



NFPA 285 TEST REPORT

Report No.: C5740.01-121-24

Test Date: February 28, 2013

Rendered to:

POLYGUARD PRODUCTS, INC.
3801 South Highway I-45
Ennis, Texas 75120

Product Type:

Exterior Non-Load-Bearing Wall System

This report contains in its entirety:

Cover Page:	1 page
Report Body:	8 pages
Graphical Data:	6 pages
Numerical Data:	18 pages
Photographs:	10 pages
Drawings:	6 pages

1.0 Report Issued To: Polyguard Products, Inc.
3801 South Highway I-45
Ennis, Texas 75120

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-Load-Bearing Wall System

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: 2/28/2013

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

4.5 Test Sample Source: The components of the test specimen were provided by the client except for the core wall components that 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, 2006*

4.0 Project Summary: (Continued)

4.7 List of Official Observers:

<u>Name</u>	<u>Company</u>
Bill Yannetti	Mitsubishi Chemical
James Moses	Mitsubishi Chemical
Ted DeZurik	Polyguard Products, Inc.
Art Parker	Hughes Associates, Inc.
Matthew Freeborn	Architectural Testing, Inc.
Ethan Grove	Architectural Testing, Inc.
Scott Gingrich	Architectural Testing, Inc.
Ben Eveler	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 February 25, 2013. Table 1 shows the average burner flow and heat flux. Table 2 shows the time average temperatures obtained during the calibration test. The values are within the allowable ranges as specified in Table 8.1.6 ($\pm 10\%$).

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	32.6	0.0	1.3	1.3	0.6
5:00-10:00	33.8	3.7	2.3	2.4	1.2
10:00-15:00	40.7	4.8	3.0	2.9	1.9
15:00-20:00	42.5	6.5	3.4	3.3	2.3
20:00-25:00	42.7	8.6	3.7	3.6	2.5
25:00-30:00	44.8	11.0	4.0	4.0	3.0

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

Table 2 Average Time Temperature Values for Calibration

Time (min)	Location							
	Burn Room (°F)	Int. Wall (°F)	1FT (°F)	2FT (°F)	3FT (°F)	4FT (°F)	5FT (°F)	6FT (°F)
0:00-5:00	1047.0	1033.1	680.1	724.7	700.0	630.6	579.0	491.9
5:00-10:00	1221.4	1213.3	889.4	940.9	979.1	936.6	880.9	762.6
10:00-15:00	1390.2	1394.3	1004.4	1055.5	1101.5	1053.1	987.8	859.4
15:00-20:00	1465.9	1474.4	1065.3	1114.9	1165.3	1123.2	1065.3	924.7
20:00-25:00	1489.7	1507.6	1103.8	1157.9	1209.5	1172.7	1127.3	981.2
25:00-30:00	1544.5	1565.8	1136.9	1191.3	1249.5	1222.2	1184.1	1027.3

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.

6.0 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 Fastenal #10 x 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. Gypsum board 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. Gypsum board orientation on the second floor consisted of vertically oriented sheets with the long dimension running parallel with the studs. Gypsum board orientation for the gaps above the top support angle and below the bottom support angle consisted of gypsum board 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. The studs were connected to the track with Fastenal #8 x 1 in. long wafer head 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 1 in. x 1 in. x 3 in. x 0.030 in. thick steel L shaped brackets. Brackets were attached to the studs with two Fastenal #8 x 1 in. long wafer head self-drilling screws and to the CRC bracing with one Fastenal #8 x 1 in. long wafer head self-drilling screw.

Exterior Sheathing:

The exterior sheathing consisted of 5/8 in. thick Georgia-Pacific DensGlass Gypsum Sheathing that was fastened to the stud wall with Fastenal #10 x 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. 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.

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 welded at each corner. A nominal 0.030 in. thick covering of PolyGuard Detail Sealant was spread across the window opening sill surface. After the installation of the exterior cladding, 0.040 Aluminum Flashing was installed around the full perimeter of the window opening. The flashing was bent to a "C" with an overall width of 7-5/8 in. with 1 in. legs bent at 90° to cover both the interior and exterior cladding. The flashing was fastened to the window opening frame with #10 x 1 in. long hex head self-drilling screws spaced 1 in. from the header/jamb and sill/ jamb joints.

Air/Vapor Barrier:

Polyguard Detail Sealant PW/ Hole Filler was used at all fastener locations and at all horizontal and vertical joints of the DensGlass. The sealant was applied over each joint and fastener hole and was troweled to a nominal thickness of 0.020 in. Polyguard Airluk Flex Gray Integrated Building Envelope was applied in a single layer with a medium nap roller to have a nominal thickness of 0.030 in. over the full surface of the exterior sheathing.

Exterior Cladding: (BAMCO G 500 Composite Wall System)

The BAMCO G 500 Composite Wall System consisted of 0.050 in. thick extruded aluminum L-brackets fastened to the assembly sill and the window opening header with #10 x 1-1/2 in. long hex head self-drilling screws spaced at 24 in. on center. 1-3/4 in. aluminum Base Extrusions were set on the L-Brackets facing vertically to accept the Mitsubishi Plastics 4 mm Alpolic/fr panels. The extrusions were fastened through the aluminum L-bracket and into the core wall with #10 x 1-1/2 in. long hex head self-drilling screws spaced at 24 in. on center. Galvanized Steel hat channel, measuring 4-1/2 in. wide x 7/8 in high x 0.060 in. thick was placed laterally across the full width of the assembly and were fastened through each flange and into the core wall with #10 x 1-1/2 in. long hex head self-drilling screws spaced at 24 in. on center. The hat channels were vertically spaced 24 in. on center. A 78 in. length x 3/4 in. overall height x 3-1/2 in. overall width x 0.060 thick piece of termination extrusion was fastened at the sill of the window opening with #10 x 1-1/2 in. long hex head self-drilling screws spaced at 24 in. on center. The Mitsubishi Plastics 4 mm Alpolic/fr panels that were installed to the left of the assembly centerline had 0.100 in. thick aluminum "T" extrusions pre-fastened to the rear of the panel on both the top to accept the panels above and centerline side of the panels to accept the panels to the right. The panels to the right of the assembly centerline had the aluminum "T" extrusions pre-fastened to the rear of the panel on the top to accept the panels above. The panels were fastened to the wall with #10 x 1 in. long hex head self-drilling screws through the extrusions and into the hat channels. The 4 mm Alpolic/fr panels were first installed on the left side of the assembly centerline over the full height of the assembly. The panels on the right side were then installed over the full height of the assembly because they would accept the extrusions from the panels to the left of the assembly centerline. Dow 795 sealant was applied to all horizontal and vertical panel joints. After the application of sealant, Tremco 5/8 in. extruded silicone gasket was used on all horizontal and vertical panel joints.

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-gauge 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. Position of the window burner was determined by calibration of the ISMA on February 25, 2013.

7.2 Test Procedure: Testing was performed on 2/28/2013 in accordance with NFPA 285 test method. Ambient conditions were 63°F and 38% 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.

7.0 Test Results: The test was performed at 11:03 am 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
00:20	Window opening headers trim buckling
01:30	Ignition of interior gypsum
05:00	Ignition of the window burner
05:30	Panel level 1 above the window opening header warping
06:00	Panel warping up to 6 ft. above the window opening header
06:25	Panel charring and peeling at 2 ft. above the window opening header Panel warping at 8 ft. above the window opening header
07:30	Panel charring and peeling at 3 ft. above the window opening header
07:32	Smoke emission from second story interior wall bottom left section of the 2 nd story interior. Approximately 2 ft. from the left wall.
09:00	Panel charring and peeling at 4 ft. above the window opening header
09:20	Smoke emission from bottom of second story interior wall between centerline TC's and left TC's
10:00	Panel/window opening header severe warping exposing panel core
11:00	Charring and peeling at 5 ft. above the window opening header. Panel warping at 9 ft. above the window opening header.
12:00	Window opening header fallout Panel warping at 12 above the window opening header
12:15	Smoke volume increasing from both second story interior locations
13:25	Panel charring and peeling at 6 ft. above the window opening header
18:30	Panel charring and peeling at 7 ft. above the window opening header
24:40	Smoke filling second story interior room
25:00	Panel charring and peeling at 8 ft. above the window opening header
25:50	Ignition at window opening header and panel joint
28:00	Severe window opening header fallout Fissure in first panel above the window opening above the window opening header at 2 ft.
30:00	The burners were extinguished.
30:01	Surface burning at 5 ft. above and at the window opening header
	Flames self-extinguish.
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.	Flames did NOT reach 10 ft. above the window opening.	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 11 and 14-17 (1000°F limit)	TC's 11 and 14-17 did NOT exceed 1000°F.	PASS
TC 18-19 and 31-40 (1000°F limit)	TC's 18-19 and 31-40 did NOT exceed 1000°F.	PASS
TC 49 through 54 (500°F above ambient)	TC's 49-54 did not exceed 500°F above ambient.	PASS

Description of Extent of Damage:

Interior Cladding:

After separation of the wall assembly from the test fixture, the 5/8 in. thick type X gypsum was intact with several fissures over the full surface of the exposed gypsum.

Exterior Sheathing:

Light damage was done to the DensGlass. Charring was found at the window opening header and only went vertical for 15 inches and horizontal for 5 in.

Air/Vapor Barrier:

Damage to the Polyguard Arilok Flex was localized to the area in the flame plume. Charring of the Polyguard Airlok Flex extended 12 in vertically and 17 in. horizontal bilaterally from the assembly centerline. The vertical joint of DensGlass was still covered by the Polyguard Airlok Flex.

Exterior Cladding:

The Mitsubishi Plastics 4 mm Alpollic/fr panels were charred up to 10 ft. above the window opening. The exterior aluminum skin of the panels above the window opening was melted away up to 3 ft. The interior skin of the panels was still intact.

The assembly described in this report meets NFPA 285 Condition of Acceptance.

8.0 Equipment: The following devices were used for testing:

Device	Asset No.
Orifice Plate 1	675-1
Orifice Plate 2	1400-4
Data Acquisition (SCXI Chassis)	63523
Ashcroft Differential Pressure Transducer 1	63523-1
Ashcroft Differential Pressure Transducer 2	63523-2
ALNOR Wind Vane Anemometer	63192

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.

Ethan Grove
Technician

Matthew Freeborn
Program Manager – Fire Testing

EJG:ddr

Attachments (pages): This report is complete only when all attachments listed are included.

- Appendix-A: Graphical Data (6)
- Appendix-B: Numerical Data (18)
- Appendix-C: Photographs (10)
- Appendix-D: Drawings (6)

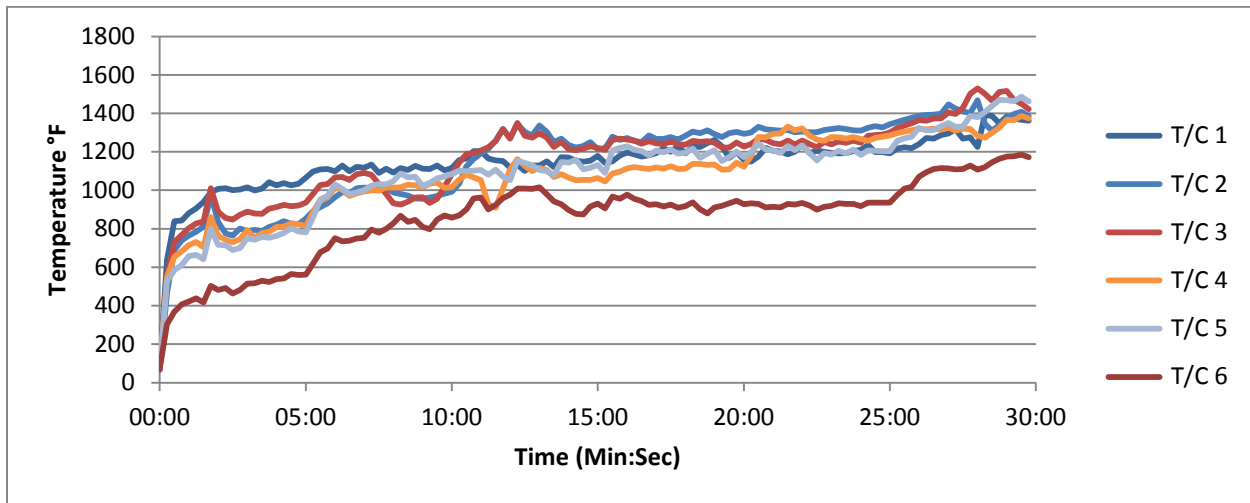
This report produced from controlled document template ATI 00587, issued 02/28/12.

Revision Log

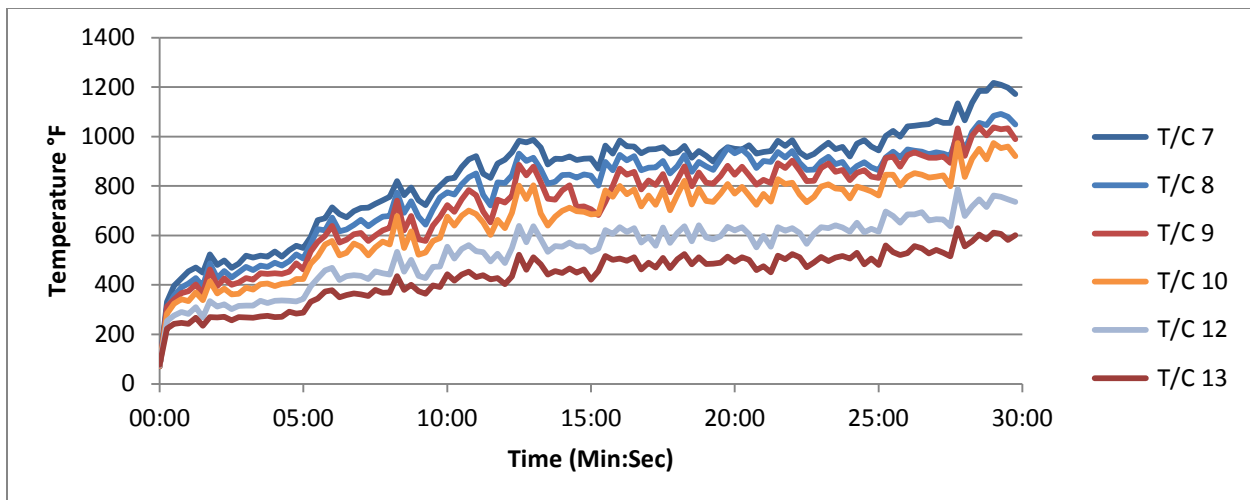
<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	3/14/2013	N/A	Original Report Issue
1	4/02/2013	4	Added BAMCO G 500 Wall System to the description

