



Title: Fire Test Results

Product: 1" StrandTec with 2" Cellulose Fiber Acoustical Backer

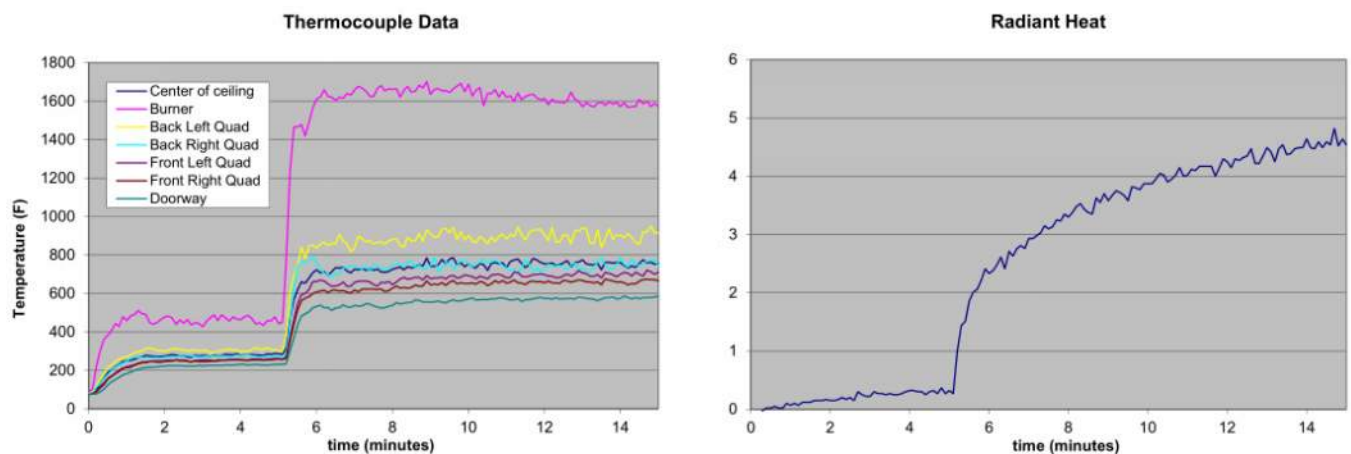
Application: Wall or Ceiling

Testing Standard: NFPA 286

Test Date: 10/03/2018

Why this test: This aggressive test evaluates the contribution of a wall or ceiling assembly to room fire growth. A flame is held in the corner of small room, furnished with the product, for 15 minutes, and the intensity is increased four times after the first 5 minutes. During the test, multiple criteria are evaluated, and the product is given a pass/fail classification.

Test Result Summary: Passed



Test ID: 103666408SAT-001R1

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ASI FIRE TEST REPORT

SCOPE OF WORK

NFPA 286 TESTING ON CEMENTITIOUS WOOD FIBER ACOUSTICAL BOARD WHEN INSTALLED ON INTERIOR WALLS AND CEILING

REPORT NUMBER

103666408SAT-001R1

TEST DATE(S)

10/03/18

ISSUE DATE

10/04/18

REVISED DATE

10/22/18

RECORD RETENTION END DATE

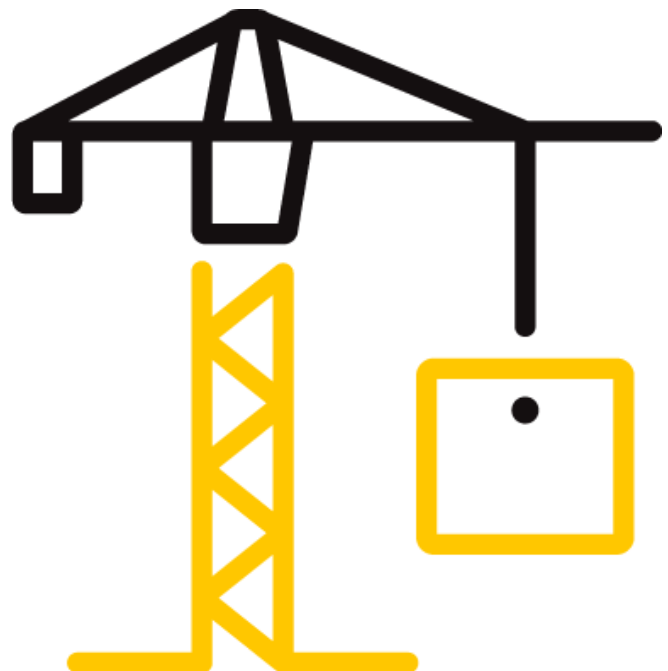
10/03/28

PAGES

20

DOCUMENT CONTROL NUMBER

ATI 00766 (11/06/17)



