

THESIZE SURFACES S.L. FIRE TEST REPORT

SCOPE OF WORK

NFPA 285 TESTING ON EXTERIOR NON-LOAD-BEARING WALL ASSEMBLY CONTINING
THESIZE SURFACE US STRONGFIX SYSTEM

REPORT NUMBER

G9194.01-121-24-R0

TEST DATE(S)

08/24/17

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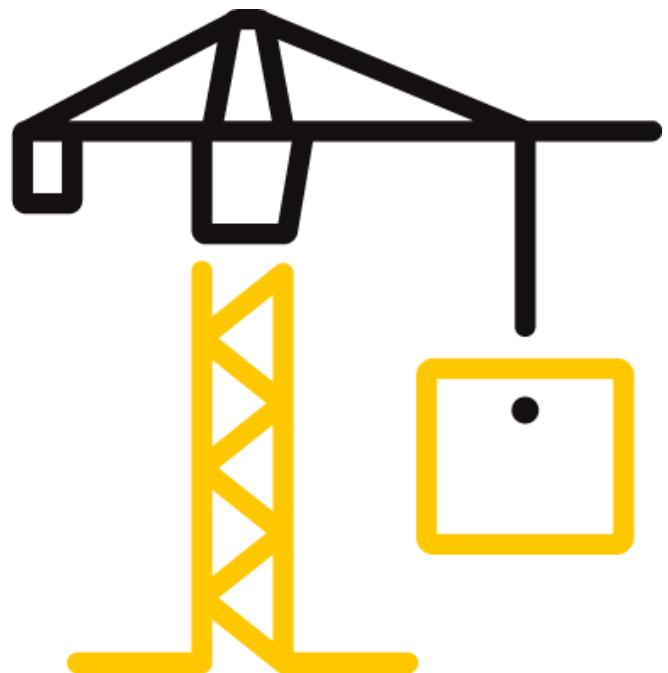
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TEST REPORT FOR THESIZE SURFACES S.L.

Report No.: G9194.01-121-24-R0

Date: 08/31/17

REPORT ISSUED TO

TheSize Surfaces USA

4025 Seaboard Court
Portsmouth, VA 23701

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by TheSize Surfaces, USA, 4025 Seaboard Court Portsmouth, VA, 23701 to evaluate the flame propagation characteristics of an exterior, non-load-bearing wall assembly containing Strongfix system. 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: Henry® Blueskin® SA Air and Vapor barrier membrane, 1-1/2 in. thick Roxul™ ComfortBatt® Insulation, Neolith cladding panels utilizing Strongfix attachment system.

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:	Senior Technician – Fire Testing	TITLE:	Manager – Fire Testing
SIGNATURE:		SIGNATURE:	
DATE:	08/31/17	DATE:	08/31/17

SDG:ddr

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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*

ASTM C1396/C1396M-14a, *Standard Specification for Gypsum Board*

ASTM C1177/C1177M-13, *Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing*

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
Lisa Burling	TheSize Surfaces, USA
Scott Gingrich	Intertek B&C
Tim Feltman	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 08/24/2017 in accordance with NFPA 285 test method. Ambient conditions were 77°F and 47% 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 11:32 AM with the burners on for 30 minutes. All observations are recorded in the table located in Section 8.

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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	0.0	1.1	0.9	0.8
5:00-10:00	35.5	4.0	2.0	1.8	1.7
10:00-15:00	43.8	5.6	2.7	2.6	2.3
15:00-20:00	43.6	8.0	2.9	2.8	2.8
20:00-25:00	43.6	11.0	3.1	3.0	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

TIME INTERVAL (MIN:SEC)	THERMOCOUPLE LOCATIONS							
	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, 6 in. deep, 18 gauge galvanized steel studs fastened to 14 ft. length, 6 in. deep, 18 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, 6 in. deep, 18 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

1/2 in. thick Georgia-Pacific DensGlass® 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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Water-resistive Barrier

The vertical and horizontal joints of the exterior sheathing were treated with Henry® Blueskin® 925 BES sealant. The sealant was applied to the sheathing joints at a thickness 1/4 in. thick and 1 in. width. The sealant was allowed to dry prior to the adhesive installation. Once dried, Henry® 574 Blueskin® LVC adhesive was roller applied to the full exterior sheathing surface. This adhesive was applied per the manufactures directions at 1 gallon per 250 ft². The adhesive was allowed to dry prior to the membrane installation. Once dried, Henry® Blueskin® SA was applied horizontally starting at the assembly sill and continued to the assembly header. The membrane was adhered to the entire surface of the exterior sheathing including the window opening header, jabs, and sill. Each row of the membrane overlapped the previously installed row by 2 in.

Window Opening

A 78 in. wide x 30 in. tall window opening was made from 18 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 window opening was prepared in the same manner as the exterior surface indicated in the section above. Upon the completion of the installation of the exterior cladding, the full window opening perimeter was flashed with flat sheets of 18 gauge galvanized steel spanning from the interior gypsum cladding to the exterior cladding panels. The flashing was fastened to the window opening perimeter framing with #12 x 1 inch long hex head, self-drilling fasteners every 10 inches.

Exterior Insulation

1-1/2 in. thick Roxul™ ComfortBatt® Insulation was installed on the exterior surface of the assembly. To retain the insulation in place 3 in. long, perforated base insulation hangers were used to secure the insulation to the assembly. These hangers were placed at every stud location and nominally every 4 ft. vertically. The pins used a 4 in. x 4 in. square of Henry® Blueskin® SA to adhere the hangers to the exterior surface of the assembly. The insulation was then placed on the pins and covered the entire exterior surface. 2 in. x 2 in. square aluminium self-locking washers were placed on the hanger pins to retain the installation to the exterior surface.

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Exterior Cladding

Installation of the Strongfix system began with the installation of 3-1/8 in. deep x 4-3/4 in. tall x 1-1/2 in. flange x 1/8 in. thick aluminium brackets. These brackets were secured to the assembly using three 1/4 in. diameter x 2 in. long hex head self-drilling fasteners per bracket. These brackets were located on the studs and were oriented vertically (reference drawing on page 49). Vertical aluminium profile "T" sections measuring 2 in. deep x 3-1/8 in. wide x 5/64 in. thick were then attached to the aluminium brackets with two #12 x 1-1/2 in. long hex head self-drilling fasteners through the slots and two #12 x 1-1/2 in. long hex head self-drilling fasteners through the bracket and vertical T. Next, horizontal aluminium profiles were attached to the vertical "T" profile. This horizontal profile had a face that measured 2-1/4 in. wide, and a fixing "J" that was 5/8 in. wide x 5/8 in. tall. The horizontal profile attached to the vertical "T" profile with two #12 x 3/4 in. long hex head self-drilling fasteners per intersection. The Neolith Panels were then prepared to be installed. The panels had a factory installed Strongfix extrusions that was used to attach the Neolith panel to the horizontal aluminium profile. The fixing profile engaged into the horizontal profile. The panels were added to cover the entire exterior surface and was friction set not fasteners were used to secure the panels. The horizontal and vertical panel joint reveal were 7mm. Vertical panel joints were located at the window opening jamb plane. Horizontal panel joints were located at 39-3/4 in., 79-1/2 in., and 119-1/4 in. above the window opening header.

SECTION 8

TEST OBSERVATIONS

TIME (Min:Sec)	OBSERVATIONS
00:00	Ignition of room burner.
01:01	Window flashing begins to warp.
02:30	Smoke emitting from the window header.
05:00	Ignition of window opening burner.
05:48	Panels begin to crack.
06:54	Ignition at the window header.
11:50	Flames behind panels above the window header at the window jabs.
12:20	Smoke emitting from the 7 ft. and 10 ft. horizontal line.
13:18	Panel directly above the window opening falls from the wall.
14:00	Flames emitting from the surface of the exterior face of the assembly reach a height of 1 ft. above the top of the window opening.
30:00	Burners Extinguished. Post-test 10-minute observation period begins.
30:01	Flames emitting from the surface at the window opening header.
40:00	Post-test 10-minute observation period ends; test concluded.

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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

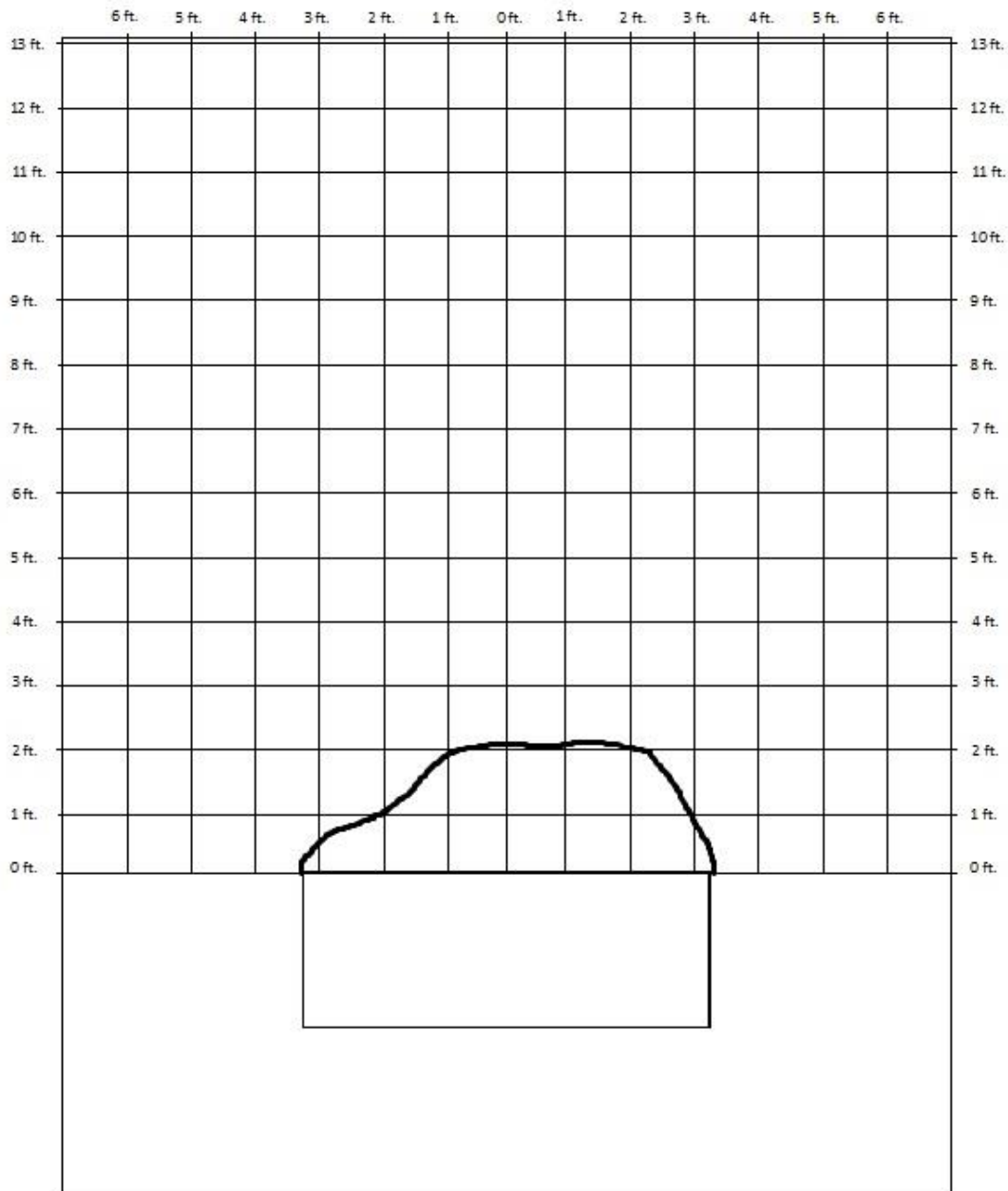
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SECTION 10

SKETCH OF EXTERIOR CLADDING BURN PATTERN



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SECTION 11

PHOTOGRAPHS



Photo No. 1
Completed Core Wall



Photo No. 2
Exterior Sheathing Installed

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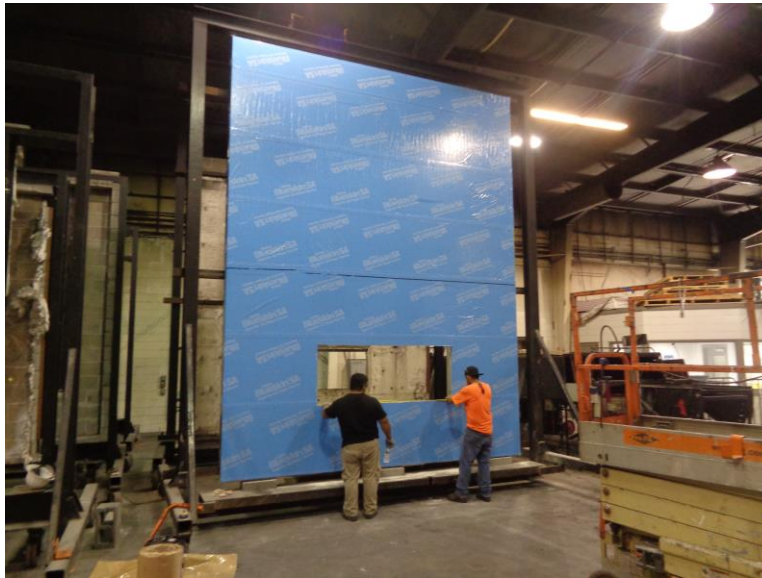