Appendix A

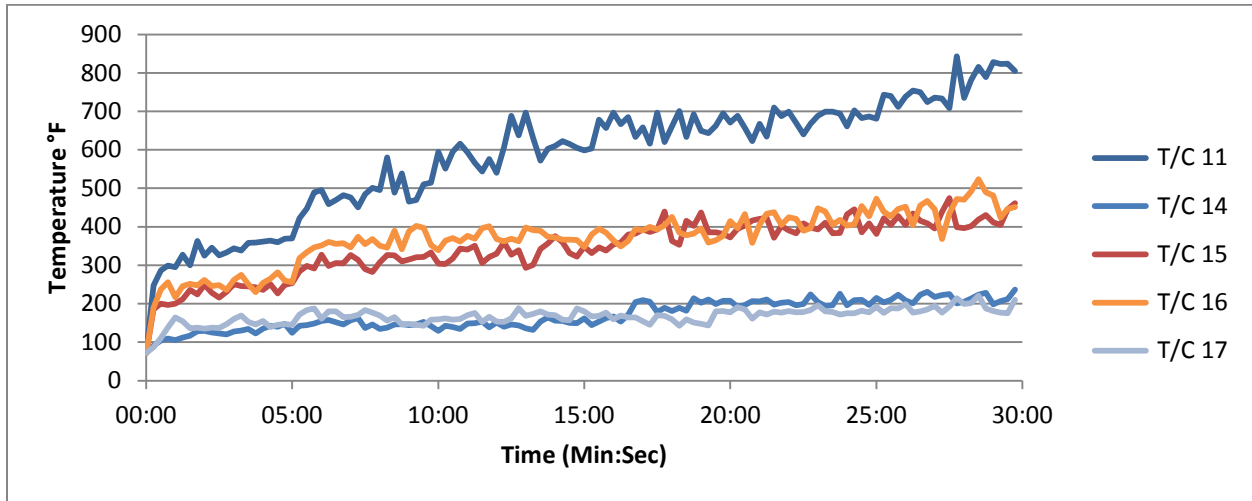
Graphical Data



Graph 1
TC's 1-6: Exterior Surface on Assembly Centerline

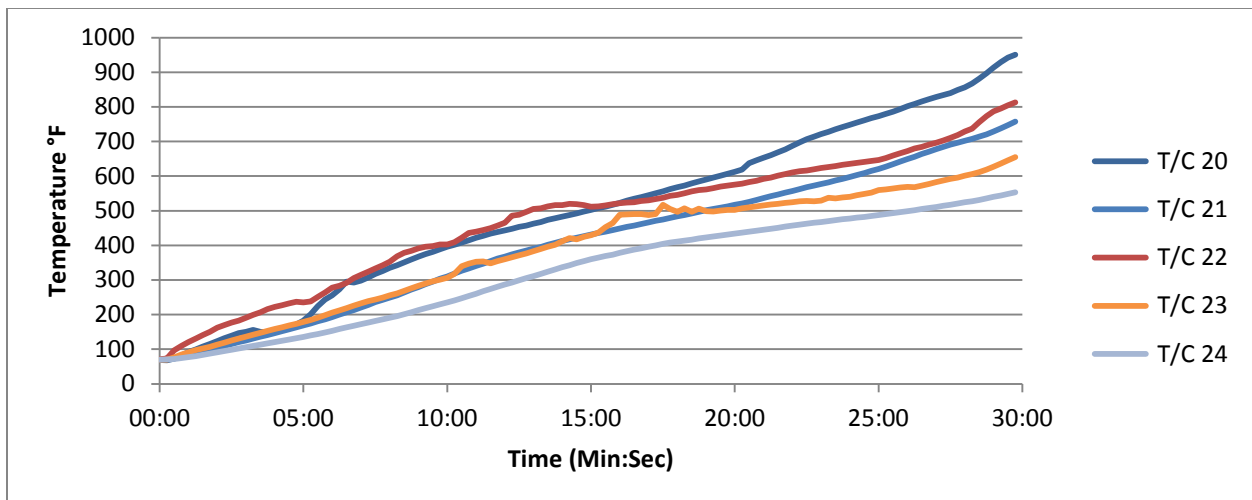


Graph 2
TC's 7-10 and 12-13: Exterior Surface on Assembly Centerline



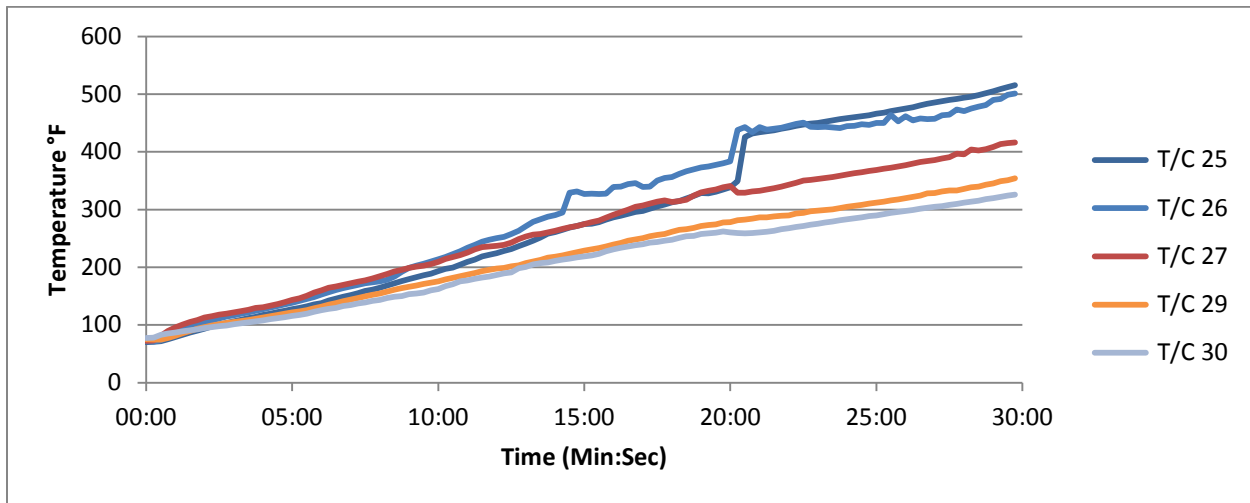
Graph 3

TC's 11 and 15-17: Exterior Surface at 10 ft. Above the Window Opening Header



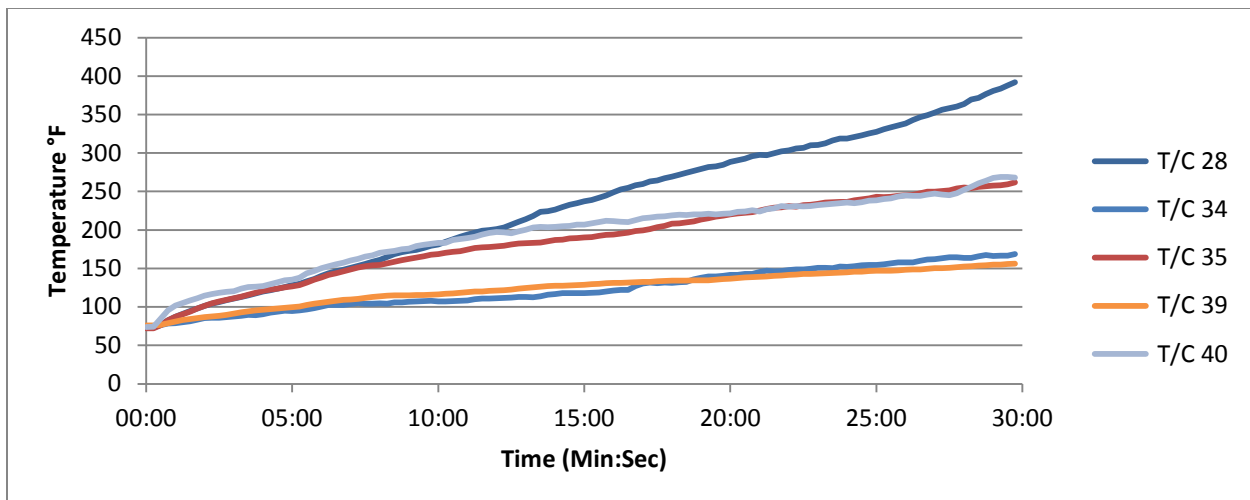
Graph 4

TC's 20-24: Wall Cavity Air Space on Assembly Centerline



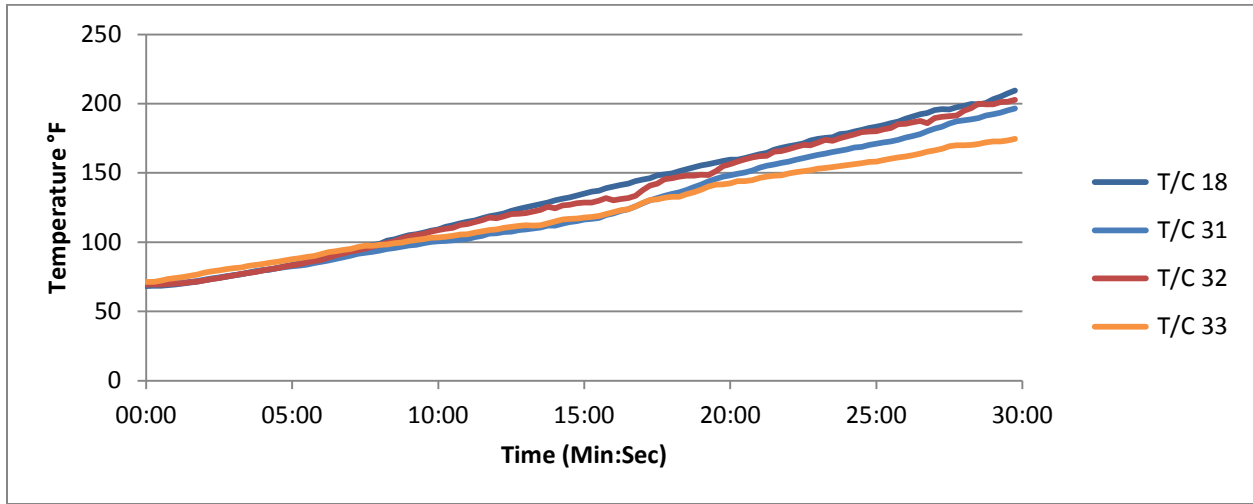
Graph 5

TC's 25-27 and 29-30: Wall Cavity Air Space on Assembly Centerline

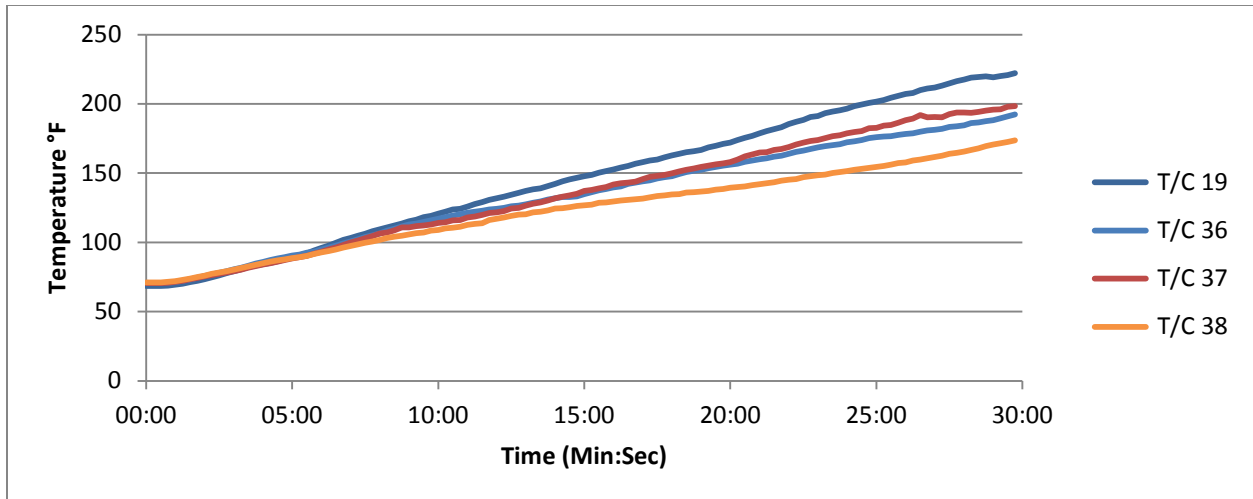


Graph 6

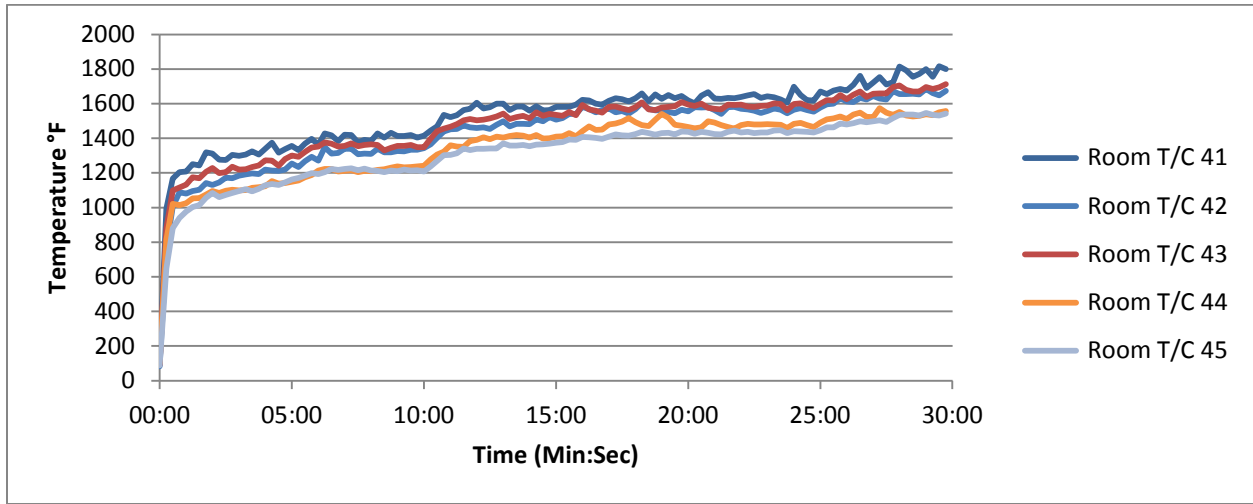
TC's 28, 34-35, and 39-40: Air Gap at 10 ft. Above the Window Opening Header



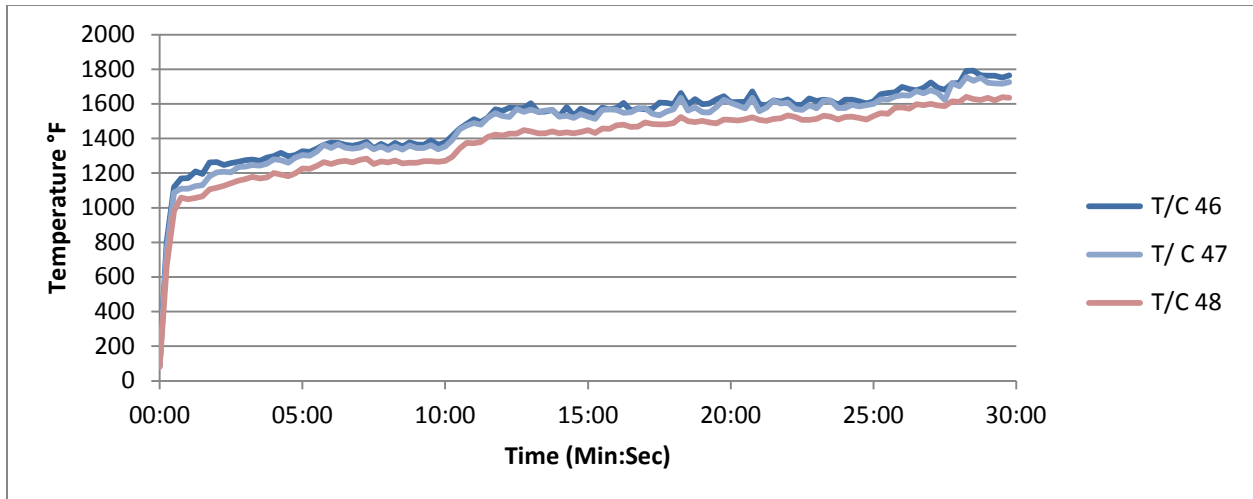
Graph 7
TC's 18 and 31-33: Wall Cavity Air Space Left of Assembly Centerline



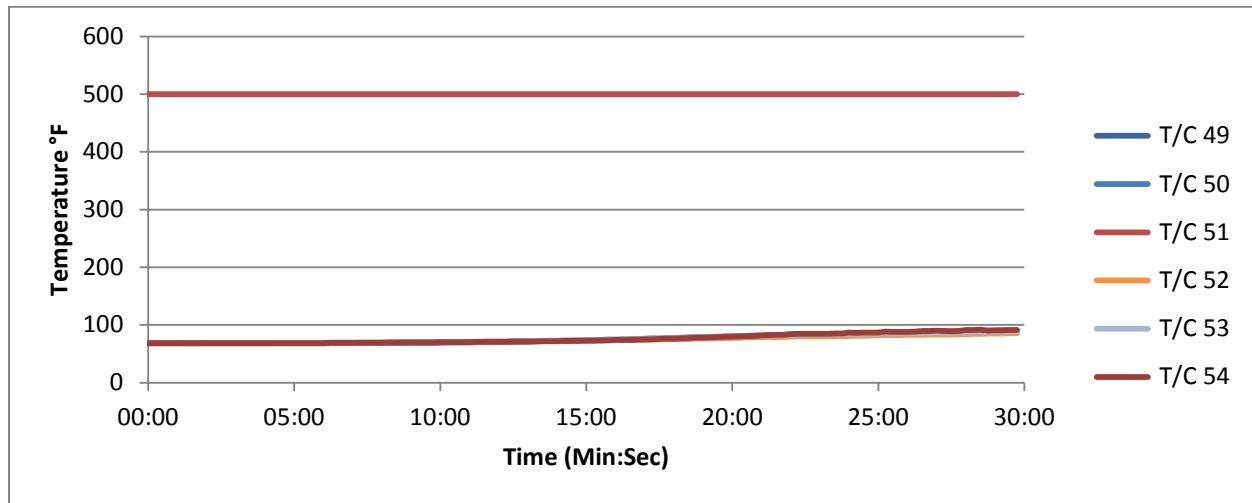
Graph 8
TC's 19 and 36-38: Wall Cavity Air Space Right of Assembly Centerline



Graph 9
TC's 41-45: Inside Burn Room 6 in. Below Ceiling



Graph 9
TC's 46-48: First Story Test Room Interior Wall Surface



Graph 10
TC's 49-54: Second Story Test Room 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
00:00	-0.28	-0.07	66.39	71.31	69.87	69.37	68.37	68.99	70.14	70.58
00:15	49.88	-0.11	638.29	465.34	554.74	549.25	527	302.91	332.18	307.66
00:30	38.29	-0.11	838.51	689.87	731.26	655.06	585.28	367.92	396.48	356.9
00:45	31.69	-0.11	842.43	739.44	767.52	682.64	611.63	406.65	426.2	390.11
01:00	33.7	-0.11	881.07	764.47	803.14	714.55	657.6	422.18	454.44	406.29
01:15	33.64	-0.11	905.35	784.06	828.17	731.55	665.02	438.95	470.54	427.21
01:30	33.35	-0.11	939.6	810.52	836.89	704.05	641.52	416.32	449.14	393.71
01:45	33.31	-0.11	989.42	975.68	1010.53	861.67	799.37	503.4	523.66	486.92
02:00	29.91	-0.11	1006.93	834.94	887.79	762.83	715.95	481.47	481.2	427.53
02:15	32.7	-0.11	1010.23	776.42	855.8	743	714.97	492.21	499.43	456.44
02:30	37.1	-0.11	1001.45	765.18	847.31	730.18	689.24	463.87	469.61	429.79
02:45	32.58	-0.11	1003.54	800.85	871.8	746.94	699.71	481.3	485.5	450.97
03:00	32.37	-0.11	1015.95	788	888.64	793.52	750.57	514.54	518.02	472.94
03:15	35.28	-0.11	999.49	793.7	878.75	753.06	742.03	516.3	509.93	459.86
03:30	30.26	-0.11	1008.77	787.01	878.38	778.24	758.04	530.08	517.9	477.59
03:45	35.55	-0.11	1043.05	809.09	904.86	784.01	753.15	523.23	514.52	473.42
04:00	34.68	-0.11	1026.04	820.45	913.23	809.71	763.11	538.21	534.56	490.39
04:15	29.94	-0.11	1037.26	838.76	924.89	811.62	777.2	541.59	514.77	478.38
04:30	35.23	-0.11	1026.22	826.67	916.8	830.17	803.05	564.43	540.44	495.73
04:45	35.61	-0.11	1033.91	823.56	920.41	823.22	785.41	560.04	557.86	524.02
05:00	30	-0.11	1065.66	852.05	935.83	814.67	780.95	560.8	549.27	506.61
05:15	34.96	2.62	1097.17	890.21	980.73	886.46	858.26	618.31	593.86	566.21
05:30	33.95	4.18	1109.31	913.13	1026.73	949.03	952.11	678.21	662.06	625.38
05:45	30.76	3.78	1110.81	932.55	1031.54	963.16	970.49	697.77	670.23	620.71
06:00	34.1	3.52	1099.11	963.31	1067.84	1013.47	1030.68	750.77	713.87	672.16
06:15	34.23	4.15	1128.09	990.67	1068.83	1004.53	1007.09	735.09	687.01	616.68
06:30	32.74	3.43	1098.28	986.04	1054.33	970.09	980.06	737.32	673.03	624
06:45	35.73	4.29	1122.89	1010.94	1083.85	983.61	988.78	749	698.04	642.58
07:00	33.17	3.32	1116.46	1013.34	1090.88	993.84	1000.9	753.05	711.42	663.19
07:15	30.75	4.5	1133.22	1011.99	1080.2	999.16	1024.15	796.53	712.04	637.66
07:30	37.69	3.09	1090.16	998.83	1031.93	999.6	1032.31	779.26	727.7	657.8
07:45	30.25	4.45	1111.4	1012.16	980.57	1014.6	1029.86	799.08	741.86	675.51
08:00	37.79	3.27	1092.69	989.59	932.48	1013.79	1046.44	828.36	756.15	679.29
08:15	32.04	4.82	1115.24	981.06	925.14	1016.42	1086.67	867.83	819.23	773.64
08:30	33.38	3.26	1105.08	971.61	940.06	1028.57	1066.46	835.51	762.46	691.25
08:45	34.73	4.44	1127.06	957.86	962.71	1024.86	1069.81	845.18	793.99	738.38
09:00	30.65	3.21	1112.8	955.44	964.05	1015.98	1022.17	809.08	742.27	676.16
09:15	35.85	4.44	1109.82	961.86	933.74	1034.53	1038.69	797.01	722.29	643.25
09:30	32.95	3.53	1128.61	970.28	955.71	1040.22	1061.82	848.25	772.02	703.96
09:45	33.66	4.27	1104.57	983.17	1017.48	1012.07	1072.98	868.8	800.84	753.74