TEST REPORT FOR ASI

Report No.: 103666408SAT-001R1

Date: 10/04/18

REPORT ISSUED TO

ASI

123 Columbia Court N

Chaska, MN 55318

SECTION 1

SUMMARY

Intertek Building & Construction (B&C) was contracted by **ASI; 123 Columbia Court N, Chaska, MN 55318** to evaluate the contribution of wall and ceiling interior finish to room fire growth of an assembly containing CEMENTITIOUS WOOD FIBER ACOUSTICAL BOARD. 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: Cementitious wood fiber acoustical board, Cellulose, Z-track

Series/Model: NA

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: | Engineering Supervisor |
| SIGNATURE: |  | SIGNATURE: |  |
| DATE: | 10/04/18 | DATE: | 10/19/18 |

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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 10/03/2018 in accordance with NFPA 286 test method. Ambient conditions prior to the initiation of the test were 75°F and 70% 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-inch 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 Cementitious wood fiber acoustic board was received directly from client. Samples were not independently selected for testing. Samples were received on 09/07/18 and received Intertek ID#SAT1809071037-001-002.

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SECTION 4

LIST OF OFFICIAL OBSERVERS

| NAME | COMPANY |
|----------------|------------------|
| Conor Cook | ASI |
| Troy Bronstad | Intertek Testing |
| Tony Jimenez | Intertek Testing |
| Duane Scribner | 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 \pm 0.5 in. above the floor. The four walls are at right angles defining the compartment. The compartment contains a 30 in. wide (\pm ¼ in.) by 80 in. high (\pm ¼ in.) doorway, centered in 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, Cement board Cladding

The full interior surfaces of the wall assemblies were clad with 5/8 in. thick gypsum board. The gypsum board was 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 2x4 wood studs and joists, spaced every 24 in.

Interior Finish

20 Gauge 2 in. web Z-Furring was fastened to base room with 1-5/8 in. self-drilling screws spaced 24 in. oc. Running horizontal on walls and parallel to side walls on ceiling. Cellulose Fiber Acoustical Board 2 in. thick 3 LB 2 ft x 4 ft natural color panels were installed in Z-Furring cavities. Square edge cementitious small strand wood fiber panels with a clear primer finish, 1 in. thick 23-3/4 in. x 95-1/2 in., were attached to Z-Furring using #6 1-7/8 in. self-drilling screws with 1 in. washers. See drawing in section 8 for details.

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SECTION 6

TEST RESULTS

Test Date: 10/03/2018

Lab Temperature: 75°F

Lab Relative Humidity: 70%

| TEST OBSERVATIONS | |
|-------------------|---|
| Time (Min:Sec) | Observations |
| 00:00 | Ignition of the burner. Heat output set at 40kW |
| 00:33 | Discoloration on back wall |
| 00:44 | Flame tips 6ft vertically in corner above burner |
| 00:55 | Charring to 4ft vertically in corner above burner with light smoke |
| 02:10 | Charring to 5ft vertically in corner above burner |
| 04:00 | No change |
| 05:00 | Increase gas flow to 160kW |
| 05:18 | Charring on ceiling above burner |
| 05:40 | Horizontal charring 4ft on ceiling |
| 07:00 | No change |
| 09:00 | No change |
| 011:00 | No change |
| 13:00 | No change |
| 15:00 | Gas off – no ignition – small flame in cavity directly above burner |

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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 |
| <p>During the 160 kW exposure, the interior finish should not flashover as defined by NFPA 286.</p> <ul style="list-style-type: none"> •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 <p>Flashover is considered to have occurred when any two of the above criteria were met during the test.</p> | <ul style="list-style-type: none"> •Peak Heat Release = 223 kW •Max Floor Heat Flux = 4.82 kW/m² •Max Average Upper Layer Temperature = 773.42°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 223 kW | 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 was 17.8m ² | PASS |

