

ENERGEX WALL SYSTEMS FIRE TEST REPORT

SCOPE OF WORK

NFPA 285 TESTING ON EXTERIOR NON-LOAD-BEARING WALL ASSEMBLY CONTAINING Exterior Insulation Finishing System (EFIS) Roll on Membrane

REPORT NUMBER

H1637.01-121-24-R0

TEST DATE(S)

07/18/17

ISSUE DATE

09/14/17

RECORD RETENTION END DATE

07/18/21

PAGES

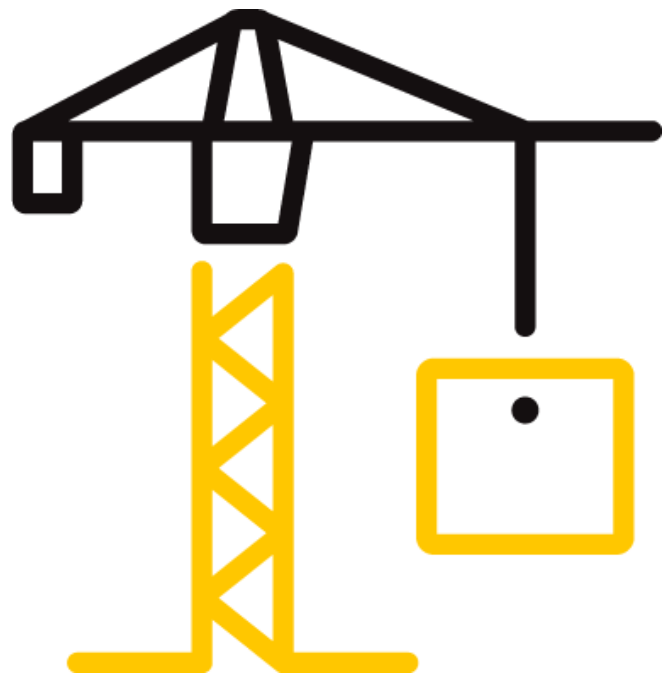
50

DOCUMENT CONTROL NUMBER

ATI 00587 (07/24/17)

RT-R-AMER-Test-2781

© 2017 INTERTEK



TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

REPORT ISSUED TO

Energex Wall Systems
2960 Woodbridge Avenue
Edison, New Jersey 08837

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Energex Wall Systems, 2960 Woodbridge Avenue Edison, New Jersey 08837 to evaluate the flame propagation characteristics of an exterior, non-load-bearing wall assembly containing EIFS Roll on Membrane. 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: Exterior Insulation Finishing System (EIFS) Roll on Membrane

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
TITLE:	Senior Technician – Fire Testing
SIGNATURE:	
DATE:	09/14/17

REVIEWED BY:	Ethan Grove
TITLE:	Manager – Fire Testing
SIGNATURE:	
DATE:	09/14/17

SDG:ddr

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample(s) tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

SECTION 3

TEST METHOD

The assembly was evaluated in accordance with the following:

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

SECTION 4

MATERIAL SOURCE/INSTALLATION

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

SECTION 5

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Ed Frobosilo	Energex Wall Systems
Scott Gingrich	Intertek B&C
Tim Feltman	Intertek B&C
Mark Dluzeski	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 07/18/2017 in accordance with NFPA 285 test method. Ambient conditions were 76°F and 74% 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 08:23 AM with the burners on for 30 minutes. All observations are recorded in the table located in Section 8.

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

SECTION 6 (Continued)

TEST PROCEDURE

The apparatus is considered to be under calibrated conditions when the time average temperatures and the time average heat flux readings obtained for a calibration wall match the requirements of Table 8.1.6 of NFPA 285. Calibration was performed on February 15, 2017 with natural gas as the fuel source and the window burner placed 3 inches from the exterior surface of the assembly. Table 6.1 of this section shows the average burner flow and heat flux. Table 6.2 shows the time average temperatures obtained during the calibration test.

