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STACBOND
FIRE TEST REPORT

SCOPE OF WORK
NFPA 285 TESTING ON EXTERIOR NON-LOAD-BEARING WALL ASSEMBLY CONTAINING MILLER CLAPPERTON 1500 RAIN SCREEN SYSTEM WITH 4MM A2 CORE STACBOND ALUMINUM COMPOSITE MATERIAL (ACM) PANELS

REPORT NUMBER
H8964.01-121-24-R0

TEST DATE(S)
01/18/18

ISSUE DATE
02/15/18

RECORD RETENTION END DATE
01/18/22

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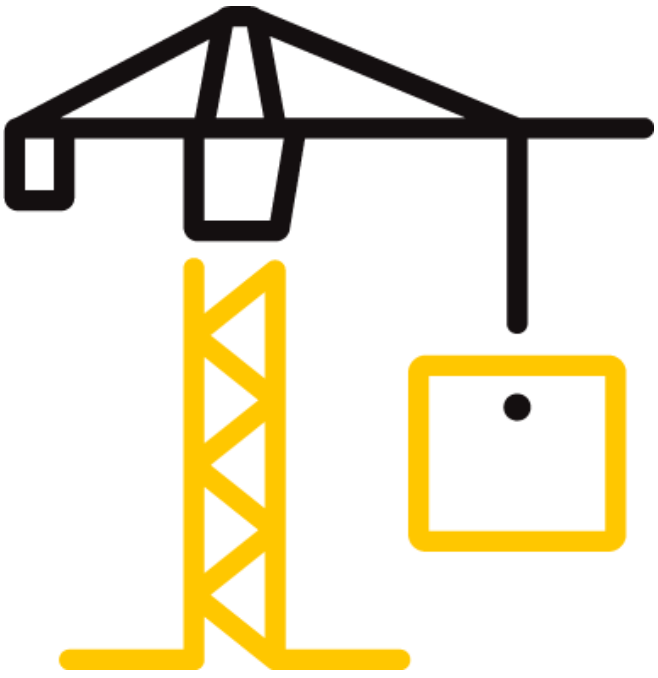

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REPORT ISSUED TO
STACBOND
15900 A Matanza
A Coru'na, Spain

SECTION 1
SCOPE

Intertek Building & Construction (B&C) was contracted by STACBOND, 15900 A Matanza A Coru'na, Spain to evaluate the flame propagation characteristics of an exterior, non-load-bearing wall assembly containing product. Testing was conducted at the Intertek B&C test facility in York, PA. Results obtained are tested values and were secured by using the designated test method(s). A summary of test results and the complete graphical test data is reported herein.

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

SECTION 2
SUMMARY OF TEST RESULTS

Wall System: Exterior Non-load-bearing Wall Assembly
Combustible Components: Miller Clapperton 1500 Rain Screen System utilizing 4mm A2 Core STACBOND Aluminum Composite Material (ACM) Panels

NFPA 285 Test Results
The assembly described and tested in this report **did** meet the Conditions of Acceptance of NFPA 285. Construction of the full assembly is summarized in Section 7 of this test report.

For INTERTEK B&C:

COMPLETED BY:	Scott Gingrich	**REVIEWED BY:**	Ethan Grove
TITLE:	Technician Team Lead – Fire Testing	**TITLE:**	Manager – Fire Testing
SIGNATURE:	Digitally Signed by: Scott Gingrich	**SIGNATURE:**	Digitally Signed by: Ethan Grove
DATE:	02/15/18	**DATE:**	02/15/18

SDG:ddr

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SECTION 3
TEST METHOD

The assembly was evaluated in accordance with the following:

> **NFPA 285-12**, *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components*

SECTION 4
MATERIAL SOURCE/INSTALLATION

The components of the test assembly were provided by the client except for the core wall components that were acquired and assembled by Intertek B&C personnel.

SECTION 5
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Marcos Garcia	STACBOND
Jose M. Rivas	STACBOND
Scott Gingrich	Intertek B&C
Tim Feltman	Intertek B&C
Nate Brillhart	Intertek B&C

SECTION 6
TEST PROCEDURE

The wall assembly was instrumented with thermocouples (TCs) in accordance with figures 6.1(a) and 6.1(b) 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 3 in. off the exterior face of the wall assembly. Testing was performed on 01/19/2018 in accordance with NFPA 285 test method. Ambient conditions were 61°F and 20% relative humidity. An anemometer was used to verify airflow across test assembly was less than 4 ft./sec 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. The test was performed at 09:51 AM with the burners on for 30 minutes. All observations are recorded in the table located in Section 8.

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SECTION 6 (Continued)
TEST PROCEDURE

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 15, 2017 with natural gas as the fuel source and the window burner placed 3 inches from the exterior surface of the assembly. Table 6.1 of this section shows the average burner flow and heat flux. Table 6.2 shows the time average temperatures obtained during the calibration test.

Table 6.1 Average Burner Output Information

TIME INTERVAL (MIN:SEC)	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	35.4	0	1.1	0.9	0.8
5:00-10:00	35.5	4	2	1.8	1.7
10:00-15:00	43.8	5.6	2.7	2.6	2.3
15:00-20:00	43.6	8	2.9	2.8	2.8
20:00-25:00	43.6	11	3.1	3	2.8
25:00-30:00	47.3	15.6	3.6	3.5	3.5

Table 6.2 Average Time Temperature Values for Calibration

	THERMOCOUPLE LOCATIONS							
TIME INTERVAL (MIN:SEC)	BURN ROOM (°F)	INT. WALL (°F)	1FT (°F)	2FT (°F)	3FT (°F)	4FT (°F)	5FT (°F)	6FT (°F)
0:00-5:00	1100	1033	633	756	679	610	560	484
5:00-10:00	1301	1260	829	1002	972	933	877	780
10:00-15:00	1466	1431	981	1129	1130	1070	1008	905
15:00-20:00	1512	1485	1009	1169	1181	1145	1107	1012
20:00-25:00	1536	1511	1043	1178	1202	1202	1162	1071
25:00-30:00	1605	1578	1090	1252	1302	1305	1236	1152

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SECTION 7
TEST ASSEMBLY DESCRIPTION

Interior Cladding
The full interior surface of the wall assembly was clad with 5/8 in. thick National Gypsum Gold Bond® Fire-Shield® gypsum board meeting the requirements of ASTM C1396. The gypsum board was fastened to the wall framing with #6 x 1-1/4 in. long, bugle head, self-drilling screws with a nominal spacing of 8 in. around the board perimeter and 12 in. in the field. Drywall orientation on the burn floor consisted of four pieces of gypsum board fastened to the core wall, with the run edge running parallel with the framing and the cut edge perpendicular to the framing. Drywall orientation on the second floor consisted of vertically oriented boards with the run edge running parallel with the framing and the cut edge perpendicular to the framing. Drywall orientation for the areas above the top support angle and below the bottom support angle consisted of boards that were oriented with the run edge perpendicular with the framing. All joints were taped with USG Sheetrock® Brand paper joint tape and spackled with USG Sheetrock® Brand joint compound. All fastener heads were spackled with USG Sheetrock® Brand joint compound.

Framing
The core wall was consisted of 18 ft. long, 3-5/8 in. deep, 20 gauge galvanized steel studs fastened to 14 ft. length, 3-5/8 in. deep, 20 gauge galvanized steel track every 24 inches on center. The studs were connected to the track with one #6 x 1/2 in. long self-drilling, pan head fastener per stud flange. Two additional 18 ft. long, 3-5/8 in. deep, 20 gauge studs were used as king studs for the window opening jambs. Johns Manville MinWool® Safing pieces with a nominal density of 4.0 lb. /cu. ft. were installed per the manufacturer's installation instructions to fit into each stud cavity placed at the second story floor line. The safing length dimensions were no less than the apparatus floor slab thickness of 8 in.

Exterior Sheathing
5/8 in. thick National Gypsum Gold Bond® eXP® exterior gypsum sheathing, meeting the requirements of ASTM C1177, was placed horizontally across the full exterior surface of the assembly. A vertical joint offset of 16 in. was utilized during installation. The gypsum sheathing was fastened to the wall framing with #6 x 1-1/4 in. long, bugle head, self-drilling screws with a nominal spacing of 8 in. around the board perimeter and 12 in. in the field.

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SECTION 7 (Continued)
TEST ASSEMBLY DESCRIPTION

Water-resistive Barrier
VaproShield® WrapSheild® SA was used as the Air, Water membrane. This Membrane was self-adhering with that used an integrated tape to seal each layer. The membrane was installed with each row installed horizontally. Each layer had a 6 in. overlap to the previous layer. The membrane was cut to wrap into the window opening. The window was then taped using 4 in. Black UV VaproShield® VaproTape™ was used to cover the entire perimeter of the window opening.

Window Opening
A 78 in. wide x 30 in. tall window opening was made from 20 gauge galvanized steel track. The opening was centered on the vertical centerline of the wall assembly with the finished sill located 30 in. above the first story floor line. The steel track sections were mechanically fastened with #6 x 1/2 in. long self-drilling, pan head fasteners at each corner. Upon the completion of the exterior sheathing, the air and water membrane was applied to the window opening using the VaproShield® VaproTape™ to secure the membrane to the assembly.

Exterior Cladding
The assembly utilized a Miller Clapperton 1500 rain screen cladding assembly. The assembly started with aluminium starter extrusions at the assembly sill and at the window header. This extrusion was secured to the test assembly using #12-14 hex washer head with #3 drill-point. One of these fasteners was used at each stud location. After the started extrusions were mounted the panels were then placed. The 4mm A2 Core STACBOND Aluminum Composite Material (ACM) panels had shop mounted continuous aluminum extrusions that were used to secure the panels to the assembly. #12-14 hex washer head with #3 drill-point were also used to secure the panels to the assembly. The remaining panels were placed on the assembly in the same manor until the entire assembly was covered. 4mm A2 Core STACBOND Aluminum Composite Material (ACM) splines were installed into the vertical and horizontal panel joints. The splines were accepted into the panel extrusions. The vertical and horizontal panel gaps were measured to be 1/2 inch wide. 0.040 aluminium flashing was added to the window header and assembly sill. The window header used 1/2 open cell backer rod in the space of the flashing and panel. Dow Corning® 795 silicone finished this by covering the backer rod.

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SECTION 8
TEST OBSERVATIONS

TIME (Min:Sec)	OBSERVATIONS
00:00	Ignition of room burner.
00:27	Window header flashing begins to warp and bend.
02:01	Ignition of the interior gypsum.
02:28	Ignition on the window opening jambs.
04:39	Panels above the window opening header begins to swell.
05:00	Ignition of window opening burner.
07:50	The paint on the panels begin to char.
27:05	Ignition at the window header.
30:00	Burners Extinguished. Post-test 10-minute observation period begins.
30:01	Flames continue to emit from the exterior surface.
31:51	Flame stop emitting from the exterior surface.
35:36	Smoke from 3 ft. horizontal.
40:00	Post-test 10-minute observation period ends; test concluded.

