

CARTER ARCHITECTURAL PANELS INC. FIRE TEST REPORT

SCOPE OF WORK

NFPA 285 TEST ON EXTERIOR NON-LOAD-BEARING WALL ASSEMBLY

REPORT NUMBER

103843210SAT-003

TEST DATE

02/22/19

ISSUE DATE

04/03/19

REVISED DATE

N/A

RECORD RETENTION END DATE

04/03/29

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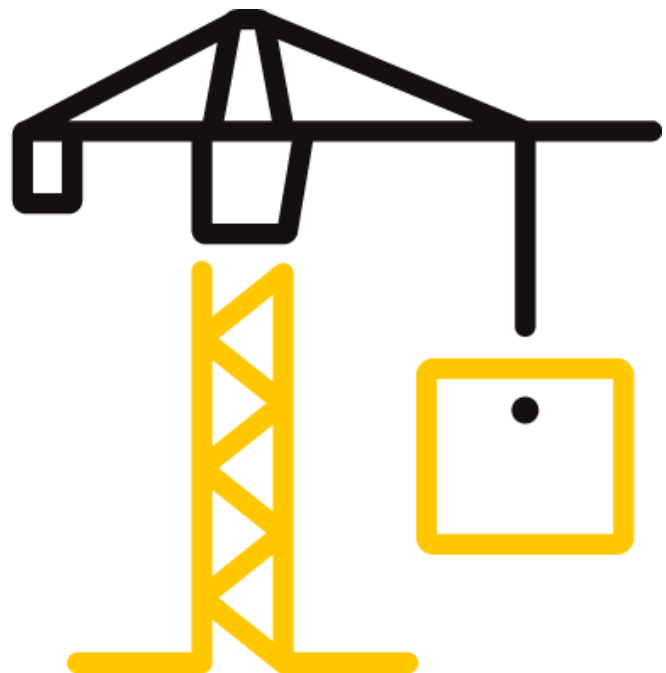
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TEST REPORT FOR CARTER ARCHITECTURAL PANELS INC.

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Date: 04/03/19

REPORT ISSUED TO

Carter Architectural Panels Inc.

221 E. Willis Road "A" Unit 18

Chandler, AZ 85286

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Carter Architectural Panels Inc., to evaluate the flame propagation characteristics of an exterior, non-load-bearing wall assembly containing Etalbond®-FR/FUSION/JMCladstone/USG/Tremco, wall panel system. Testing was conducted at the Intertek B&C test facility in Elmendorf, Texas, U.S.A. Results obtained are tested values and were secured by using the designated test method. 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: Etalbond® FR (Aluminum Composite Panels), TREMCO EXOAIR 110 membrane, TREMCO DYMONIC® 100 High Performance Polyurethane Sealant, TREMCO SPECTREM®1 Moisture-Cure Silicone Sealant, TREMCO 4 in., one sided single ribbed, proglaze ETA.

NFPA 285 Test Results

The assembly described and tested in this report met the Conditions of Acceptance of NFPA 285-2019. Construction of the full assembly is summarized in Section 7 of this test report.

For INTERTEK B&C:

COMPLETED BY:	Jason De La Cruz	REVIEWED BY:	Herbert W. Stansberry II
TITLE:	Senior Project Engineer	TITLE:	Engineering Supervisor Building and Construction
SIGNATURE:		SIGNATURE:	
DATE:	04/03/19	DATE:	04/03/19

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TEST METHOD

The assembly was evaluated in accordance with the following:

NFPA 285-2019, *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components, 2019 Edition*

SECTION 4

MATERIAL SOURCE/INSTALLATION

All samples were provided directly from the client. Samples were not manufactured under Intertek surveillance. The samples were received at the Evaluation Center on 12/17/18 and were assigned Intertek Sample ID No. SAT1812171316-001.

The base wall including the Installation of USG/TREMCO SECUROCK® EXOAIR®430 Air & Water Barrier exterior sheathing was completed by Intertek personnel. The TREMCO EXOAIR tape, TREMCO DYMONIC®100 High Performance Polyurethane Sealant, TREMCO SPECTREM®1 Moisture-Cure Silicone Sealant, TREMCO 4 in., one sided, single ribbed, PROGLAZE ETA were installed by TREMCO representative William Cardott. The JOHNS MANVILLE 2 in. thick JM CLADSTONE® Water and Fire Block mineral wool insulation, TENMAT FIREFLY 102 intumescent strip fire seal, FUSION® extrusions and 0.16 in. (4 mm.) thick, Etalbond® FR core aluminum composite panels were installed by Auzmet Architectural.

SECTION 5

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Kathy Miks	Johns Manville
Joel McKinley	Carter Architectural Panels Inc.
William C. Cardott	Tremco
Marco Kristen	Tenmat
Ian Hainsworth	Tenmat
George K. Michalatos	Elval-Colour
Jason De La Cruz	Intertek B&C
Abel de Hoyos	Intertek B&C

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TEST PROCEDURE

The wall assembly was instrumented with thermocouples (TCs) in accordance with Figures 6.1(a) and 6.1(b); Detail H, of NFPA 285-2012 test method. 18 GA, Type K TCs were used in the burn room and 24 GA, Type K were used on the exterior façade and combustible core space. The window burner was positioned in the center of the opening and 4 in. off the exterior face of the wall assembly. Testing was performed on 02/22/2019 in accordance with NFPA 285-2019 test method. Ambient conditions were 55°F and 80% relative humidity. 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 initiated at 09:47 a.m. with the burners on for 30 minutes. All observations are recorded in the table located in Section 8.

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 7.1.11 of NFPA 285-2019.

CALIBRATED EQUIPMENT USED

Equipment	Equipment No.	Cal. Due Date
DAQ	99LE006	3-22-19
Thermo/Hygrometer	170475469	6-26-19
Stopwatch	170558063	8-2-19
Stopwatch	160778059	8-2-19

SECTION 7

TEST ASSEMBLY DESCRIPTION

The wall assembly contained 5/8 in. thick, USG/TREMCO SECUROCK® EXOAIR®430 Air & Water Barrier exterior sheathing, TREMCO EXOAIR 110 membrane, TREMCO DYMONIC®100 High Performance Polyurethane Sealant, TREMCO SPECTREM®1 Moisture-Cure Silicone Sealant, TREMCO 4 in., one sided single ribbed, Proglaze ETA, JOHNS MANVILLE 2 in. thick JM CLADSTONE® Water and Fire Block insulation, TENMAT FIREFLY 102 intumescent strip fire seal, FUSION® extrusions and 0.16 in. (4 mm) thick, Etalbond® FR aluminum composite panels. Drawings of the wall assembly can be found in Section 13 of this report.

Framing – 3-5/8 in. deep by 1-1/4 in. flange by 20 GA steel studs and track, installed with 1/2 in. pan head framing screws at 24 in. on-center (oc). Cavities of the studs were left empty (uninsulated).

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Exposed side sheathing - 4 ft. by 10 ft. by 5/8 in. thick Type X gypsum board, installed with the long dimension perpendicular to the steel studs using #14 × 1-1/4 in. long self-tapping bugle head screws at 8 in. oc and 12 in. in the field. All joints and screw heads received a Level 2 finish.

Un-exposed side sheathing – USG/TREMCO SECUROCK® EXOAIR®430 Air & Water Barrier exterior sheathing, 4 ft. by 8 ft. by 5/8 in. thick, installed with the long dimension perpendicular to the steel studs using #14 × 1-1/4 in. long self-tapping bugle head screws at 8 in. oc and 12 in. in the field. All joints and screw heads were covered with, TREMCO DYMONIC®100 High Performance Polyurethane Sealant. The window opening was finished with TREMCO EXOAIR tape followed by TREMCO SPECTREM®1 Moisture-Cure Silicone Sealant used to secure TREMCO 4 in., one sided single ribbed, PROGLAZE ETA used on the header and uprights of the window opening.

Wall Brackets – 2 in. 18 GA “Z” bars and “U” bars were utilized to hold the mineral wool insulation and to attach the Fusion whole clips and half clips. Refer to Section 13 of this report for further details.

Wall Insulation – JOHNS MANVILLE 2 in. thick JM CLADSTONE® Water and Fire Block insulation installed onto wall using ULTRAFast® Phillips 5 in. roofing fasteners and ULTRAFast® CI Plates.

Wall Panels – 0.16 in. (4 mm) thick, Etalbond® FR aluminum composite panels with FUSION – Perimeter extrusions.

Window Opening - The 30 in. x 78 in. window opening was finished with TREMCO EXOAIR tape followed by TREMCO SPECTREM®1 Moisture-Cure Silicone Sealant used to secure TREMCO 4 in., one sided single ribbed, PROGLAZE ETA used on the header and uprights of the window opening. The window header used a 26 gauge head flashing followed by (on the window header only) 18 gauge aluminium flashing flush with the exterior edge of the panels and with a 2 in. leg within the interior side of the window opening.

The assembly was completed on 02/22/19.

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SECTION 8

TEST OBSERVATIONS

TIME (Min:Sec)	OBSERVATIONS
00:00	Ignition of room burner. Test started at 09:47 a.m.
01:36	Flames from room burner exiting the window opening.
01:56	Window header flashing is warping.
05:00	Window burner on.
07:10	Panels directly above window opening are warping.
07:15	Material melting and falling from window header.
09:32	Flaming observed at window header at centerline (interior edge)
13:41	Moderate smoke at top cap of wall assembly.
14:08	Panels above window opening peeling and warping up to 2 ft. above window opening.
16:40	Flames observed at the bottom of first row of panel above window opening.
18:35	Panels peeling up to 4 ft. above window opening.
23:00	Panels peeling up to 5 ft. above window opening.
23:47	Panels directly above window opening have opened up.
25:03	Flames reach 3 ft. above window opening.
27:40	Flaming visible at 4 ft. above window opening
30:00	Test burners off. Begin Observation period.
40:00	End of Observation period. Test terminated.

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SECOND FLOOR OBSERVATIONS

TIME (Min:Sec)	OBSERVATIONS
00:00	Ignition of room burner. Test started at 09:47 a.m.
01:45	Light smoke from right side under angle (as viewed)
02:10	Light smoke from left side under angle (as viewed)
05:00	Window burner ignited. Light smoke continues.
08:00	Light smoke continues. Room visibility at 95%.
10:00	No visible changes.
12:00	Smoke increases. Room visibility at 85%.
15:00	No changes. Room visibility at 90%.
18:00	Room visibility at 85%.
20:00	Smoke continues to build. Room visibility at 75%.
23:00	Room visibility at 70%.
28:00	Room visibility at 70%. No visible changes.
30:00	Test burners off. Smoke continues.
32:00	Smoke clearing from room. Visibility at 75%
36:00	Room visibility at 95%.
40:00	Observation period ends. Test terminated.

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

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SECTION 10 PHOTOGRAPHS



Photo No. 1

Base wall joint and window detail preparation



Photo No. 2

5/8 in., USG/TREMCO SECUROCK® EXOAIR 430® for Base Wall

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Photo No. 3

Rear View of Base Wall Prior to 5/8 in., Type X Gypsum Board Installation



Photo No. 4

TREMCO EXOAIR Tape

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Photo No. 5

TREMCO Dymonic 100 High Performance Polyurethane Sealant



Photo No. 6

Application of TREMCO Dymonic 100 High Performance Polyurethane Sealant

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Photo No. 7
TREMCO Spectrem 1, Silicone Sealant



Photo No. 8
TREMCO PROGLAZE ETA

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Photo No. 9

Application of TREMCO Spectrem 1, Silicone Sealant & TREMCO PROGLAZE ETA 3 in.