Table 6.1 Average Burner Output Information

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

Table 6.2 Average Time Temperature Values for Calibration

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

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

SECTION 7**TEST ASSEMBLY DESCRIPTION****Interior Cladding**

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

Framing

The core wall was consisted of 18 ft. long, 3-5/8 in. deep, 20 gauge galvanized steel studs fastened to 14 ft. length, 3-5/8 in. deep, 20 gauge galvanized steel track every 16 inches on center. The studs were connected to the track with one #6 x 1/2 in. long self-drilling, pan head fastener per stud flange. Two additional 18 ft. long, 3-5/8 in. deep, 20 gauge studs were used as king studs for the window opening jambs. Johns Manville MinWool® Safing pieces with a nominal density of 4.0 lb./cu. ft. were installed per the manufacturer's installation instructions to fit into each stud cavity placed at the second story floor line. The safing length dimensions were no less than the apparatus floor slab thickness of 8 in.

Exterior Sheathing

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

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

SECTION 7 (Continued)**TEST ASSEMBLY DESCRIPTION****Water-resistive Barrier**

The exterior gypsum joints were treated with Energex® Wall Systems Enershield Joint treatment and Self-Adhering Fiberglass Mesh. This treatment began with the 4 in. wide self-adhering fiberglass mesh and then the Energex Enershield joint treatment was applied at 30 wet mils. The coat covered the 4 in wide mesh and was trowel applied. The treatment was allowed to dry. The Energex® Wall Systems Enershield acrylic copolymer was then roller applied to the exterior gypsum surface. This was applied at a rate of one pale per 400 sq. ft. This was applied in two coats allowing each coat to dry to the touch.

Window Opening

A 78 in. wide x 30 in. tall window opening was made from 20 gauge galvanized steel track. The opening was centered on the vertical centerline of the wall assembly with the finished sill located 30 in. above the first story floor line. The steel track sections were mechanically fastened with #6 x 1/2 in. long self-drilling, pan head fasteners at each corner. Upon the completion of the exterior sheathing, the window opening was covered with the Enermix Dry Acrylic Dry Powder Adhesive & Base and Energex® Next Generation Course 1.5 finish coat.

Exterior Insulation

4 in. thick Energex expanded polystyrene (EPS) insulation panels were used in the EIFS application. 4 in. x 24 in. x 48 in. sections of insulation were oriented with the longest dimension running perpendicular to the steel studs. The insulation was adhered to the wall assembly using Energex® Enermix Dry Acrylic Dry Powder Adhesive & Base mixed with water to the proper consistency. This mixture was applied with a 2.5 in. notched trowel to the back surface of the EPS panels in a ribbon pattern 2 in. wide by 3/8 in. thick over the entire perimeter of the insulation board. Dabs of the mixture were applied to the sheathing approximately 8 per board 3/8 in. thick by 4 ft. in diameter and 8 in. on center. The insulation was applied to cover the exterior wall surface.

Exterior Cladding

After the insulation was applied the application of the exterior coating began. Enermix Dry Acrylic Dry Powder Adhesive & Base mixed with water and was mixed with a jiffy mixer for approximately 3 minutes and until homogenous and the proper consistency. This mixture was then trowelled on the insulation surface using a stainless steel trowel to a uniform thickness. Immediately following the base coat application, the Energex reinforced mesh was installed. The surface was smoothed with the trowel until the mesh was fully embedded. After this step the mesh was not visible. This coat was allowed to dry overnight. The next coat was Energex® Next Generation Course 1.5 finish coat white in color. This coat was trowel applied to a uniform thickness covering the previous coat.



Total Quality. Assured.

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

Exterior Cladding (continued)

The dry mix, mesh, and next generation coats were extended in to the window opening perimeter. This layer covered the window header, jabs and sill. The finished assembly was allowed to cure for 28 days before testing.

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

SECTION 8

TEST OBSERVATIONS

TIME (Min:Sec)	OBSERVATIONS
00:01	Ignition of room burner.
01:46	Interior gypsum ignition.
05:00	Ignition of window opening burner.
05:38	Wall surface sinks and chars.
11:56	Ignition at the window header.
14:11	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	Surface burning continues.
33:16	Window header falls out to the sill.
40:00	Post-test 10-minute observation period ends; test concluded.