SECTION 9
TEST RESULTS

TEST REQUIREMENTS	TEST RESULTS	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 their 1000°F limit.	**PASS**
TC's 18-19, 28, and 31-40 (1000°F limit)	TC's 18-19, 28, and 31-40 did not exceed their 1000°F limit.	**PASS**
TC's 49-54 (500°F above ambient)	TC's 49-54 did not exceed 500°F above their ambient temperatures.	**PASS**

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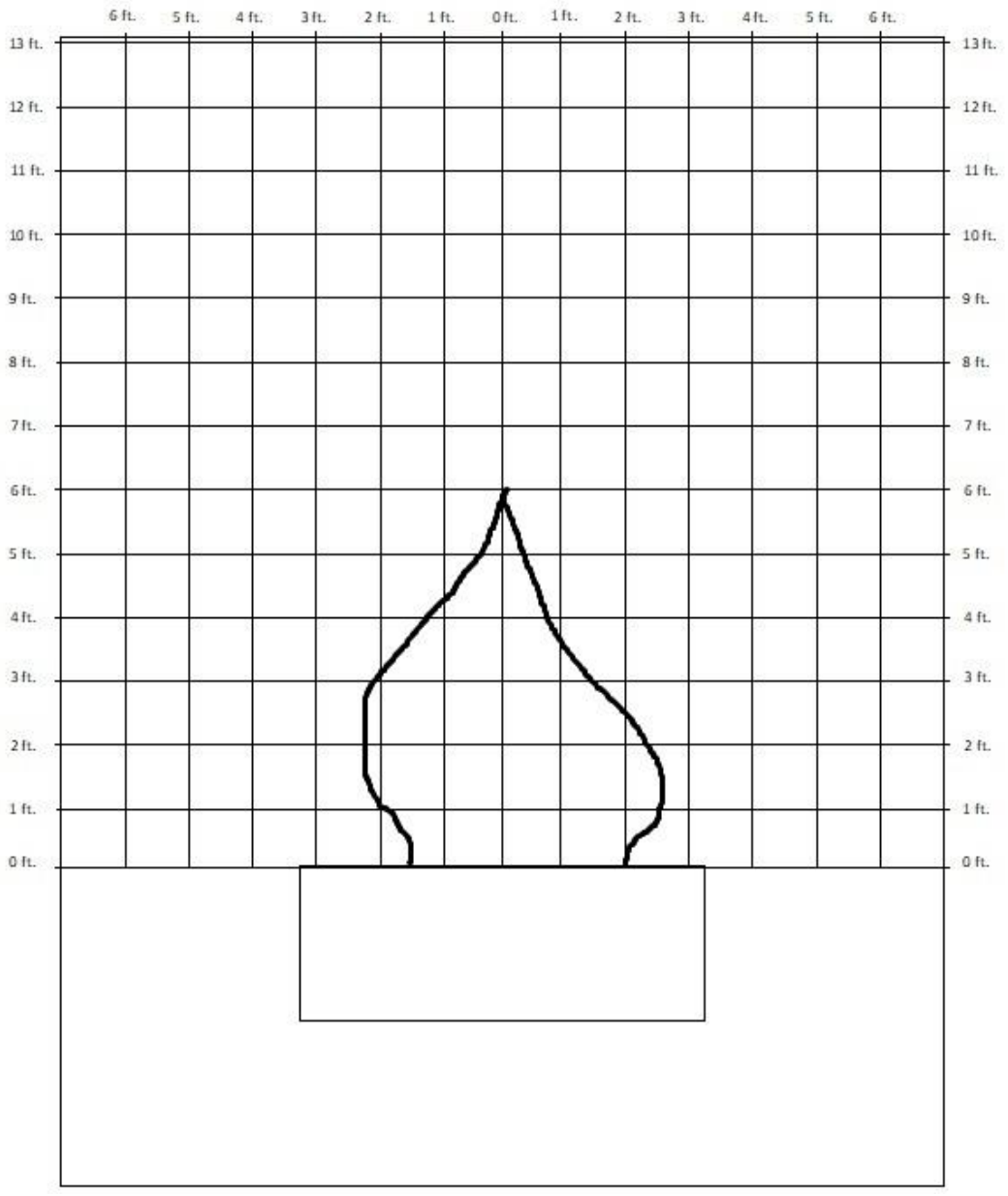
SECTION 10
SKETCH OF EXTERIOR CLADDING BURN PATTERN



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SECTION 11
PHOTOGRAPHS

Photo No. 1
Core Wall and Sheathing Installed

Photo No. 2
Air Vapor Barrier and Window Tape Installed

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Photo No. 3
Panel Labeling

Photo No. 4
Completed Assembly

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Photo No. 5
Interior Wall Surface First Floor

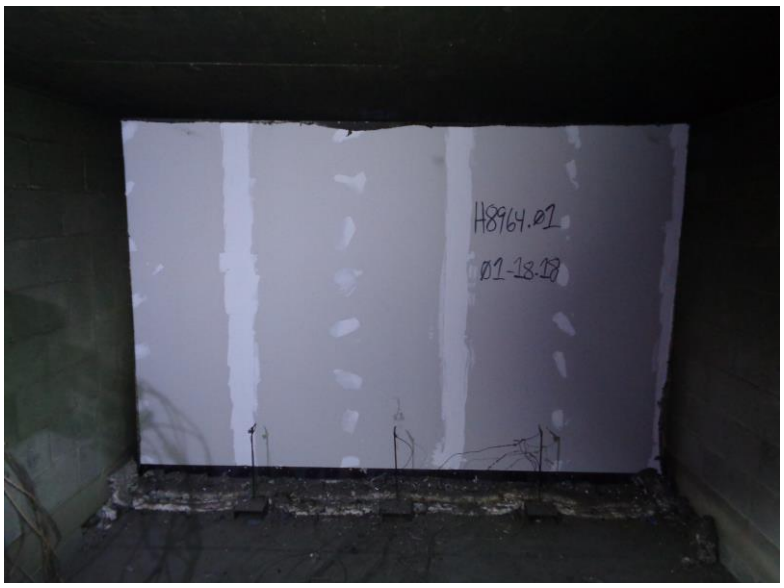

Photo No. 6
Interior Wall Surface Second Floor

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Photo No. 7
Room Burner Ignition

Photo No. 8
Window Burner Ignition

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Photo No. 9
During Test

Photo No. 10
Burners Off

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Photo No. 11
First and Second Floor Interior Wall Surface

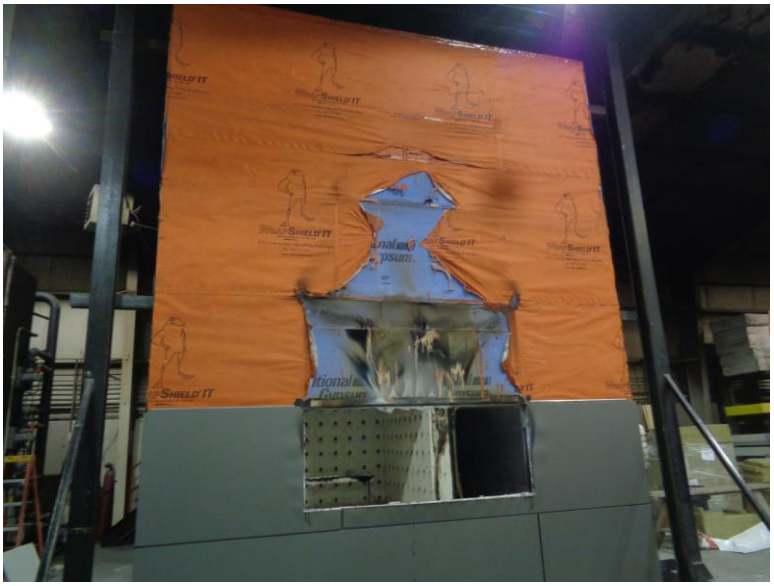

Photo No. 12
Panels Removed

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Photo No. 13
Back of Panels

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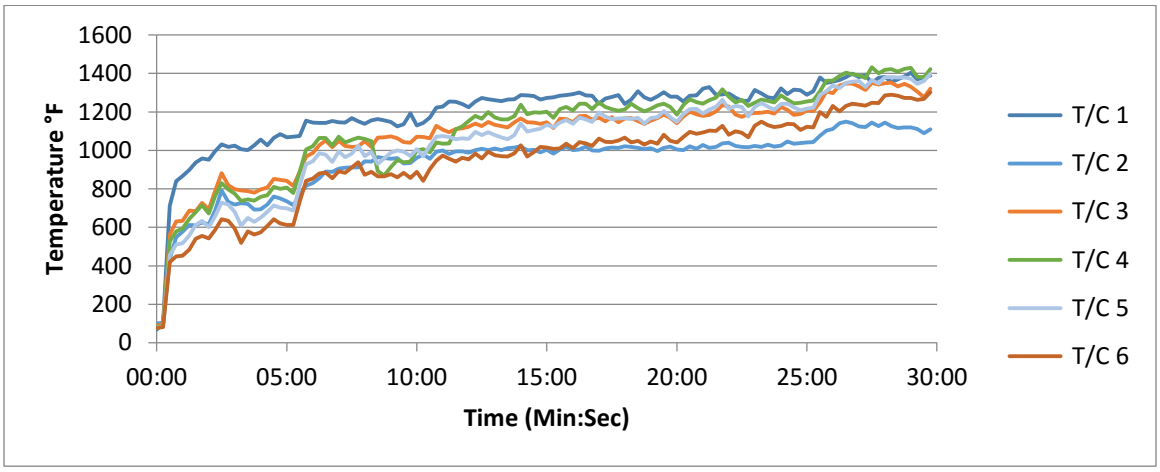
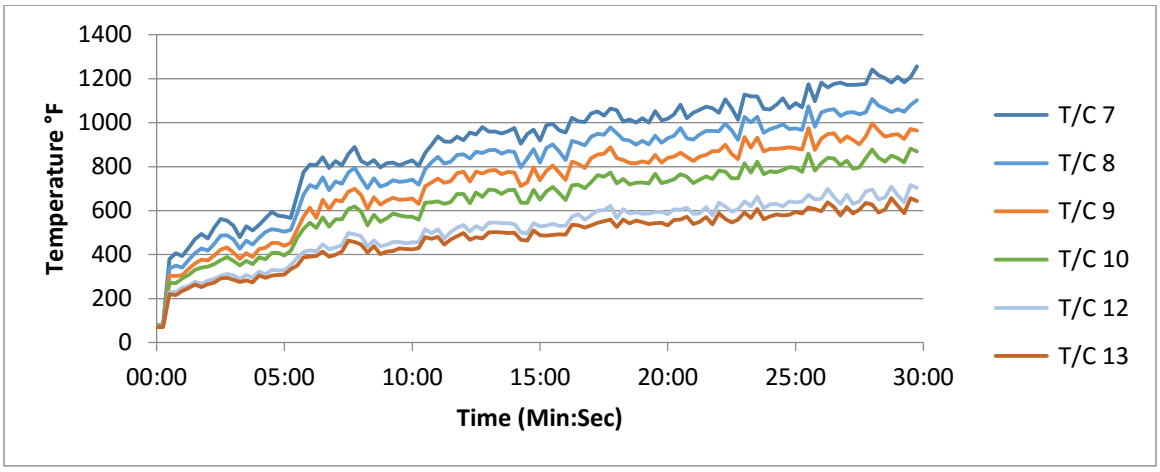
SECTION 12
GRAPHS



Graph No. 1
Assembly Centerline (Assembly Exterior)



Graph No. 2
Assembly Centerline (Assembly Exterior)

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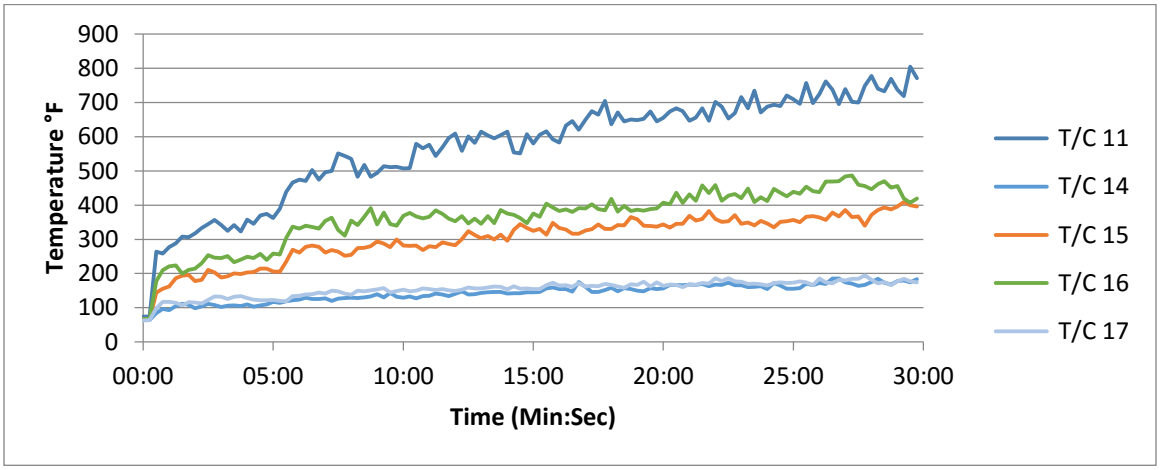
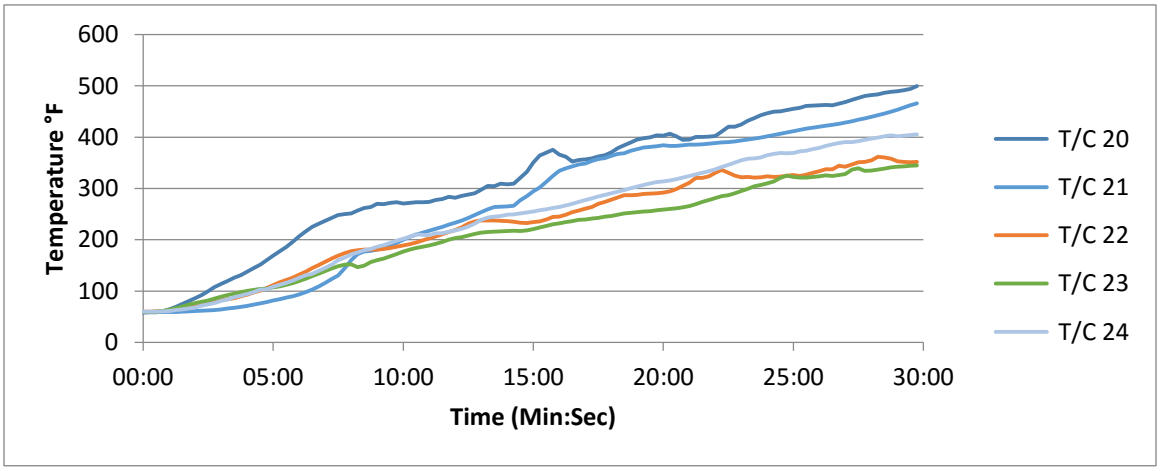