Photo No. 10

Base Wall Window Detail

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Photo No. 11

Johns Manville Cladstone™ Insulation, 2 in. thick



Photo No. 12

Installation of U-channel and Z-girt with Insulation

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Photo No. 13

Installation of TRUFAST® #12 3-3/4" fasteners and TRUFAST® 3" Galvalume Plates



Photo No. 14

TENMAT FIREFLY 102

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Photo No. 15

Installation of TENMAT FIREFLY 102 round window opening



Photo No. 16

Installation of Etalbond® FR aluminum composite panels

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Photo No. 17

View of backside of Etalbond® FR aluminum composite panels



Photo No. 18

Finished test assembly

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Photo No. 19

Window opening of finished test assembly



Photo No. 20

Interior view of window opening of finished test assembly

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Photo No. 21

Room burner at beginning of test (approx. 3 minutes into test)



Photo No. 22

Window burner ignited

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Photo No. 23
Smoke from wall during test



Photo No. 24
Flaming drops from panels above window opening

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Photo No. 25
During test



Photo No. 26
Burners turned off at end of 30-minute exposure

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Photo No. 27

Residual flaming during optional 10-minute observation period



Photo No. 28

Post test photo

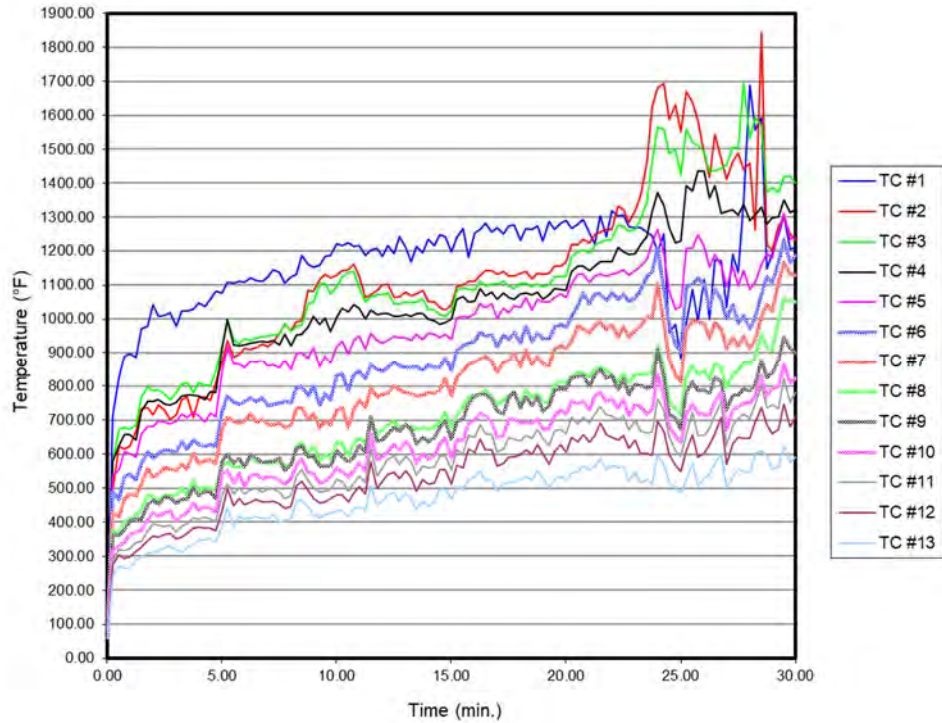
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SECTION 11

GRAPHS

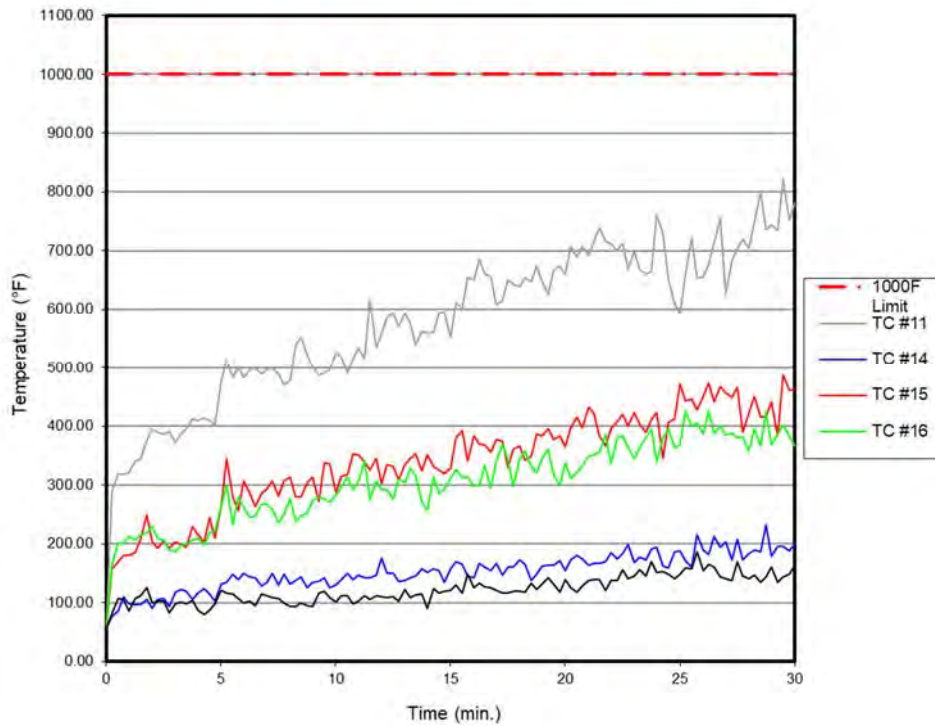


Graph No. 1
Exterior Face Temperatures

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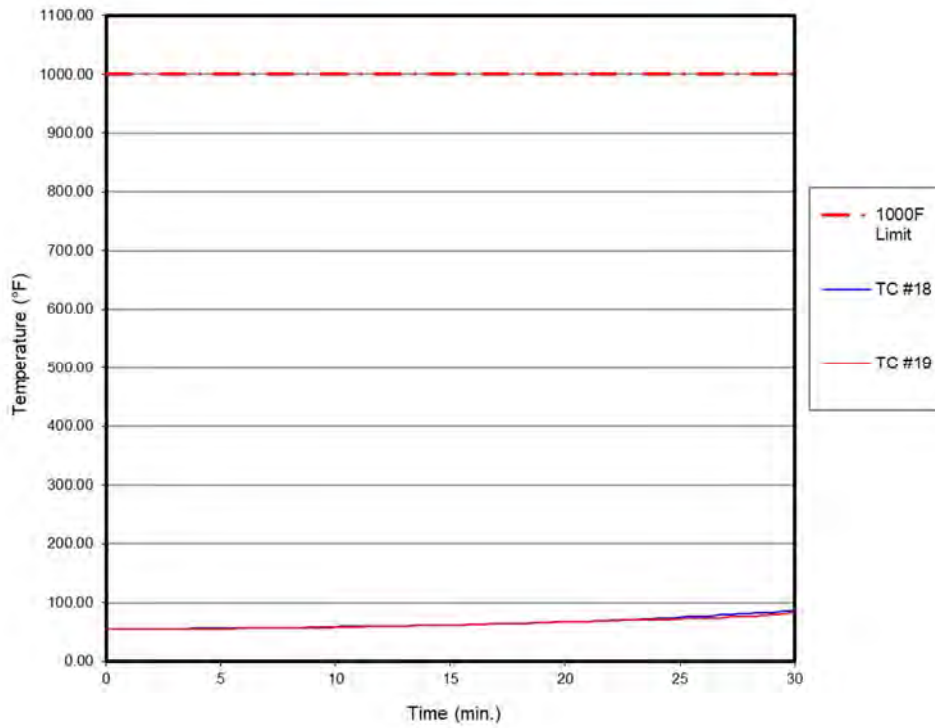


Graph No. 2
Exterior Face 10 ft. Temperatures

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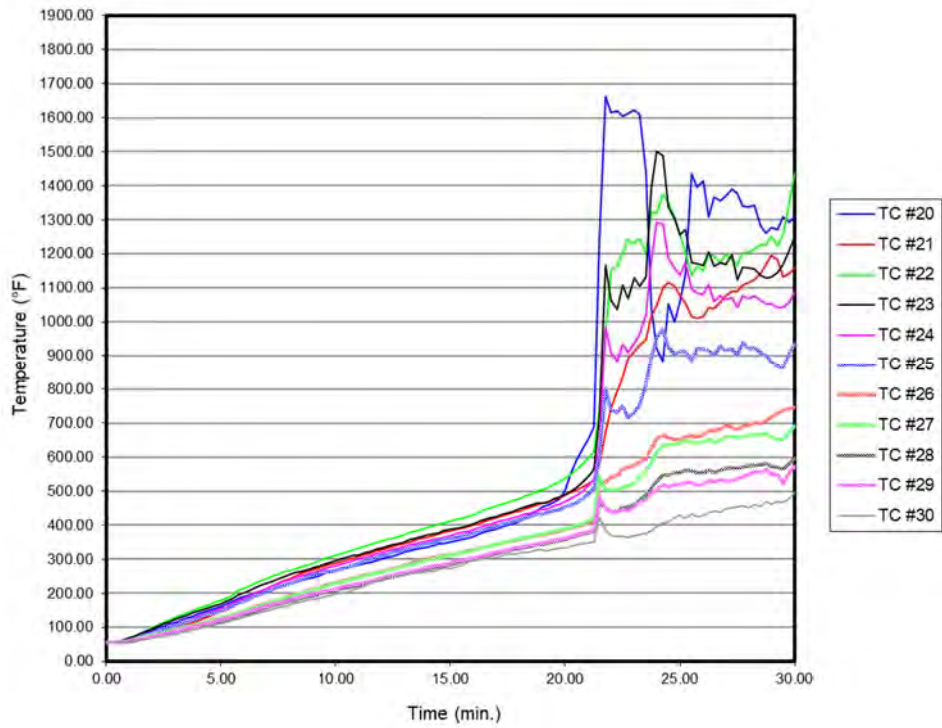


Graph No. 3
Lateral Space Temperatures

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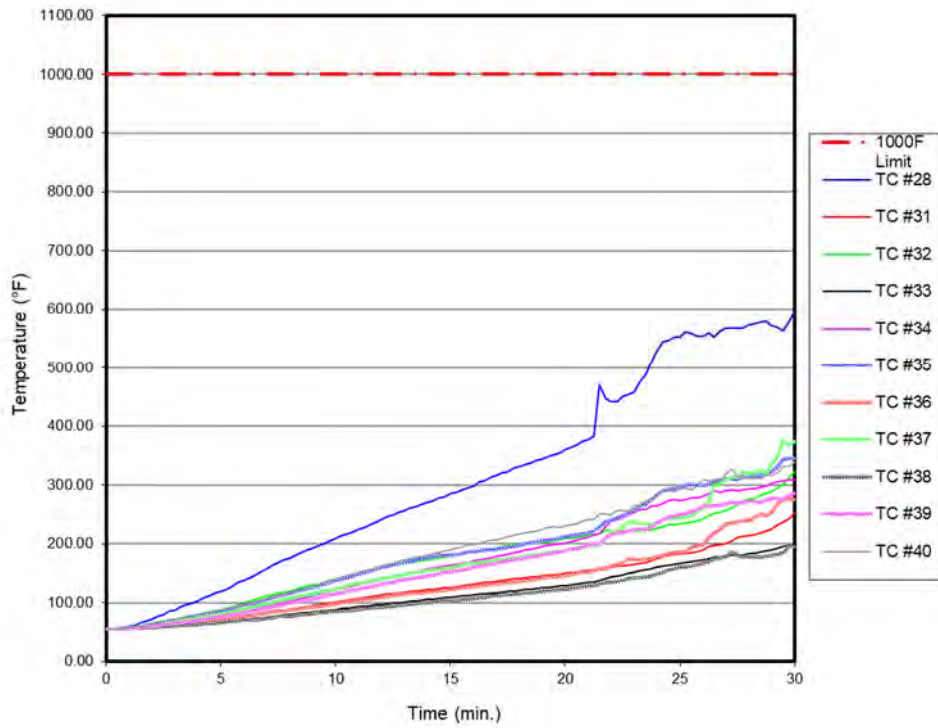


