

CHAMELEON WRAPPING AND LAMINATION LTD TEST REPORT

SCOPE OF WORK

CAN/ULC S134, STANDARD METHOD OF FIRE TESTS OF EXTERIOR WALL ASSEMBLIES
CONTAINING CHAMCLAD PVC SIDING

REPORT NUMBER

104543597SAT-002_REV.2

TEST DATE(S)

01/11/21

ISSUE DATE [REVISED DATE]

01/19/21 05/06/21

RECORD RETENTION END DATE

1/11/25

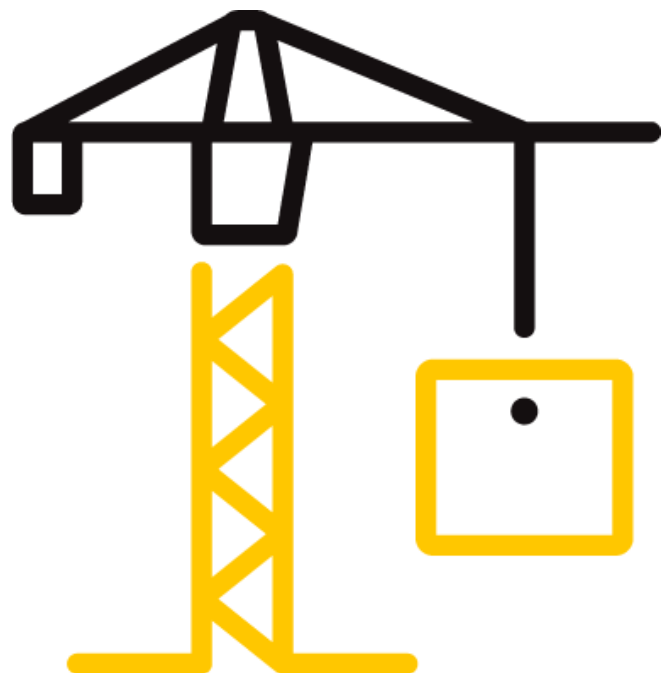
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DOCUMENT CONTROL NUMBER

GFT-OP-10c (09/29/20)

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TEST REPORT FOR CHAMELEON WRAPPING AND LAMINATION LTD

Report No.: 104543597SAT-002_REV.2

Date: 01/19/21

REPORT ISSUED TO

CHAMELEON WRAPPING AND LAMINATION LTD

10235-184 Street

Edmonton, AB T5S 2J4

CANADA

SECTION 1

SCOPE

Intertek Testing Services NA, Inc. dba Intertek Building & Construction (B&C) was contracted by CHAMELEON WRAPPING AND LAMINATION LTD., 10235-184 Street, Edmonton, AB T5S 2J4, CANADA to perform testing in accordance with **CAN/ULC-S134, Standard Method of Fire Test of Exterior Wall Assemblies**, on their ChamClad PVC Siding. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek B&C test facility in Elmendorf, Texas, USA.

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:	01/12/21	DATE:	01/14/21

AAA:bbb

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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

Samples were independently selected by a 3rd Party engineer for Building Science Engineering Ltd., on 12/01/20 at the Chameleon Wrapping and Laminating Ltd.'s manufacturing facility located at 10235 – 184 ST. NW, Edmonton, Alberta CANADA. The samples were received at the Evaluation Center on 12/29/20 and were assigned Intertek Sample ID No. SAT2012291334-001. The samples contained the mark of the inspector.

The subject test specimens are traceable samples selected from the manufacturer's facility. Intertek did not select the specimens and has not verified their composition, manufacturing techniques and quality assurance procedures.

