were secured by using the NFPA 286 test method. A summary of test results is reported herein, and the complete graphical test data is included in this report.

Product Type: Neopore 5200 panels with HALO facer double side laminate
LOT/BATCH: X1084P 2.28 in. × 48 in. × 96 in.

Summary of NFPA 286 Test Results
The assembly described and tested in this report **did** meet the requirements of acceptance criteria for interior wall or ceiling finishes of 2015 International Building Code Section 803.1.2.1 and NFPA 286 Annex C. Construction summary of the full assembly is located in Section 5 of this test report.

For INTERTEK B&C:

COMPLETED BY:	Troy Bronstad	**REVIEWED BY:**	Herbert W. Stansberry II
TITLE:	Test Engineer – Fire Testing	**TITLE:**	Program Manager, Building & Construction
SIGNATURE:		**SIGNATURE:**	
DATE:	09/27/19	**DATE:**	09/30/19

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SECTION 2
TEST METHOD

The assembly was evaluated in accordance with the following:

NFPA 286-15, *Standard Methods of Fire Tests for evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*

International Building Code (2015), *Chapter 8, Section 803.1.2.1*

SECTION 3
TEST PROCEDURE

A calibration test is run within 30 days of testing any material as specified in the standard. All instrumentation is zeroed, spanned and calibrated prior to testing. Testing was performed on 09/27/2019 in accordance with NFPA 286 test method. Ambient conditions prior to the initiation of the test were 86°F and 45% relative humidity. The specimen is installed and the ignition source is placed in a corner adjacent to the room opening. The ignition source for the test is a gas burner with a nominal 12 in. by 12 in. porous top surface of a refractory material. The burner used at this laboratory is filled with a minimum 4-in. layer of Ottawa sand. The collection hood exhaust blower is turned on and an initial flow is established. The gas sampling pump is turned on and the flow rate is adjusted. When all instruments are reading steady state conditions, the computer data acquisition system and video equipment is started. The gas supply to the burner is C.P. grade propane. The burner is capable of producing a gross heat output of 40±1 kW for five minutes followed by a 160±5 kW for ten minutes. The flow rate is metered throughout the test. The gas burners are controlled with mass flow meters to control the volume of gas to match the heat outputs of the standard. Ambient data is taken then the burner is ignited at a fuel flow rate that is known to produce 40 kW of heat output. This level is maintained for five minutes at which time the fuel flow is increased to the 160 kW level for a 10-minute period. During the burn period, all temperature, heat release and heat flux data is being recorded every 6 seconds. Physical flame propagation observations are recorded by the technician in conjunction with the test data. At the end of the fifteen minute burn period, the burner is shut off and all instrument readings are stopped. Post-test observations are made and this concludes the test. All observations are recorded in the table located in Section 6.

Material Source/Installation
The sampled product was selected by Intertek inspector Randy Alexander. The specimens were witnessed during production and tagged, signed prior to shipment on 09/18/19, Selection Report No. 104014201, dated 09/17/19). Panels arrived at Intertek Elmendorf on 09-25-19 and received sample ID#SAT1009251351. The remaining components of the test assembly were provided by and assembled by Intertek-SAT personnel.

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SECTION 4
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Troy Bronstad	Intertek Testing
Duane Scribner	Intertek Testing
Jason De La Cruz	Intertek Testing

SECTION 5
TEST ASSEMBLY DESCRIPTION

The interior dimensions of the floor of the fire room, when the specimens are in place, measures 8 ft, by 12 ft. The finished ceiling is 8 ft ± 0.5 in. above the floor. The four walls are at right angles defining the compartment. The compartment contains a 30 in. wide (± ¼ in.) by 80 in. high (± ¼ in.) doorway, in the Center of the 8 ft by 8 ft wall on the edge of the hood calorimeter apparatus. No other openings are present to allow ventilation. Below is a detailed description of the assembly:

Gypsum
The full interior surfaces of the wall assemblies were clad with 5/8 in. thick gypsum board. The gypsum board were fastened to the wall framing with self-drilling screws at a nominal spacing of 8 in. around the board perimeter and 12 in. in the field. Drywall orientation was with the run edge parallel to the framing and the cut edge perpendicular to the framing. All joints were spackled with joint compound.

Framing
The test room walls and ceiling were constructed with 3-5/8 in., 20-gauge studs and joists, spaced every 24 in.

Interior Finish
NEOPORE 5200 panels were fastened with 4in. self-drilling screws and 1-1/2 in. washers spaced 48 in. oc and 2 in. from the panel edges.

