

CHAMCLAD FIRE TEST REPORT

SCOPE OF WORK

NFPA 268 TESTING ON EXTERIOR WALL ASSEMBLY CONTAINING CHAM-CLAD PVC CLADDING

REPORT NUMBER

M1959.01-121-24 R1

TEST DATE(S)

04/08/21

ISSUE DATE

04/15/21

REVISION DATE

11/20/23

RECORD RETENTION END DATE

04/08/25

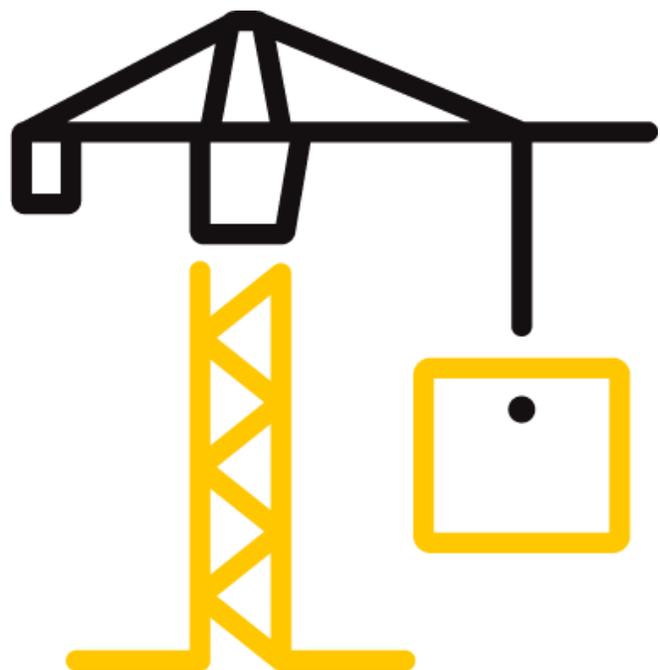
PAGES

22

DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-3566 (11/29/17)

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TEST REPORT FOR CHAMCLAD

Report No.: M1959.01-121-24 R1

Date: 04/15/21

Revision Date: 11/20/23

REPORT ISSUED TO

ChamClad.

10235 – 184 Street NW

Edmonton, Alberta, Canada T5S 2J4

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by ChamClad, Edmonton, Alberta, Canada to evaluate the performance of exterior walls containing Cham-Clad PVC cladding when exposed to a radiant heat source. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania, USA. Results obtained are tested values and were secured by using the designated test method(s). A summary of test results and the complete graphical test data is reported herein.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

Wall System: Exterior Wall Assembly

Combustible Components: Dupont™ Tyvek® CommericalWrap®, Cham-Clad PVC Cladding

NFPA 268 Test Results

The assembly described and tested in this report **did** meet the full, 20-minute exposure duration as required by the NFPA 268 test method. Construction of the full assembly is summarized in Section 7 of this test report.

For INTERTEK B&C:

COMPLETED BY:	Timothy Feltman	REVIEWED BY:	Ethan Grove
TITLE:	Technician – Fire Lab	TITLE:	Manager – Fire Testing
SIGNATURE:		SIGNATURE:	
DATE:	11/20/23	DATE:	11/20/23

TRF:ddr

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SECTION 3

TEST METHOD

The assembly was evaluated in accordance with the following:

NFPA 268-2017, *Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source*

SECTION 4

MATERIAL SOURCE/INSTALLATION

The components of the test assembly were provided by the client except for the wall framing, sheathing, and air and water barrier which were acquired and assembled by Intertek B&C personnel.

SECTION 5

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Timothy Feltman	Intertek B&C
Benjamin Samson	Intertek B&C

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SECTION 6

TEST PROCEDURE

The test specimen is installed into the test apparatus and centered both vertically and horizontally with respect to the center of the radiant exposure panel. Prior to the initiation of the test, a water-cooled radiation barrier is placed between the radiant panel and test specimen to absorb the energy from the radiant burner once the calibrated exposure is achieved. Thirty seconds after the spark igniter, located 5/8 inch away from the exposed face of the specimen, is energized, the radiation shield is removed, and the test begins with the sample being subjected to the calibrated exposure. The igniter is cycled on for greater than 5 seconds and off for less than 2 seconds to create a piloted ignition source. The test is continued for 20 minutes, or until sustained flaming for a period of 5 seconds or more occurs within the 20-minute test duration.