SECTION 9

TEST RESULTS

TEST REQUIREMENTS	TEST RESULTS	PASS/FAIL
Flames did not reach 10 ft. above the window opening header.	Flames did not reach 10 ft. above the window opening header.	PASS
Flames did not reach a lateral distance of 5 ft. from the vertical centerline.	Flames did not reach a lateral distance of 5 ft. from the vertical centerline.	PASS
Flames did not propagate beyond the limits of the first story test room.	Flames did not propagate beyond the limits of the first story test room.	PASS
No visible flaming in the second story test room	No visible flaming in the second story test room.	PASS
TC's 11 and 14-17 (1000°F limit)	TC's 11 and 14-17 did not exceed their 1000°F limit.	PASS
TC's 18-19, 28, and 31-40 (750°F above ambient)	TC's 18-19, 28, and 31-40 did not exceed their 750°F above ambient limit.	PASS
TC's 49-54 (500°F above ambient)	TC's 49-54 did not exceed 500°F above their ambient temperatures. OR TC XX exceeded 500°F above its ambient temperature.	PASS

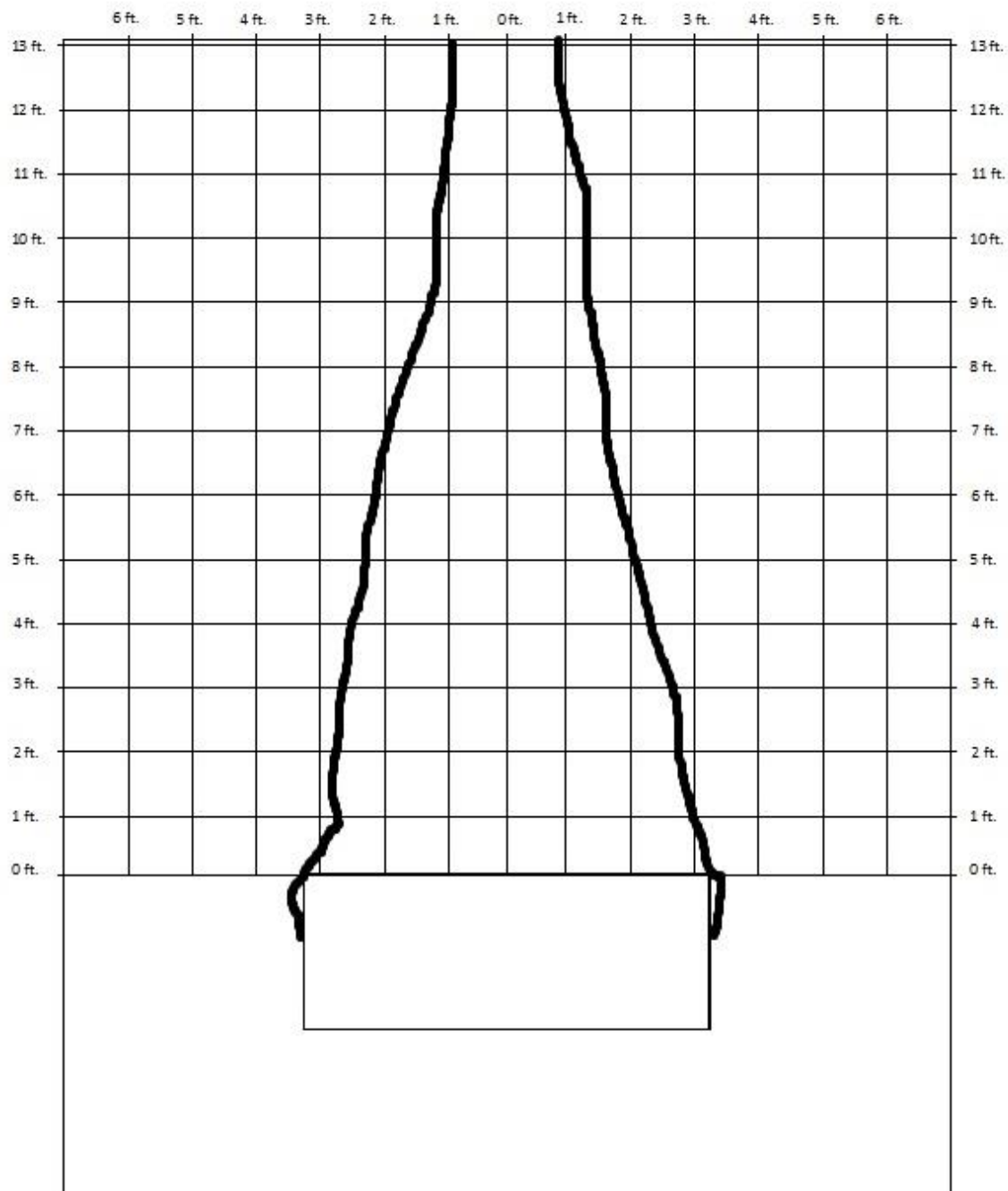
TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