Graph No. 3
10 ft. above the Window Opening Header (Assembly Exterior)



Graph No. 4
Assembly Centerline (Air Cavity Space)

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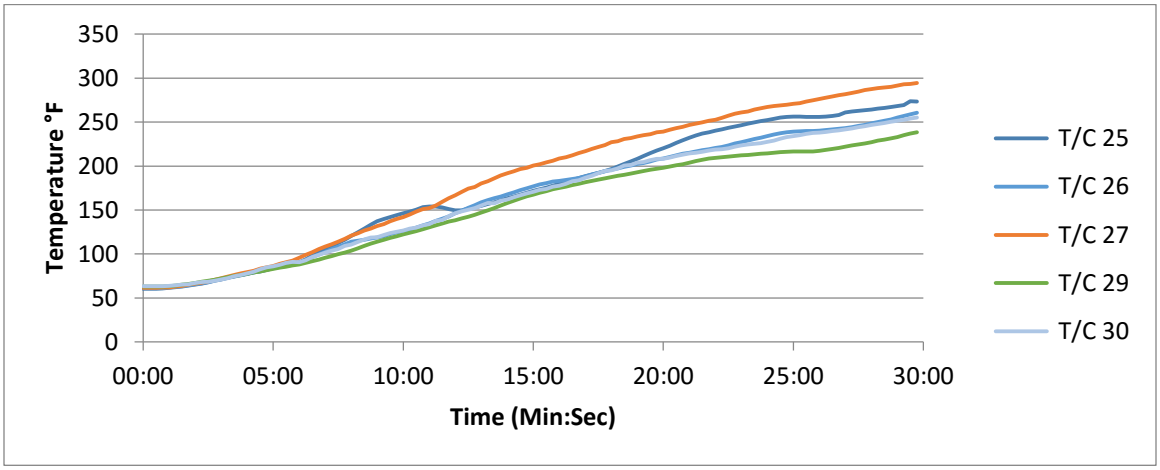
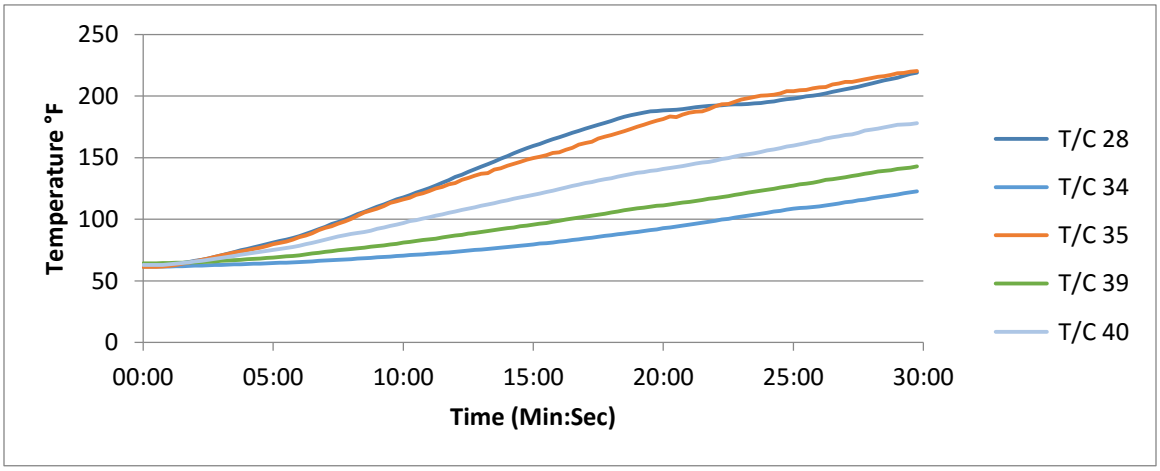


Graph No. 5
Assembly Centerline (Air Cavity Space)



Graph No. 6
10 ft. above the Window Opening Header (Air Cavity Space)

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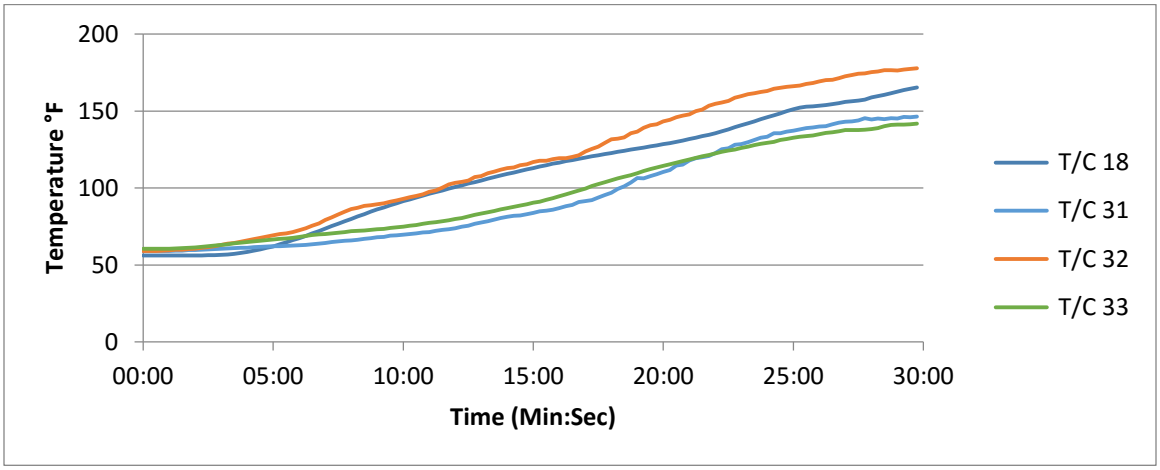
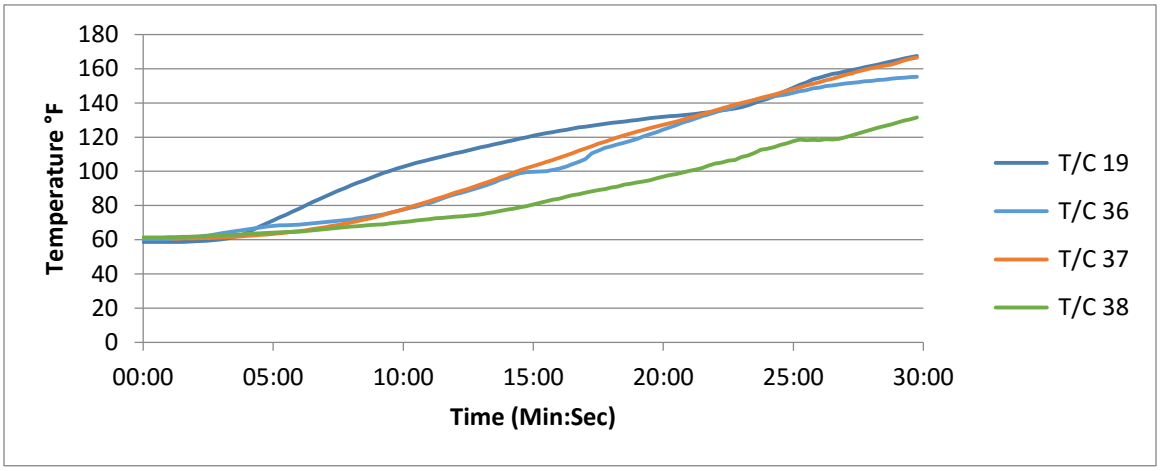


Graph No. 7
Left of Assembly Centerline (Air Cavity Space)



Graph No. 8
Right of Assembly Centerline (Air Cavity Space)

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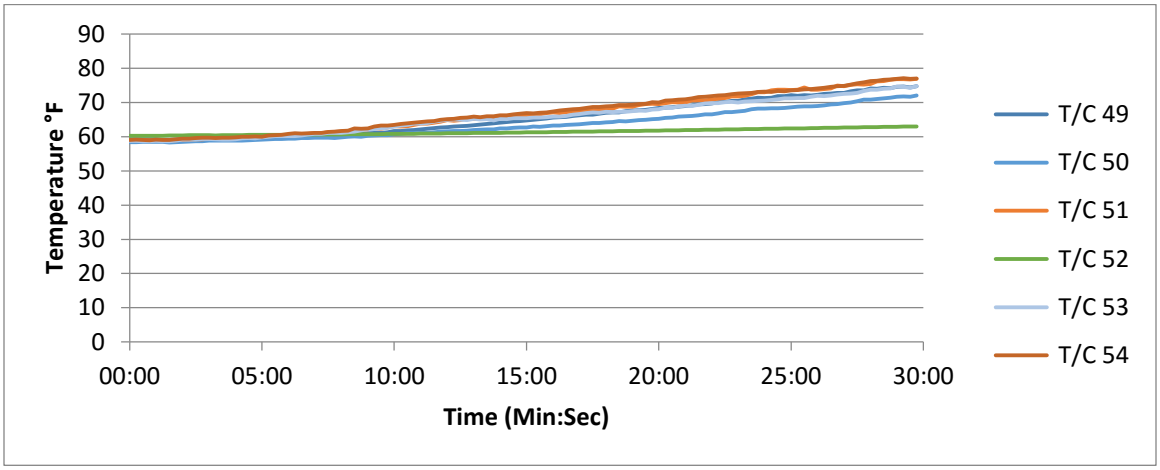
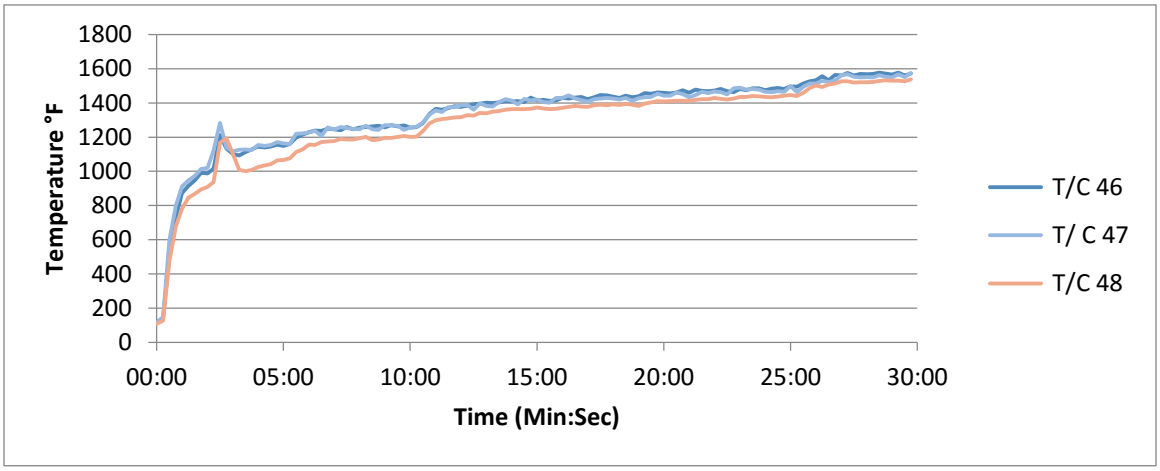