SECTION 5

EQUIPMENT

Description	Serial No.	Calibration Due Date
Stopwatch	160778695	08/12/21
DAQ Unit	HB9002195	01/25/21
Thermo/Hygrometer	10361069	07/23/21
Anemometer	17331	08/24/21
Anemometer	17332	08/24/21
Anemometer	17334	08/24/21
Radiometer	215262	10/30/21
Radiometer	189853	09/16/21
Radiometer	189854	09/16/21
Gas Flow Transducer	2642089	10/06/21
E-Type TC	461564	10/06/21
Gas Pressure Transducer	1217181017	10/06/21

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SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
David Smith	Element (MS Teams)
Amber Gunderson	ChamClad (MS Teams)
Tony Crimi	A.C. Consulting Solutions (MS Teams)
Hussein Elfeki	Intertek (Canada) (MS Teams)
Emmanuel Ogoe	Intertek B&C
Abel de Hoyos	Intertek B&C

SECTION 7

TEST PROCEDURE

Testing was performed on 12/11/2020 in accordance with the CAN/ULC S134 test method. Ambient conditions were 5.5°C and 76% 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 09:00 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 weather barrier - air cavity 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

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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.

SECTION 8

TEST OBSERVATIONS

FIRE-RESISTANCE TEST OBSERVATIONS	
Time (Min:Sec)	Observations
Pre-test	Nothing to note
00:00	Test started at 09:00 A.M.
3:20	Panels directly above opening beginning to be covered in soot
3:30	Flame tips coming out of burn room opening
4:15	Panels above opening beginning to warp
5:20	Flame tips at 2 m
7:00	Sizzling sound heard
8:05	Sustained flaming up to 2 m
8:20	Falling sections of panels
9:00	Flaming sections of panels falling
10:00	Exhaust fan on
11:00	More flaming sections falling
12:00	Flame tips at 2.5 m; sustained flaming at 2 m
20:00	Room burner begins ramp down
22:00	Sustained flaming right side at 1 m above opening
23:00	Sustained flaming at middle area above opening and on right side 1 m
25:00	Gas off, sustained flaming on right side at 1 m and upper opening left corner
40:00	All sustained flaming self-extinguished
60:00	End of test

SECTION 9

TEST SPECIMEN DESCRIPTION

The Chameleon Wrapping and Lamination Ltd., ChamClad PVC Siding System consisted of a base wall (20 GA metal studs and track (16 in. oc) R-11 Batt Insulation and 5/8 in. exterior sheathing), WRB, 1-1/2 in. 20 GA hat-channel, PVC exterior panels and aluminum trim extrusions.

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Base Wall – 20 GA. Metal studs and track spaced 16 in. oc, with R-11 Batt insulation in stud cavities. Stud and track were secured using 1/2 in. long #8 self-tapping screws.

Exterior Sheathing – Georgia Pacific 4 ft. by 10 ft. by 5/8 in. thick, ASTM C1177 Compliant, DensGlass Gold Exterior Sheathing, installed with the long dimension perpendicular to the metal studs. Exterior sheathing was secured using 1-1/4 in. long #8 self-tapping screws.

Air and Moisture Barrier – Dupont™ Tyvek® Commercial Wrap® - 5 ft. wide rolls. Air and Moisture barrier was secured using staples.

Hat Channel – 20 GA, 1-1/2 in. installed vertically. Hat Channel was secured using 1-1/4 in. long #8 self-tapping screws at 12 in. oc, on only one side of the hat channel.

Panels – Chameleon ChamClad 6 in wide PVC siding panels, installed horizontally and secured every 16-in. Panels were secured with 3/4 in. long, #8 pan head, self-tapping screws.

The assembly was completed on 01/09/21.