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SECTION 6

PHOTOGRAPHS

Photo No. 1
Pretest photo



Photo No. 2
40KW fire exposure



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Photo No.3
40kW



Photo No. 4
40kW



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Photo No. 5
40kW



Photo No. 6
160kW



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Photo No. 7
160kW



Photo No. 8
160kW



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Photo No.9
160kW



Photo No.10
End of test



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Photo No.11
Post test



Photo No. 12
Post test



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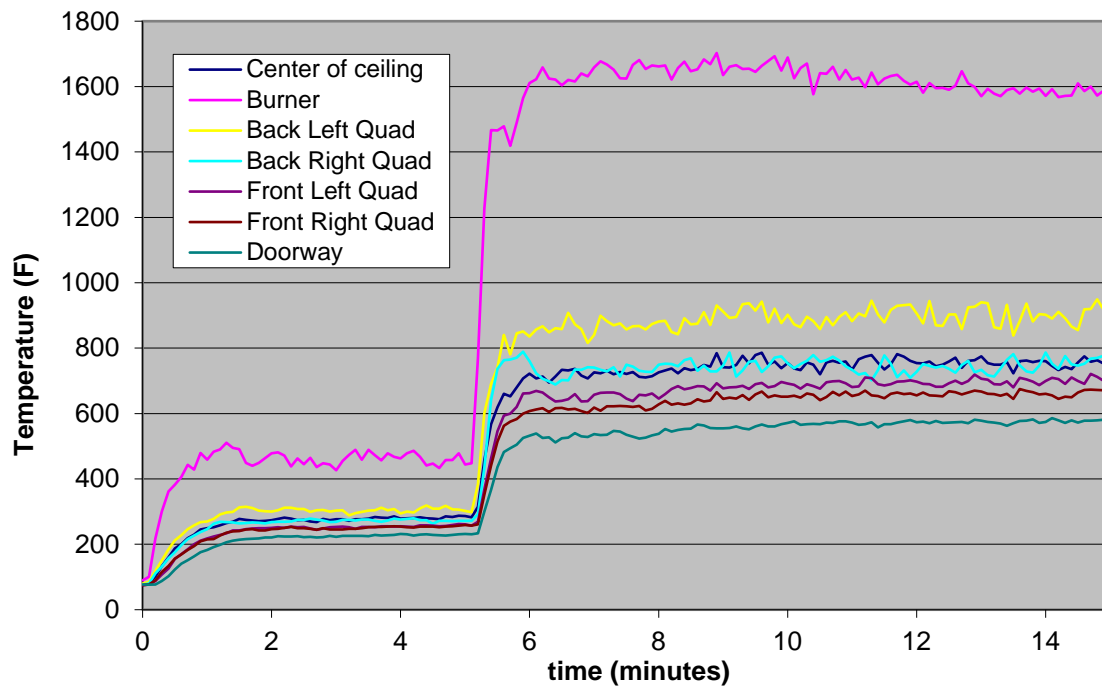
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SECTION 7

GRAPHS

Graph No.1

Thermocouple Data



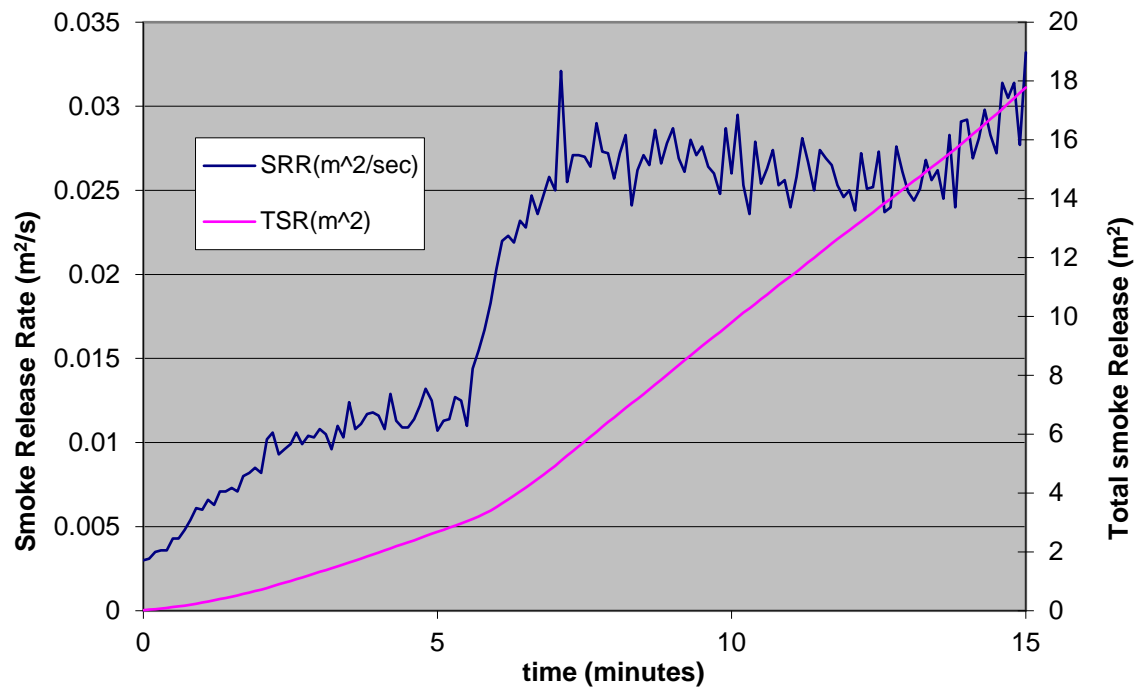
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Graph No. 2