Graph No. 9
First-story Test Room Ceiling



Graph No. 10
First-story Interior Wall Surface

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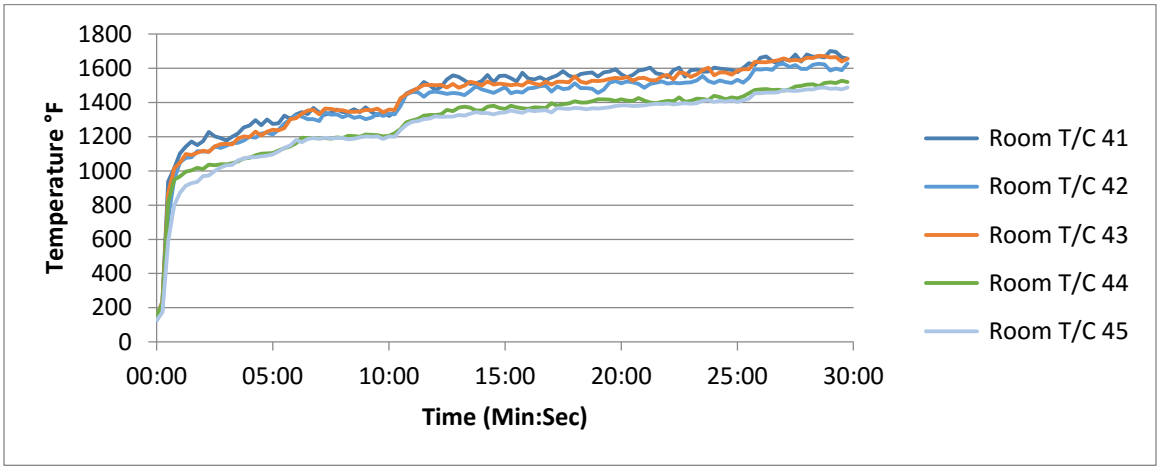

Graph No. 11
Second-story Interior Wall Surface

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SECTION 13
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	0.1	0.0	68	100	89	83	78	77	77	76	75
00:15	8.4	0.0	100	105	99	92	85	82	80	78	76
00:30	35.1	0.0	712	436	562	528	457	419	380	338	304
00:45	36.2	0.0	840	550	630	579	510	449	407	349	303
01:00	36.5	0.0	868	577	634	594	518	453	393	341	305
01:15	36.5	0.0	898	613	687	645	558	484	431	376	336
01:30	36.5	0.0	937	610	685	680	612	542	470	407	360
01:45	36.5	0.0	957	625	726	715	634	556	494	429	377
02:00	36.5	0.0	951	616	694	673	600	542	473	417	373
02:15	36.6	0.0	996	688	790	764	660	587	523	448	397
02:30	36.5	0.0	1032	791	882	830	730	642	563	487	422
02:45	36.5	0.0	1018	732	818	796	719	634	554	488	433
03:00	36.5	0.0	1024	718	799	775	680	593	532	469	409
03:15	36.5	0.0	1007	725	792	737	609	518	479	427	380
03:30	36.5	0.0	1002	722	789	746	649	580	528	463	407
03:45	36.5	0.0	1027	691	780	739	629	563	510	445	389
04:00	36.5	0.0	1056	693	797	758	650	574	534	476	426
04:15	36.5	0.0	1026	718	808	767	680	607	565	503	431
04:30	36.5	0.0	1065	760	852	810	714	643	595	516	453
04:45	36.5	0.0	1085	750	847	801	703	621	576	511	454
05:00	36.6	0.0	1067	736	842	807	699	612	574	504	440
05:15	36.5	0.1	1071	716	816	779	687	613	566	513	453
05:30	36.5	1.1	1074	765	888	888	815	735	669	587	512
05:45	36.5	4.3	1155	817	968	1005	928	841	775	673	572
06:00	36.5	4.4	1145	831	987	1021	942	853	810	716	613
06:15	36.5	4.4	1143	856	1026	1064	984	879	806	703	567
06:30	36.5	4.4	1142	889	1052	1065	979	885	842	752	649
06:45	36.5	4.3	1154	888	1016	1026	940	856	794	693	606
07:00	36.5	4.4	1146	905	1049	1072	995	892	825	733	648
07:15	36.5	4.4	1145	911	1023	1041	964	883	806	722	642
07:30	36.5	4.4	1168	912	1018	1054	983	911	857	773	686
07:45	36.5	4.4	1152	911	1020	1067	1025	939	890	795	700
08:00	36.5	4.3	1138	943	1048	1059	971	873	825	746	671
08:15	36.5	4.3	1156	942	1018	1048	991	889	811	701	607
08:30	36.5	4.4	1163	964	1066	891	931	866	829	747	661
08:45	36.5	4.4	1156	960	1067	869	959	866	797	709	627
09:00	36.5	4.4	1148	957	1073	913	988	877	816	719	645
09:15	36.5	4.4	1124	960	1063	951	1000	860	818	738	658
09:30	36.5	4.4	1136	932	1043	939	993	884	805	731	650
09:45	36.5	4.3	1193	935	1039	942	972	857	818	735	652
10:00	36.6	4.3	1129	961	1072	1000	1006	889	828	741	655
10:15	36.7	4.3	1143	978	1069	1006	970	842	803	718	631
10:30	40.7	4.8	1171	957	1063	990	1026	904	862	787	710

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TEST REPORT FOR STACBOND

Report No.: H8964.01-121-24-R0
Date: 02/15/18

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
10:45	44.9	5.7	1223	993	1128	1042	1072	946	898	820	728
11:00	45.1	5.7	1228	1000	1108	1035	1075	973	937	845	745
11:15	44.9	5.8	1254	981	1095	1037	1070	956	915	814	727
11:30	44.9	5.7	1252	995	1111	1109	1058	942	913	823	734
11:45	44.9	5.7	1241	995	1114	1124	1063	962	936	854	771
12:00	45.0	5.7	1224	988	1123	1153	1060	953	920	856	778
12:15	45.0	5.7	1255	1002	1139	1179	1097	984	956	837	732
12:30	45.0	5.7	1272	1008	1127	1165	1079	959	947	867	777
12:45	44.9	5.7	1266	1001	1147	1199	1095	994	979	862	768
13:00	44.9	5.7	1261	1010	1134	1171	1080	976	960	875	782
13:15	45.0	5.7	1256	1001	1126	1161	1068	970	960	876	784
13:30	45.0	5.7	1265	1011	1120	1161	1058	968	950	859	767
13:45	45.1	5.7	1266	1015	1146	1178	1080	985	961	870	776
14:00	45.1	5.7	1288	1021	1166	1237	1140	1027	975	866	773
14:15	44.9	5.7	1286	1000	1146	1188	1097	969	904	796	711
14:30	45.0	5.7	1283	1004	1144	1197	1107	992	948	837	728
14:45	45.0	5.7	1265	990	1138	1195	1113	1019	968	879	797
15:00	45.1	5.7	1273	1003	1147	1201	1133	1015	919	819	738
15:15	45.1	5.8	1275	984	1115	1170	1122	1008	988	885	781
15:30	44.8	7.2	1284	1005	1165	1215	1144	1010	995	901	805
15:45	44.6	8.3	1287	1018	1163	1227	1158	1034	965	869	773
16:00	44.7	8.2	1292	1001	1147	1207	1137	1012	955	830	739
16:15	45.0	8.2	1301	1005	1178	1243	1171	1044	1022	917	822
16:30	44.8	8.2	1286	1020	1180	1242	1162	1036	1006	909	813
16:45	44.8	8.3	1284	999	1159	1215	1147	1023	1004	896	793
17:00	44.7	8.2	1242	999	1172	1250	1198	1061	1043	936	838
17:15	44.9	8.1	1269	1010	1151	1226	1177	1045	1051	949	855
17:30	44.8	8.2	1278	1015	1173	1214	1163	1044	1032	945	860
17:45	44.8	8.3	1287	1013	1145	1207	1166	1051	1064	978	888
18:00	44.8	8.2	1241	1021	1166	1213	1168	1066	1056	952	838
18:15	44.8	8.2	1264	1018	1167	1243	1163	1041	1005	924	831
18:30	44.8	8.3	1308	1013	1153	1219	1169	1049	1015	919	816
18:45	44.8	8.3	1275	1006	1137	1203	1139	1030	1000	899	815
19:00	44.8	8.3	1262	1012	1155	1216	1167	1047	1020	918	823
19:15	44.8	8.2	1280	997	1167	1234	1174	1036	1000	902	817
19:30	44.8	8.2	1303	1013	1186	1243	1204	1081	1052	940	853
19:45	44.8	8.2	1280	1020	1169	1225	1173	1050	1010	908	818
20:00	44.8	8.2	1279	1004	1141	1186	1148	1041	1018	928	841
20:15	44.8	8.4	1254	1001	1176	1237	1189	1070	1037	940	845
20:30	44.8	10.1	1284	1022	1201	1267	1215	1097	1082	976	864
20:45	44.8	11.2	1285	1007	1188	1252	1216	1086	1020	929	844
21:00	44.8	11.2	1321	1028	1180	1243	1191	1092	1045	923	825
21:15	44.8	11.2	1330	1013	1185	1261	1213	1102	1058	946	846
21:30	44.8	11.2	1289	1019	1202	1274	1226	1101	1074	962	853
21:45	44.8	11.2	1291	1036	1236	1317	1262	1128	1065	962	870
22:00	44.8	11.2	1295	1040	1228	1279	1216	1081	1046	961	871

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TEST REPORT FOR STACBOND

Report No.: H8964.01-121-24-R0
Date: 02/15/18

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
22:15	44.8	11.2	1275	1022	1186	1250	1231	1099	1106	996	899
22:30	44.8	11.2	1258	1018	1175	1263	1227	1091	1066	965	858
22:45	44.8	11.2	1258	1017	1189	1231	1175	1069	1013	922	834
23:00	44.8	11.2	1314	1023	1195	1248	1227	1129	1129	1026	935
23:15	44.8	11.2	1295	1018	1195	1264	1246	1149	1120	1002	886
23:30	44.8	11.2	1275	1030	1202	1258	1229	1130	1120	1026	932
23:45	44.8	11.2	1270	1020	1190	1249	1212	1121	1063	953	870
24:00	44.8	11.2	1322	1024	1226	1287	1242	1127	1060	971	881
24:15	44.8	11.2	1293	1046	1211	1264	1243	1137	1081	979	880
24:30	44.8	11.2	1316	1035	1185	1244	1224	1136	1110	993	884
24:45	44.8	11.2	1312	1038	1189	1248	1208	1107	1066	971	889
25:00	44.8	11.2	1290	1041	1207	1254	1217	1123	1090	973	884
25:15	45.0	11.5	1308	1043	1205	1260	1222	1119	1070	966	877
25:30	47.1	14.5	1380	1076	1249	1307	1289	1199	1174	1075	976
25:45	48.7	15.9	1351	1103	1305	1363	1307	1175	1097	981	877
26:00	48.7	15.8	1358	1111	1297	1363	1338	1231	1182	1047	927
26:15	48.6	16.0	1366	1141	1338	1388	1325	1202	1160	1057	947
26:30	48.7	16.0	1380	1149	1348	1404	1350	1231	1177	1061	952
26:45	48.7	15.9	1400	1141	1348	1396	1357	1242	1183	1031	912
27:00	48.6	16.0	1380	1124	1333	1391	1360	1238	1172	1045	937
27:15	48.6	15.9	1391	1121	1314	1377	1329	1233	1172	1048	922
27:30	48.7	16.0	1351	1145	1351	1432	1366	1248	1174	1038	902
27:45	48.7	15.9	1377	1126	1342	1400	1348	1247	1176	1047	937
28:00	48.7	15.9	1382	1145	1349	1419	1381	1286	1242	1109	997
28:15	48.6	15.9	1356	1126	1353	1422	1381	1290	1215	1077	963
28:30	48.6	15.9	1368	1116	1332	1409	1380	1284	1202	1064	936
28:45	48.7	15.9	1385	1120	1345	1423	1379	1273	1182	1049	944
29:00	48.7	15.9	1404	1120	1332	1429	1373	1273	1208	1061	948
29:15	48.7	15.9	1369	1111	1306	1383	1347	1263	1184	1049	926
29:30	48.6	15.9	1380	1089	1275	1381	1361	1267	1207	1081	971
29:45	48.6	15.9	1390	1110	1322	1422	1397	1303	1256	1103	963
30:00	48.7	15.9	1385	1121	1327	1410	1382	1297	1273	1139	984