Graph No. 4
Air Cavity Centerline Temperatures

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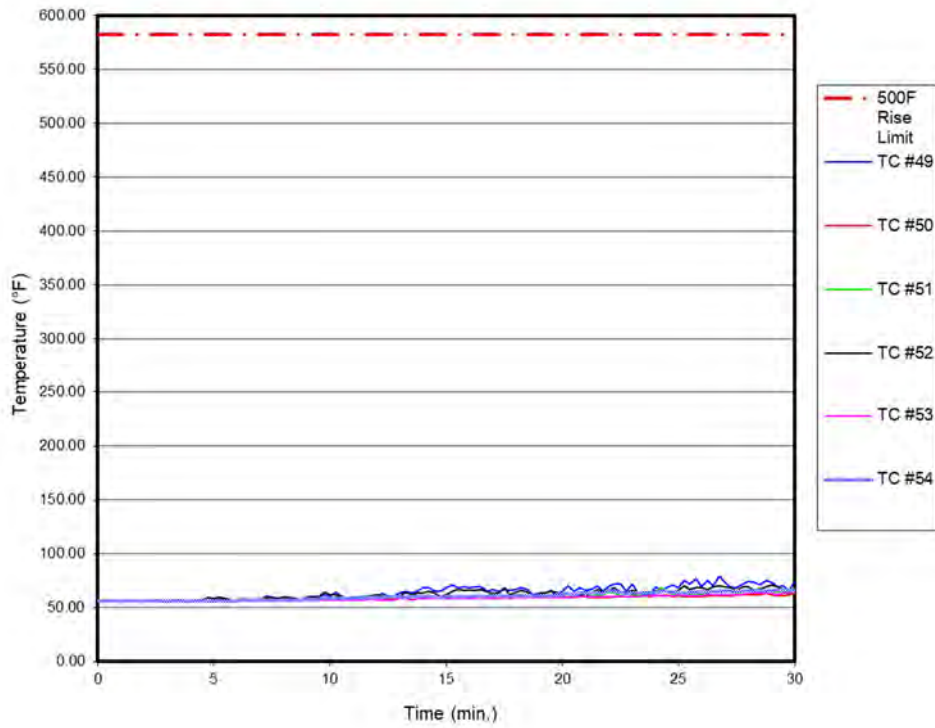


Graph No. 5
Air Cavity Pass/Fail Location Temperatures

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Graph No. 6
Second Floor Interior Room Temperatures

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Time (min)	Pass/ Fail										Pass/ Fail						
	TC #1 (°F)	TC #2 (°F)	TC #3 (°F)	TC #4 (°F)	TC #5 (°F)	TC #6 (°F)	TC #7 (°F)	TC #8 (°F)	TC #9 (°F)	TC #10 (°F)	TC #11 (°F)	TC #12 (°F)	TC #13 (°F)	TC #14 (°F)	TC #15 (°F)	TC #16 (°F)	TC #17 (°F)
15.25	1241	1095	1084	1057	1002	908	827	716	693	642	613	567	505	189	381	325	130
15.50	1268	1101	1093	1067	1007	920	844	738	704	642	602	559	496	165	392	314	117
15.75	1181	1111	1086	1050	1005	829	866	769	750	691	655	614	524	145	340	313	148
16.00	1253	1112	1084	1053	1015	933	870	771	770	699	649	605	533	142	383	298	126
16.25	1263	1129	1110	1090	1044	961	882	777	775	720	686	645	550	167	370	299	133
16.50	1282	1142	1098	1068	1035	949	889	788	777	712	661	611	522	161	368	333	127
16.75	1256	1143	1104	1078	1046	953	874	765	759	693	656	611	522	154	356	295	125
17.00	1268	1131	1102	1059	1002	918	843	745	727	650	608	564	492	167	378	340	121
17.25	1250	1140	1111	1077	1033	952	870	759	718	654	616	574	512	147	374	369	116
17.50	1275	1126	1097	1063	1019	939	877	771	764	701	650	590	516	160	330	343	116
17.75	1276	1127	1090	1059	1040	961	900	781	781	703	643	592	518	160	360	298	120
18.00	1233	1135	1106	1074	1035	930	858	750	737	691	639	598	524	173	366	344	120
18.25	1267	1140	1106	1076	1063	979	907	790	768	694	654	613	532	165	342	357	118
18.50	1265	1119	1094	1070	1026	933	863	765	745	691	647	598	525	138	348	331	133
18.75	1274	1135	1104	1079	1058	958	888	775	767	701	673	627	552	149	386	321	123
19.00	1229	1132	1096	1059	1049	943	866	754	727	672	647	601	530	162	384	346	132
19.25	1288	1134	1101	1071	1051	941	859	753	742	676	626	569	501	164	396	360	142
19.50	1263	1156	1124	1091	1064	976	911	804	786	716	667	608	526	164	377	316	132
19.75	1281	1155	1124	1086	1073	983	921	815	793	729	674	627	536	171	383	300	118
20.00	1290	1168	1127	1085	1064	976	913	810	790	717	660	604	526	155	365	338	139
20.25	1267	1220	1181	1139	1104	1008	933	825	825	756	707	648	545	173	398	312	125
20.50	1279	1220	1198	1155	1132	1039	979	842	829	749	689	636	549	181	415	321	118
20.75	1293	1234	1202	1155	1132	1076	972	836	831	755	708	658	564	175	397	333	128
21.00	1254	1225	1195	1142	1107	1046	960	829	800	730	692	636	553	164	432	349	138
21.25	1222	1249	1217	1156	1127	1073	979	851	834	771	717	654	566	166	421	351	139
21.50	1304	1256	1226	1170	1132	1075	991	854	851	780	739	691	587	166	383	356	139
21.75	1244	1264	1233	1170	1127	1056	968	847	823	755	716	656	555	170	366	385	121
22.00	1320	1265	1236	1169	1132	1076	985	835	831	762	712	649	567	185	395	336	138
22.25	1304	1332	1277	1210	1138	1058	946	809	788	735	699	640	560	175	408	381	137
22.50	1305	1321	1271	1199	1146	1075	977	837	821	761	713	655	562	184	420	383	156
22.75	1272	1284	1259	1190	1128	1053	946	809	775	713	669	618	520	198	401	364	141
23.00	1270	1318	1265	1192	1142	1060	966	833	806	746	700	640	547	168	423	364	145
23.25	1289	1361	1294	1220	1155	1085	979	835	802	740	689	602	516	178	403	364	156
23.50	1256	1459	1343	1243	1174	1124	1004	836	793	719	662	603	525	173	389	381	145
23.75	1246	1624	1465	1316	1225	1141	1007	840	797	731	664	597	509	191	411	396	169
24.00	1197	1681	1564	1373	1265	1209	1106	923	911	836	762	698	600	194	423	339	151
24.25	1251	1693	1559	1334	1194	1087	993	855	827	770	728	668	570	162	345	381	153
24.50	961	1587	1489	1270	1082	985	879	753	716	677	653	600	518	159	406	395	148
24.75	984	1630	1498	1223	1028	925	833	734	707	654	610	567	501	187	412	364	140
25.00	883	1552	1426	1229	1038	902	814	718	672	633	593	548	489	188	472	368	148
25.25	987	1669	1560	1382	1208	1095	972	828	780	719	658	609	523	171	443	426	159
25.50	1087	1639	1520	1376	1209	1102	993	859	812	747	722	657	572	161	446	401	157
25.75	986	1585	1512	1434	1247	1121	991	833	786	721	654	591	508	215	428	405	186
26.00	1116	1489	1493	1435	1213	1099	986	847	790	716	655	601	528	190	450	386	154
26.25	999	1417	1433	1355	1152	1034	942	820	778	714	676	628	540	182	473	426	165
26.50	1174	1543	1438	1393	1190	1086	989	866	826	756	714	659	573	213	441	388	160
26.75	1171	1473	1443	1310	1159	1058	970	854	814	780	755	708	602	194	468	401	143
27.00	1034	1412	1455	1316	1095	1000	914	794	731	671	626	569	502	204	457	385	141
27.25	1190	1465	1506	1322	1156	1043	945	834	774	731	683	632	534	173	449	388	137
27.50	1137	1488	1504	1306	1098	990	921	847	773	738	704	648	553	208	466	381	170
27.75	1342	1441	1693	1337	1142	1011	948	867	791	750	719	647	548	173	390	382	146
28.00	1689	1459	1532	1289	1086	971	914	866	786	749	704	646	543	184	423	357	140
28.25	1556	1260	1594	1307	1107	1004	939	866	806	774	748	693	602	189	450	396	147
28.50	1594	1844	1571	1330	1160	1073	1009	959	876	830	801	735	610	187	416	367	135
28.75	1149	1219	1373	1280	1193	1125	1043	910	820	770	736	687	593	233	415	424	144
29.00	1193	1203	1389	1299	1179	1105	1025	908	840	792	744	681	558	179	441	368	160
29.25	1248	1275	1371	1302	1258	1166	1107	995	876	800	734	673	561	196	383	387	135
29.50	1303	1297	1419	1351	1311	1235	1165	1060	947	866	822	748	627	195	488	402	144
29.75	1207	1251	1419	1314	1234	1167	1132	1053	913	811	752	680	576	188	462	383	149
30.00	1210	1233	1400	1323	1239	1188	1130	1051	900	823	780	709	590	200	463	367	163
Max Temp	1689	1844	1693	1435	1311	1235	1165	1060	947	866	822	748	627	233	488	426	186
Max Allowed										1000				1000	1000	1000	1000

TEST REPORT FOR CARTER ARCHITECTURAL PANELS INC.