Photo No. 3
AVB Installed

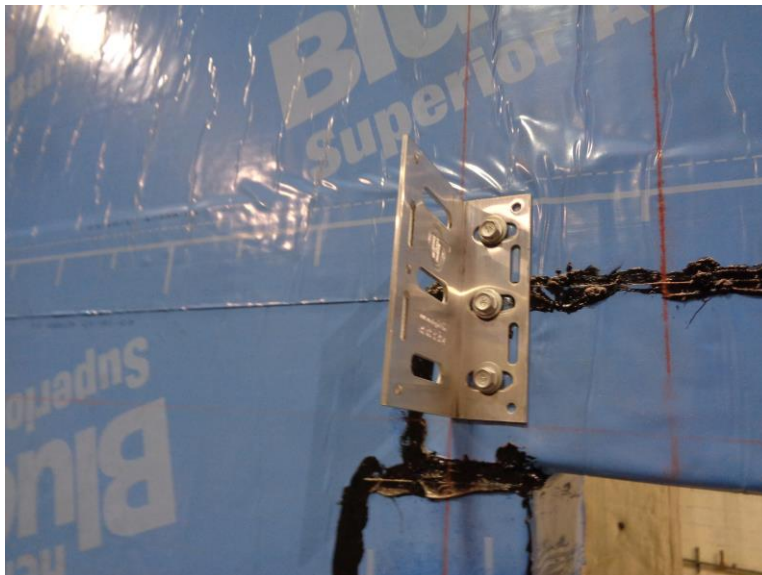


Photo No. 4
Aluminum Bracket Installed

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Photo No. 5

Mineral Wool Insulation and Vertical Aluminum Profiles Installed



Photo No. 6

Horizontal Aluminum Profile Installed

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Photo No. 7
Complete Assembly



Photo No. 8
Room Burner Ignition

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Photo No. 10
Window Burned Ignition



Photo No. 11
Flame Propagation During Test

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Photo No. 12
Burners Extinguished



Photo No. 13
First Floor Interior Gypsum (Post-Test)

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Photo No. 14
Second Floor Interior Gypsum (Post-Test)



Photo No. 15
Exterior Surface (Post-Test)

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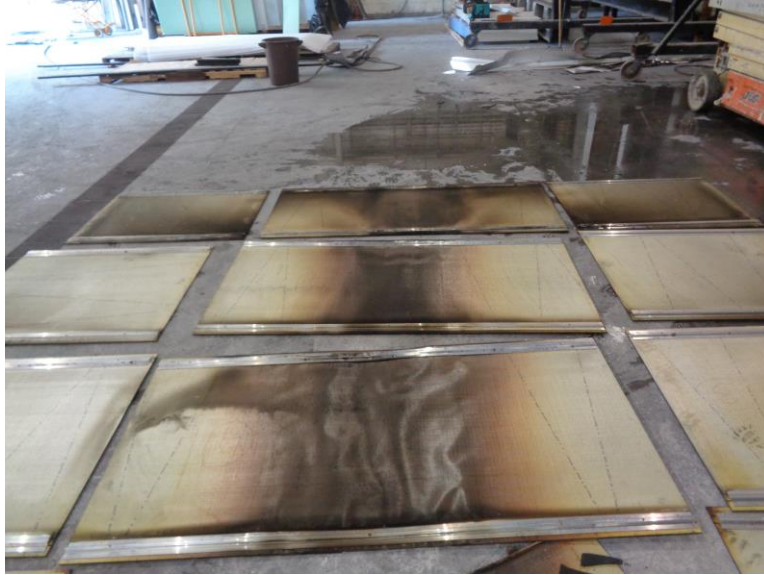


Photo No. 16
Back of Panels (Post-Test)



Photo No. 17
Exterior Cladding Removed (Post-Test)

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**Photo No. 18****Aluminum Profiles and Mineral Wool Removed****Photo No. 19****Sheathing above Window Header Opening**

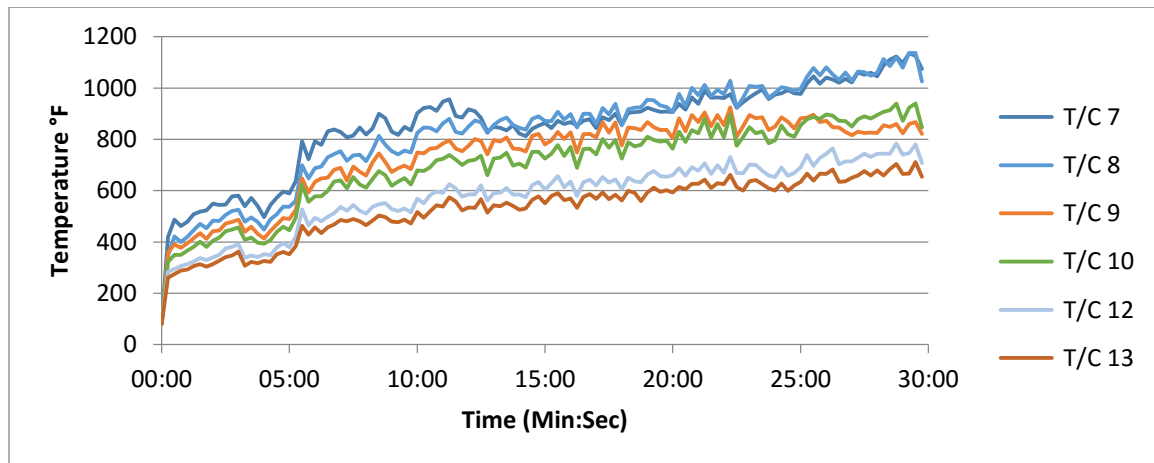
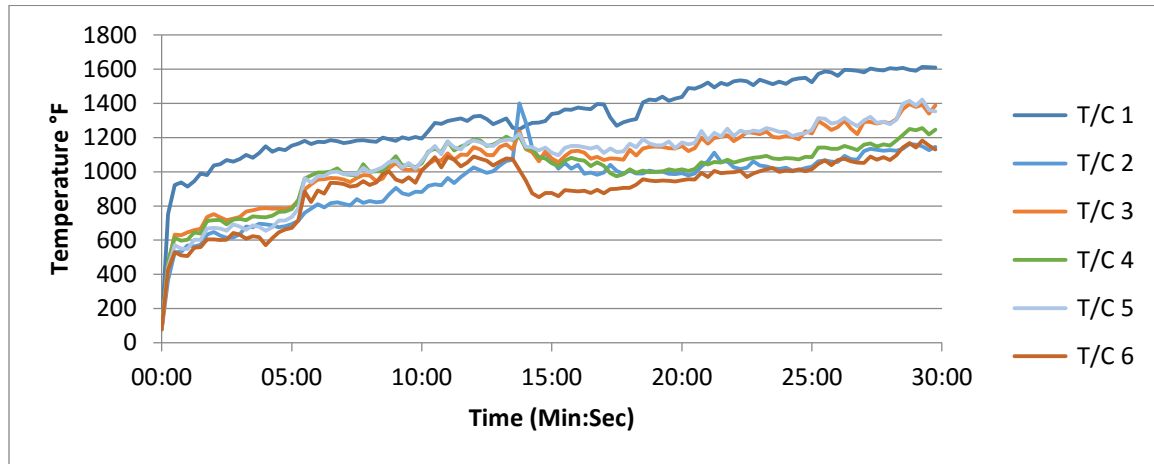
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SECTION 12

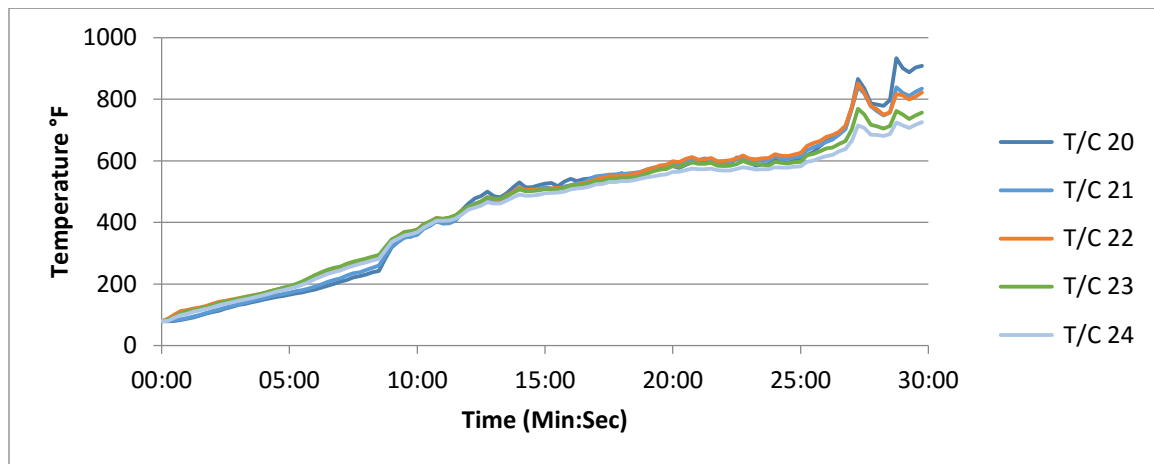
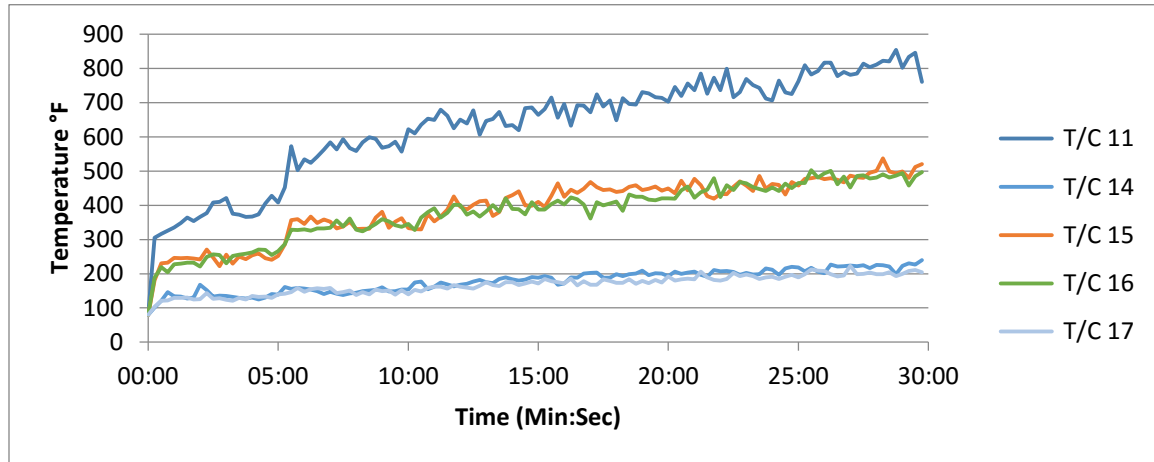
GRAPHS