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
10:00	33.7	3.87	1115.65	992.88	1084.66	1015.98	1083.84	857.75	829.34	775.06
10:15	34.04	4.81	1156.45	1034.22	1144.15	1054.77	1101.43	869.34	832.65	765.7
10:30	44.59	4.88	1164.84	1125.82	1189.47	1081.57	1098.27	900.86	876.86	807.09
10:45	35.39	5.02	1204.2	1161.43	1193.39	1066.75	1102.02	956.94	907.39	834.87
11:00	36.82	4.63	1203.77	1192.1	1207.01	1051.65	1105.91	962.61	920.49	850.26
11:15	43.28	5.23	1165.65	1214.98	1223.51	927.87	1081.3	900.83	849.85	763.56
11:30	44.58	4.82	1155.26	1257.72	1254.98	909.5	1107.48	924.26	832.54	721
11:45	38.19	5	1152.35	1317.72	1317.62	1009.16	1071.37	959.77	891.49	814.68
12:00	36.58	4.88	1119.32	1270.59	1268.82	1108.89	1051.72	976.99	906.43	811.57
12:15	43.04	4.9	1132.94	1344.89	1350.49	1161.67	1154.26	1008.26	936.16	842.7
12:30	45.94	4.96	1101.28	1304.23	1283.1	1127.3	1142.19	1009.24	982.66	931.03
12:45	39.3	5.18	1128.6	1284.78	1272.72	1100.7	1130.44	1007.55	975.78	901.67
13:00	35.7	4.75	1128.94	1337.14	1296.08	1116.93	1106.07	1015.43	986.06	914.48
13:15	43.38	5.2	1150.88	1303.79	1273.24	1106.05	1099.05	979.18	955.19	867.77
13:30	42.75	3.92	1120.59	1250.65	1224.97	1069.06	1076.98	942.93	886.72	809.2
13:45	35.03	5	1171.34	1267.93	1252.37	1083.94	1146.57	927.24	909.96	817.03
14:00	43.13	5.03	1169.7	1235.43	1213.46	1065.26	1144.56	897.97	909.25	844.01
14:15	40.68	4.83	1153.68	1222.68	1208.94	1051.56	1158.38	878.12	919.45	846.14
14:30	40.57	4.83	1148.18	1229.94	1216.86	1054.22	1108.09	874.7	904.81	834.11
14:45	41.36	4.59	1153.05	1250.48	1229.07	1053.51	1116.86	915.07	910.35	847.2
15:00	37.61	5.25	1179.4	1213.71	1219.93	1063.09	1131.43	930.57	911.94	841.09
15:15	46.85	6.12	1141.65	1218.77	1210.66	1045.46	1090.28	905.06	870.35	801.77
15:30	38.63	6.33	1151.03	1278.15	1262.39	1087.06	1207.11	967.01	963.82	896.95
15:45	44.03	6.69	1180.3	1262.06	1267.93	1096.7	1220.75	955.21	930.8	863.99
16:00	43.71	6.4	1197.17	1271.63	1262.74	1113.69	1229.34	977.55	983.87	926.43
16:15	38.26	6.84	1186.9	1257.35	1257.78	1120.17	1210.13	955.93	961.27	903.7
16:30	42.72	6.27	1175.54	1249.55	1241.09	1115.04	1204.2	944.88	959.64	920.8
16:45	46.94	6.93	1181.86	1285.37	1255.49	1109.77	1182.62	924.52	931.81	864.24
17:00	41.02	6.3	1193.77	1267.17	1243.11	1119.43	1206.69	927.84	948.36	874.51
17:15	41.26	6.82	1217.95	1266.85	1239.42	1111.4	1197.28	915.61	948.77	874.94
17:30	43	6.36	1200.42	1276.85	1252.95	1125.26	1212.42	925.8	957.41	901.72
17:45	40.85	6.41	1228.71	1263.7	1238.05	1109.99	1189.84	909.56	930.54	850.25
18:00	44.56	6.31	1191.37	1284	1237.05	1111.37	1196.09	916.96	936.25	880.17
18:15	38.31	7.08	1226.36	1304.99	1257.18	1136.46	1217.24	937.21	961.98	924.68
18:30	42.25	5.84	1224.52	1297.4	1251.2	1136.58	1168.89	901.1	914.05	856.9
18:45	45.85	7.45	1245.45	1311.63	1254.52	1132.11	1190.15	878.42	940.81	897.13
19:00	39.41	6.06	1261.47	1292.29	1246.1	1134.38	1208.78	910.23	922.31	879.63
19:15	40.56	6.56	1229.12	1276.76	1221.52	1107.19	1152.58	919.21	898.22	864.39
19:30	47.64	6.61	1169.09	1296.75	1221.79	1108.83	1174.18	932.91	935.08	909.73
19:45	42.36	7.25	1199.26	1303.86	1249.12	1144.04	1200.43	946.42	956.33	954.34

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
20:00	40.1	6.02	1157.67	1294.1	1226.86	1121.37	1172.67	928.16	950.11	932.32
20:15	45.27	9	1149.14	1300.51	1241.04	1176.44	1196.71	932.59	947.67	948.02
20:30	44.79	8.44	1175.32	1330.2	1268.26	1277.18	1242.1	929.94	965.12	921.55
20:45	39.81	9.59	1220.7	1316.36	1261.46	1274.46	1211.92	910.7	930.57	873.17
21:00	40.54	8.1	1204.73	1312.82	1244.82	1293.1	1206.2	914.91	937.85	900.8
21:15	45.97	9.24	1202.18	1310.7	1238.36	1294.7	1193.95	911.16	941.37	897.31
21:30	40.21	8.45	1186.91	1313.89	1259.28	1331.99	1229.61	929.37	983.17	936.99
21:45	45.27	8.24	1199.78	1301.37	1238.79	1312.37	1208.35	925.18	962.37	915
22:00	40.44	8.85	1237.28	1305.33	1257.76	1321.08	1233.45	934.07	985.39	941.95
22:15	39.54	8.09	1193.01	1302.27	1239.95	1285.05	1193.17	920.92	936.32	893.15
22:30	44.69	9.58	1204.92	1302.04	1222.98	1262.81	1154.78	899.33	917.17	864.69
22:45	40.92	8.25	1201.06	1313.86	1251.82	1256.36	1193.19	914.43	929.59	866.93
23:00	47.62	8.28	1194.17	1318.94	1237.85	1276.25	1184.94	918.91	953.33	898.54
23:15	41.13	8.78	1192.82	1323.86	1254.17	1275.45	1205.7	931.96	975.04	917.73
23:30	39.03	8.56	1193	1317.92	1247	1268.6	1192.69	928.57	949.21	887.96
23:45	44.32	8.21	1203.81	1312.07	1257.96	1276.51	1211.86	929.98	957.71	897.99
24:00	45.45	8.52	1210.4	1310.24	1247.66	1267.03	1183.36	918.33	918.85	856.19
24:15	39.56	8.5	1234.42	1324.99	1284	1257.6	1206.16	935.4	971.72	880.83
24:30	39.93	8.18	1199.28	1332.62	1287.04	1271.99	1205.07	935.11	985.13	896.21
24:45	45.61	8.94	1197.98	1326.13	1289.34	1278.19	1204.22	935.41	960.09	874.73
25:00	43.63	9.38	1192.42	1343.27	1299.84	1285.44	1203.75	936.44	943.5	864.24
25:15	42.31	12.04	1217.6	1355.67	1323.69	1296.75	1256.74	976.42	1001.53	915.32
25:30	51.47	11.11	1222.96	1367.2	1336.77	1305.81	1269.42	1008.53	1023.16	938.69
25:45	43.78	12.63	1217.88	1376.24	1348.5	1312.19	1278.63	1017.98	999.16	915.48
26:00	44.7	12.2	1241.05	1386.48	1364.19	1319.86	1324.14	1070.8	1041.16	947.35
26:15	51.38	10.67	1271.85	1391.21	1361.94	1317.09	1311.61	1093.03	1044.02	943.17
26:30	42.22	12.24	1268.31	1393.15	1372.72	1320.75	1314.07	1110.57	1047.37	938.23
26:45	47.46	12.43	1287.58	1398.38	1373.49	1314.57	1333.8	1115.02	1050.64	928.96
27:00	47.39	11.01	1295.9	1446.92	1405.05	1326.88	1350.85	1113.77	1065.47	936.37
27:15	42.3	11.01	1317.48	1424.21	1397.25	1309.89	1329.53	1109.39	1055.49	931.6
27:30	52.31	12.38	1268.32	1409.69	1428.89	1319.6	1329.5	1109.99	1055.12	921.28
27:45	44.26	12.26	1275.73	1401.9	1501.88	1317.62	1386.63	1128.82	1133.6	1013.32
28:00	45.4	10.68	1224.82	1468.17	1529.48	1284.04	1379.81	1107.87	1065.59	944.51
28:15	46.08	11.39	1391.81	1344.6	1501.71	1273.18	1406.53	1120.8	1137.06	1019.48
28:30	43.56	11.68	1386.37	1310.67	1466.07	1299.06	1438.63	1144.64	1184.21	1055.03
28:45	53.82	11.62	1349.08	1337.77	1511.72	1325.41	1469.12	1163.93	1184.39	1045.58
29:00	44.03	11.6	1384	1372.51	1516.19	1366.62	1468.72	1176.09	1217.07	1083.29
29:15	45.78	10.99	1371.89	1395.93	1469.25	1364.35	1462.98	1177.63	1209.77	1091.41
29:30	50.42	12.34	1367.01	1408.59	1450.56	1385.99	1485.96	1186.15	1197.45	1079.22
29:45	41.61	12.25	1361.26	1385.77	1420.99	1373.76	1461.28	1171.51	1171.08	1048.93

Time (Min:Sec)	T/C 9	T/C 10	T/C 11	T/C 12	T/C 13	T/C 14	T/C 15	T/C 16	T/C 17	T/C 18	T/C 19
00:00	70.64	71.33	72.51	73.92	76.49	72.5	70.75	71.3	71.65	68.38	68.42
00:15	312.28	284.54	247.17	254.61	223.41	91.39	185.59	189.9	86.91	68.43	68.43
00:30	341.33	323.94	286.21	276.74	243.01	104.32	199.8	237.21	110.67	68.54	68.47
00:45	366.3	342.07	298.81	290.05	246.65	109.27	196.8	255.77	138.4	68.93	68.74
01:00	374.91	334.8	294.85	282.9	243.22	105.1	199.71	216.94	163.92	69.38	69.36
01:15	401.76	369.13	327.54	310.11	266.77	112.07	211.73	245.65	154	70.04	70.2
01:30	364.43	338.67	299.78	268.7	234.32	117.07	235.7	251.62	135.77	70.77	71.2
01:45	462.01	414.16	363.44	334.96	269.22	128.16	223.81	247.62	137.87	71.51	72.18
02:00	395.33	365.67	324.99	312.1	268.84	129.73	249.44	261.9	135.35	72.43	73.4
02:15	426.37	384.53	345.61	322.1	271.34	124.82	228.23	246.09	137.86	73.38	74.77
02:30	400.57	361.08	325.35	301.91	256.99	123.04	216.23	248.34	136.87	74.21	76.25
02:45	409.79	363.92	333.56	314.53	269.35	120.11	231.12	235.74	147	75.09	77.72
03:00	427.14	388.91	343.96	316.3	268.65	127.42	250.42	261.43	160.24	76.05	79.23
03:15	421.01	380.65	338.45	315.87	267.14	130.08	245.98	275.01	169.08	76.94	80.64
03:30	447.4	403.3	357.9	336.39	272.21	134.19	245.15	251.22	153.02	77.78	82.08
03:45	444.55	405.24	358.57	326.41	275.22	122.63	242.41	229.72	146.25	78.72	83.21
04:00	446.83	394.77	361.12	335.71	269.6	134.98	236.21	254.5	155.5	79.61	84.3
04:15	444.06	404.34	364.17	336.85	271.07	142.57	251.2	265.35	139.49	80.31	85.23
04:30	453.3	406.4	360.04	336.16	291.57	140.32	226.74	281.42	145.51	81.44	86.29
04:45	486.66	424.15	369.21	333.07	283.56	148.02	248.82	259.9	146.82	82.56	87.77
05:00	463.19	424.03	369.47	343.17	288.45	124.1	253.38	256.15	144.89	83.58	88.99
05:15	534.86	486.41	422.48	393.93	332.15	142.72	283.9	318.59	171.88	84.75	90.77
05:30	573.73	515.18	447.22	426.33	344.87	144.02	298.41	333.69	183.73	85.44	92.07
05:45	597.86	563.86	489.28	458.54	373.77	148.24	291.8	346.17	187.61	87.25	94.06
06:00	638.7	578.29	495.14	468.74	378.97	154.92	327.35	351.33	161.1	88.94	96.07
06:15	571.25	519.64	458.36	420.28	349.87	157.96	298.42	360.55	179.97	90.31	97.63
06:30	582.47	530.18	469.88	434.83	358.57	151.87	305.76	355.79	180	91.79	99.69
06:45	604.47	568.03	482.35	439.33	365.18	146.27	304.72	357.49	164.75	93.16	101.82
07:00	609.49	554.09	476.02	436.65	361.23	157.1	326.29	346.58	166.24	94.65	103.24
07:15	577.68	520.01	450.63	423.99	355.83	162.88	313.89	373.68	170.89	95.66	104.74
07:30	599.72	552.01	484.9	454.35	379.36	137.24	289.88	355.06	183.47	96.49	106.07
07:45	620.87	575.18	501.5	446.76	367.62	146.23	282.24	368.08	177.19	97.9	107.93
08:00	631.09	562.99	495.08	442.19	368.82	134.05	307.15	350.41	168.89	98.87	109.51
08:15	740.21	678.18	580.07	534.24	435.53	137.4	326.34	345.68	156.09	101.09	110.9
08:30	620.04	548.81	489.04	453.43	379.41	146.11	325.5	389.94	165.33	101.94	112.29
08:45	678.09	616.32	538.98	501.79	400.59	147.19	309.74	341.39	145.69	103.69	113.63
09:00	584.39	522.31	465.66	436.65	374.35	144.67	315.21	387.84	147.58	104.99	115.22
09:15	578.04	531.6	469.16	427.92	364.35	146.03	320.4	402.43	145.3	105.68	116.42
09:30	640.26	577.33	510.42	472.32	397.85	152.24	321.54	397.1	142.27	106.82	118.22
09:45	675.31	590.03	514.74	474.37	391.36	142.12	333.1	351.96	158.53	108.27	119.13

Time (Min:Sec)	T/C 9	T/C 10	T/C 11	T/C 12	T/C 13	T/C 14	T/C 15	T/C 16	T/C 17	T/C 18	T/C 19
10:00	722.23	675.92	594.31	554.29	443.74	129.72	304.35	339.2	159.67	109.08	120.82
10:15	696.08	639.98	550.74	506.49	417.84	142.58	303.44	364.17	161.49	111	122.14
10:30	745.38	679.58	595.21	544.82	442.25	139.31	317.39	370.97	158.09	112.12	123.79
10:45	783.11	700.45	615.72	561.49	453.22	134.24	343.51	361.61	159.89	113.52	124.26
11:00	763.43	686.39	593.58	536.37	431.18	148.64	341	376.07	170.2	114.69	125.9
11:15	696.8	652.97	566.26	531.99	439.48	149.01	350.48	368.76	175.62	115.67	127.55
11:30	652.47	601.74	543.39	494.55	421.91	153.71	305.48	396.01	152.85	117.32	129.16
11:45	744.18	662.58	576.03	526.53	427.36	138.62	321.4	401.77	165.76	118.58	130.61
12:00	733.38	628.95	540.36	488.8	403	151.16	330.21	367.78	153.47	119.62	131.78
12:15	759.67	691.88	605.63	549.7	434.69	140.4	360.08	361.9	152.96	120.84	133.04
12:30	885.78	801.66	687.94	638.72	521.51	145.68	327.43	369.2	161.66	122.58	134.43
12:45	843.19	747.74	637.71	573.14	461.22	143.37	339.18	361.91	188.02	123.91	135.65
13:00	877.37	802.69	696.58	636.83	511.9	135.86	293.57	397.7	168.82	125.12	137.09
13:15	815.77	689.28	630.52	585.88	483.5	131.57	300.94	391.14	173.55	126.36	138.37
13:30	747.97	640.2	571.84	534.15	441.84	153.27	342.7	389.35	179.95	127.53	138.93
13:45	744.05	676.32	602.59	557.27	456.19	163.99	356.51	373.52	171.72	128.59	140.69
14:00	781.89	699.33	609.86	554.03	448.61	156.04	375.63	372.04	169.71	130.11	142.22
14:15	802.98	712.14	622.59	571.03	465.88	155.52	359.4	366.46	158.52	131.26	143.96
14:30	715.1	698.59	614.74	555.76	449.69	150.22	331.8	366.16	156.73	132.32	145.36
14:45	717.19	695.89	605.38	555.62	462.46	149.32	322.37	365.93	187.38	133.64	146.57
15:00	706.29	684.57	598.34	533.61	421.62	161.82	347.95	347.55	180.26	134.95	147.65
15:15	682.31	687.11	603.53	546.68	455.91	144.52	331.27	379.46	166.61	136.41	148.78
15:30	735.89	782.3	678.02	621.22	516.63	153.81	346.52	394.47	168.51	137.18	150.41
15:45	800.12	756.95	656.99	606.71	501.51	162.28	337.91	384.81	176.75	139.09	151.57
16:00	869.75	800.69	697.05	632.92	507.06	166.95	353.61	364.83	159.22	140.21	152.69
16:15	845.43	767.26	666.58	614.42	497.01	153.62	359.03	348.77	169.65	141.21	154.11
16:30	857.5	786.58	685.02	629.05	511.87	170.66	379.8	363.03	164.2	142.3	155.2
16:45	786.56	716.95	633.71	571.16	462.9	204.61	382.19	394.08	164.07	144.06	156.79
17:00	822.21	761.72	658.24	595.06	489.17	209.1	392.72	390.91	154.68	145.27	158.04
17:15	804.29	724.49	615.9	558.3	470.41	204.91	386.07	400.11	144.97	146.23	159.1
17:30	848.48	786.38	696.33	632.3	509.53	178.52	393.27	393.12	169.98	148.21	159.7
17:45	774.03	702.61	620.49	569.65	468.32	189.13	439.37	404.26	168.08	148.83	161.31
18:00	826.57	764.36	660.55	609.49	504.48	180.58	363.26	425.65	159.47	149.66	162.82
18:15	879.38	820.84	700.77	637.35	524.94	189.45	353.28	385	142.29	151.31	164.04
18:30	798.42	725.85	633.3	576.98	483.49	181.83	415.62	377.69	159.46	152.7	165.03
18:45	854.27	788.69	692.69	640.67	511.31	213.89	402.14	382.32	151.17	153.91	165.68
19:00	813.19	739.91	649.38	591.68	484.96	202.9	436.86	395.21	148.07	155.44	166.8
19:15	809.29	736.04	643.76	584.06	486.5	210.78	385.67	358.88	143.58	156.33	168.62
19:30	840.62	769.44	662.62	597.55	490.19	198.93	385.62	364.57	180.27	157.56	169.69
19:45	881.45	807.96	695.34	634.58	514.98	207.41	381.37	376.61	180.53	158.72	171.21