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SECTION 6
TEST RESULTS

Test Date: 09/27/2019
Lab Temperature: 86°F
Lab Relative Humidity: 45%

TEST OBSERVATIONS	
Time (Min:Sec)	**Observations**
00:00	Ignition of the burner. Heat output set at 40kW
00:09	Wall panels melting
00:25	Ceiling panels beginning to melt
01:02	Light smoke
01:29	Panel in burn corner consumed to 7ft
02:53	Flame tips 6ft vertically in burn corner
03:36	Flames recede back to burner
05:00	Increase gas flow to 160kW
05:26	Flame tips 4ft on side wall – burner side
07:17	Floor flame under burner
09:06	Flaming 8ft in corner above burner
09:20	Flaming ceased
11:30	No change
13:51	Flaming back wall 2ft vertically/horizontally
14:32	Flaming drops - floor flame
15:00	Gas Off

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2015 IBC SECTION 803.1.2.1 & NFPA 286 ANNEX C PERFORMANCE CRITERIA	TEST OBSERVATIONS	PASS/FAIL
During 40 kW exposure, flames should not spread to the ceiling.	Flames did not spread to the ceiling during the 40kW exposure.	**PASS**
During the 160 kW exposure, the interior finish should not spread to the outer extremity of the sample on any wall or ceiling	Flames propagation to the outer extremities did not occur during the 160kW exposure.	**PASS**
During the 160-kW exposure, the interior finish should not flashover as defined by NFPA 286. •Peak Heat Release > 1 MW •Floor Heat Flux > 20 kW/m² •Average Upper Layer Temperature > 1,112°F •Flames exiting doorway •Auto ignition of Paper Target Flashover is considered to have occurred when any two of the above criteria were met during the test.	•Peak Heat Release = 247kW •Max Floor Heat Flux =1.56 kW/m² •Max Average Upper Layer Temperature =632°F •No Flames exited doorway •The flashover indicators did not ignite.	**PASS**
The peak rate of heat release throughout the NFPA 286 test should not exceed 800 kW.	The peak heat release rate was 247kW	**PASS**
The total smoke released throughout the NFPA 286 test should not exceed 1,000 m^2.	The total smoke released during the entirety of the test was19 m²	**PASS**

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SECTION 7
PHOTOGRAPHS

Photo No. 1
Pretest photo

Photo No. 2
40KW fire exposure

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Photo No.3
40kW

Photo No. 4
160kW

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Photo No. 5
160kW

Photo No. 6
Foam consumption side wall opposite burner

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Photo No. 7
End of test

Photo No. 8
Post test

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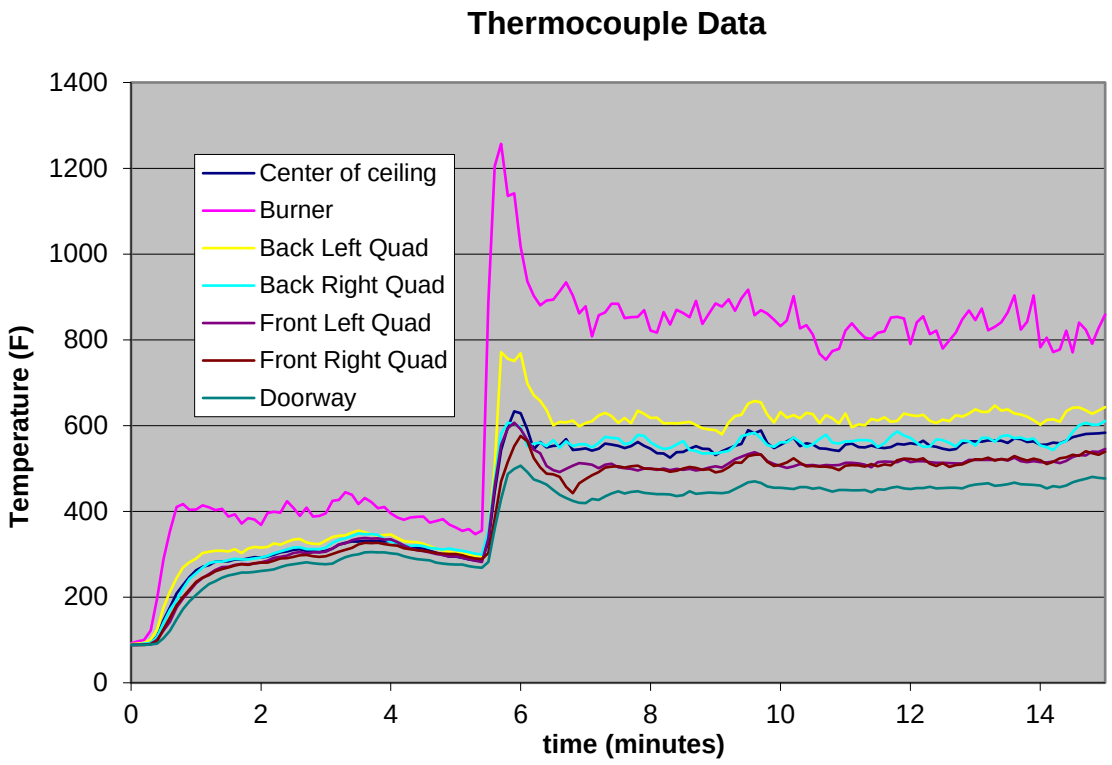
SECTION 8
GRAPHS