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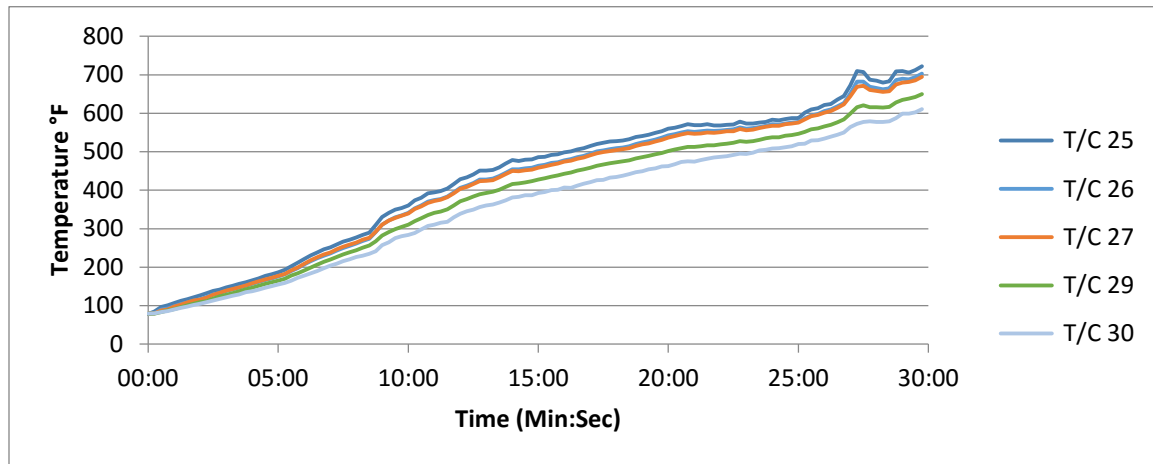
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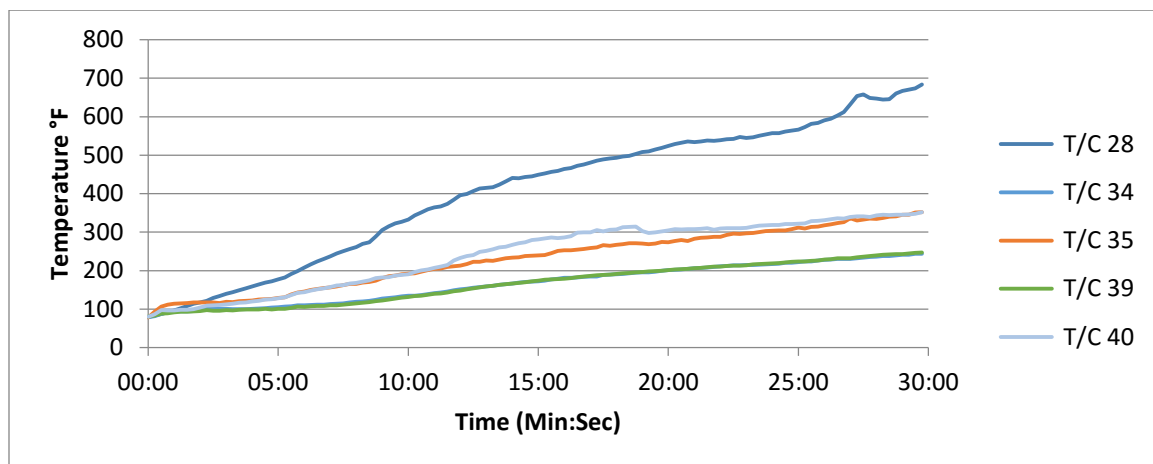
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Graph No. 5
Assembly Centerline (Air Cavity Space)

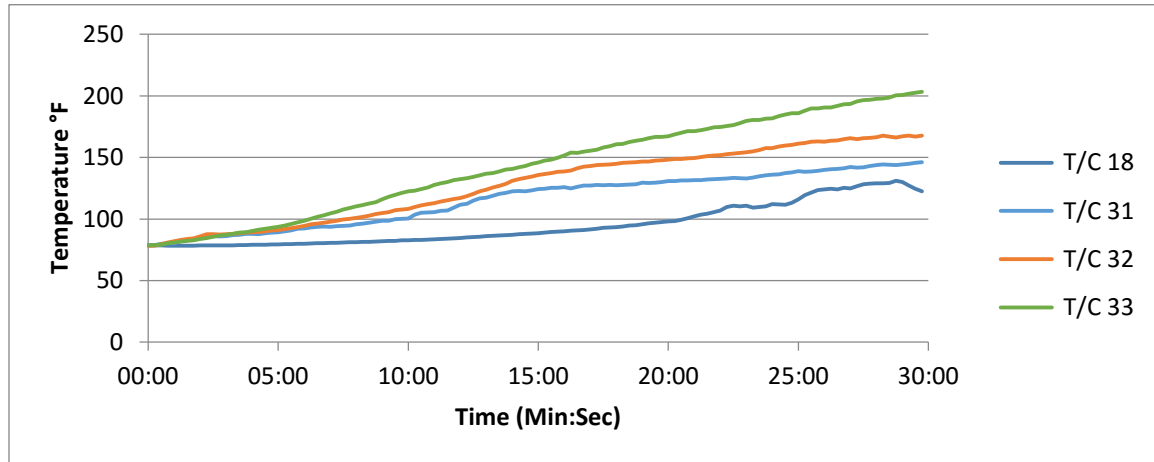


Graph No. 6
10 ft. above the Window Opening Header (Air Cavity Space)

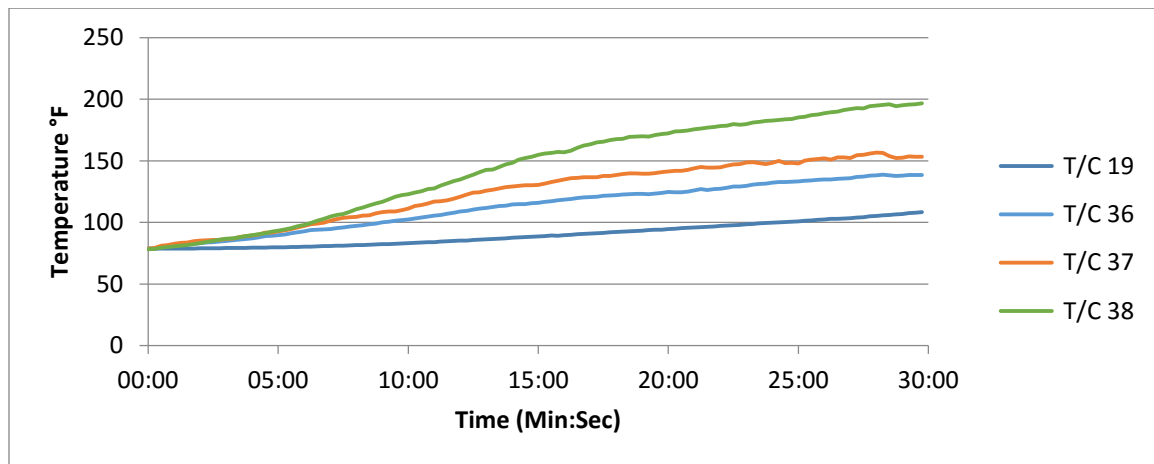
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Graph No. 7
Left of Assembly Centerline (Air Cavity Space)

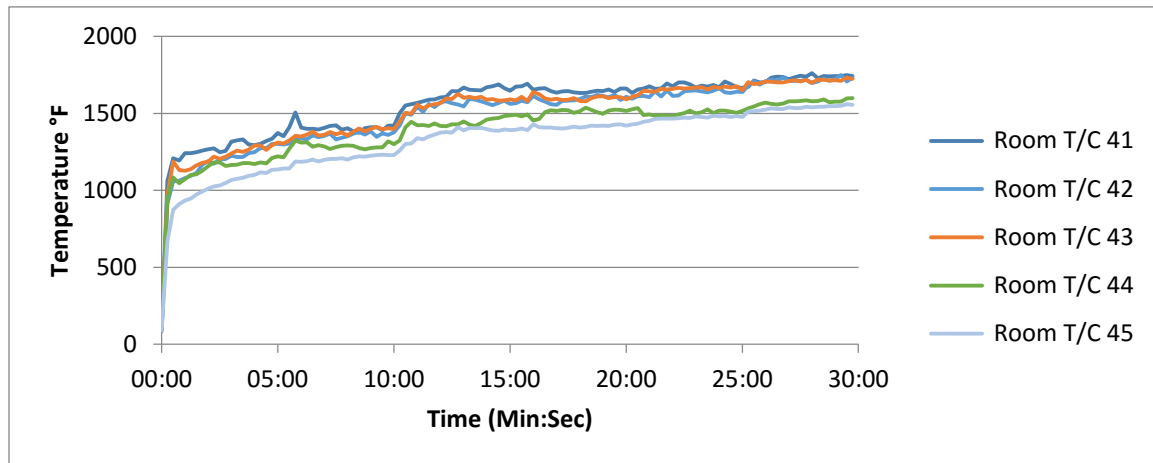


Graph No. 8
Right of Assembly Centerline (Air Cavity Space)

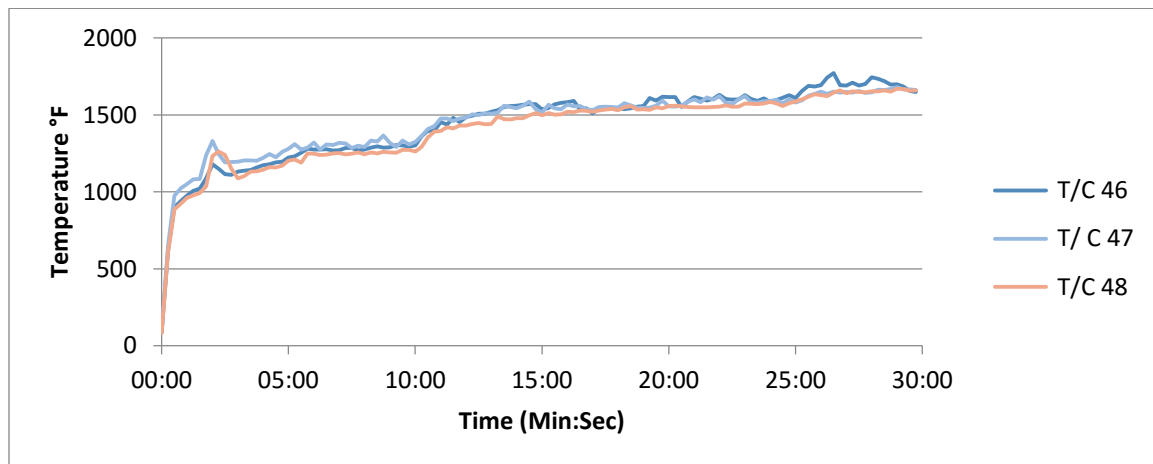
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Graph No. 12
First-story Test Room Ceiling