Time (Min:Sec)	T/C 9	T/C 10	T/C 11	T/C 12	T/C 13	T/C 14	T/C 15	T/C 16	T/C 17	T/C 18	T/C 19
20:00	845.96	769.71	670.94	620.4	493.72	207.75	372.46	414.42	177.77	159.53	172.12
20:15	878.54	797	688.32	632.96	511.69	191.77	394.32	396.2	190.78	159.66	173.88
20:30	842.83	761.5	656.76	604.73	500.89	196.49	403.05	433.27	184.98	160.77	175.41
20:45	806	724.17	622.49	552.51	460.56	206.31	416.66	358.35	160.92	161.98	176.84
21:00	825.48	767.53	667.51	598.52	474.94	206.3	420.81	405.85	177.73	163.4	178.8
21:15	812.48	736.53	634.52	555.1	450.58	210.51	422.79	433.55	172.06	164.49	180.42
21:30	891.65	827.64	709.63	632.85	518.52	197.61	371.5	438.28	179.09	166.72	181.65
21:45	872.39	807.79	687.72	618.61	504.21	202.72	402.44	404.43	176.55	168.05	183.23
22:00	902.66	813.62	699.55	629.48	525.28	204.09	390.44	424.4	180.79	169.24	185.53
22:15	862	764.96	670.25	609.94	511.2	195.85	383.23	420.44	177.63	170.11	187.09
22:30	819.94	734.85	639.79	565.7	471.32	198.97	408.5	389.45	178.68	171.36	188.4
22:45	821.51	755.93	667.41	607.59	490.67	223.82	398.16	396.29	183.82	173.37	190.5
23:00	872.45	797.83	688.43	632.88	512.78	204.13	393.04	448.21	196.3	174.62	191.31
23:15	891.17	806.67	699.29	629.07	496.56	194	410.49	440.03	180.18	175.35	193.18
23:30	856.73	790.45	699.36	641.16	510.12	195.93	383.14	405.85	178.33	175.66	194.35
23:45	865.35	787.38	694.31	632.38	516.46	225.71	383.95	418.12	172.05	178.01	195.3
24:00	823.21	749.65	661.18	615.31	506.53	195.9	431.8	402.61	175.27	178.42	196.54
24:15	853.28	797.18	702.43	652.14	530.1	208.95	445.47	406.24	174.7	179.81	198.29
24:30	863.85	789.21	682.76	612.83	483.65	209.97	385.26	454.13	181.75	181.06	199.56
24:45	837.72	777.74	686.73	626.32	506.76	196.97	408.58	427.51	177.76	182.41	200.76
25:00	832.45	761.56	680.73	615.27	480.32	215.21	381.16	473.12	191.67	183.39	201.7
25:15	913.33	845.32	743.54	696.6	559.93	203.33	421.78	438.39	175.79	184.44	202.86
25:30	919.49	845.03	740.2	679.04	532.8	210.22	404.54	427.32	188.27	185.83	204.32
25:45	877.85	801.44	711.46	650.94	520.4	223.14	427.85	446.22	188	187	205.7
26:00	925.04	838.36	738.11	685.12	527.98	208.28	404.48	452.24	199.31	189.1	207.03
26:15	936.45	851.62	754.09	684.99	557.36	201.03	434.55	404.08	177.08	190.8	207.87
26:30	924.52	845.49	749.92	694.7	548.09	223.4	415.45	455.68	180.12	192.33	209.88
26:45	914.7	833.96	723.91	659.93	526.92	230.85	409.08	467.21	185.3	193.2	210.96
27:00	914.76	838.33	736.04	665.55	541.43	217.57	395.17	445.59	194.49	195.33	211.67
27:15	919.97	842.66	733.11	664.05	529.7	222.94	439.06	367.88	176.98	196.04	213.23
27:30	893.73	798.94	708.19	637.31	515.75	225.05	474.27	434.99	192.61	195.9	214.82
27:45	1033.72	973.87	842.98	787.2	629.9	200.6	398.55	471.91	214.07	197.37	216.44
28:00	921.48	836.02	734.8	679.17	556.33	205.06	396.64	470.76	199.01	198.44	217.46
28:15	1003.35	910.09	781.57	717.79	577.01	213.65	401.46	491.68	202.01	199.77	219.03
28:30	1038.63	950.57	815.41	746.03	603.5	223.51	419.03	523.67	220.97	199.49	219.36
28:45	1004.75	908.12	789.04	715.28	583.69	228.29	430.76	489.45	187.79	200.52	219.91
29:00	1037.59	973.97	828.01	761.83	611.69	198.19	411.09	480.91	180.67	203.33	219.26
29:15	1029.51	952.99	823.22	756.72	606.68	206.87	404.35	423.87	177.09	205.1	219.98
29:30	1032.74	959.64	824.06	746.06	581.18	211.51	445.33	446.68	175.01	207.33	220.88
29:45	989.41	921.24	804.97	735.2	601.36	236.67	461.54	451.42	210.23	209.47	222.05

Time (Min:Sec)	T/C 20	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
00:00	68.87	69.93	70.57	69.51	69.94	70.32	71.56	72.58	73.43	74.97	77.14
00:15	68.41	72.31	73.56	69.69	70.27	70.48	71.41	72.95	73.4	74.47	78.08
00:30	72.47	73.74	96.15	75.93	71.38	71.65	73.7	81.28	76.86	74.7	82.97
00:45	82.26	78.61	109.91	84.24	74.06	75.14	79.37	89.73	82.44	77.3	85.19
01:00	91.87	84.08	120.58	91.43	77.13	79.27	85.51	95.86	87.28	81.3	87.03
01:15	99.48	89.14	130.36	97.23	80.28	82.91	90.97	100.58	91	85.44	88.94
01:30	107.34	93.93	140.57	102.19	83.61	86.67	96.07	104.86	94.57	89.57	90.69
01:45	114.9	98.86	149.77	107.13	87.07	90.21	99.91	108.65	97.84	93.23	92.46
02:00	123.46	104.43	162.64	113.15	90.9	93.63	103.77	112.84	101.4	96.29	94.42
02:15	131.54	109.73	169.42	119.01	94.65	97.3	107.74	115.17	104.13	98.88	96
02:30	139.32	114.95	176.82	124.98	98.3	100.49	111.3	117.6	106.46	101.08	97.81
02:45	146.2	120.2	182.81	130.83	101.84	103.51	114.26	119.61	108.92	103.19	99.08
03:00	150.23	125.33	191.24	136.12	105.45	106.06	116.82	121.71	110.8	105.07	101.02
03:15	155.82	130.88	199.22	141.67	109.19	109.11	119.3	124.05	112.99	106.73	102.79
03:30	150.37	135.95	206.61	147.13	112.91	111.81	121.83	126.27	115.15	108.54	104.33
03:45	149.16	141.29	215.46	152.64	116.71	114.16	124.47	129.28	117.45	110.73	106.18
04:00	154.19	146.81	221.85	158.36	120.53	117.24	127.24	130.84	119.87	112.99	107.91
04:15	159.51	152.28	227.32	163.32	124.38	119.39	130.13	133.55	121.61	115.14	109.85
04:30	165.24	157.5	232.66	168.32	128.17	122.04	132.95	136.29	123.94	117.1	111.5
04:45	171.24	163.19	237.21	173.21	132.02	124.51	135.65	139.47	125.99	119.27	113.41
05:00	182.64	168.71	235.05	178.68	135.87	127.5	138.34	143.16	128.45	121.49	115.57
05:15	201.27	174.45	238.3	184.16	139.71	129.7	141.44	146.3	130.07	123.48	117.31
05:30	224.27	180.47	250.89	190.73	143.8	132.19	144.78	150.82	133.1	125.58	119.6
05:45	243.11	186.52	264.2	198.55	148.35	135.72	148.61	156.15	136.35	128.68	122.84
06:00	256.01	193.15	277.9	205.76	153.03	137.98	152.61	160.04	140.21	131.65	125.46
06:15	272.88	200.19	283.2	212.14	158.08	141.98	156.56	164.32	143.63	134.97	127.74
06:30	295.3	206.44	291.3	218.35	162.77	145.61	160.28	166.92	146.18	138.09	129.7
06:45	292.38	213.48	305.24	226.2	167.49	148.87	163.95	169.36	148.4	140.96	132.58
07:00	298.32	220.73	314.49	232.12	172.26	151.82	166.9	172.14	150.66	143.94	134.75
07:15	307.57	228.09	323.62	238.91	176.9	155.21	169.38	175.01	153.37	146.47	137.27
07:30	317.21	235.77	333.38	243.18	181.46	158.96	172.21	177.22	155.94	149.33	139.18
07:45	326.24	242.82	342.13	248.81	186.02	161.2	174.03	180.51	158.5	152.27	141.64
08:00	334.97	248.95	353.07	255.16	190.71	164.58	175.67	184.5	161.09	154.69	143.18
08:15	342.85	255.56	368.51	261.43	195.67	168.11	178.27	188.35	164.96	157.74	146.59
08:30	351.13	264.22	378.34	268.69	200.85	172.23	183.79	192.48	168.6	160.94	149.09
08:45	359.07	272.03	383.7	276.06	206.54	176.05	192.06	195.28	171.13	163.7	150.21
09:00	367.2	279.72	391.55	282.91	213.05	179.15	198.56	199.02	172.63	166.12	153.07
09:15	375.07	287.94	396.23	290.18	218.96	182.56	202.8	201.1	174.27	168.56	154.61
09:30	381.65	295.52	397.72	296.42	224.32	186.16	206.15	202.7	176.48	171.21	156.13
09:45	388.71	303.23	402.19	300.87	229.68	188.69	209.63	205.48	179.3	173.24	159.94

Time (Min:Sec)	T/C 20	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
10:00	395.62	309.95	402.88	306.85	235.3	193.19	213.58	209.2	181.16	175.76	162.31
10:15	401.87	318.41	409.4	317.25	241.09	197.38	217.75	214.41	184.35	178.7	167.04
10:30	408.35	326.32	421.92	339.8	247.03	199.53	222.53	217.48	187.97	181.39	170.74
10:45	414.95	333.24	435.43	347.17	253.37	204.26	227.88	220.91	190.94	184.15	175.29
11:00	421.51	340.8	439.06	353.03	260	209.45	233.6	225.37	194.09	187.14	177.33
11:15	427.61	347.46	443.94	353.58	267.17	213.04	238.96	230.97	196.69	190.13	180.23
11:30	433.97	354.52	449.27	348.33	274.14	218.76	244.13	235.01	199.16	193.07	182.37
11:45	438.49	361.7	457.07	354.33	280.83	221.56	247.66	236.05	199.68	195.52	183.87
12:00	443.18	367.76	465.14	359.87	287.35	224.5	250.35	236.96	201.24	197.89	186.45
12:15	448.07	373.5	485.58	365.34	292.85	228.3	252.64	238.73	203.35	198.57	189.25
12:30	453.03	379.68	488.6	370.95	298.91	231.46	257.79	242.73	206.8	201.83	191.17
12:45	457.45	385.26	496.58	376.9	305.2	236.28	263.37	248.73	210.74	203.29	198.06
13:00	462.6	390.61	504.74	382.83	311.35	240.95	270.97	253.23	214.08	207.17	200.55
13:15	467.57	395.34	507.17	389.31	317.55	246.1	278.72	256.65	218.17	209.96	204.92
13:30	473.53	401.52	512.5	395.75	324.22	251.52	282.88	257.38	223.4	212.73	206.91
13:45	478.08	407.03	516.3	401.46	330.6	258	287.39	260.39	224.54	216.43	208.14
14:00	482.88	412.34	516.05	412.2	336.81	261.02	290.43	262.89	226.56	218.46	210.75
14:15	487.7	417.12	520.03	420.83	342.83	264.97	294.62	266.19	229.88	220.52	213.2
14:30	492.5	421.84	519.13	416.85	348.97	268.51	329.01	269.03	232.85	223.21	214.9
14:45	497.5	426.21	515.77	424.85	354.59	271.68	331.32	271.43	234.93	226.04	217.06
15:00	502.17	431.14	511.66	429.15	359.61	274.65	327	274.51	237.32	228.57	218.78
15:15	507.88	435.54	512.49	436.98	364.33	275.42	327.38	277.9	238.83	230.92	220.34
15:30	511.78	439.64	515.32	452.43	368.82	278.28	326.68	280.85	241.8	233.14	222.94
15:45	517.08	443.86	518.93	464.33	373.39	282.3	327.21	285.64	244.69	236.1	227.5
16:00	522.89	448.31	521.68	488.5	378.06	286.17	339.07	290.74	248.96	239.02	231.04
16:15	528.92	452.97	523.8	489.35	382.77	289.45	339.61	295.47	252.55	242.12	233.74
16:30	534.26	457.49	524.85	490.5	387.28	292.76	343.97	299.93	254.93	245.98	235.71
16:45	539.73	462.07	528.46	490.06	391.59	295.97	345.92	304.51	258.14	247.99	238.15
17:00	544.55	466.44	529.93	487.84	395.7	297.75	339.16	307.13	259.94	250.64	240.12
17:15	550.16	470.58	534.12	490.69	399.58	301.53	339.55	310.38	262.87	253.6	242.54
17:30	556	474.81	537.43	517.27	404.49	305.06	350.1	313.47	264.41	255.99	243.83
17:45	561.99	479.36	542.7	504.7	407.97	308.53	354.43	315.57	267.35	257.85	245.74
18:00	567.54	484	546.02	496.9	410.63	312.25	356.4	313.15	269.32	261.51	247.85
18:15	572.97	487.61	550.55	507.24	413.82	314.85	361.99	314.5	271.85	264.82	251.21
18:30	578.89	491.81	556.04	496.73	416.78	319.4	366.08	316.77	274.18	265.83	253.9
18:45	584.78	496.84	559.41	506.41	419.83	323.37	369.46	324.3	276.89	268.39	254.09
19:00	590.23	501.2	561.61	498.89	422.65	328.79	372.67	329.65	279.46	271.4	257.72
19:15	595.51	505.14	565.55	498.17	425.52	328.22	374.67	332.25	281.65	273.02	258.78
19:30	601.36	509	570.12	500.07	428.33	331.06	377.39	334.74	282.47	274.42	259.88
19:45	606.54	512.59	572.96	502.66	431.11	334.44	380.05	338.29	284.79	277.5	262.05

Time (Min:Sec)	T/C 20	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
20:00	612.69	516.72	575.6	501.99	434.02	338.4	383.22	340.66	288.46	278.04	260.32
20:15	618.95	520.65	578.54	507.19	436.94	349.18	437.65	329.28	290.52	281.19	259.13
20:30	637.32	525.79	583.04	509.57	439.81	425.58	442.83	329.07	292.56	282.45	258.72
20:45	645.74	530.79	586.87	512.12	442.61	431.74	434.12	331.39	296.06	284.33	259.43
21:00	653.29	536.22	591.78	515.14	445.42	434.16	442.85	332.41	297.64	286.19	260.13
21:15	660.81	541.81	595.49	517.88	448.13	435.81	438.39	334.83	297.33	286.53	261.31
21:30	668.46	546.75	601.11	519.96	450.96	437.34	440.26	337.09	299.51	288.18	263.06
21:45	677.26	551.91	605.91	523.02	454.05	439.96	441.7	339.49	302.18	289.2	265.84
22:00	686.98	557.17	610.01	524.84	457.05	442.52	444.86	342.73	303.58	289.72	267.46
22:15	697.28	562.32	614.36	527.33	460.04	445.06	448.12	346.58	306.1	293	269.87
22:30	706.84	567.59	616.42	527.76	462.74	447.22	450.3	349.94	306.66	294.27	271.67
22:45	714.02	572.39	619.42	527.59	465.07	448.88	443.34	351.25	309.98	296.75	273.41
23:00	721.7	577.19	623.21	528.87	467.49	450.27	442.71	352.85	310.65	298.16	275.25
23:15	727.76	581.89	626.27	537.69	470.04	452.23	443.45	354.49	312.66	299.39	277.44
23:30	734.81	586.95	628.95	535.54	472.7	454.35	442.11	356.34	316.15	300.25	279.42
23:45	741.87	592.3	632.72	537.95	475.29	456.48	441.23	358.39	318.85	302.28	281.28
24:00	748.21	597.6	635.49	540.36	477.7	458.3	444.52	360.63	318.61	304.84	282.99
24:15	754.57	603.08	638.14	545.28	480.04	459.8	444.79	362.75	320.75	306.39	284.83
24:30	760.8	608.88	640.77	548.48	482.46	461.56	447.93	364.62	322.93	307.86	286.62
24:45	767.13	614.75	643.98	552.12	484.98	463.56	446.45	366.6	325.26	310.38	288.4
25:00	773.04	620.97	646.9	559.54	487.51	465.91	449.79	368.37	327.5	311.8	289.99
25:15	779.41	627.5	651.89	561.85	490.12	467.81	449.96	370.59	330.72	313.35	291.91
25:30	786.27	634.49	659.87	564.5	492.93	470.29	463.84	372.43	333.35	315.97	294.17
25:45	793.71	641.61	666.03	566.75	495.73	473.02	452.72	374.67	335.72	317.71	295.6
26:00	802.09	648.84	672.11	568.54	498.58	475.11	461.68	376.96	338.34	319.73	297.3
26:15	808.69	656.13	679.55	568.31	501.63	477.27	454.59	379.68	342.81	321.81	299.27
26:30	815.54	663.63	684.42	572.83	504.65	480.56	457.56	382.27	346.73	324.32	301.22
26:45	821.93	670.83	690.86	577.6	507.68	483.34	456.54	384.04	349.28	327.98	302.93
27:00	828.34	677.66	696.6	582.4	510.9	485.42	457.22	385.89	352.48	328.63	304.58
27:15	834.21	684.48	703.01	587.07	514.14	487.8	463.32	388.46	356.12	331.3	306.11
27:30	840.07	690.86	710.03	591.55	517.21	489.94	464.26	390.59	358.25	333.18	307.94
27:45	848.87	696.46	718.21	596.01	520.63	491.33	473.03	396.8	360.28	333.11	309.5
28:00	856.66	702.39	729.01	600.8	524.08	493.7	470.44	395.79	363.58	335.87	311.94
28:15	867.08	707.86	737.42	605.75	527.61	495.21	475.12	404.12	369.34	338.78	313.54
28:30	881.01	714.08	755.71	611.64	531.34	498.17	478.17	402.47	371.61	339.88	315.36
28:45	896.7	720.57	773.23	618.56	535.34	501.45	481.24	404.66	376.74	343.08	317.93
29:00	914.05	728.68	786.56	627.13	539.79	504.68	489.69	408.3	380.9	345.18	319.78
29:15	929.5	738.08	795.67	636.18	544.29	508.71	491.66	413.28	383.52	348.91	321.77
29:30	942.22	747.67	804.6	645.55	548.99	512.22	498.93	414.81	387.74	351	324.04
29:45	950.51	757.63	812.76	655.19	553.4	515.61	501.22	416.46	391.95	354.35	325.9