SECTION 10

SKETCH OF EXTERIOR CLADDING BURN PATTERN



TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

SECTION 11

PHOTOGRAPHS

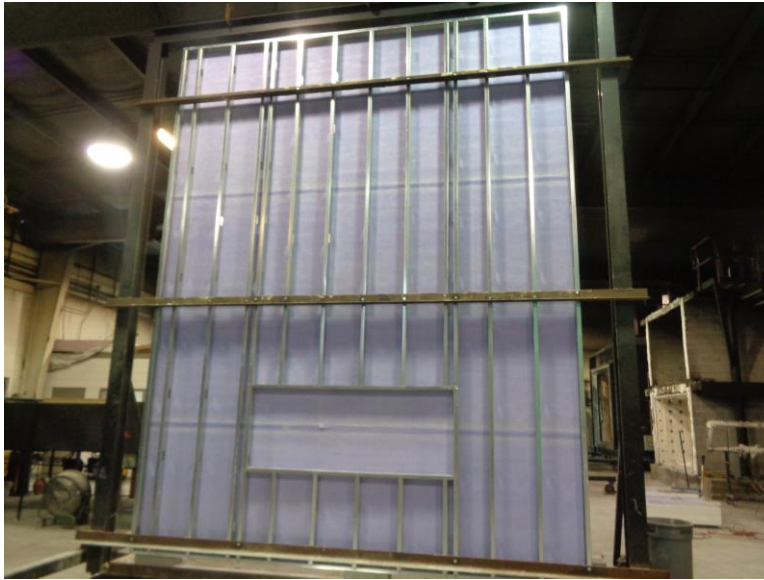


Photo No. 1
Core Wall Construction/Completion



Photo No. 2
Safing Installation

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Photo No. 3
Application of AWB

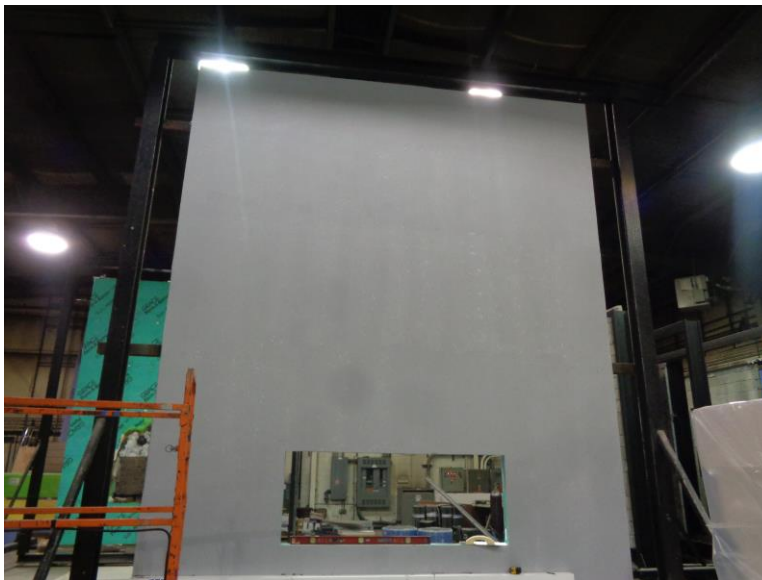


Photo No. 4
Completion of AWB

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Photo No. 5
Installation of Insulation



Photo No. 6
Completed Installation of Insulation

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Photo No. 7
Installation of Exterior Cladding



Photo No. 8
Completed installation of Exterior Cladding

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Photo No. 9
First Story Interior gypsum (Pre-Test)