SECTION 7

TEST ASSEMBLY DESCRIPTION

The overall dimensions of the test assembly are 4 feet wide by 8 feet high. Below is a detailed description of the components in the assembly:

Framing

20 gauge steel studs spaced 16" O.C. and fastened using #6 x 20 x 1/2" self-drilling stainless steel framing screws.

Exterior Sheathing

National Gypsum® 5/8" exterior gypsum board was attached to the steel framing using #6 x 20 x 1 1/4" self-drilling drywall screws every 8" around the perimeter and every 12" in the field.

Air and Water Barrier

Dupont™ Tyvek® CommercialWrap® was applied to the exterior sheathing and fastened using T50 3/8" staples. A minimum of 6" overlap was utilized between sheets.

Hat Channel and Z-Girts

20 gauge aluminum 1 1/2" high Z-girts were installed vertically on the 8' perimeters and secured using #6 x 20 x 1 1/4" self-drilling drywall screws every 12". 20 gauge aluminum 1 1/2" Hat Channels were installed vertically at the stud locations and secured on one side using #6 x 20 x 1 1/4" self-drilling drywall screws every 12".

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SECTION 7 (Continued)

TEST ASSEMBLY DESCRIPTION

2 Piece Finishing Trim (Starter Strip)

A single piece of 0.056 aluminum starter strip was placed vertically directly on top of the aluminum Z-girts and one of the hat channels. Two pieces of the starter strips were placed back to back on top of one hat channel to create a joint detail. Additionally, one piece of starter strip was placed horizontally at the top and bottom of the wall assembly to create a perimeter grid system. The vertical starter strips were fastened every 6" using #6 x 20 x 1/2" self-drilling stainless steel screws and fastened at the stud locations horizontally. **(See Construction Photos in Section 10, Page 10)**

Exterior Cladding

Cham-Clad PVC cladding was installed and placed between the starter strips, cut 1/8" shorter to allow for expansion and contraction, and fastened using #6 x 20 1/2" self-drilling stainless steel framing screws. A joint was utilized at one of the interior stud locations.

2 Piece Finishing Trim (Perimeter Cap)

A 0.075 aluminum perimeter cap was applied onto the starter strip, completing the finishing trim.

Note: The test specimen was conditioned to a constant weight at $21.1^{\circ}\text{C} \pm 5.6^{\circ}\text{C}$ ($70^{\circ}\text{F} \pm 10^{\circ}\text{F}$) and a relative humidity of 50 percent \pm 10 percent.

SECTION 8

TEST OBSERVATIONS

Calibration Information:

Calibration Date: 03/10/2021

Average Heat Flux of Four Quadrant Heat Flux Transducers: 12.8 kW/m²

The heat flux at the center of the calibration panel shall not exceed 15 kW/m² or be not less than 12.5 kW/m²: True; High: 14.5 kW/m², Low: 13.2 kW/m²

Average Surface Temperature of Radiant Panel: 1582 °F

Test Date: 04/08/2021

Lab Temperature: 71 °F

Lab Relative Humidity: 34%

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TEST OBSERVATIONS

TIME (Min:Sec)	OBSERVATIONS
Pre-test (-10:00)	Ignition of radiant panel burner.
Pre-test (-01:00)	Data acquisition begins.
Pre-test (-00:30)	Spark igniter initiated
00:00	Radiation shield removed. Test begins.
01:21	Warping of cladding
01:42	Smoke emitting from test assembly
02:58	Surface bubbling of cladding
04:02	Separation of horizontal cladding joints
06:22	Cladding dislodging from trim on the long side exposing the Tyvek® air and water barrier
07:11	Tyvek® melting exposing the exterior sheathing
09:30	Cladding dislodging from the trim on the short side exposing the Tyvek® air and water barrier
11:30	Cladding on the short side melting in front of the reference heat flux meter
11:46	Surface paint peeling from trim perimeter cap
13:41	Cladding melting onto spark ignitor
16:40	Cladding removed from reference heat flux meter
18:42	Transient flaming at the spark ignitor; sustained flaming did not occur.
20:00	End of Test