Report No.: 103843210SAT-003

Date: 04/03/19

Time (min)	Pass/ Fail		TC #18 (°F)	TC #19 (°F)	TC #20 (°F)	TC #21 (°F)	TC #22 (°F)	TC #23 (°F)	TC #24 (°F)	TC #25 (°F)	TC #26 (°F)	TC #27 (°F)
	TC #18 (°F)	TC #19 (°F)										
0.00	55	55	56	55	55	55	55	55	55	55	55	55
0.25	55	55	56	55	56	56	56	55	55	55	55	55
0.50	55	55	59	56	57	57	56	56	56	55	55	55
0.75	55	55	64	58	61	62	60	59	57	57	57	58
1.00	55	55	69	60	66	68	64	62	59	61	61	61
1.25	55	55	75	63	74	74	68	67	62	65	65	65
1.50	55	55	81	66	81	81	73	72	66	69	69	69
1.75	55	55	86	71	90	89	79	78	70	73	73	73
2.00	55	55	91	75	98	95	84	82	74	77	77	77
2.25	55	55	98	81	107	104	91	89	78	82	82	82
2.50	55	55	103	86	114	110	97	94	82	86	86	86
2.75	55	55	110	92	122	117	103	100	87	90	90	90
3.00	55	55	114	97	129	123	108	105	92	94	94	94
3.25	55	55	121	103	136	130	114	111	96	98	98	98
3.50	55	55	127	108	142	135	120	117	101	102	102	102
3.75	56	55	133	114	149	142	126	122	105	107	107	107
4.00	56	55	139	120	155	147	132	127	109	111	111	111
4.25	56	55	146	126	160	153	139	134	114	115	115	115
4.50	56	55	151	132	167	158	145	139	118	120	120	120
4.75	56	55	156	139	174	165	150	144	123	124	124	124
5.00	56	55	160	145	179	170	156	149	127	128	128	128
5.25	56	55	168	152	185	176	162	155	132	132	132	132
5.50	56	55	176	161	195	186	171	163	137	137	137	137
5.75	56	56	184	171	208	196	180	171	143	144	144	144
6.00	56	56	191	180	214	202	186	178	149	149	149	149
6.25	56	56	196	190	223	209	194	185	155	155	155	155
6.50	56	56	201	198	230	216	202	192	160	159	159	159
6.75	56	56	202	207	237	224	208	199	166	165	165	165
7.00	56	56	207	215	243	230	215	205	171	170	170	170
7.25	57	56	211	223	250	236	221	212	177	176	176	176
7.50	57	56	217	230	257	242	229	219	181	181	181	181
7.75	57	56	223	238	264	249	235	225	187	187	187	187
8.00	57	56	228	244	268	255	241	231	192	191	191	191
8.25	57	57	232	252	273	261	246	236	197	196	196	196
8.50	57	57	238	258	277	265	250	241	202	201	201	201
8.75	58	57	243	264	282	269	256	248	208	206	206	206
9.00	58	57	246	269	288	275	262	254	212	210	210	210
9.25	58	57	252	275	295	279	266	258	217	216	216	216
9.50	58	57	258	280	301	285	271	263	222	220	220	220
9.75	58	57	263	285	306	290	276	265	227	225	225	225
10.00	58	58	266	289	311	295	280	268	231	229	229	229
10.25	59	58	271	294	317	300	286	273	236	233	233	233
10.50	59	58	275	298	322	305	291	278	240	237	237	237
10.75	59	58	281	304	328	311	297	283	244	242	242	242
11.00	59	58	283	308	333	312	300	288	248	245	245	245
11.25	59	59	288	314	338	320	305	295	253	250	250	250
11.50	60	59	291	318	342	323	310	300	256	255	255	255
11.75	60	59	297	324	348	331	317	306	261	259	259	259
12.00	60	59	301	327	353	333	320	311	264	262	262	262
12.25	60	60	306	332	358	339	325	315	268	266	266	266
12.50	60	60	309	337	363	344	329	321	272	270	270	270
12.75	60	60	314	342	368	347	333	325	277	274	274	274
13.00	60	60	321	346	373	352	338	329	282	279	279	279
13.25	61	60	324	351	379	358	344	334	288	285	285	285
13.50	61	61	330	356	384	363	347	338	292	289	289	289
13.75	61	61	332	361	389	367	352	343	297	294	294	294
14.00	61	61	336	365	393	371	355	347	300	298	298	298
14.25	62	61	341	370	399	376	359	351	305	301	301	301
14.50	62	62	346	374	403	378	362	353	308	305	305	305
14.75	62	62	347	379	407	385	365	358	311	309	309	309
15.00	62	62	351	382	412	389	370	361	314	312	312	312



Total Quality. Assured.

16015 Shady Falls Road
Elmendorf, Texas 78112

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TEST REPORT FOR CARTER ARCHITECTURAL PANELS INC.

Report No.: 103843210SAT-003

Date: 04/03/19

Time (min)	Pass/ Fail		TC #20 (°F)	TC #21 (°F)	TC #22 (°F)	TC #23 (°F)	TC #24 (°F)	TC #25 (°F)	TC #26 (°F)	TC #27 (°F)
	TC #18 (°F)	TC #19 (°F)								
15.25	62	62	354	387	416	390	374	364	317	316
15.50	62	62	360	391	420	394	379	369	320	319
15.75	63	63	362	396	426	399	381	372	324	322
16.00	63	63	368	400	431	405	388	378	327	327
16.25	63	63	374	405	438	413	393	383	332	332
16.50	63	63	379	411	445	416	398	388	336	336
16.75	64	64	385	417	452	422	403	394	340	340
17.00	64	64	387	422	456	426	409	397	344	344
17.25	64	64	397	428	463	433	415	403	348	348
17.50	65	64	400	432	468	436	417	406	351	352
17.75	65	65	405	437	473	442	423	412	355	357
18.00	65	65	411	442	479	448	427	417	358	361
18.25	65	65	423	448	485	453	432	422	362	364
18.50	66	65	436	453	492	458	436	426	366	368
18.75	66	66	442	458	499	464	444	432	370	373
19.00	66	66	454	464	505	464	446	433	373	375
19.25	66	66	458	469	510	468	449	437	376	378
19.50	67	66	468	475	519	479	457	444	380	383
19.75	67	67	478	481	527	483	463	447	383	386
20.00	67	67	504	487	538	491	470	454	387	391
20.25	68	67	551	495	549	498	478	460	392	394
20.50	68	68	594	504	565	512	489	468	396	399
20.75	68	68	622	513	579	524	498	478	402	405
21.00	68	68	654	523	599	545	517	493	407	412
21.25	69	69	688	533	615	564	536	509	415	420
21.50	69	69	1238	577	738	717	645	601	526	543
21.75	69	69	1661	673	962	1166	984	803	524	505
22.00	70	69	1614	744	1154	1063	911	739	542	503
22.25	70	69	1621	795	1163	1038	884	732	547	505
22.50	70	70	1605	835	1201	1107	935	749	564	513
22.75	71	70	1613	892	1242	1068	910	715	569	514
23.00	71	70	1623	914	1230	1130	938	730	575	522
23.25	72	70	1609	932	1246	1105	962	754	587	541
23.50	72	70	1441	947	1203	1133	1022	916	597	560
23.75	72	71	1041	1019	1323	1393	1182	891	626	584
24.00	73	71	920	1048	1318	1501	1293	954	655	615
24.25	74	71	885	1101	1375	1488	1287	976	666	634
24.50	74	71	1052	1116	1350	1337	1186	926	658	636
24.75	74	72	1000	1105	1308	1303	1159	904	652	639
25.00	75	72	1062	1077	1256	1255	1137	914	653	640
25.25	76	73	1140	1055	1206	1272	1174	913	661	650
25.50	76	73	1434	1015	1138	1174	1097	884	663	643
25.75	76	73	1396	1011	1164	1171	1084	922	660	642
26.00	77	73	1413	1016	1151	1166	1082	922	666	645
26.25	77	74	1309	1041	1201	1205	1111	916	677	651
26.50	78	74	1368	1040	1193	1164	1081	902	679	645
26.75	79	74	1357	1057	1175	1174	1076	930	682	650
27.00	79	75	1370	1077	1197	1170	1067	916	694	661
27.25	80	76	1391	1090	1182	1197	1070	922	688	659
27.50	81	76	1378	1091	1166	1123	1043	903	682	658
27.75	81	76	1341	1107	1204	1162	1077	940	692	660
28.00	81	77	1337	1116	1206	1159	1068	922	693	665
28.25	82	77	1342	1124	1214	1156	1077	924	701	664
28.50	82	78	1282	1143	1226	1138	1064	911	699	665
28.75	83	78	1260	1168	1226	1130	1053	899	708	669
29.00	83	79	1278	1196	1251	1133	1053	881	719	659
29.25	84	80	1273	1183	1224	1145	1043	867	729	653
29.50	85	81	1309	1131	1255	1169	1043	864	738	652
29.75	86	82	1293	1143	1352	1211	1059	909	742	672
30.00	87	82	1308	1157	1435	1250	1088	935	748	691
Max Temp	87	82	1661	1196	1435	1501	1293	976	748	691
Max Allowed	1000	1000								

TEST REPORT FOR CARTER ARCHITECTURAL PANELS INC.

Report No.: 103843210SAT-003

Date: 04/03/19

Time (min)	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail	Pass/ Fail
	TC #28 (°F)	TC #29 (°F)	TC #30 (°F)	TC #31 (°F)	TC #32 (°F)	TC #33 (°F)	TC #34 (°F)	TC #35 (°F)	TC #36 (°F)	TC #37 (°F)	TC #38 (°F)	TC #39 (°F)	TC #40 (°F)	
0.00	55	55	55	55	56	56	55	55	55	55	55	55	55	
0.25	55	55	55	55	56	56	55	55	55	55	55	55	55	
0.50	55	55	56	55	56	56	55	55	55	55	55	55	55	
0.75	57	57	57	56	57	56	55	56	55	55	55	55	56	
1.00	59	60	59	56	58	56	56	57	58	56	55	56	57	
1.25	62	63	61	57	59	56	57	58	56	57	56	57	59	
1.50	66	66	63	57	61	57	58	60	57	59	56	58	60	
1.75	69	70	66	58	63	57	60	61	58	60	57	59	62	
2.00	72	73	68	59	65	58	61	63	59	62	57	60	64	
2.25	76	78	71	60	67	58	63	65	60	63	58	61	65	
2.50	80	82	73	61	69	59	64	67	61	65	59	63	68	
2.75	85	86	76	62	71	60	65	69	62	66	60	64	70	
3.00	88	90	80	63	72	60	67	70	63	67	60	65	71	
3.25	93	93	84	64	74	61	68	72	64	69	61	66	73	
3.50	96	97	88	65	76	62	69	74	65	70	62	68	75	
3.75	100	102	92	66	78	62	71	76	66	72	62	69	77	
4.00	103	106	96	67	80	63	72	78	67	73	63	71	79	
4.25	108	111	100	68	82	64	74	80	68	75	64	72	81	
4.50	111	115	104	69	84	65	75	82	69	77	65	73	83	
4.75	116	120	108	70	87	66	77	84	70	78	65	75	85	
5.00	119	123	112	71	88	67	78	86	71	80	66	76	87	
5.25	123	126	116	73	91	68	80	88	72	82	67	78	90	
5.50	128	132	121	74	94	69	81	90	74	84	68	80	92	
5.75	134	138	125	76	97	70	84	93	75	87	69	81	94	
6.00	138	143	130	77	100	71	85	96	76	89	70	83	97	
6.25	142	149	135	79	103	72	88	98	78	92	71	85	99	
6.50	147	153	140	80	105	73	89	100	79	93	71	87	101	
6.75	153	159	145	82	108	74	92	103	81	96	72	89	104	
7.00	158	163	149	84	111	75	94	105	82	98	73	91	107	
7.25	163	168	153	86	113	76	96	108	84	100	74	93	109	
7.50	168	172	158	87	116	78	98	111	85	103	76	95	112	
7.75	173	177	162	88	118	79	100	113	86	105	77	97	114	
8.00	176	182	166	89	120	80	102	116	87	107	77	99	116	
8.25	181	187	171	91	123	81	104	119	89	109	78	101	120	
8.50	185	191	174	92	125	82	107	121	90	111	79	102	122	
8.75	189	195	179	94	128	83	109	124	92	113	80	104	125	
9.00	192	198	182	95	130	84	111	126	92	115	81	106	128	
9.25	197	203	186	97	132	85	114	130	94	118	82	108	132	
9.50	201	207	190	98	135	86	116	132	95	119	82	110	135	
9.75	205	210	194	100	138	87	119	135	97	121	84	113	138	
10.00	209	215	197	101	140	88	121	137	98	123	84	115	139	
10.25	214	220	201	103	142	90	124	141	99	126	86	117	143	
10.50	217	223	204	104	145	91	125	142	101	128	86	119	145	
10.75	220	226	209	106	147	92	128	146	102	131	87	121	148	
11.00	225	228	217	107	149	93	130	148	104	133	88	123	152	
11.25	228	233	220	109	152	94	133	151	105	135	90	125	154	
11.50	233	236	234	110	154	95	135	153	106	137	90	127	156	
11.75	237	241	235	112	157	96	138	157	107	138	92	129	159	
12.00	241	246	241	113	159	97	141	160	109	141	92	131	162	
12.25	246	252	248	114	161	98	143	162	110	142	93	133	165	
12.50	249	254	252	115	163	99	145	164	111	143	94	135	167	
12.75	253	259	254	116	165	100	147	167	113	146	95	137	169	
13.00	256	261	257	118	166	101	149	169	114	148	96	139	172	
13.25	261	265	262	119	168	102	152	170	115	150	97	141	174	
13.50	263	267	259	120	170	103	153	172	117	151	98	142	177	
13.75	267	273	261	121	171	104	154	175	117	153	99	144	178	
14.00	271	277	263	122	173	105	157	177	118	154	100	146	180	
14.25	274	279	265	123	174	106	159	178	119	156	101	147	184	
14.50	278	283	270	124	176	107	160	180	120	157	102	149	185	
14.75	280	285	275	125	177	108	162	180	121	158	102	151	188	
15.00	285	289	272	126	179	109	163	181	122	159	103	153	189	



Total Quality. Assured.