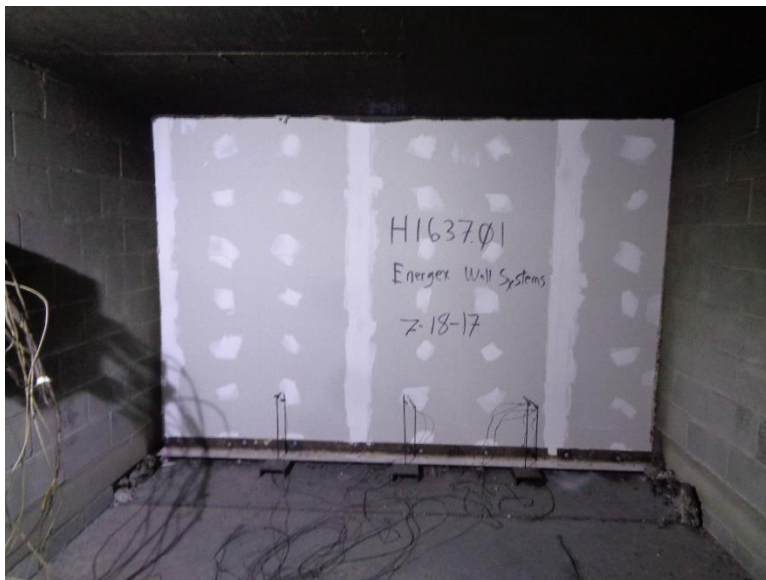


Photo No. 10
Second Story Interior gypsum (Pre-Test)

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Photo No. 11
Finished Assembly (Pre-Test)



Photo No. 12
Room Burner Ignition

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Photo No. 13
Window Burner Ignition



Photo No. 14
Surface Ignition

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Photo No. 15
Burners Extinguished



Photo No. 16
Assembly (Post-Test)

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Photo No. 17
First Floor Gypsum (Post-Test)

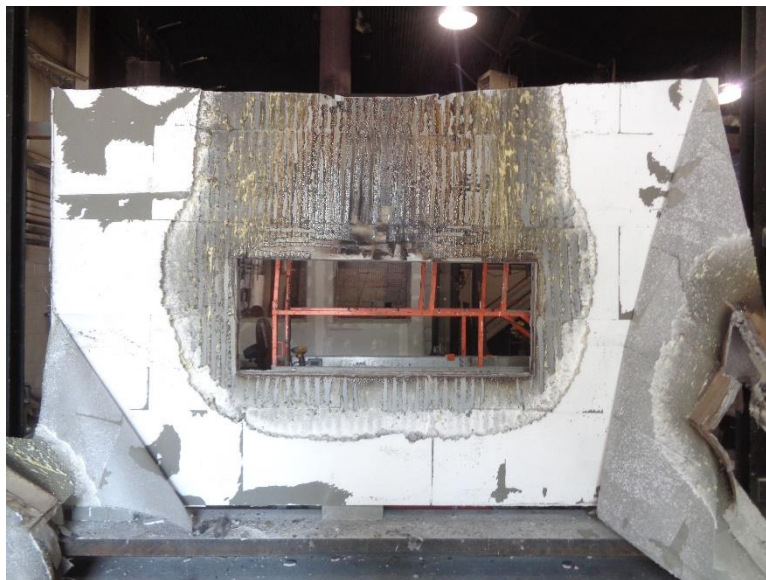


Photo No. 18
Exterior Cladding Removed (Post-Test)

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Photo No. 19
Exterior Cladding Removed (Post-Test)

