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MITREX
TEST REPORT

SCOPE OF WORK
CAN/ULC S134, STANDARD METHOD OF FIRE TESTS OF EXTERIOR WALL ASSEMBLIES CONTAINING MITREX CLADDING SYSTEM

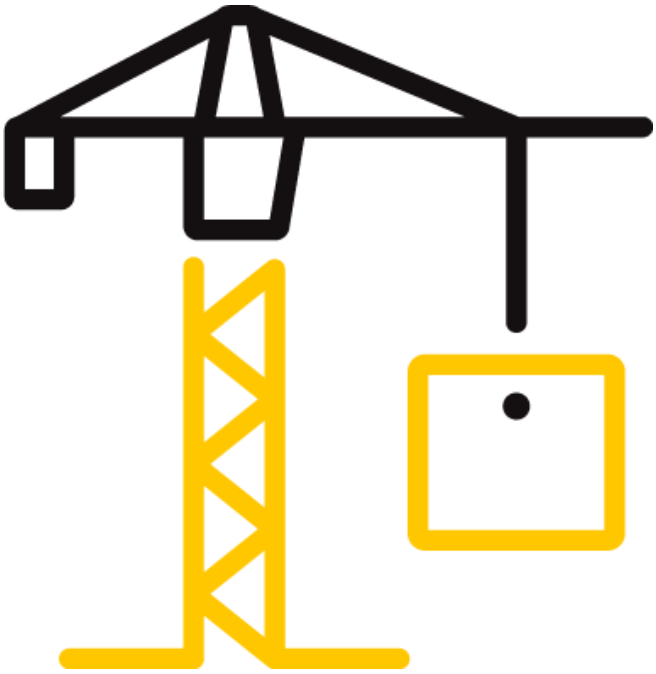
REPORT NUMBER
G104760082SAT-002 R0

TEST DATE(S)
08/27/21

ISSUE DATE **[REVISED DATE]**
08/31/21 MM/DD/YY

PAGES
18

DOCUMENT CONTROL NUMBER
GFT-OP-10c (09/29/20)



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TEST REPORT FOR MITREX
Report No.: G104760082SAT-002 R0
Date: 08/31/21

REPORT ISSUED TO

MITREX
41 Racine Road
Toronto, ON M9W 2Z4
CANADA

SECTION 1

SCOPE

Intertek Testing Services NA, Inc. dba Intertek Building & Construction (B&C) was contracted by Mitrex, 41 Racine Road, Toronto, ON M9W 2Z4, CANADA, to perform testing in accordance with CAN/ULC S-134, *Standard Method of Fire Test of Exterior Wall Assemblies*, on their Product Name, Type. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Company Name test facility in City, State OR Address where testing was completed.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule also called “Shared Risk approach,” of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

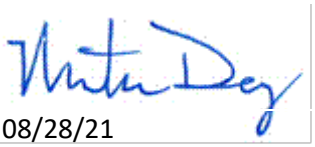
Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens (where required by Certification or Accreditation bodies), or other pertinent project documentation, will be retained for the entire test record retention period.

SECTION 2

SUMMARY OF TEST RESULTS

The assembly described and tested in this report **met** the Conditions of Acceptance of **CAN/ULC-S134, Standard Method of Fire Tests of Exterior Wall Assemblies, 2nd Edition, dated August 2013**.

For INTERTEK B&C:

COMPLETED BY:	Abel de Hoyos	**REVIEWED BY:**	Mike Dey
TITLE:	Senior Project Manager – Fire Resistance	**TITLE:**	Senior Project Engineer
SIGNATURE:		**SIGNATURE:**	
DATE:	08/28/21	**DATE:**	08/28/21

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SECTION 3
TEST METHOD(S)

The specimen was evaluated in accordance with the following:

> **CAN/ULC-S134**, *Standard Method of Fire Test of Exterior Wall Assemblies, 2nd Edition, dated August 2013*

SECTION 4
MATERIAL SOURCE/INSTALLATION

Test samples were provided by the client. The results outlined in this report apply to the sample as received.

The test samples were received by the test facility on 08/13/21 and given Intertek Sample ID: SAT2108131537-001.

Intertek personnel and Mr. Yeow of Mitrex completed the installation on 08/26/21.