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TEST REPORT FOR CARTER ARCHITECTURAL PANELS INC.

Report No.: 103843210SAT-003

Date: 04/03/19

Time (min)	Pass/Fail		Pass/Fail		Pass/Fail		Pass/Fail		Pass/Fail		Pass/Fail		Pass/Fail		Pass/Fail	
	TC #28 (°F)	TC #29 (°F)	TC #30 (°F)	TC #31 (°F)	TC #32 (°F)	TC #33 (°F)	TC #34 (°F)	TC #35 (°F)	TC #36 (°F)	TC #37 (°F)	TC #38 (°F)	TC #39 (°F)	TC #40 (°F)	TC #41 (°F)	TC #42 (°F)	TC #43 (°F)
15.25	288	295	277	127	181	110	165	182	124	162	104	153	192			
15.50	292	297	282	129	182	111	166	183	125	163	105	156	194			
15.75	295	301	292	130	185	112	168	186	126	166	106	158	198			
16.00	298	303	298	131	187	113	171	186	127	167	107	160	199			
16.25	305	309	302	133	189	114	173	188	129	168	108	162	201			
16.50	307	311	302	134	190	115	175	189	130	169	109	163	203			
16.75	313	317	305	135	192	116	176	190	131	171	111	165	206			
17.00	316	321	303	136	193	117	179	191	131	172	111	167	207			
17.25	321	325	311	137	195	118	181	193	133	173	113	169	209			
17.50	323	327	313	139	197	119	182	194	134	174	113	171	212			
17.75	329	333	314	140	198	120	185	195	135	176	114	172	214			
18.00	331	336	319	141	199	121	186	197	136	177	115	174	217			
18.25	335	339	320	142	200	122	189	200	137	179	116	176	219			
18.50	338	343	323	143	200	123	191	202	139	181	117	177	220			
18.75	343	347	327	144	202	124	193	204	140	181	118	179	222			
19.00	344	348	328	145	203	125	195	206	142	183	119	181	225			
19.25	348	352	326	147	204	126	197	206	142	185	120	184	227			
19.50	351	356	330	147	205	127	199	208	143	186	121	184	229			
19.75	355	360	332	148	206	128	200	209	145	187	122	186	228			
20.00	360	363	334	150	209	129	202	212	146	188	123	188	231			
20.25	364	368	338	151	210	130	204	214	148	190	124	191	232			
20.50	368	373	343	152	211	131	206	215	150	192	125	191	234			
20.75	374	377	345	154	213	133	209	217	151	193	127	194	238			
21.00	377	381	348	155	215	134	211	219	152	196	128	197	241			
21.25	383	387	351	156	215	135	215	222	154	197	129	200	242			
21.50	470	485	422	159	217	137	217	230	157	199	131	201	251			
21.75	448	448	386	160	223	141	229	239	158	208	134	211	250			
22.00	442	438	369	161	223	144	238	240	162	221	135	216	249			
22.25	441	439	367	162	222	146	241	245	165	221	136	218	257			
22.50	451	446	366	162	221	147	245	248	167	227	137	218	257			
22.75	453	444	365	164	221	150	249	252	174	237	140	221	255			
23.00	458	452	369	165	221	152	254	257	174	237	142	224	264			
23.25	475	467	372	167	222	154	258	264	173	235	142	225	266			
23.50	489	476	378	168	223	156	259	268	174	232	143	225	273			
23.75	510	494	384	171	223	157	264	275	175	232	145	228	277			
24.00	528	505	397	175	226	160	265	282	179	235	149	235	281			
24.25	546	520	407	179	230	162	269	291	181	241	152	240	291			
24.50	547	511	408	181	232	164	273	292	184	242	156	246	292			
24.75	553	521	422	182	232	165	275	294	185	244	158	248	289			
25.00	553	519	430	183	234	167	274	297	187	245	160	251	294			
25.25	562	525	420	184	235	168	275	299	187	244	160	251	295			
25.50	559	526	432	185	237	169	278	301	194	248	162	255	292			
25.75	554	517	424	187	239	171	278	299	197	255	165	259	298			
26.00	555	521	427	190	243	172	281	300	198	261	167	264	308			
26.25	561	530	438	195	247	175	285	301	211	272	170	265	307			
26.50	553	527	442	197	252	177	290	306	219	300	174	264	309			
26.75	563	532	438	199	254	178	288	308	225	303	176	266	305			
27.00	568	529	450	201	256	180	291	310	234	308	177	267	319			
27.25	568	530	451	205	262	181	292	310	235	313	186	270	327			
27.50	568	538	454	211	268	182	291	308	237	314	181	269	315			
27.75	569	541	456	213	272	181	292	315	240	322	178	271	312			
28.00	575	548	451	214	277	183	293	312	239	320	178	272	311			
28.25	576	558	462	215	277	184	293	317	244	319	178	272	311			
28.50	579	555	454	218	282	186	296	317	251	326	178	271	311			
28.75	580	564	469	222	286	188	298	321	248	320	179	275	317			
29.00	573	550	463	224	289	189	302	323	254	334	181	276	316			
29.25	570	548	469	232	295	192	305	331	267	348	182	277	321			
29.50	564	523	466	237	301	196	307	344	275	375	185	276	331			
29.75	580	555	478	243	313	197	309	346	277	368	195	283	332			
30.00	597	574	497	252	322	194	309	346	275	375	195	286	339			
Max Temp	597	574	497	252	322	197	309	346	277	375	195	286	339			
Max Allowed	1000			1000	1000	1000	1000	1000	1000	1000	1000	1000	1000			



Total Quality. Assured.

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TEST REPORT FOR CARTER ARCHITECTURAL PANELS INC.

Report No.: 103843210SAT-003

Date: 04/03/19

Time (min)	TC #41 (°F)	TC #42 (°F)	TC #43 (°F)	TC #44 (°F)	TC #45 (°F)	TC #46 (°F)	TC #47 (°F)	TC #48 (°F)	TC #49 (°F)	TC #50 (°F)	TC #51 (°F)	TC #52 (°F)	TC #53 (°F)	TC #54 (°F)
0.00	84	94	93	87	91	94	95	99	56	57	56	56	57	56
0.25	561	746	646	440	420	629	488	456	56	57	56	56	57	56
0.50	789	1087	940	701	727	922	809	757	56	57	56	56	57	56
0.75	935	1181	1040	850	892	1016	959	909	56	57	56	56	57	56
1.00	1023	1209	1086	908	963	1049	1004	965	56	57	56	56	57	56
1.25	1098	1239	1109	955	1006	1053	1048	1007	56	57	56	56	57	56
1.50	1161	1232	1138	994	1025	1165	1129	1066	56	57	56	56	57	56
1.75	1208	1259	1182	1026	1049	1206	1189	1256	56	57	56	56	57	56
2.00	1254	1288	1209	1047	1059	1197	1175	1180	56	57	56	56	57	56
2.25	1287	1285	1222	1075	1072	1186	1160	1151	56	57	56	56	57	56
2.50	1291	1302	1224	1090	1083	1193	1163	1165	57	57	56	57	57	56
2.75	1292	1304	1228	1099	1097	1192	1178	1179	57	57	56	56	57	56
3.00	1327	1282	1245	1106	1115	1193	1185	1178	56	57	56	57	57	56
3.25	1327	1318	1278	1121	1125	1205	1191	1190	56	57	56	56	57	56
3.50	1393	1362	1268	1136	1127	1229	1204	1208	56	57	56	56	57	56
3.75	1363	1354	1292	1143	1143	1236	1220	1212	57	57	56	57	57	56
4.00	1351	1354	1317	1141	1157	1246	1224	1220	57	57	56	57	57	56
4.25	1382	1369	1323	1159	1166	1242	1234	1238	57	57	57	57	57	56
4.50	1404	1381	1326	1170	1177	1254	1229	1242	57	57	56	57	56	56
4.75	1411	1372	1362	1178	1199	1272	1242	1249	59	57	57	59	57	56
5.00	1402	1393	1354	1183	1212	1289	1254	1253	58	57	56	58	56	56
5.25	1438	1450	1395	1204	1227	1316	1280	1288	59	57	56	59	57	56
5.50	1419	1427	1403	1215	1234	1296	1284	1285	58	57	57	58	56	56
5.75	1419	1425	1406	1208	1243	1299	1289	1288	57	57	57	57	57	56
6.00	1440	1419	1387	1213	1238	1290	1283	1292	57	57	57	57	57	56
6.25	1435	1416	1410	1212	1245	1300	1279	1288	57	57	57	58	57	57
6.50	1427	1439	1391	1215	1244	1301	1283	1286	57	57	58	57	57	57
6.75	1438	1405	1397	1215	1242	1305	1285	1286	57	57	57	57	57	57
7.00	1437	1421	1406	1220	1249	1323	1296	1300	57	57	58	57	57	57
7.25	1436	1471	1407	1225	1251	1332	1293	1296	61	57	58	59	57	57
7.50	1431	1461	1436	1227	1270	1330	1302	1298	59	57	58	59	57	57
7.75	1440	1444	1428	1240	1270	1335	1309	1312	58	57	57	58	57	57
8.00	1461	1445	1442	1249	1273	1338	1308	1318	60	57	57	59	57	57
8.25	1454	1477	1421	1245	1271	1340	1306	1318	58	57	57	59	57	57
8.50	1453	1497	1421	1250	1267	1356	1308	1318	58	57	57	58	57	57
8.75	1462	1466	1427	1247	1274	1348	1313	1329	57	57	57	57	57	57
9.00	1467	1470	1439	1257	1282	1349	1320	1339	60	57	58	59	57	58
9.25	1476	1491	1437	1267	1285	1360	1328	1343	60	57	58	60	57	57
9.50	1490	1489	1436	1278	1282	1356	1329	1341	60	57	58	59	57	58
9.75	1497	1484	1440	1278	1293	1375	1338	1356	62	57	58	64	57	58
10.00	1509	1491	1446	1285	1300	1381	1347	1357	61	57	59	62	57	58
10.25	1497	1495	1448	1281	1301	1384	1346	1360	64	57	58	62	57	58
10.50	1505	1514	1443	1281	1301	1403	1357	1366	60	57	60	60	57	58
10.75	1515	1518	1473	1290	1311	1393	1357	1368	58	58	59	58	57	58
11.00	1505	1513	1469	1288	1317	1394	1371	1383	58	58	59	58	57	58
11.25	1517	1526	1483	1295	1324	1399	1365	1379	60	58	58	58	57	59
11.50	1505	1489	1465	1296	1317	1399	1368	1373	60	58	60	59	57	58
11.75	1500	1523	1471	1296	1328	1404	1376	1391	61	58	61	61	58	59
12.00	1517	1549	1472	1305	1324	1411	1376	1391	60	58	60	62	57	59
12.25	1510	1528	1490	1303	1336	1408	1390	1402	63	58	59	61	57	59
12.50	1516	1545	1478	1304	1339	1414	1392	1401	60	58	60	61	57	60
12.75	1507	1548	1477	1310	1342	1428	1387	1404	61	58	60	59	57	60
13.00	1524	1536	1483	1319	1339	1423	1389	1405	63	58	60	60	58	60
13.25	1524	1542	1489	1321	1343	1423	1391	1398	65	58	60	64	58	59
13.50	1522	1550	1485	1318	1340	1418	1385	1396	63	58	60	62	57	60
13.75	1530	1549	1489	1323	1343	1430	1397	1412	65	58	60	63	58	60
14.00	1516	1539	1488	1317	1349	1423	1394	1413	68	58	60	63	58	60
14.25	1531	1523	1467	1325	1338	1423	1384	1405	68	58	60	65	58	60
14.50	1539	1497	1492	1326	1344	1417	1397	1412	65	58	60	63	58	60
14.75	1542	1551	1496	1321	1352	1429	1398	1412	65	58	60	60	58	59
15.00	1532	1551	1502	1327	1354	1427	1401	1415	68	58	59	62	58	60



Total Quality. Assured.