SECTION 9

TEST RESULTS

TEST REQUIREMENTS	TEST RESULTS	PASS/FAIL
Sustained flaming (ignition) for a period of 5 seconds or more shall not occur within the 20-minute test period.	Sustained flaming did not occur during the 20-minute test period.	PASS

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SECTION 10

PHOTOGRAPHS



Photo No. 1
Construction of Test Assembly

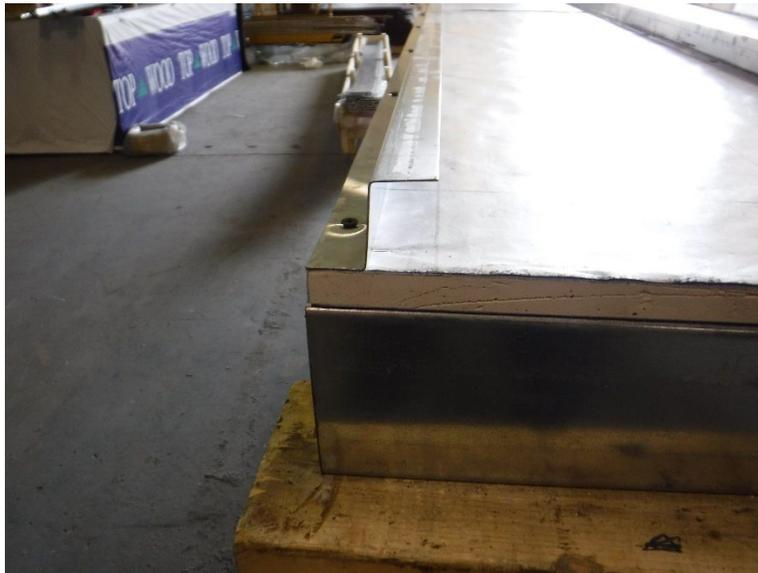


Photo No. 2
Z-girt Installation

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PHOTOGRAPHS

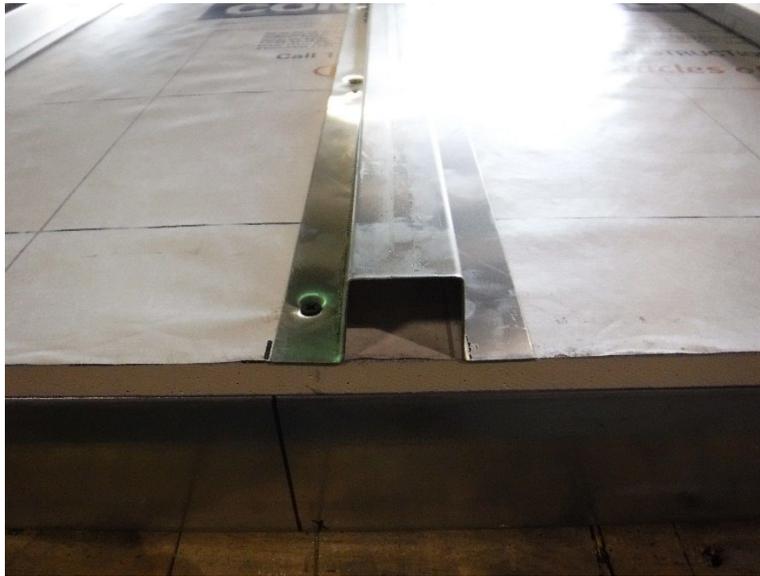


Photo No. 3
Hat Channel Installation



Photo No. 4
Complete Z-girt and Hat Channel Installation

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PHOTOGRAPHS