SECTION 5
EQUIPMENT

Description	Serial No.	Calibration Due Date
DAQ Unit	HB9002195	02/05/22
Stopwatch	10361080	07/24/22
Thermo/Hygrometer	170558059	07/23/22
Anemometer	17331	08/24/21
Anemometer	17332	08/24/21
Anemometer	17334	08/24/21
Radiometer	215263	03/02/22
Radiometer	189854	03/02/22
Radiometer	215262	10/30/21
Gas Flow Transducer	2642089	10/06/21
E-Type TC	461564	10/06/21
Gas Pressure Transducer	121718I017	10/06/21

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SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Travis Yeow	Mitrex
Emmanuel Ogoe	Intertek B&C
Abel de Hoyos	Intertek B&C

SECTION 7
TEST PROCEDURE

Testing was performed on 08/27/2021 in accordance with the CAN/ULC S134 test method. Ambient conditions were 25.8°C and 92% relative humidity. Anemometers were used to verify ambient air velocity did not exceed 2 m/s as specified in the test method. Video recording, digital photographs, visual observations, and data collection were performed prior, during, and after testing was completed. The test was performed at 08:18 AM. All observations are recorded in the table located in Section 8.

In accordance with CAN/ULC S134, once ambient conditions are met, the pilot burners are lit. The test then starts with the ignition of the burners. The burners proceed, controlled as specified in the test method, with a 5 min growth period, followed by a 15 min steady state period, followed by a 5 min ramp down period to zero.

Three water cooled heat flow transducers (0-100 kW/m2) were installed through the test specimen and the front wall of the test chamber 3.5 m above the top of the window opening; one within 0.2 m ± 0.05 m horizontally of the center line of the opening and one on each side and within 0.5 ± 0.1 m horizontally from the first. The transducers were installed so that their sensing faces were flush with the outer face of the test specimen. Two (2) layers of 24 GA (0.51 mm), Type K bare beaded thermocouples were used to monitor temperature of the specimen and were located on the vertical center line and above the opening at 1.5 ± 0.05 m, 2.5 ± 0.05 m, 3.5 ± 0.05 m, 4.5 ± 0.05 m, 5.5 ± 0.05 m. At each of these levels, one thermocouple was installed on the interface between the test structure and insulation behind the panels and at the outer layer of the specimen.

The output of the transducers and thermocouples were monitored by a National Instruments CDAQ-9188 Data Acquisition Unit. The data acquisition system was programmed to scan and save data every 5 seconds. Following the test, the files were imported into MS Excel for graphical display. The graphical display data can be found in Section 13.

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SECTION 8
TEST OBSERVATIONS

FIRE-RESISTANCE TEST OBSERVATIONS	
Time (Min:Sec)	**Observations**
Pre-test	Nothing to note
00:00	Test started at 08:18 A.M.
03:20	Flame tips coming out of burn room opening
04:00	Flame tips at 2 m
06:10	Flame tips at 2 m
07:00	Melted pieces falling
07:51	Left side panel above window flaming
08:00	Right side panel above window flaming
08:30	Flame tips at 3 m
08:40	Flaming pieces falling
10:00	Exhaust fan on
11:20	Sporadic flaming at 3rd row of panels above window
16:00	Flame tips at 2.5 m
16:30	Sporadic flaming at 3.5 m
18:00	Glass melting
18:50	Panels fall
19:20	Sustained flaming at 3.5 to 4 m
20:00	Flame tips at 5 m
22:15	More panels fall
23:40	Sustained flaming at 3.5 to 4 m
25:00	Gas off
45:00	Test terminated due to no test samples left on wall to flame

SECTION 9
TEST SPECIMEN DESCRIPTION

The Mitrex Cladding system consisted of aluminum channel, mineral wool insulation and Mitrex panels.

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The assembly was completed on 08/26/21.

SECTION 10
TEST RESULTS

Time (min)	Left Radiometer (1 min. Avg.)	Right Radiometer (1 min. Avg.)	Center Radiometer (1 min. Avg.)	Visual Flame Height (in meters)
0:00	-1.31	-1.45	-1.44	0
1:00	-1.30	-1.39	-1.39	0
2:00	-1.25	-1.08	-1.20	0
3:00	-1.20	-0.38	-0.75	1 m
4:00	-0.50	3.58	1.00	2 m
5:00	0.98	5.41	4.00	2 m
6:00	2.41	8.04	5.36	2 m
7:00	2.47	8.86	6.12	2 m
8:00	3.83	9.34	7.63	2 m
9:00	4.59	10.56	8.54	3 m
10:00	6.46	15.49	11.13	3 m
11:00	3.86	16.47	8.84	3 m
12:00	5.11	16.06	8.79	3 m
13:00	7.10	15.12	9.41	3 m
14:00	6.43	12.79	9.10	3m
15:00	6.42	14.14	9.82	3 m
16:00	6.05	16.22	11.05	2.5 m
17:00	6.30	17.92	12.72	2.5 m
18:00	5.93	19.60	11.30	2.5 m
19:00	6.40	19.33	11.21	flaming at 3.5 m
20:00	10.46	22.65	15.36	Tips at 5 m
21:00	18.75	31.18	15.91	Tips at 4.5
22:00	22.45	26.21	14.29	Flaming at 4 m
23:00	16.19	8.37	6.72	Flaming at 4 m
24:00	18.02	4.45	3.23	Flaming at 4 m
25:00	14.78	4.14	2.35	Sustained flaming out
26:00	17.26	2.13	1.83	
27:00	19.75	1.30	0.94	