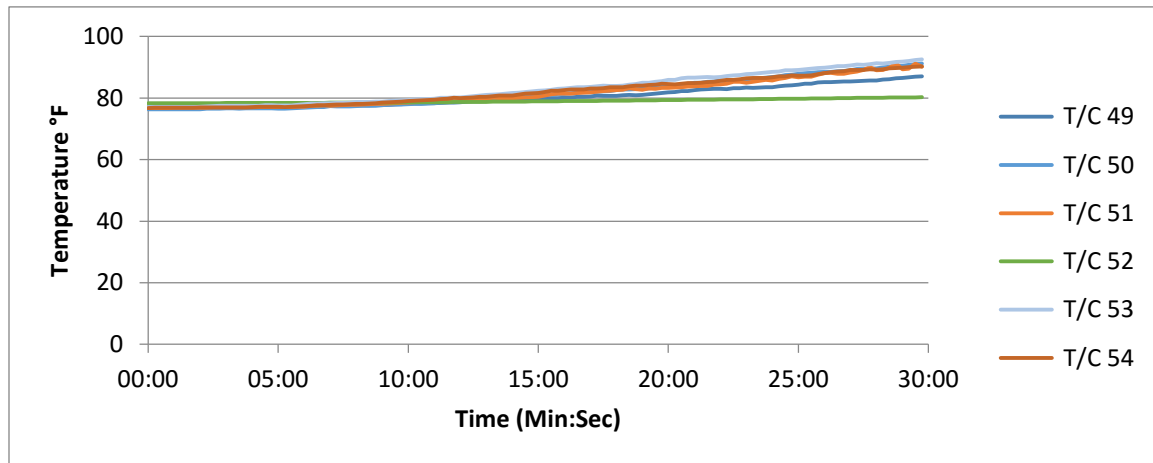


Graph No. 13
First-story Interior Wall Surface

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Graph No. 14
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	0.0	0.0	78	78	78	79	78	79	80	80	80
00:15	37.0	0.0	752	367	462	474	439	426	420	347	359
00:30	43.4	0.0	923	530	633	614	571	530	486	422	391
00:45	36.8	0.0	937	532	629	596	551	511	461	400	377
01:00	36.4	0.0	914	568	646	603	549	507	478	419	395
01:15	36.4	0.0	945	564	659	646	603	557	507	445	415
01:30	36.5	0.0	991	573	666	637	602	559	518	471	435
01:45	36.4	0.0	981	633	736	714	668	604	523	453	412
02:00	36.5	0.0	1037	647	753	717	672	604	549	483	442
02:15	36.5	0.0	1044	627	735	719	668	602	544	482	444
02:30	36.4	0.0	1069	613	717	693	655	602	545	506	472
02:45	36.5	0.0	1060	616	726	721	693	641	578	520	478
03:00	36.4	0.0	1075	634	736	725	680	632	580	526	486
03:15	36.4	0.0	1098	680	768	718	660	609	539	480	439
03:30	36.4	0.0	1082	675	775	739	686	624	571	495	459
03:45	36.4	0.0	1109	697	784	736	678	618	541	478	433
04:00	36.4	0.0	1149	693	788	734	656	571	497	448	413
04:15	36.4	0.0	1118	687	784	742	676	613	544	488	443
04:30	36.4	0.0	1134	675	786	765	714	646	573	509	469
04:45	36.4	0.0	1127	681	782	767	715	663	597	539	493
05:00	36.5	0.0	1152	694	794	782	735	673	589	537	489
05:15	36.4	0.5	1164	713	831	835	785	715	636	560	524
05:30	36.4	3.4	1180	760	897	960	962	885	792	699	648
05:45	36.5	4.6	1162	784	927	978	938	824	722	648	593
06:00	36.5	4.2	1175	810	954	997	974	890	792	688	634
06:15	36.4	4.3	1174	792	956	995	975	872	779	694	648
06:30	36.5	4.4	1185	816	964	1001	998	936	831	730	650
06:45	36.4	4.4	1178	821	962	1019	1001	933	839	742	681
07:00	36.4	4.4	1168	813	955	986	987	928	829	754	689
07:15	36.4	4.4	1173	803	940	983	988	913	808	716	639
07:30	36.4	4.4	1183	841	964	979	982	920	815	738	694
07:45	36.4	4.3	1184	817	980	1044	1024	946	847	740	673
08:00	36.3	4.3	1180	829	978	1000	997	923	818	715	659
08:15	36.4	4.3	1175	822	946	1003	1011	938	843	759	710
08:30	36.4	4.3	1199	825	961	1001	1028	986	900	814	745
08:45	36.4	4.3	1190	868	1022	1049	1058	1002	883	778	711
09:00	36.4	4.3	1182	906	1052	1090	1065	954	830	753	673
09:15	36.5	4.3	1202	875	1018	1034	1024	941	817	742	688
09:30	36.5	4.3	1192	865	1010	1043	1052	967	848	756	698
09:45	36.4	4.3	1203	883	1012	1026	1018	936	835	749	683
10:00	36.4	4.3	1195	881	1007	1049	1063	1008	903	825	748
10:15	38.7	4.7	1236	917	1045	1118	1112	1044	923	847	745
10:30	44.1	5.5	1285	926	1068	1135	1151	1085	926	845	763

TEST REPORT FOR THESIZE SURFACES S.L.

Report No.: G9194.01-121-24-R0

Date: 08/31/17

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	44.8	5.7	1279	921	1065	1114	1102	1026	911	831	766
11:00	44.9	5.7	1297	963	1107	1177	1175	1087	947	863	784
11:15	44.8	5.7	1305	934	1070	1126	1143	1071	956	880	796
11:30	44.9	5.7	1312	970	1100	1147	1131	1031	891	829	763
11:45	44.8	5.6	1297	998	1098	1163	1172	1054	885	822	754
12:00	44.9	5.7	1322	1025	1143	1190	1182	1089	918	850	774
12:15	44.8	5.7	1326	1008	1131	1182	1174	1075	909	873	801
12:30	44.9	5.7	1308	993	1098	1151	1155	1065	884	866	793
12:45	44.9	5.7	1279	1003	1097	1159	1150	1038	830	825	741
13:00	44.9	5.7	1295	1037	1145	1181	1178	1059	849	856	797
13:15	44.9	5.7	1313	1064	1160	1204	1187	1078	844	875	792
13:30	44.9	5.7	1258	1071	1131	1184	1189	1074	835	885	807
13:45	44.8	5.7	1249	1399	1238	1208	1223	1011	855	856	764
14:00	44.9	5.6	1270	1289	1133	1138	1146	950	822	845	763
14:15	44.9	5.6	1286	1141	1115	1133	1144	875	812	837	752
14:30	44.8	5.6	1287	1072	1062	1086	1125	852	841	879	814
14:45	44.8	5.6	1298	1109	1120	1078	1142	876	854	890	821
15:00	44.9	5.7	1338	1072	1078	1050	1112	877	863	871	780
15:15	44.8	6.4	1344	1019	1056	1034	1096	858	843	871	796
15:30	44.7	8.1	1364	1052	1092	1065	1140	892	872	907	829
15:45	44.7	8.2	1362	1018	1120	1081	1150	888	860	878	801
16:00	44.7	8.2	1376	1041	1124	1071	1151	885	867	899	828
16:15	44.7	8.2	1370	989	1111	1065	1144	889	853	846	749
16:30	44.7	8.3	1367	996	1076	1034	1136	876	873	900	820
16:45	44.7	8.3	1395	983	1086	1055	1147	895	878	899	822
17:00	44.7	8.3	1395	995	1068	1036	1111	873	844	860	807
17:15	44.7	8.2	1318	1040	1078	992	1136	898	887	922	867
17:30	44.7	8.2	1268	1006	1076	973	1116	901	875	897	826
17:45	44.7	8.2	1289	989	1071	986	1119	907	900	938	866
18:00	44.7	8.2	1301	1006	1129	1015	1163	906	856	857	777
18:15	44.7	8.2	1308	990	1096	993	1143	925	903	917	846
18:30	44.7	8.2	1405	989	1137	1007	1191	956	906	924	844
18:45	44.7	8.2	1423	1006	1146	999	1167	949	909	924	836
19:00	44.7	8.2	1418	999	1147	1000	1154	944	923	954	867
19:15	44.7	8.2	1439	1002	1145	1000	1154	950	914	952	847
19:30	44.7	8.2	1415	989	1138	1014	1177	948	908	932	836
19:45	44.7	8.1	1429	986	1137	1007	1138	944	908	926	837
20:00	44.7	8.2	1438	993	1151	1015	1171	951	906	907	805
20:15	44.7	9.3	1490	978	1121	1004	1161	957	939	977	882
20:30	44.7	11.0	1486	989	1138	1016	1169	954	916	930	832
20:45	44.7	11.2	1500	1032	1199	1056	1239	994	964	1000	894
21:00	44.7	11.2	1521	1061	1165	1042	1185	970	938	972	867
21:15	44.7	11.2	1493	1111	1197	1057	1227	1004	990	1012	905
21:30	44.7	11.2	1520	1058	1204	1054	1205	993	962	969	851
21:45	44.7	11.2	1508	1061	1215	1071	1253	995	963	993	895
22:00	44.7	11.2	1529	1026	1180	1054	1209	999	961	976	854

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Date: 08/31/17

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	44.7	11.2	1535	1016	1204	1065	1242	1005	976	1028	924
22:30	44.7	11.2	1529	1025	1232	1074	1228	969	923	923	810
22:45	44.6	11.2	1507	1060	1228	1082	1241	990	945	963	852
23:00	44.7	11.2	1539	1036	1221	1086	1236	1003	964	1009	895
23:15	44.7	11.2	1525	1030	1236	1093	1255	1015	979	1004	882
23:30	44.7	11.2	1512	1020	1204	1078	1246	1022	994	1008	886
23:45	44.7	11.2	1527	1017	1200	1074	1233	1000	957	962	836
24:00	44.7	11.2	1513	1023	1209	1080	1233	1007	974	981	850
24:15	44.6	11.1	1539	1007	1203	1078	1210	1004	979	1003	886
24:30	44.7	11.1	1546	1010	1190	1073	1221	1015	992	998	869
24:45	44.7	11.2	1549	1023	1238	1088	1225	1003	980	989	842
25:00	44.7	11.2	1523	1029	1224	1085	1245	1014	978	997	882
25:15	46.1	13.1	1572	1061	1297	1142	1314	1047	1018	1045	885
25:30	48.5	15.7	1587	1067	1272	1143	1310	1068	1045	1078	896
25:45	48.6	15.8	1582	1060	1245	1134	1281	1038	1017	1049	868
26:00	48.5	15.9	1561	1058	1262	1134	1290	1068	1041	1081	872
26:15	48.6	15.9	1596	1094	1299	1150	1315	1076	1033	1054	847
26:30	48.6	15.9	1595	1073	1253	1141	1287	1060	1021	1032	846
26:45	48.6	15.9	1591	1070	1220	1128	1268	1054	1035	1060	829
27:00	48.7	15.9	1581	1121	1293	1159	1301	1052	1022	1028	816
27:15	48.7	15.9	1604	1134	1291	1165	1322	1089	1061	1065	830
27:30	48.5	15.9	1597	1128	1282	1147	1286	1071	1052	1062	825
27:45	48.5	15.9	1592	1123	1292	1160	1293	1086	1060	1048	826
28:00	48.5	15.9	1606	1127	1285	1153	1277	1068	1046	1060	825
28:15	48.5	15.9	1601	1122	1308	1183	1304	1097	1088	1113	854
28:30	48.6	15.9	1607	1135	1366	1215	1399	1143	1110	1086	848
28:45	48.5	15.9	1596	1163	1397	1251	1415	1167	1123	1119	860
29:00	48.5	15.9	1591	1158	1379	1243	1388	1142	1096	1079	824
29:15	48.5	15.9	1613	1150	1392	1256	1422	1183	1135	1136	859
29:30	48.6	15.9	1611	1127	1339	1218	1360	1153	1125	1136	867
29:45	48.5	15.9	1609	1145	1389	1246	1354	1131	1075	1026	821
30:00	41.5	13.6	1487	1130	1281	1152	1185	1051	1001	945	782

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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	81	81	81	80	80	79	79	80	79	79
00:15	322	305	283	262	101	181	188	103	78	79
00:30	350	317	295	275	121	230	219	121	78	79
00:45	349	326	306	289	147	232	205	122	78	79
01:00	365	336	313	292	134	246	228	129	78	79
01:15	381	348	324	306	133	245	230	130	78	79
01:30	401	364	338	313	128	247	233	131	78	79
01:45	381	354	329	304	130	244	232	125	78	79
02:00	404	366	340	313	167	242	221	125	78	79
02:15	417	377	349	327	152	270	249	144	79	79
02:30	442	408	375	340	133	247	257	127	79	79
02:45	448	410	380	347	136	222	255	129	79	79
03:00	457	421	390	362	135	256	230	124	79	79
03:15	408	375	339	307	132	230	252	121	79	79
03:30	417	372	348	322	130	250	256	130	79	79
03:45	397	366	341	317	128	243	258	125	79	79
04:00	393	367	352	326	130	254	262	135	79	79
04:15	407	373	349	322	125	260	270	133	79	80
04:30	440	405	379	353	131	245	270	134	79	80
04:45	460	428	396	361	141	241	255	130	79	80
05:00	446	409	380	352	139	252	266	140	79	80
05:15	494	453	419	383	161	286	287	141	80	80
05:30	623	573	527	463	155	357	328	146	80	80
05:45	557	503	465	428	159	360	328	158	80	80
06:00	577	535	495	457	157	345	330	147	80	80
06:15	578	524	480	434	154	367	326	155	80	80
06:30	599	542	498	457	149	348	332	157	80	81
06:45	635	563	512	469	141	359	332	155	80	81
07:00	641	584	537	485	147	353	334	158	81	81
07:15	609	564	522	481	142	333	356	144	81	81
07:30	653	593	544	489	138	338	338	147	81	81
07:45	624	568	521	481	143	352	362	151	81	81
08:00	611	559	510	466	145	331	329	138	81	82
08:15	645	584	537	483	149	332	324	146	81	82
08:30	677	599	547	504	151	332	334	140	82	82
08:45	660	595	551	497	153	365	345	154	82	82
09:00	619	568	528	479	160	381	360	149	82	82
09:15	635	573	521	476	148	334	353	151	82	83
09:30	648	586	531	487	149	352	342	138	82	83
09:45	625	557	515	472	154	363	337	152	83	83
10:00	679	622	570	517	154	334	346	140	83	83
10:15	677	610	551	495	174	330	328	152	83	83
10:30	692	635	583	519	177	330	364	148	83	84
10:45	718	654	597	544	154	375	380	159	83	84
11:00	724	649	591	538	162	353	391	162	84	84
11:15	739	679	625	574	175	367	365	162	84	84
11:30	722	662	609	557	169	388	378	157	84	85

