Architectural Testing

NFPA 285 TEST REPORT

Report No.: D6274.02-121-24

Rendered to:

CARLISLE SYNTEC, INCORPORATED
Carlisle, Pennsylvania

PRODUCT TYPE:
Exterior Non-Loadbearing Wall Assembly

This report contains in its entirety:

Cover Page:	1 page
Report Body:	9 pages
Graphical Data:	7 pages
Numerical Data:	20 pages
Photographs:	8 pages
Drawings:	10 pages

1.0 Report Issued To: Carlisle SynTec, Incorporated
1555 Ritner Highway
P.O. Box 7000
Carlisle, Pennsylvania 17013

2.0 Test Laboratory: Architectural Testing, Inc.
130 Derry Court
York, Pennsylvania 17406-8405
717-764-7700

3.0 Introduction:

[Section 1.3.1, NFPA 285] The NFPA 285 test apparatus is used to evaluate the fire propagation characteristics of exterior non-load-bearing wall assemblies and panels used as components of curtain wall assemblies that are constructed using combustible materials or that incorporate combustible components within the wall assemblies as specified in the following:

A. The ability of the wall assembly to resist flame propagation over the exterior face of the wall assembly.
B. The ability of the wall assembly to resist vertical flame propagation within the combustible core or within other combustible components from one story to the next.
C. The ability of the wall assembly to resist vertical flame propagation over the interior surface of the wall assembly from one story to the next.
D. The ability of the wall assembly to resist lateral flame propagation from the compartment of fire origin to adjacent compartments or spaces.

4.0 Project Summary:

4.1 Product Type: Exterior Non-Loadbearing Wall Assembly

4.2 Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). The specimen(s) were tested and evaluated against the requirements of the standard. A summary of the results is listed in the Test Results section and the complete graphical test data is included in Appendix A of this report.

4.3 Test Date: 5/14/2014

4.4 Test Location: Architectural Testing, Inc., test facility in York, Pennsylvania.

4.5 Test Sample Source: The exterior insulation used in testing was independently sampled by ATI personnel at the Franklin Park, Illinois facility on May 2nd, 2014. The core wall components were acquired and assembled by Architectural Testing, Inc. personnel.

4.6 Test Method(s), Practices and/or Classifications: NFPA 285 - *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components, 2012*

4.0 Project Summary: (Continued)

4.7 List of Official Observers:

Name	Company
Joe Malpezzi	Carlisle SynTec, Incorporated
Jonathan Gonzalez	UL, LLC
Dan Meier	AL13 Architectural
Matthew Freeborn	Architectural Testing, Inc.
Ethan Grove	Architectural Testing, Inc.
Scott Gingrich	Architectural Testing, Inc.

5.0 Calibration Information: The apparatus is considered to be under calibrated conditions when the time average temperatures and the time average heat flux readings obtained for a calibration wall match the requirements of Table 8.1.6 of NFPA 285. Calibration was performed on March 11, 2014 with natural gas as the fuel source and window burner placed 4-1/2 inches from the exterior surface of the assembly. Table 1 shows the average burner flow and heat flux. Table 2 shows the time average temperatures obtained during the calibration test.

Table 1 Average Burner Output Information

Time Interval (min)	Room Burner (SCFM)	Window Burner (SCFM)	2 FT Flux (W/cm^2)	3 FT Flux (W/cm^2)	4 FT Flux (W/cm^2)
0:00-5:00	33.9	0.0	1.0	1.0	0.8
5:00-10:00	33.7	4.3	1.9	2.0	1.5
10:00-15:00	43.0	5.1	2.5	2.6	1.9
15:00-20:00	42.9	7.9	2.8	2.9	2.2
20:00-25:00	43.5	10.1	3.1	3.2	2.5
25:00-30:00	46.8	14.3	3.5	3.7	3.0

Table 2 Average Time Temperature Values for Calibration

	Location							
Time (min)	Burn Room (°F)	Int. Wall (°F)	1FT (°F)	2FT (°F)	3FT (°F)	4FT (°F)	5FT (°F)	6FT (°F)
0:00-5:00	1105.7	1068.6	627.0	688.1	646.9	553.7	515.4	437.3
5:00-10:00	1213.5	1218.0	928.7	1001.0	1000.7	925.9	863.2	732.0
10:00-15:00	1400.7	1403.9	1054.8	1142.3	1162.4	1110.0	1041.6	879.5
15:00-20:00	1469.1	1478.4	1101.1	1189.4	1227.0	1195.2	1134.9	950.8
20:00-25:00	1499.5	1508.7	1129.6	1230.6	1268.5	1241.2	1186.0	945.5
25:00-30:00	1568.2	1580.8	1182.5	1282.1	1334.7	1317.6	1288.4	981.2

Some values obtained during the calibration were slightly above the limit. These values represent a more severe test scenario.

Architectural Testing's NFPA 285 ISMA apparatus meets the calibration requirements.

Test Specimen Description:

Interior Wall Cladding:

The interior wall was clad with National Gypsum 5/8 in. thick Type X gypsum board fastened to the core wall with #6x 1-1/4 in. long flat head self-drilling screws with a nominal spacing of 8 inches on the perimeter and 12 inches in the field. Drywall orientation on the burn floor consisted of two vertical pieces on each side of the window opening, parallel with the studs. Two pieces were then cut and placed above and below the window opening with the long side factory edges facing the window opening. Drywall orientation on the second floor consisted of vertically oriented sheets with the long dimension running parallel with the studs. Drywall orientation for the gaps above the top support angle and below the bottom support angle consisted of drywall that was oriented with the long dimension running perpendicular with the steel studs. All joints were taped with USG Sheetrock paper joint tape, and spackled with USG Sheetrock Joint Compound.

Core Wall:

The core wall was consisted of 18 ft. long, 3-5/8 in. deep, 20 gauge galvanized steel studs fastened to 14 ft. length, 20 gauge galvanized steel track every 24 inches on center. The studs were connected to the track with #6 x 1/2 in. long self-drilling screws. Horizontal 16 gauge x 1-1/2" wide CRC steel bracing was fit into the cutouts of the studs and fastened to the studs every 4 ft. above the window opening. The CRC Bracing was fastened to the studs by using 3-5/8 in. Clark Dietrich BridgeClips. The clips were attached to the studs with two #6 x 1/2 in. long, self-drilling screws and to the CRC bracing with one #6 x 1/2 in. long, self-drilling screw.

Exterior Sheathing:

5/8 in. thick Georgia Pacific DensGlass exterior gypsum was placed horizontally across the unexposed surface of the assembly. Sheathing sizes were 4 ft. x 8 ft. and 4 ft. x 6 ft. The 6 ft. and 8 ft. lengths were offset each vertical row. The gypsum was fastened to the framing members with #6 x 1-1/4 inch type S bugle head fasteners spaced every 8 inches along the perimeter and every 12 inches in the field.

Window opening:

A 78 in. wide x 30 in. tall window opening was made from 20 gauge galvanized steel track was centered on the vertical centerline of the wall assembly with the finished sill of the opening 30 inches above the first story floor line. The steel track sections were mechanically fastened with #6 x ½ in. long self-drilling pan head fasteners at each corner. Upon completion of exterior cladding installation, 16 gauge galvanized steel flashing was fastened to the window opening perimeter with #12 x 3/4 in. long self-drilling fasteners nominally spaced every 12 in. on center.

6.0 Test Specimen Description: (Continued)

Air/Vapor Barrier:

Carlisle Coatings and Waterproofing 702 LV Membrane Adhesive was applied to the full exterior with a medium nap roller to achieve the manufacturers specification of 300-350 square feet per gallon. After the 702LV Membrane Adhesive was dry, Carlisle Coatings and Waterproofing 705-FR-A aluminum faced self-adhering air barrier was placed horizontally across the full specimen. A 3 in. overlap was used for each installed row. Material in the window opening was cut to allow 4 in. pieces to bend and adhere to the window opening perimeter. 45 degree cuts were made at each corner of the window opening and were bent inward. The excess material was then cut off and disposed.

Exterior Insulation:

Prior to insulation installation, 16 gauge, 3-1/2 in. wide x 3 in. leg galvanized steel z-girts were fastened across the full width of the exterior surface of the assembly with #12 x 1-1/2 in. long self-drilling, hex head fasteners into each stud. All sections of z-girts were placed with the exterior leg pointed downward. 3-1/2 in. thick Hunter Panels Xci CG polyisocyanurate rigid insulation panels were placed on to each z-girts and were held in place by the above adjacent z-girt. The insulation panels were cut do 24 in. heights and were offset 6 ft. and 8 ft. lengths every vertical row. Two pieces of 30 in. long of 16 gauge, 3 in. x 6-1/2 in. galvanized steel angle were placed vertically and fastened to the window opening jambs with #12 x 1-1/2 in. long self-drilling fasteners. At the window opening header, a 16 gauge, 3 in. x 6-1/2 in. galvanized steel angle was fastened to the window opening header with the 3 in. leg located 3-1/2 in. from the exterior sheathing to accept the above adjacent rigid insulation. The window opening header piece of galvanized steel angle was fastened to the window opening header framing with #12 x 1-1/2 in. long self-drilling hex head fasteners nominally spaced every 12 in. Exterior insulation installation continued uninterrupted above the window opening header to the assembly header.

6.0 Test Specimen Description: (Continued)

Exterior Cladding:

Upon completion of the exterior insulation installation, AL13 aluminum perimeter "end frame" (Reference Drawing No. 4) extrusions were fastened to the galvanized steel girts with #12 x 3/4 in. long self-drilling hex head fasteners nominally spaced every 24 in. AL13 aluminum "vertical" extrusions (reference Drawing No. 3) were placed the full height of the assembly located on the vertical plane of each window opening jamb. The two vertical extrusions were fastened to each horizontal z-girt with one #12 x 3/4 in. long self-drilling fastener per z-girt. AL13 "horizontal" aluminum extrusions were placed at specific locations between the vertical extrusions and end frame extrusions. Horizontal extrusions between the end frame and vertical extrusions were placed at the horizontal plane of the window opening header as well as 8 ft. above the horizontal plane of the window opening header. Additional horizontal extrusions were fastened to the z-girts between the full height vertical extrusions at 4 ft., 8 ft. and 10 ft. above the window opening header. After all horizontal sections were installed; 0.020 in. thick aluminum spacers measuring 3/4 in. leg x 3/4 in. width x 3/4 in. leg were installed vertically across the full height of the assembly. The spacers were fastened to each z-girt with #12 x 3/4 in. long self-drilling fastener per z-girt. After the spacers were installed, 1/2 in. wide double-sided tape was installed onto each spacer over the full width of the assembly. 3 millimeters thick AL13 aluminum composite panels were then placed on to their designated locations and were held in place with AL13 vertical and horizontal panel joint extrusions.

7.0 Instrumentation and Test Procedure:

7.1 Instrumentation: Wall assembly was instrumented with thermocouples in accordance with figures 6.1 of NFPA 285 test method. 18-gague Type "K" TCs were used in the burn room and 20-gauge Type "K" was used on exterior façade and cavity air space. The window burner was positioned in the center of the opening and 4-1/2 in. off the exterior face of the wall assembly.

7.2 Test Procedure: Testing was performed on 5/14/2014 in accordance with NFPA 285 test method. Ambient conditions were 68°F and 73% relative humidity. An anemometer was used to verify airflow across test assembly was less than 4 ft. /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. Temperature data was recorded every 15 seconds.

8.0 Test Results: The test was performed at 4:57 PM with the burners on for 30 minutes. The burners were turned off and the specimen was allowed to burn for an additional 10 minutes after the test. All observations are recorded in the following table.

Table 3 Test Observations

Time (min:sec)	Observations
00:00	Ignition of the room burner.
01:40	Ignition of first-story interior gypsum. Panels warping above the window opening header.
01:50	Window opening header flashing warping.
05:00	Ignition of the window burner.
10:00	Charring evident 2 ft. above the window opening header.
12:22	Ignition at the window opening header.
29:59	Charring evident up to 8 ft. above the window opening header.
30:00	The burners were extinguished.
30:01	Sustained Combustion at the window opening header and sill.
33:43	All flaming seized
40:00	The test was terminated.

Table 4 Test Requirements

Test Requirements	Test Observations	Pass/Fail
Flames did not reach 10 ft. above the window opening header.	**Flames did not reach 10 ft. above the window opening header.**	**PASS**
Flames did not reach a lateral distance of 5 ft. from the vertical centerline.	**Flames did not reach a lateral distance of 5 ft. from the vertical centerline.**	**PASS**
Flames did not propagate beyond the limits of the first story test room.	**Flames did not propagate beyond the limits of the first story test room.**	**PASS**
No visible flaming in the second story test room	**No Visible flaming in the second story test room.**	**PASS**
TC's 11 and 14-17 (1000°F limit)	**TC's 11 and 14-17 did not exceed the 1000ºF limit.**	**PASS**
TC's 18-19, 28, and 31-40 (1000ºF limit)	**TC's 18-19, 28, and 31-40 did not exceed the 1000ºF limit.**	**PASS**
TC's 55-67 (750 °F above ambient)	**TC's 55-67 did not exceed 750°F above ambient.**	**PASS**
TC's 49-54 (500°F above ambient)	**TC's 49-54 did not exceed 500ºF above ambient.**	**PASS**

9.0 Description of Extent of Damage:

Interior Cladding:

The interior gypsum was still intact after the separation of the assembly from the test fixture. However, the area exposed to the test room was heavily fatigued and showed significant flame damage.

Air/Vapor Barrier:

The CCW 705-FR-A was only affected in the area of flame plume. Damage was localized to less than 1 ft. above the window opening header.

Exterior Insulation:

Charring was evident up to 8 ft. above the window opening header. Discoloration was evident up to 10 ft. above the window opening header.

Exterior Cladding:

Charring was evident up to 8 ft. above the window opening header. Charring was not found laterally outside of the area of the flame plume.

The assembly tested and described in this report meets the Conditions of Acceptance of NFPA 285.

Architectural Testing will service this report for the entire test record retention period. The service life of this report will expire on the stated Test Record Retention End Date, at which time such materials as drawings, data sheets, samples of test specimens, copies of this report, and any other pertinent project documentation, shall be discarded without notice.

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For ARCHITECTURAL TESTING, Inc.

Digitally Signed for: Ethan Grove by Dottie R. Rushing

Ethan Grove
Senior Technician - Fire Testing

Digitally Signed by: Matthew D. Freeborn

Matthew Freeborn
Manager - Fire Testing

EJG:ddr

Attachments (pages): This report is complete only when all attachments listed are included.
- Appendix-A: Graphical Data (7)
- Appendix-B: Numerical Data (20)
- Appendix-C: Photographs (8)
- Appendix-D: Drawings (10)

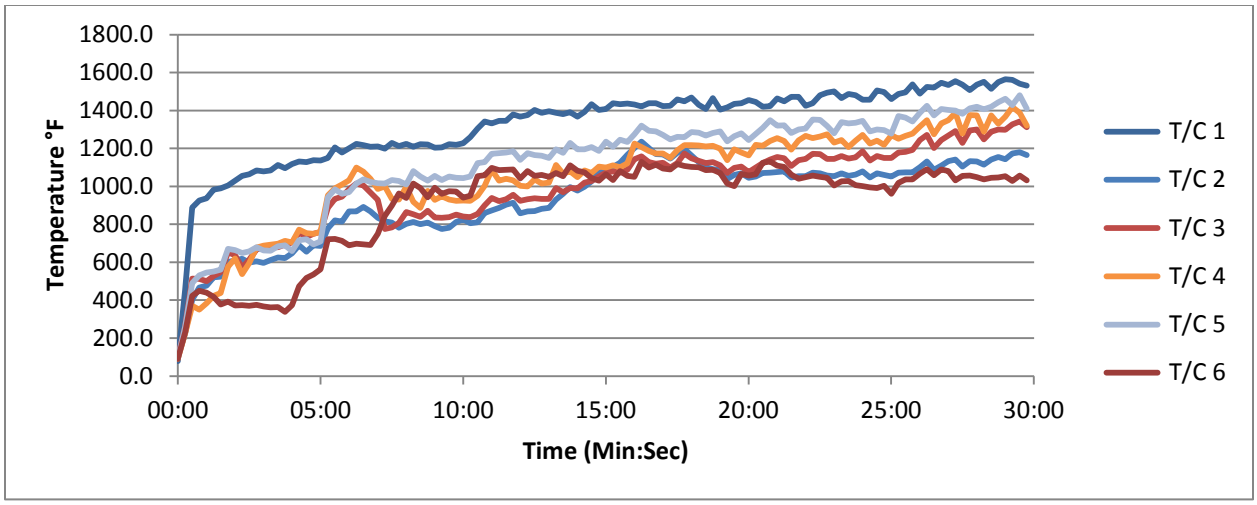
This report produced from controlled document template ATI 00587, issued 02/28/12.

Revision Log

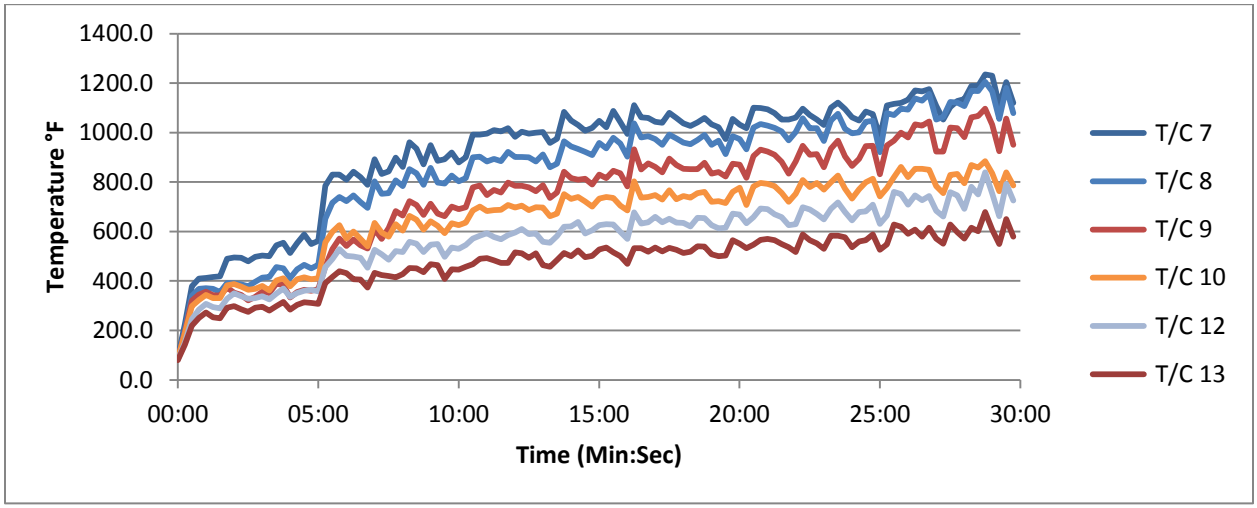
Rev. #	Date	Page(s)	Revision(s)
0	6/27/2014	N/A	Original Report Issue