Smoke Release



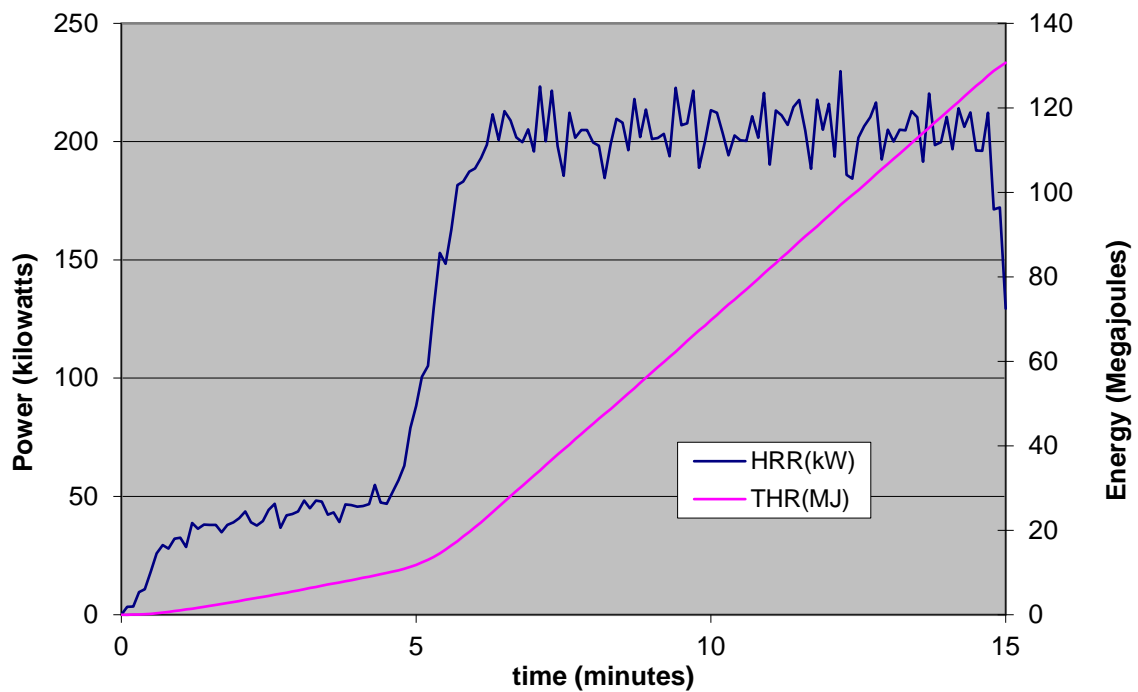
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Graph No. 3