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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
11:45	700	626	577	523	163	426	402	167	84	85
12:00	717	651	586	535	168	396	400	163	85	85
12:15	720	640	585	533	170	388	373	159	85	85
12:30	737	677	621	567	177	402	382	156	85	86
12:45	660	606	562	514	181	412	367	165	86	86
13:00	726	647	590	543	175	414	382	176	86	86
13:15	728	653	591	539	173	369	400	167	86	87
13:30	747	673	611	553	185	380	382	164	87	87
13:45	698	632	585	541	189	422	421	175	87	87
14:00	705	634	585	526	184	430	390	175	87	88
14:15	690	620	574	530	180	441	388	167	88	88
14:30	752	685	622	564	183	400	374	171	88	88
14:45	752	686	634	578	190	399	410	178	88	88
15:00	725	665	604	551	188	410	387	172	89	89
15:15	744	681	629	579	193	395	388	185	89	89
15:30	778	715	657	591	189	428	404	178	89	89
15:45	735	656	613	563	168	465	414	176	90	89
16:00	770	697	635	570	171	425	403	171	90	90
16:15	689	633	579	533	190	445	424	185	90	90
16:30	762	693	632	575	189	436	418	166	91	90
16:45	764	692	643	587	201	449	402	178	91	91
17:00	741	672	620	568	203	468	361	168	91	91
17:15	801	724	653	593	203	453	409	168	92	91
17:30	767	689	632	567	188	445	400	184	93	92
17:45	797	707	644	584	188	447	405	179	93	92
18:00	725	648	606	562	199	439	411	173	93	92
18:15	788	713	650	598	193	442	384	174	94	93
18:30	773	696	637	592	198	454	431	184	95	93
18:45	779	694	632	560	200	458	425	171	95	93
19:00	810	731	663	593	209	445	425	179	96	93
19:15	797	727	676	612	195	449	417	173	97	94
19:30	791	716	657	596	201	455	415	182	97	94
19:45	795	714	654	602	200	443	421	175	97	94
20:00	763	703	660	593	193	449	420	192	98	95
20:15	830	746	687	614	206	436	420	180	98	95
20:30	790	720	658	606	200	472	444	184	99	95
20:45	836	757	692	627	203	444	455	186	101	96
21:00	823	737	677	626	207	478	422	184	102	96
21:15	880	786	707	643	197	458	438	206	104	96
21:30	806	726	666	611	192	427	446	189	104	96
21:45	859	773	699	628	211	419	479	182	106	97
22:00	807	737	671	626	207	433	424	180	107	97
22:15	897	800	732	662	208	432	459	185	110	97
22:30	775	716	669	614	206	454	444	203	111	98
22:45	809	731	667	600	197	470	468	193	110	98
23:00	847	770	702	636	203	457	464	198	111	98
23:15	824	752	700	642	197	442	453	193	109	99

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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
23:30	831	744	678	625	198	485	447	185	110	99
23:45	785	712	659	609	215	449	442	189	110	100
24:00	796	706	653	601	212	463	452	191	112	100
24:15	854	765	690	628	197	460	442	185	112	100
24:30	820	730	657	599	215	432	463	192	112	100
24:45	809	725	669	620	220	468	450	197	113	100
25:00	855	763	691	634	219	458	465	189	116	101
25:15	879	810	739	666	207	478	465	199	119	101
25:30	888	782	696	638	217	479	503	213	121	102
25:45	880	792	728	667	207	483	481	209	124	102
26:00	898	817	744	665	202	477	494	208	124	102
26:15	892	817	765	683	227	479	501	198	125	103
26:30	873	778	702	635	221	474	462	192	124	103
26:45	870	790	714	636	222	467	484	195	125	103
27:00	849	782	713	650	224	487	452	223	125	104
27:15	879	785	729	659	222	482	486	198	127	104
27:30	890	814	744	677	224	480	488	200	128	104
27:45	881	804	731	659	216	496	478	203	129	105
28:00	895	812	744	679	225	500	481	198	129	105
28:15	908	823	744	659	225	537	491	199	129	106
28:30	914	821	744	684	222	499	482	204	129	106
28:45	940	855	784	704	198	493	487	193	131	107
29:00	872	802	740	665	223	499	495	200	130	107
29:15	923	834	746	666	231	480	457	208	127	108
29:30	940	846	780	711	226	512	485	211	125	108
29:45	846	761	707	654	239	521	497	204	122	108
30:00	775	721	667	613	221	469	413	188	123	109

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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	79	79	79	79	79	78	79	79	79	79
00:15	79	84	87	84	80	85	80	80	83	79
00:30	80	84	101	93	91	97	90	88	88	83
00:45	83	85	112	105	99	101	93	90	92	87
01:00	87	90	116	111	103	107	99	98	96	91
01:15	92	95	120	116	110	112	104	103	102	96
01:30	98	100	123	120	114	116	109	108	109	101
01:45	104	106	129	125	120	122	113	114	114	105
02:00	109	112	136	132	124	126	117	116	117	109
02:15	114	118	142	138	131	132	123	121	122	112
02:30	120	124	145	143	136	139	129	128	129	119
02:45	125	129	150	147	141	142	133	133	134	124
03:00	132	134	154	152	145	147	138	139	139	128
03:15	136	140	158	157	150	152	142	143	144	133
03:30	140	145	163	162	154	156	147	148	149	138
03:45	145	150	166	165	159	161	152	153	154	142
04:00	150	154	171	171	164	166	157	159	159	147
04:15	153	160	177	176	170	171	161	163	164	152
04:30	158	164	182	182	176	177	167	169	169	157
04:45	161	167	188	188	180	182	171	173	172	161
05:00	166	171	191	192	185	186	176	178	178	165
05:15	169	177	197	199	191	193	182	183	182	170
05:30	173	180	206	208	198	203	190	192	192	178
05:45	178	185	216	218	206	211	197	199	199	184
06:00	182	191	226	229	217	222	207	209	208	192
06:15	188	199	236	238	225	231	216	218	216	199
06:30	194	207	242	246	233	238	223	225	224	207
06:45	200	213	247	252	239	246	230	233	231	214
07:00	207	219	252	257	245	251	236	238	237	220
07:15	213	228	260	266	253	259	243	246	244	227
07:30	221	235	265	272	259	266	250	253	251	233
07:45	226	238	270	278	266	272	256	259	256	239
08:00	231	246	275	283	270	277	261	264	262	244
08:15	238	252	282	290	276	284	268	271	269	251
08:30	242	259	284	294	282	290	274	276	273	256
08:45	282	293	311	320	309	310	291	293	289	267
09:00	319	321	343	346	337	330	310	311	305	282
09:15	337	336	356	356	347	341	321	321	315	292
09:30	354	350	369	369	358	350	330	328	323	299
09:45	354	355	371	371	362	354	335	334	327	305
10:00	367	360	377	377	368	360	341	339	332	310
10:15	390	380	394	394	384	374	353	351	344	319
10:30	397	389	402	403	394	381	361	358	351	327
10:45	413	403	415	414	406	392	371	367	359	335
11:00	405	396	412	412	406	395	374	372	364	341
11:15	402	397	415	416	406	398	377	375	367	345
11:30	415	407	423	424	412	404	384	382	374	350

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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
11:45	441	431	440	439	426	416	394	392	385	361
12:00	461	446	452	452	442	428	406	404	396	371
12:15	478	461	458	458	448	434	412	409	399	377
12:30	486	468	467	468	455	441	419	416	407	384
12:45	500	478	482	481	466	451	427	423	413	389
13:00	485	472	476	477	461	451	428	425	415	393
13:15	482	465	474	477	462	452	430	426	417	396
13:30	495	482	489	487	471	460	437	433	423	401
13:45	513	499	498	496	481	469	445	442	432	408
14:00	531	514	514	507	491	479	454	450	441	416
14:15	513	503	505	502	487	476	454	449	440	417
14:30	515	506	506	503	488	479	457	452	443	420
14:45	521	508	506	504	490	480	459	454	445	423
15:00	526	514	510	509	495	486	464	459	449	428
15:15	528	511	511	509	496	487	466	462	452	431
15:30	518	509	513	510	497	491	471	466	457	435
15:45	532	516	513	512	500	493	473	469	459	438
16:00	541	521	520	518	507	499	478	474	464	443
16:15	535	527	522	521	510	501	481	477	467	446
16:30	540	529	527	523	512	506	486	482	473	451
16:45	543	542	532	528	517	509	489	485	476	454
17:00	548	550	541	535	524	515	495	491	480	458
17:15	545	552	546	535	525	520	501	496	486	464
17:30	554	555	550	542	531	524	504	499	489	467
17:45	553	556	550	541	531	526	507	502	491	470
18:00	561	557	554	545	535	528	509	504	494	472
18:15	549	559	554	543	534	529	511	506	496	475
18:30	557	561	558	546	537	532	515	510	498	478
18:45	562	564	565	551	543	538	520	515	503	482
19:00	571	573	572	559	546	541	524	519	508	486
19:15	578	578	577	566	550	544	527	522	510	489
19:30	578	576	586	572	554	549	532	527	515	493
19:45	579	583	587	574	557	553	536	531	519	497
20:00	584	592	599	583	565	560	542	537	524	502
20:15	577	589	596	580	564	562	546	541	529	506
20:30	586	600	606	588	570	567	550	545	532	510
20:45	595	605	613	596	575	572	553	548	535	512
21:00	595	602	604	591	573	569	552	546	534	513
21:15	606	608	605	591	573	569	553	547	535	514
21:30	596	602	609	594	575	572	555	550	538	517
21:45	586	593	599	584	569	568	554	549	537	517
22:00	587	592	600	583	568	568	555	551	539	519
22:15	589	595	602	584	569	570	557	553	541	521
22:30	611	605	608	589	574	571	558	554	542	523
22:45	602	604	617	599	579	578	564	559	547	527
23:00	594	600	607	591	576	573	560	556	544	526
23:15	584	599	605	589	572	574	561	558	547	528

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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
23:30	590	601	608	587	573	576	564	561	550	531
23:45	589	601	609	584	572	577	567	565	554	535
24:00	605	615	621	597	579	583	571	568	557	538
24:15	599	606	616	594	578	582	571	568	557	538
24:30	593	607	615	592	578	585	574	572	562	542
24:45	601	611	620	595	581	587	576	574	563	543
25:00	606	615	626	596	582	588	577	576	567	546
25:15	619	634	649	618	597	602	587	584	573	551
25:30	629	645	658	623	601	610	594	592	581	558
25:45	648	652	665	631	609	614	598	595	584	561
26:00	665	661	678	641	615	621	605	602	590	566
26:15	673	670	684	643	620	624	610	606	595	570
26:30	693	686	695	655	631	636	619	614	603	577
26:45	709	703	714	665	638	645	627	623	612	584
27:00	774	770	774	703	665	673	651	644	632	599
27:15	866	841	852	770	716	710	682	669	654	616
27:30	834	819	821	751	707	707	683	671	658	620
27:45	787	778	778	717	685	687	669	661	648	616
28:00	783	761	767	712	684	685	666	658	647	615
28:15	779	748	749	705	681	680	662	656	644	615
28:30	797	757	758	713	687	683	665	657	645	617
28:45	933	839	817	762	724	709	686	675	661	628
29:00	902	821	813	750	716	710	689	680	667	635
29:15	888	811	799	736	707	706	688	681	670	638
29:30	904	825	809	748	717	712	694	686	674	642
29:45	909	835	823	757	726	722	703	695	683	649
30:00	926	849	834	769	733	724	706	696	685	652

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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
00:00	80	79	78	79	79	78	79	79	78	80
00:15	80	79	78	79	81	93	79	79	79	83
00:30	83	80	80	79	87	106	80	81	80	88
00:45	86	80	81	80	92	111	80	82	80	89
01:00	90	80	82	81	94	114	81	83	81	92
01:15	94	82	83	82	94	115	82	83	81	93
01:30	98	83	84	82	94	115	82	84	82	93
01:45	101	84	84	83	95	117	83	85	82	94
02:00	105	84	86	84	101	117	83	85	83	95
02:15	109	85	88	85	101	117	84	85	84	97
02:30	114	86	88	86	101	117	84	86	85	96
02:45	117	86	87	87	100	116	85	86	86	96
03:00	122	86	88	87	101	119	85	86	87	97
03:15	126	87	88	88	100	118	85	87	87	96
03:30	129	87	89	89	100	121	86	88	88	98
03:45	135	88	89	89	100	122	87	89	89	99
04:00	137	88	89	90	101	122	87	89	90	99
04:15	142	88	90	91	101	125	88	90	90	99
04:30	146	89	90	92	102	125	89	92	91	101
04:45	151	89	91	93	104	127	89	92	93	99
05:00	155	89	91	94	105	129	90	93	93	101
05:15	159	90	92	95	107	131	90	94	94	101
05:30	165	91	93	96	108	138	91	95	95	103
05:45	172	92	93	97	110	143	92	96	97	106
06:00	178	92	94	99	110	146	93	97	98	105
06:15	184	93	96	100	110	150	94	99	100	108
06:30	190	94	96	102	112	152	94	99	101	108
06:45	197	94	97	103	112	155	94	100	103	108
07:00	204	94	98	105	113	157	95	101	105	110
07:15	209	94	99	106	114	159	95	103	106	110
07:30	216	94	100	108	115	162	96	104	107	111
07:45	221	95	100	109	117	165	97	104	109	113
08:00	227	96	101	110	119	166	97	105	111	115
08:15	230	96	102	111	120	169	98	105	112	116
08:30	235	97	103	113	122	170	98	106	114	118
08:45	242	98	104	114	124	174	99	107	115	121
09:00	257	99	105	116	127	180	100	108	117	122
09:15	265	99	106	118	129	186	101	109	119	125
09:30	276	100	107	120	130	187	101	109	121	127
09:45	281	100	108	121	133	191	102	110	122	129
10:00	284	101	108	122	135	192	102	111	123	131
10:15	289	104	110	123	135	193	103	113	124	134
10:30	298	105	111	124	137	197	104	114	125	135
10:45	307	105	112	126	139	201	105	116	127	137
11:00	310	105	113	128	141	205	106	117	128	140
11:15	315	107	114	129	143	205	106	117	130	141
11:30	318	107	115	130	146	210	107	118	132	143