Appendix A

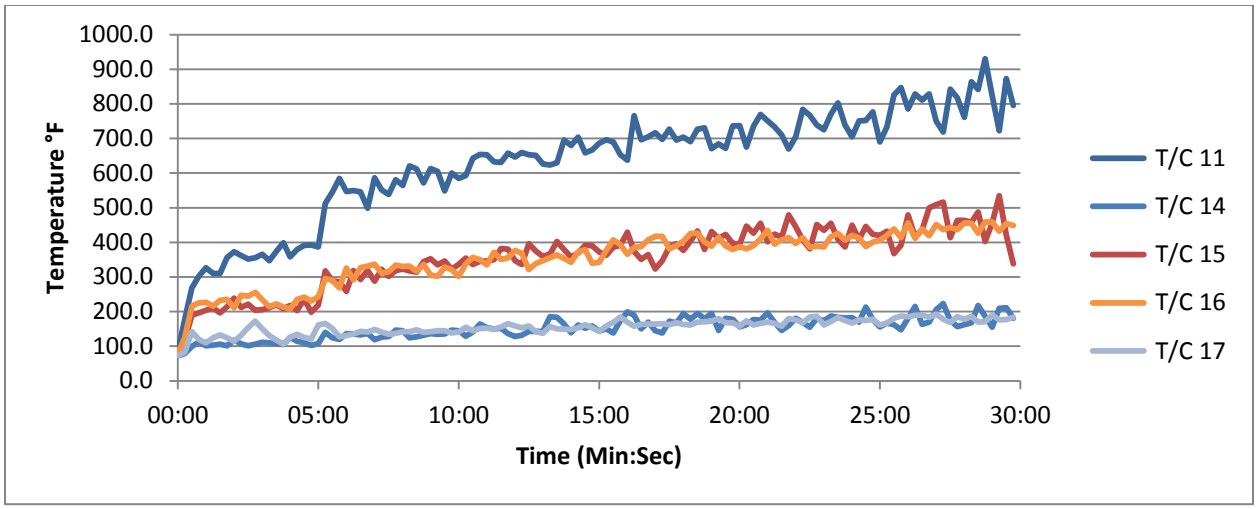
Graphical Data



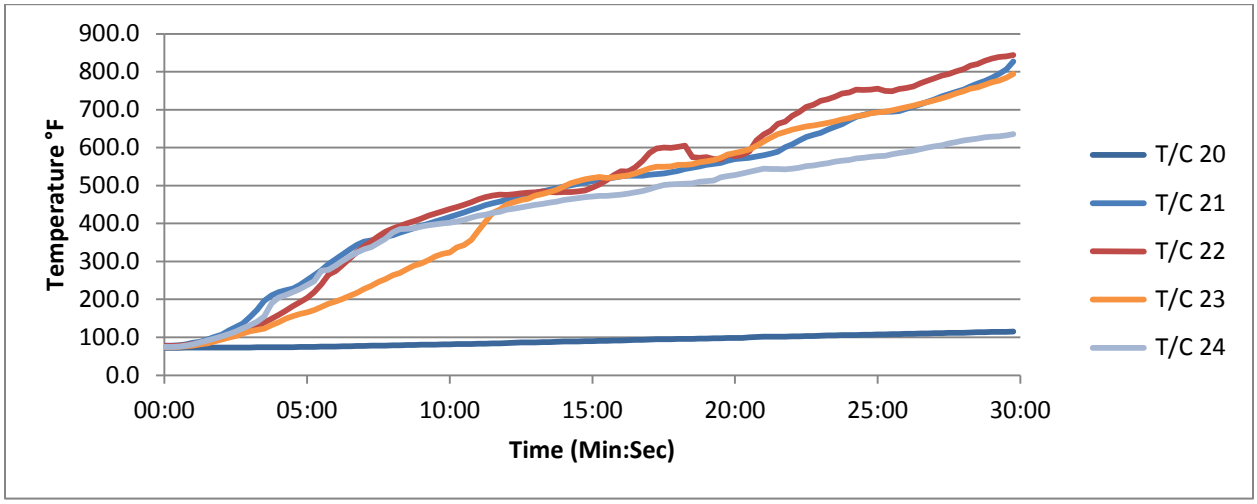
Graph No. 1
Assembly centerline (Assembly exterior)



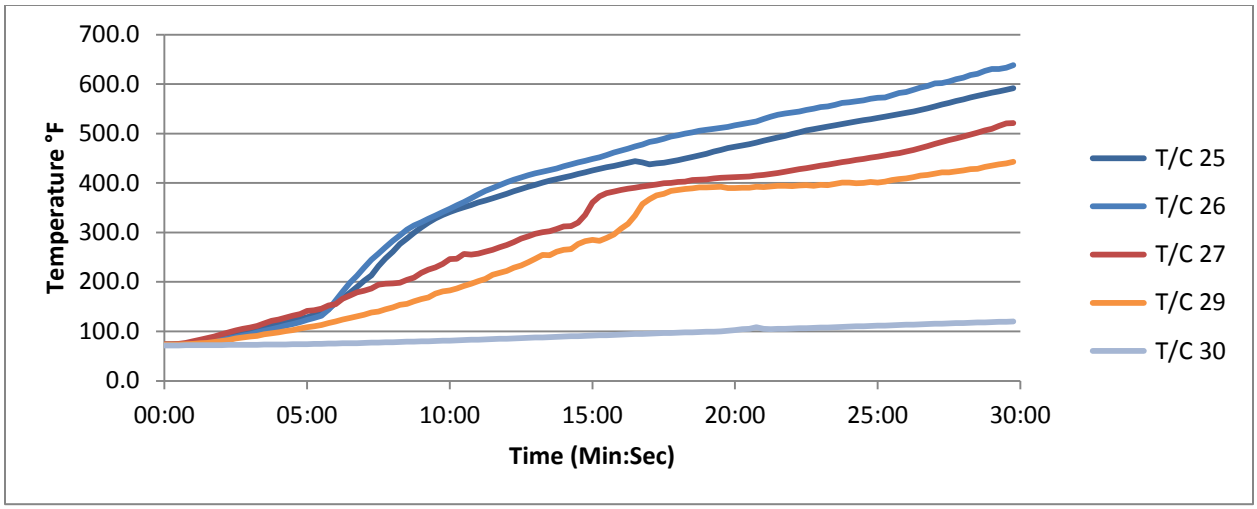
Graph No. 2
Assembly centerline (Assembly exterior)



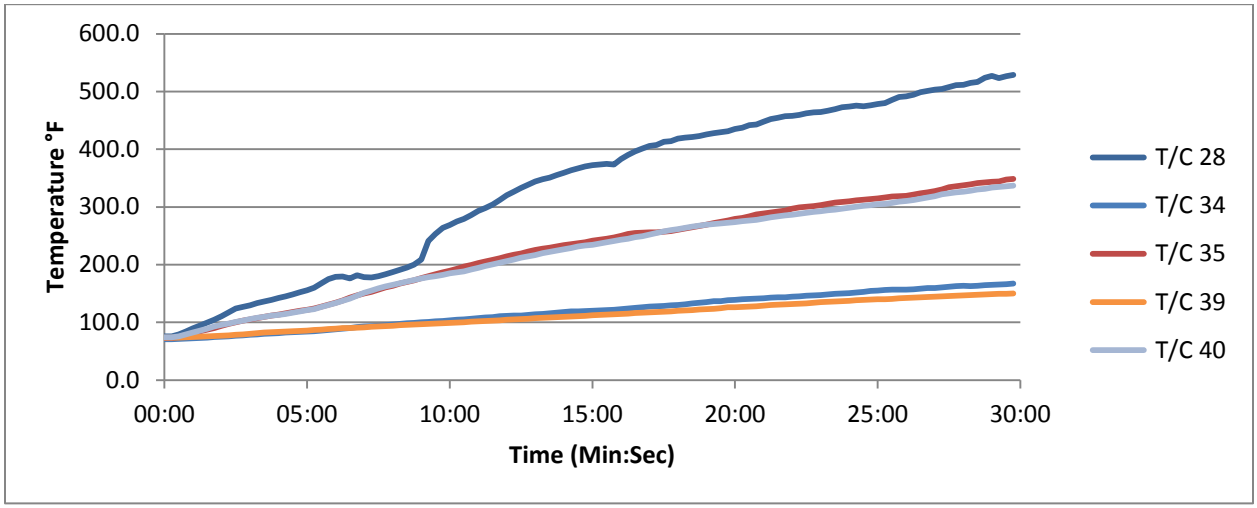
Graph No. 3
10 ft. above the window opening header (Assembly exterior)



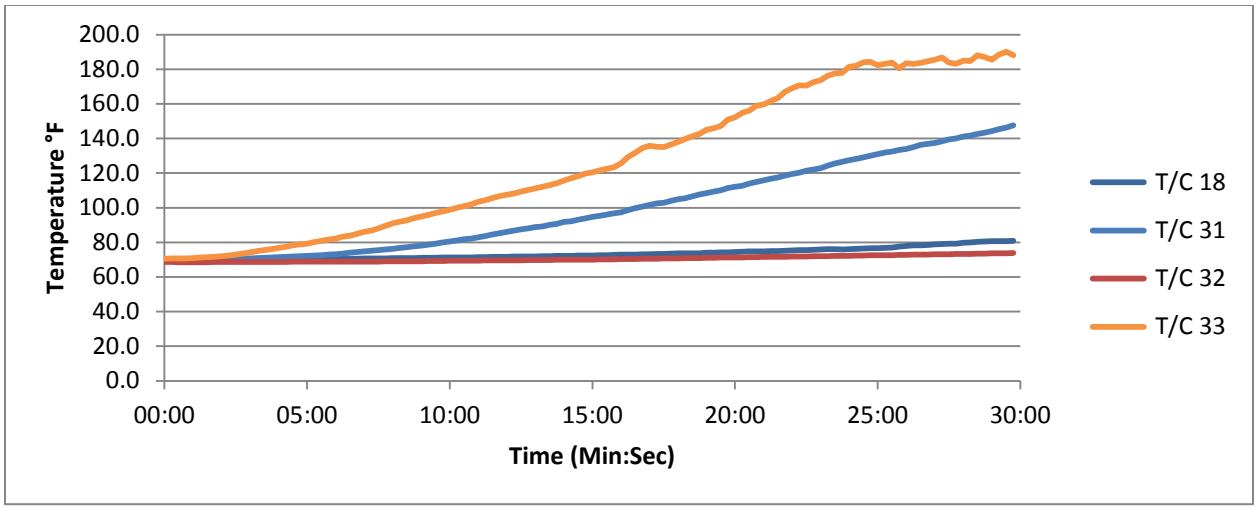
Graph No. 4
Assembly Centerline (Air cavity space)



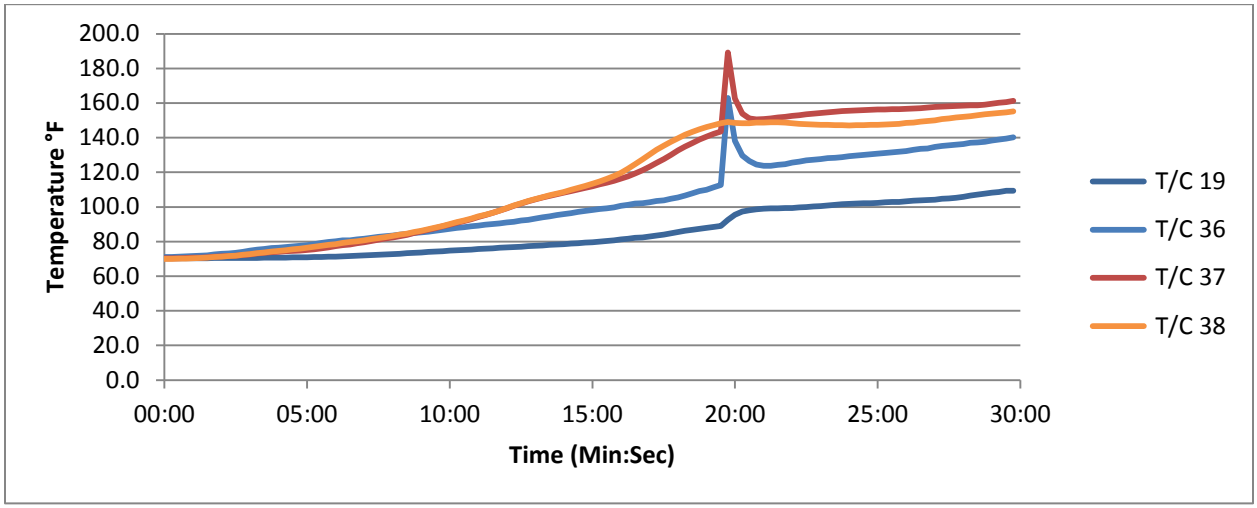
Graph No. 5
Assembly centerline (Air cavity space)



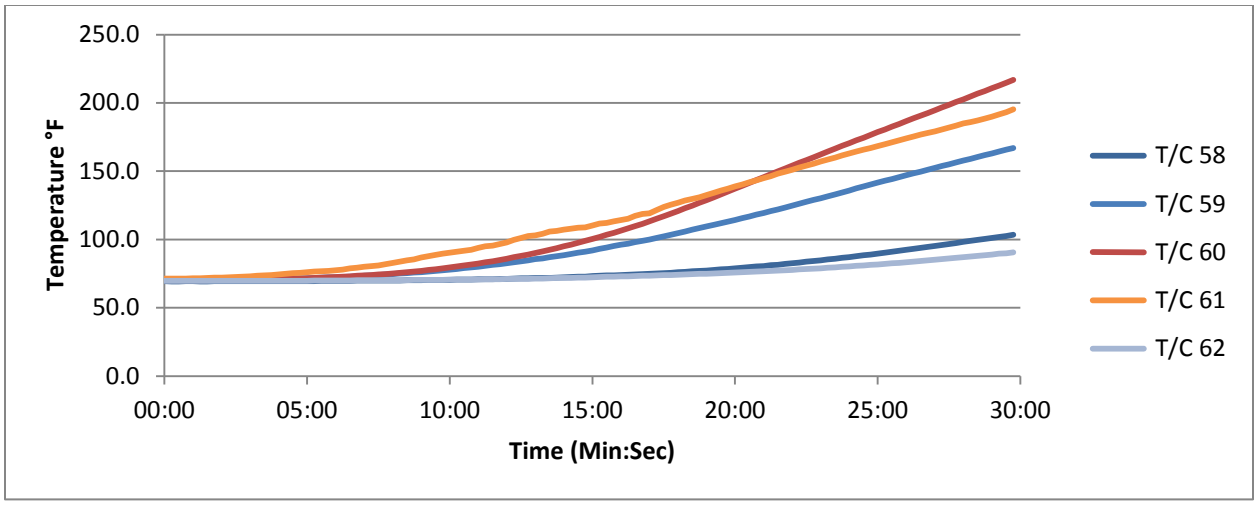
Graph No. 6
10 ft. above the window opening header (Air cavity space)



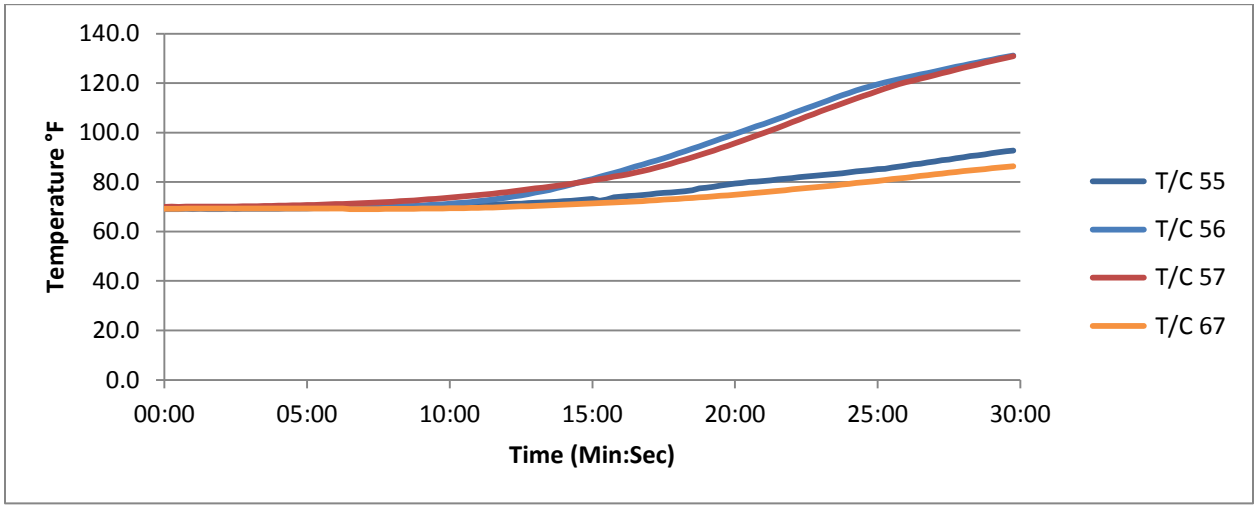
Graph No. 7
Left of assembly centerline (Air cavity space)



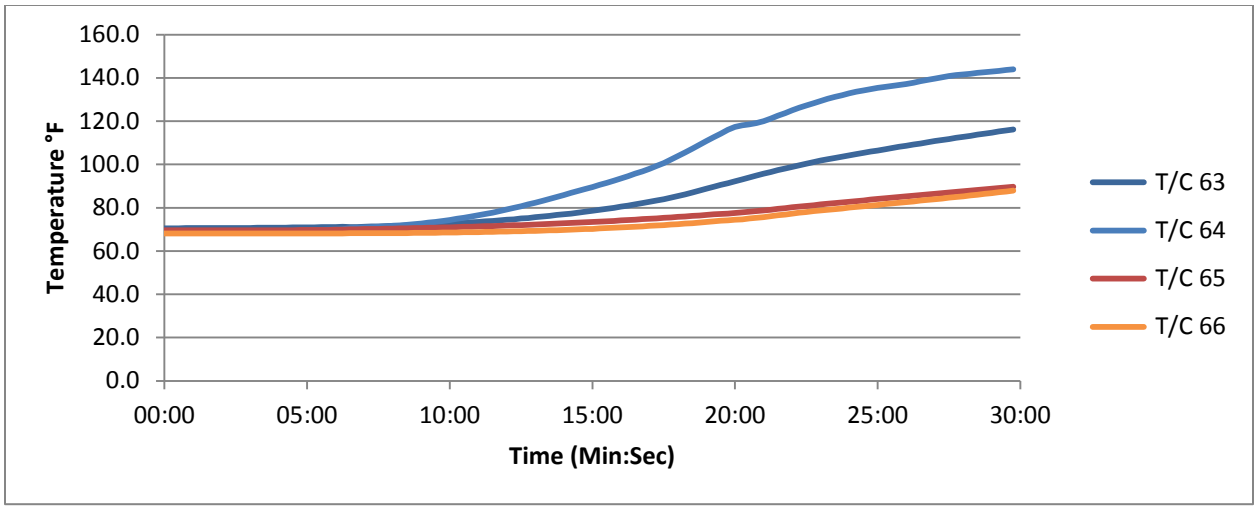
Graph No. 8
Right of assembly centerline (Air cavity space)



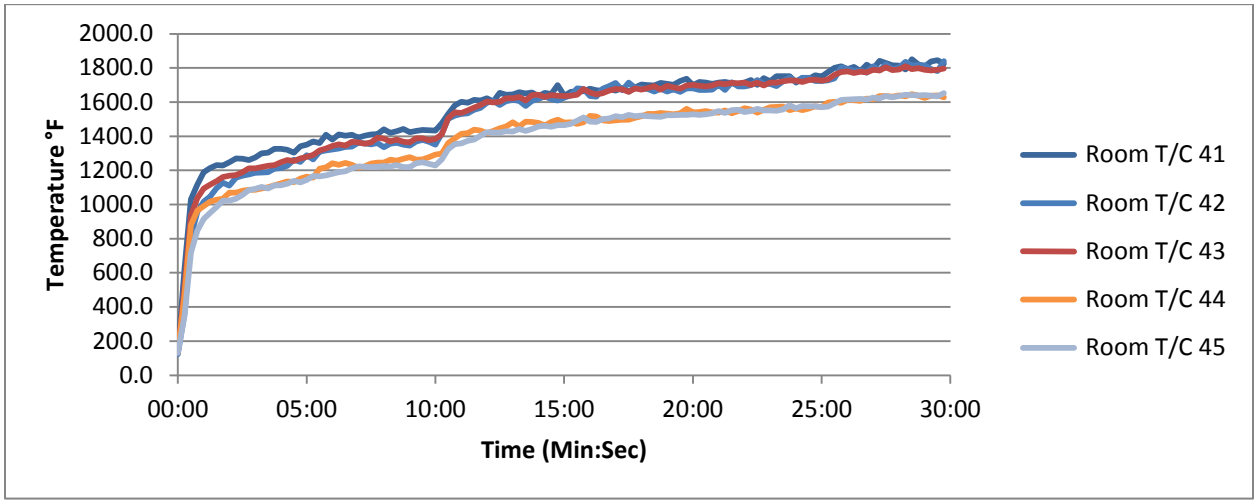
Graph No. 9
10 ft. above the window opening (Combustible insulation)



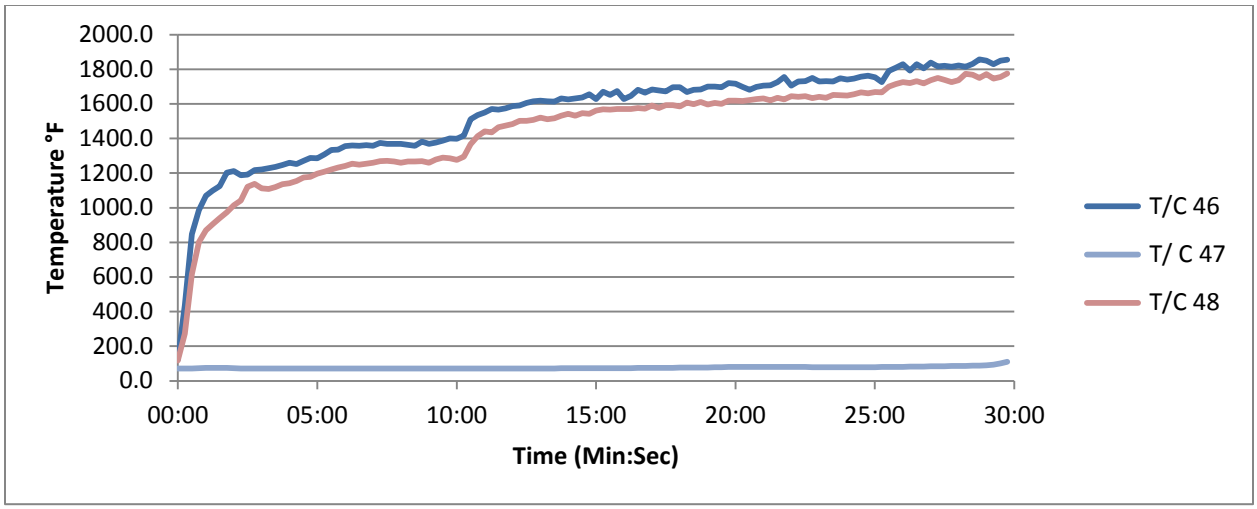
Graph No. 10
Left of assembly centerline (Combustible insulation)