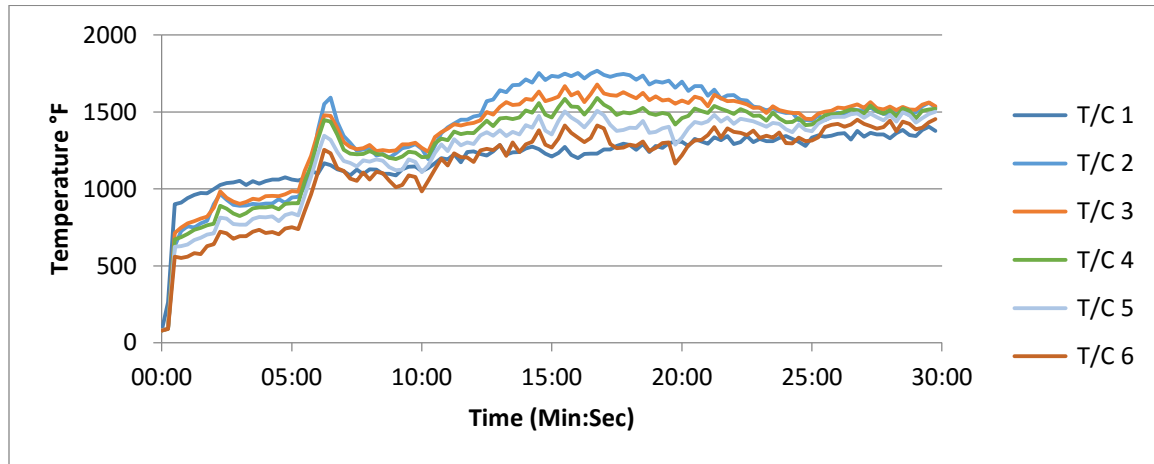
TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

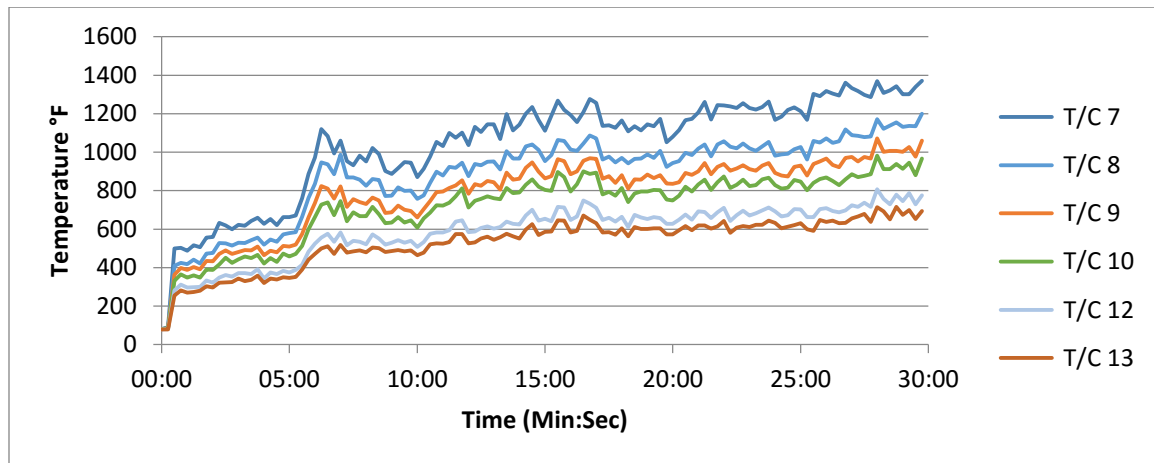
Date: 09/14/17

SECTION 12

GRAPHS



Graph No. 1
Assembly Centerline (Assembly Exterior)

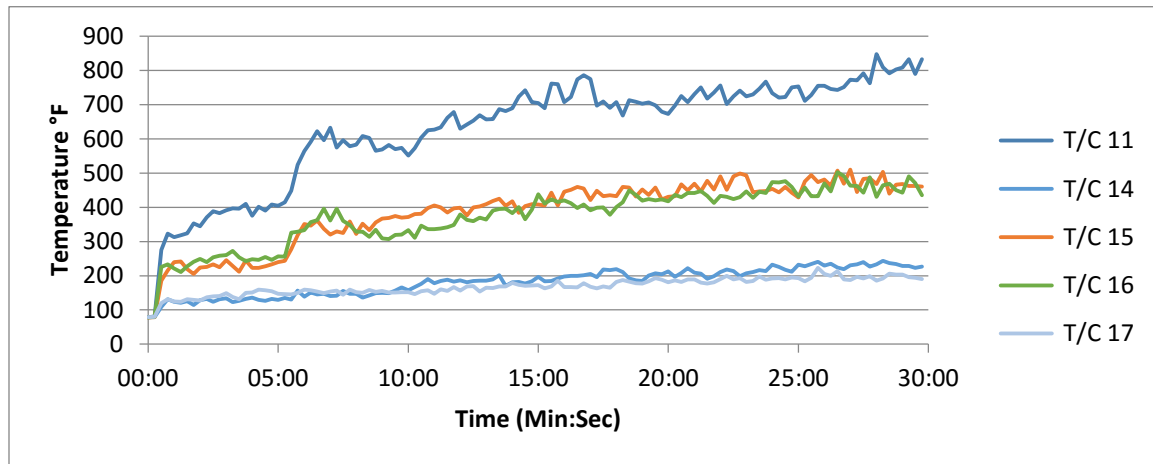


Graph No. 2
Assembly Centerline (Assembly Exterior)