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Report No.: H8964.01-121-24-R0
Date: 02/15/18

TIME (Min:Sec)	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	75	74	72	70	64	68	67	63	56	59
00:15	75	74	72	71	63	67	67	63	56	59
00:30	272	264	229	220	85	144	178	99	56	59
00:45	270	258	228	215	97	156	210	118	56	59
01:00	291	277	250	235	92	162	221	117	56	59
01:15	308	289	258	248	105	187	224	115	56	59
01:30	331	308	277	264	111	193	200	107	56	59
01:45	341	306	267	252	108	195	210	116	56	59
02:00	345	317	281	266	99	178	214	116	56	59
02:15	357	333	289	273	104	181	230	113	56	59
02:30	374	344	303	291	111	211	253	123	56	60
02:45	389	357	313	295	108	204	246	133	56	60
03:00	372	342	306	286	102	188	245	132	57	60
03:15	351	325	289	275	106	192	251	125	57	61
03:30	372	342	307	283	107	201	233	132	57	62
03:45	357	323	294	274	105	199	241	134	58	63
04:00	387	358	323	304	110	203	249	129	58	64
04:15	378	345	310	294	103	205	245	123	59	66
04:30	408	370	330	305	107	214	258	122	60	68
04:45	408	374	328	308	110	214	240	122	61	70
05:00	396	363	330	309	117	206	258	123	62	71
05:15	417	389	351	334	115	205	256	120	63	73
05:30	475	439	385	350	119	235	304	119	65	75
05:45	516	467	413	388	122	270	337	134	66	77
06:00	544	475	420	391	123	261	331	135	67	78
06:15	521	470	415	393	130	278	340	138	69	80
06:30	569	502	447	414	126	282	336	140	70	82
06:45	527	475	424	391	126	278	331	144	72	84
07:00	561	496	432	400	127	261	354	142	74	85
07:15	561	499	442	414	120	269	363	150	75	87
07:30	608	551	498	463	126	264	327	148	77	89
07:45	618	544	492	457	129	252	311	141	78	90
08:00	596	535	484	445	130	255	355	137	80	92
08:15	533	483	437	410	128	275	342	150	81	93
08:30	581	518	464	439	130	275	366	148	83	95
08:45	550	483	439	403	133	280	391	151	85	96
09:00	565	494	444	413	139	294	343	154	86	98
09:15	587	514	457	417	131	287	379	157	87	99
09:30	578	511	457	428	144	277	345	144	89	100
09:45	572	512	452	426	132	300	340	149	90	102
10:00	573	507	456	424	129	282	369	152	91	103
10:15	560	509	456	430	133	281	377	148	93	104
10:30	637	580	516	479	127	281	367	149	94	105
10:45	638	566	496	472	134	269	361	156	95	106
11:00	643	577	516	481	135	280	366	155	96	107
11:15	631	544	474	446	141	278	384	151	97	108
11:30	640	569	503	469	139	291	375	155	98	109

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11:45	676	596	523	484	134	286	360	151	100	110
12:00	676	609	535	498	140	283	353	149	101	111
12:15	633	559	505	468	148	301	368	152	102	111
12:30	682	601	530	479	139	324	346	159	103	112
12:45	663	582	514	474	139	312	361	157	104	113
13:00	696	615	545	501	144	303	345	157	105	114
13:15	693	603	546	502	145	310	368	159	106	115
13:30	675	595	544	501	146	299	347	162	107	116
13:45	693	605	544	499	146	313	386	161	108	117
14:00	694	615	539	500	142	295	375	154	109	117
14:15	636	554	500	467	142	327	372	163	110	118
14:30	634	551	496	464	142	344	363	155	111	119
14:45	694	607	543	509	146	333	347	156	112	120
15:00	649	581	529	487	145	325	375	154	113	121
15:15	687	606	531	486	147	331	366	155	114	122
15:30	708	616	541	490	157	314	405	166	115	122
15:45	679	593	530	492	159	348	393	174	116	123
16:00	648	583	531	491	155	333	383	165	117	124
16:15	716	632	572	536	155	329	387	166	117	124
16:30	718	646	584	533	147	317	380	161	118	125
16:45	701	620	558	524	175	316	391	172	119	126
17:00	730	650	579	533	161	326	390	162	120	126
17:15	761	675	600	545	147	330	403	164	121	127
17:30	754	665	601	552	146	343	388	163	121	127
17:45	774	705	621	559	152	330	384	170	122	128
18:00	723	636	566	525	159	331	418	166	123	128
18:15	744	671	607	559	148	342	381	162	123	129
18:30	720	645	587	542	157	341	398	158	124	129
18:45	727	650	592	554	155	365	382	168	125	130
19:00	728	648	586	548	150	359	386	167	126	130
19:15	724	653	586	539	148	340	383	176	126	131
19:30	768	674	594	543	158	339	388	162	127	131
19:45	726	645	594	545	155	337	390	175	128	131
20:00	733	655	584	533	157	343	407	164	129	132
20:15	743	674	606	558	167	334	402	168	129	132
20:30	766	683	604	559	167	346	436	167	130	133
20:45	755	675	613	572	166	346	407	160	131	133
21:00	726	647	586	539	168	368	432	169	132	133
21:15	740	656	587	549	167	354	413	166	133	134
21:30	755	683	616	571	169	360	458	173	134	134
21:45	745	647	578	537	163	383	435	170	135	135
22:00	781	702	637	588	168	359	459	187	136	135
22:15	778	688	619	562	167	351	413	178	137	136
22:30	747	653	595	546	173	353	428	187	138	136
22:45	747	669	606	559	165	371	432	177	139	137
23:00	815	716	643	591	166	345	421	176	141	138
23:15	773	684	621	566	160	349	448	170	142	139

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23:30	823	734	663	607	161	340	409	171	143	140
23:45	765	671	611	560	163	354	423	168	145	141
24:00	780	688	629	573	155	347	412	165	146	142
24:15	774	693	630	582	172	335	448	172	147	144
24:30	785	689	618	578	164	352	436	175	149	146
24:45	798	720	643	582	156	353	426	172	150	147
25:00	795	709	638	594	155	357	439	173	151	149
25:15	775	696	640	588	157	350	433	177	152	151
25:30	859	757	673	614	170	366	454	174	153	152
25:45	781	698	651	607	166	368	441	165	153	154
26:00	815	725	654	597	172	364	438	186	153	155
26:15	841	762	699	638	170	356	469	174	154	156
26:30	837	738	661	615	186	379	469	172	154	157
26:45	806	695	631	578	186	367	470	182	155	158
27:00	828	740	672	617	175	386	484	180	156	158
27:15	790	702	630	586	171	365	486	184	156	159
27:30	796	700	642	604	164	367	460	185	157	160
27:45	839	749	688	635	167	340	456	195	158	161
28:00	878	778	696	628	175	372	447	182	159	162
28:15	840	740	651	591	185	386	461	172	160	162
28:30	822	733	660	604	173	393	470	175	161	163
28:45	851	769	710	656	168	387	451	166	162	164
29:00	839	738	670	621	178	396	456	177	163	165
29:15	819	719	638	589	180	409	419	185	164	166
29:30	882	805	716	657	174	400	407	177	164	167
29:45	869	771	703	643	184	396	419	174	165	167
30:00	918	826	748	678	186	393	436	176	166	168

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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
00:00	58	59	60	59	60	60	61	62	62	63
00:15	58	59	60	59	60	60	61	62	62	63
00:30	59	59	60	60	60	60	61	62	62	63
00:45	61	59	61	61	60	61	61	62	63	63
01:00	64	59	62	64	61	61	62	62	63	64
01:15	69	59	64	67	63	62	63	63	64	64
01:30	75	60	66	70	64	63	64	64	64	65
01:45	80	60	68	74	66	64	64	65	65	66
02:00	86	61	70	76	68	65	66	66	66	67
02:15	92	62	73	79	72	66	67	68	67	68
02:30	100	62	76	82	74	68	68	69	68	70
02:45	108	63	79	86	77	69	70	71	69	71
03:00	114	64	82	89	81	71	72	73	71	72
03:15	120	66	84	92	83	73	73	74	72	74
03:30	126	67	86	95	88	74	75	76	73	75
03:45	131	69	90	98	91	76	76	78	75	76
04:00	138	71	93	100	94	77	78	79	76	78
04:15	145	74	97	102	98	79	79	81	77	79
04:30	151	76	101	104	103	80	80	83	78	80
04:45	160	79	106	105	104	82	82	85	80	82
05:00	169	81	111	107	109	84	84	86	81	83
05:15	178	84	117	109	112	85	85	89	82	84
05:30	186	87	122	112	116	87	86	91	83	86
05:45	196	90	126	115	120	88	88	93	85	87
06:00	207	93	132	120	126	91	90	96	86	88
06:15	217	98	138	124	131	94	93	99	88	90
06:30	225	103	145	129	133	98	97	102	90	92
06:45	231	109	151	134	140	102	99	106	92	94
07:00	237	116	157	139	146	105	102	108	94	96
07:15	242	124	163	144	151	109	105	111	96	98
07:30	248	130	169	149	160	113	108	114	98	100
07:45	250	145	174	152	165	116	111	117	100	102
08:00	252	160	177	152	171	120	114	121	102	104
08:15	257	172	180	146	175	125	115	124	104	106
08:30	262	177	181	150	179	129	116	127	106	109
08:45	264	178	181	157	182	133	118	129	108	112
09:00	270	181	181	160	186	137	119	132	110	114
09:15	270	184	182	163	190	140	120	134	112	116
09:30	272	188	184	168	194	142	123	137	114	118
09:45	273	194	187	172	198	144	124	140	116	120
10:00	271	200	189	177	202	146	126	142	118	122
10:15	272	206	192	181	206	148	128	145	120	124
10:30	273	210	195	184	211	150	130	148	122	126
10:45	273	214	199	186	210	153	132	151	123	128
11:00	274	218	203	189	209	154	135	152	125	130
11:15	278	221	206	192	213	154	137	155	127	133
11:30	279	225	211	196	213	153	140	160	130	135

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Report No.: H8964.01-121-24-R0
Date: 02/15/18

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
11:45	284	229	215	200	216	151	143	163	132	137
12:00	282	233	219	203	218	150	146	167	134	139
12:15	285	238	224	205	222	150	149	171	136	140
12:30	288	243	231	208	226	152	153	174	138	143
12:45	290	248	236	211	231	153	156	176	141	145
13:00	297	254	237	214	239	155	159	180	143	147
13:15	305	260	238	215	243	157	161	183	145	149
13:30	304	264	237	216	245	159	163	186	147	152
13:45	310	265	237	216	246	161	165	189	149	155
14:00	308	265	236	217	249	163	168	192	151	158
14:15	309	267	235	217	249	165	170	194	153	161
14:30	321	277	233	217	251	168	173	197	156	163
14:45	332	285	233	218	253	170	175	198	158	166
15:00	350	294	234	221	255	172	177	201	160	168
15:15	364	302	236	224	258	173	179	202	161	170
15:30	370	313	240	227	259	176	181	204	163	171
15:45	375	324	244	230	262	178	182	206	165	174
16:00	366	334	245	232	264	180	183	208	167	175
16:15	362	339	249	234	267	182	184	210	168	177
16:30	352	343	254	236	270	184	185	212	170	178
16:45	356	347	257	239	274	187	186	215	172	180
17:00	357	349	261	240	277	188	188	217	174	182
17:15	358	354	264	242	281	190	190	219	175	183
17:30	362	357	270	243	284	192	192	222	177	185
17:45	365	360	274	245	287	194	194	224	178	186
18:00	371	363	278	247	291	197	196	227	180	188
18:15	379	367	282	249	294	199	197	228	182	189
18:30	384	369	287	251	297	202	199	231	183	190
18:45	390	374	287	253	301	205	201	232	185	192
19:00	395	377	288	254	304	208	202	234	186	193
19:15	398	380	289	255	307	212	204	235	187	194
19:30	400	381	290	256	310	215	205	236	188	196
19:45	404	382	291	258	312	218	207	238	188	197
20:00	403	384	292	259	314	220	209	239	188	198
20:15	407	383	294	260	316	223	211	241	189	199
20:30	401	383	298	261	318	226	212	243	189	201
20:45	395	384	305	263	321	229	214	245	190	202
21:00	396	385	311	266	324	232	215	247	190	204
21:15	400	386	320	269	328	235	217	248	191	206
21:30	400	386	321	274	330	237	218	250	192	207
21:45	401	387	323	277	334	239	219	252	192	208
22:00	402	388	331	281	337	240	220	253	192	209
22:15	411	390	336	285	341	242	222	255	193	210
22:30	420	391	331	287	346	243	224	257	193	211
22:45	420	392	325	291	350	245	226	259	193	211
23:00	425	394	322	295	355	246	227	261	193	212
23:15	432	395	322	300	358	248	229	262	194	213