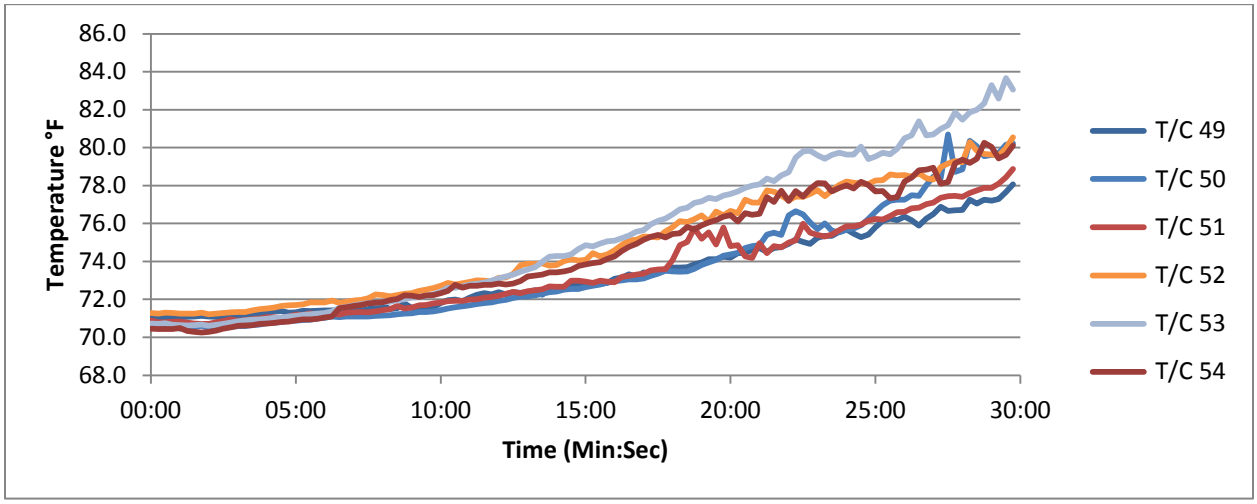
Graph No. 11
Right of assembly centerline (Combustible insulation)



Graph No. 12
First-story ceiling



Graph No. 13
First-story interior wall surface



Graph No. 14
Second-story interior wall surface

Appendix B

Numerical Data

Time (Min:Sec)	Room Gas Flow	Window Gas Flow	T/C 1	T/C 2	T/C 3	T/C 4	T/C 5	T/C 6	T/C 7	T/C 8	T/C 9
00:00	0	0	77.8	99.9	100.0	91.1	92.9	90.0	89.7	87.8	85.8
00:15	34.21	-0.11	457.0	224.9	266.3	225.3	261.1	230.7	225.0	200.6	192.8
00:30	34.22	-0.11	888.1	403.2	514.4	369.8	490.7	422.6	378.4	339.7	320.1
00:45	34.21	-0.11	924.7	466.1	512.0	349.7	530.5	449.8	409.4	367.8	344.2
01:00	34.27	-0.11	937.4	476.0	500.8	384.4	545.9	439.5	411.9	370.3	356.0
01:15	34.3	-0.11	982.3	521.0	527.5	423.2	550.9	418.2	415.7	368.1	342.0
01:30	34.32	-0.11	989.7	523.4	547.2	438.2	561.0	377.6	418.8	355.7	340.5
01:45	34.28	-0.11	1003.9	600.6	652.9	576.5	669.8	392.5	489.3	392.1	373.5
02:00	34.24	-0.11	1030.3	609.2	636.1	619.5	663.8	371.7	495.5	389.8	353.1
02:15	34.24	-0.11	1054.8	618.6	570.9	538.1	649.2	373.3	493.1	386.4	343.4
02:30	34.2	-0.11	1062.9	598.8	613.2	594.2	657.5	370.0	479.7	378.5	321.8
02:45	34.28	-0.11	1083.6	605.5	667.0	677.6	679.9	376.2	497.7	396.1	335.6
03:00	34.23	-0.11	1079.4	596.8	675.4	686.7	662.6	366.8	503.1	413.2	356.4
03:15	34.28	-0.11	1084.7	612.2	678.5	691.8	661.1	361.6	500.6	415.5	350.8
03:30	34.21	-0.11	1111.9	625.5	679.0	697.0	684.5	363.2	544.0	456.0	388.9
03:45	34.29	-0.11	1095.6	621.6	692.5	712.2	688.9	338.6	554.4	451.3	383.7
04:00	34.24	-0.11	1117.0	647.4	704.2	704.9	658.8	373.9	512.6	412.8	333.3
04:15	34.31	-0.11	1130.6	689.4	757.5	771.6	716.2	472.5	553.2	447.4	355.5
04:30	34.28	-0.11	1128.1	654.8	733.4	752.8	721.2	517.9	588.6	465.6	364.6
04:45	34.28	-0.11	1137.6	690.0	750.3	750.0	694.8	535.4	548.9	451.0	360.2
05:00	34.26	-0.11	1136.5	685.6	760.3	760.7	710.1	562.7	562.1	465.2	366.9
05:15	34.15	11.89	1150.5	778.5	887.4	952.2	942.2	720.6	785.4	651.5	459.1
05:30	34.11	5.02	1204.8	820.9	933.0	989.5	984.0	722.9	830.1	716.3	528.2
05:45	34.11	4.13	1178.8	814.8	945.9	1009.1	960.2	712.8	830.4	739.9	571.6
06:00	34.11	4.03	1200.2	867.2	984.0	1031.2	969.2	688.8	808.8	722.1	541.4
06:15	34.09	4.08	1223.1	868.3	1014.7	1098.5	1014.1	697.6	842.3	746.5	567.2
06:30	34.12	4.19	1217.7	892.3	1004.4	1078.0	1036.9	694.9	819.2	719.1	544.4
06:45	34.21	4.09	1208.5	867.4	967.6	1039.9	1024.0	691.0	788.0	695.8	531.7
07:00	34.2	4	1211.1	833.8	928.9	986.2	1015.9	750.0	892.4	802.8	608.8
07:15	34.34	4.23	1197.8	815.3	775.3	999.8	1014.1	845.1	833.3	752.1	570.0
07:30	34.13	4.14	1228.9	808.7	782.9	933.2	1034.0	898.0	843.5	755.4	613.6
07:45	34.38	4.05	1211.9	781.2	807.2	930.3	1028.8	962.6	899.1	806.6	683.0
08:00	34.4	4.08	1224.4	801.8	865.2	997.1	1009.2	939.4	861.3	783.4	664.6
08:15	34.44	4.2	1208.6	811.7	852.3	918.2	1080.3	1014.6	961.0	851.8	723.1
08:30	34.2	4.12	1221.8	800.5	838.6	887.2	1052.2	991.7	935.2	835.3	706.9
08:45	34.25	3.99	1220.1	808.4	870.5	975.6	1029.2	942.5	871.9	789.1	667.4
09:00	34.3	4.28	1203.1	791.0	836.0	929.0	1054.8	993.6	949.3	857.5	711.9
09:15	34.35	4.04	1205.1	775.6	834.5	947.0	1033.5	961.4	885.4	798.2	672.4
09:30	34.3	4.08	1221.9	781.8	836.9	931.2	1052.5	974.2	891.8	793.9	661.5
09:45	34.32	4.21	1218.5	811.7	850.6	923.4	1045.5	972.0	919.2	826.6	701.1

Time (Min:Sec)	Room Gas Flow	Window Gas Flow	T/C 1	T/C 2	T/C 3	T/C 4	T/C 5	T/C 6	T/C 7	T/C 8	T/C 9
10:00	34.1	4.09	1228.1	825.7	840.7	924.6	1043.0	940.5	878.8	802.9	690.6
10:15	36.87	4.42	1259.8	806.1	837.3	923.0	1052.6	951.2	899.3	816.4	698.4
10:30	44.11	5.15	1305.7	809.9	854.3	951.4	1122.1	1053.2	992.3	899.4	777.8
10:45	44.2	5.23	1341.9	860.4	899.7	1002.2	1128.4	1058.9	991.4	902.3	786.4
11:00	44.01	4.95	1331.2	873.4	938.1	1086.8	1171.9	1096.8	995.7	883.6	747.4
11:15	43.66	5.02	1344.9	886.7	921.6	1029.6	1174.4	1085.1	1009.7	893.5	767.9
11:30	44.2	5.03	1344.9	902.9	932.6	1040.8	1178.7	1086.5	1004.2	883.8	757.2
11:45	44.17	5.02	1379.1	913.8	955.5	1032.2	1185.0	1088.7	1017.5	922.2	797.6
12:00	44.2	5.03	1366.9	858.5	923.3	1003.2	1139.1	1041.2	982.3	900.8	784.3
12:15	43.87	5.04	1375.0	868.7	932.8	1000.0	1174.4	1080.4	1003.5	901.6	785.2
12:30	44.05	5.08	1403.2	869.7	936.5	1036.8	1164.9	1054.9	995.2	900.3	777.7
12:45	44.28	5.1	1388.2	880.8	933.4	1015.2	1161.4	1060.7	999.1	883.6	763.1
13:00	43.77	5.17	1396.2	886.6	933.7	1019.6	1149.6	1050.4	1001.8	911.2	787.6
13:15	44.09	5.14	1388.1	931.0	990.7	1112.8	1195.6	1070.0	958.5	859.2	736.1
13:30	43.63	5.33	1380.4	960.6	969.5	1066.4	1176.4	1052.8	974.8	873.7	758.2
13:45	44.17	5.17	1391.2	996.4	991.9	1079.7	1228.5	1110.3	1083.6	964.8	841.1
14:00	44.15	4.99	1367.5	977.8	989.1	1047.7	1195.1	1082.2	1048.9	943.6	815.9
14:15	43.64	5.15	1392.9	997.5	1020.5	1083.3	1196.1	1074.0	1030.8	933.3	809.9
14:30	43.76	5.35	1433.7	1025.8	1028.8	1071.0	1207.1	1043.2	1007.7	921.4	812.7
14:45	44.35	5.16	1402.1	1080.2	1052.2	1104.0	1187.2	1029.9	1018.4	909.2	789.6
15:00	43.82	4.98	1407.8	1093.4	1072.7	1099.8	1235.1	1062.9	1047.5	958.4	830.1
15:15	44.37	6.06	1438.7	1103.1	1079.6	1111.3	1208.6	1033.2	1021.0	935.8	816.3
15:30	43.88	7.59	1432.4	1124.0	1071.8	1101.6	1246.7	1081.2	1087.8	978.8	846.2
15:45	43.9	7.82	1435.8	1167.3	1086.7	1121.5	1234.9	1055.8	1042.9	955.7	835.1
16:00	44.16	7.53	1431.1	1201.2	1143.0	1225.7	1274.3	1050.8	994.7	901.9	782.4
16:15	43.88	7.44	1421.8	1235.2	1158.9	1207.8	1319.9	1129.3	1110.9	1037.4	932.9
16:30	43.6	7.77	1437.5	1201.2	1127.5	1187.4	1292.4	1099.0	1061.6	980.1	850.9
16:45	43.89	7.88	1439.0	1170.0	1119.4	1173.5	1289.0	1113.5	1059.0	985.3	875.9
17:00	44.2	7.54	1422.2	1169.1	1124.5	1173.8	1271.1	1094.6	1043.0	973.7	861.2
17:15	43.94	7.69	1424.0	1146.3	1099.2	1150.4	1246.8	1089.1	1039.7	949.8	839.1
17:30	43.69	7.75	1457.6	1177.3	1122.8	1190.0	1261.1	1118.2	1080.4	991.6	895.1
17:45	43.93	7.68	1448.0	1197.7	1174.0	1217.1	1258.7	1108.4	1058.8	975.8	868.7
18:00	44.21	7.69	1468.8	1163.7	1148.0	1217.0	1286.2	1102.8	1037.7	959.1	853.1
18:15	43.84	7.66	1429.1	1128.2	1135.1	1216.0	1283.8	1101.4	1026.9	953.3	852.7
18:30	44.16	7.79	1408.2	1101.6	1123.1	1209.9	1267.6	1085.9	1040.6	969.4	851.6
18:45	43.98	7.62	1464.6	1091.4	1128.6	1213.8	1281.5	1087.8	1058.7	990.2	878.6
19:00	44.43	7.59	1404.4	1085.2	1110.9	1198.6	1289.2	1071.2	1033.3	951.0	833.6
19:15	43.93	7.92	1416.1	1038.9	1069.8	1138.3	1238.0	1015.1	1021.7	966.9	840.1
19:30	43.68	7.91	1434.2	1060.5	1096.8	1195.8	1263.9	1001.1	974.3	912.7	822.6
19:45	44.42	7.74	1437.7	1068.0	1103.9	1177.9	1279.2	1065.7	1055.4	985.5	874.7

Time (Min:Sec)	Room Gas Flow	Window Gas Flow	T/C 1	T/C 2	T/C 3	T/C 4	T/C 5	T/C 6	T/C 7	T/C 8	T/C 9
20:00	43.96	7.02	1454.2	1045.6	1075.2	1163.2	1243.9	1057.7	1031.8	973.5	870.1
20:15	43.67	8.01	1444.8	1051.5	1099.8	1218.4	1277.0	1062.9	1017.9	932.2	816.8
20:30	43.4	9.62	1419.1	1070.4	1122.3	1214.2	1308.8	1124.1	1100.6	1020.0	905.8
20:45	43.91	10.2	1422.9	1072.6	1140.5	1238.9	1348.9	1131.2	1098.9	1033.9	930.9
21:00	43.95	10.03	1463.8	1075.8	1154.4	1254.7	1319.5	1108.7	1094.1	1027.6	922.9
21:15	44.18	9.83	1448.1	1078.9	1147.2	1238.6	1322.6	1102.0	1078.4	1019.3	910.5
21:30	43.9	9.69	1471.9	1046.5	1107.2	1194.1	1282.1	1062.6	1053.2	1005.0	881.4
21:45	44.11	9.62	1471.2	1053.0	1137.3	1243.2	1300.3	1039.4	1053.0	968.0	833.7
22:00	44.48	10.22	1424.4	1053.3	1144.7	1266.3	1305.2	1048.0	1060.2	1001.9	883.5
22:15	44.23	10.06	1437.6	1072.0	1171.0	1255.1	1351.9	1057.7	1096.7	1057.5	946.5
22:30	43.94	9.86	1481.2	1068.1	1169.4	1262.4	1351.0	1050.8	1071.3	1017.5	910.2
22:45	43.93	9.78	1493.8	1057.8	1145.4	1274.6	1318.4	1044.5	1052.7	1017.5	913.5
23:00	44.1	9.97	1501.1	1052.8	1145.4	1230.8	1280.4	1005.1	1030.6	965.6	860.0
23:15	43.87	10.15	1465.0	1069.2	1160.2	1245.0	1338.3	1027.3	1100.6	1048.7	935.2
23:30	44.18	10.04	1486.5	1054.5	1146.3	1206.8	1331.4	1029.0	1120.7	1075.6	967.1
23:45	44.39	9.88	1479.5	1061.3	1153.9	1240.5	1335.9	1005.9	1095.4	1015.4	904.4
24:00	44.03	10.32	1456.1	1079.4	1185.3	1271.0	1345.8	1000.7	1061.4	996.4	865.7
24:15	43.85	9.92	1456.0	1046.9	1136.2	1225.4	1290.4	993.7	1048.9	1001.2	893.5
24:30	44.2	9.9	1506.2	1068.7	1160.3	1241.4	1299.4	991.3	1084.4	1043.0	945.2
24:45	44.36	9.77	1497.0	1060.7	1149.0	1218.4	1297.2	1003.3	1075.0	1046.8	946.6
25:00	44.01	9.63	1460.5	1051.8	1149.9	1269.9	1277.8	960.7	982.5	921.3	831.8
25:15	45.47	12	1486.9	1073.0	1177.7	1251.4	1371.5	1017.4	1109.9	1078.8	948.3
25:30	47.78	14.54	1495.6	1073.3	1181.2	1266.0	1362.0	1036.7	1115.6	1070.4	967.3
25:45	48.21	14.66	1537.2	1073.9	1191.6	1277.2	1342.8	1036.2	1119.7	1096.4	999.6
26:00	48.42	14.48	1488.9	1101.3	1243.8	1315.4	1387.3	1066.9	1132.4	1092.1	979.7
26:15	48.17	14.59	1523.5	1131.2	1271.7	1349.1	1424.7	1089.9	1170.4	1138.1	1033.1
26:30	47.66	14.66	1520.9	1087.9	1202.2	1275.0	1374.7	1058.0	1165.9	1129.0	1028.4
26:45	47.12	14.73	1546.1	1109.4	1244.9	1331.5	1407.3	1088.5	1175.6	1155.7	1045.4
27:00	47.41	14.71	1533.5	1132.5	1267.3	1348.2	1402.4	1080.7	1107.6	1052.8	922.7
27:15	47.94	14.72	1555.0	1141.7	1290.7	1387.0	1399.9	1032.1	1053.2	1062.6	923.6
27:30	48.35	14.73	1535.4	1103.5	1228.5	1277.6	1383.3	1055.2	1102.9	1123.7	1019.9
27:45	48.04	14.71	1507.8	1132.2	1295.4	1375.3	1411.7	1056.7	1128.1	1121.1	1018.1
28:00	47.91	14.72	1535.5	1131.1	1300.6	1374.7	1420.4	1049.1	1135.2	1106.9	981.8
28:15	46.94	14.71	1551.2	1114.3	1247.3	1288.8	1406.5	1036.5	1189.0	1169.4	1061.8
28:30	47.42	14.73	1514.3	1140.9	1288.1	1373.3	1419.1	1045.4	1188.4	1167.8	1066.3
28:45	47.55	14.71	1548.9	1154.2	1300.5	1330.9	1443.7	1046.4	1234.6	1205.1	1097.2
29:00	48.24	14.71	1563.9	1142.7	1297.8	1367.2	1462.5	1053.4	1230.0	1166.5	1031.7
29:15	47.66	14.7	1561.1	1172.8	1326.9	1417.2	1427.9	1028.3	1110.5	1055.7	924.2
29:30	47.69	14.72	1540.3	1180.0	1341.2	1388.1	1480.4	1056.6	1203.7	1180.4	1056.1
29:45	47.82	14.72	1530.8	1164.8	1312.0	1319.8	1409.3	1031.1	1119.3	1078.2	950.0