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Report No.: 103843210SAT-003

Date: 04/03/19

Time (min)	TC #41 (°F)	TC #42 (°F)	TC #43 (°F)	TC #44 (°F)	TC #45 (°F)	TC #46 (°F)	TC #47 (°F)	TC #48 (°F)	TC #49 (°F)	Pass/Fail (°F)	TC #50 (°F)	TC #51 (°F)	TC #52 (°F)	TC #53 (°F)	TC #54 (°F)
15.25	1591	1597	1534	1361	1371	1465	1437	1449	71	58	60	65	58	60	
15.50	1629	1607	1524	1377	1373	1495	1465	1468	68	58	60	67	58	60	
15.75	1634	1624	1550	1380	1388	1493	1472	1480	69	58	60	66	58	60	
16.00	1627	1652	1558	1385	1401	1507	1476	1487	68	58	60	66	58	60	
16.25	1666	1643	1562	1399	1408	1510	1486	1504	69	58	62	66	58	61	
16.50	1628	1638	1548	1395	1406	1513	1487	1502	69	59	60	67	59	60	
16.75	1614	1648	1576	1392	1421	1515	1480	1508	65	58	60	64	58	60	
17.00	1634	1648	1583	1402	1421	1523	1498	1517	67	58	61	63	58	62	
17.25	1629	1634	1585	1405	1422	1534	1509	1513	65	58	60	63	59	61	
17.50	1631	1664	1575	1397	1426	1541	1499	1516	67	59	60	68	59	61	
17.75	1618	1652	1595	1402	1438	1542	1510	1527	66	58	59	62	59	60	
18.00	1635	1659	1571	1410	1430	1538	1510	1525	67	59	59	64	59	61	
18.25	1650	1692	1587	1412	1433	1550	1520	1534	68	59	60	66	59	61	
18.50	1684	1653	1583	1424	1429	1564	1519	1527	67	59	59	64	59	61	
18.75	1668	1674	1577	1422	1432	1568	1527	1531	62	59	60	60	59	61	
19.00	1649	1669	1586	1420	1433	1556	1521	1534	63	60	60	63	59	61	
19.25	1651	1675	1613	1423	1450	1563	1531	1540	63	59	60	63	60	61	
19.50	1675	1676	1600	1428	1451	1564	1535	1545	66	59	60	65	59	61	
19.75	1658	1683	1605	1426	1454	1579	1538	1543	61	59	62	64	59	62	
20.00	1653	1668	1595	1423	1461	1569	1539	1550	65	59	62	62	59	62	
20.25	1635	1661	1623	1429	1461	1574	1547	1564	70	60	62	64	59	63	
20.50	1649	1695	1595	1436	1453	1580	1554	1558	65	59	62	62	60	62	
20.75	1665	1706	1614	1439	1461	1583	1548	1560	68	60	61	62	60	63	
21.00	1693	1682	1585	1441	1450	1574	1541	1553	66	60	64	60	60	63	
21.25	1687	1714	1605	1443	1465	1580	1555	1573	67	59	62	63	60	63	
21.50	1691	1677	1607	1441	1467	1593	1560	1572	70	59	61	67	60	63	
21.75	1652	1696	1622	1438	1478	1591	1555	1559	65	59	62	65	60	63	
22.00	1650	1713	1639	1443	1475	1595	1565	1579	70	59	64	67	60	66	
22.25	1662	1671	1611	1443	1473	1614	1571	1598	72	60	63	68	60	65	
22.50	1681	1712	1610	1454	1477	1605	1572	1590	72	60	61	63	61	64	
22.75	1712	1691	1595	1454	1463	1593	1565	1585	65	60	64	64	60	63	
23.00	1690	1719	1631	1458	1476	1596	1571	1586	72	60	62	66	60	63	
23.25	1691	1724	1625	1455	1482	1615	1582	1590	63	60	61	64	60	63	
23.50	1692	1709	1609	1450	1476	1601	1576	1600	62	61	64	63	61	63	
23.75	1684	1723	1600	1463	1473	1601	1572	1587	62	60	61	63	61	63	
24.00	1690	1681	1598	1465	1469	1619	1585	1583	69	61	64	65	61	63	
24.25	1693	1634	1575	1489	1455	1680	1640	1600	65	61	68	65	61	65	
24.50	1735	1715	1587	1499	1467	1697	1634	1619	68	62	66	65	61	65	
24.75	1767	1762	1614	1502	1487	1660	1620	1659	71	60	62	64	61	64	
25.00	1778	1713	1624	1509	1502	1663	1640	1659	68	61	61	66	62	64	
25.25	1833	1749	1649	1527	1521	1700	1684	1724	75	60	65	70	61	63	
25.50	1816	1749	1649	1530	1519	1724	1684	1728	72	60	62	67	61	64	
25.75	1826	1769	1653	1541	1519	1733	1689	1726	77	60	62	68	61	64	
26.00	1860	1774	1646	1543	1525	1763	1705	1745	69	60	62	68	61	64	
26.25	1843	1760	1650	1541	1530	1745	1699	1751	75	61	65	67	62	64	
26.50	1844	1775	1665	1545	1536	1754	1703	1743	70	61	64	69	62	65	
26.75	1845	1769	1661	1550	1531	1773	1712	1757	79	61	66	70	62	65	
27.00	1844	1792	1646	1554	1531	1768	1706	1746	73	61	65	69	62	65	
27.25	1875	1800	1662	1553	1538	1788	1713	1749	68	61	66	68	62	65	
27.50	1838	1760	1661	1568	1530	1791	1718	1739	68	62	63	66	62	65	
27.75	1824	1781	1653	1562	1534	1781	1706	1728	72	62	64	69	62	65	
28.00	1845	1747	1647	1569	1532	1826	1746	1744	74	62	65	69	63	65	
28.25	1821	1777	1637	1555	1527	1815	1723	1758	73	62	65	66	63	66	
28.50	1825	1755	1642	1555	1532	1790	1729	1752	71	62	68	67	63	66	
28.75	1820	1803	1640	1552	1530	1787	1713	1738	75	63	63	69	63	65	
29.00	1832	1807	1656	1558	1534	1795	1716	1727	73	62	64	71	63	65	
29.25	1818	1786	1652	1564	1537	1770	1714	1731	69	61	64	69	62	67	
29.50	1836	1771	1649	1555	1534	1781	1714	1733	70	61	65	67	63	66	
29.75	1841	1767	1666	1559	1546	1762	1714	1753	66	62	63	66	63	66	
30.00	1860	1781	1667	1559	1545	1797	1713	1729	74	63	63	67	64	66	
Max Temp	1875	1807	1667	1569	1546	1826	1746	1758	79	63	68	71	64	67	
Max Allowed									556	557	556	556	557	556	



Total Quality. Assured.

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SECTION 13

DRAWINGS

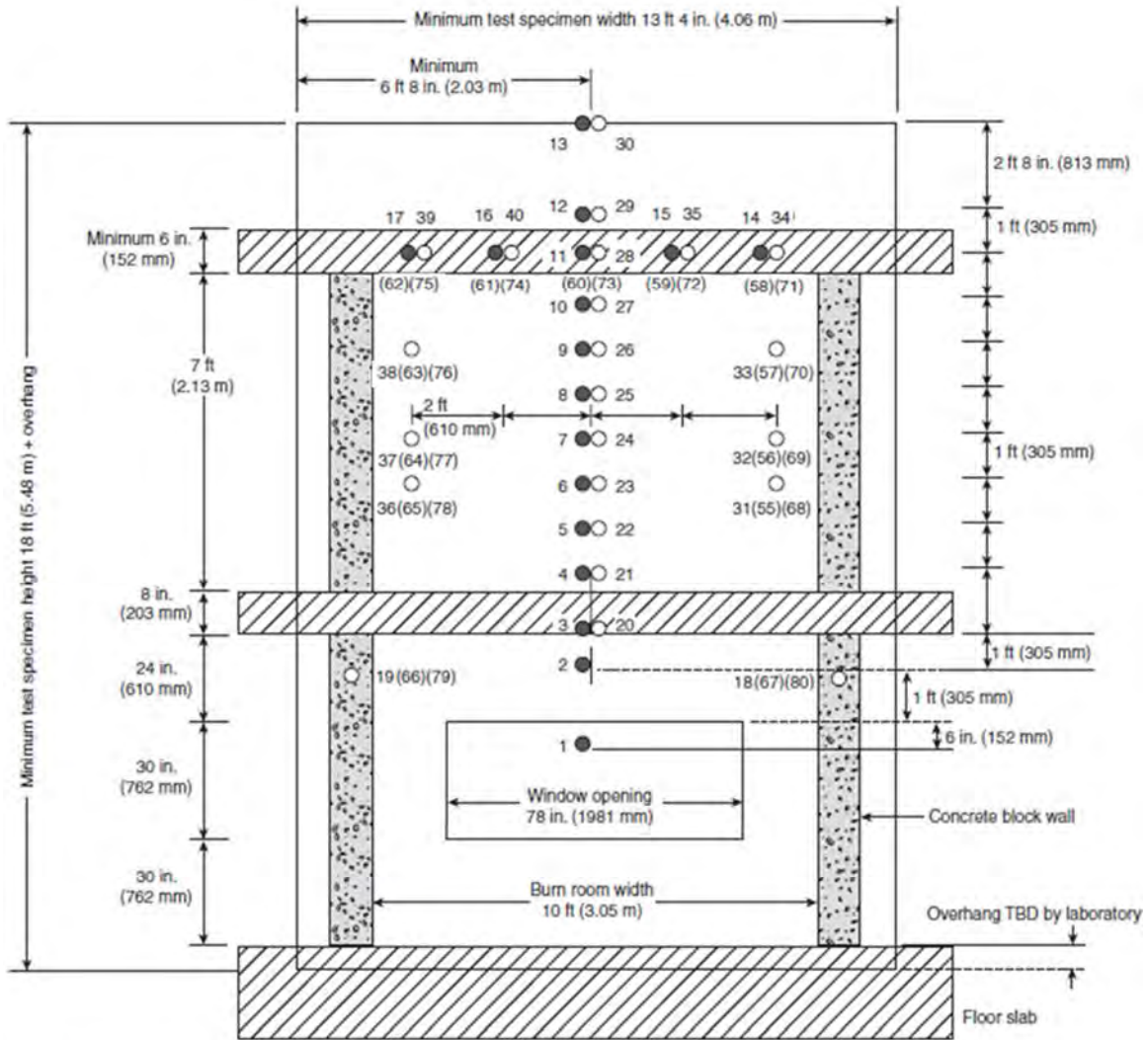
The test specimen drawings which follow have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