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RESULTS CONT.				
28:00	6.27	1.16	1.03	
29:00	0.09	1.09	0.47	
30:00	-0.72	0.41	0.23	
31:00	-0.69	0.56	0.23	
32:00	-0.55	0.16	-0.07	
33:00	-0.70	-0.05	-0.43	
34:00	-1.08	0.05	-0.20	
35:00	-1.11	0.07	-0.35	
36:00	-0.76	-0.18	-0.30	
37:00	-0.99	-0.27	-0.39	
38:00	-0.98	-0.26	-0.76	
39:00	-0.94	-0.44	-0.42	
40:00	-0.97	-0.36	-0.50	
41:00	-1.26	-0.31	-0.74	
42:00	-0.97	-0.72	-0.55	
43:00	-0.95	-0.46	-0.58	
44:00	-1.19	-0.47	-0.76	
45:00	-1.00	-0.65	-0.58	Test terminated

SECTION 11
CONCLUSION

The GCAT Group Inc., with Mitrex cladding system **met** the conditions of acceptance outlined in **CAN/ULC-S134, Standard Method of Fire Test of Exterior Wall Assemblies, 2nd Edition, dated August 2013**.

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Photo No. 3
Assembly at Start of Test

Photo No. 4
Flames Exiting Window

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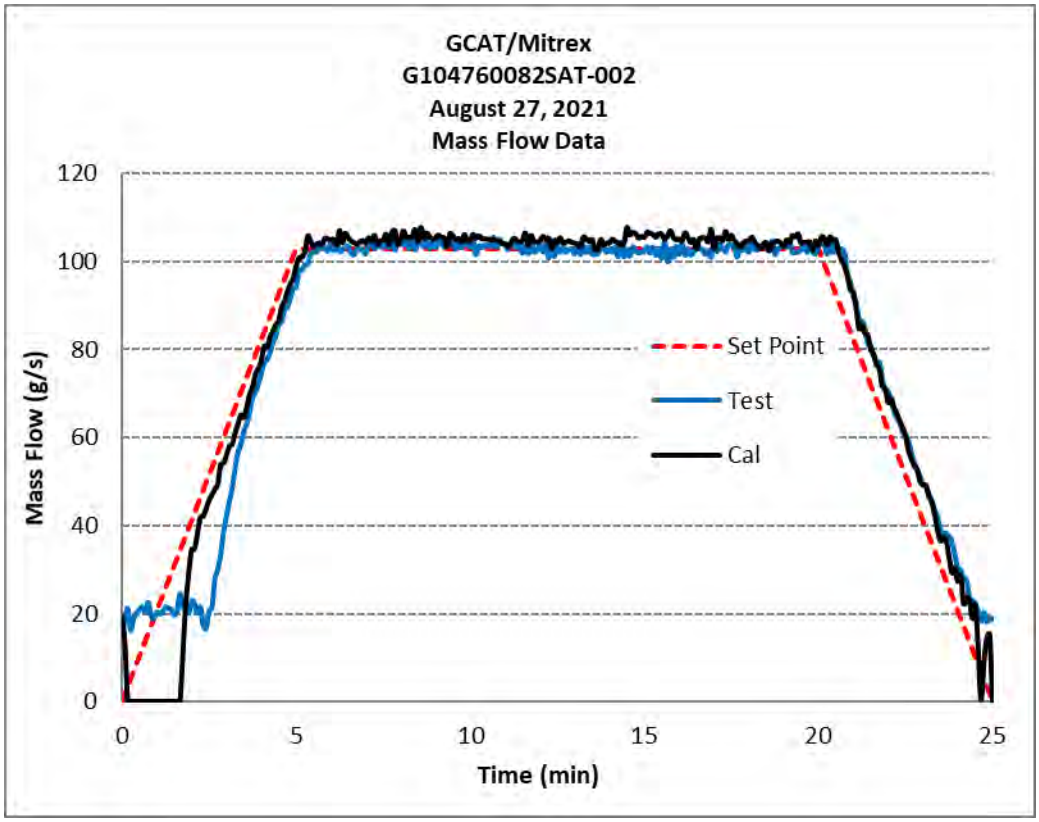
SECTION 13
GRAPHS