Time (Min:Sec)	T/C 31	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
00:00	69.42	69.42	71.35	72.81	72.34	70.72	70.67	71.04	76.02	73.96	88.8
00:15	69.42	69.39	71.33	73.44	72.35	70.63	70.65	71.07	76.04	74.31	993.48
00:30	69.77	69.46	72.3	76.39	76.5	70.61	70.69	71.12	76.91	84.96	1168.21
00:45	70.26	69.71	73.41	78.38	82.51	70.71	70.92	71.41	78.75	95.57	1204.58
01:00	70.5	70.05	74.04	78.95	86.98	71.36	71.49	71.98	81.11	101.7	1208.26
01:15	70.85	70.46	74.76	80.2	90.52	72.17	72.32	72.83	83.11	104.97	1251.34
01:30	71.32	71.04	75.73	81.36	93.95	73.06	73.35	73.84	84.15	108.41	1242.65
01:45	71.89	71.57	76.71	83.3	97.94	74.42	74.29	74.88	85.63	111.27	1318.24
02:00	72.9	72.46	77.95	85.29	101.36	75.58	75.37	75.96	86.62	114.58	1310.85
02:15	73.76	73.32	79.02	86.01	104.66	76.74	76.29	77.2	87.73	116.66	1275.47
02:30	74.52	74.16	79.56	85.97	107.11	77.97	77.23	78.28	88.38	118.16	1274.94
02:45	75.46	75.27	80.44	86.76	109.13	79.17	78.23	79.21	89.75	119.45	1303.96
03:00	76.19	75.9	81.27	87.73	111.37	80.48	79.22	80.32	91.26	120.62	1299.16
03:15	76.91	77.05	81.76	88.35	113.55	81.73	80.34	81.46	93.17	123.67	1305.39
03:30	78.04	77.73	82.84	89.54	116.02	83.16	81.6	82.7	94.16	125.62	1323.94
03:45	79.13	78.53	83.47	89.3	118.48	84.62	82.73	83.86	95.26	126.23	1305.94
04:00	79.81	79.5	84.33	90.55	120.75	85.88	83.94	84.98	96.13	127.26	1339.48
04:15	80.35	80.45	85.26	92.46	122.37	87.29	84.97	86.08	97.12	129.41	1374.41
04:30	81.11	81.32	85.83	93.67	123.91	88.39	86.09	86.98	98.01	132.02	1316.55
04:45	81.97	82.3	86.8	95.09	125.48	89.37	87.24	87.78	98.94	134.63	1338.18
05:00	82.6	83.36	87.8	94.49	126.81	90.44	88.35	88.5	99.44	135.28	1356.38
05:15	83.17	83.97	88.37	95.54	128.29	91.14	89.26	89.42	100.59	137.72	1330.96
05:30	83.72	85.3	89.28	96.8	131.54	92.47	90.3	90.29	102.65	143.5	1369.18
05:45	84.86	86.2	90.05	98.34	135.31	93.35	91.85	91.57	104.06	146.44	1397.44
06:00	85.95	87.19	91.35	100.48	138.18	94.79	93.18	92.88	105.24	150.35	1362.95
06:15	86.84	88.83	92.85	102.45	141.74	96.26	94.76	93.81	106.61	152.75	1428.1
06:30	87.99	90.4	93.54	102.68	143.8	97.61	96.13	94.87	107.79	155.47	1416.39
06:45	89.11	91.93	94.46	102.39	146.11	99.24	98.06	96.16	109.13	157.53	1383.67
07:00	90.14	93.18	95.1	103.95	148.76	100.57	100.05	97.32	109.76	160.3	1421.23
07:15	91.72	94.19	96.38	105.05	151.07	102.3	101.37	98.59	110.61	162.56	1418.79
07:30	92.4	95.42	97.47	104.37	152.73	103.77	102.95	99.7	111.82	165.16	1377.01
07:45	93.1	96.75	97.45	104.18	153.96	105	104.49	100.56	113.13	166.99	1391.54
08:00	93.95	98.2	98.07	104.46	154.56	106.39	106.31	101.8	113.77	170.35	1385.95
08:15	95.06	99.53	98.4	104.3	156.54	108.55	107.07	103.07	114.39	171.42	1427.05
08:30	95.89	100.65	99.23	105.82	158.6	109.78	108.82	104.01	115.05	172.78	1404.23
08:45	96.69	102.74	99.8	105.88	160.81	111.43	110.81	104.7	115.05	174.98	1431.49
09:00	97.59	104.19	100.75	106.86	162.44	112.78	110.8	105.72	115.09	175.86	1413.11
09:15	98.05	105.25	101.52	107.21	164.2	113.61	111.67	106.72	115.39	178.89	1413.24
09:30	99.33	105.88	102.18	107.65	165.7	114.71	112.07	107.2	115.61	180.81	1419.58
09:45	100.17	107.48	103.2	107.81	167.7	115.99	112.81	108.37	116.03	182.05	1403.33

Time (Min:Sec)	T/C 31	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
10:00	100.54	108.78	103.47	107.01	168.7	116.94	114.14	108.98	116.43	183.2	1415.41
10:15	100.95	109.65	103.87	107.28	170.37	118.21	114.54	110.09	117.19	183.19	1443.95
10:30	101.22	110.22	104.59	107.37	171.63	119.32	115.87	110.68	117.64	186.84	1468.68
10:45	101.8	112.41	105.55	108.04	172.56	120.34	116.21	111.35	118.54	188.3	1534.58
11:00	102.36	113.02	105.64	108.46	174.34	121.37	117.86	112.59	118.96	189.61	1521.94
11:15	103.55	114.54	106.91	109.88	176.53	122.23	118.59	113.31	119.85	191.19	1533.97
11:30	104.62	115.96	107.88	110.87	177.3	122.88	119.91	113.79	120.11	193.9	1562.6
11:45	106.15	117.73	108.63	110.93	177.86	123.71	121.11	116.05	120.82	196.11	1570.51
12:00	106.33	117.19	109.14	111.43	178.8	124.31	121.72	117.09	121.25	197.32	1604.67
12:15	107.35	118.71	110.22	111.67	179.3	124.97	122.59	118.06	121.74	196.92	1572.52
12:30	107.55	120.18	110.97	112.12	181.31	125.94	124.51	119.19	122.38	195.83	1580.03
12:45	108.68	120.51	111.65	112.96	182.28	126.47	124.99	119.93	123.56	198.33	1600.71
13:00	109.11	120.87	112.17	112.98	182.87	127.36	126.6	120.36	124.42	200.47	1600.25
13:15	109.92	122.03	112.05	112.41	183.16	128.5	127.95	121.71	125.2	203.17	1562.35
13:30	110.58	123.22	112.29	113.74	183.47	129.6	128.91	122.09	126.17	204.16	1583.26
13:45	111.85	125.54	113.55	115.99	185.3	130.79	130.09	123.13	126.93	203.64	1582.9
14:00	112.03	124.38	114.86	116.74	186.96	131.79	131.74	124.51	127.39	204.09	1560.02
14:15	113.32	126.43	116.39	118.02	187.4	132.73	132.91	124.72	127.51	204.87	1585.06
14:30	114.57	126.88	116.83	117.93	189.17	132.83	133.8	125.36	127.7	205.38	1561.41
14:45	115.17	128.11	116.93	117.93	189.49	133.31	135.03	126.35	128.13	206.99	1562.38
15:00	116.28	128.61	117.8	117.9	190.08	134.9	137.23	126.81	128.87	206.78	1581.73
15:15	116.72	128.6	118.24	118.17	190.71	136.11	137.9	127.25	129.63	208.5	1580.64
15:30	117.49	130.04	118.83	118.85	192.56	137.54	138.92	128.52	130.16	210.34	1581.84
15:45	119.47	131.88	120.23	119.89	193.66	138.45	140.01	128.82	130.79	211.98	1594.55
16:00	120.66	130.18	121.71	121.16	194.01	139.64	141.75	129.54	131.08	211.46	1621.46
16:15	122.57	131.23	122.95	121.92	195.42	140.39	142.66	130.24	131.32	210.56	1618.23
16:30	123.63	131.79	123.76	122.15	196.51	142.33	143.07	130.6	131.55	210.14	1599.79
16:45	125.75	133.33	125.74	127.22	198.4	143.18	143.93	131.03	131.93	212.86	1594.1
17:00	128.07	137.54	128.4	130.38	199.61	144.14	145.77	131.61	132.41	215.43	1616.74
17:15	130.26	140.9	130.47	131.67	201.17	144.76	147.2	132.41	132.46	215.95	1630.57
17:30	131.78	142.18	130.8	130.96	203.63	146.1	147.91	133.46	133.25	217.36	1625.59
17:45	133.5	145.43	132.16	131.68	205.21	146.99	148.66	133.79	133.56	217.59	1613.26
18:00	134.73	146.12	132.81	131.41	208.34	147.65	149.94	134.5	134.02	219.04	1632.03
18:15	135.98	147.34	132.82	131.93	208.52	149.31	151.21	134.89	134	219.9	1659.47
18:30	137.67	147.97	134.58	132.37	209.69	150.79	152.38	136.04	134.34	219.37	1615.22
18:45	139.71	148.08	135.99	135.97	210.92	151.6	153.38	136.27	134.55	220.33	1653.85
19:00	141.64	148.7	137.94	138.05	213.62	152.49	154.56	136.78	134.58	220.06	1626.71
19:15	143.76	148.41	140.05	139.72	215.39	153.48	155.31	137.19	134.67	221.22	1650.37
19:30	145.61	151.3	141.48	139.47	217.34	154.54	156.36	138.1	135.28	220.06	1630.7
19:45	147.35	154.92	141.71	140.33	218.73	155.33	157.06	138.45	136.03	221.23	1645.04

Time (Min:Sec)	T/C 31	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
20:00	148.25	156.24	142.53	141.58	220.25	156.15	157.91	139.38	136.63	221.38	1619.21
20:15	149.36	158.27	144.04	141.53	221.53	156.78	159.75	139.93	137.5	223.46	1601.53
20:30	150.39	159.69	144.1	142.68	222.33	158.18	161.98	140.31	138.42	223.84	1646.76
20:45	151.8	161.13	144.84	143.07	223.31	159.2	163.46	141.33	138.65	225.58	1666.89
21:00	153.67	162.1	146.32	145.52	225.3	160.03	164.76	141.96	139.07	224.12	1630.27
21:15	155.16	162.36	147.23	146.89	227.29	160.76	164.99	142.68	139.55	226.96	1627.41
21:30	156.06	165.25	147.94	146.37	228.82	161.78	166.62	143.43	140.24	228.28	1632.48
21:45	157.21	165.87	148.18	146.69	229.38	162.61	167.39	144.48	140.78	231.19	1631.8
22:00	158.1	167.21	149.64	148	231.01	164	168.79	145.31	141.5	230.39	1638.05
22:15	159.49	168.71	150.5	148.71	230.16	165.41	170.67	145.8	141.96	231.21	1648.53
22:30	160.71	170.28	151.34	148.63	232.17	166.29	172.09	146.96	142.72	230.57	1655.15
22:45	161.94	169.88	152	149.66	232.76	167.42	173.14	147.71	143.04	231.06	1633.07
23:00	163.05	171.75	153.04	150.82	234.05	168.58	173.88	148.5	143.4	232.4	1642.09
23:15	164.04	173.9	153.57	150.62	235.52	169.5	175.33	148.99	143.9	233.12	1636.66
23:30	165.14	173.11	154.23	150.47	235.96	170.15	176.69	150.11	144.14	234.15	1623.46
23:45	165.91	175.09	155.04	152.49	236.24	170.82	177.33	150.81	144.48	234.79	1604.52
24:00	166.91	176.48	155.72	152.11	236.37	172.36	178.79	151.49	145.15	235.51	1697.72
24:15	168.31	177.71	156.29	152.94	238.32	173.05	179.71	152.48	145.6	234.86	1649.77
24:30	168.77	179.37	156.93	154.03	239.63	173.95	180.3	153.19	145.84	236.15	1619.81
24:45	170.21	179.83	157.95	154.37	240.88	175.33	182.36	153.81	146.47	238.03	1618.1
25:00	171.16	180.11	158.27	154.54	242.9	175.96	182.69	154.45	146.88	238.58	1670.74
25:15	172.06	181.61	159.3	155.39	242.75	176.51	184.22	155.13	146.84	240.25	1654.79
25:30	172.8	182.51	160.16	156.4	243.1	176.62	184.75	156.12	147.19	241	1675.89
25:45	173.97	185.13	161.22	157.66	244.27	177.63	186.42	157.13	147.49	243.38	1684.84
26:00	175.6	185.47	161.97	157.94	245.3	178.32	188.23	157.73	148.16	244.75	1675.65
26:15	176.65	186.57	162.86	157.77	245.65	178.74	189.25	159.1	148.5	244.16	1708.48
26:30	178.01	187.47	163.87	160.09	247.83	179.86	191.82	159.8	148.82	244.25	1760.01
26:45	180.01	185.99	165.21	161.73	249.86	180.9	190.24	160.79	149.58	245.95	1690.87
27:00	181.97	189.5	166.26	161.85	249.73	181.33	190.54	161.73	150.32	247.36	1721.61
27:15	183.43	190.51	167.5	163.18	250.59	182.02	190.3	162.65	150.52	246	1752.45
27:30	185.57	190.95	169.29	164.56	251.58	183.34	192.53	163.9	150.88	245.24	1710.41
27:45	187.18	191.5	169.83	164.43	254.04	183.91	193.8	164.73	151.59	247.74	1724.36
28:00	188.01	194.9	169.98	163.47	255.29	184.41	193.72	165.54	152.43	252.26	1813.61
28:15	188.56	196.7	170.09	163.76	254.44	186.1	193.55	166.71	152.7	256.03	1791.65
28:30	189.65	199.97	170.81	165.56	256.19	186.51	194.23	167.91	153.76	260.48	1754.72
28:45	191.44	199.41	171.93	167.61	256.91	187.49	195.07	169.43	154.29	263.69	1771.77
29:00	192.34	199.49	172.61	166.02	257.75	188.26	195.72	170.74	154.83	267.81	1800.06
29:15	193.55	201.15	172.72	166.37	258.06	189.56	196.13	171.62	155.06	269	1755.39
29:30	195.12	201.42	173.32	166.66	259.38	190.86	197.96	172.58	155.62	268.79	1816.42
29:45	196.55	202.8	174.46	168.64	261.63	192.35	198.46	173.64	156.27	268.26	1799.77