Heat Release



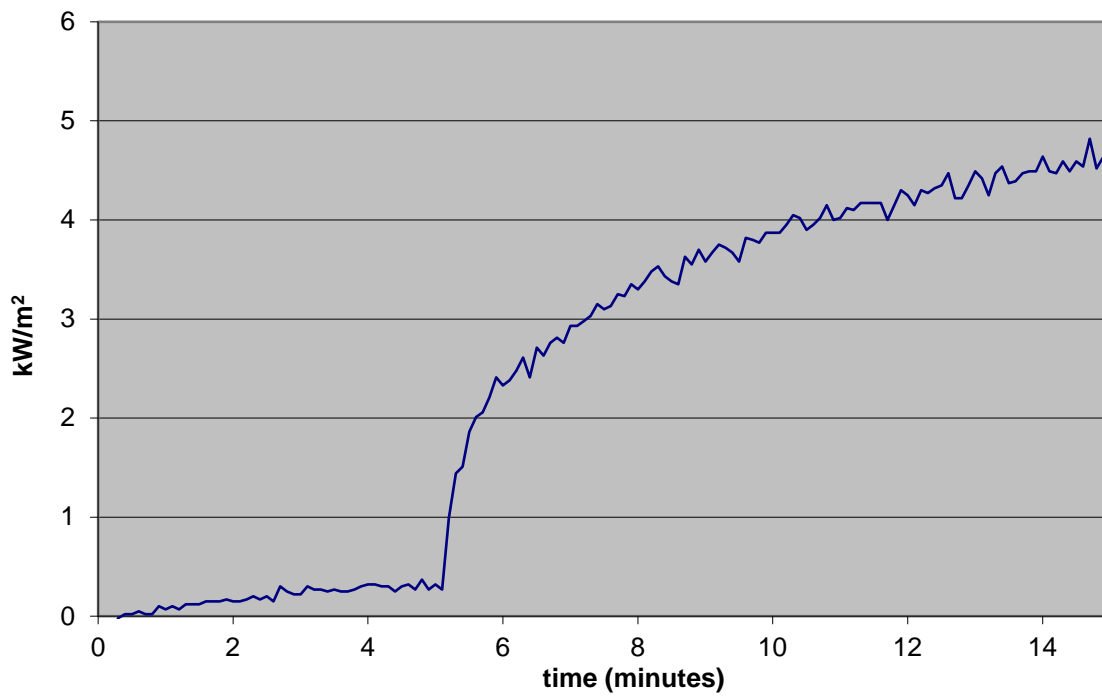
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Graph No. 4

Radiant Heat



TEST REPORT FOR ASI

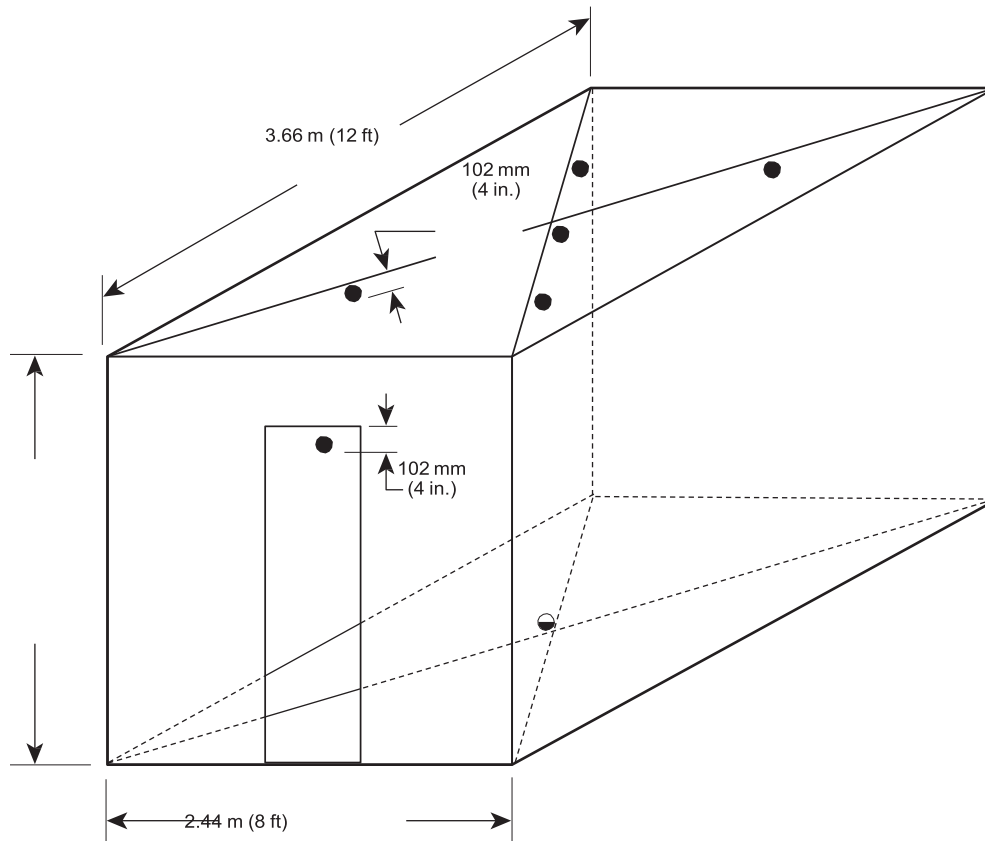
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SECTION 8