Time (Min:Sec)	T/C 21	T/C 22	T/C 23	T/C 24	T/C 25	T/C 26	T/C 27	T/C 28	T/C 29	T/C 30	T/C 31
00:00	77.7	77.1	74.2	74.6	73.0	74.1	74.0	75.5	73.3	71.5	69.9
00:15	77.7	77.2	74.2	74.7	73.1	74.2	74.0	75.6	73.3	71.6	69.9
00:30	78.7	78.0	74.7	75.8	73.3	74.3	74.6	78.8	73.6	71.6	69.9
00:45	81.2	79.8	76.4	78.4	73.9	74.8	76.4	83.9	74.1	71.8	69.9
01:00	85.6	82.3	78.5	81.3	75.6	75.8	79.8	89.4	75.0	72.0	69.9
01:15	88.4	85.4	81.5	86.4	77.8	77.2	83.4	94.6	76.1	72.1	70.0
01:30	94.3	88.9	84.2	91.5	79.7	78.9	86.3	99.6	77.0	72.2	70.1
01:45	100.9	92.8	88.6	96.9	82.4	80.8	89.8	104.7	78.5	72.3	70.1
02:00	107.1	97.2	94.0	102.3	86.1	83.0	94.2	110.9	80.4	72.4	70.2
02:15	117.6	102.1	99.3	108.2	90.2	85.6	98.1	117.2	82.5	72.5	70.4
02:30	127.3	107.3	103.7	114.8	92.4	88.4	101.7	123.8	85.6	72.6	70.5
02:45	135.9	113.3	110.4	123.6	97.3	91.4	105.1	126.7	87.4	72.8	70.7
03:00	153.9	120.0	116.1	132.1	102.8	94.5	107.9	129.6	89.6	72.9	70.8
03:15	172.9	128.5	119.4	141.1	105.2	97.8	111.2	133.2	91.0	73.1	70.9
03:30	196.2	139.1	122.8	154.8	108.0	101.1	116.1	136.0	94.5	73.2	71.1
03:45	210.5	149.1	131.7	189.0	112.5	104.5	121.6	138.8	96.3	73.4	71.2
04:00	218.7	159.2	140.0	204.2	114.8	107.9	123.9	142.1	97.9	73.6	71.4
04:15	224.1	170.4	149.3	211.2	117.6	111.4	128.1	145.2	100.5	73.7	71.6
04:30	228.2	181.6	156.1	219.1	121.0	115.1	131.4	148.4	102.6	73.9	71.8
04:45	238.6	193.1	161.2	227.7	125.3	119.0	135.1	152.2	105.9	74.1	72.0
05:00	251.3	203.5	165.4	237.5	128.6	123.0	141.2	155.5	108.5	74.3	72.2
05:15	263.8	218.7	171.5	247.6	133.5	126.8	142.5	160.1	110.0	74.5	72.4
05:30	277.4	240.3	179.7	275.4	137.4	131.7	146.2	167.8	113.1	74.9	72.6
05:45	293.1	265.5	188.3	277.6	144.8	144.0	152.4	174.8	116.7	75.1	72.9
06:00	306.0	274.9	194.2	289.1	157.7	161.8	155.3	178.9	119.7	75.4	73.2
06:15	318.6	290.6	201.5	301.4	167.3	180.5	165.8	179.3	123.9	75.7	73.6
06:30	332.3	308.7	209.3	313.3	178.0	198.4	172.6	176.1	126.9	76.0	74.0
06:45	343.6	325.3	217.6	323.2	189.7	212.7	179.2	181.7	130.7	76.3	74.4
07:00	351.8	339.9	227.5	331.6	201.9	228.7	181.9	178.5	133.7	76.7	74.7
07:15	355.5	353.1	235.7	337.7	213.0	245.2	186.6	177.5	138.1	77.2	75.1
07:30	359.8	366.5	245.7	348.5	231.7	256.9	194.3	179.9	140.0	77.5	75.5
07:45	364.8	377.9	253.7	360.1	247.6	270.3	196.6	183.3	144.8	77.8	75.9
08:00	369.3	386.4	263.3	376.3	261.1	283.0	197.3	187.2	148.4	78.2	76.3
08:15	375.7	393.3	269.2	385.1	276.8	294.0	198.3	190.9	153.4	78.6	76.8
08:30	381.5	400.6	279.2	386.2	287.8	305.5	204.0	195.1	155.8	79.0	77.2
08:45	387.3	406.5	288.5	387.3	299.1	314.1	208.4	199.9	161.1	79.4	77.7
09:00	393.5	413.2	295.1	392.0	310.2	320.4	218.3	208.5	165.1	79.8	78.1
09:15	399.5	420.2	303.6	395.3	319.8	327.7	224.6	241.1	168.3	80.2	78.7
09:30	405.2	426.5	313.1	397.9	328.6	334.1	229.4	253.0	176.3	80.5	79.3

Time (Min:Sec)	T/C 21	T/C 22	T/C 23	T/C 24	T/C 25	T/C 26	T/C 27	T/C 28	T/C 29	T/C 30	T/C 31
09:45	411.3	432.0	320.1	400.2	335.6	341.0	236.4	263.5	180.9	81.0	79.9
10:00	417.4	437.8	323.7	402.3	341.4	347.7	246.3	268.6	182.5	81.4	80.5
10:15	423.2	443.3	337.4	405.7	346.3	354.6	247.1	274.9	186.5	81.9	81.2
10:30	429.3	449.3	343.1	409.9	351.2	361.3	256.5	279.2	191.9	82.3	81.7
10:45	435.4	456.2	356.8	415.3	355.6	369.4	255.5	285.7	196.6	82.8	82.2
11:00	441.7	463.6	380.9	420.2	360.5	377.1	257.3	292.9	201.3	83.3	82.8
11:15	448.1	469.4	404.9	423.1	364.8	383.8	261.1	298.3	206.0	83.8	83.6
11:30	453.2	473.5	428.4	428.3	369.4	389.6	264.9	304.4	214.6	84.3	84.6
11:45	457.8	476.3	436.9	431.0	373.9	395.6	270.0	311.9	218.3	84.8	85.3
12:00	462.5	475.0	449.9	436.3	378.4	401.5	274.8	320.2	222.1	85.3	86.1
12:15	467.2	476.9	456.2	439.3	383.1	406.8	280.7	326.5	228.6	85.8	86.9
12:30	471.9	479.4	461.9	442.6	387.9	411.4	287.9	333.3	233.0	86.5	87.5
12:45	476.2	481.0	465.0	445.5	392.5	415.4	292.0	338.5	240.0	86.9	88.2
13:00	480.7	482.3	474.0	449.1	396.5	419.3	297.4	344.3	246.6	87.4	88.8
13:15	484.8	484.8	478.2	451.9	400.7	422.6	300.8	347.7	254.3	88.0	89.2
13:30	489.0	483.0	483.2	454.8	404.5	425.7	302.3	351.0	253.9	88.5	90.0
13:45	493.0	482.3	489.1	458.0	407.7	429.3	307.3	355.2	261.3	89.0	90.7
14:00	496.9	482.6	497.4	461.5	410.9	433.8	312.3	359.3	264.7	89.6	91.7
14:15	500.8	483.0	506.5	464.3	414.4	438.0	312.8	363.4	266.3	90.1	92.2
14:30	504.7	484.7	511.5	467.1	418.0	441.7	320.1	367.1	276.9	90.6	93.1
14:45	508.4	487.4	516.5	469.7	421.6	445.1	335.4	370.4	282.2	91.1	93.8
15:00	512.0	494.4	520.1	471.2	425.2	448.4	360.9	372.3	285.3	91.5	94.7
15:15	515.3	502.8	522.2	472.8	428.8	452.0	373.1	373.3	283.3	92.0	95.3
15:30	518.2	513.7	520.0	472.8	431.8	456.4	379.7	374.7	288.7	92.5	96.0
15:45	521.1	527.8	522.1	474.2	434.7	461.5	382.6	373.4	295.8	93.0	96.7
16:00	524.4	537.7	524.4	476.2	437.6	465.3	385.7	382.8	307.4	93.6	97.4
16:15	525.6	536.8	526.8	479.1	441.2	469.3	388.8	390.2	317.4	94.2	98.6
16:30	525.8	547.5	531.5	481.9	444.1	474.0	390.6	396.1	334.0	94.6	99.8
16:45	526.2	565.0	538.3	485.3	441.6	477.9	393.2	401.2	357.3	95.1	100.7
17:00	528.4	586.0	545.5	490.6	438.0	482.8	395.1	405.9	367.2	95.5	101.5
17:15	530.0	597.8	549.3	496.5	439.6	485.6	396.9	407.4	374.8	96.0	102.4
17:30	532.3	600.2	549.4	501.7	441.2	489.6	399.2	412.8	378.4	96.5	103.0
17:45	534.9	599.4	550.6	503.0	443.4	493.6	400.2	414.1	383.9	96.9	104.0
18:00	538.9	601.8	554.8	503.8	446.2	496.6	402.4	418.3	385.9	97.3	104.8
18:15	543.4	605.6	555.0	505.1	449.3	499.5	403.0	420.0	387.9	97.8	105.5
18:30	547.4	574.7	556.7	505.6	452.8	502.3	405.8	421.0	389.3	98.3	106.5
18:45	550.8	572.9	561.6	510.1	455.8	505.5	406.6	423.0	391.1	98.7	107.6
19:00	554.9	574.8	563.9	511.3	459.3	507.8	407.0	425.5	390.9	99.1	108.5
19:15	557.6	569.9	567.1	513.0	463.3	509.6	408.9	427.9	391.8	99.6	109.4
19:30	559.5	568.8	573.3	521.5	466.6	511.4	410.7	429.2	392.3	100.0	110.2

Time (Min:Sec)	T/C 21	T/C 22	T/C 23	T/C 24	T/C 25	T/C 26	T/C 27	T/C 28	T/C 29	T/C 30	T/C 31
19:45	565.2	581.4	581.8	524.7	470.4	513.3	410.9	430.9	389.8	101.4	111.4
20:00	569.5	577.8	586.1	527.7	473.2	516.7	411.9	435.0	389.5	102.7	112.2
20:15	571.3	580.7	590.4	531.7	475.9	519.2	412.3	437.2	390.2	104.4	112.6
20:30	573.3	590.4	594.9	536.0	478.7	521.6	413.0	441.7	390.2	105.1	114.0
20:45	576.4	619.0	604.5	540.5	481.9	524.7	414.8	443.1	392.1	108.1	114.9
21:00	580.2	635.2	616.2	544.4	485.3	529.7	416.5	447.9	391.6	105.0	115.9
21:15	584.1	645.2	626.2	543.8	488.7	533.9	418.3	452.0	393.1	104.7	116.8
21:30	589.0	662.5	635.8	543.8	492.3	538.1	420.5	454.7	394.5	104.9	117.5
21:45	601.2	668.7	641.1	542.8	495.5	540.7	422.9	457.1	394.5	105.2	118.6
22:00	608.5	683.9	647.5	544.7	498.9	542.6	425.4	458.0	393.9	105.7	119.4
22:15	618.9	694.2	651.6	547.1	502.6	544.4	427.8	459.3	394.9	106.1	120.3
22:30	627.8	707.6	656.1	551.4	506.2	547.8	430.1	462.1	395.3	106.6	121.4
22:45	633.9	713.5	658.4	552.8	509.0	550.4	432.6	463.7	394.5	107.0	122.1
23:00	639.1	723.5	661.9	556.1	511.7	553.3	435.2	464.5	396.5	107.6	122.8
23:15	647.4	727.5	665.0	558.9	514.3	554.5	437.2	466.7	395.7	108.0	124.3
23:30	655.1	734.4	669.5	563.1	516.9	557.7	439.6	469.2	398.4	108.6	125.7
23:45	661.4	742.9	674.2	565.9	519.4	562.0	442.0	472.5	400.9	109.1	126.5
24:00	671.5	745.2	677.6	567.7	521.6	563.2	444.4	473.7	400.5	109.5	127.4
24:15	680.9	753.0	683.0	571.3	524.3	564.9	446.5	475.3	399.6	110.0	128.3
24:30	685.8	751.8	685.7	572.8	526.7	566.8	448.7	474.2	400.1	110.4	129.1
24:45	690.9	753.1	690.1	575.8	529.2	570.2	451.0	476.2	402.0	111.0	130.1
25:00	693.5	755.7	692.9	577.0	531.6	572.0	453.4	478.5	401.0	111.4	131.0
25:15	694.8	749.0	694.3	578.2	533.9	573.1	455.6	480.1	402.5	111.9	131.9
25:30	694.8	748.5	698.1	582.7	536.7	577.6	458.4	485.7	406.1	112.4	132.4
25:45	696.2	754.1	702.6	585.5	539.0	581.8	460.5	490.5	408.1	112.8	133.4
26:00	702.2	757.3	706.3	588.0	541.8	584.0	463.4	491.5	409.2	113.3	133.8
26:15	708.4	761.2	710.5	592.0	544.7	588.3	466.7	494.3	411.8	113.8	135.0
26:30	714.2	769.4	715.6	596.0	547.7	593.0	471.0	498.8	415.1	114.3	136.3
26:45	720.8	776.6	720.1	600.0	551.2	596.4	474.5	501.2	416.2	114.8	137.0
27:00	727.9	783.4	725.4	603.4	554.9	601.3	478.9	503.3	418.6	115.3	137.5
27:15	734.9	789.6	730.1	606.5	558.4	602.3	483.2	504.5	421.3	115.7	138.3
27:30	741.0	793.9	736.2	610.8	562.0	605.1	487.2	507.7	421.5	116.2	139.4
27:45	746.6	801.2	742.4	614.5	565.7	609.6	490.0	511.2	423.6	116.5	140.1
28:00	752.7	807.1	749.0	618.8	569.2	612.9	494.0	511.6	425.3	117.0	141.2
28:15	761.1	815.8	755.0	621.5	572.7	618.3	498.0	515.1	427.8	117.4	141.7
28:30	768.9	820.7	759.1	623.9	576.0	620.8	501.9	516.4	428.8	117.9	142.6
28:45	776.0	828.7	765.8	626.8	579.1	626.5	506.1	523.7	432.3	118.4	143.3
29:00	784.4	834.5	772.3	629.3	582.3	630.4	509.4	527.2	434.8	118.8	144.3
29:15	794.5	839.2	776.6	630.1	585.3	630.7	515.5	523.1	437.5	119.2	145.3
29:30	806.1	840.9	784.1	631.8	588.3	632.8	520.3	526.3	439.6	119.7	146.4

Time (Min:Sec)	T/C 21	T/C 22	T/C 23	T/C 24	T/C 25	T/C 26	T/C 27	T/C 28	T/C 29	T/C 30	T/C 31
29:45	827.1	843.8	793.9	635.4	591.7	638.4	521.3	528.9	442.9	120.2	147.6

Time (Min:Sec)	T/C 32	T/C 33	T/C 34	T/C 35	T/C 36	T/C 37	T/C 38	T/C 39	T/C 40	Room T/C 41	Room T/C 42
00:00	68.6	70.6	70.9	72.9	71.1	70.3	70.0	73.4	73.8	130.6	122.3
00:15	68.6	70.6	70.9	72.9	71.1	70.3	70.1	73.4	73.9	623.3	365.0
00:30	68.6	70.7	71.1	74.5	71.2	70.4	70.1	73.6	75.6	1030.3	811.2
00:45	68.6	70.8	71.6	77.6	71.4	70.5	70.2	74.1	78.9	1115.5	956.6
01:00	68.6	71.0	72.3	81.1	71.6	70.6	70.3	74.5	82.5	1189.9	1016.9
01:15	68.6	71.2	73.0	84.5	71.8	70.8	70.5	75.1	86.0	1213.3	1047.8
01:30	68.6	71.4	73.7	87.5	72.1	71.0	70.8	75.6	89.2	1230.8	1094.9
01:45	68.6	71.7	74.4	90.3	72.5	71.2	71.0	76.3	92.9	1228.5	1128.1
02:00	68.6	72.0	75.0	93.8	72.8	71.4	71.3	77.0	95.9	1248.1	1111.2
02:15	68.6	72.3	75.9	97.3	73.1	71.7	71.6	77.5	98.0	1270.4	1157.4
02:30	68.6	72.9	76.7	100.1	73.5	71.9	71.9	78.2	100.5	1267.3	1168.4
02:45	68.6	73.4	77.6	102.9	74.0	72.2	72.3	79.1	103.0	1260.1	1175.6
03:00	68.7	74.3	78.4	105.2	74.7	72.6	72.8	80.3	105.6	1276.3	1185.3
03:15	68.7	75.0	79.1	107.4	75.3	73.1	73.2	81.3	107.8	1300.6	1186.6
03:30	68.7	75.4	79.9	109.6	75.8	73.5	73.7	82.2	109.6	1304.6	1189.1
03:45	68.7	76.1	80.6	111.8	76.2	73.8	74.2	82.9	111.6	1326.1	1209.8
04:00	68.7	76.7	81.3	113.6	76.5	74.1	74.6	83.5	113.1	1326.3	1213.7
04:15	68.7	77.4	82.1	115.8	76.8	74.4	75.0	84.0	114.8	1320.6	1226.4
04:30	68.8	78.3	82.9	117.9	77.2	74.6	75.5	84.6	117.0	1304.1	1262.1
04:45	68.8	78.9	83.6	120.1	77.5	74.9	75.9	85.2	118.9	1341.2	1249.8
05:00	68.8	79.3	84.2	122.0	77.8	75.2	76.4	85.8	121.1	1351.4	1288.6
05:15	68.8	80.1	84.8	124.0	78.4	75.5	76.9	86.5	123.0	1369.5	1264.6
05:30	68.8	81.0	85.8	127.1	79.2	76.0	77.5	87.6	126.7	1360.8	1309.8
05:45	68.8	81.6	86.9	130.8	79.7	76.6	78.1	88.5	130.0	1409.1	1316.9
06:00	68.8	82.2	88.0	134.0	80.2	77.3	78.6	89.3	133.6	1380.6	1321.6
06:15	68.9	83.2	89.1	137.8	80.6	77.9	79.2	89.9	137.5	1409.8	1328.4
06:30	68.8	83.9	90.3	143.0	80.7	78.4	79.7	90.0	140.9	1402.5	1337.8
06:45	68.9	84.9	91.5	146.8	81.2	79.0	80.2	90.8	146.3	1408.3	1339.6
07:00	68.9	86.0	92.6	150.1	81.7	79.6	80.8	91.5	151.2	1392.1	1361.9
07:15	68.9	86.8	93.4	152.7	82.3	80.3	81.4	92.3	155.3	1403.0	1357.6
07:30	68.9	88.1	94.3	156.6	82.7	81.0	82.0	93.0	158.7	1409.7	1352.9
07:45	69.0	89.6	95.1	160.4	83.1	81.7	82.6	93.6	161.9	1411.6	1360.4
08:00	69.0	91.0	96.2	163.6	83.5	82.4	83.2	94.2	165.1	1441.3	1336.4
08:15	69.0	92.0	97.3	167.2	84.1	83.1	83.9	94.9	167.8	1420.6	1355.8
08:30	69.0	92.7	98.3	170.2	84.5	83.9	84.7	95.5	170.6	1428.7	1361.1
08:45	69.1	94.0	99.1	173.0	84.9	84.9	85.5	96.2	173.4	1442.1	1349.9
09:00	69.1	95.0	100.0	176.4	85.3	85.9	86.3	96.8	176.3	1424.0	1344.6
09:15	69.2	95.9	100.9	179.8	85.7	86.8	87.1	97.3	178.2	1431.1	1369.7
09:30	69.3	96.9	101.6	183.4	86.3	87.7	88.0	98.0	180.2	1437.6	1379.4
09:45	69.3	97.9	102.6	186.7	86.8	88.8	89.0	98.6	182.4	1435.0	1366.5

Time (Min:Sec)	T/C 32	T/C 33	T/C 34	T/C 35	T/C 36	T/C 37	T/C 38	T/C 39	T/C 40	Room T/C 41	Room T/C 42
10:00	69.3	98.9	103.6	189.5	87.3	89.8	90.1	99.2	184.9	1433.2	1350.7
10:15	69.4	99.9	104.5	192.9	87.8	90.8	91.2	99.8	186.8	1476.9	1417.1
10:30	69.4	100.9	105.2	196.4	88.3	91.9	92.2	100.4	188.5	1529.9	1501.6
10:45	69.4	102.0	106.1	199.6	88.7	93.0	93.3	101.0	191.4	1581.3	1520.9
11:00	69.5	103.4	107.3	202.5	89.2	94.1	94.5	101.8	194.7	1601.2	1530.9
11:15	69.5	104.4	108.2	205.2	89.7	95.2	95.5	102.3	197.6	1596.1	1534.1
11:30	69.6	105.6	109.2	208.2	90.0	96.5	96.6	103.0	200.5	1612.9	1554.8
11:45	69.6	106.8	110.4	211.0	90.5	97.8	98.0	103.7	203.1	1609.6	1566.6
12:00	69.6	107.6	111.2	214.5	91.0	99.2	99.4	104.5	205.8	1622.1	1596.3
12:15	69.6	108.3	111.7	217.1	91.5	100.6	100.8	105.2	209.0	1603.5	1607.0
12:30	69.6	109.3	112.0	219.2	92.1	102.0	102.2	105.7	212.0	1654.8	1582.8
12:45	69.8	110.3	112.7	222.7	92.6	103.2	103.5	106.5	214.1	1643.1	1604.9
13:00	69.7	111.1	113.8	225.4	93.3	104.4	104.6	107.1	216.8	1645.2	1612.3
13:15	69.8	112.2	114.5	227.6	93.9	105.5	105.6	107.7	219.7	1658.6	1608.0
13:30	69.8	113.1	115.7	229.3	94.6	106.4	106.8	108.4	221.9	1650.5	1577.0
13:45	69.9	114.1	116.7	231.5	95.3	107.4	107.7	109.0	224.2	1656.9	1606.5
14:00	70.0	115.6	117.8	233.9	95.9	108.2	108.7	109.6	226.6	1635.6	1618.1
14:15	70.0	117.1	118.8	235.4	96.5	109.1	109.8	110.1	228.9	1653.4	1633.0
14:30	70.0	118.3	119.2	236.8	97.1	110.0	111.0	110.8	231.5	1646.7	1616.2
14:45	70.0	119.6	119.7	239.0	97.7	110.9	112.2	111.4	233.4	1699.2	1609.4
15:00	70.1	120.5	120.3	241.7	98.2	111.9	113.4	112.1	234.5	1637.3	1626.5
15:15	70.1	121.5	120.9	243.1	98.8	113.0	114.7	112.7	236.4	1659.0	1639.2
15:30	70.1	122.4	121.1	244.7	99.3	114.0	116.1	113.3	238.5	1664.0	1681.2
15:45	70.2	123.4	121.8	247.0	99.7	115.1	117.9	113.9	240.7	1664.0	1676.4
16:00	70.3	125.7	122.7	249.9	100.6	116.3	119.8	114.5	243.2	1679.1	1636.0
16:15	70.3	129.4	123.7	253.1	101.3	117.7	122.1	115.2	245.0	1669.6	1631.8
16:30	70.4	131.7	125.2	254.6	102.0	119.3	124.7	116.0	247.5	1666.4	1679.3
16:45	70.5	134.4	126.2	255.2	102.2	121.2	127.4	116.5	249.5	1676.6	1693.6
17:00	70.6	135.8	127.5	256.0	102.7	123.3	130.2	117.3	252.0	1667.0	1711.4
17:15	70.6	135.2	127.9	255.9	103.4	125.5	133.0	118.0	254.7	1682.4	1668.9
17:30	70.7	135.1	128.6	256.9	103.7	127.6	135.3	118.5	257.6	1662.6	1713.3
17:45	70.7	136.5	129.6	258.3	104.6	130.0	137.6	119.1	259.6	1687.0	1684.7
18:00	70.8	137.9	130.3	260.6	105.4	132.6	139.7	119.9	261.6	1702.6	1680.5
18:15	70.9	139.6	131.3	262.9	106.6	134.9	141.7	120.5	263.6	1699.4	1676.1
18:30	70.9	141.4	132.6	265.0	107.9	136.9	143.4	121.2	265.7	1697.7	1661.6
18:45	71.0	142.7	133.7	267.3	109.1	138.8	144.8	122.1	267.6	1711.7	1678.8
19:00	71.0	145.0	134.9	269.5	110.0	140.6	146.1	122.7	269.2	1706.4	1661.0
19:15	71.1	146.0	136.5	271.8	111.3	142.2	147.2	123.7	270.4	1701.7	1674.9
19:30	71.2	147.2	136.9	274.0	112.7	143.6	148.4	124.5	271.6	1723.8	1660.8
19:45	71.2	150.9	138.2	276.6	162.9	189.2	149.1	126.4	272.6	1736.7	1680.1