Time (Min:Sec)	Room T/C 42	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
00:00	81.49	90.71	100.59	88.75	84.77	83.5	79.63	68.55	68.21	500	68.92
00:15	767.02	879.42	813.5	648.59	802.54	755.32	663.04	68.47	68.08	500	68.71
00:30	1005.58	1099.24	1021.35	881.01	1118.76	1087.17	981.15	68.34	67.97	500	68.56
00:45	1087.65	1115.36	1013.63	940.56	1169.78	1109.96	1058.5	68.39	67.97	500	68.62
01:00	1080.63	1132.21	1024.38	977.38	1170.77	1109.64	1049.35	68.32	67.93	500	68.52
01:15	1095.44	1174.12	1052.13	1003.26	1209.3	1125.24	1057.22	68.28	67.8	500	68.41
01:30	1103.55	1168.7	1054.67	1013.13	1194.52	1129.55	1065.26	68.28	67.84	500	68.45
01:45	1140.65	1206.84	1075.37	1056.95	1262.12	1182.84	1107.06	68.28	67.88	500	68.46
02:00	1130.52	1227.59	1095.64	1083.99	1263.46	1203.72	1116.33	68.28	67.93	500	68.48
02:15	1145.76	1198.49	1084.46	1060.78	1247.68	1207.52	1126.16	68.3	67.87	500	68.48
02:30	1172.67	1204.28	1097.07	1072.57	1257.04	1203.97	1141.66	68.29	67.86	500	68.44
02:45	1169.96	1235.32	1102.26	1084.98	1264.43	1236.29	1155.49	68.36	67.81	500	68.49
03:00	1184.38	1218.64	1099.36	1095.96	1274.09	1237.78	1165.66	68.36	67.87	500	68.52
03:15	1190.59	1221.68	1101.7	1106.58	1278.01	1246.21	1178.22	68.41	67.87	500	68.54
03:30	1197.5	1232.96	1113.46	1094.17	1270.66	1243.01	1168.28	68.43	67.85	500	68.58
03:45	1193.53	1243.05	1116.8	1108.58	1289.68	1253.9	1174.04	68.48	67.96	500	68.65
04:00	1218.33	1273.49	1123.26	1127.96	1298.02	1280.62	1201.36	68.5	67.96	500	68.77
04:15	1212.68	1270.31	1152.81	1135.5	1316.3	1274.39	1191.15	68.48	68	500	68.99
04:30	1211.11	1240.82	1138.34	1129.81	1296.27	1259.31	1182.42	68.5	68.13	500	68.96
04:45	1218.29	1279.51	1141.82	1145.1	1304.36	1288.59	1198.69	68.52	68.17	500	68.99
05:00	1254.23	1299.55	1147.96	1161.03	1325.57	1303.36	1225.91	68.62	68.15	500	69.02
05:15	1233.58	1293.3	1156.36	1171.54	1322.13	1300.97	1224.7	68.67	68.13	500	69.04
05:30	1267.23	1321.34	1174.77	1184.28	1340.51	1324.49	1241.56	68.66	68.17	500	69.02
05:45	1292.78	1345.98	1186.81	1199.63	1362.78	1362.69	1262.66	68.68	68.17	500	68.97
06:00	1270.09	1352.27	1213.95	1192.74	1376.78	1344.95	1252.23	68.75	68.17	500	68.97
06:15	1348.01	1376.14	1222.19	1203.95	1374.43	1366.4	1264.8	68.81	68.24	500	69.01
06:30	1311.1	1369.48	1222.1	1222.58	1363.67	1345.89	1270.03	68.83	68.26	500	69.12
06:45	1315.21	1352.77	1207.41	1217.25	1357.69	1341.84	1261.6	68.88	68.32	500	69.21
07:00	1338.69	1356.58	1210.97	1223.4	1367.64	1347.08	1275.82	68.88	68.36	500	69.27
07:15	1338.35	1370.94	1215.63	1225.82	1380.11	1365.94	1282.89	68.91	68.44	500	69.34
07:30	1308.1	1353.27	1203.82	1215.57	1342.81	1337.33	1252.8	68.96	68.48	500	69.42
07:45	1311.21	1360.61	1211.35	1224.35	1368.59	1354.79	1266.61	69.03	68.5	500	69.56
08:00	1309.73	1365.88	1209.62	1212.92	1347.59	1333.01	1261.39	69.1	68.57	500	69.67
08:15	1338.43	1362.22	1216.56	1211.78	1373.74	1354.74	1273.61	69.22	68.65	500	69.73
08:30	1319.44	1330.71	1221.09	1203.59	1352.5	1335.65	1256.55	69.29	68.71	500	69.88
08:45	1319.03	1344.69	1230.46	1212.99	1377.95	1359.31	1259.42	69.37	68.77	500	69.92
09:00	1326.56	1356.17	1236.66	1210.42	1365.85	1345.5	1259.66	69.49	68.92	500	70
09:15	1323.99	1356.11	1232.11	1219.36	1362.67	1345.3	1268.37	69.54	68.97	500	70.02
09:30	1333.6	1361.58	1234.27	1212.74	1388.89	1362.31	1268.84	69.62	69.08	500	70.19
09:45	1332.78	1347.64	1236.86	1214.9	1363.11	1338.49	1265.36	69.76	69.25	500	70.27

Time (Min:Sec)	Room T/C 42	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
10:00	1343.11	1348.67	1241.86	1207.66	1378.54	1353.35	1270.19	69.85	69.36	500	70.39
10:15	1364.72	1398.36	1279.09	1237.52	1417.07	1393.33	1294.92	69.96	69.45	500	70.46
10:30	1402.66	1440.06	1305.24	1268.43	1455.28	1451.11	1340.33	70.08	69.6	500	70.52
10:45	1439.68	1456.2	1322	1302.83	1484.22	1473.87	1375.25	70.26	69.77	500	70.67
11:00	1452.05	1466.14	1359.31	1303.71	1510.83	1488.95	1373.04	70.35	69.88	500	70.8
11:15	1454.37	1481.62	1351.55	1313.83	1495.01	1479.22	1379.59	70.38	69.95	500	70.9
11:30	1474.96	1504.65	1349.84	1340.25	1521.77	1521.21	1408.99	70.45	70.11	500	70.99
11:45	1462.56	1511.97	1384.49	1332.58	1569.12	1545.45	1422.49	70.56	70.2	500	71.23
12:00	1459.86	1504.23	1391.21	1338.51	1558.93	1528.96	1416.43	70.66	70.45	500	71.31
12:15	1463.62	1508.17	1406.18	1339.75	1577.79	1523.2	1428.01	70.81	70.6	500	71.48
12:30	1454.29	1514.07	1395.47	1340.76	1576	1570.43	1428.06	70.97	70.81	500	71.64
12:45	1477.38	1526.47	1408.61	1341.39	1576.1	1554.26	1448.43	71.18	71.02	500	71.78
13:00	1497.73	1542.41	1403.61	1370.24	1603.83	1566.9	1440.29	71.34	71.36	500	71.93
13:15	1468.55	1510.38	1412.8	1357.48	1554.3	1553.41	1430.68	71.59	71.63	500	72.13
13:30	1484.01	1522.48	1419.07	1357.21	1555.04	1560.53	1429.91	71.73	71.84	500	72.21
13:45	1482.89	1529.24	1415.77	1362.14	1564.3	1565.41	1440.86	71.84	72.14	500	72.35
14:00	1480.99	1514.82	1404.06	1353.87	1528.11	1525.36	1429.55	72.01	72.33	500	72.44
14:15	1508.69	1550.36	1418.76	1363.92	1581.19	1531.55	1435.86	72.23	72.72	500	72.61
14:30	1498.54	1528.9	1398.75	1364.99	1531.19	1518.26	1430.7	72.42	73.03	500	72.74
14:45	1522.16	1540.78	1400.08	1369.46	1572.16	1541.16	1438	72.66	73.51	500	72.93
15:00	1507.28	1534.42	1409.97	1374.08	1551.09	1526.66	1448.61	72.88	73.73	500	73.09
15:15	1517.1	1529.22	1410.98	1377.26	1543.29	1513.74	1431.78	73.05	73.87	500	73.29
15:30	1540.67	1551.36	1429.04	1392.37	1577.23	1564.59	1457.62	73.17	74.08	500	73.46
15:45	1539.97	1533.85	1412.19	1390.14	1568.67	1568.57	1454.83	73.42	74.51	500	73.61
16:00	1581.11	1591.79	1440.35	1406.78	1576.64	1565.15	1475.78	73.66	74.79	500	73.86
16:15	1569.18	1567.17	1468.72	1404.9	1605.9	1547.65	1479.51	73.97	75.24	500	74.05
16:30	1550.43	1558.87	1448.32	1401.41	1558.95	1551.76	1467.24	74.27	75.52	500	74.26
16:45	1563.54	1547.51	1451	1397.28	1573.29	1572.98	1468.09	74.37	75.68	500	74.28
17:00	1572.48	1581.29	1479.35	1408.91	1568.58	1574.96	1492.04	74.56	76.1	500	74.47
17:15	1549.69	1583.08	1484.76	1423.16	1571.35	1542.7	1482.81	74.91	76.65	500	74.8
17:30	1557.24	1572.27	1496.9	1417.02	1606.62	1534.06	1480.7	75.2	77.01	500	75.13
17:45	1543.36	1562.63	1516.32	1414.66	1605.83	1555.25	1480.76	75.48	77.21	500	75.42
18:00	1567.96	1579.29	1493.41	1424.97	1597.3	1568.55	1488.8	75.74	77.63	500	75.66
18:15	1605.26	1606.72	1475.47	1436.69	1663.18	1635.24	1523.65	76.02	77.81	500	75.95
18:30	1570.39	1566.86	1470.86	1430.57	1593.88	1560.37	1499.2	76.35	78.68	500	76.2
18:45	1561.63	1562.53	1507.75	1421.38	1627.46	1579.77	1493.66	76.63	78.87	500	76.63
19:00	1562.43	1577.46	1539.83	1430.56	1598.47	1552.39	1501.48	77.02	79.15	500	76.81
19:15	1552.67	1581.97	1518.64	1432.57	1601.66	1550.57	1491.79	77.26	79.53	500	76.98
19:30	1543.53	1585.59	1477.03	1422.26	1625.84	1580.89	1486.98	77.51	79.85	500	77.31
19:45	1563.82	1608.84	1472.42	1438.18	1645.12	1624.44	1509.1	77.86	80.09	500	77.62

Time (Min:Sec)	Room T/C 42	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
20:00	1554.6	1595.2	1465.02	1437.35	1608.71	1605.86	1507.38	78.23	80.55	500	77.91
20:15	1579.07	1586.27	1457.2	1426.6	1611.87	1591.28	1503.16	78.53	80.83	500	78.19
20:30	1578.11	1599.2	1463.39	1436.84	1610.12	1574.75	1511.76	78.88	81.47	500	78.49
20:45	1579.24	1576.46	1497.7	1430.98	1672.58	1635.73	1522.7	79.13	81.58	500	78.91
21:00	1561.99	1569.61	1490.09	1424.27	1597.38	1557.32	1507.14	79.46	81.8	500	78.94
21:15	1540.92	1566.43	1476.29	1422.44	1589.84	1577.84	1501.23	79.75	82.2	500	79.11
21:30	1579.85	1594.56	1465.27	1436.84	1620.15	1618.33	1513.5	79.93	82.61	500	79.29
21:45	1580.67	1592.05	1456.52	1444.7	1613.71	1601.33	1516.04	80.35	82.96	500	79.52
22:00	1570.44	1594	1475.37	1433.04	1625.31	1607.06	1532.87	80.9	83.33	500	79.8
22:15	1567.29	1582.36	1483.31	1437.45	1594.03	1570.78	1524.1	81.07	83.65	500	80.01
22:30	1558.79	1580.76	1479.2	1429.6	1594.2	1564.86	1507.06	81.13	83.58	500	80.1
22:45	1547.05	1586	1479.26	1434.12	1630.83	1591.91	1508.3	81.44	84.15	500	80.14
23:00	1557.72	1588.39	1481.8	1434.35	1616.88	1574.72	1513.04	81.8	84.07	500	80.27
23:15	1571.99	1601.78	1479.35	1444.89	1624.29	1617.6	1532.06	81.95	84.21	500	80.35
23:30	1564.51	1598.64	1477.99	1445.64	1618.15	1617.99	1525.79	82.3	84.35	500	80.64
23:45	1543.76	1560.41	1459.74	1430.17	1593.69	1575.41	1509.63	82.5	84.84	500	80.8
24:00	1563.98	1598.52	1483.78	1440.07	1624.19	1575.72	1524.51	82.81	85.41	500	80.92
24:15	1573.33	1601.57	1488.98	1438.59	1624.52	1593.89	1526.39	83.1	85.63	500	81.14
24:30	1563.28	1587.81	1476.71	1436.83	1614.1	1584.95	1518.57	83.3	85.79	500	81.46
24:45	1553.44	1574.25	1464.57	1434.26	1602.52	1592.66	1510.18	83.74	86.28	500	81.84
25:00	1577.38	1599.79	1491.6	1447.35	1614.42	1600.05	1529.36	83.97	86.2	500	82.17
25:15	1596.72	1620.53	1508.37	1462.69	1656.09	1624.92	1546.83	84.27	86.84	500	82.25
25:30	1600.52	1617.73	1513.97	1462.19	1662.36	1623.93	1543.09	84.44	86.91	500	82.53
25:45	1631.7	1650.63	1525.39	1484.59	1666.42	1642.41	1578.16	84.78	87.3	500	82.52
26:00	1612.45	1625.32	1510.23	1479.82	1698.18	1648.89	1579.75	85.06	87.3	500	82.67
26:15	1608.92	1651.96	1537.7	1486.42	1684.42	1648.22	1571.68	85.36	87.96	500	82.97
26:30	1633.33	1669.44	1548.44	1498.92	1676.84	1674.29	1598.14	85.65	87.83	500	83.13
26:45	1623.53	1638.49	1524.29	1492.5	1692.32	1660.44	1591.78	86.06	87.99	500	83.35
27:00	1644.51	1657.49	1522.02	1498.22	1723.87	1678.86	1599.3	86.2	88.08	500	83.5
27:15	1629.55	1658.62	1574.42	1504.49	1693	1661.87	1591.11	86.24	88.56	500	83.69
27:30	1624.58	1658.55	1548.12	1493.87	1680.39	1622.52	1586.6	86.44	88.89	500	83.55
27:45	1672.15	1695.63	1535.65	1515.78	1718.67	1719.15	1614.21	86.78	89.16	500	84.05
28:00	1655.58	1706	1552.22	1535.59	1719.91	1701.12	1610.89	86.9	89.61	500	84.19
28:15	1654.79	1680.24	1532.17	1537.25	1790.64	1755.9	1639.86	87.17	89.53	500	84.33
28:30	1656.37	1669.69	1526.15	1537.63	1792.12	1733.85	1628.21	87.63	89.81	500	84.46
28:45	1653.9	1669.64	1529.06	1530.63	1764.63	1751.76	1621.62	88	90.09	500	84.92
29:00	1684.71	1695.18	1538.34	1546.6	1763.18	1721.02	1634.67	88.02	90.35	500	85.21
29:15	1661.56	1685.34	1533.64	1535.26	1762.88	1717.45	1619.76	88.14	90.42	500	85.31
29:30	1647.28	1695.04	1550.06	1530.56	1751.8	1715.71	1638.23	88.54	90.31	500	85.58
29:45	1673.48	1713.42	1556.67	1543.05	1765.18	1725.03	1634.22	88.7	90.81	500	85.8

Time (Min:Sec)	T/C 52	T/C 53	T/C 54
00:00	68.92	68.58	68.53
00:15	68.71	68.47	68.48
00:30	68.56	68.31	68.34
00:45	68.62	68.31	68.34
01:00	68.52	68.25	68.37
01:15	68.41	68.12	68.29
01:30	68.45	68.16	68.25
01:45	68.46	68.2	68.3
02:00	68.48	68.3	68.38
02:15	68.48	68.26	68.5
02:30	68.44	68.24	68.41
02:45	68.49	68.23	68.45
03:00	68.52	68.26	68.43
03:15	68.54	68.27	68.46
03:30	68.58	68.26	68.47
03:45	68.65	68.33	68.5
04:00	68.77	68.38	68.57
04:15	68.99	68.5	68.6
04:30	68.96	68.63	68.66
04:45	68.99	68.61	68.73
05:00	69.02	68.59	68.76
05:15	69.04	68.58	68.77
05:30	69.02	68.57	68.72
05:45	68.97	68.58	68.73
06:00	68.97	68.69	68.75
06:15	69.01	68.7	68.84
06:30	69.12	68.78	68.94
06:45	69.21	68.91	68.99
07:00	69.27	69.02	69.02
07:15	69.34	69.09	69.13
07:30	69.42	69.16	69.21
07:45	69.56	69.25	69.25
08:00	69.67	69.38	69.29
08:15	69.73	69.49	69.36
08:30	69.88	69.6	69.46
08:45	69.92	69.71	69.5
09:00	70	69.81	69.63
09:15	70.02	69.87	69.65
09:30	70.19	70	69.71
09:45	70.27	70.08	69.79



Architectural Testing

Test Report No.: C5740.01-121-24

Revision 1: 4/02/2013

Report Date: 3/14/2013

Test Record Retention End Date: 2/28/2017

Time (Min:Sec)	T/C 52	T/C 53	T/C 54
10:00	70.39	70.2	69.91
10:15	70.46	70.31	70.16
10:30	70.52	70.41	70.24
10:45	70.67	70.49	70.18
11:00	70.8	70.68	70.24
11:15	70.9	70.84	70.44
11:30	70.99	71	70.6
11:45	71.23	71.14	70.68
12:00	71.31	71.32	70.83
12:15	71.48	71.42	70.99
12:30	71.64	71.63	71.25
12:45	71.78	71.87	71.31
13:00	71.93	72.13	71.42
13:15	72.13	72.35	71.47
13:30	72.21	72.54	71.69
13:45	72.35	72.74	71.91
14:00	72.44	72.91	72.09
14:15	72.61	73.21	72.32
14:30	72.74	73.42	72.52
14:45	72.93	73.68	72.63
15:00	73.09	73.89	72.99
15:15	73.29	74.07	73.06
15:30	73.46	74.26	73.22
15:45	73.61	74.56	73.63
16:00	73.86	74.83	73.86
16:15	74.05	75.02	74.07
16:30	74.26	75.33	74.19
16:45	74.28	75.57	74.48
17:00	74.47	75.75	74.91
17:15	74.8	76.32	75.27
17:30	75.13	76.59	75.78
17:45	75.42	77	76.16
18:00	75.66	77.32	76.5
18:15	75.95	77.59	76.83
18:30	76.2	77.95	77.45
18:45	76.63	78.35	77.9
19:00	76.81	78.61	78.16
19:15	76.98	78.85	78.66
19:30	77.31	79.29	78.86
19:45	77.62	79.62	79.42

Time (Min:Sec)	T/C 52	T/C 53	T/C 54
20:00	77.91	79.94	79.67
20:15	78.19	80.18	80.19
20:30	78.49	80.5	80.83
20:45	78.91	80.68	80.97
21:00	78.94	80.98	81.65
21:15	79.11	81.6	82.53
21:30	79.29	81.8	82.76
21:45	79.52	81.82	83.11
22:00	79.8	82.19	83.95
22:15	80.01	82.31	84.38
22:30	80.1	82.42	84.52
22:45	80.14	82.65	84.48
23:00	80.27	82.87	84.78
23:15	80.35	83.18	84.43
23:30	80.64	83.27	85.16
23:45	80.8	83.36	85.4
24:00	80.92	83.6	86.71
24:15	81.14	83.79	86.38
24:30	81.46	83.99	86.66
24:45	81.84	84.2	86.55
25:00	82.17	84.36	86.95
25:15	82.25	84.62	88.47
25:30	82.53	84.87	88.06
25:45	82.52	85.17	87.85
26:00	82.67	85.35	88.08
26:15	82.97	85.64	88.62
26:30	83.13	85.81	89.35
26:45	83.35	86.02	89.69
27:00	83.5	86.3	90.1
27:15	83.69	86.43	89.32
27:30	83.55	86.51	88.95
27:45	84.05	86.69	89.46
28:00	84.19	86.93	91.25
28:15	84.33	87.08	91.27
28:30	84.46	87.39	91.69
28:45	84.92	87.56	90.26
29:00	85.21	87.72	90.44
29:15	85.31	87.91	90.63
29:30	85.58	88.23	91.09
29:45	85.8	88.3	91.42