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Standard TC Locations



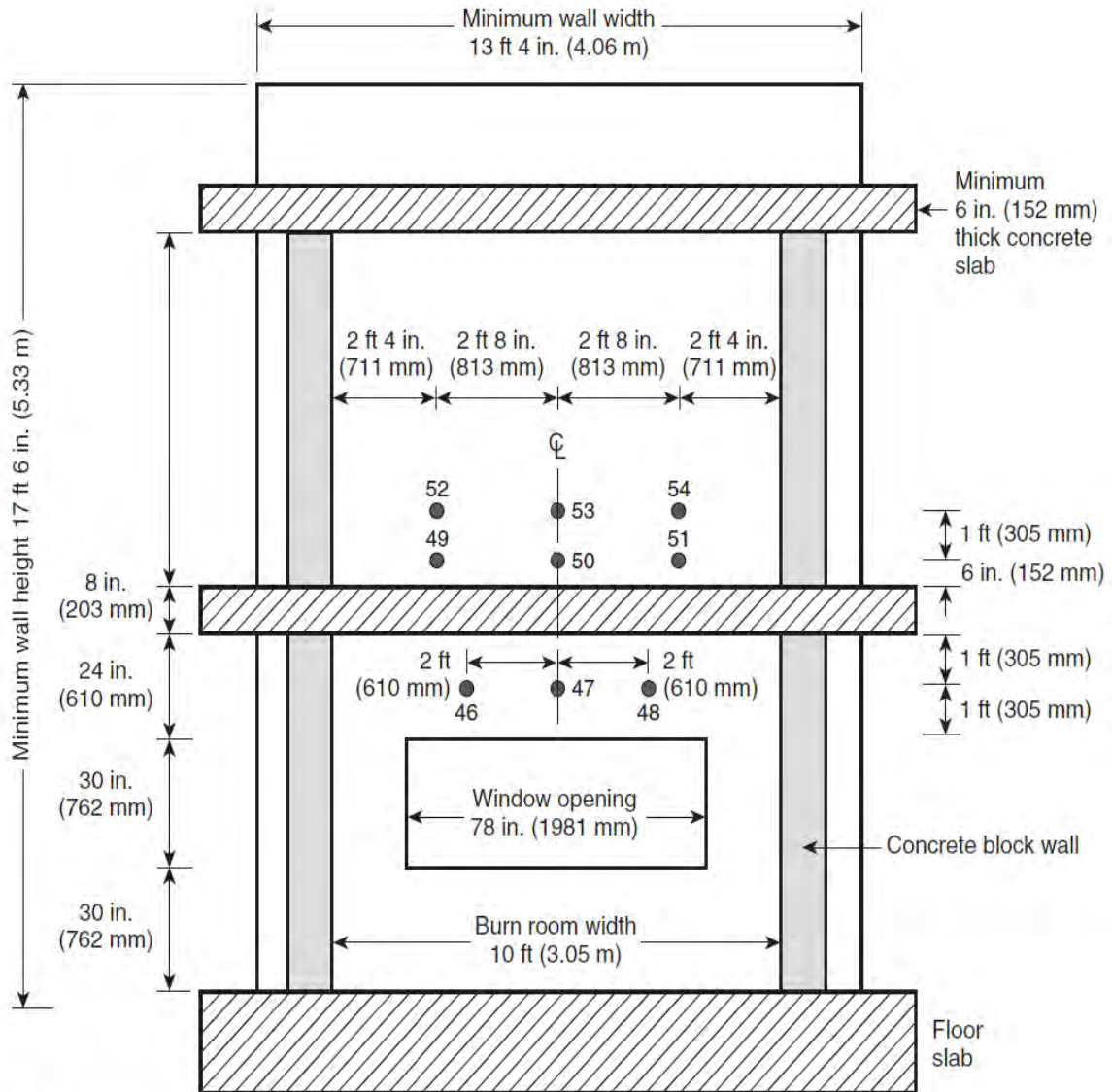
- Thermocouples — 1 in. (25 mm) from exterior wall surface
- Thermocouples — In the wall cavity air space or the insulation, or both, as shown in Figure 6.1(b) Details A through I.
- () Thermocouples — Additional thermocouples in the insulation or the stud cavity, or both, where required for the test specimen construction being tested, as shown in Figure 6.1(b) Details C through I.

Note: Thermocouple numbering in drawing above has been edited from the standard drawing to reflect actual numbering during test (Front view).

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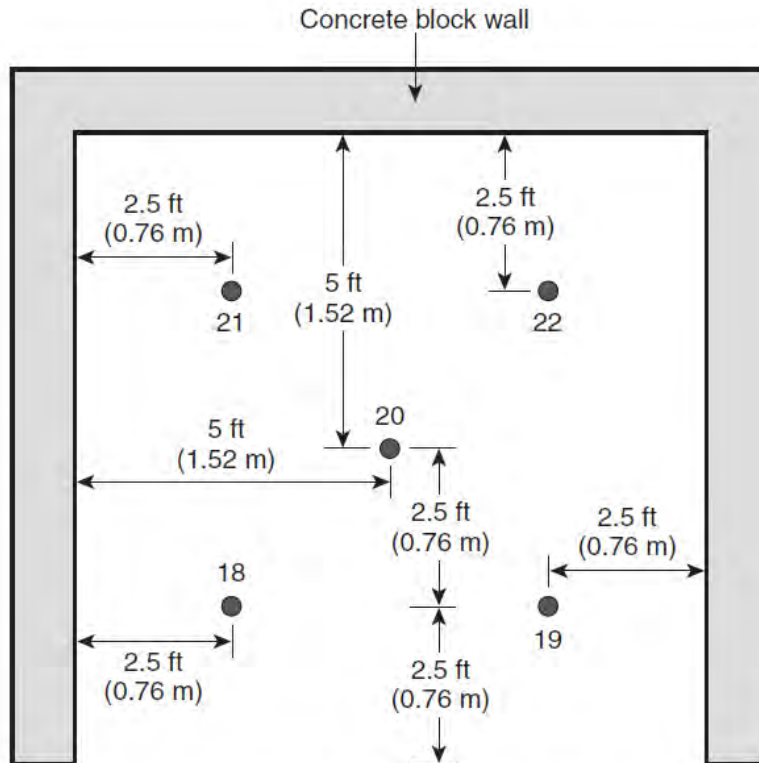


● Thermocouples — 1 in. (25 mm) from interior wall surface

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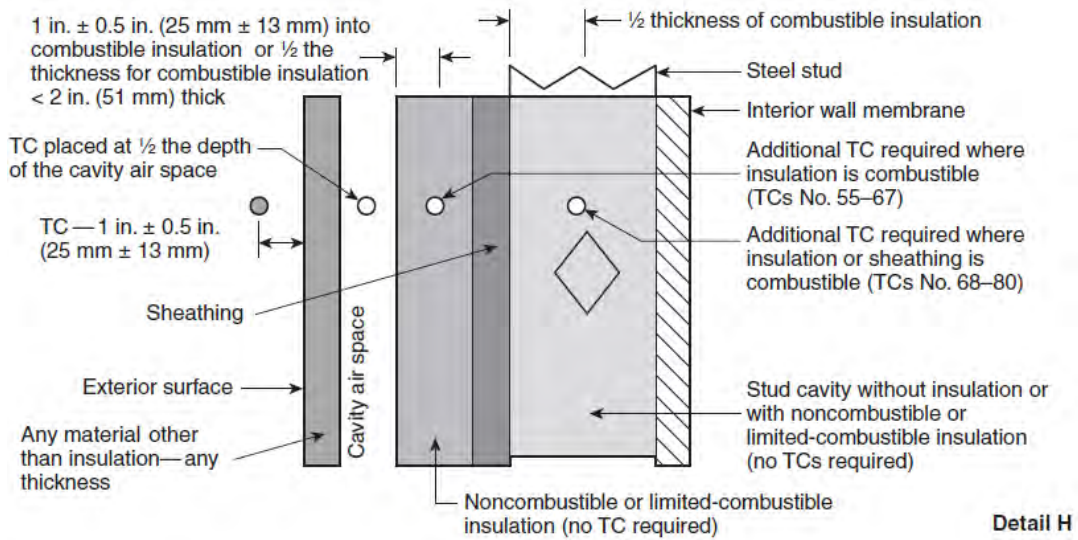


- Thermocouples (5) inside burn room 6 in. (152 mm) below ceiling

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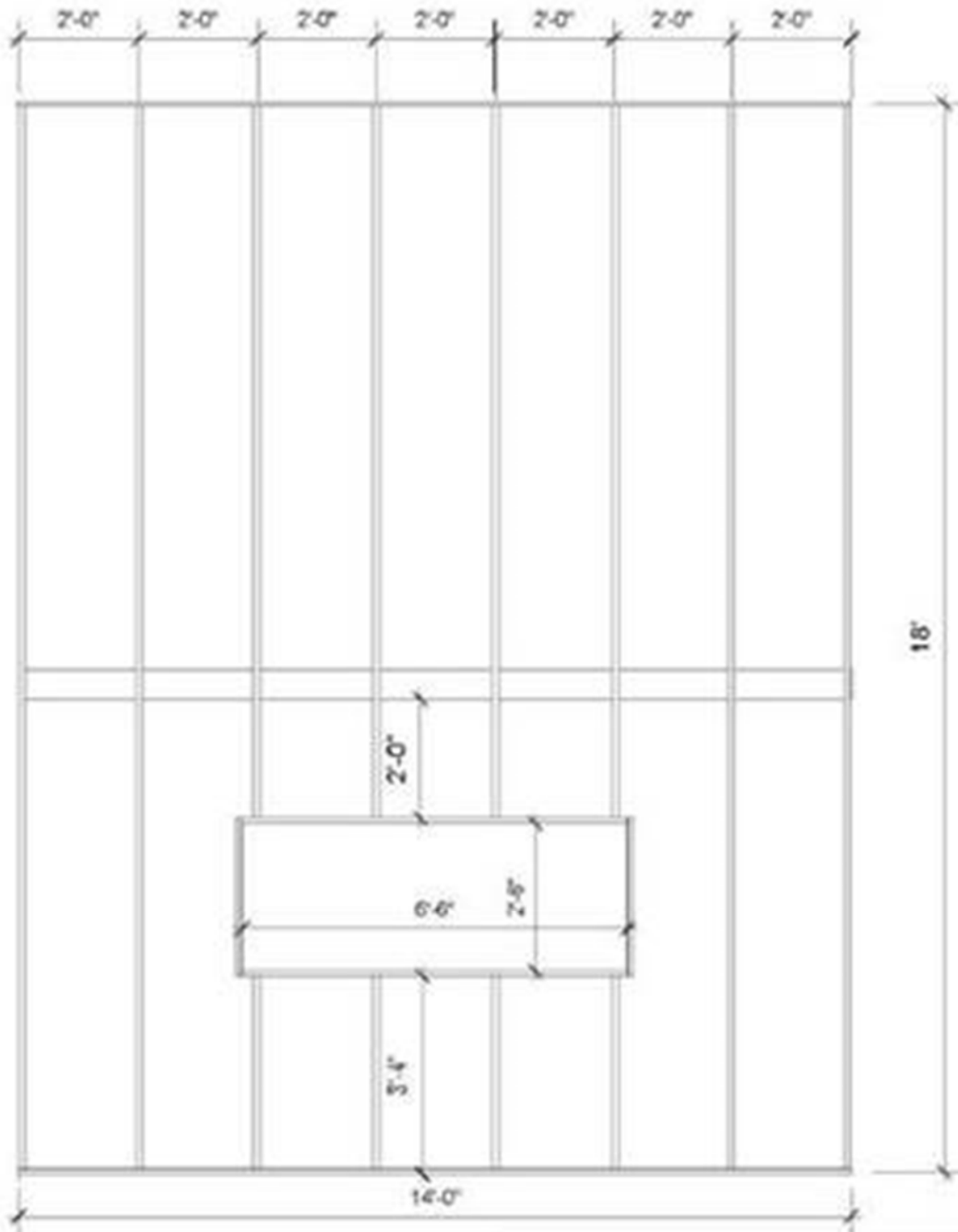
Date: 04/03/19