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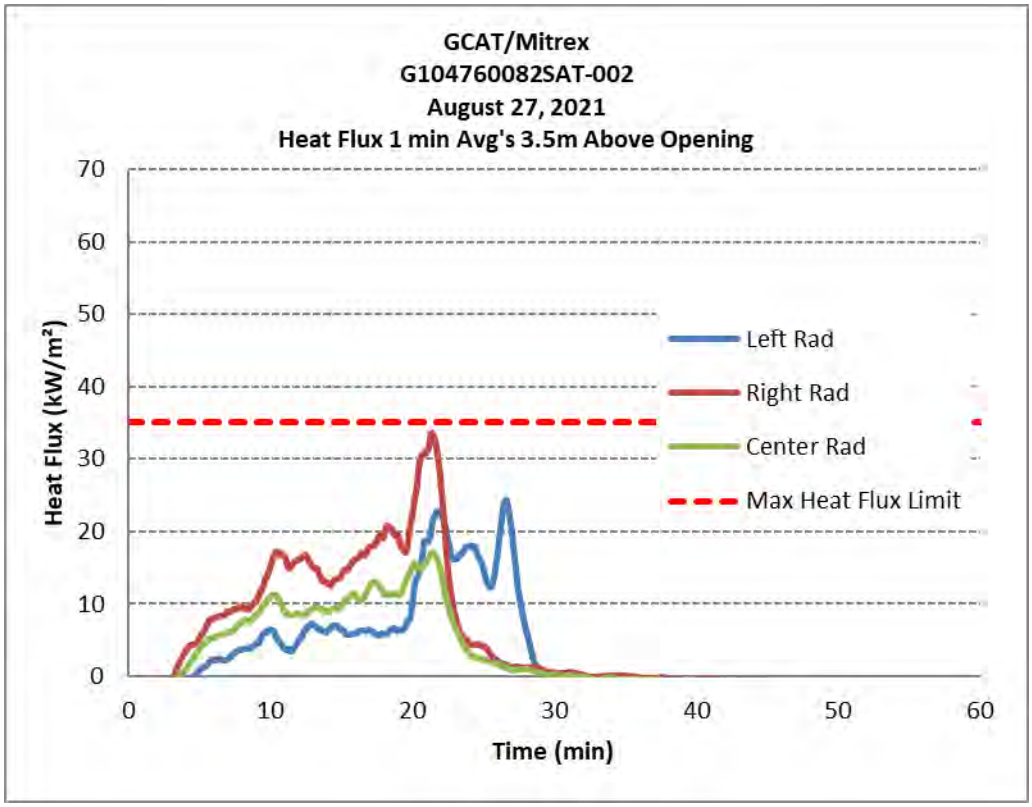