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	-0.96	-1.27	-0.64	0
1:00	-1.45	-1.21	-1.18	0
2:00	-0.92	-0.48	0.35	0
3:00	0.01	0.87	1.40	.5 m
4:00	2.93	5.72	3.37	1 m
5:00	3.68	6.53	5.23	2 m
6:00	6.31	7.18	0.27	2 m
7:00	7.96	8.58	3.46	2 m
8:00	7.95	8.45	2.37	2 m
9:00	8.95	8.51	5.18	2 m
10:00	9.33	6.94	2.87	2 m
11:00	10.90	6.28	6.96	2 m
12:00	12.63	8.19	-0.93	2.5 m
13:00	11.45	8.22	1.83	2.5 m
14:00	10.76	9.67	9.40	2.5 m
15:00	9.65	8.72	16.53	2.5 m
16:00	10.17	11.43	12.25	2.5 m

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RESULTS CONT.				
17:00	14.68	11.93	17.35	2.5 m
18:00	14.45	13.33	8.53	2.5 m
19:00	14.53	16.74	10.51	2.5 m
20:00	13.61	17.30	11.70	2.5 m
21:00	13.89	19.79	3.46	2.5 m
22:00	10.66	14.34	12.04	2 m
23:00	7.95	10.45	8.87	Flaming at 1 m
24:00	6.21	9.22	7.41	Flaming at 1 m
25:00	4.84	8.39	5.96	Flaming at 1 m
26:00	2.18	5.23	3.52	Flaming at 1 m
27:00	0.91	3.45	2.81	Flaming at 1 m
28:00	1.64	1.66	2.19	Flaming at 1 m
29:00	0.57	2.51	1.84	Flaming at 1 m
30:00	-0.75	1.61	1.47	Flaming at 1 m
31:00	0.32	1.89	1.22	Flaming at 1 m
32:00	-0.42	1.09	1.44	Flaming at 1 m
33:00	0.33	1.07	0.72	Flaming at 1 m
34:00	-0.67	0.97	0.29	Flaming at 1 m
35:00	-0.70	0.63	0.66	Flaming at 1 m
36:00	-0.32	0.52	0.72	Flaming at 1 m
37:00	-0.94	0.61	0.29	Flaming at 1 m
38:00	-0.61	0.32	0.53	Flaming at 1 m
39:00	-0.87	0.55	-0.19	Flaming at 1 m
40:00	0.03	0.31	0.16	Sustained flaming out
41:00	-0.54	0.35	0.48	
42:00	-1.19	0.12	-0.09	
43:00	-1.74	0.08	-0.19	
44:00	-0.75	0.18	0.05	
45:00	-0.95	0.15	0.26	
46:00	-1.07	-0.02	0.11	
47:00	-0.83	-0.07	-0.09	
48:00	-0.43	-0.20	-0.15	
49:00	-0.81	-0.20	0.35	
50:00	-1.06	-0.17	-0.24	
51:00	-1.31	-0.34	-0.15	
52:00	-0.20	-0.25	-0.32	

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RESULTS CONT.				
53:00	-0.34	-0.22	-0.03	
54:00	-0.90	-0.30	-0.22	
55:00	0.22	-0.41	-0.07	
56:00	0.09	-0.39	-0.09	
57:00	-0.90	-0.52	-0.25	
58:00	-2.00	-0.49	-0.27	
59:00	-2.48	-0.50	-0.81	
60:00	-2.09	-0.55	-0.76	

SECTION 11

CONCLUSION

The Chameleon Wrapping and Lamination Ltd., ChamClad PVC Siding 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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SECTION 12

PHOTOGRAPHS



Photo No. 1
Installation of Metal Stud Frame Wall



Photo No. 2
Exterior Sheathing and Stud Cavity Insulation Installation

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Photo No. 3
WRB Installation



Photo No. 4
Hat-Channel Installation

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Photo No. 5
Installation of ChamClad PVC Siding



Photo No. 6
Window Trim Installation

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Photo No. 6
Finished Installation



Photo No. 7
View at Start of Test

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Photo No. 8
Flame Tips Exiting Opening



Photo No. 9
Sustained Flaming Above Opening

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Photo No. 10
Sustained Flaming at End of Exposure



Photo No. 11
Sustained Flaming Above Window

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Photo No. 12
Post-Test View of Opening