Appendix C

Photographs



Photo No. 1
Stud Wall



Photo No. 2
Core Wall (Complete)
www.archtest.com



Photo No. 3
Application of Joint Sealant



Photo No. 4
Application of Window Opening Detail Sealant



Photo No. 5
Application of Air/Vapor Barrier



Photo No. 6
Complete Air/Vapor Barrier
www.archtest.com



Photo No. 7
Installation of Assembly Sill Trim



Photo No. 8
Installation of Hat Channels



Photo No. 9
Installation of Termination Extrusion at Window Opening Sill



Photo No. 10
Installation of Alpolic/fr Panels
www.archtest.com



Photo No. 11
Hat Channel Spacing and Panel Installation



Photo No. 12
Complete Assembly (Pre-Test)
www.archtest.com

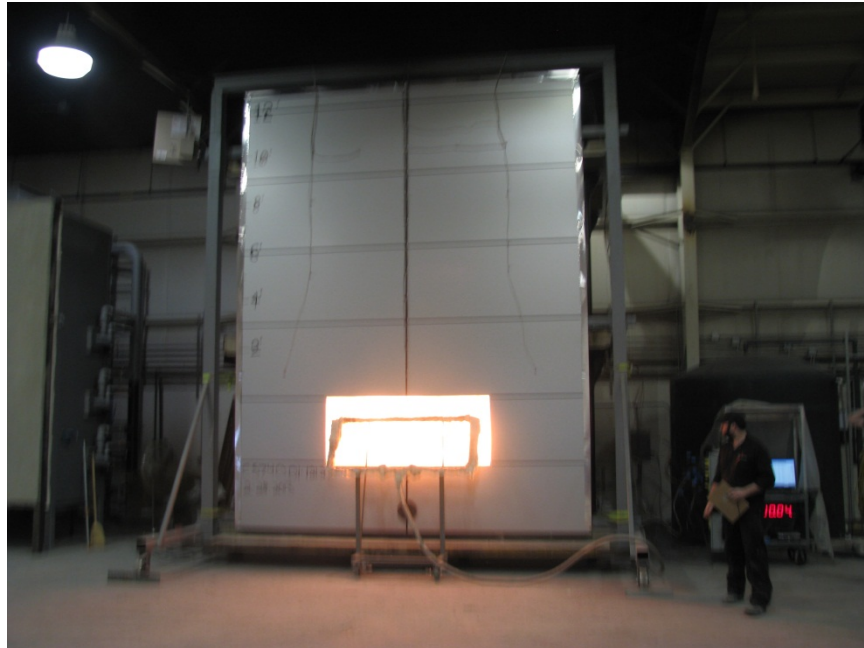


Photo No. 13
Ignition of Room Burner



Photo No. 14
Window Opening Header Trim Buckling

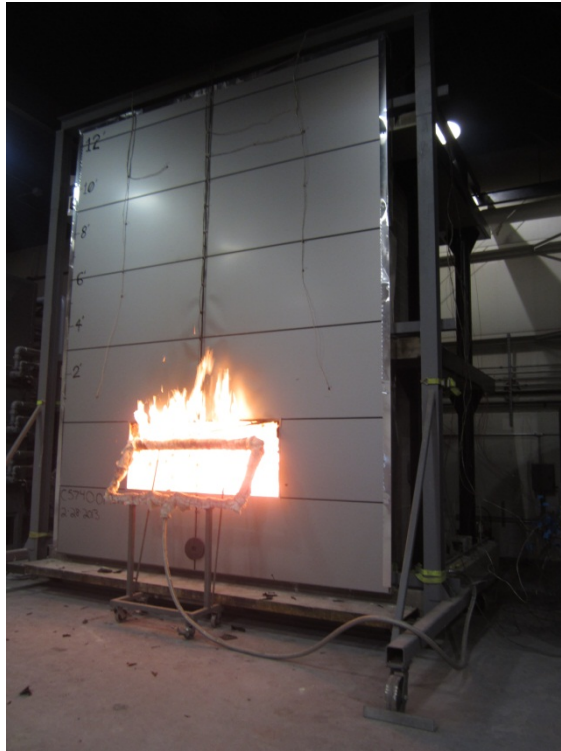


Photo No. 15
Ignition of Window Opening Burner



Photo No. 16
Assembly Halfway into Flame Duration



Photo No. 17
Ignition at Window Opening Header



Photo No. 18
Room and Window Burners Extinguished



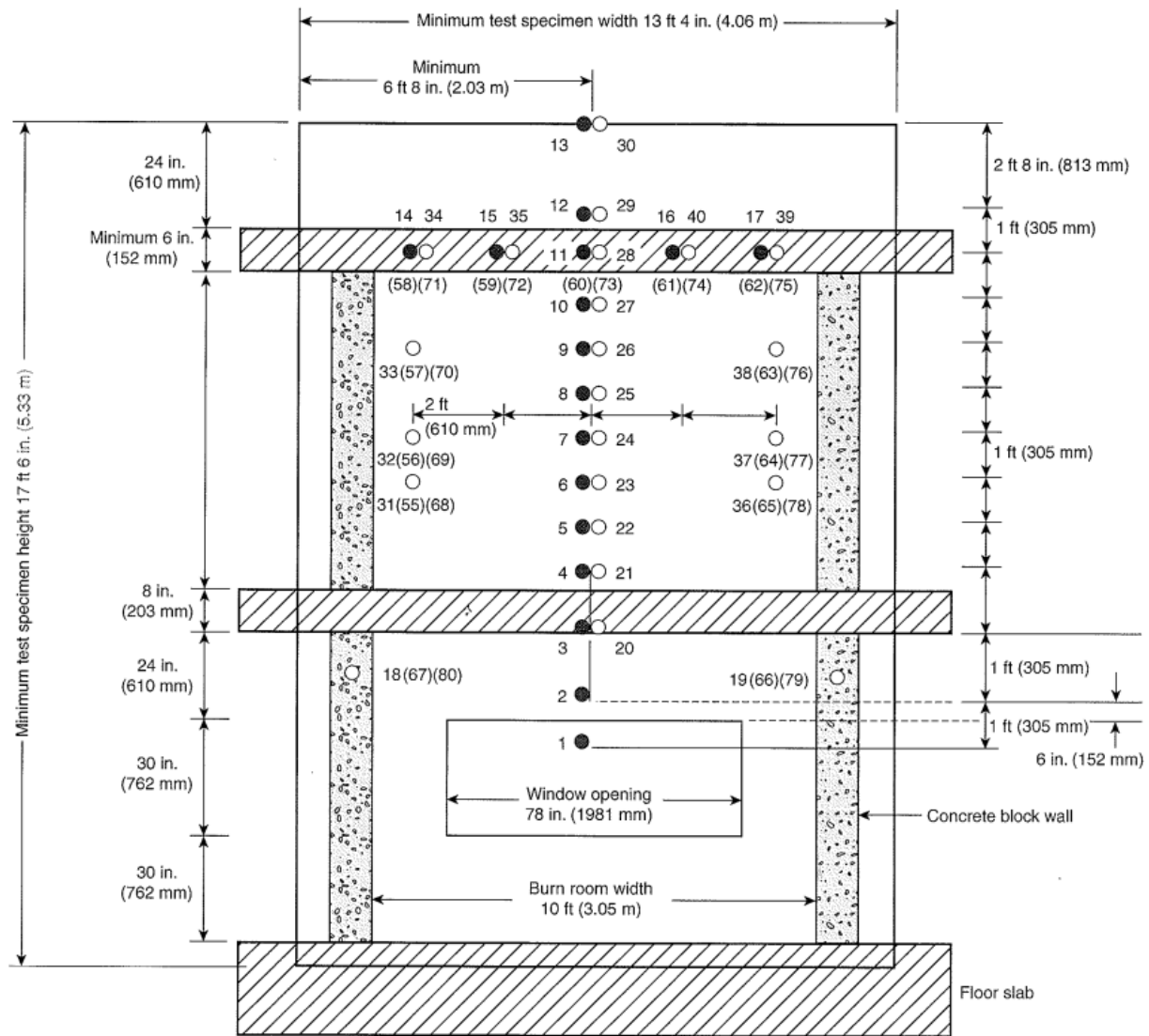
Photo No. 19
Complete Assembly (Post-Test)



Photo No. 20
Panels Removed (Post-Test)

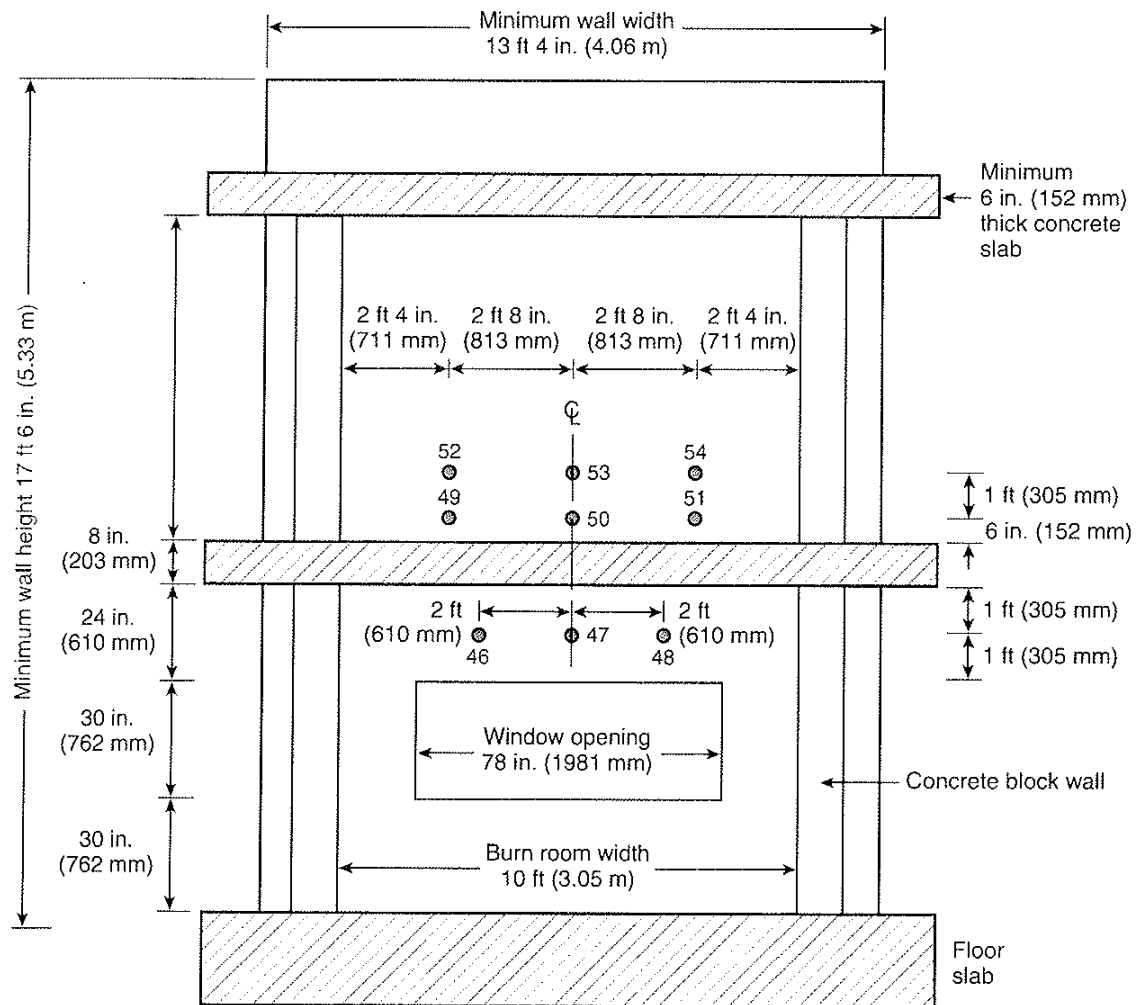
Appendix D

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.



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

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

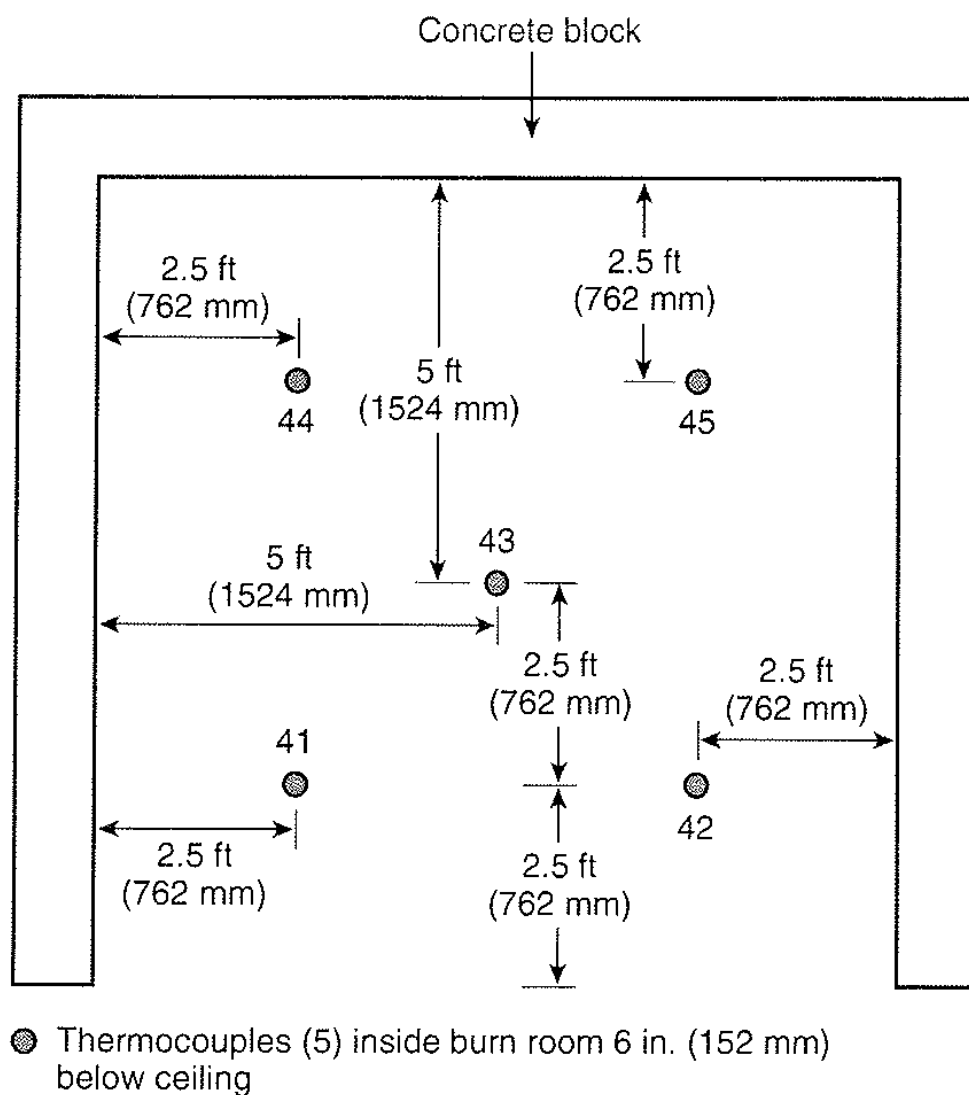


FIGURE 6.1(d) Plan View — First-Story Test Room. Instrumentation arrangement.

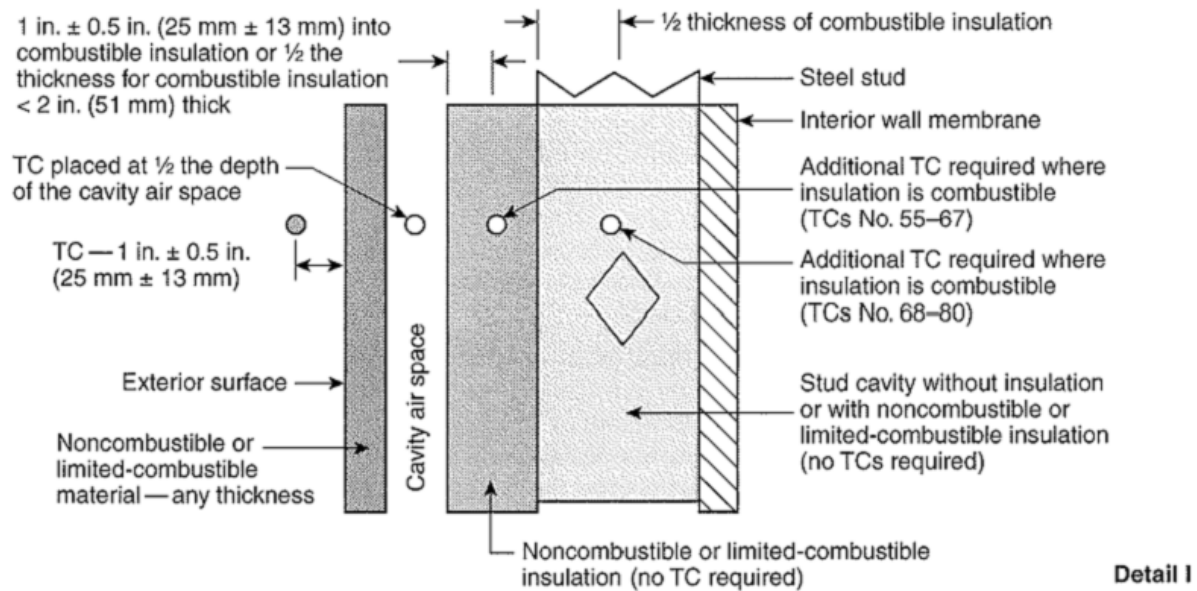


FIGURE 6.1(b) *Continued*

G-500 COMPOSITE PANEL SYSTEM

STRUCTURAL ALIGNMENT

VERIFICATION OF SUBSTRUCTURE / ARCHITECTURAL
IT IS IMPORTANT THAT THE SUBSTRUCTURE IS INSTALLED CORRECTLY. IF THE FRAMING (EVEN SOLID SUBSTRUCTURE) HAS EXCESSIVE VARIATION FROM THE PLANE OF THE WALL, IT CAN CAUSE UNDESIRABLE STRESS ON THE WALL PANELS, JOINTS AND CONNECTIONS. THE MAXIMUM DEVIATION OF THE PLANE OF THE SUBSTRUCTURE SHOULD NOT EXCEED $\pm \frac{1}{8}"$ IN ANY 10 FOOT LENGTH, HORIZONTALLY OR VERTICALLY. SUBSTRUCTURE TRANSITION AREAS SUCH AS CORNERS AND SOFFITS SHALL BE WITHIN $\pm \frac{1}{8}"$ OF THE THEORETICAL GIRT PLANE.