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TEST REPORT FOR STACBOND

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Date: 02/15/18

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
23:30	437	397	321	304	359	250	231	264	194	213
23:45	443	399	322	307	361	251	232	266	194	214
24:00	447	401	323	310	365	252	234	267	195	214
24:15	449	404	322	314	367	254	236	268	196	215
24:30	450	406	323	321	369	255	237	269	197	216
24:45	453	409	325	325	369	256	239	270	197	216
25:00	455	412	326	322	369	256	239	271	198	217
25:15	457	414	324	321	372	256	240	272	199	217
25:30	461	416	326	321	374	256	240	273	200	217
25:45	461	418	331	323	377	256	240	275	200	217
26:00	462	420	333	324	379	256	240	276	201	217
26:15	463	422	337	326	383	256	241	278	202	218
26:30	462	424	337	324	386	257	242	279	204	219
26:45	465	426	344	326	388	258	242	281	204	220
27:00	469	429	342	328	390	261	243	282	206	222
27:15	473	431	347	337	390	262	244	283	207	223
27:30	477	434	351	339	392	263	246	285	208	225
27:45	480	437	352	334	395	263	247	286	209	226
28:00	482	440	355	335	397	264	248	288	210	227
28:15	483	443	362	337	399	265	250	289	212	229
28:30	486	446	360	339	402	266	251	289	213	230
28:45	489	449	358	341	404	267	253	290	214	231
29:00	490	453	353	342	401	268	255	292	215	233
29:15	491	458	352	343	403	269	257	293	216	235
29:30	494	462	351	344	404	274	259	293	218	237
29:45	499	466	351	345	405	273	261	294	219	238
30:00	504	470	349	345	407	274	262	296	220	240

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Date: 02/15/18

TIME (Min:Sec)	T/C 30	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
00:00	63	59	59	60	62	61	60	61	61	64
00:15	63	59	59	60	62	61	60	61	61	64
00:30	63	59	59	60	62	61	60	61	61	64
00:45	63	59	59	61	62	62	60	61	61	64
01:00	64	59	60	61	62	62	60	61	61	64
01:15	65	59	60	61	62	63	61	61	62	65
01:30	65	59	60	61	62	64	61	61	62	65
01:45	66	60	60	61	62	65	61	61	62	65
02:00	67	60	61	61	62	66	62	61	62	65
02:15	68	60	61	62	62	67	62	61	62	65
02:30	69	60	62	62	63	68	63	61	62	66
02:45	70	60	62	63	63	69	63	61	62	66
03:00	71	61	63	63	63	71	64	61	62	66
03:15	73	61	64	64	63	72	64	62	63	66
03:30	75	61	64	64	63	73	65	62	63	67
03:45	76	61	65	64	63	74	66	62	63	67
04:00	78	61	66	65	64	75	66	62	63	68
04:15	80	62	67	65	64	76	67	63	64	68
04:30	83	62	68	66	64	77	67	63	64	68
04:45	85	62	69	66	64	78	68	63	64	69
05:00	86	62	69	67	64	80	68	63	64	69
05:15	88	62	70	67	65	81	68	64	64	69
05:30	90	62	71	67	65	82	69	64	64	70
05:45	91	63	71	68	65	83	69	65	65	70
06:00	91	63	73	68	65	86	69	65	65	71
06:15	93	63	74	69	66	87	69	66	65	71
06:30	97	63	76	70	66	89	70	66	66	72
06:45	99	64	77	70	66	91	70	67	66	73
07:00	102	64	79	70	66	93	70	67	66	74
07:15	104	65	81	71	67	94	71	68	67	74
07:30	106	65	83	71	67	96	71	69	67	75
07:45	109	66	85	71	67	98	71	69	67	75
08:00	111	66	86	72	68	100	72	70	68	76
08:15	113	66	87	72	68	103	73	71	68	76
08:30	116	67	88	72	68	106	73	72	68	77
08:45	119	68	89	73	69	107	74	73	69	78
09:00	119	68	89	73	69	109	74	74	69	78
09:15	122	68	90	74	69	111	75	75	69	79
09:30	124	69	91	74	70	113	76	76	70	79
09:45	125	69	92	74	70	115	77	77	70	80
10:00	127	70	93	75	71	116	78	78	70	81
10:15	129	70	94	75	71	118	78	79	71	82
10:30	130	71	95	76	71	120	79	80	71	82
10:45	132	71	96	77	72	121	80	81	72	83
11:00	134	71	98	77	72	123	81	83	72	84
11:15	137	72	98	78	72	125	83	84	73	84
11:30	139	73	100	78	73	126	84	85	73	85

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Report No.: H8964.01-121-24-R0
Date: 02/15/18

TIME (Min:Sec)	T/C 30	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
11:45	143	73	102	79	73	128	85	86	73	86
12:00	146	74	103	80	74	129	87	87	73	87
12:15	149	75	104	81	74	132	88	89	74	87
12:30	150	76	105	82	74	134	89	90	74	88
12:45	152	77	107	83	75	135	90	91	74	89
13:00	155	78	108	83	75	137	91	92	75	90
13:15	158	78	110	84	76	138	92	94	76	90
13:30	158	79	111	85	77	140	94	95	76	91
13:45	161	80	112	86	77	141	95	97	77	92
14:00	162	81	113	87	78	143	96	98	78	93
14:15	164	82	113	88	78	145	98	99	78	93
14:30	167	82	115	89	79	147	99	101	79	94
14:45	169	83	115	89	79	148	99	102	80	95
15:00	171	84	117	90	80	150	100	103	81	96
15:15	173	85	118	91	80	151	100	104	82	96
15:30	174	85	118	92	81	152	100	106	82	97
15:45	177	86	119	93	81	154	101	107	83	98
16:00	178	87	119	95	82	154	102	108	84	99
16:15	180	88	119	96	82	157	103	109	85	100
16:30	183	89	120	97	83	158	104	111	86	101
16:45	184	91	121	98	84	161	106	112	87	101
17:00	187	91	124	100	84	162	107	113	88	102
17:15	189	92	125	101	85	163	111	115	88	103
17:30	192	94	127	103	86	165	112	116	89	104
17:45	194	95	129	104	86	167	114	117	90	104
18:00	195	97	132	105	87	168	115	119	91	105
18:15	197	99	132	106	88	170	116	120	91	106
18:30	201	101	133	107	88	171	117	121	92	107
18:45	201	104	136	108	89	173	118	122	93	108
19:00	204	107	137	110	90	175	119	123	94	109
19:15	205	106	139	111	90	177	120	124	94	109
19:30	207	108	141	112	91	178	122	125	95	110
19:45	208	109	141	113	92	180	123	126	96	111
20:00	208	110	143	114	93	181	124	127	97	111
20:15	210	112	144	115	93	184	126	128	98	112
20:30	211	115	146	116	94	183	127	129	98	113
20:45	213	115	147	118	95	185	128	130	99	113
21:00	214	118	148	118	96	186	130	131	100	114
21:15	215	119	150	119	96	187	131	132	101	115
21:30	216	120	151	121	97	188	132	133	102	116
21:45	218	121	153	121	98	189	133	135	103	117
22:00	219	123	155	123	99	192	134	136	105	117
22:15	219	125	156	123	100	193	136	137	105	118
22:30	220	126	157	124	100	194	136	138	106	119
22:45	222	128	159	125	101	195	138	139	107	120
23:00	223	129	160	126	102	197	139	140	108	121
23:15	224	130	161	127	103	198	141	141	109	122

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TIME (Min:Sec)	T/C 30	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
23:30	225	131	162	128	104	199	142	142	111	122
23:45	226	133	162	129	105	200	142	143	113	123
24:00	227	133	163	129	105	200	143	144	113	124
24:15	229	136	164	130	106	201	144	145	114	125
24:30	231	136	165	131	107	202	144	146	115	126
24:45	233	137	166	132	108	204	145	147	116	127
25:00	234	137	166	133	109	204	146	148	118	127
25:15	235	138	166	133	109	205	147	149	119	128
25:30	236	139	168	134	109	205	147	150	118	129
25:45	238	139	168	134	110	206	148	151	118	130
26:00	238	140	169	135	111	207	149	152	118	131
26:15	239	140	170	136	111	207	150	153	119	132
26:30	240	141	170	136	112	209	150	154	119	133
26:45	241	142	171	137	113	210	151	155	119	133
27:00	242	143	173	138	114	211	151	156	120	134
27:15	243	143	173	138	114	211	152	157	121	135
27:30	244	144	174	138	115	212	152	158	122	136
27:45	245	145	175	138	116	214	153	159	123	137
28:00	247	145	175	138	117	215	153	160	124	138
28:15	248	145	176	139	118	216	153	161	126	139
28:30	249	145	177	140	119	216	154	162	126	139
28:45	250	145	177	141	119	217	154	162	127	140
29:00	251	145	176	141	120	218	155	164	128	141
29:15	253	146	177	141	121	219	155	165	130	141
29:30	254	146	177	141	122	220	155	166	130	142
29:45	255	146	178	142	123	220	155	166	131	143
30:00	256	147	178	143	123	221	155	167	132	143

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Date: 02/15/18

TIME (Min:Sec)	T/C 40	T/C 41	T/C 42	T/C 43	T/C 44	T/C 45	T/C 46	T/C 47	T/C 48	T/C 49
00:00	63	143	125	146	154	127	117	117	109	59
00:15	63	237	185	235	225	173	142	148	128	59
00:30	63	938	722	870	817	588	519	600	476	59
00:45	63	1017	952	1014	948	800	732	800	677	59
01:00	63	1102	1051	1049	967	873	871	911	780	59
01:15	64	1143	1077	1099	995	914	916	946	845	59
01:30	65	1171	1080	1093	1003	928	947	974	868	59
01:45	65	1151	1116	1106	1018	936	992	1014	894	59
02:00	66	1174	1114	1117	1010	969	988	1021	910	59
02:15	66	1228	1112	1113	1037	973	1017	1123	937	59
02:30	67	1202	1144	1144	1034	1000	1213	1283	1167	59
02:45	68	1192	1135	1156	1040	1021	1133	1139	1194	60
03:00	69	1177	1148	1158	1039	1033	1102	1116	1103	60
03:15	69	1200	1162	1156	1045	1035	1093	1126	1008	60
03:30	70	1219	1165	1188	1055	1062	1114	1128	1002	60
03:45	71	1255	1177	1202	1073	1073	1128	1124	1008	60
04:00	72	1266	1199	1198	1076	1081	1145	1155	1025	60
04:15	73	1297	1193	1230	1091	1080	1140	1150	1035	60
04:30	73	1268	1218	1208	1101	1085	1145	1155	1042	60
04:45	74	1301	1224	1230	1102	1090	1157	1171	1064	60
05:00	75	1274	1214	1240	1104	1096	1149	1163	1066	60
05:15	76	1278	1242	1237	1119	1114	1160	1160	1076	60
05:30	77	1323	1277	1250	1133	1135	1198	1220	1113	60
05:45	77	1305	1302	1303	1145	1149	1215	1222	1128	60
06:00	78	1332	1326	1309	1163	1180	1229	1228	1157	60
06:15	80	1345	1317	1335	1194	1167	1239	1237	1153	60
06:30	81	1332	1302	1354	1192	1187	1237	1206	1171	60
06:45	82	1368	1302	1357	1192	1192	1250	1257	1174	60
07:00	83	1343	1292	1330	1191	1189	1246	1244	1177	60
07:15	85	1329	1342	1365	1192	1193	1240	1259	1190	60
07:30	86	1340	1328	1363	1189	1190	1258	1253	1186	60
07:45	87	1359	1331	1356	1196	1193	1247	1248	1186	60
08:00	88	1343	1314	1356	1192	1192	1255	1247	1194	61
08:15	89	1344	1326	1345	1205	1185	1259	1267	1202	61
08:30	90	1361	1310	1346	1203	1189	1262	1247	1182	61
08:45	91	1344	1318	1348	1199	1196	1267	1243	1186	61
09:00	92	1372	1303	1358	1213	1202	1257	1270	1196	61
09:15	93	1344	1311	1355	1211	1199	1271	1268	1195	61
09:30	94	1326	1334	1364	1209	1202	1263	1266	1201	61
09:45	96	1345	1321	1342	1202	1188	1269	1243	1207	61
10:00	97	1321	1335	1360	1206	1202	1255	1257	1202	62
10:15	98	1343	1330	1357	1221	1199	1259	1260	1202	62
10:30	99	1388	1380	1425	1244	1239	1282	1285	1235	62
10:45	101	1453	1447	1450	1284	1270	1334	1329	1281	62
11:00	102	1469	1462	1467	1295	1288	1366	1356	1298	62
11:15	103	1483	1461	1484	1305	1291	1361	1346	1305	62
11:30	104	1520	1434	1503	1323	1304	1370	1375	1309	63