DRAWINGS

TC LOCATIONS

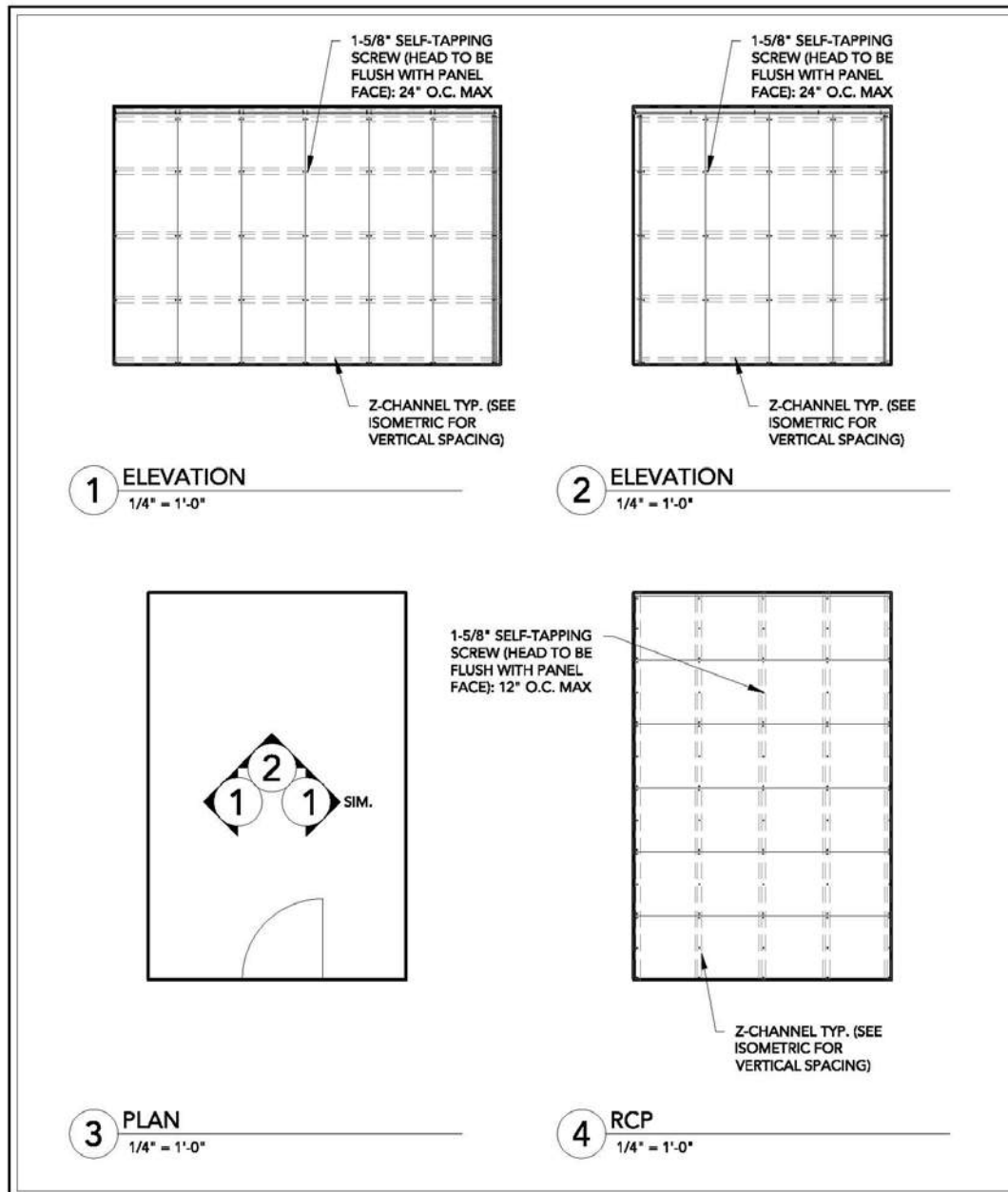


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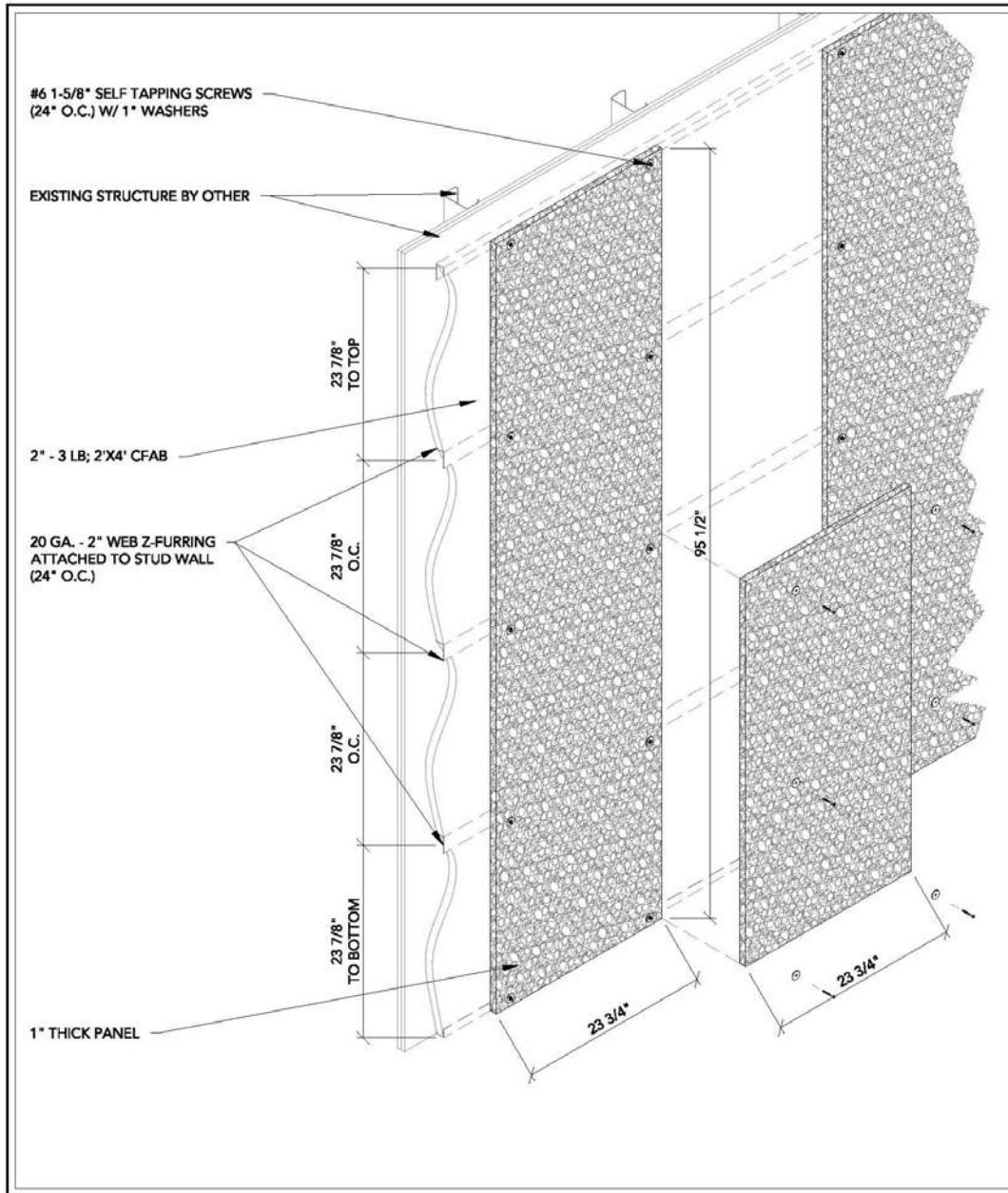
Install



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ASI
123 Columbia Court North, Chaska,
Minnesota 55318 P. 800.527.6253

ISOMETRIC

SCALE: 3/4" = 1'-0"

LAST REVISED: 10/11/2018

DRAWN BY: BMH



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SECTION 9**REVISION LOG**

| REVISION # | DATE | PAGES | REVISION |
|------------|----------|-------|---|
| 0 | 10/04/18 | N/A | Original Report Issue |
| 1 | 10/22/18 | all | Changed the company name to ASI, in accordance with their company's corporate branding standards.   |