Graph No. 1



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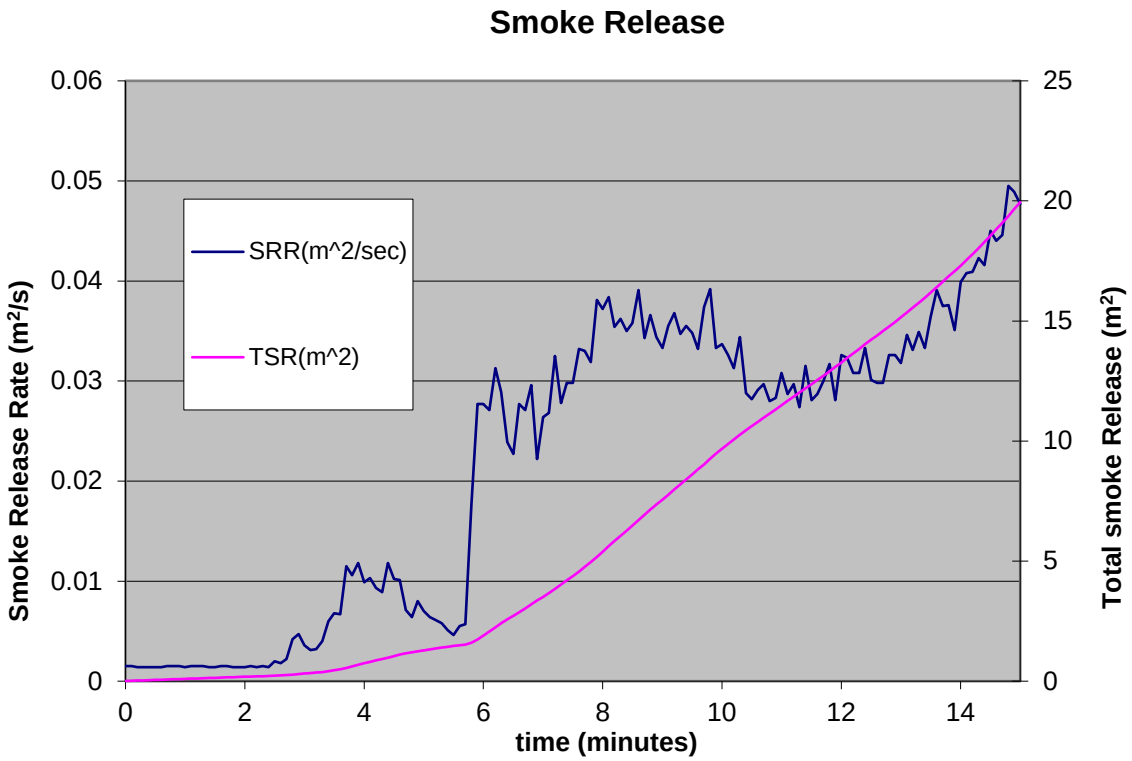
Graph No. 2