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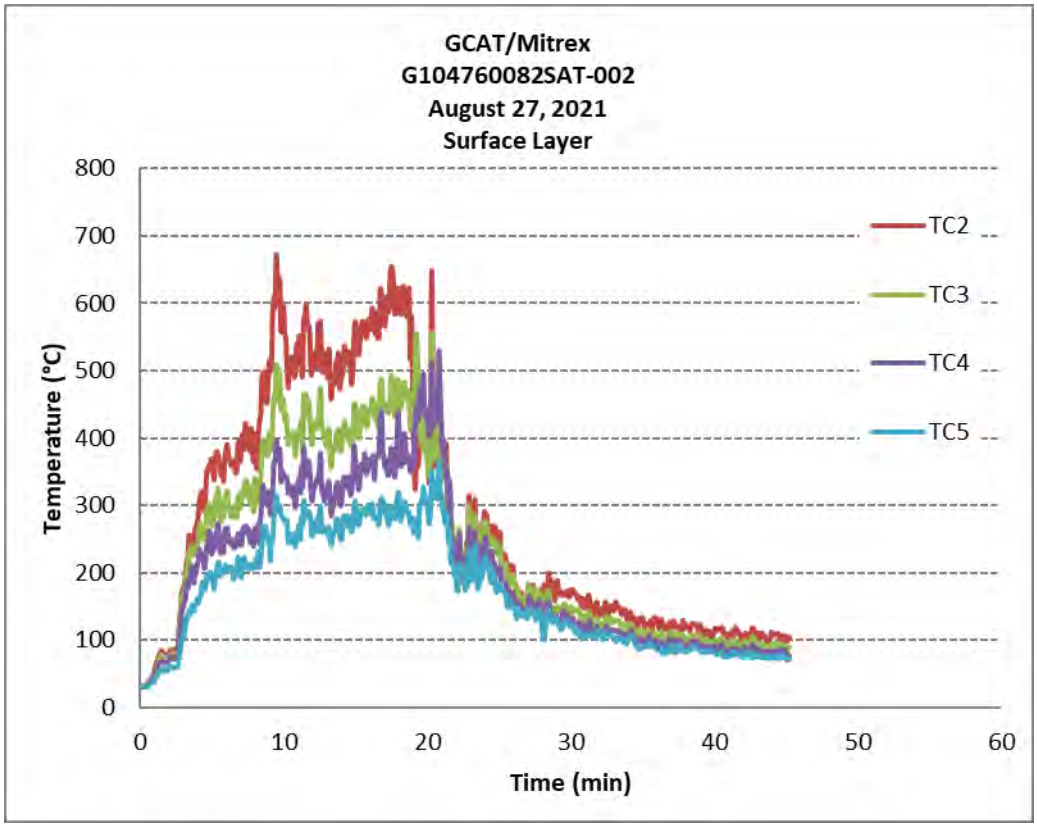

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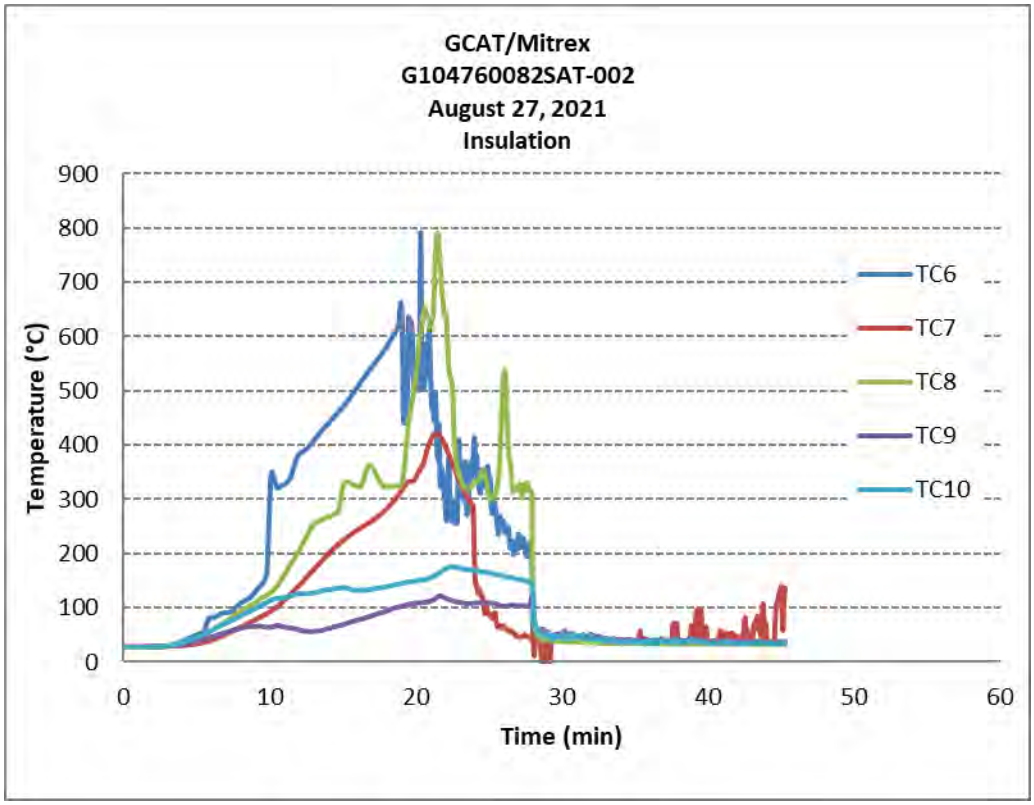

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SECTION 14
DRAWINGS

The "As-Built" drawings for the GCAT Group Inc., which follow have been reviewed by Intertek B&C and are representative of the project reported herein. Project construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

NOTE: Due to clarity issues full drawings are stored in project file.