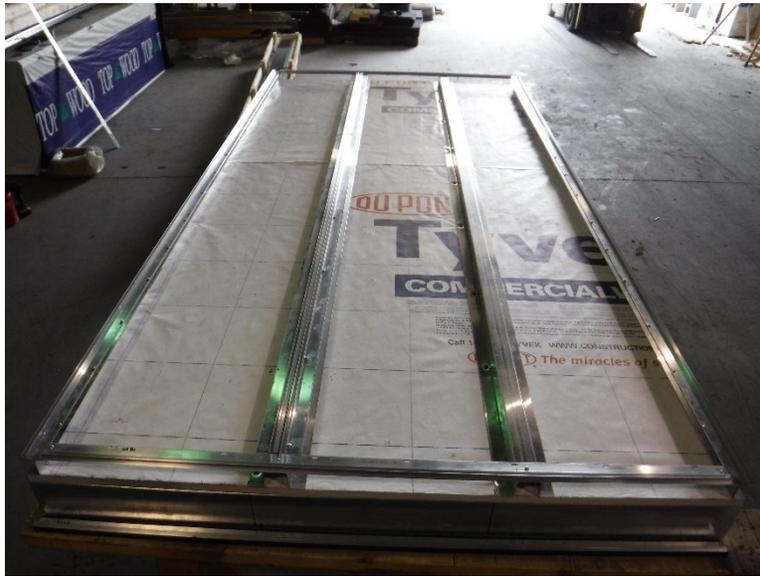


Photo No. 5
Complete Starter Strip Finishing Trim Installation

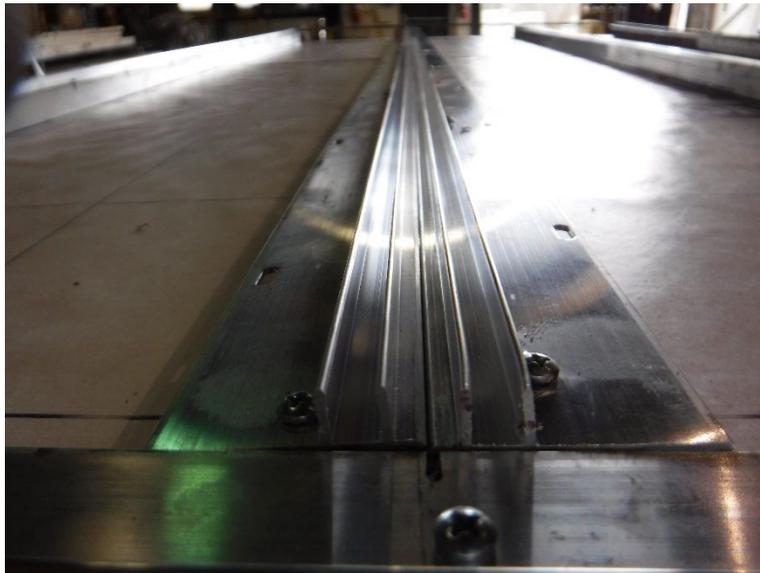


Photo No. 6
Back to Back Starter Strip Installation

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PHOTOGRAPHS



Photo No. 7
1 1/2" Air Cavity

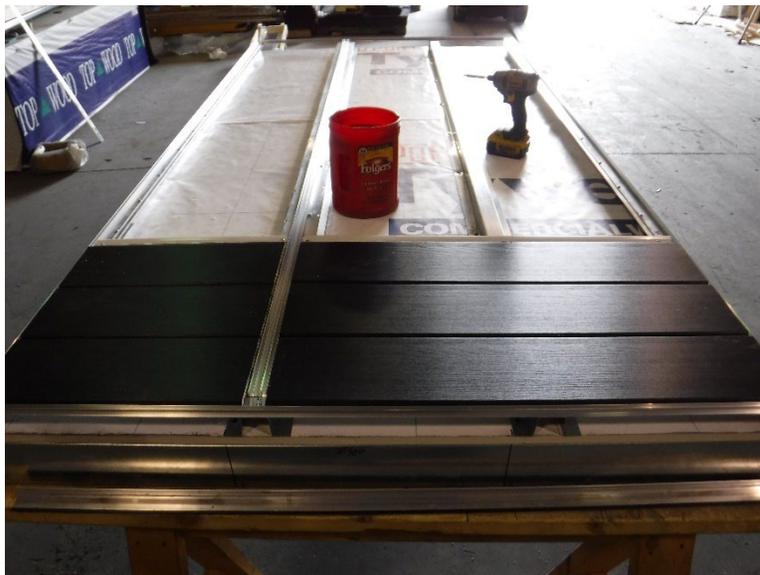


Photo No. 8
Installation of Cladding

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PHOTOGRAPHS

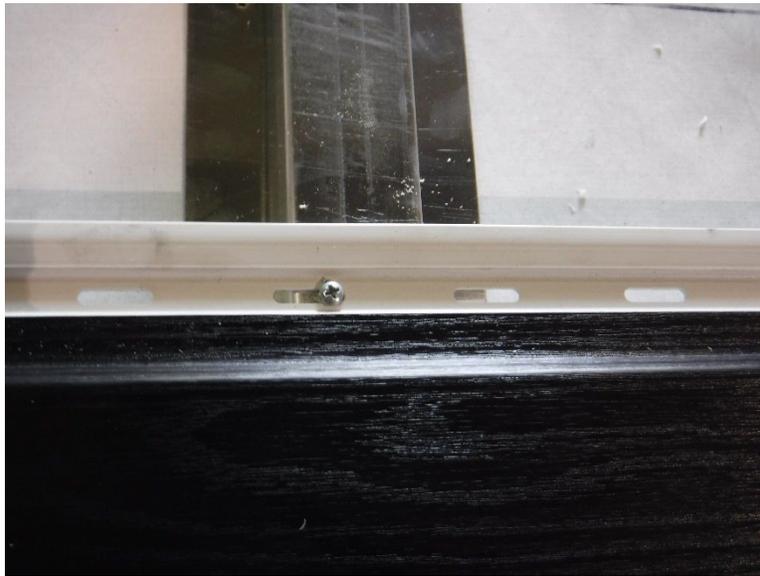


Photo No. 9
Fastening of Cladding on Hat Channel



Photo No. 10
Complete Cladding

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PHOTOGRAPHS



Photo No. 11
Complete Test Assembly



Photo No. 12
Complete Assembly (Pre-test)