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Date: 02/15/18

TIME (Min:Sec)	T/C 40	T/C 41	T/C 42	T/C 43	T/C 44	T/C 45	T/C 46	T/C 47	T/C 48	T/C 49
11:45	105	1501	1461	1503	1326	1307	1381	1375	1316	63
12:00	106	1474	1463	1500	1327	1319	1377	1386	1317	63
12:15	107	1492	1458	1503	1332	1316	1384	1389	1328	63
12:30	109	1535	1450	1487	1358	1318	1391	1361	1326	63
12:45	110	1559	1457	1509	1350	1318	1395	1397	1341	63
13:00	111	1549	1453	1486	1371	1328	1401	1382	1340	63
13:15	112	1528	1443	1499	1376	1324	1399	1380	1348	64
13:30	113	1508	1468	1523	1370	1335	1403	1405	1352	64
13:45	114	1511	1495	1515	1354	1343	1412	1422	1360	64
14:00	115	1525	1477	1499	1353	1338	1409	1414	1364	64
14:15	117	1562	1468	1523	1376	1338	1411	1391	1364	64
14:30	118	1519	1457	1504	1381	1331	1404	1424	1364	64
14:45	119	1555	1472	1510	1368	1340	1431	1414	1365	65
15:00	120	1557	1489	1506	1363	1342	1415	1419	1373	65
15:15	121	1542	1455	1502	1382	1354	1418	1405	1367	65
15:30	122	1523	1464	1507	1373	1346	1413	1402	1365	65
15:45	123	1574	1458	1500	1367	1340	1415	1430	1367	65
16:00	125	1541	1483	1523	1362	1356	1430	1429	1372	66
16:15	126	1534	1487	1510	1371	1349	1426	1444	1376	66
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17:00	129	1547	1464	1504	1396	1342	1421	1406	1377	66
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18:00	133	1547	1512	1553	1407	1368	1438	1425	1393	67
18:15	135	1567	1484	1522	1400	1367	1430	1420	1388	67
18:30	136	1571	1485	1514	1399	1360	1443	1429	1393	67
18:45	137	1576	1480	1527	1407	1367	1433	1412	1390	67
19:00	138	1552	1457	1525	1419	1364	1438	1427	1383	68
19:15	138	1576	1474	1529	1418	1369	1457	1432	1396	68
19:30	139	1582	1516	1538	1417	1372	1454	1436	1403	68
19:45	140	1594	1525	1543	1410	1379	1461	1453	1410	68
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22:45	151	1551	1516	1571	1404	1396	1463	1486	1425	70
23:00	152	1589	1519	1549	1410	1393	1482	1490	1435	71
23:15	153	1593	1530	1565	1423	1397	1474	1478	1436	71

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TIME (Min:Sec)	T/C 40	T/C 41	T/C 42	T/C 43	T/C 44	T/C 45	T/C 46	T/C 47	T/C 48	T/C 49
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23:45	155	1581	1526	1604	1415	1413	1485	1478	1439	71
24:00	156	1604	1514	1558	1439	1403	1475	1465	1436	71
24:15	157	1599	1530	1577	1432	1409	1485	1463	1434	71
24:30	158	1595	1521	1577	1418	1406	1487	1469	1436	72
24:45	159	1592	1514	1563	1430	1411	1482	1466	1442	72
25:00	160	1578	1534	1585	1424	1405	1497	1499	1447	72
25:15	161	1603	1516	1594	1436	1414	1495	1462	1441	72
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26:45	167	1629	1623	1646	1476	1460	1565	1531	1513	73
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TIME (Min:Sec)	T/C 50	T/C 51	T/C 52	T/C 53	T/C 54
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00:30	58	59	60	59	59
00:45	58	59	60	59	59
01:00	58	59	60	59	59
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10:45	61	63	61	64	64
11:00	61	64	61	64	64
11:15	61	64	61	64	64
11:30	61	64	61	64	65

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TIME (Min:Sec)	T/C 50	T/C 51	T/C 52	T/C 53	T/C 54
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12:00	62	65	61	65	65
12:15	62	65	61	65	65
12:30	62	65	61	65	66
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22:15	67	71	62	70	72
22:30	67	71	62	70	72
22:45	67	72	62	70	72
23:00	67	72	62	70	73
23:15	68	72	62	70	73

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TIME (Min:Sec)	T/C 50	T/C 51	T/C 52	T/C 53	T/C 54
23:30	68	72	62	70	73
23:45	68	73	62	70	73
24:00	68	73	62	71	73
24:15	68	74	62	71	73
24:30	68	74	62	71	73
24:45	68	74	62	71	73
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29:45	72	77	63	75	77
30:00	72	77	63	75	77

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SECTION 14
DRAWINGS

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

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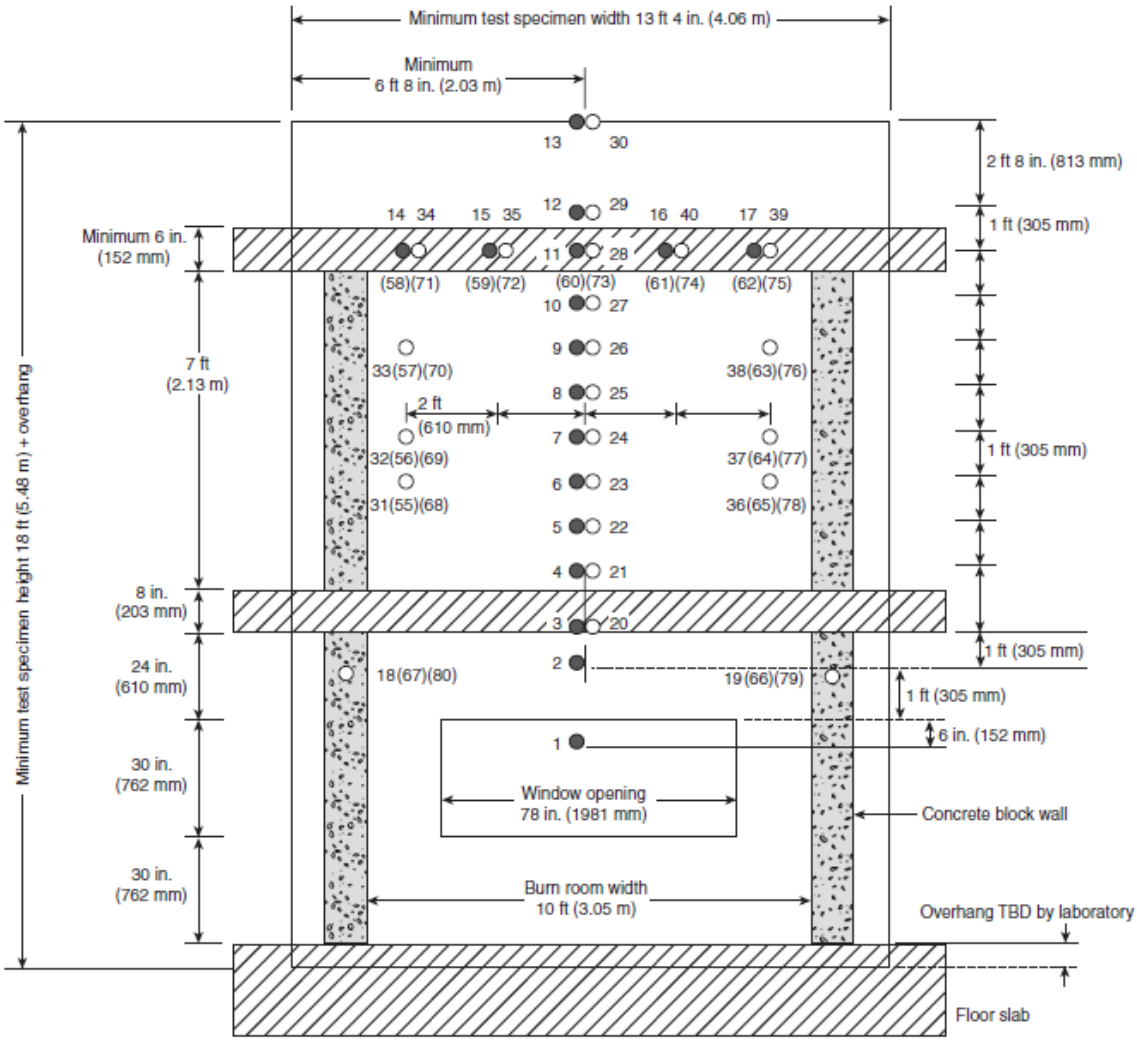
Standard TC Locations



● 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.

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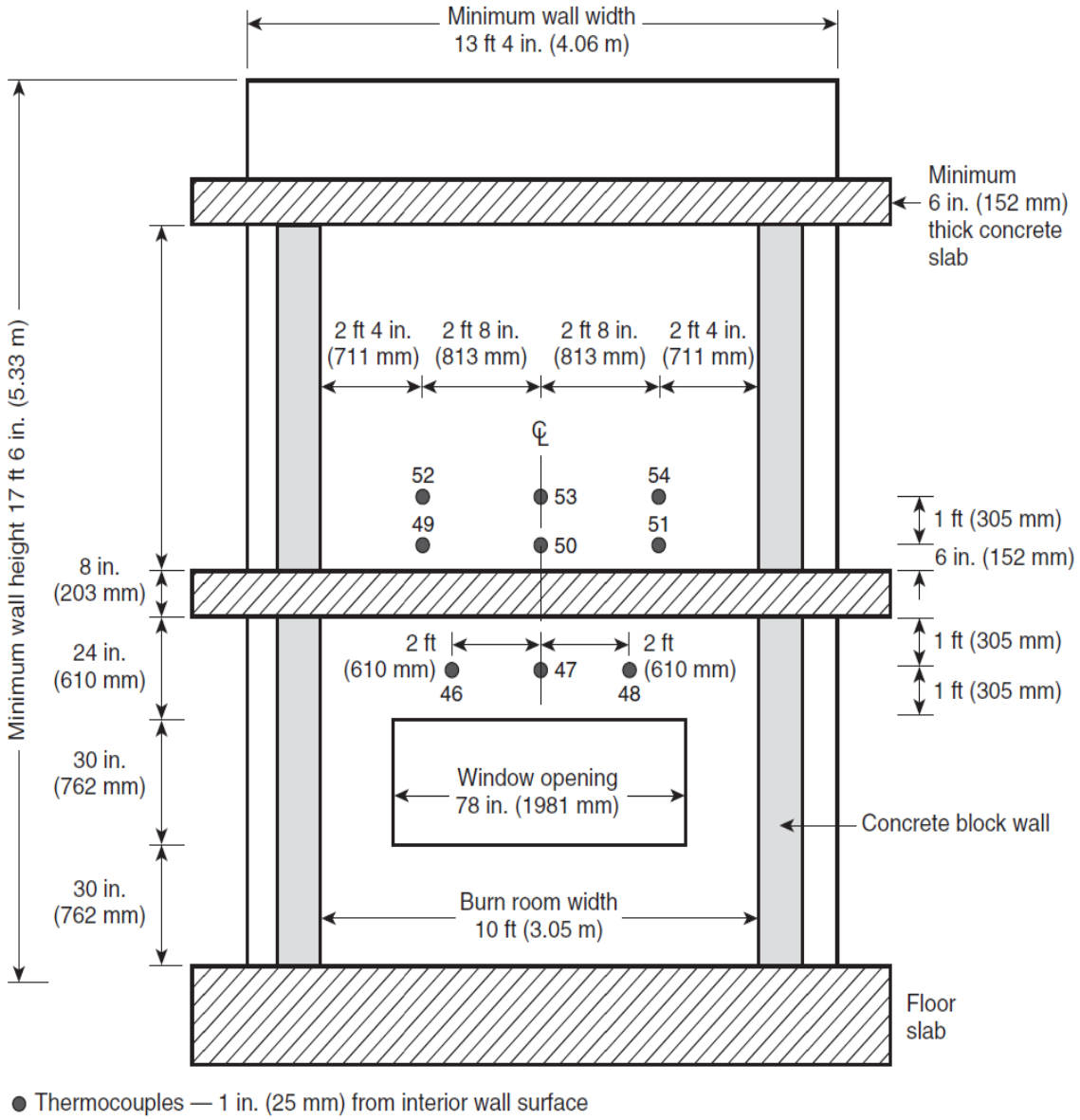