Photo No. 13
Post Test View of Wall

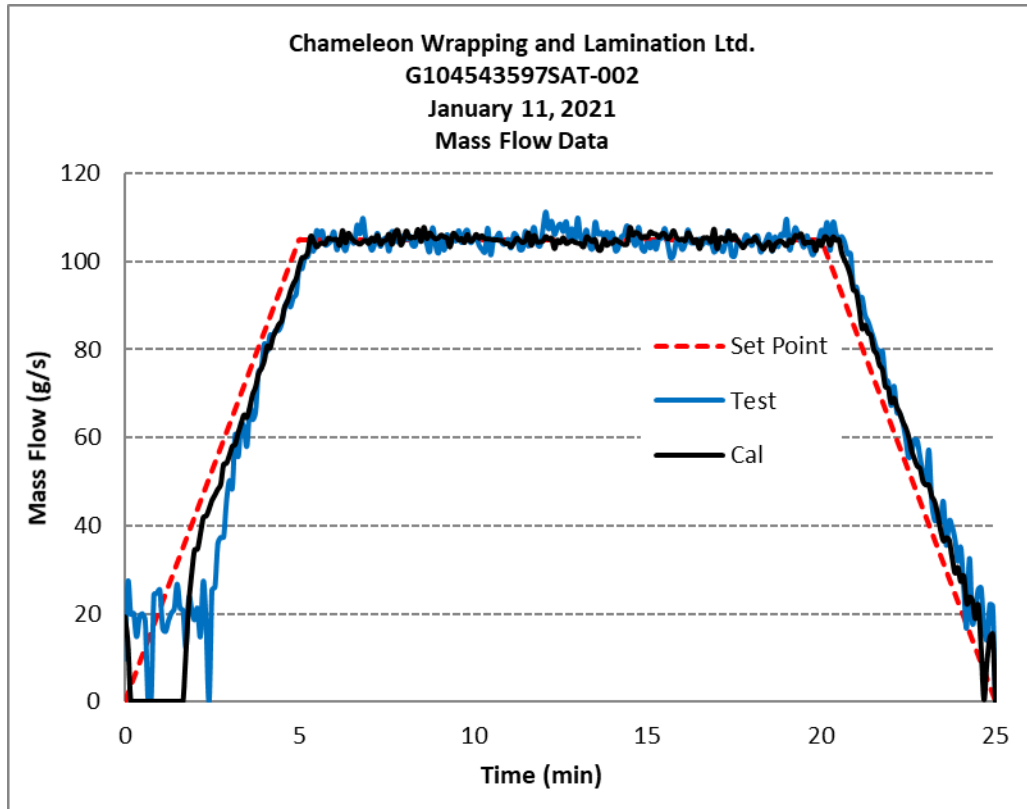
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SECTION 13