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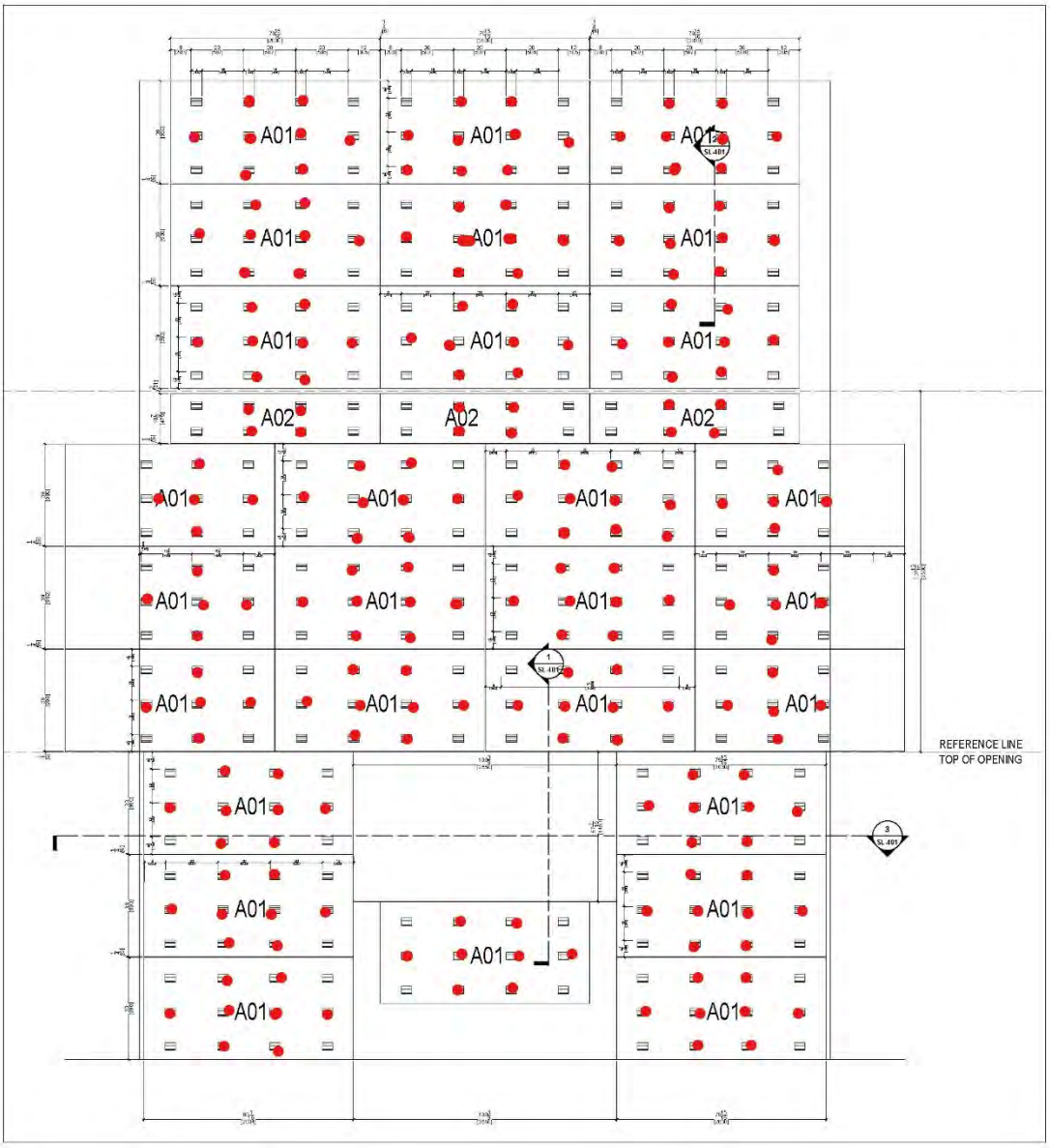

NOTE: Red marks show unused clips. Lower left and lower right panels not installed**.**