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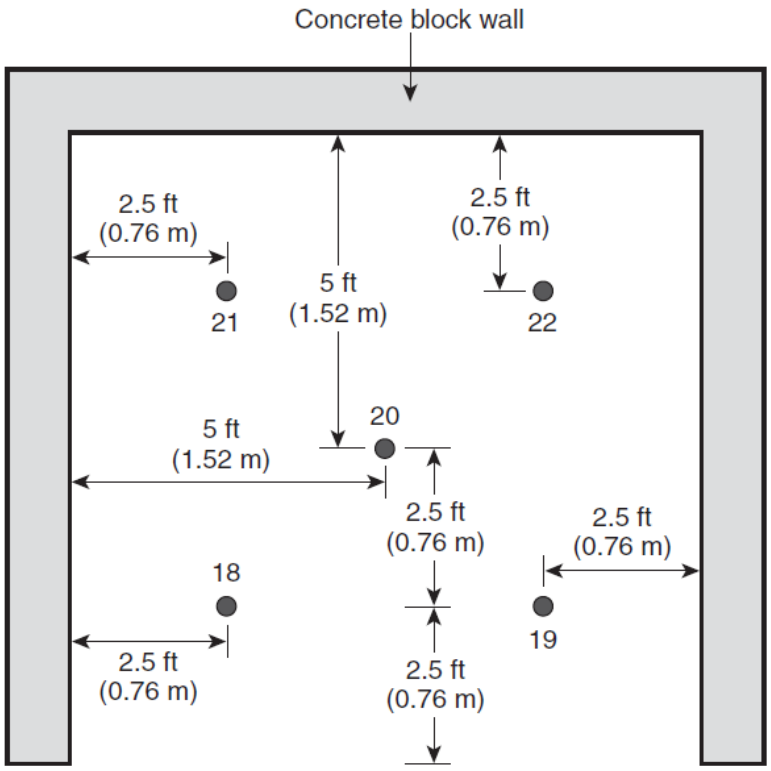

● Thermocouples (5) inside burn room 6 in. (152 mm) below ceiling

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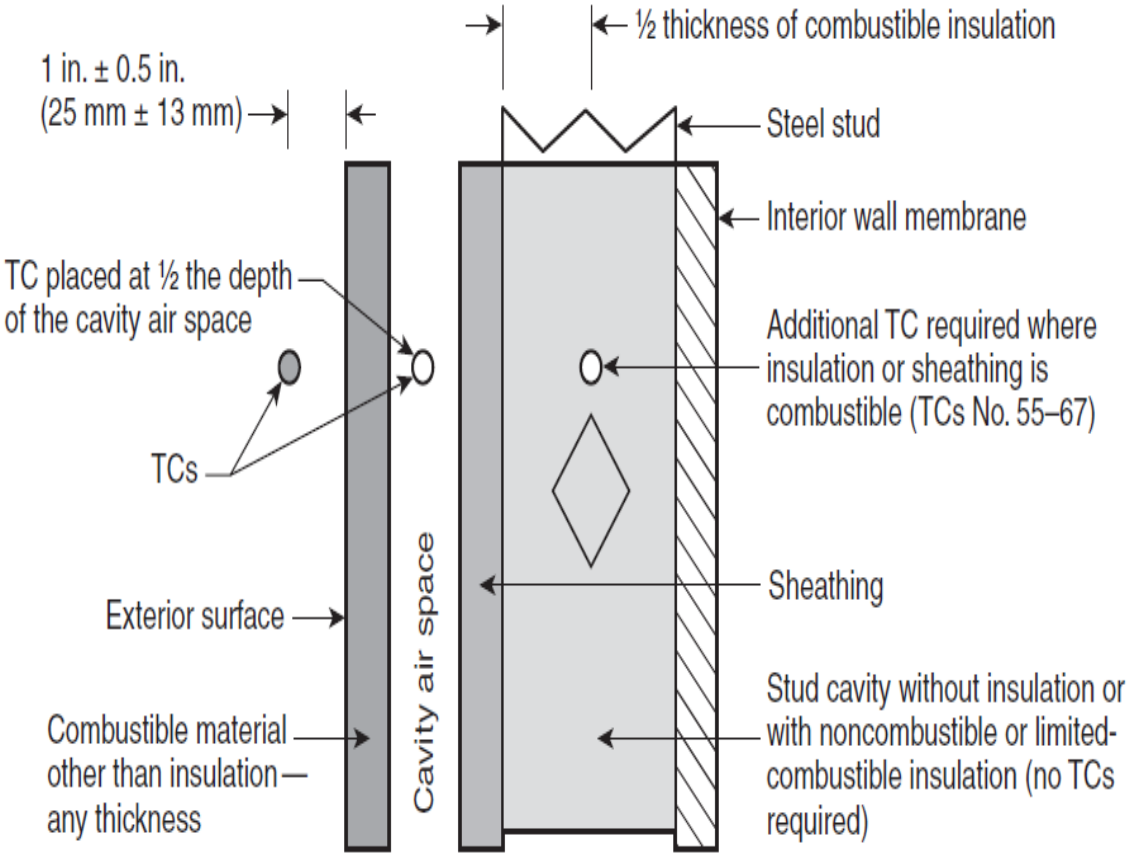

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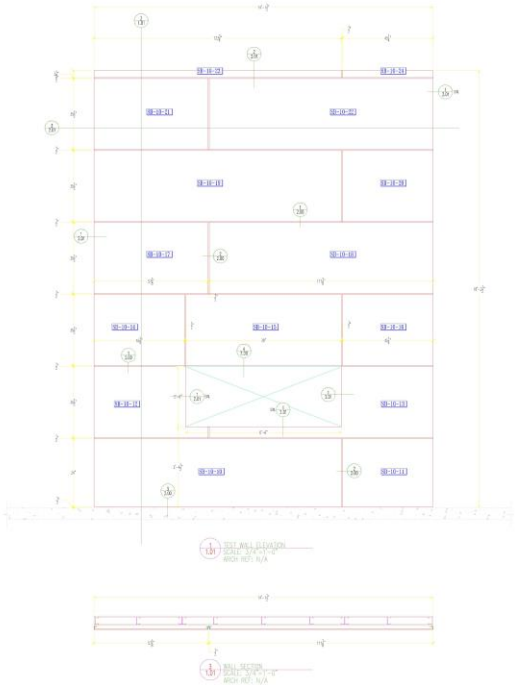

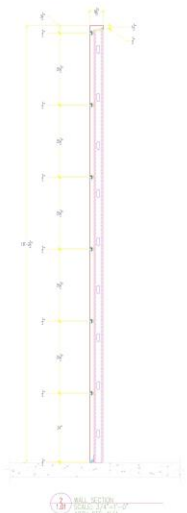

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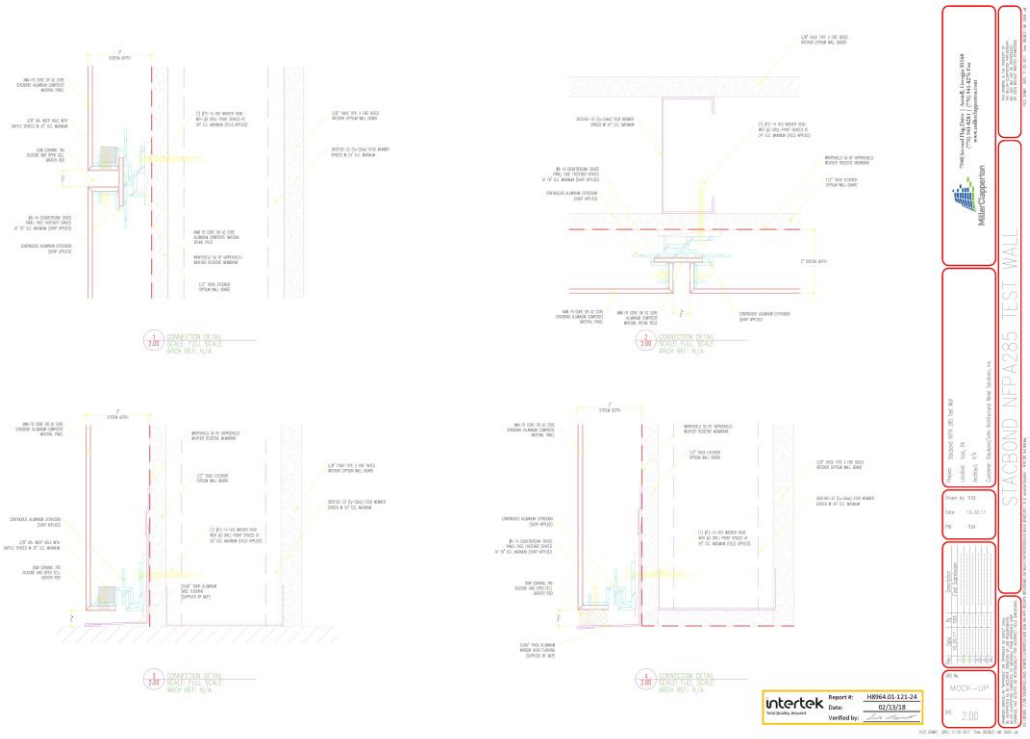

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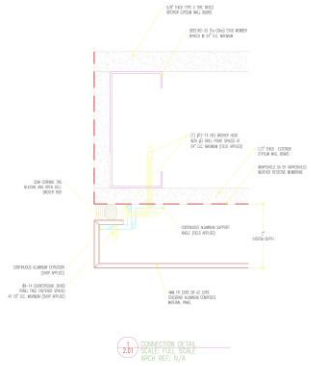

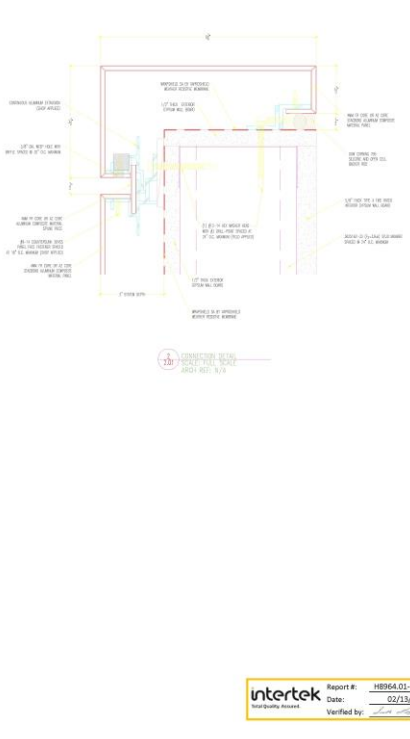

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SECTION 15
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	02/15/18	N/A	Original Report Issue