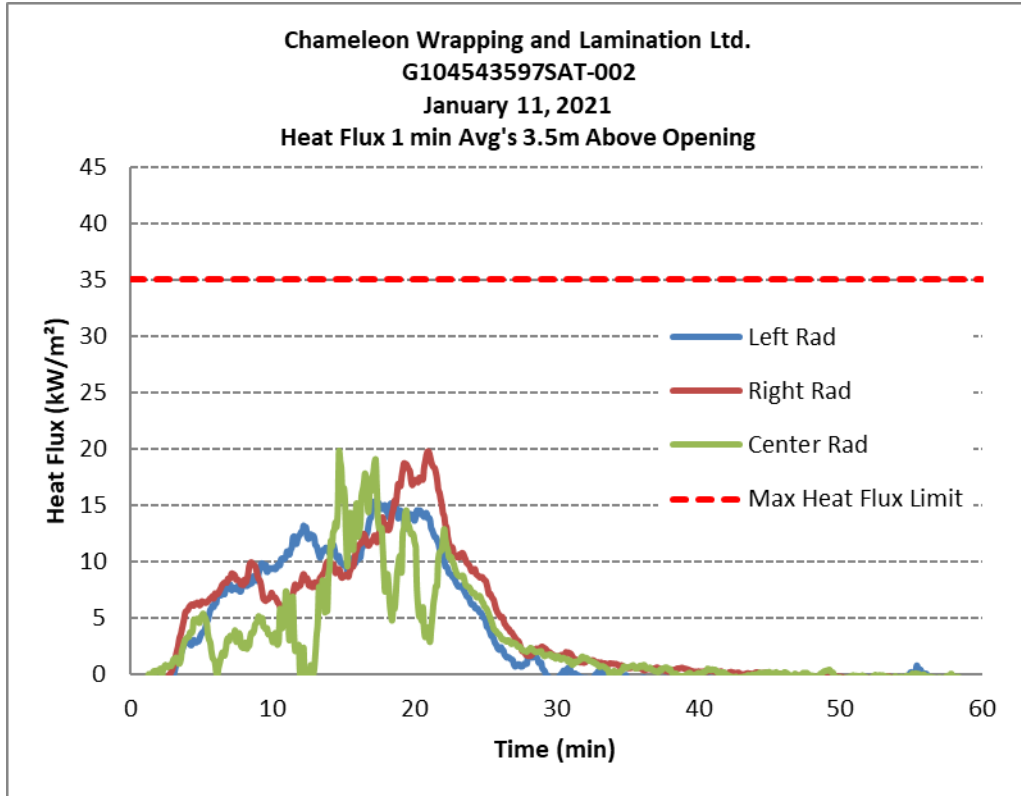
GRAPHS



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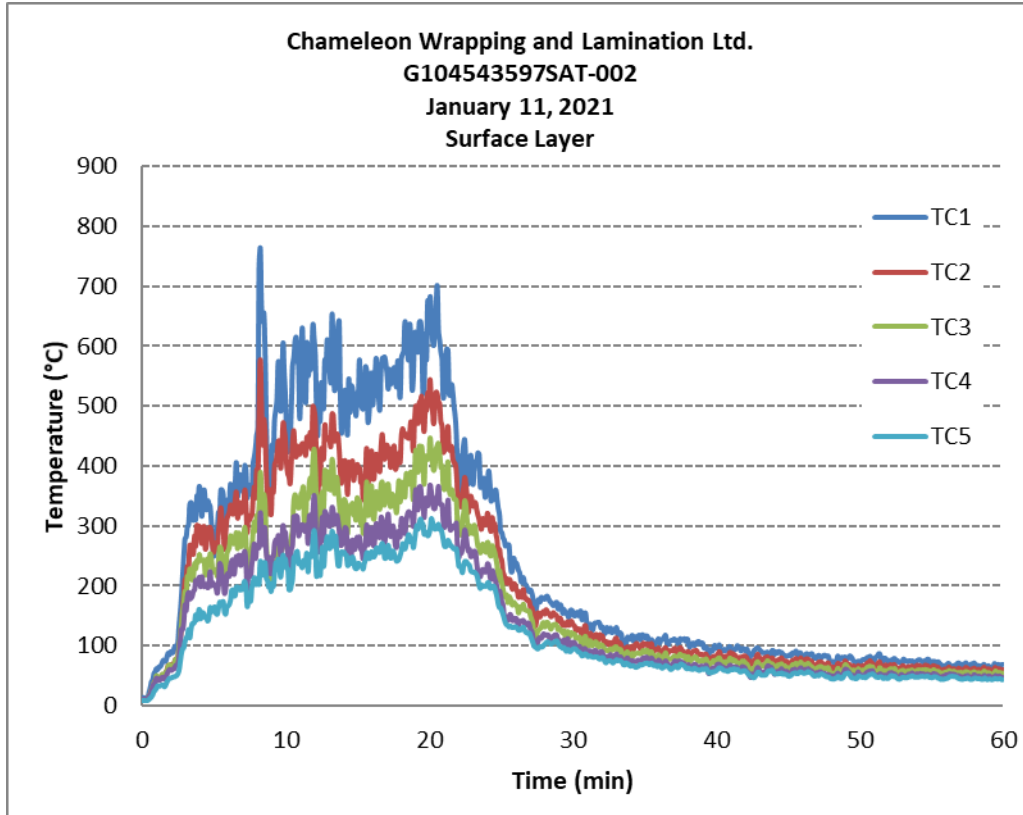