Time (Min:Sec)	T/C 32	T/C 33	T/C 34	T/C 35	T/C 36	T/C 37	T/C 38	T/C 39	T/C 40	Room T/C 41	Room T/C 42
20:00	71.3	152.2	138.8	279.2	138.1	162.5	148.5	126.3	273.8	1698.3	1679.7
20:15	71.3	154.8	139.8	280.8	129.7	153.9	148.4	126.7	275.2	1717.4	1671.2
20:30	71.4	156.2	140.3	283.9	126.5	151.2	148.3	127.4	276.4	1715.1	1670.7
20:45	71.5	158.9	141.2	287.0	124.5	150.5	148.7	128.1	277.8	1706.2	1672.2
21:00	71.6	159.6	141.7	288.5	123.8	150.7	148.8	129.0	279.9	1714.6	1701.8
21:15	71.6	161.7	142.6	290.3	123.8	151.1	148.8	129.8	282.2	1717.7	1671.7
21:30	71.7	163.4	143.2	291.9	124.2	151.7	148.8	130.4	283.7	1710.5	1715.5
21:45	71.7	167.0	143.6	293.9	124.8	152.1	148.6	131.0	285.3	1704.0	1691.0
22:00	71.8	169.0	144.3	297.0	125.7	152.6	148.3	131.7	286.3	1714.6	1691.8
22:15	71.8	170.8	145.0	299.2	126.2	153.1	147.9	132.5	288.1	1729.3	1698.9
22:30	71.9	170.6	146.2	300.5	127.0	153.5	147.7	133.1	289.8	1701.6	1729.0
22:45	71.9	172.6	146.9	301.3	127.2	153.9	147.6	133.9	291.3	1739.7	1706.2
23:00	72.0	173.7	147.4	303.1	127.7	154.2	147.3	134.8	292.6	1722.5	1706.0
23:15	72.0	176.3	148.6	305.2	128.2	154.6	147.3	135.5	293.9	1751.8	1694.5
23:30	72.1	177.5	149.4	307.7	128.4	155.0	147.2	136.1	295.5	1751.1	1721.4
23:45	72.2	178.0	150.0	308.5	128.8	155.3	147.1	136.7	297.2	1751.3	1744.7
24:00	72.3	181.5	150.8	309.6	129.3	155.6	147.1	137.4	298.7	1714.0	1721.3
24:15	72.4	182.0	151.8	311.1	129.7	155.8	147.2	138.2	300.1	1742.5	1743.0
24:30	72.4	184.1	152.8	312.3	130.1	155.9	147.2	138.8	301.7	1735.8	1741.9
24:45	72.5	184.2	154.3	313.8	130.5	156.1	147.4	139.5	303.2	1756.9	1723.0
25:00	72.5	182.4	155.1	314.9	130.7	156.2	147.5	139.8	304.5	1749.7	1723.8
25:15	72.6	183.1	155.9	316.3	131.1	156.3	147.7	140.2	305.3	1776.4	1728.1
25:30	72.6	183.9	156.5	317.9	131.4	156.4	147.8	140.7	307.1	1799.7	1739.4
25:45	72.7	180.5	156.6	318.5	131.9	156.5	148.1	141.4	308.9	1810.2	1803.2
26:00	72.8	183.5	156.9	319.1	132.3	156.6	148.5	142.0	310.2	1793.5	1794.9
26:15	72.9	183.2	157.5	321.2	132.9	156.8	148.8	142.7	311.8	1806.6	1784.1
26:30	73.0	183.6	158.6	323.8	133.5	157.1	149.2	143.3	314.3	1782.4	1786.1
26:45	73.0	184.5	159.3	325.4	133.7	157.4	149.7	143.8	316.3	1820.1	1772.1
27:00	73.1	185.6	159.5	327.6	134.7	157.7	150.1	144.5	318.7	1795.2	1810.0
27:15	73.1	186.9	160.3	330.3	135.2	157.9	150.7	145.1	321.7	1841.9	1785.5
27:30	73.2	183.9	161.8	334.2	135.5	158.2	151.2	145.6	323.8	1828.1	1821.7
27:45	73.2	183.1	162.8	336.0	136.0	158.4	151.6	146.0	325.4	1815.9	1790.3
28:00	73.3	184.9	163.1	337.5	136.3	158.5	152.1	146.6	326.5	1813.2	1802.4
28:15	73.4	184.8	162.9	339.2	137.1	158.6	152.5	147.1	327.8	1791.7	1836.7
28:30	73.4	188.0	163.4	341.1	137.2	158.7	153.0	147.5	330.3	1850.7	1814.4
28:45	73.5	187.0	164.4	342.7	137.7	159.0	153.5	148.2	331.5	1821.4	1816.8
29:00	73.6	185.6	165.1	343.4	138.3	159.6	153.9	148.6	333.7	1808.0	1815.4
29:15	73.7	188.5	165.4	344.1	138.9	160.1	154.3	149.3	334.6	1837.9	1793.0
29:30	73.7	190.1	166.3	347.4	139.5	160.6	154.7	149.7	335.6	1845.0	1781.7
29:45	73.8	188.1	167.3	348.3	140.3	161.2	155.1	150.1	336.8	1825.7	1840.4

Time (Min:Sec)	Room T/C 43	Room T/C 44	Room T/C 45	T/C 46	T/ C 47	T/C 48	T/C 49	T/C 50	T/C 51	T/C 52	T/C 53
00:00	131.5	139.3	130.1	123.6	70.6	117.9	71.2	70.6	70.9	71.3	70.7
00:15	513.7	471.8	346.4	436.7	70.9	273.4	71.1	70.6	70.8	71.2	70.7
00:30	933.8	880.0	716.7	846.9	71.5	615.9	71.1	70.6	70.8	71.3	70.7
00:45	1037.6	964.8	845.9	985.3	73.0	801.4	71.1	70.6	70.8	71.3	70.7
01:00	1092.8	991.5	915.1	1068.8	74.1	868.9	71.1	70.5	70.8	71.3	70.6
01:15	1117.2	1016.0	950.8	1098.7	74.7	905.3	71.1	70.5	70.8	71.3	70.6
01:30	1137.1	1028.7	984.8	1124.3	75.1	940.8	71.1	70.5	70.7	71.2	70.6
01:45	1161.9	1032.9	1023.3	1201.8	75.7	973.5	71.1	70.6	70.7	71.3	70.7
02:00	1169.3	1069.2	1022.9	1210.8	72.4	1013.3	71.1	70.5	70.7	71.2	70.6
02:15	1172.9	1068.6	1033.5	1186.8	72.1	1040.8	71.1	70.5	70.8	71.2	70.7
02:30	1189.5	1080.8	1056.8	1191.9	71.9	1120.2	71.1	70.5	70.9	71.3	70.7
02:45	1211.9	1085.9	1083.7	1216.9	71.7	1137.7	71.2	70.5	71.0	71.3	70.8
03:00	1211.4	1086.9	1091.9	1220.3	71.5	1112.2	71.2	70.6	70.9	71.3	70.8
03:15	1218.9	1094.4	1102.3	1229.1	71.4	1107.4	71.1	70.6	70.9	71.3	70.9
03:30	1226.2	1101.0	1094.3	1236.1	71.2	1118.9	71.2	70.6	71.0	71.4	70.9
03:45	1230.1	1112.0	1112.4	1246.5	71.1	1136.2	71.2	70.7	71.0	71.5	71.0
04:00	1247.0	1124.1	1113.2	1259.7	71.0	1141.1	71.3	70.7	71.1	71.5	71.0
04:15	1260.6	1134.8	1121.3	1253.1	70.7	1153.6	71.4	70.8	71.1	71.6	71.0
04:30	1255.8	1130.8	1139.6	1270.5	70.7	1174.8	71.4	70.8	71.0	71.7	71.1
04:45	1270.3	1151.9	1128.8	1287.2	70.7	1178.9	71.3	70.9	71.1	71.7	71.1
05:00	1280.1	1163.2	1144.9	1285.4	70.7	1196.1	71.3	70.9	71.2	71.7	71.1
05:15	1289.7	1157.5	1166.5	1307.3	70.7	1207.7	71.4	70.9	71.2	71.7	71.2
05:30	1317.3	1210.6	1164.5	1333.7	70.7	1221.4	71.4	70.9	71.3	71.8	71.2
05:45	1328.1	1217.1	1171.5	1334.8	70.7	1232.6	71.4	71.0	71.2	71.8	71.2
06:00	1342.3	1241.2	1180.2	1356.6	70.7	1241.4	71.4	71.0	71.2	71.8	71.3
06:15	1351.6	1231.7	1188.4	1360.2	70.8	1254.8	71.4	71.1	71.2	71.9	71.4
06:30	1345.3	1244.3	1194.4	1357.2	70.6	1249.3	71.4	71.1	71.2	71.8	71.6
06:45	1368.3	1231.9	1212.6	1360.9	70.6	1254.0	71.5	71.1	71.3	71.9	71.6
07:00	1363.9	1215.4	1222.4	1357.3	70.6	1260.5	71.4	71.1	71.3	71.9	71.7
07:15	1355.8	1222.2	1221.9	1373.8	70.6	1269.3	71.4	71.1	71.3	72.0	71.8
07:30	1362.8	1240.6	1220.0	1368.2	70.7	1271.5	71.5	71.1	71.3	72.1	71.8
07:45	1391.6	1246.5	1221.8	1368.6	70.7	1267.1	71.6	71.1	71.4	72.3	71.8
08:00	1386.3	1246.4	1225.4	1368.1	70.7	1259.7	71.7	71.2	71.4	72.2	71.9
08:15	1368.7	1262.3	1223.3	1363.6	70.7	1268.0	71.5	71.2	71.5	72.2	71.9
08:30	1380.9	1256.3	1230.7	1358.5	70.8	1266.3	71.5	71.2	71.7	72.2	72.0
08:45	1368.2	1268.7	1219.0	1381.4	70.8	1268.1	71.8	71.3	71.5	72.3	72.0
09:00	1363.7	1278.1	1219.3	1369.7	70.8	1260.3	71.6	71.3	71.6	72.3	72.1
09:15	1388.3	1262.8	1241.2	1376.6	70.8	1278.7	71.5	71.3	71.7	72.4	72.1
09:30	1387.9	1264.8	1246.8	1387.5	70.8	1289.4	71.6	71.3	71.7	72.5	72.2

Time (Min:Sec)	Room T/C 43	Room T/C 44	Room T/C 45	T/C 46	T/ C 47	T/C 48	T/C 49	T/C 50	T/C 51	T/C 52	T/C 53
09:45	1376.4	1277.0	1238.0	1401.0	70.8	1286.2	71.6	71.4	71.8	72.6	72.3
10:00	1384.9	1292.7	1228.7	1397.6	70.9	1276.1	71.8	71.4	71.8	72.7	72.4
10:15	1410.6	1297.2	1263.7	1416.7	70.9	1294.5	72.0	71.5	71.9	72.9	72.6
10:30	1505.6	1359.4	1324.4	1511.6	70.9	1367.4	72.0	71.6	71.9	72.8	72.6
10:45	1540.8	1387.6	1354.4	1536.0	71.0	1413.8	71.9	71.6	71.9	72.9	72.7
11:00	1535.5	1414.9	1358.4	1550.0	71.0	1441.8	72.1	71.7	72.0	72.9	72.8
11:15	1551.6	1417.9	1372.6	1570.0	71.1	1435.9	72.3	71.8	72.0	73.0	72.8
11:30	1568.9	1438.7	1381.2	1567.1	71.1	1464.7	72.3	71.8	72.1	73.0	72.9
11:45	1583.9	1432.3	1402.3	1574.7	71.2	1473.8	72.3	71.8	72.1	73.0	73.0
12:00	1603.9	1418.2	1422.8	1586.5	71.3	1483.5	72.4	71.9	72.2	73.1	73.1
12:15	1598.8	1432.0	1421.1	1590.2	71.4	1501.7	72.3	72.0	72.3	73.2	73.2
12:30	1602.4	1446.1	1422.6	1606.2	71.5	1502.7	72.4	72.1	72.4	73.3	73.3
12:45	1623.2	1457.0	1428.6	1614.1	71.6	1507.9	72.4	72.1	72.3	73.8	73.5
13:00	1622.7	1481.1	1428.2	1618.5	71.8	1520.4	72.4	72.2	72.4	73.9	73.6
13:15	1630.2	1457.5	1442.6	1615.3	71.9	1511.1	72.5	72.2	72.5	73.9	73.7
13:30	1609.5	1484.7	1430.3	1612.5	72.1	1516.8	72.3	72.3	72.5	73.9	74.0
13:45	1641.2	1483.0	1442.4	1630.8	72.2	1530.9	72.6	72.4	72.7	73.8	74.3
14:00	1643.3	1477.5	1457.4	1626.3	72.3	1543.0	72.5	72.4	72.7	73.8	74.3
14:15	1630.2	1463.1	1460.6	1631.7	72.5	1532.2	72.6	72.5	72.7	74.0	74.3
14:30	1640.7	1482.9	1455.9	1637.0	72.6	1546.4	72.7	72.5	73.0	74.1	74.4
14:45	1637.8	1497.5	1464.7	1655.5	72.7	1542.8	72.7	72.5	73.0	74.1	74.7
15:00	1635.8	1479.6	1465.6	1627.9	72.8	1561.2	72.8	72.6	72.9	74.1	74.9
15:15	1637.0	1481.3	1473.2	1670.8	73.0	1568.8	72.8	72.7	72.9	74.4	74.8
15:30	1642.5	1472.8	1491.0	1652.2	73.2	1567.2	72.8	72.8	73.0	74.3	74.9
15:45	1677.6	1482.6	1509.4	1673.8	73.4	1571.0	72.9	72.9	72.9	74.4	75.1
16:00	1655.9	1519.6	1485.8	1628.1	73.6	1570.5	73.1	73.0	72.9	74.6	75.1
16:15	1645.2	1516.0	1483.4	1646.9	73.8	1569.4	73.2	73.0	73.2	74.9	75.2
16:30	1652.0	1492.9	1499.9	1681.4	74.1	1575.3	73.3	73.1	73.2	75.1	75.4
16:45	1667.5	1489.1	1504.9	1664.8	74.4	1572.1	73.2	73.1	73.3	75.1	75.6
17:00	1676.1	1492.2	1517.8	1682.4	74.7	1589.9	73.4	73.1	73.4	75.3	75.7
17:15	1675.7	1496.0	1510.9	1677.6	75.0	1575.6	73.3	73.2	73.5	75.3	76.0
17:30	1660.3	1496.9	1524.3	1671.5	75.3	1593.0	73.4	73.4	73.6	75.3	76.1
17:45	1681.2	1507.5	1516.9	1695.2	75.6	1592.6	73.6	73.5	73.6	75.6	76.3
18:00	1673.9	1516.9	1521.4	1696.0	75.9	1585.9	73.7	73.5	74.1	75.8	76.5
18:15	1682.1	1529.9	1516.9	1668.9	76.2	1607.1	73.7	73.5	74.9	76.1	76.8
18:30	1692.8	1529.9	1514.7	1680.3	76.6	1597.3	73.7	73.5	75.0	76.1	76.8
18:45	1673.0	1536.0	1513.9	1682.3	77.0	1610.1	73.9	73.6	75.8	76.2	77.1
19:00	1696.0	1531.8	1523.3	1699.8	77.7	1596.5	73.9	73.8	75.2	76.4	77.2
19:15	1686.8	1529.3	1523.9	1699.4	78.5	1606.3	74.1	73.9	75.5	76.1	77.4
19:30	1678.5	1533.5	1524.1	1695.9	79.2	1599.9	74.1	74.1	74.9	76.6	77.3

Time (Min:Sec)	Room T/C 43	Room T/C 44	Room T/C 45	T/C 46	T/ C 47	T/C 48	T/C 49	T/C 50	T/C 51	T/C 52	T/C 53
19:45	1698.0	1559.6	1525.8	1719.2	79.7	1617.7	74.3	74.3	75.8	76.4	77.5
20:00	1700.4	1540.8	1528.5	1716.2	80.4	1618.6	74.2	74.4	74.8	76.7	77.6
20:15	1695.1	1542.3	1524.2	1697.4	80.8	1617.3	74.4	74.5	74.9	76.6	77.7
20:30	1691.4	1547.4	1527.9	1681.5	81.1	1621.6	74.5	74.7	74.3	77.3	77.9
20:45	1696.9	1539.1	1533.4	1698.4	81.2	1626.7	74.6	74.8	74.2	77.1	78.0
21:00	1709.6	1538.7	1546.8	1705.6	81.1	1631.9	74.7	74.9	75.0	77.1	78.1
21:15	1705.2	1551.8	1535.4	1707.8	80.9	1619.8	74.5	75.4	74.4	77.7	78.4
21:30	1712.4	1535.1	1552.6	1725.3	80.6	1634.5	74.7	75.5	74.8	77.7	78.2
21:45	1709.6	1547.8	1554.7	1754.3	80.2	1626.0	74.8	75.4	74.7	77.5	78.5
22:00	1713.4	1563.6	1541.3	1705.2	79.9	1644.0	74.9	76.4	75.0	77.2	78.7
22:15	1701.0	1555.8	1547.4	1729.3	79.6	1640.4	75.2	76.7	75.1	77.4	79.5
22:30	1715.1	1538.9	1560.2	1731.9	80.1	1644.0	75.0	76.5	76.0	77.4	79.8
22:45	1697.5	1555.7	1551.8	1749.9	79.1	1633.0	74.9	76.1	75.5	77.6	79.8
23:00	1715.0	1569.8	1550.9	1729.1	78.9	1640.6	75.2	75.7	75.4	77.8	79.6
23:15	1714.1	1572.0	1549.6	1731.8	78.7	1634.8	75.3	76.0	75.3	77.4	79.4
23:30	1721.7	1572.8	1556.7	1728.8	78.6	1651.2	75.3	75.6	75.4	77.8	79.6
23:45	1726.6	1552.8	1580.7	1747.7	78.5	1650.2	75.6	75.5	75.7	78.0	79.7
24:00	1726.1	1561.6	1564.5	1739.5	78.6	1648.6	75.7	75.7	75.9	78.2	79.6
24:15	1718.4	1553.6	1577.2	1746.0	78.6	1655.5	75.5	75.7	75.9	78.1	79.6
24:30	1728.5	1563.0	1576.3	1756.1	78.9	1666.7	75.3	75.9	75.9	78.1	80.1
24:45	1730.7	1576.1	1575.4	1763.3	79.1	1661.4	75.4	76.2	76.2	78.1	79.4
25:00	1724.7	1569.5	1570.4	1752.6	79.4	1668.4	75.8	76.6	76.2	78.3	79.5
25:15	1732.7	1598.3	1573.5	1725.3	79.6	1665.6	76.1	77.0	76.2	78.3	79.7
25:30	1759.8	1602.1	1592.7	1790.4	80.1	1699.2	76.3	77.2	76.4	78.6	79.7
25:45	1775.2	1596.6	1613.7	1808.9	80.5	1714.0	76.2	77.3	76.6	78.5	79.9
26:00	1779.6	1612.5	1615.5	1829.3	81.2	1726.0	76.4	77.3	76.6	78.6	80.5
26:15	1770.0	1611.8	1615.9	1791.9	81.6	1719.8	76.2	77.5	76.8	78.5	80.7
26:30	1778.3	1607.4	1618.4	1829.2	82.2	1731.3	75.9	77.5	76.8	78.7	81.4
26:45	1773.3	1620.9	1615.1	1804.1	82.8	1718.8	76.3	78.0	77.0	78.4	80.6
27:00	1789.6	1616.2	1626.7	1838.4	83.4	1737.5	76.5	78.5	77.1	78.3	80.7
27:15	1786.0	1634.9	1623.0	1816.0	83.8	1749.4	76.9	78.4	77.4	79.0	81.0
27:30	1803.7	1634.9	1634.8	1819.5	84.8	1739.2	76.7	80.7	77.4	79.2	81.2
27:45	1787.6	1632.4	1627.7	1814.3	85.2	1725.8	76.7	78.7	77.5	79.3	81.9
28:00	1790.8	1639.0	1636.0	1822.2	85.6	1736.7	76.7	78.9	77.4	79.2	81.5
28:15	1810.2	1633.3	1642.9	1813.8	86.4	1773.4	77.3	80.4	77.6	80.3	81.9
28:30	1793.7	1646.6	1641.8	1831.1	87.9	1767.4	77.1	80.1	77.7	79.8	82.0
28:45	1798.2	1636.4	1640.2	1856.0	88.8	1749.1	77.3	79.6	77.9	79.7	82.3
29:00	1789.6	1624.3	1640.6	1849.1	90.6	1771.2	77.2	79.6	77.9	79.6	83.3
29:15	1785.0	1636.6	1638.3	1828.8	94.1	1745.4	77.3	79.7	78.1	79.6	82.6
29:30	1789.1	1639.5	1634.1	1849.0	100.4	1754.2	77.7	80.2	78.4	80.0	83.7