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PHOTOGRAPHS



Photo No. 13
Initiation of Test



Photo No. 14
Warping of Cladding and Smoke Emitting From Assembly

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PHOTOGRAPHS



Photo No. 15

Dislodged Cladding on Long Side with Exposed Tyvek®



Photo No. 16

Dislodged Cladding on Short Side with Exposed Tyvek®

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PHOTOGRAPHS



Photo No. 17

Cladding in Front of Reference Heat Flux Meter

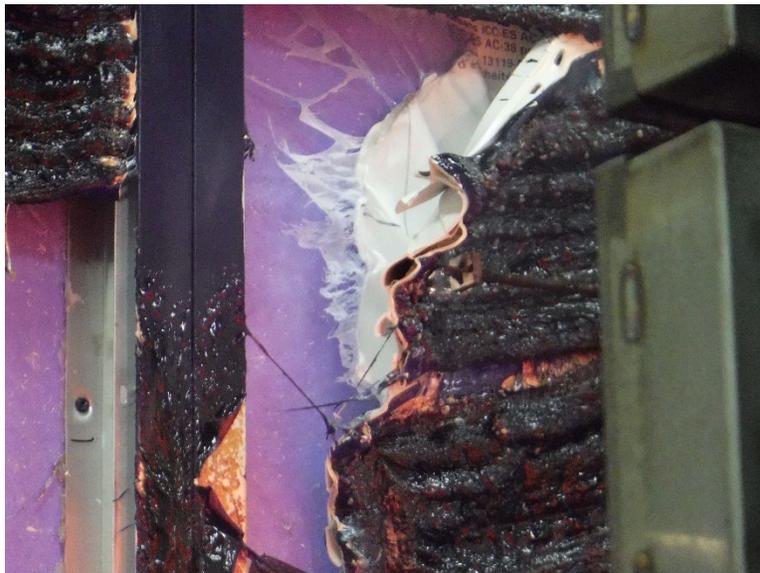


Photo No. 18

Cladding Melting onto Spark Ignitor

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PHOTOGRAPHS



Photo No. 19
Post-test Exterior

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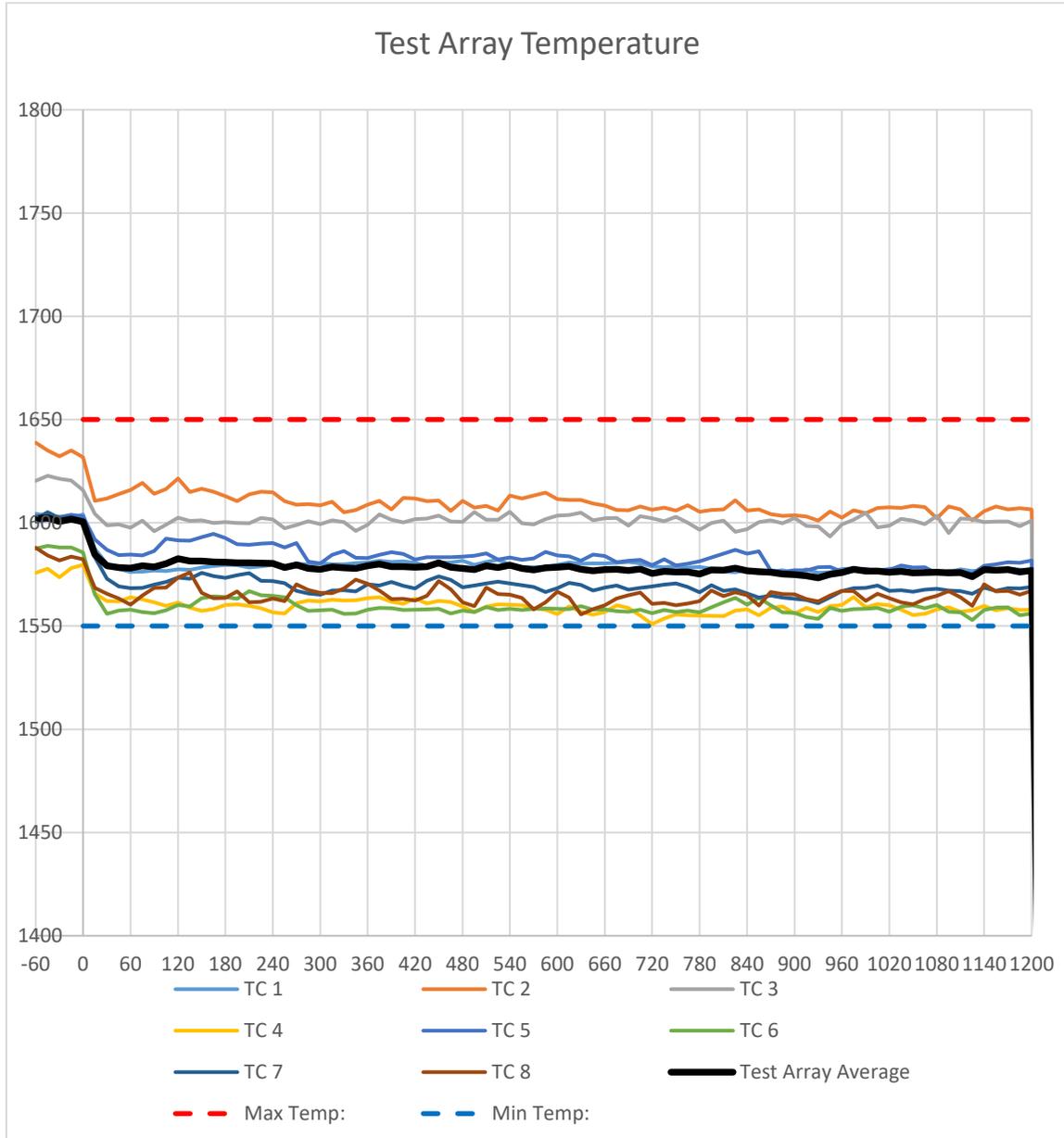
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SECTION 11