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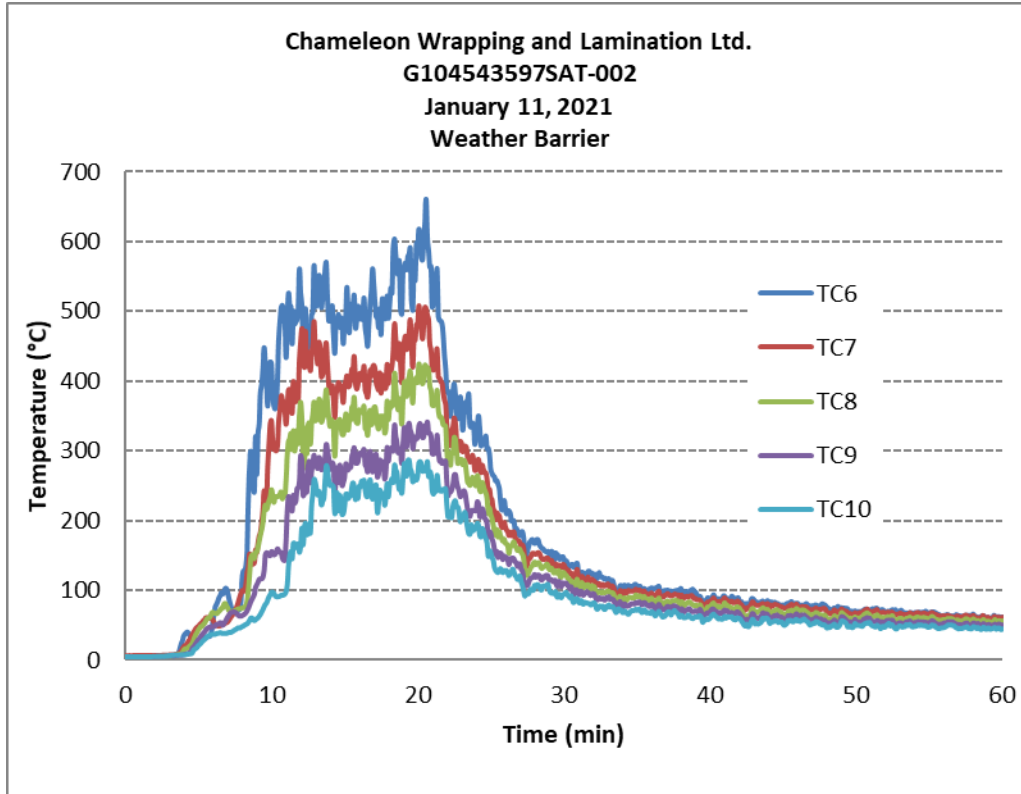
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SECTION 14