Time (Min:Sec)	Room T/C 43	Room T/C 44	Room T/C 45	T/C 46	T/ C 47	T/C 48	T/C 49	T/C 50	T/C 51	T/C 52	T/C 53
29:45	1797.0	1628.7	1652.9	1855.2	109.2	1775.8	78.1	80.2	78.9	80.5	83.1

Time (Min:Sec)	T/C 54	T/C 55	T/C 56	T/C 57	T/C 58	T/C 59	T/C 60	T/C 61	T/C 62	T/C 63	T/C 64
00:00	70.5	69.3	69.1	70.0	69.4	70.3	70.2	71.3	69.7	70.5	69.0
00:15	70.4	69.4	69.1	70.0	69.4	70.4	70.2	71.4	69.7	70.5	69.0
00:30	70.4	69.4	69.1	70.0	69.3	70.4	70.2	71.4	69.7	70.5	68.9
00:45	70.4	69.4	69.1	70.0	69.4	70.4	70.2	71.4	69.7	70.6	68.9
01:00	70.5	69.4	69.1	70.1	69.4	70.4	70.2	71.6	69.7	70.6	68.9
01:15	70.3	69.4	69.1	70.1	69.4	70.4	70.3	71.7	69.7	70.6	68.9
01:30	70.3	69.4	69.1	70.1	69.3	70.5	70.3	71.8	69.7	70.6	68.9
01:45	70.3	69.4	69.1	70.1	69.4	70.5	70.3	72.0	69.7	70.6	68.9
02:00	70.3	69.4	69.1	70.1	69.4	70.5	70.3	72.1	69.7	70.6	68.9
02:15	70.4	69.4	69.1	70.1	69.4	70.6	70.4	72.3	69.7	70.6	68.9
02:30	70.5	69.4	69.1	70.1	69.5	70.6	70.4	72.6	69.7	70.6	69.0
02:45	70.5	69.4	69.1	70.2	69.4	70.7	70.5	72.8	69.7	70.6	69.0
03:00	70.6	69.4	69.1	70.2	69.4	70.7	70.6	73.1	69.7	70.7	69.0
03:15	70.6	69.4	69.2	70.3	69.4	70.8	70.7	73.4	69.8	70.7	69.0
03:30	70.6	69.4	69.2	70.3	69.5	70.9	70.8	73.7	69.7	70.7	69.1
03:45	70.7	69.4	69.2	70.4	69.5	71.0	70.9	74.0	69.8	70.8	69.1
04:00	70.7	69.5	69.2	70.4	69.4	71.1	71.0	74.4	69.7	70.8	69.2
04:15	70.8	69.5	69.2	70.5	69.5	71.2	71.1	74.8	69.8	70.8	69.3
04:30	70.8	69.5	69.3	70.5	69.5	71.4	71.3	75.3	69.8	70.8	69.3
04:45	70.8	69.5	69.3	70.6	69.6	71.5	71.4	75.6	69.8	70.9	69.4
05:00	70.9	69.5	69.3	70.7	69.5	71.7	71.6	76.0	69.8	70.9	69.5
05:15	71.0	69.5	69.4	70.8	69.6	71.9	71.8	76.5	69.8	71.0	69.6
05:30	70.9	69.5	69.4	70.8	69.6	72.0	72.0	76.8	69.9	71.0	69.7
05:45	71.0	69.5	69.4	70.9	69.6	72.2	72.3	77.0	69.9	71.1	69.8
06:00	71.0	69.6	69.5	71.0	69.7	72.4	72.5	77.5	69.9	71.1	69.9
06:15	71.1	69.6	69.6	71.1	69.7	72.6	72.7	78.0	69.9	71.2	70.0
06:30	71.5	69.5	69.6	71.2	69.8	72.8	73.1	78.8	70.0	71.0	70.6
06:45	71.6	69.6	69.7	71.3	69.8	73.1	73.4	79.3	70.1	71.1	70.8
07:00	71.7	69.6	69.8	71.4	69.9	73.4	73.7	80.1	70.1	71.2	70.9
07:15	71.7	69.6	69.8	71.6	69.9	73.7	74.0	80.4	70.1	71.3	71.0
07:30	71.8	69.7	69.9	71.7	69.9	74.0	74.3	81.0	70.2	71.4	71.2
07:45	71.8	69.7	70.0	71.9	69.9	74.3	74.7	81.8	70.2	71.5	71.4
08:00	71.9	69.8	70.1	72.0	70.0	74.7	75.1	82.8	70.2	71.6	71.6
08:15	72.0	69.8	70.2	72.2	70.0	75.0	75.6	83.7	70.3	71.7	71.9
08:30	72.0	69.8	70.3	72.4	70.1	75.4	76.0	84.7	70.3	71.9	72.1
08:45	72.2	69.9	70.4	72.6	70.2	75.8	76.5	85.4	70.4	72.0	72.4
09:00	72.2	70.0	70.5	72.8	70.2	76.2	77.0	86.8	70.4	72.1	72.8
09:15	72.1	70.0	70.7	73.0	70.3	76.6	77.6	87.7	70.4	72.3	73.1
09:30	72.2	70.1	70.8	73.2	70.4	77.1	78.2	88.7	70.5	72.4	73.5
09:45	72.2	70.1	71.0	73.4	70.5	77.5	78.8	89.6	70.5	72.5	73.9

Time (Min:Sec)	T/C 54	T/C 55	T/C 56	T/C 57	T/C 58	T/C 59	T/C 60	T/C 61	T/C 62	T/C 63	T/C 64
10:00	72.3	70.2	71.3	73.7	70.5	78.0	79.5	90.4	70.5	72.7	74.4
10:15	72.5	70.3	71.5	73.9	70.6	78.4	80.1	91.1	70.6	72.9	74.8
10:30	72.8	70.4	71.6	74.2	70.6	79.0	80.9	91.8	70.7	73.0	75.4
10:45	72.6	70.5	71.9	74.5	70.8	79.6	81.6	92.5	70.7	73.3	75.9
11:00	72.7	70.6	72.2	74.7	70.9	80.1	82.4	93.9	70.7	73.4	76.5
11:15	72.7	70.7	72.5	75.0	70.9	80.7	83.2	94.9	70.8	73.7	77.1
11:30	72.8	70.8	72.9	75.3	71.0	81.3	84.1	95.5	70.9	73.9	77.8
11:45	72.8	70.9	73.3	75.6	71.2	81.9	85.0	96.7	71.0	74.1	78.4
12:00	72.8	71.1	73.7	75.9	71.2	82.6	86.0	97.9	71.1	74.4	79.1
12:15	72.8	71.2	74.2	76.3	71.3	83.3	87.0	99.7	71.1	74.6	79.9
12:30	72.8	71.3	74.6	76.7	71.5	84.0	88.0	101.2	71.2	75.0	80.7
12:45	73.0	71.4	75.2	77.0	71.5	84.7	89.0	102.6	71.2	75.3	81.5
13:00	73.2	71.6	75.7	77.4	71.7	85.6	90.2	103.1	71.3	75.6	82.4
13:15	73.3	71.7	76.3	77.7	71.8	86.1	91.3	104.2	71.4	75.9	83.2
13:30	73.3	71.9	76.9	78.1	71.9	87.0	92.5	105.9	71.6	76.2	84.1
13:45	73.4	72.1	77.6	78.5	72.1	87.7	93.7	106.2	71.7	76.6	85.0
14:00	73.4	72.2	78.3	78.9	72.3	88.4	95.0	107.2	71.8	77.0	85.9
14:15	73.5	72.4	78.9	79.3	72.6	89.3	96.3	108.0	71.9	77.3	86.8
14:30	73.6	72.6	79.7	79.8	72.7	90.3	97.6	108.6	72.0	77.8	87.7
14:45	73.8	72.9	80.5	80.2	72.9	91.1	99.0	108.9	72.2	78.2	88.6
15:00	73.9	73.1	81.2	80.7	73.2	92.0	100.4	110.1	72.3	78.6	89.6
15:15	73.9	72.5	82.1	81.2	73.4	93.2	101.9	111.5	72.5	79.1	90.5
15:30	74.0	72.9	82.9	81.6	73.6	94.1	103.4	112.2	72.6	79.5	91.5
15:45	74.1	73.8	83.7	82.2	73.8	95.3	104.9	113.2	72.8	80.0	92.5
16:00	74.3	74.1	84.5	82.7	73.9	96.2	106.5	114.2	72.9	80.5	93.5
16:15	74.6	74.4	85.3	83.2	74.2	97.0	108.1	115.2	73.1	81.0	94.6
16:30	74.8	74.5	86.2	83.8	74.4	98.0	109.8	117.4	73.2	81.5	95.7
16:45	74.9	74.8	87.0	84.4	74.6	99.0	111.5	118.7	73.4	82.1	96.8
17:00	75.1	75.0	87.9	85.1	74.9	100.0	113.3	119.3	73.5	82.7	98.0
17:15	75.3	75.4	88.7	85.9	75.1	101.2	115.1	121.5	73.7	83.3	99.3
17:30	75.4	75.6	89.7	86.7	75.3	102.4	117.0	123.8	73.9	84.0	100.7
17:45	75.3	75.8	90.5	87.5	75.6	103.5	118.9	125.4	74.0	84.7	102.2
18:00	75.5	76.0	91.5	88.3	75.9	104.7	120.8	127.0	74.3	85.4	103.8
18:15	75.5	76.3	92.4	89.1	76.3	105.9	122.8	128.5	74.4	86.2	105.5
18:30	75.8	76.7	93.5	90.0	76.7	107.1	124.8	129.7	74.7	87.0	107.3
18:45	75.7	77.4	94.5	90.9	77.0	108.3	126.8	130.8	74.8	87.9	109.0
19:00	75.9	77.7	95.4	91.8	77.3	109.5	128.9	132.5	74.9	88.8	110.8
19:15	76.1	78.1	96.5	92.8	77.7	110.7	130.9	134.2	75.2	89.7	112.6
19:30	76.2	78.6	97.4	93.7	78.1	111.9	133.0	135.8	75.4	90.6	114.3
19:45	76.4	79.0	98.4	94.7	78.4	113.1	135.1	137.3	75.6	91.3	116.1

Time (Min:Sec)	T/C 54	T/C 55	T/C 56	T/C 57	T/C 58	T/C 59	T/C 60	T/C 61	T/C 62	T/C 63	T/C 64
20:00	76.4	79.3	99.5	95.7	78.9	114.3	137.2	138.8	75.7	92.2	117.4
20:15	76.1	79.7	100.4	96.7	79.3	115.5	139.2	140.3	76.0	93.1	118.0
20:30	76.6	80.0	101.5	97.7	79.7	116.8	141.4	141.9	76.3	94.0	118.5
20:45	76.5	80.2	102.5	98.8	80.2	118.1	143.4	143.4	76.4	94.8	119.1
21:00	76.5	80.5	103.5	99.8	80.6	119.4	145.5	144.9	76.7	95.7	120.0
21:15	77.4	80.7	104.5	100.9	81.1	120.7	147.6	146.4	76.9	96.5	121.2
21:30	77.1	81.1	105.5	102.0	81.5	122.1	149.7	148.1	77.2	97.3	122.5
21:45	77.7	81.4	106.6	103.1	82.1	123.4	151.9	149.5	77.5	98.1	123.8
22:00	77.2	81.5	107.7	104.2	82.7	124.8	154.0	151.1	77.8	98.9	125.0
22:15	77.7	82.0	108.7	105.3	83.1	126.2	156.1	152.5	78.1	99.6	126.2
22:30	77.4	82.2	109.8	106.4	83.7	127.7	158.2	154.0	78.3	100.4	127.3
22:45	77.8	82.4	110.9	107.5	84.2	129.0	160.2	155.5	78.7	101.1	128.3
23:00	78.1	82.7	111.9	108.6	84.8	130.2	162.3	157.1	78.9	101.8	129.4
23:15	78.1	83.0	113.0	109.7	85.3	131.6	164.3	158.6	79.3	102.4	130.3
23:30	77.7	83.3	114.1	110.8	85.9	133.0	166.4	160.0	79.6	103.0	131.2
23:45	77.9	83.5	115.1	111.8	86.5	134.4	168.5	161.5	80.0	103.7	132.0
24:00	78.0	83.9	116.0	112.8	87.1	135.8	170.5	163.0	80.3	104.2	132.8
24:15	77.9	84.2	117.0	113.8	87.8	137.3	172.6	164.3	80.6	104.8	133.6
24:30	78.2	84.5	117.9	114.8	88.4	138.8	174.6	165.7	81.0	105.4	134.2
24:45	78.0	84.8	118.7	115.8	89.0	140.2	176.6	167.0	81.4	106.0	134.8
25:00	77.7	85.3	119.5	116.8	89.7	141.6	178.6	168.4	81.8	106.5	135.4
25:15	77.7	85.4	120.2	117.8	90.4	143.0	180.6	169.8	82.1	107.0	135.8
25:30	77.3	85.9	120.9	118.7	91.1	144.3	182.7	171.2	82.6	107.6	136.3
25:45	77.4	86.2	121.6	119.6	91.8	145.7	184.6	172.5	82.9	108.1	136.7
26:00	78.2	86.7	122.2	120.4	92.4	147.0	186.6	174.0	83.4	108.7	137.2
26:15	78.4	87.1	122.8	121.1	93.2	148.4	188.6	175.3	83.8	109.2	137.8
26:30	78.8	87.4	123.5	121.8	93.9	149.7	190.6	176.7	84.3	109.7	138.5
26:45	78.8	87.9	124.1	122.5	94.6	151.1	192.6	177.9	84.7	110.2	139.1
27:00	78.9	88.4	124.7	123.2	95.3	152.4	194.6	179.2	85.1	110.8	139.7
27:15	78.1	88.8	125.4	124.0	96.0	153.7	196.6	180.6	85.6	111.3	140.3
27:30	78.2	89.1	125.9	124.7	96.7	155.1	198.6	182.1	86.1	111.8	140.8
27:45	79.2	89.6	126.6	125.4	97.4	156.4	200.6	183.5	86.6	112.3	141.3
28:00	79.4	90.0	127.2	126.2	98.2	157.8	202.6	184.9	87.1	112.8	141.6
28:15	79.2	90.5	127.7	126.8	98.9	159.1	204.7	186.0	87.5	113.3	142.0
28:30	79.4	90.8	128.3	127.6	99.6	160.4	206.7	187.2	88.1	113.8	142.3
28:45	80.3	91.2	128.9	128.2	100.4	161.7	208.7	188.5	88.5	114.2	142.6
29:00	80.0	91.6	129.5	128.9	101.1	163.1	210.8	189.8	89.0	114.8	142.9
29:15	79.4	92.0	130.1	129.6	101.9	164.4	212.8	191.6	89.5	115.2	143.3
29:30	79.6	92.4	130.6	130.2	102.6	165.7	214.8	193.2	90.0	115.7	143.7
29:45	80.1	92.8	131.2	130.9	103.4	167.0	216.8	195.2	90.6	116.2	144.0

Time (Min:Sec)	T/C 65	T/C 66	T/C 67
00:00	69.5	68.1	69.2
00:15	69.5	68.1	69.2
00:30	69.5	68.1	69.2
00:45	69.5	68.1	69.2
01:00	69.5	68.1	69.2
01:15	69.5	68.1	69.3
01:30	69.5	68.1	69.3
01:45	69.5	68.1	69.3
02:00	69.5	68.1	69.3
02:15	69.6	68.1	69.3
02:30	69.6	68.1	69.3
02:45	69.6	68.1	69.3
03:00	69.6	68.1	69.3
03:15	69.6	68.1	69.3
03:30	69.6	68.1	69.3
03:45	69.6	68.1	69.3
04:00	69.6	68.1	69.3
04:15	69.6	68.1	69.3
04:30	69.6	68.1	69.3
04:45	69.7	68.1	69.3
05:00	69.7	68.1	69.3
05:15	69.7	68.1	69.3
05:30	69.8	68.1	69.3
05:45	69.8	68.1	69.3
06:00	69.8	68.2	69.3
06:15	69.9	68.2	69.3
06:30	70.0	68.2	69.0
06:45	70.1	68.2	69.0
07:00	70.1	68.2	69.0
07:15	70.2	68.2	69.1
07:30	70.2	68.3	69.1
07:45	70.3	68.3	69.1
08:00	70.3	68.3	69.1
08:15	70.4	68.3	69.1
08:30	70.4	68.3	69.2
08:45	70.6	68.4	69.2
09:00	70.6	68.4	69.2
09:15	70.7	68.4	69.3
09:30	70.8	68.5	69.3

Time (Min:Sec)	T/C 65	T/C 66	T/C 67
09:45	70.9	68.5	69.3
10:00	71.0	68.6	69.4
10:15	71.1	68.6	69.4
10:30	71.2	68.7	69.5
10:45	71.3	68.7	69.5
11:00	71.4	68.8	69.6
11:15	71.4	68.8	69.7
11:30	71.6	68.9	69.7
11:45	71.7	68.9	69.8
12:00	71.8	69.0	69.9
12:15	71.9	69.1	70.0
12:30	72.0	69.2	70.1
12:45	72.1	69.3	70.2
13:00	72.3	69.4	70.4
13:15	72.4	69.4	70.5
13:30	72.5	69.5	70.6
13:45	72.7	69.7	70.7
14:00	72.8	69.8	70.8
14:15	73.0	69.9	71.0
14:30	73.1	70.0	71.1
14:45	73.2	70.1	71.2
15:00	73.4	70.2	71.4
15:15	73.6	70.4	71.5
15:30	73.7	70.6	71.6
15:45	73.9	70.7	71.7
16:00	74.1	70.9	71.9
16:15	74.3	71.1	72.0
16:30	74.5	71.2	72.2
16:45	74.7	71.4	72.3
17:00	74.9	71.6	72.5
17:15	75.1	71.8	72.7
17:30	75.3	72.0	72.9
17:45	75.5	72.2	73.0
18:00	75.8	72.4	73.2
18:15	76.0	72.6	73.4
18:30	76.2	72.9	73.6
18:45	76.4	73.1	73.8
19:00	76.7	73.4	74.0
19:15	76.9	73.7	74.2
19:30	77.2	74.0	74.5

Time (Min:Sec)	T/C 65	T/C 66	T/C 67
19:45	77.3	74.2	74.7
20:00	77.6	74.4	74.9
20:15	77.8	74.7	75.2
20:30	78.1	75.0	75.4
20:45	78.4	75.3	75.6
21:00	78.7	75.7	75.9
21:15	79.1	76.0	76.2
21:30	79.4	76.5	76.4
21:45	79.8	76.9	76.7
22:00	80.2	77.3	77.0
22:15	80.5	77.7	77.3
22:30	80.8	78.1	77.6
22:45	81.2	78.4	77.8
23:00	81.5	78.7	78.1
23:15	81.8	79.0	78.4
23:30	82.2	79.4	78.6
23:45	82.5	79.7	78.9
24:00	82.8	80.0	79.3
24:15	83.1	80.3	79.6
24:30	83.4	80.7	79.9
24:45	83.7	81.0	80.2
25:00	84.0	81.3	80.5
25:15	84.4	81.6	80.8
25:30	84.6	81.9	81.1
25:45	84.9	82.3	81.5
26:00	85.3	82.6	81.8
26:15	85.6	83.0	82.1
26:30	85.9	83.3	82.4
26:45	86.2	83.6	82.7
27:00	86.5	84.0	83.1
27:15	86.8	84.3	83.4
27:30	87.1	84.6	83.8
27:45	87.4	85.0	84.1
28:00	87.7	85.3	84.4
28:15	87.9	85.7	84.7
28:30	88.2	86.1	85.0
28:45	88.5	86.4	85.3
29:00	88.8	86.8	85.6
29:15	89.1	87.1	85.8
29:30	89.4	87.5	86.1
29:45	89.8	87.9	86.4