GRAPHS



Graph No. 1
Burner Output Verification Data

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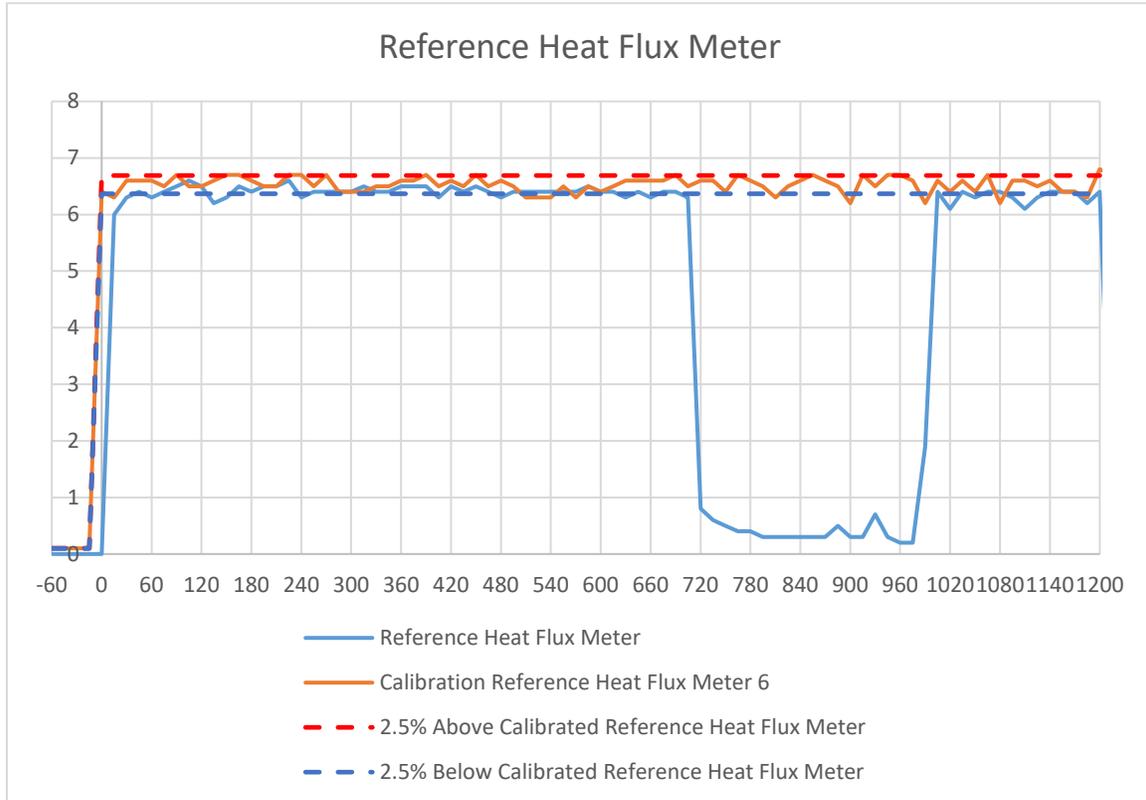
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GRAPHS



Graph No. 2

Reference Heat Flux Meter

NOTE: The Decline Shown in the Above Graph was Created by a Melted Piece of PVC Cladding Blocking the Reference Heat Flux Meter. See Photo #17 on Page 16 of this Test Report.



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SECTION 12

DRAWINGS

The test specimen drawings which follow have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

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2 PIECE FINISHING TRIM STARTER STRIP INSTALLTION



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2 PIECE FINISHING TRIM PERIMETER CAP INSTALLATION



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SECTION 14

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	04/15/21	N/A	Original Report Issue
1	11/20/23	1,2 & 5	Removal of parent company name as per customer request