DRAWINGS

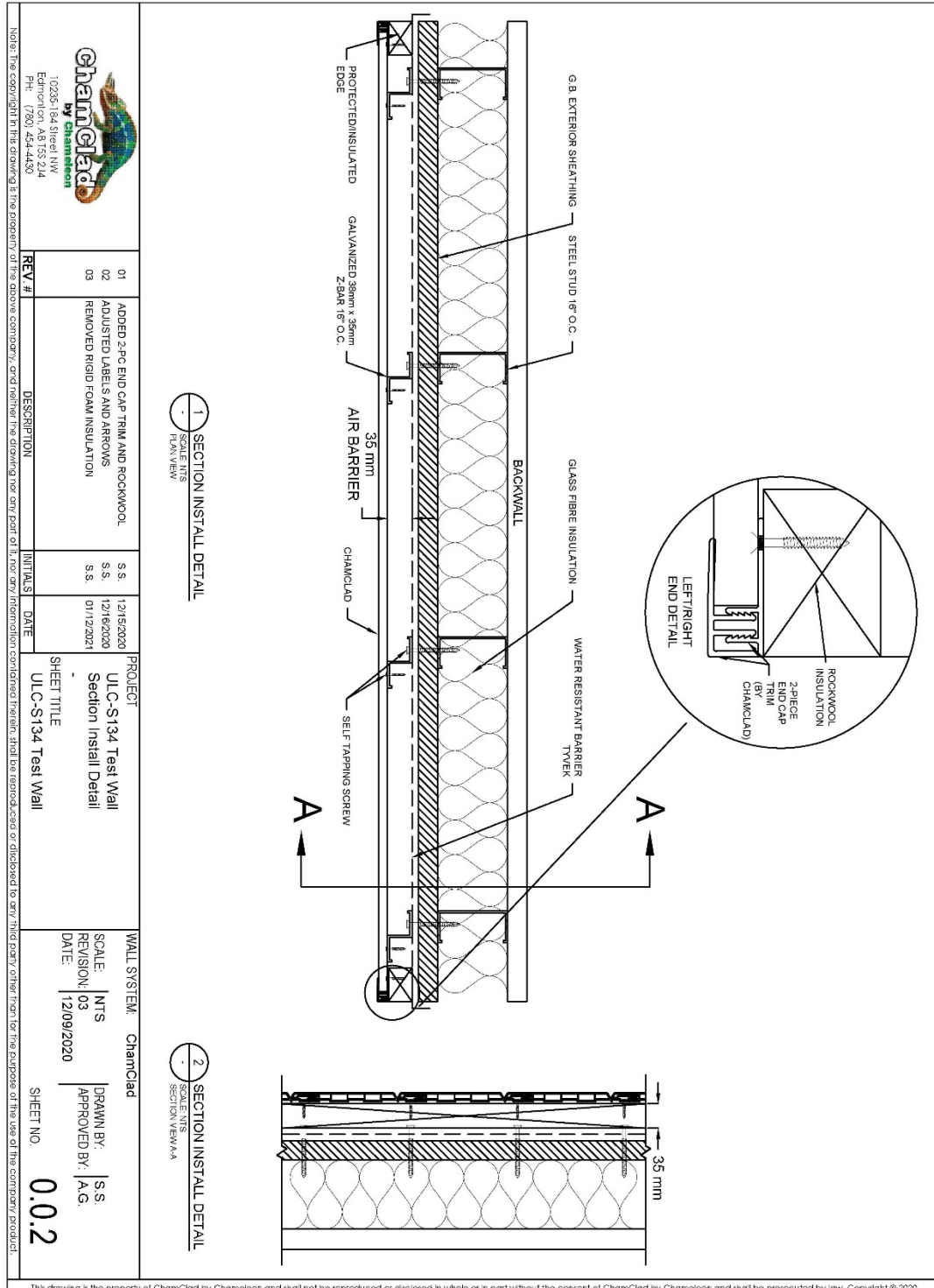
The "As-Built" drawings for the Chameleon Wrapping and Lamination Ltd., Sheet Nos. 0.0.2, and dated 12/09/2020; which follow have been reviewed by Intertek B&C and are representative of the project reported herein. Project construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

*Drawing shows the use of Galvanized 38 × 35 mm, Z-Bar but, 20 GA, 1-1/2 in., tall, Hat-Channel was used in its place.

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SECTION 15

REVISION LOG

REVISION #	DATE	SECTION	REVISION
0	01/19/21	N/A	Original Report Issue
1	02/11/21	14	Revised to correct the "AS-BUILT" Drawing date.  
2	05/06/21	All	Revised to change report ownership name. Changed name throughout report. 