PANEL INSTALLATION

1. INSTALL THE COMPOSITE ALUMINUM PANEL WALL SYSTEM IN ACCORDANCE WITH THE APPROVED ERECTION DRAWINGS AND INSTRUCTIONS.
2. ALL PANELS MUST BE INSTALLED WITH PROPER ATTACHMENT EXTRUSIONS SHOWN ON ERECTION DRAWINGS.
3. PANEL RETENTION - CARE MUST BE EXERCISED TO MAINTAIN UNIFORM JOINTS ON EACH ELEVATION. USE SPACERS FOR UNIFORM $\frac{1}{2}"$ JOINTS.
4. PROTECT PANELS FROM ABUSE BY OTHER TRADES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE WALL PANELS FROM WEATHER, CEMENT, PLASTER AND PAINTING OPERATIONS. BY NO MEANS MAY ANY OF THE COMPOSITE ALUMINUM PANELS OR RELATED ITEMS BE MOVED OR RELOCATED BY ANY TRADE OTHER THAN BAMCO INC. WITHOUT NOTICE.

PANEL FABRICATION TOLERANCES: $\pm \frac{1}{8}"$

PANEL ERECTION TOLERANCES: $\pm \frac{1}{8}"$ IN 10'-0"

PANEL TECHNICAL DATA

A COMPOSITE ALUMINUM PANEL (C.A.P.) IS TWO SHEETS OF .020 (NOMINAL) GAGE ALUMINUM COVERING A LOW DENSITY POLYETHYLENE CORE.

THICKNESS	4mm
WEIGHT (Lb/Ft ²)	1.12

PROJECT SPECIFICATIONS

MANUFACTURER	PANEL COLOR
ALPOLIC	TO BE SELECTED
PANEL JOINERY	JOINERY COLOR
SILICONE GASKET	BLACK
PANEL TYPE	
FIRE RATED CORE	

THESE SHOP DRAWINGS ARE BASED ON ARCHITECTURAL DRAWINGS.
DATED: 09/17/2010 REVISION:

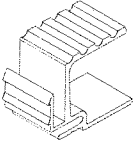
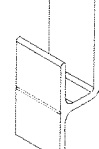
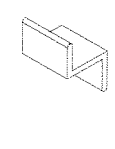
CUSTOMER NOTES

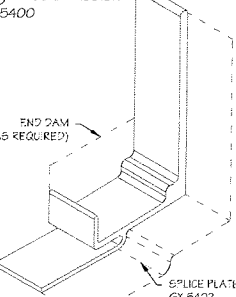
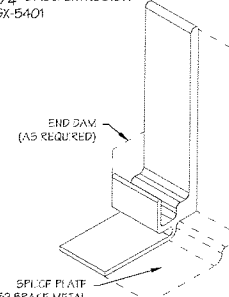
THESE DRAWINGS ARE BAMCO'S INTERPRETATION OF OUR CONTRACT. ALL MATERIALS WILL BE RELEASED FOR FABRICATION BASED ON AN APPROVED SET OF THESE DRAWINGS.

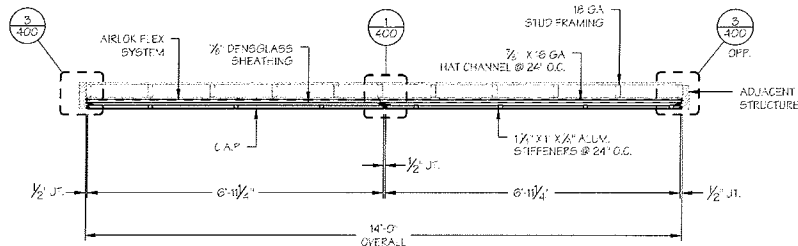
BAMCO SHALL NOT BE RESPONSIBLE FOR DISCREPANCIES BETWEEN FIELD CONDITIONS AND THESE DRAWINGS IF THEY ARE NOT BROUGHT TO BAMCO'S ATTENTION ON APPROVALS.

STANDARD EXTRUSIONS

ALL EXTRUSIONS ARE SUPPLIED IN A MILL FINISH UNLESS OTHERWISE SPECIFIED.

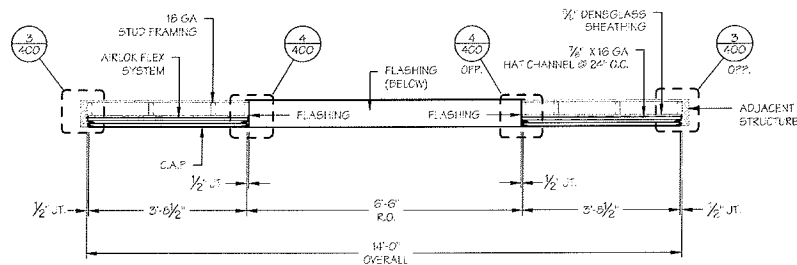
PERIMETER EXTRUSION GX-5100	"I" EXTRUSION GX-5200	TERMINATION EXTRUSION GX-5300
		

2 5/8" BASE EXTRUSION GX-5400	1 3/4" BASE EXTRUSION GX-5401
	



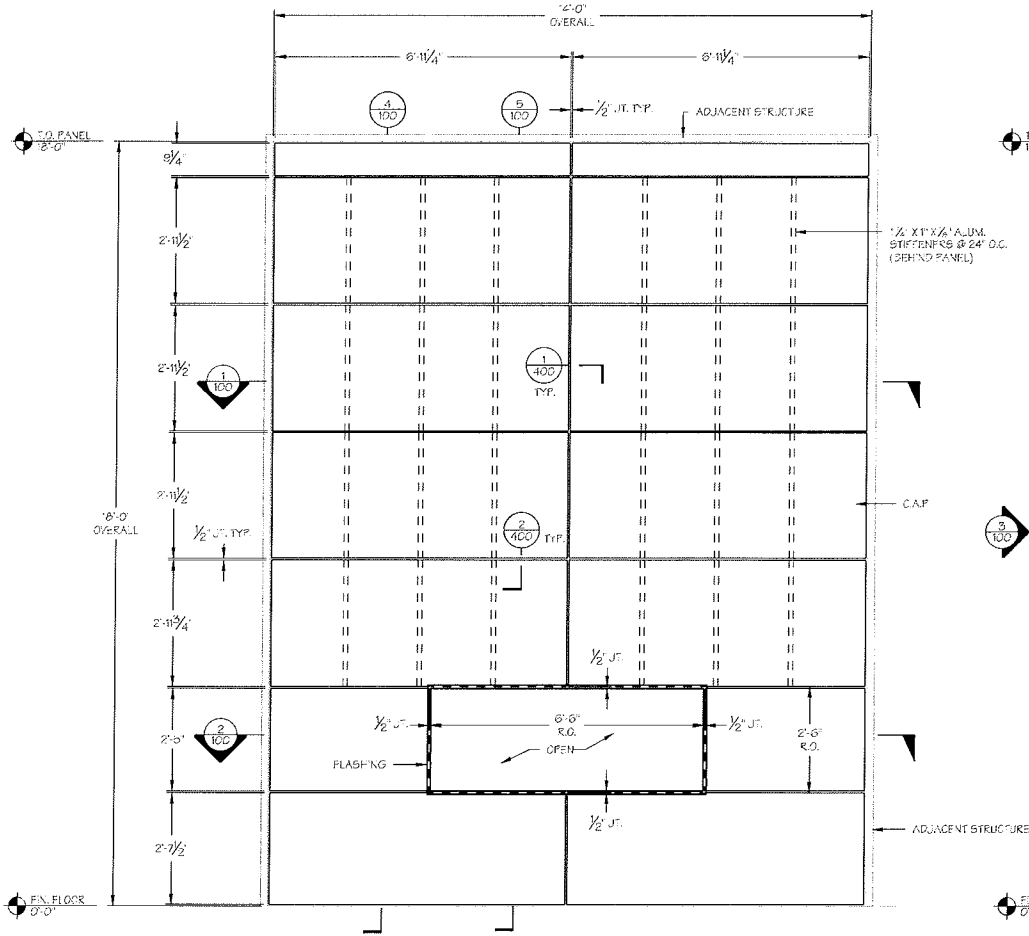
1 FLOOR PLAN
100 11'2" x 14'-0" Rm 100

ADDED 7/8" HAT CHANNEL AND STIFFENERS



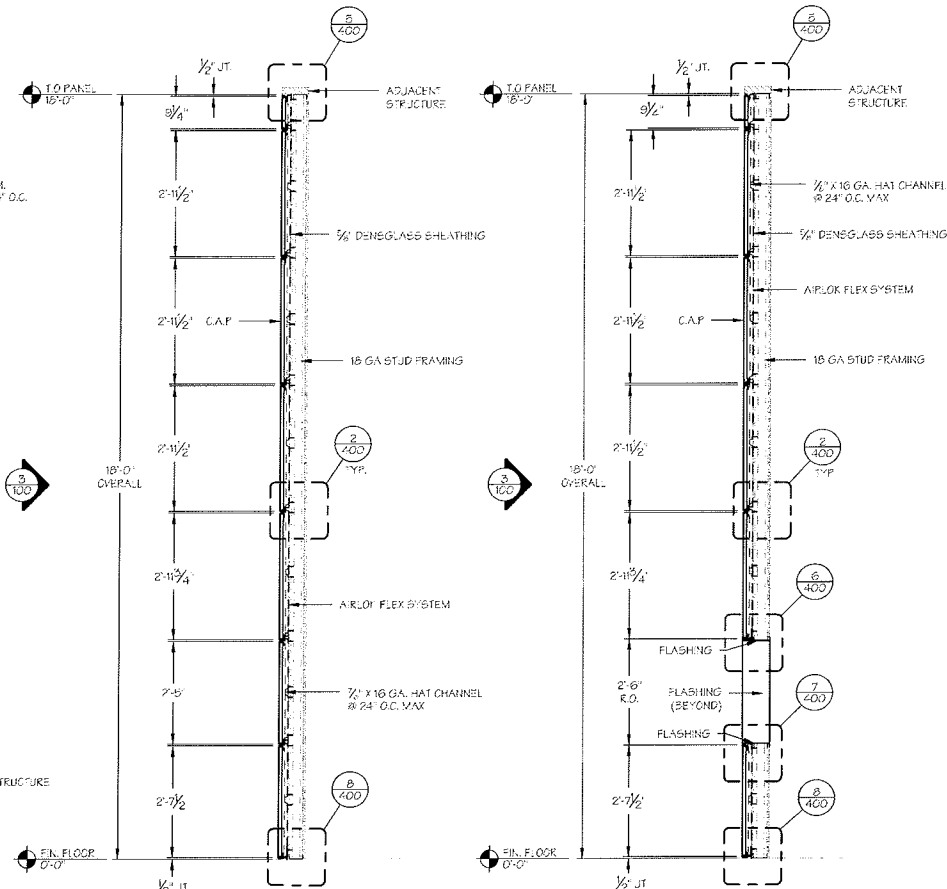
2 FLOOR PLAN
100 11'2" x 14'-0" Rm 100

ADDED 7/8" HAT CHANNEL AND STIFFENERS



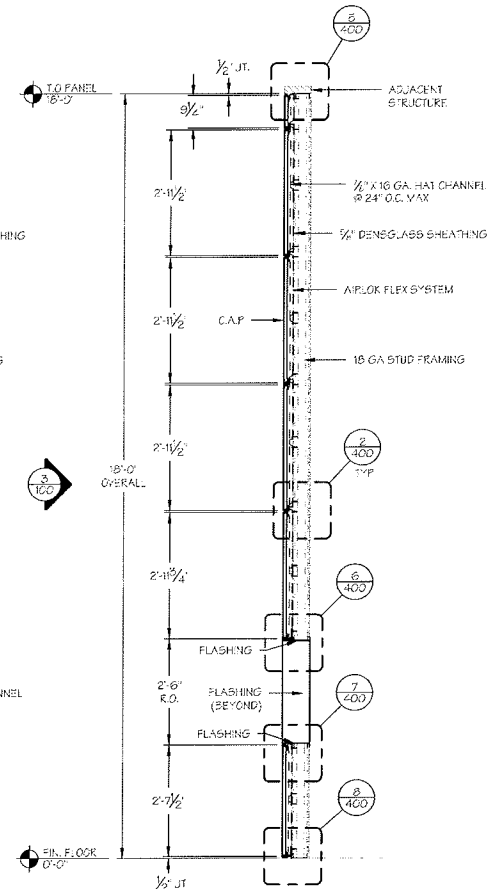
3 FRONT ELEVATION
100 11'2" x 14'-0" Rm 100

ADDED STIFFENERS



4 SECTION
100 11'2" x 14'-0" Rm 100

ADDED 7/8" HAT CHANNEL



5 SECTION
100 11'2" x 14'-0" Rm 100

ADDED 7/8" HAT CHANNEL

FLASHING	CLOSURE TRIM
ALL FLASHING IS SUPPLIED IN 10'-0" LENGTHS	
FLASHING GAGE .040 ALUMINUM	
FLASHING FINISH SMOOTH	
FLASHING COLOR MILL	



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report # **C5740.01-121-24**

Date **2-28-2013** Tech **EG**

GENERAL NOTES

1. C.A.P. = COMPOSITE ALUMINUM PANEL
2. "B.O." = BY OTHERS
3. WHEN USING METALLIC FINISHES, ALL PANELS MUST BE RUN IN THE SAME DIRECTION. METALLIC FINISHES PRODUCE A GRAIN ON THE PANEL THAT ONCE EXPOSED TO SUNLIGHT MAY CHANGE THE APPEARANCE DEPENDING ON THE PANEL DIRECTION.
4. ALL DIMENSIONS MUST BE VERIFIED IN THE FIELD PRIOR TO PANEL FABRICATION.

DRAWING LIST

100 - PLANS, ELEVATIONS AND SECTIONS
400 - DETAILS

DRAWING STATUS

NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION
	2-8-13	1ST SUBMITTAL
	2-12-13	AS NOTED
		REVISED BY: JMR
		REVISED BY:
		REVISED BY:
		REVISED BY:
		REVISED BY:
		REVISED BY:
		REVISED BY:
		REVISED BY:

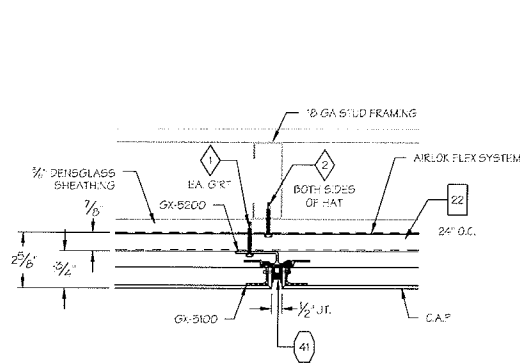
Project: **NFPA 285**

PLANS

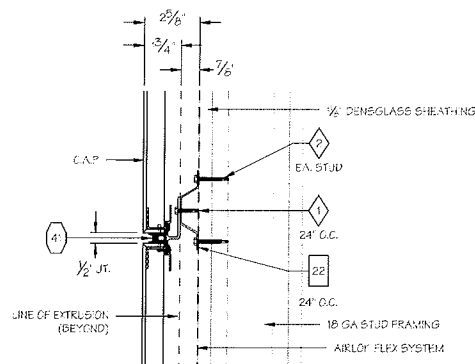
BAMCO Project No.	General Contractor:
Drawn By: JMR	
Checked By: JB	
Scale: AS NOTED	
Project Manager:	

Drawing No.

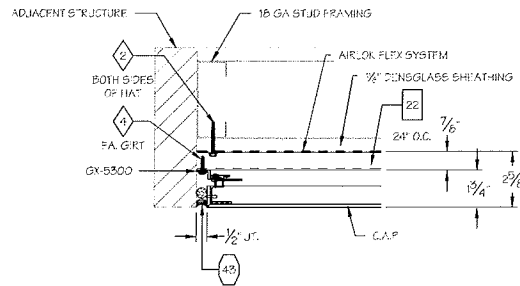
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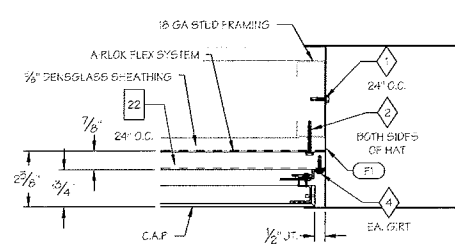
1 TYP. VERTICAL JOINT
REVISED DETAIL



2 TYP. HORIZONTAL JOINT
REVISED DETAIL



3 TERMINATION DETAIL
REVISED DETAIL



4 TERMINATION DETAIL @ OPENING
REVISED DETAIL

FASTENER INDEX		SUBGIRT INDEX	
1	#10-16 x 3/4" TEL. 3-HW DRILL FLEX	21	1 1/2" x 1/8" x 1 1/2" x 16 GAZ-GRT
2	#10-16 x 1 1/2" TEK 3-HW ZINC	22	7/8" x 16 GA -AT CHANNEL
3	#10-16 x 1 1/2" TEK 3-HW DRILL-FLEX	23	
4	#10-16 x 3/4" TEK 2-HW DRILL-FLEX	24	
5	#12-24 x 1 3/4" TEK 3-HW ZINC	25	
6	#12-24 x 2" TEK 3-HW ZINC	26	
7	CONCRETE #10-15 x 1" GP 304 SS	27	
8	CONCRETE #10-15 x 1 1/2" GP 304 SS	28	
9	1/4" x 1 3/4" HL-3 KWIK-CONC	29	
10	#12-14 x 1 1/2" TEK 3-HW DRILL-FLEX	30	
11	#12-14 x 1 1/2" TEK 3-FLEX DRILL-FLEX	31	
12	#12-14 x 1 1/2" TEK 3-SS 304 SS TORX	32	
13	#12-14 x 1 3/4" TEK 3-SS 304 SS TORX	33	
14	POF RIVE	34	
15		35	
		ACCESSORY INDEX	
16		41	1/2" BLACK SILICONE GASKET
17		42	3/8" BLACK SILICONE GASKET
18		43	BACKER ROD AND SEALANT
19		44	
20		45	

General Notes:

REV.	DATE	DESCRIPTION
	2-8-13	1ST SUBMITTAL
Δ	2-12-13	AS NOTED
		REVISED BY: JMR
		REVISED BY:
		REVISED BY:
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		REVISED BY:
		REVISED BY:
		REVISED BY:

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Project: NFPA 285

DETAILS

BAMCO Project No.	
Drawn By: JMR	General Contractor:
Checked By: JB	
Scale: AS NOTED	Architect:
Spec. Section:	

Drawing No. 400 2 of 2

REVISION	DRAWING STATUS
Δ	2nd SUBMITTAL - NOT FOR CONSTRUCTION



Test sample complies with these details.
Deviations are noted.
Report # C5740.01-121-24
Date 2-28-2013 Tech EG