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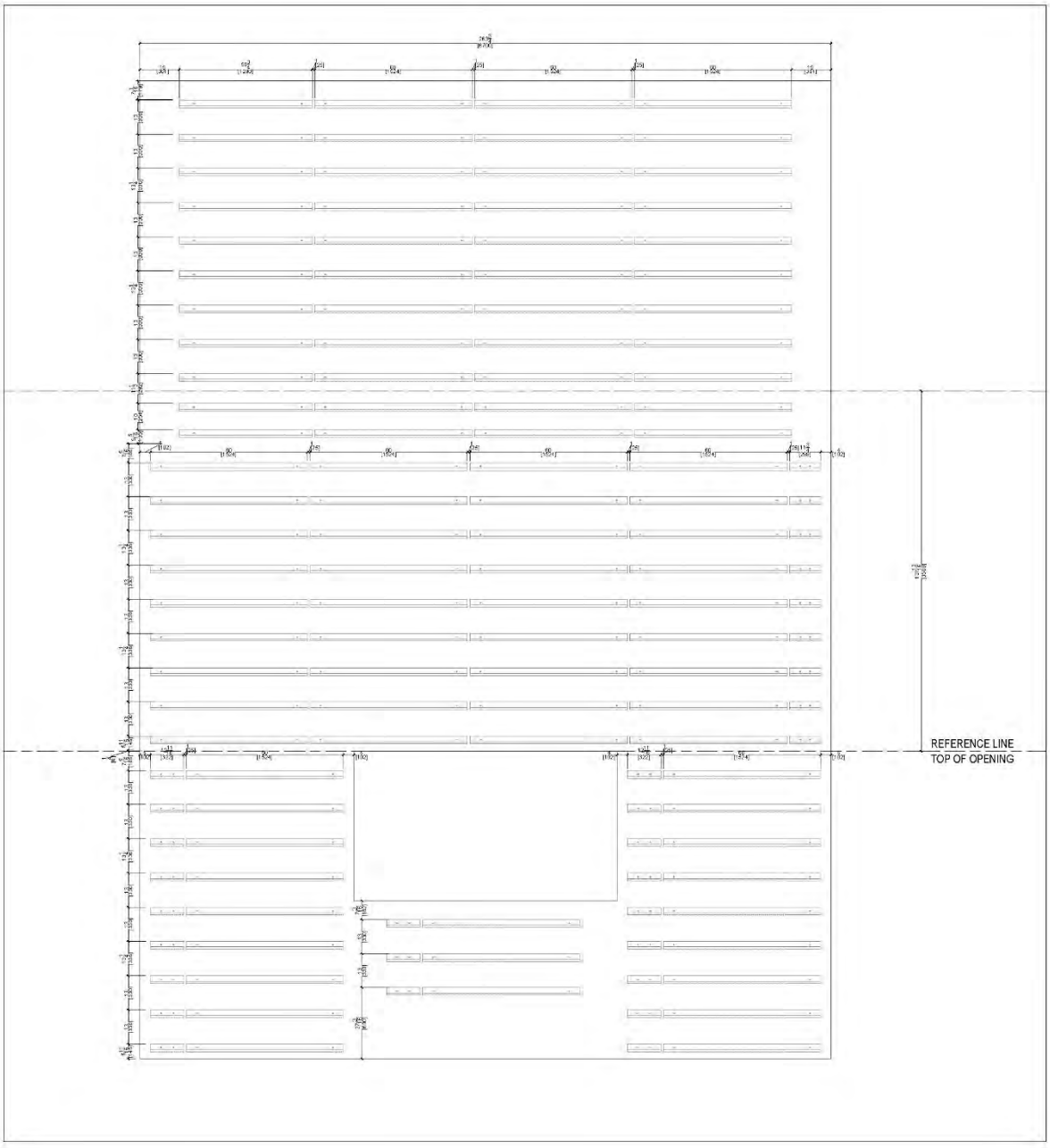