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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
11:45	329	109	116	131	148	211	108	119	134	146
12:00	339	112	117	132	151	213	109	121	135	148
12:15	345	112	119	133	153	217	110	123	137	151
12:30	349	115	120	134	155	223	111	124	139	154
12:45	356	117	123	136	157	223	111	124	141	157
13:00	360	117	124	137	159	227	112	126	143	159
13:15	363	119	126	137	160	225	113	127	143	160
13:30	368	121	127	139	163	229	113	128	145	163
13:45	374	121	128	140	165	232	114	129	147	165
14:00	381	122	131	141	166	234	115	129	148	166
14:15	383	123	132	142	169	235	115	130	151	168
14:30	387	123	133	143	171	238	115	130	152	170
14:45	387	123	134	145	171	238	116	130	153	172
15:00	393	124	136	146	172	239	116	131	155	174
15:15	395	125	137	147	174	240	117	131	156	176
15:30	400	125	137	148	177	245	117	133	156	177
15:45	401	125	138	150	179	251	118	134	157	178
16:00	407	126	139	152	181	253	119	135	157	179
16:15	406	125	139	154	181	252	119	136	158	180
16:30	412	126	141	154	182	254	120	136	161	183
16:45	417	127	143	155	184	256	120	137	162	185
17:00	421	127	143	156	185	259	121	137	164	186
17:15	426	128	144	156	184	260	121	137	165	188
17:30	427	127	144	158	189	266	122	138	165	189
17:45	433	128	144	159	189	264	122	138	167	190
18:00	434	127	145	161	191	267	122	139	168	191
18:15	438	128	146	161	191	268	123	139	168	193
18:30	442	128	146	163	193	271	123	140	170	194
18:45	447	128	146	164	195	271	123	140	170	196
19:00	449	130	147	164	195	270	123	140	170	196
19:15	454	129	147	166	196	268	123	140	170	198
19:30	456	129	147	167	197	271	123	140	171	199
19:45	462	130	148	167	200	274	124	141	172	200
20:00	463	131	148	167	201	274	125	141	172	201
20:15	468	131	149	169	202	277	125	142	174	203
20:30	473	131	149	170	203	279	125	142	174	204
20:45	475	131	149	171	205	277	125	143	175	205
21:00	475	132	150	171	207	283	126	144	176	206
21:15	478	132	150	172	207	286	127	145	176	207
21:30	482	132	151	173	208	286	126	144	177	208
21:45	485	132	152	175	210	288	127	144	177	211
22:00	487	133	152	175	211	288	127	145	178	210
22:15	488	133	153	175	212	293	128	146	178	212
22:30	492	134	153	176	214	296	129	147	180	213
22:45	495	133	154	178	214	296	129	147	179	213
23:00	494	133	154	180	214	297	130	149	180	214
23:15	497	134	155	181	214	298	131	149	181	216

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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	504	135	156	181	216	300	131	148	182	217
23:45	505	136	158	182	216	302	131	147	182	218
24:00	509	136	158	182	217	304	132	149	183	219
24:15	509	136	159	184	218	305	133	150	183	219
24:30	511	137	160	185	220	305	133	148	184	221
24:45	514	138	160	186	221	307	133	148	184	223
25:00	520	139	161	186	222	312	133	148	185	224
25:15	521	138	162	188	224	310	134	150	186	224
25:30	529	139	163	190	224	314	134	151	187	225
25:45	530	139	163	190	226	314	135	151	188	226
26:00	535	140	163	191	228	317	135	152	189	229
26:15	540	140	163	191	229	321	135	151	189	229
26:30	544	141	164	192	230	324	135	153	190	232
26:45	550	141	165	193	230	326	136	153	191	232
27:00	564	142	166	193	230	336	136	152	192	232
27:15	572	142	165	195	232	330	137	155	193	234
27:30	577	142	166	196	234	333	137	155	193	237
27:45	579	143	166	197	236	335	138	156	194	238
28:00	577	144	167	198	236	335	138	157	195	240
28:15	577	144	168	198	238	336	139	156	195	241
28:30	579	144	167	199	238	340	138	154	196	242
28:45	587	144	166	201	240	341	138	152	194	243
29:00	599	144	167	201	241	345	138	152	195	243
29:15	599	145	168	202	241	345	138	154	196	244
29:30	603	146	167	203	243	351	139	153	196	246
29:45	611	146	168	203	243	351	139	153	197	247
30:00	613	146	168	204	244	351	139	153	197	248

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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
00:00	80	94	83	92	105	90	86	87	83	77
00:15	87	1061	914	973	949	669	616	652	608	77
00:30	98	1208	1060	1187	1085	875	901	975	886	77
00:45	96	1194	1064	1132	1047	913	940	1024	923	77
01:00	97	1241	1080	1128	1074	935	976	1051	961	77
01:15	98	1242	1095	1138	1100	947	1007	1081	978	77
01:30	98	1249	1112	1163	1105	973	1021	1084	991	77
01:45	99	1259	1167	1180	1127	992	1088	1237	1036	77
02:00	104	1267	1191	1187	1158	1012	1179	1331	1232	77
02:15	109	1273	1174	1219	1181	1025	1149	1245	1262	77
02:30	109	1247	1202	1204	1181	1032	1114	1191	1240	77
02:45	110	1257	1205	1220	1159	1049	1111	1193	1150	77
03:00	112	1317	1225	1240	1164	1067	1130	1195	1087	77
03:15	114	1325	1217	1258	1168	1075	1137	1205	1102	77
03:30	116	1332	1218	1250	1177	1082	1142	1203	1131	77
03:45	117	1298	1242	1264	1177	1095	1157	1201	1134	77
04:00	120	1295	1249	1293	1170	1101	1172	1220	1145	77
04:15	122	1302	1275	1292	1182	1116	1179	1246	1160	77
04:30	125	1321	1273	1263	1176	1114	1192	1224	1157	77
04:45	126	1336	1302	1295	1211	1133	1195	1260	1170	77
05:00	128	1374	1303	1312	1221	1136	1224	1278	1203	77
05:15	131	1353	1299	1305	1216	1142	1231	1311	1211	77
05:30	137	1410	1305	1326	1272	1143	1254	1275	1189	77
05:45	142	1507	1327	1355	1323	1189	1281	1288	1249	77
06:00	144	1408	1338	1350	1310	1186	1274	1321	1247	77
06:15	148	1400	1331	1362	1313	1190	1274	1275	1240	78
06:30	152	1399	1359	1381	1283	1200	1277	1309	1241	78
06:45	154	1396	1346	1357	1294	1189	1269	1304	1249	78
07:00	157	1407	1353	1360	1286	1199	1271	1317	1252	78
07:15	161	1419	1368	1380	1269	1205	1284	1315	1244	78
07:30	162	1423	1331	1365	1282	1205	1284	1286	1247	78
07:45	167	1394	1342	1376	1290	1209	1268	1299	1256	78
08:00	168	1404	1353	1356	1293	1201	1276	1292	1243	78
08:15	171	1384	1368	1381	1291	1215	1288	1332	1256	78
08:30	175	1375	1379	1401	1275	1221	1295	1327	1251	78
08:45	180	1405	1363	1384	1268	1220	1286	1366	1260	78
09:00	182	1411	1384	1401	1276	1225	1289	1319	1255	78
09:15	183	1410	1349	1412	1279	1229	1304	1292	1253	78
09:30	187	1393	1372	1398	1280	1232	1301	1333	1273	78
09:45	188	1421	1360	1405	1319	1230	1293	1309	1272	78
10:00	190	1421	1377	1399	1299	1229	1302	1325	1261	78
10:15	196	1501	1424	1448	1324	1259	1360	1362	1291	78
10:30	201	1551	1502	1503	1410	1303	1397	1408	1354	78
10:45	203	1559	1491	1498	1446	1305	1396	1427	1391	78
11:00	207	1567	1544	1559	1422	1339	1453	1477	1395	78
11:15	210	1579	1509	1533	1424	1330	1437	1476	1421	78
11:30	215	1590	1563	1552	1419	1349	1480	1460	1411	78

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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
11:45	226	1590	1542	1560	1436	1364	1454	1476	1432	79
12:00	233	1603	1573	1567	1420	1376	1484	1483	1431	79
12:15	238	1608	1579	1598	1416	1380	1495	1504	1442	79
12:30	241	1645	1566	1594	1429	1375	1507	1500	1448	79
12:45	249	1642	1558	1627	1430	1410	1507	1510	1438	79
13:00	251	1667	1545	1603	1448	1390	1521	1507	1442	79
13:15	256	1654	1595	1607	1426	1407	1531	1513	1489	79
13:30	260	1652	1590	1599	1419	1405	1551	1559	1473	79
13:45	262	1650	1579	1608	1437	1407	1557	1552	1470	79
14:00	267	1670	1566	1589	1460	1398	1560	1544	1478	79
14:15	271	1677	1555	1594	1467	1391	1566	1559	1477	79
14:30	274	1688	1569	1584	1471	1388	1571	1586	1497	80
14:45	280	1663	1584	1585	1483	1396	1570	1537	1511	80
15:00	281	1648	1562	1592	1488	1392	1535	1517	1496	80
15:15	284	1675	1566	1584	1492	1395	1546	1565	1512	80
15:30	286	1676	1583	1607	1480	1402	1568	1542	1501	80
15:45	284	1694	1572	1580	1495	1392	1579	1536	1503	80
16:00	286	1654	1615	1639	1454	1430	1583	1568	1520	80
16:15	290	1663	1592	1625	1465	1410	1590	1555	1518	80
16:30	299	1664	1577	1597	1508	1408	1532	1557	1528	80
16:45	299	1645	1559	1590	1522	1409	1542	1537	1527	80
17:00	299	1634	1557	1595	1518	1404	1509	1531	1520	81
17:15	305	1643	1581	1588	1522	1403	1543	1551	1528	81
17:30	302	1645	1582	1589	1521	1407	1539	1553	1535	81
17:45	306	1636	1585	1601	1504	1416	1547	1551	1538	81
18:00	307	1633	1594	1581	1515	1408	1545	1546	1530	81
18:15	312	1634	1610	1579	1537	1412	1537	1576	1549	81
18:30	313	1642	1606	1601	1523	1422	1543	1561	1558	81
18:45	314	1647	1621	1609	1509	1420	1554	1548	1535	81
19:00	303	1646	1613	1613	1498	1421	1557	1544	1538	81
19:15	298	1657	1604	1599	1518	1418	1608	1548	1533	81
19:30	300	1639	1623	1606	1525	1426	1594	1559	1548	81
19:45	302	1661	1587	1606	1522	1430	1619	1592	1542	82
20:00	304	1662	1609	1592	1517	1420	1615	1556	1557	82
20:15	308	1633	1595	1607	1526	1429	1615	1553	1560	82
20:30	307	1656	1613	1619	1535	1433	1552	1562	1555	82
20:45	308	1662	1614	1647	1490	1447	1587	1584	1552	82
21:00	308	1676	1607	1642	1494	1452	1617	1600	1550	83
21:15	308	1660	1643	1642	1486	1464	1605	1583	1550	83
21:30	310	1663	1609	1660	1489	1466	1592	1613	1550	83
21:45	306	1695	1650	1656	1486	1467	1606	1599	1551	83
22:00	310	1677	1615	1661	1484	1466	1631	1621	1553	83
22:15	310	1702	1617	1666	1495	1469	1604	1578	1562	83
22:30	310	1702	1644	1662	1502	1473	1599	1569	1554	83
22:45	310	1689	1647	1664	1519	1472	1602	1600	1554	83
23:00	311	1669	1650	1669	1500	1480	1629	1623	1574	83
23:15	315	1680	1643	1670	1508	1477	1603	1583	1571	83

TEST REPORT FOR THESIZE SURFACES S.L.