Appendix C

Photographs

Photo No. 1
Application of CCW-702LV

Photo No. 2
Installation of CCW 705-FR-A over CCW-702LV

Photo No. 3
Complete installation of CCW 705-FR-A

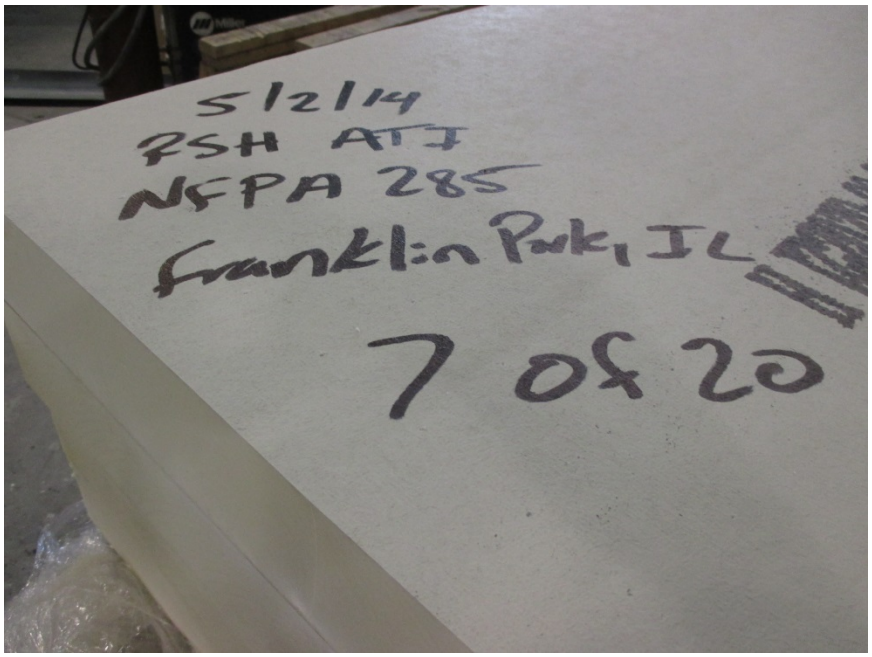


Photo No. 4
Typical Sample Markings

Photo No. 5
Insulation Installation

Photo No. 6
Complete Insulation Installation

Photo No. 7
Installation of AL13 Spacers, Horizontal, Vertical, and End Extrusions

Photo No. 8
AL13 Panels

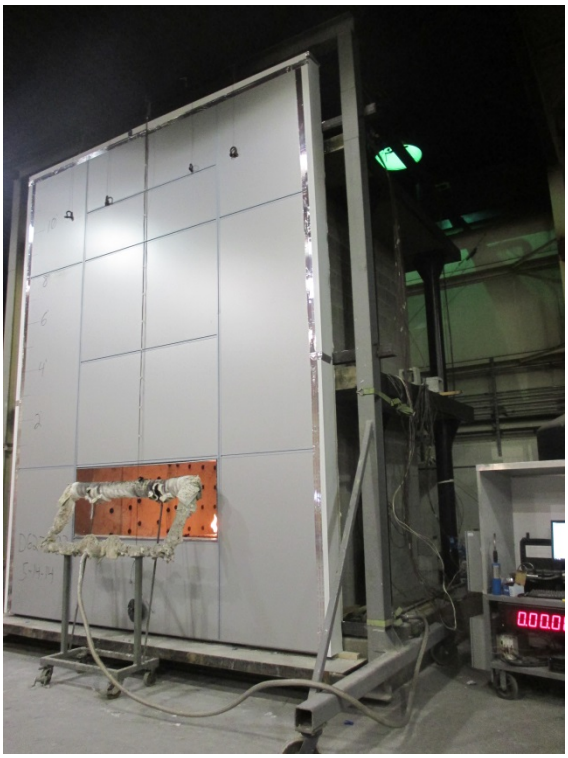


Photo No. 9
Complete Assembly (Pre-test)

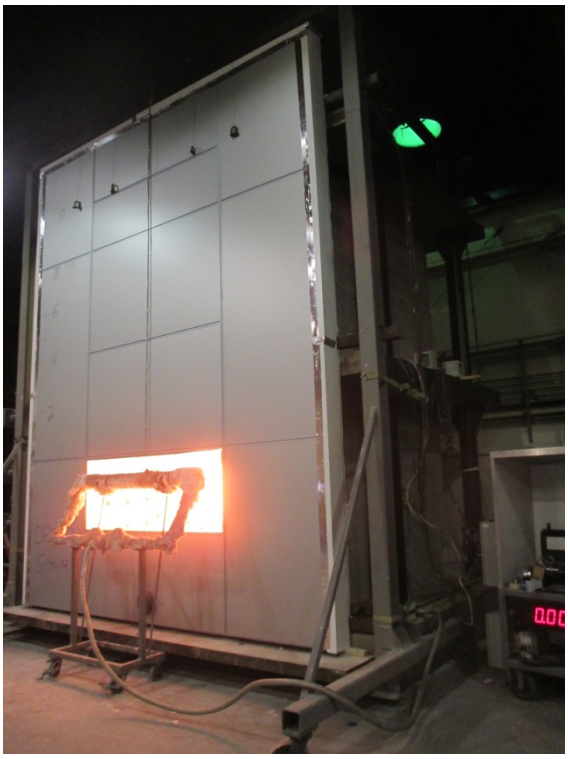


Photo No. 10
Ignition of the Room Burner

Photo No. 11
Ignition of the Window Opening Burner

Photo No. 12
Ignition at the Window Opening Burner

Photo No. 13
Complete Assembly (Post-test)

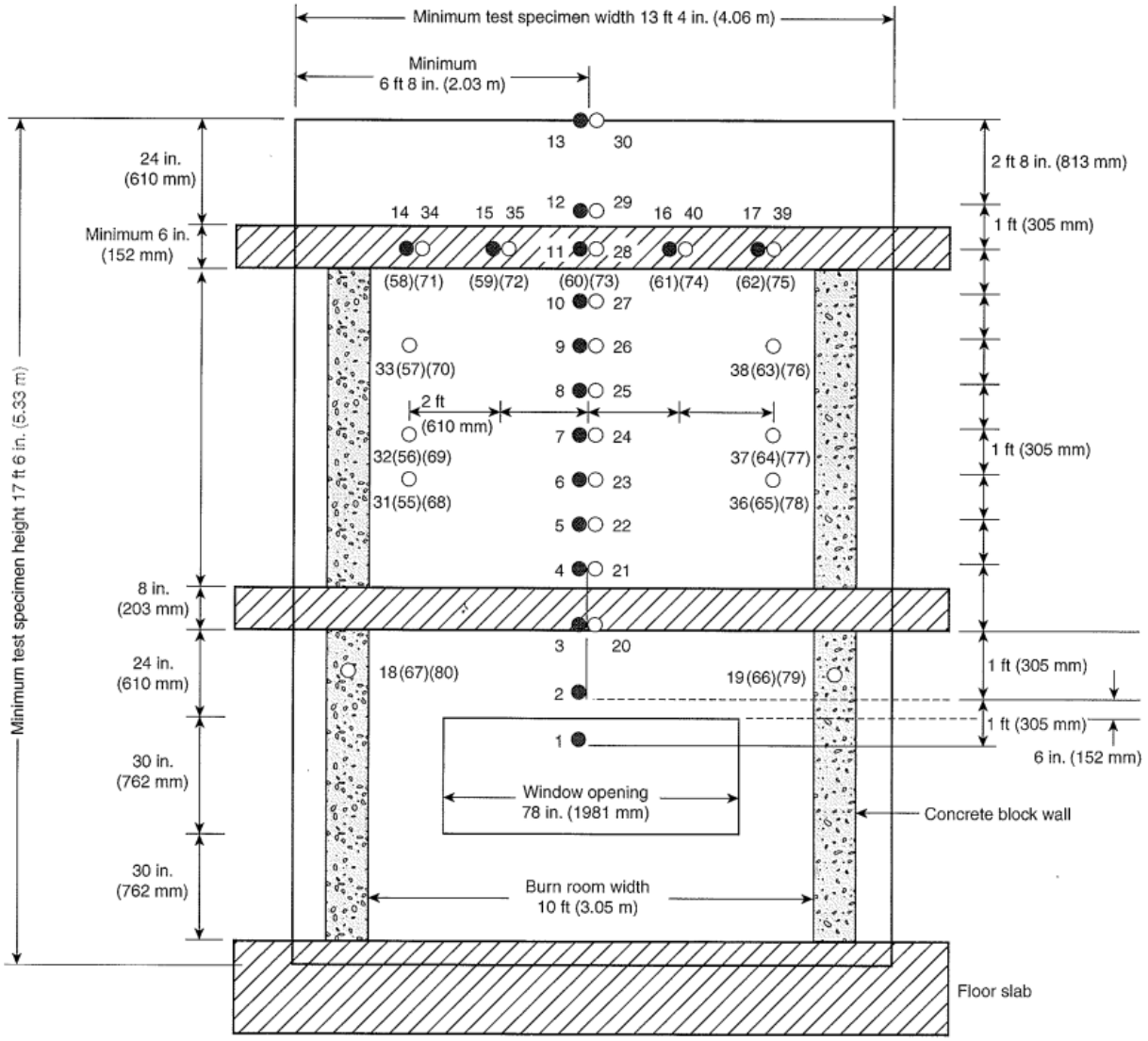
Photo No. 14
Second-story Interior Surface (Post-test)

Photo No. 15
First-story Interior Surface (Post-test)

Photo No. 16
Burn Pattern of Insulation
(Exterior Cladding Removed)

Appendix D

Drawings



● Thermocouples — 1 in. (25 mm) from exterior wall surface

○ Thermocouples — In the wall cavity air space or the insulation, or both, as shown in Figure 6.1(b) Details A through I.

( ) Thermocouples — Additional thermocouples in the insulation or the stud cavity, or both, where required for the test specimen construction being tested, as shown in Figure 6.1(b) Details C through I.

FIGURE 6.1(a) Front View of Test Specimen Superimposed over Test Apparatus Thermocouple Locations.

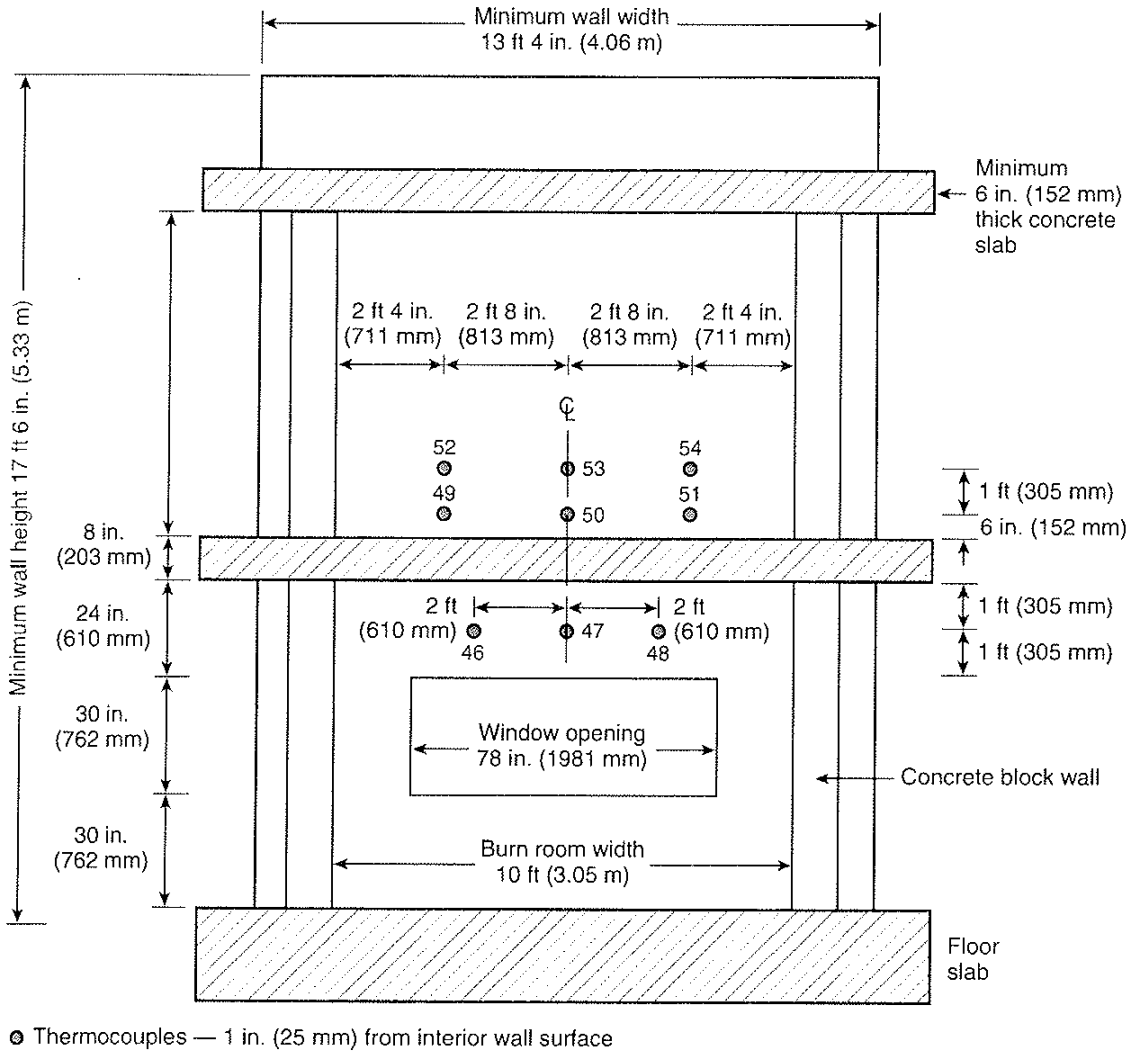


FIGURE 6.1(c) Interior View of the Test Specimen. Instrumentation arrangement.

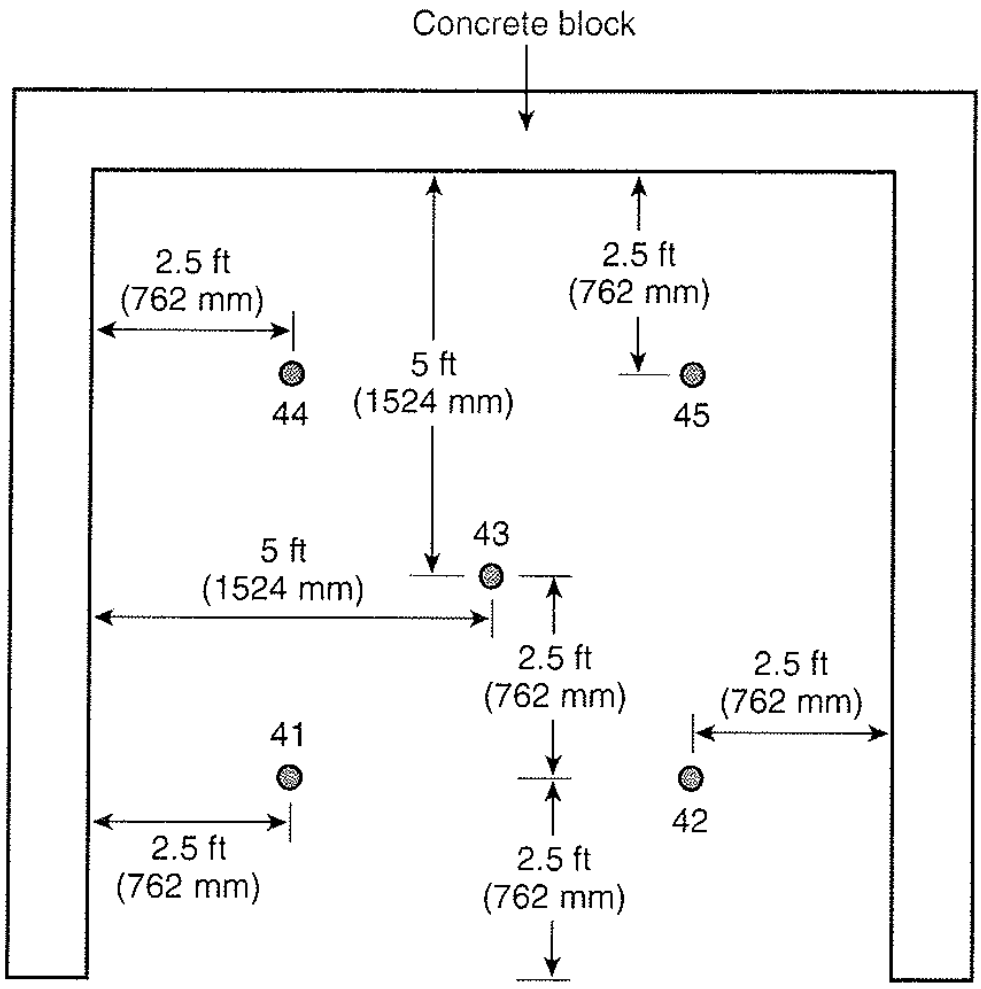
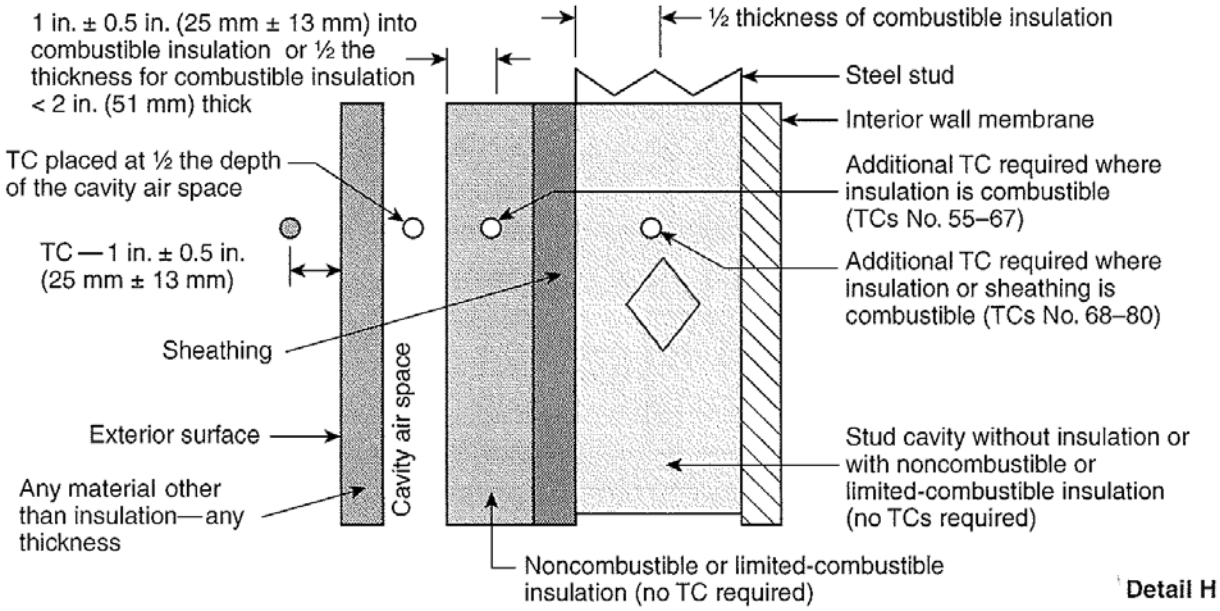


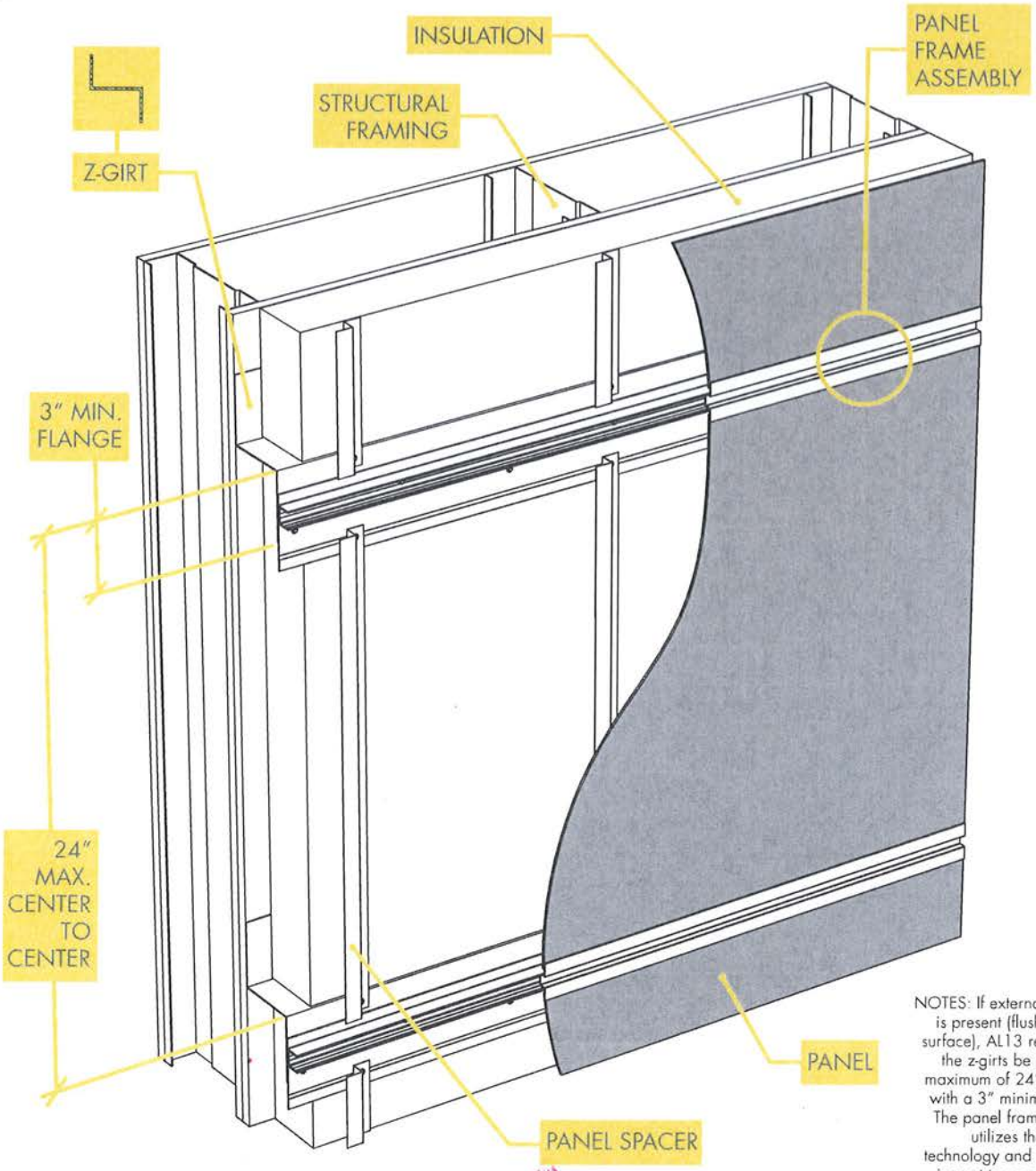
FIGURE 6.1(d) Plan View — First-Story Test Room. Instrumentation arrangement.