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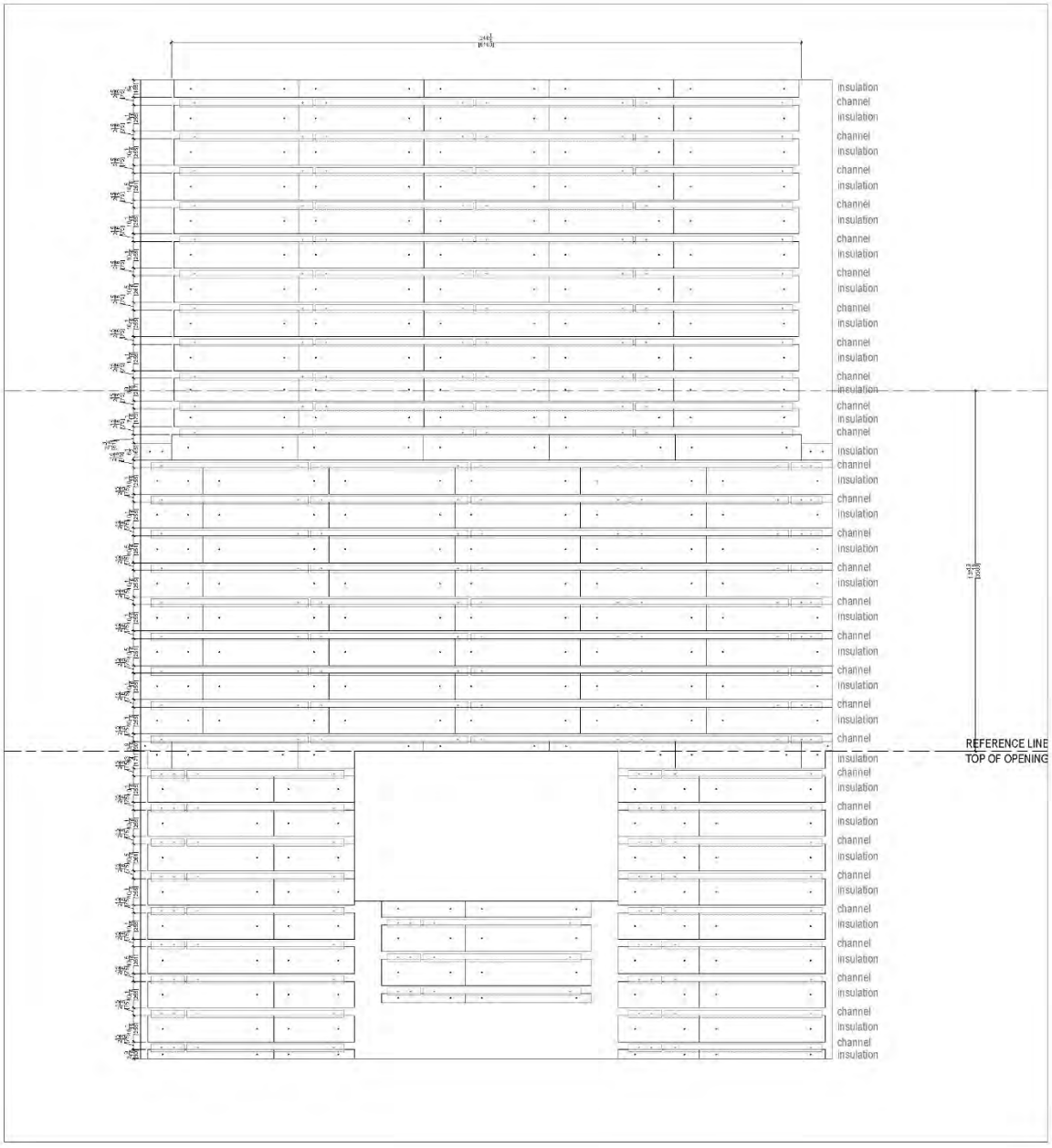

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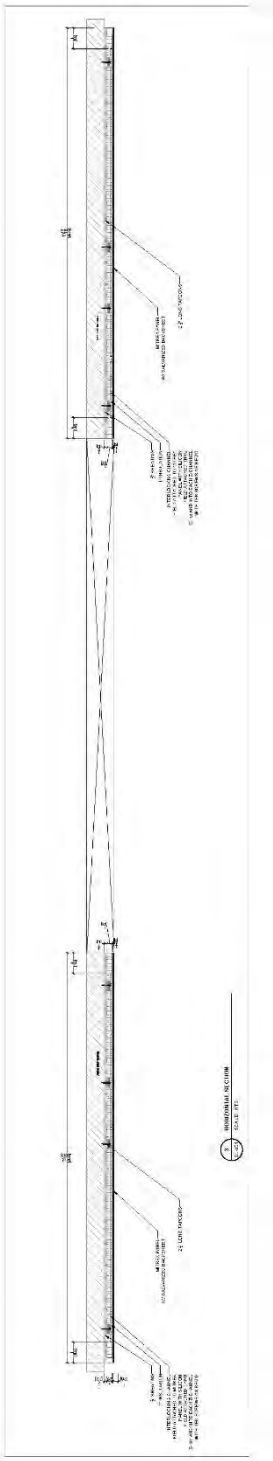

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SECTION 15
REVISION LOG

REVISION #	DATE	SECTION	REVISION
0	08/31/21	N/A	Original Report Issue