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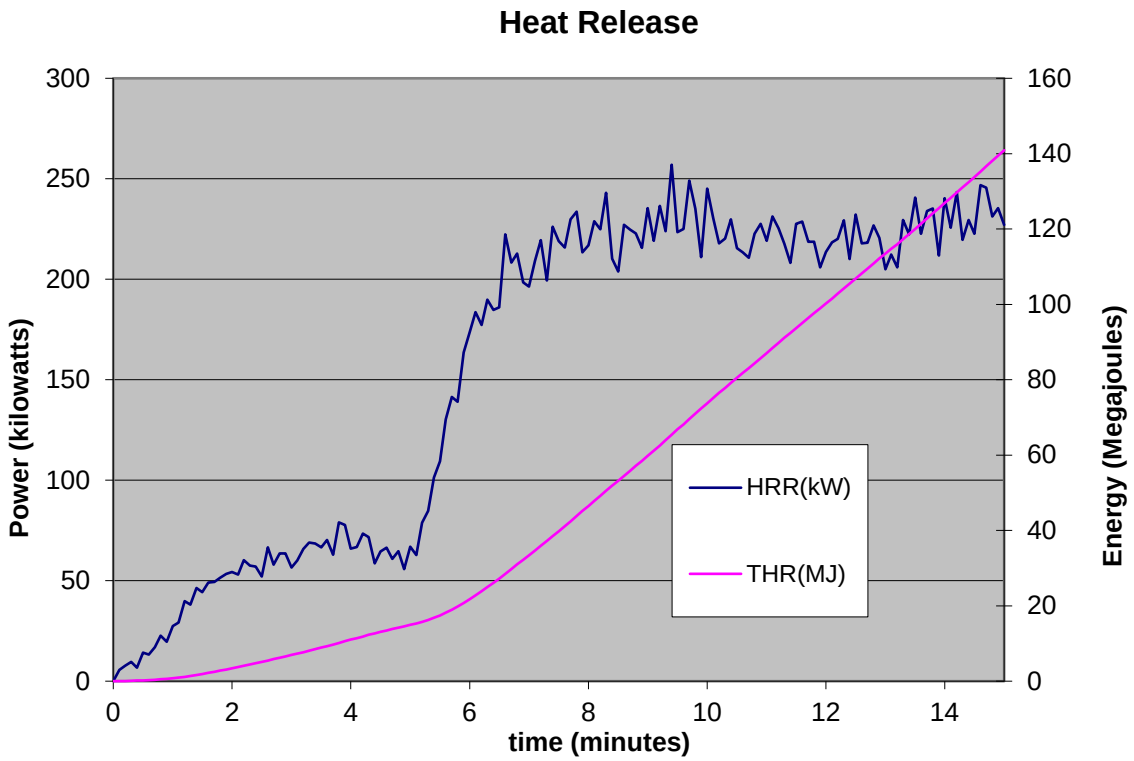
Graph No. 3



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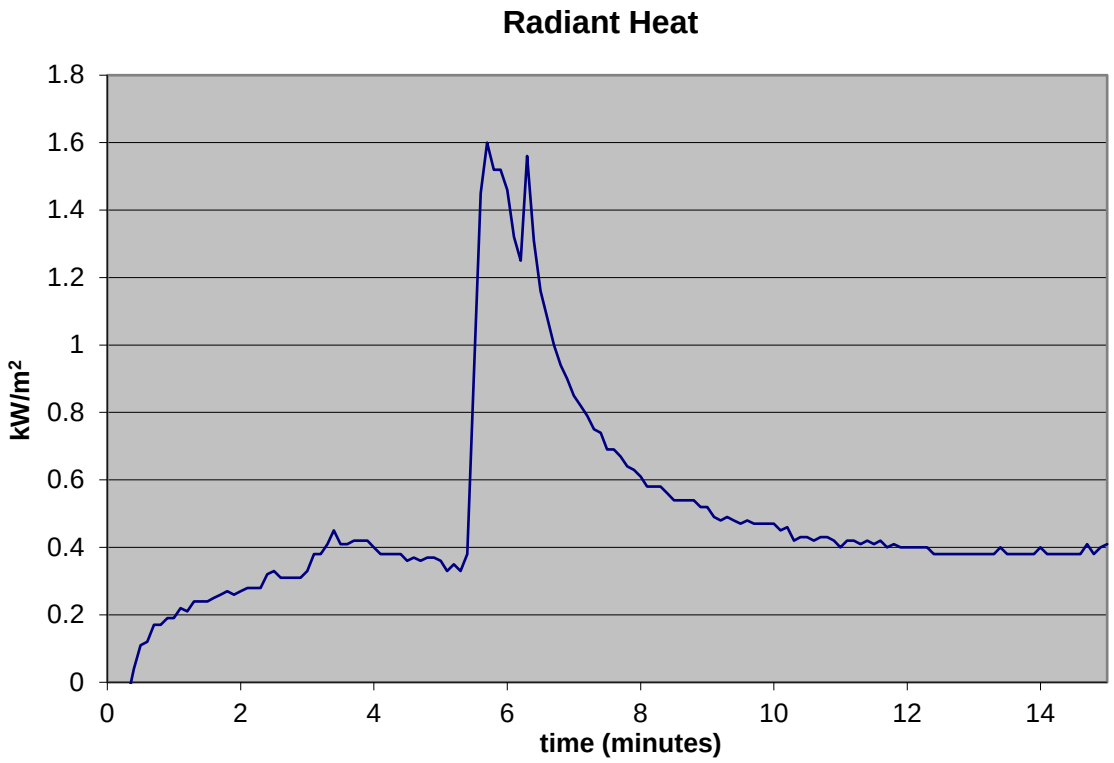
Graph No. 4