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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
23:30	317	1675	1638	1655	1526	1474	1591	1581	1569	83
23:45	318	1685	1648	1672	1502	1486	1606	1588	1574	83
24:00	319	1671	1665	1666	1518	1480	1584	1590	1584	84
24:15	318	1708	1637	1674	1518	1482	1598	1597	1574	84
24:30	321	1691	1632	1669	1513	1477	1612	1577	1558	84
24:45	321	1671	1640	1677	1504	1483	1627	1600	1576	84
25:00	322	1666	1640	1652	1516	1476	1609	1581	1587	84
25:15	323	1673	1681	1705	1532	1512	1655	1595	1600	85
25:30	328	1715	1710	1690	1545	1514	1688	1625	1618	85
25:45	329	1701	1687	1695	1561	1519	1684	1637	1635	85
26:00	331	1703	1711	1708	1571	1526	1693	1651	1628	85
26:15	333	1733	1718	1706	1563	1534	1743	1636	1623	85
26:30	336	1740	1711	1702	1559	1528	1772	1652	1644	85
26:45	335	1738	1734	1701	1564	1528	1692	1646	1659	85
27:00	339	1722	1710	1710	1579	1540	1691	1648	1642	85
27:15	341	1734	1712	1717	1578	1536	1709	1644	1653	86
27:30	341	1746	1711	1709	1581	1535	1690	1655	1648	86
27:45	339	1738	1717	1717	1584	1544	1700	1642	1647	86
28:00	344	1762	1698	1699	1578	1540	1744	1647	1654	86
28:15	345	1729	1709	1721	1581	1543	1735	1664	1653	86
28:30	344	1743	1726	1718	1591	1543	1720	1661	1658	86
28:45	345	1741	1713	1714	1572	1547	1697	1668	1652	86
29:00	345	1744	1724	1715	1577	1549	1699	1681	1670	87
29:15	346	1743	1748	1712	1578	1549	1685	1666	1668	87
29:30	347	1748	1708	1733	1599	1560	1654	1665	1657	87
29:45	351	1744	1731	1723	1600	1556	1650	1661	1659	87
30:00	348	1683	1648	1653	1574	1530	1594	1621	1615	87

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TIME (Min:Sec)	T/C 50	T/C 51	T/C 52	T/C 53	T/C 54
00:00	76	77	78	77	77
00:15	76	77	78	77	77
00:30	76	77	78	77	77
00:45	76	77	78	77	77
01:00	76	77	78	77	77
01:15	76	77	78	77	77
01:30	76	77	78	77	77
01:45	76	77	78	77	77
02:00	76	77	78	77	77
02:15	77	77	78	77	77
02:30	77	77	78	77	77
02:45	77	77	78	77	77
03:00	77	77	78	77	77
03:15	77	77	78	77	77
03:30	77	77	78	77	77
03:45	77	77	78	77	77
04:00	77	77	78	77	77
04:15	77	77	78	78	77
04:30	77	77	78	78	77
04:45	77	77	78	78	77
05:00	77	77	78	78	77
05:15	77	77	78	78	77
05:30	77	77	78	78	77
05:45	77	77	78	78	77
06:00	77	77	78	78	77
06:15	77	77	78	78	78
06:30	77	78	78	78	78
06:45	77	78	78	78	78
07:00	77	78	78	78	78
07:15	77	78	78	78	78
07:30	77	78	79	78	78
07:45	77	78	79	79	78
08:00	77	78	79	79	78
08:15	78	78	79	79	78
08:30	78	78	79	79	78
08:45	78	78	79	79	78
09:00	78	78	79	79	79
09:15	78	78	79	79	79
09:30	78	78	79	79	79
09:45	78	78	79	79	79
10:00	78	78	79	79	79
10:15	78	79	79	80	79
10:30	78	79	79	80	79
10:45	78	79	79	80	79
11:00	78	79	79	80	79
11:15	79	79	79	80	80
11:30	79	79	79	80	80

TEST REPORT FOR THESIZE SURFACES S.L.

Report No.: G9194.01-121-24-R0

Date: 08/31/17

TIME (Min:Sec)	T/C 50	T/C 51	T/C 52	T/C 53	T/C 54
11:45	79	79	79	80	80
12:00	79	79	79	80	80
12:15	79	79	79	80	80
12:30	79	80	79	81	80
12:45	79	80	79	81	80
13:00	79	80	79	81	80
13:15	80	80	79	81	81
13:30	80	80	79	81	81
13:45	80	80	79	81	81
14:00	80	80	79	82	81
14:15	80	80	79	82	81
14:30	80	80	79	82	81
14:45	81	80	79	82	82
15:00	81	80	79	82	82
15:15	81	81	79	83	82
15:30	81	81	79	83	82
15:45	81	81	79	83	82
16:00	81	81	79	83	83
16:15	82	81	79	83	83
16:30	82	82	79	84	83
16:45	82	82	79	84	83
17:00	82	82	79	84	83
17:15	82	82	79	84	83
17:30	82	82	79	84	83
17:45	82	82	79	84	84
18:00	83	83	79	84	84
18:15	83	83	79	84	84
18:30	83	83	79	84	84
18:45	83	83	79	85	84
19:00	83	83	79	85	84
19:15	83	83	79	85	84
19:30	83	83	79	85	84
19:45	84	83	79	86	85
20:00	84	83	79	86	85
20:15	84	83	79	86	84
20:30	84	84	79	86	85
20:45	85	84	79	87	85
21:00	85	84	79	87	85
21:15	85	84	79	87	85
21:30	85	84	79	87	85
21:45	85	84	80	87	85
22:00	86	84	80	87	86
22:15	86	85	80	87	86
22:30	86	85	80	87	86
22:45	86	85	80	88	86
23:00	86	85	80	88	86
23:15	86	85	80	88	86

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Date: 08/31/17

TIME (Min:Sec)	T/C 50	T/C 51	T/C 52	T/C 53	T/C 54
23:30	86	86	80	88	87
23:45	87	86	80	88	87
24:00	87	86	80	88	87
24:15	87	86	80	89	87
24:30	87	87	80	89	87
24:45	88	87	80	89	87
25:00	88	87	80	89	87
25:15	88	87	80	89	87
25:30	88	87	80	90	87
25:45	88	88	80	90	88
26:00	89	88	80	90	88
26:15	88	88	80	90	88
26:30	89	88	80	90	89
26:45	89	88	80	90	89
27:00	89	88	80	91	89
27:15	89	89	80	91	89
27:30	89	89	80	91	89
27:45	90	90	80	91	89
28:00	90	89	80	91	89
28:15	90	89	80	91	89
28:30	90	90	80	91	90
28:45	90	91	80	92	90
29:00	91	89	80	92	90
29:15	91	90	80	92	90
29:30	91	91	80	92	90
29:45	91	90	80	93	90
30:00	91	90	80	93	90



Total Quality. Assured.

130 Derry Court
York, Pennsylvania 17406

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www.intertek.com/building

TEST REPORT FOR THESIZE SURFACES S.L.

Report No.: G9194.01-121-24-R0

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SECTION 14

DRAWINGS

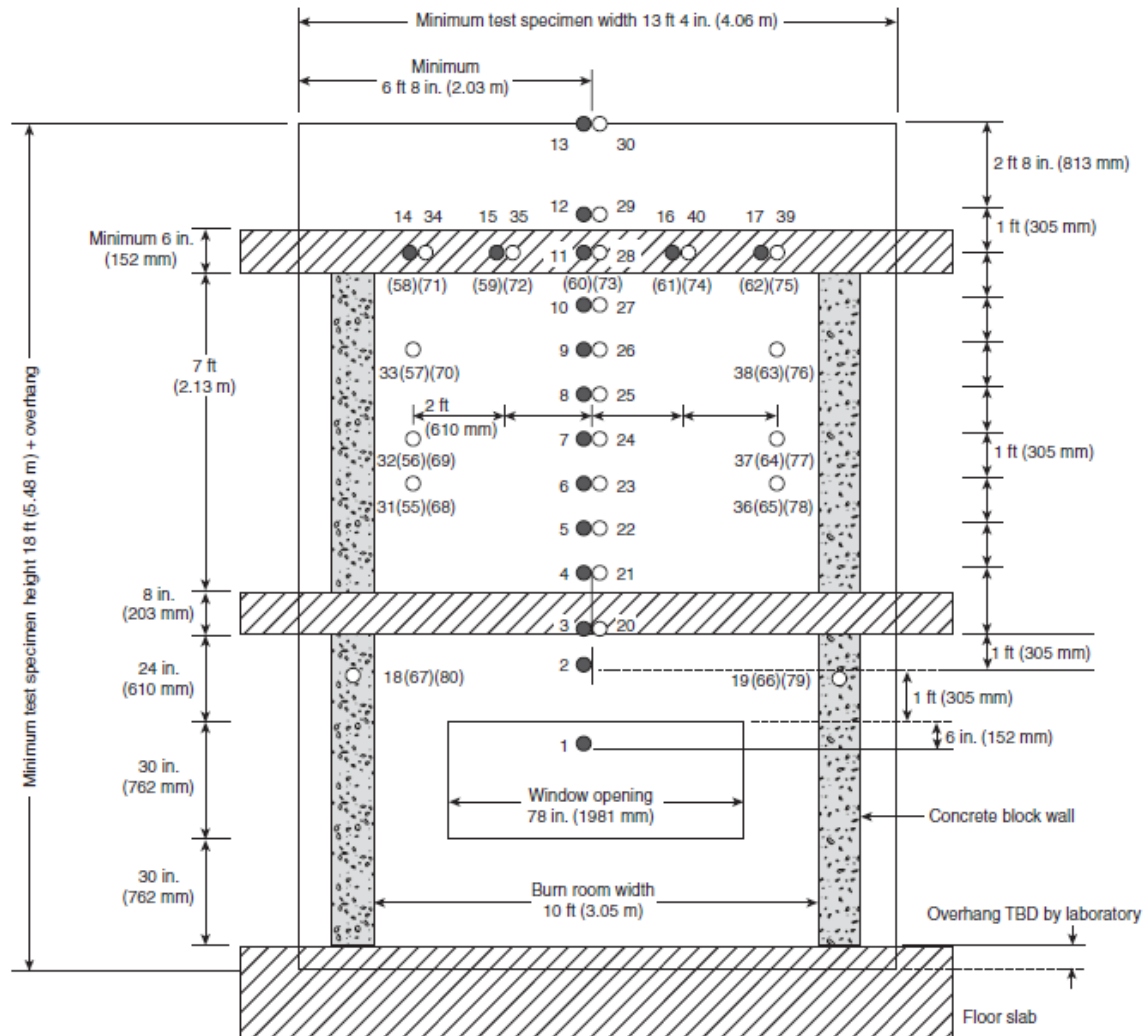
The test specimen drawings which follow have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

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Standard TC Locations



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

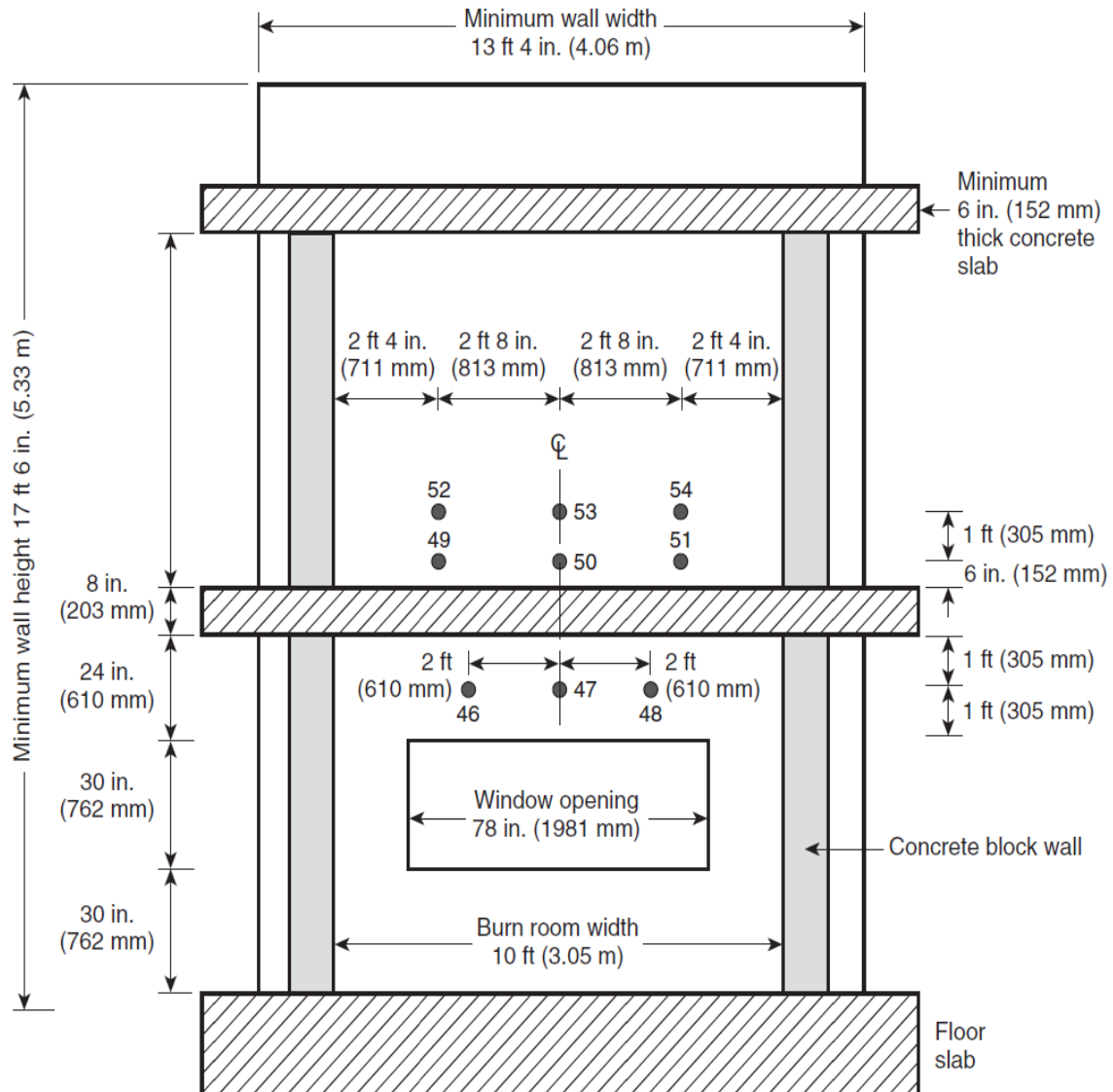
○ Thermocouples — In the wall cavity air space or the insulation, or both, as shown in Figure 6.1(b) Details A through I.