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Report No.: 103843210SAT-003

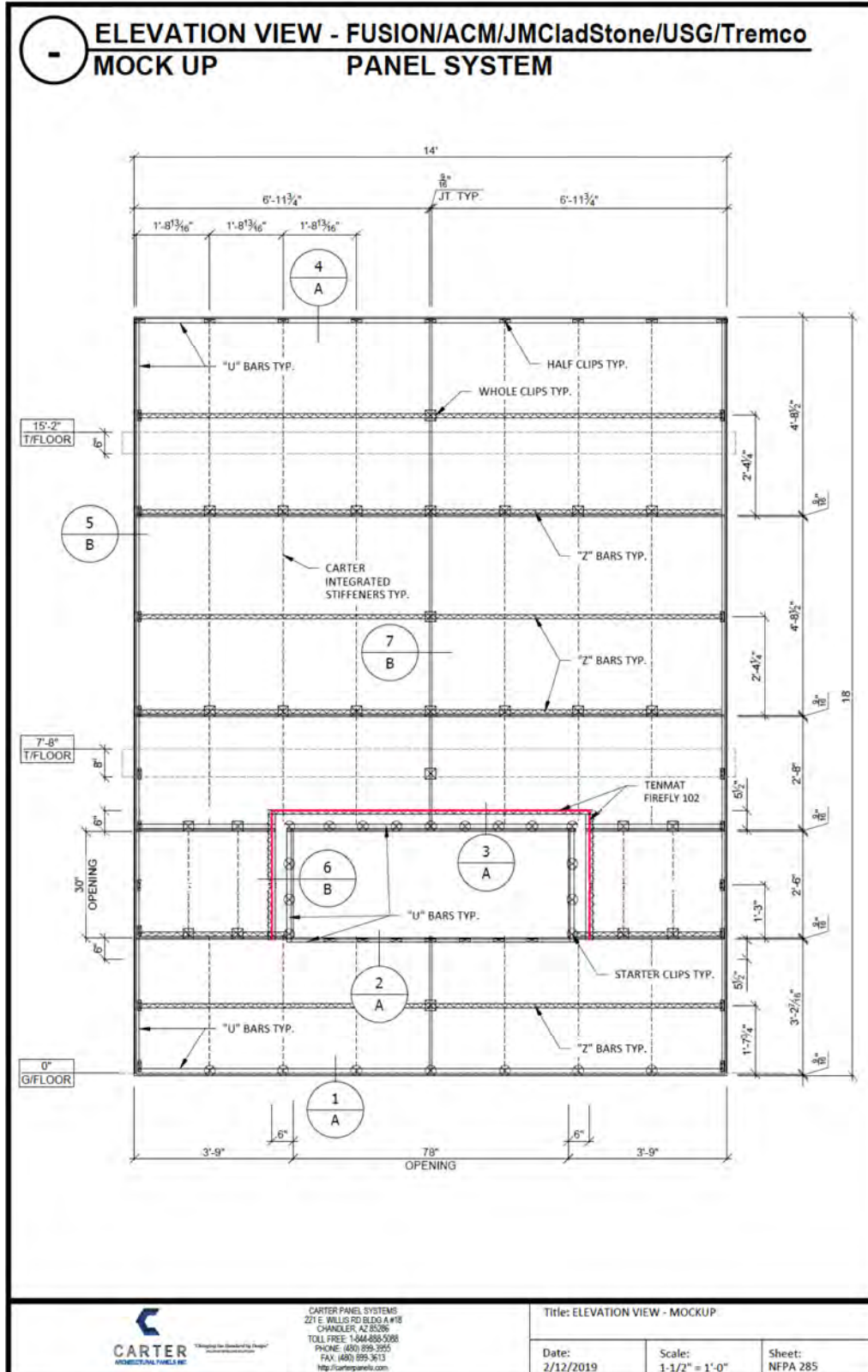
Date: 04/03/19



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Report No.: 103843210SAT-003

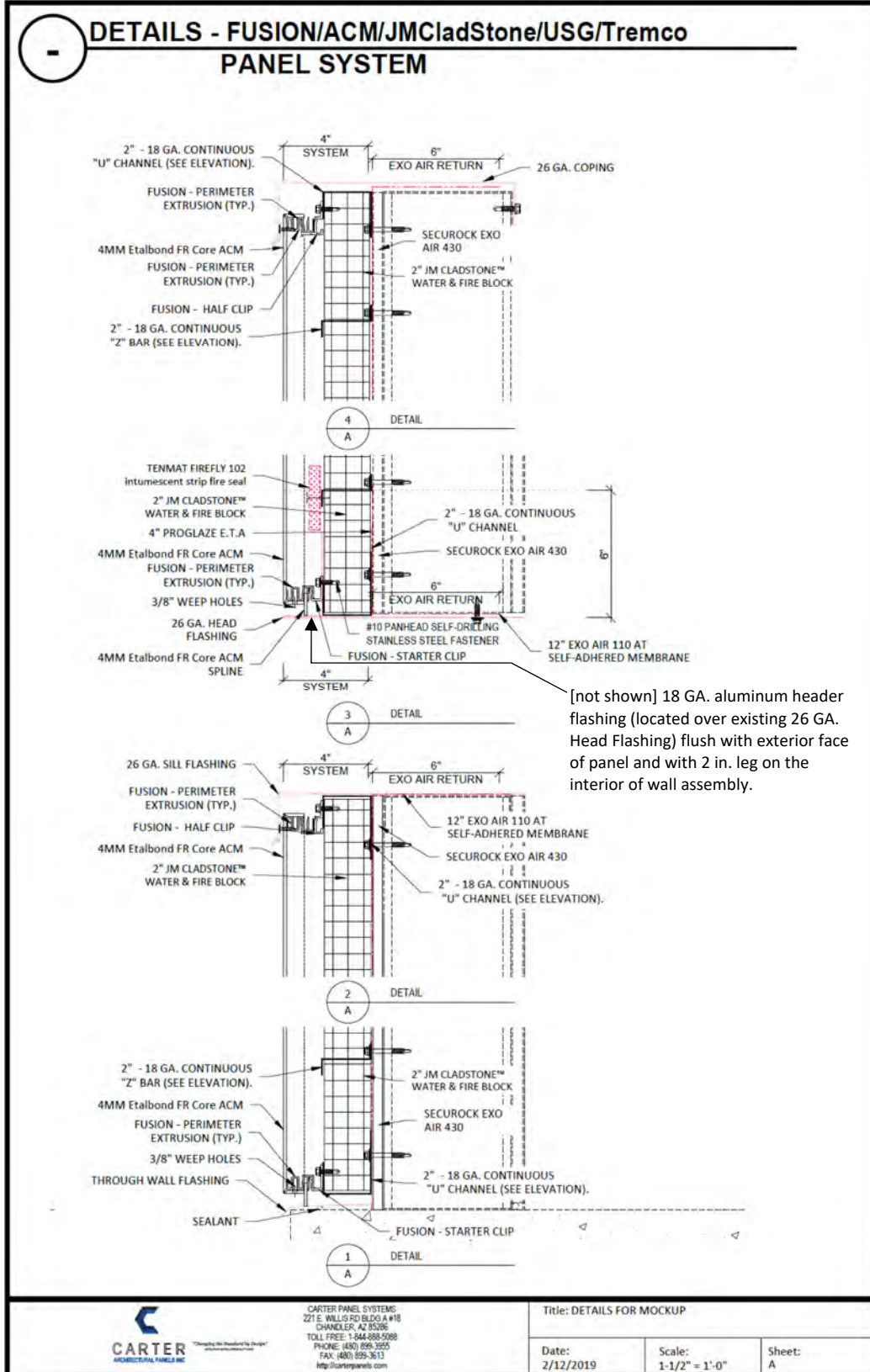
Date: 04/03/19



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Report No.: 103843210SAT-003

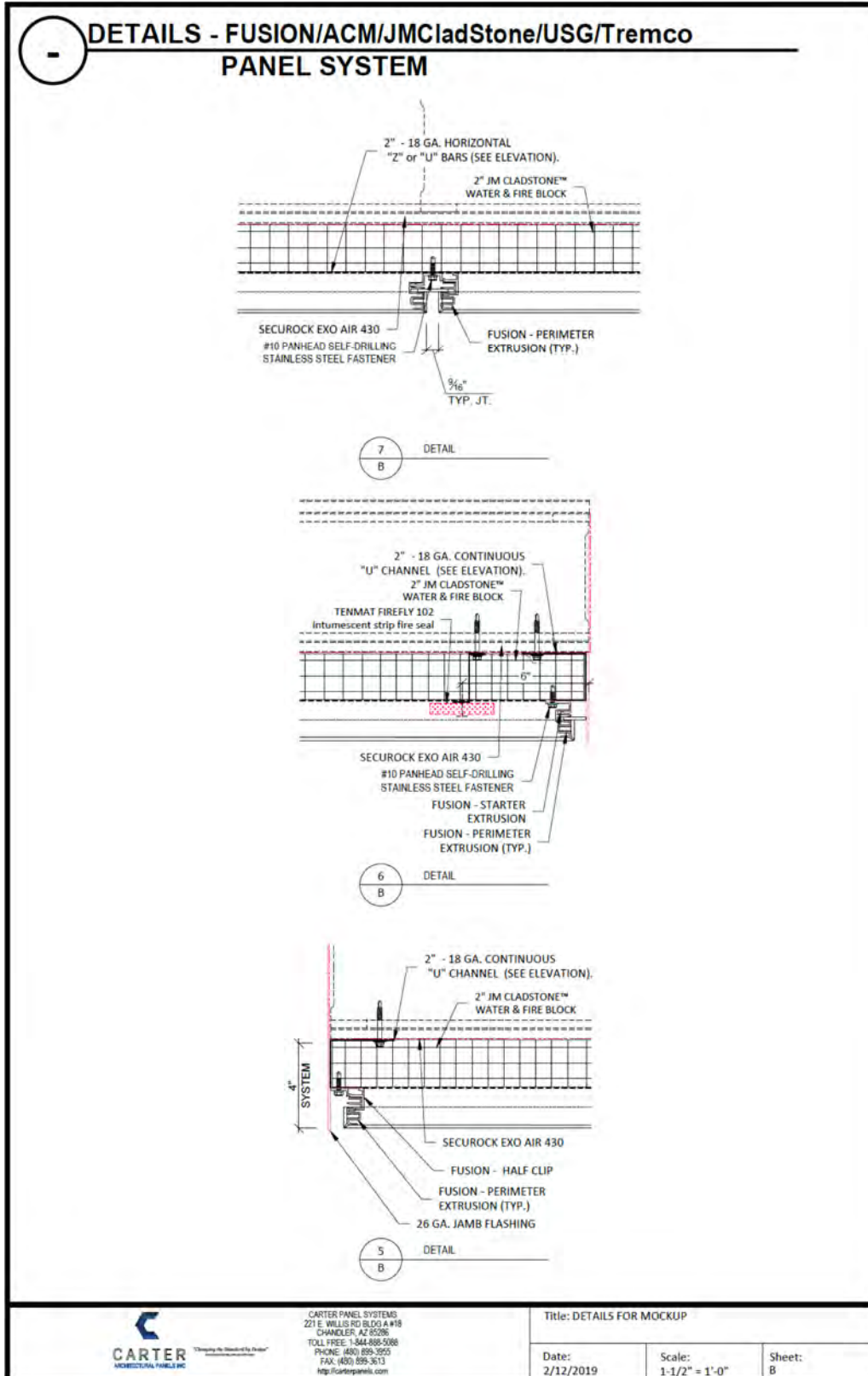
Date: 04/03/19



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SECTION 14

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	04/03/19	N/A	Original Report Issue