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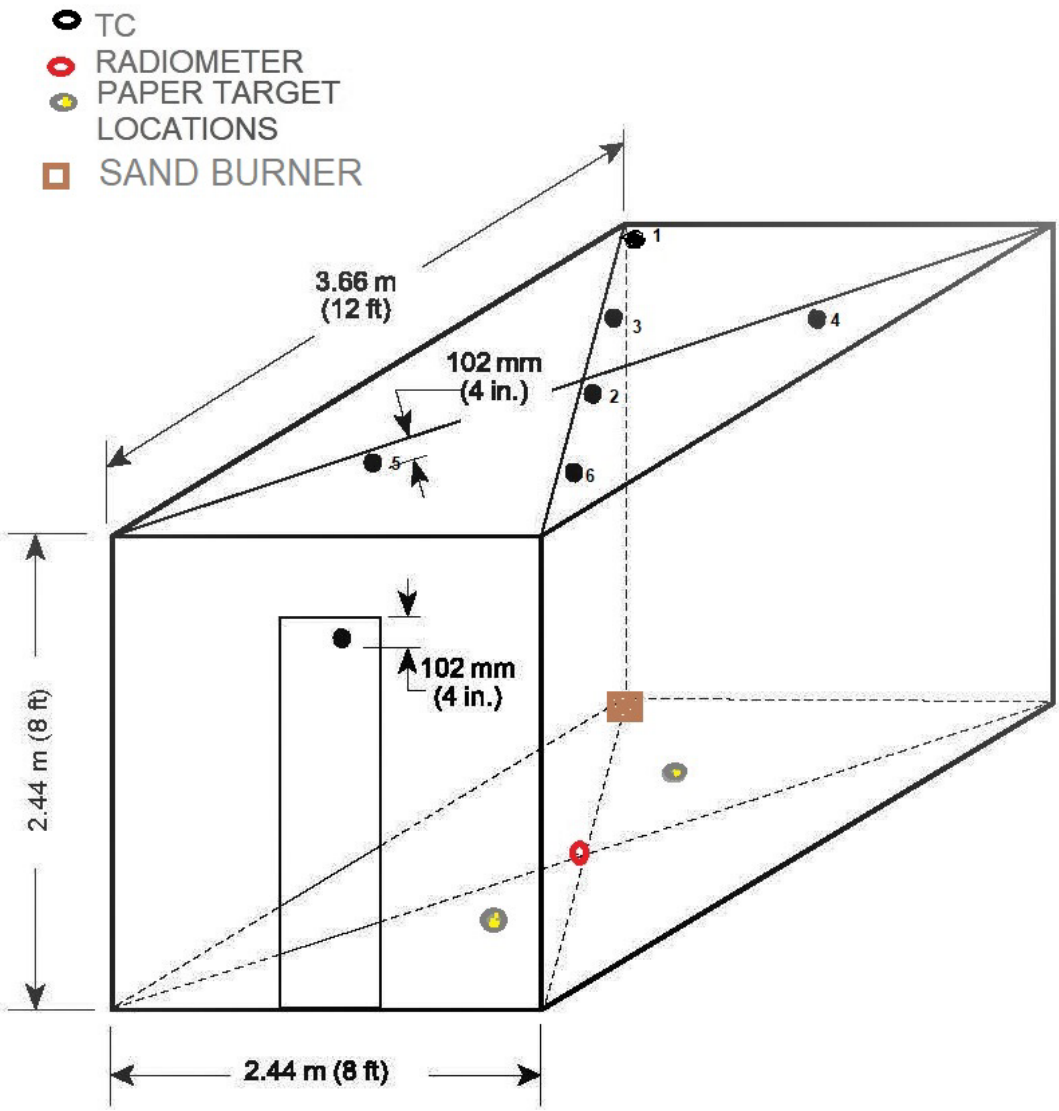
SECTION 9
DRAWINGS

TC, BURNER, TARGET AND RADIOMETER LOCATIONS



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SECTION 10
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	09/27/19	N/A	Original Report Issue