() 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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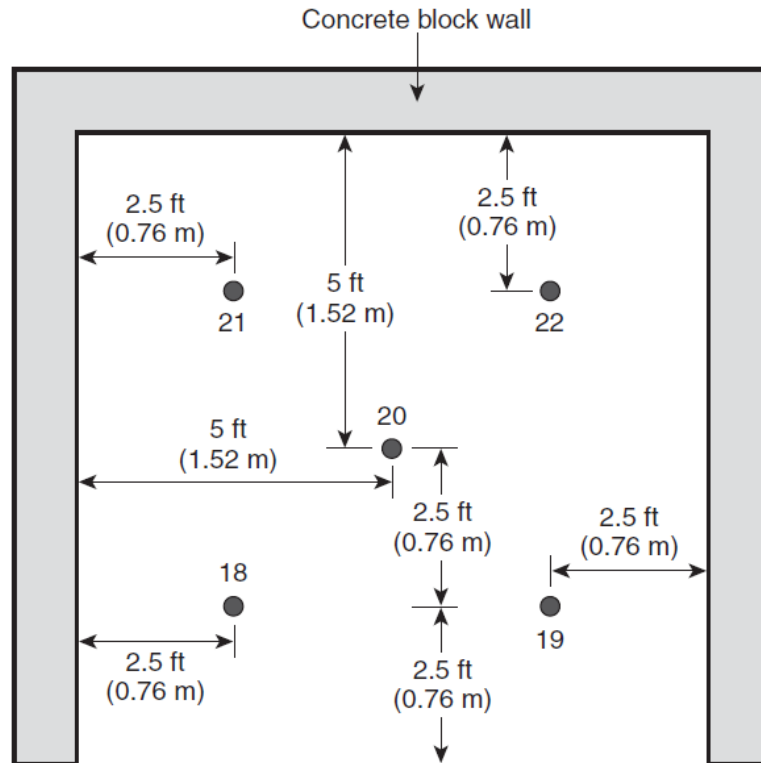


● Thermocouples — 1 in. (25 mm) from interior wall surface

TEST REPORT FOR THE SIZE SURFACES S.L.

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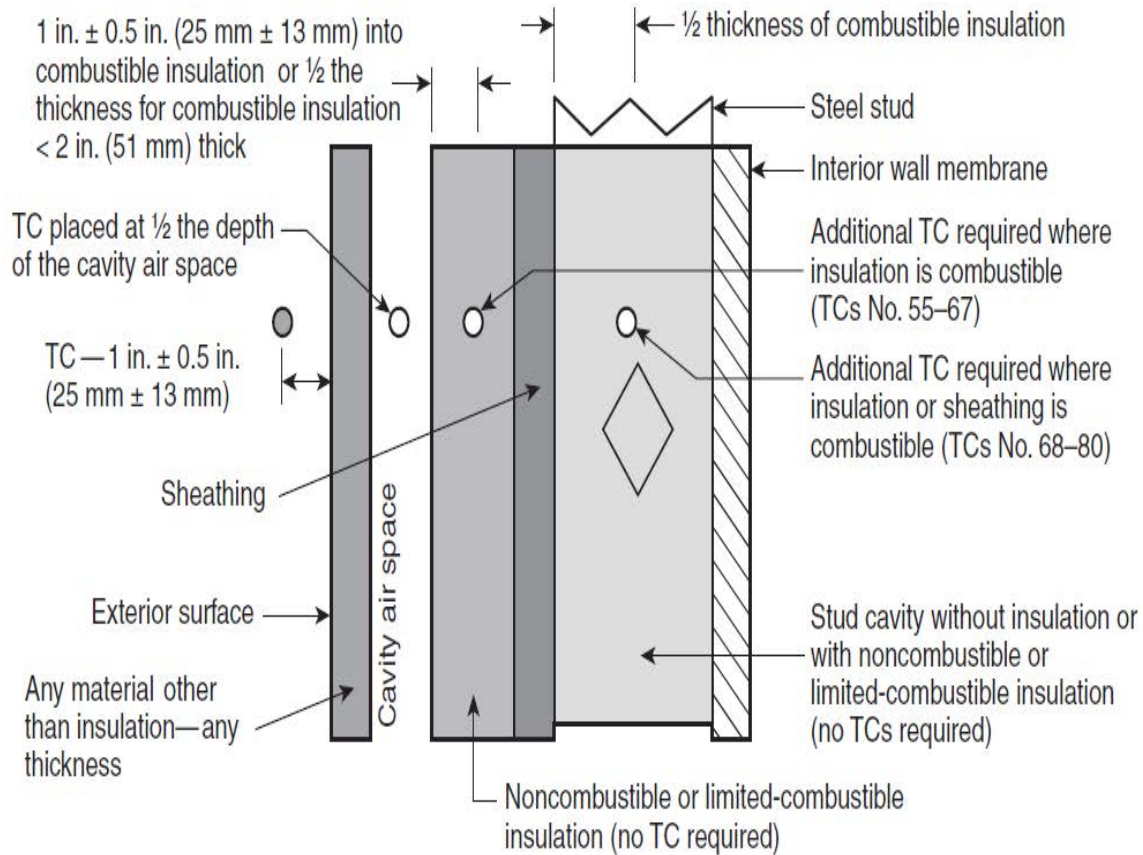


- Thermocouples (5) inside burn room 6 in. (152 mm) below ceiling

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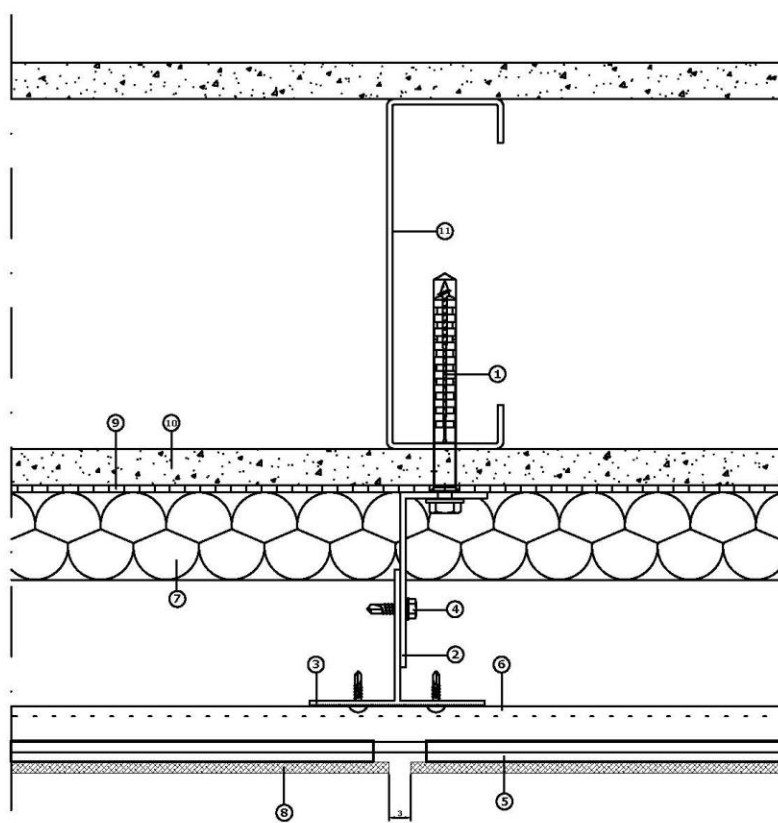


TEST REPORT FOR THESIZE SURFACES S.L.

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Horizontal section



- 1 Screw MTA 10x90 inox A2
- 2 Aluminum bracket 80x40x120x3
- 3 Vertical aluminum profile T 110x50x2
- 4 Screw DIN 7504-K 6.3x25 inox A 2
- 5 Fixing Profile
- 6 Horizontal aluminum profile
- 7 Insulation
- 8 Neolith
- 9 Moisture barrier
- 10 Gypsum wallboard
- 11 Metal studs

NEOLITH by The Size

P.I. Canal Fondo, Sopol 8, C/ Dela Ibers 31
12550 Almorosa, (Castellón) SPAIN
T. +34673 426 684

PROJECT: Strongfix System Details

scale:
4" = 1'-0"

TITLE: Horizontal section detail

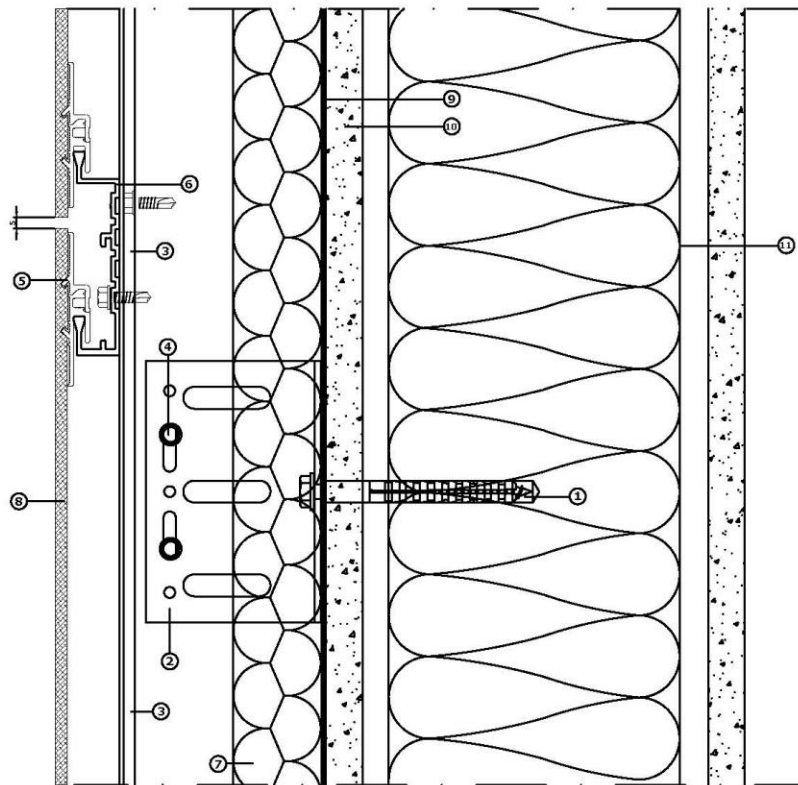
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TEST REPORT FOR THESIZE SURFACES S.L.

Report No.: G9194.01-121-24-R0

Date: 08/31/17

Vertical section



- 1 Screw MTA 10x90 inox A2
- 2 Aluminum bracket 80x40x120x3
- 3 Vertical aluminum profile T 110x50x2
- 4 Screw DIN 7504-K 6.3x25 inox A 2
- 5 Fixing Profile
- 6 Horizontal aluminum profile
- 7 Insulation
- 8 Neolith
- 9 Moisture barrier
- 10 Gypsum wallboard
- 11 Insulation at thermal bridges

NEOLITH by The Size

P.J. Camí Fondo, Supol 8, C/ Dels Ibers 31
12550 Almassora, (Castellón) SPAIN
T. +34873 428 684

PROJECT: Strongfix System Details

scale:
4" = 1'-0"

TITLE: Vertical section detail

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Total Quality. Assured.

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SECTION 10

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	08/31/17	N/A	Original Report Issue