1 in. ± 0.5 in. (25 mm ± 13 mm) into combustible insulation or ½ the thickness for combustible insulation < 2 in. (51 mm) thick
½ thickness of combustible insulation
Steel stud
Interior wall membrane
TC placed at ½ the depth of the cavity air space
Additional TC required where insulation is combustible (TCs No. 55–67)
TC — 1 in. ± 0.5 in. (25 mm ± 13 mm)
Additional TC required where insulation or sheathing is combustible (TCs No. 68–80)
Sheathing
Exterior surface
Cavity air space
Stud cavity without insulation or with noncombustible or limited-combustible insulation (no TCs required)
Any material other than insulation—any thickness
Noncombustible or limited-combustible insulation (no TC required)

Detail H

HOW TO DESIGN FOR AL13

The AL13 system may be installed on **Z-GIRT** with external insulation (flush with z-girt surface). When designing for the system to be installed on a z-girt substrate, the following points are recommended:



NOTES: If external insulation is present (flush with z-girt surface), AL13 recommends the z-girts be placed at a maximum of 24" on center, with a 3" minimum flange. The panel frame assembly utilizes the snap lock technology and requires an impact to engage the two components. Ensure that the substrate is solid enough to sustain this impact.

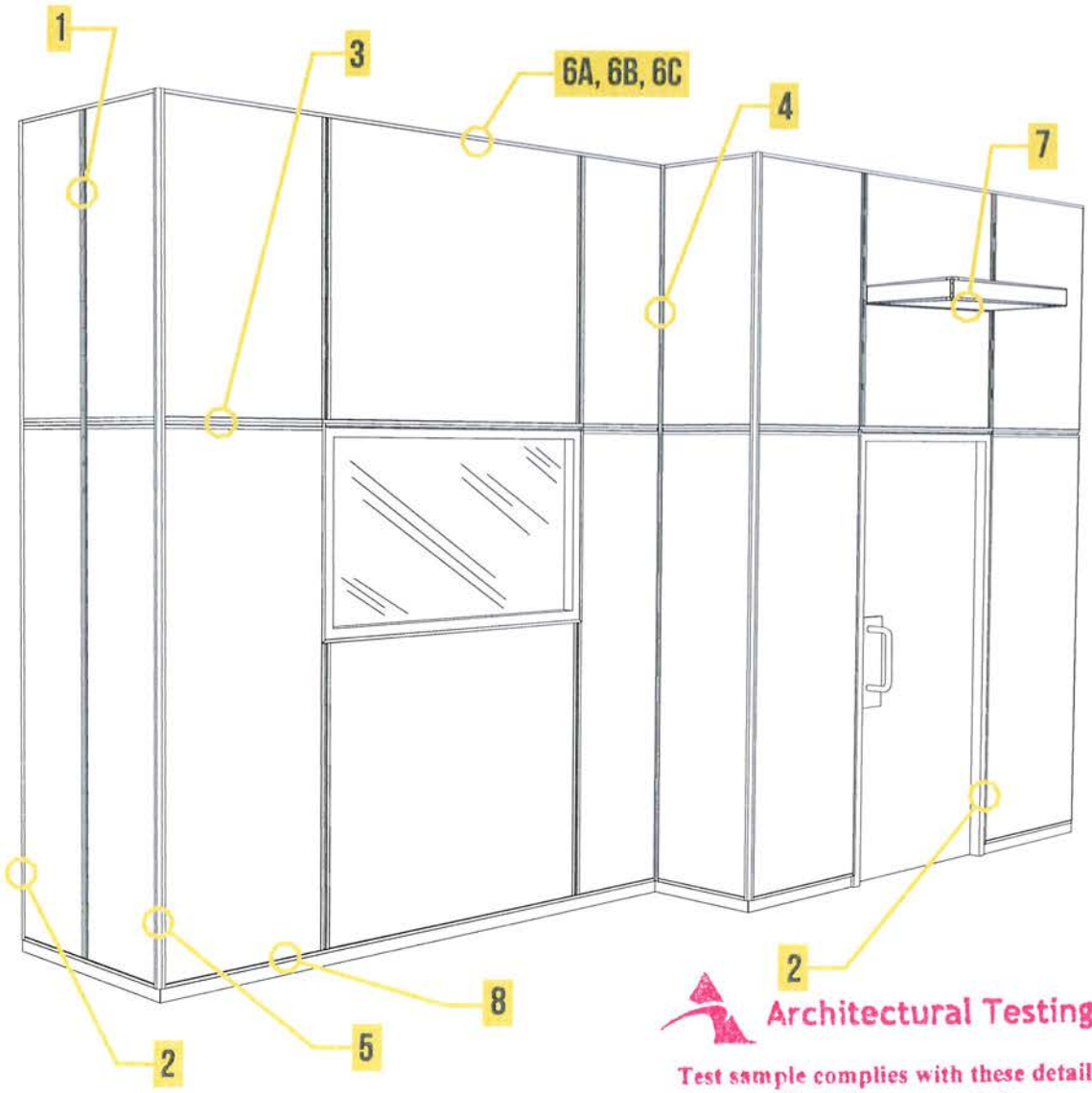
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report # DC274.02

Date 6-27-14 Tech EG

TYPICAL DETAILS Z-GIRT



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report # D6274.02

Date 6-27-14 Tech EC

GENERAL DETAILS

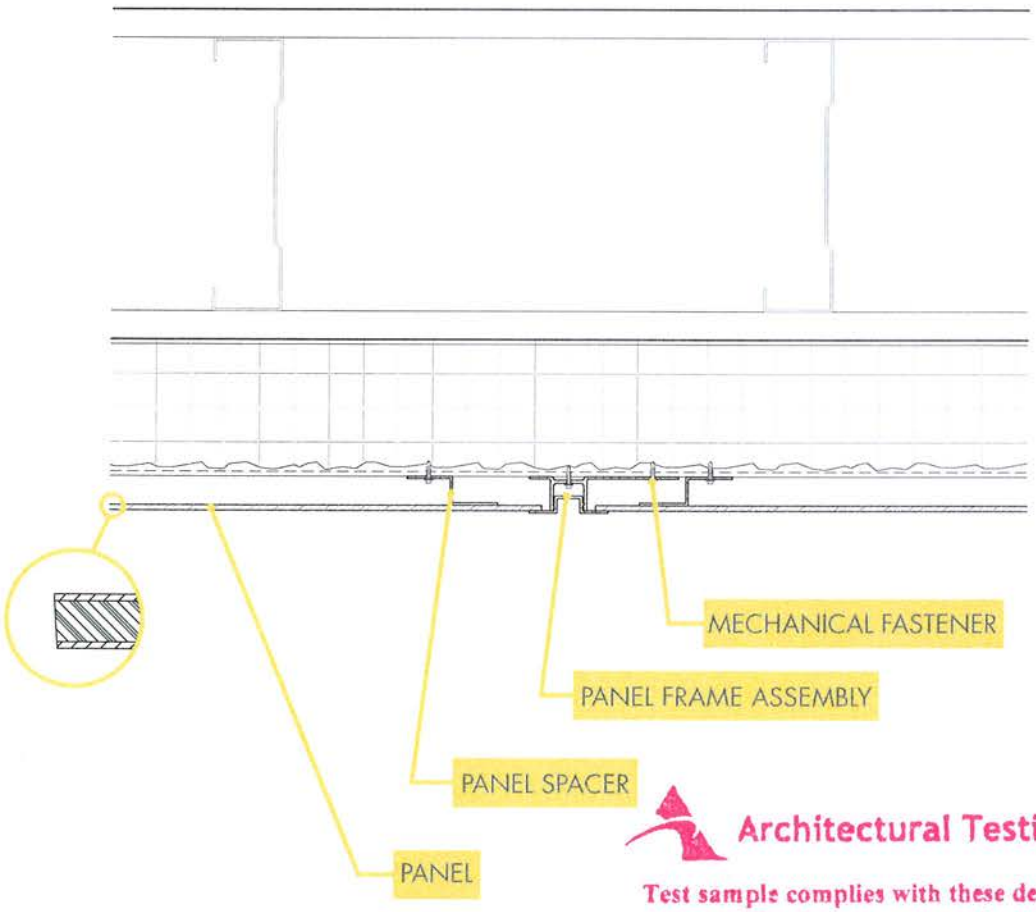
1. VERTICAL
2. VERTICAL END OF WALL
3. HORIZONTAL
4. INSIDE CORNER
5. OUTSIDE CORNER

6A. PARAPET - TOP OF WALL
6B. HORIZONTAL TRANSITION
6C. SOFFIT - TOP OF WALL
7. SOFFIT - FASCIA
8. BOTTOM OF WALL

9. NON-PERP. INS. CNR.
10. NON-PERP. OUT. CNR.

SUBSTRUCTURE NOTE: AL13 recommends 18 ga. galvanized with a 3" (minumum) mounting flange, girts should be mounted at a maxiumum of 24" on center (horizontally).

VERTICAL



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report # D6274.02

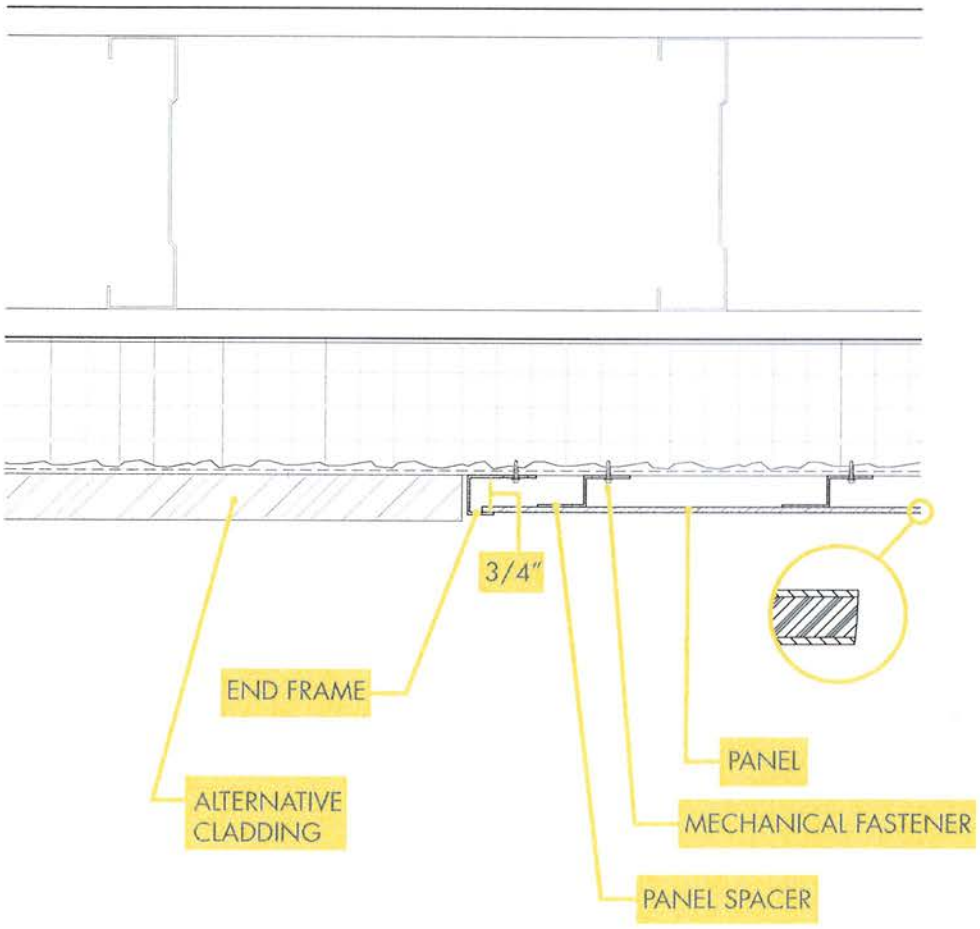
Date 6-27-14 Tech EG

Z-GIRT DETAIL 1

VERTICAL CONNECTION BETWEEN ADJACENT PANELS

PRIMARY CONNECTOR FOR VERTICAL JOINTS BETWEEN PANELS. PANEL SPACERS POSITION PANEL AWAY FROM WALL TO THE UNDERSIDE OF PANEL FRAME TABS.

VERTICAL END

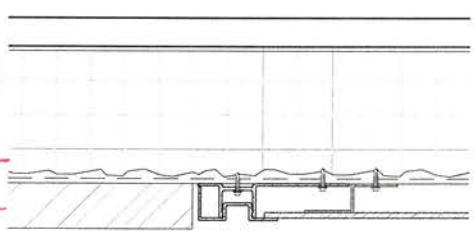


Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report # D6974.02

Date 6-27-14 Tech EC

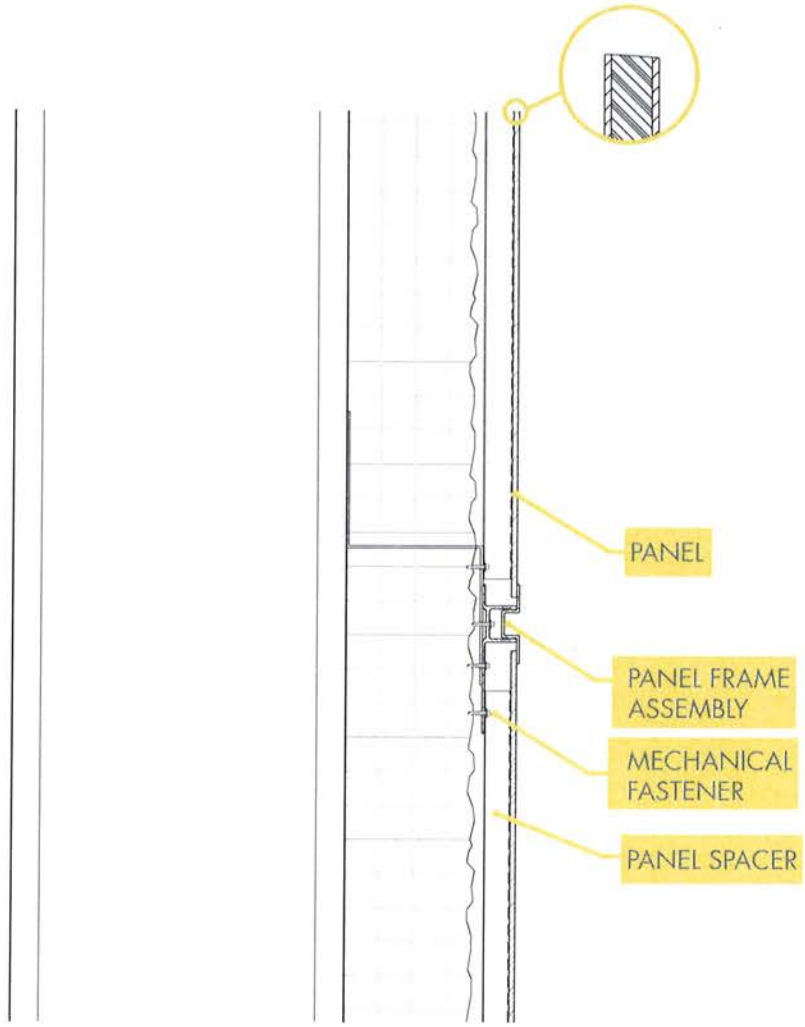


ALTERNATE END CONDITION USING PERIMETER FRAME ASSEMBLY

Z-GIRT DETAIL 2

VERTICAL END OF WALL - TRANSITION
USED TO VERTICALLY TERMINATE THE SYSTEM OR TRANSITION TO BUTT TO WINDOW/DOOR FRAMES.

HORIZONTAL



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report # D6274.02

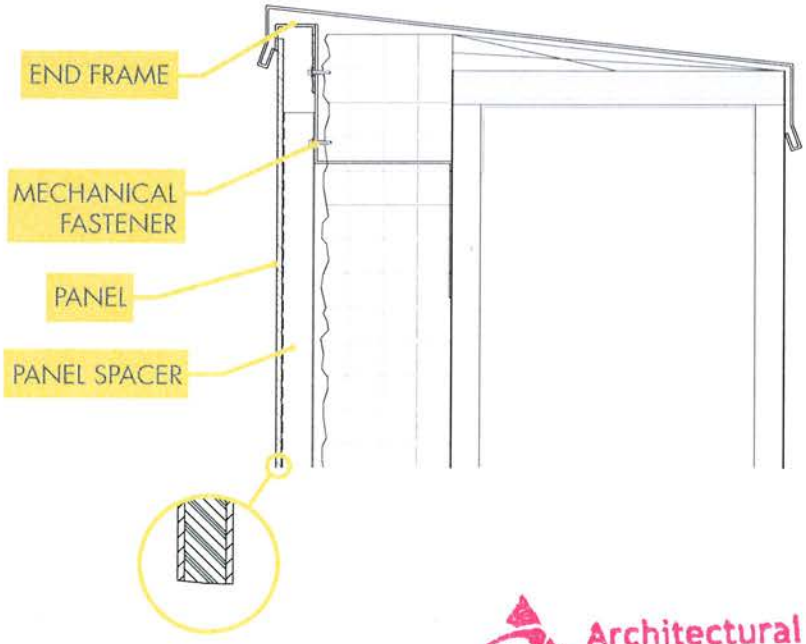
Date 6-27-14 Tech EG

Z-GIRT DETAIL 3

HORIZONTAL CONNECTION BETWEEN ADJACENT PANELS

PRIMARY CONNECTOR FOR HORIZONTAL JOINTS BETWEEN PANELS. PANEL SPACERS POSITION PANEL AWAY FROM WALL TO THE UNDERSIDE OF PANEL FRAME TABS.

PARAPET - TOP OF WALL



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report # D6274.02

Date 6-27-14 Tech EG

Z-GIRT DETAIL 6A

HORIZONTAL TOP OF WALL - TRANSITION
END FRAME USED TO HORIZONTALLY TERMINATE THE SYSTEM OR TRANSITION TO SIT UNDER PARAPET/FLASHING.