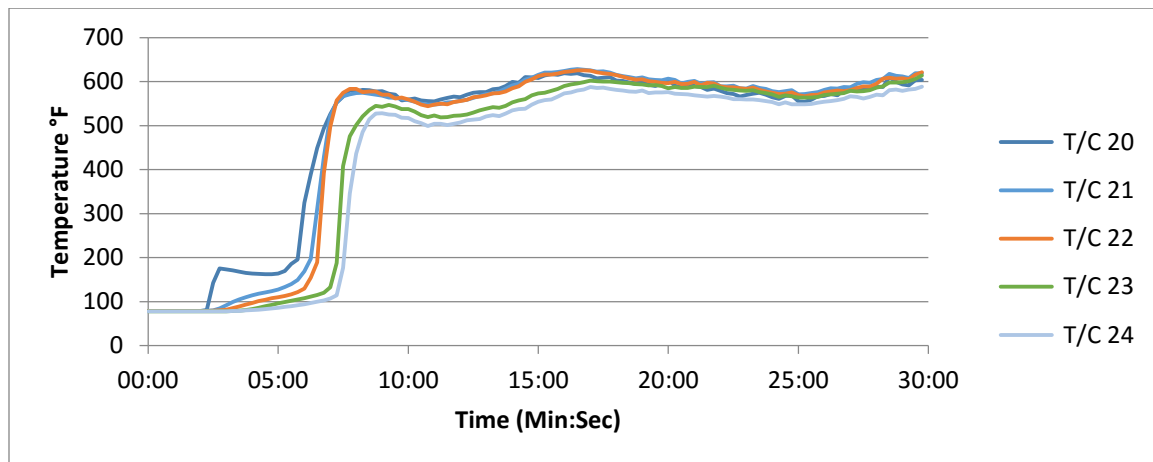
TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



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

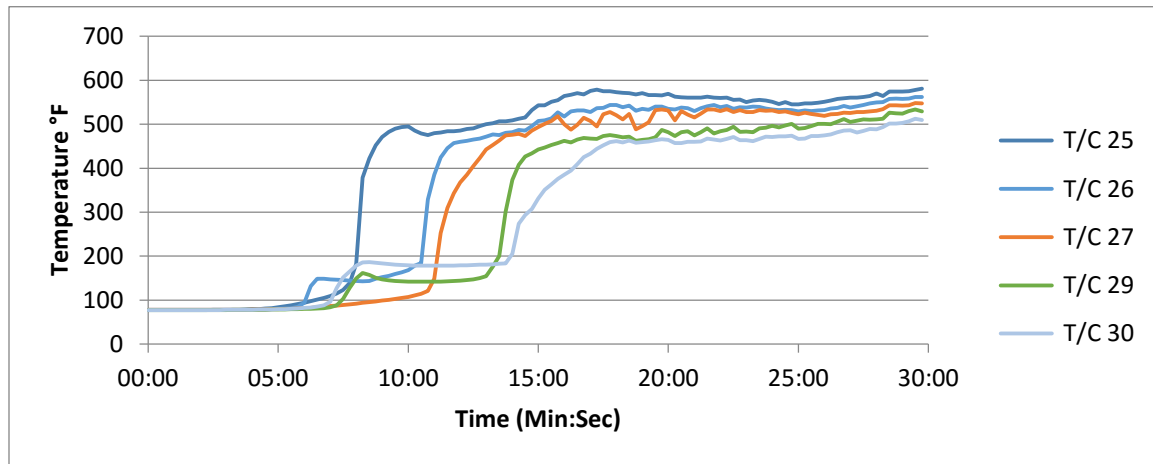


Graph No. 4
Assembly Centerline (Air Cavity Space)

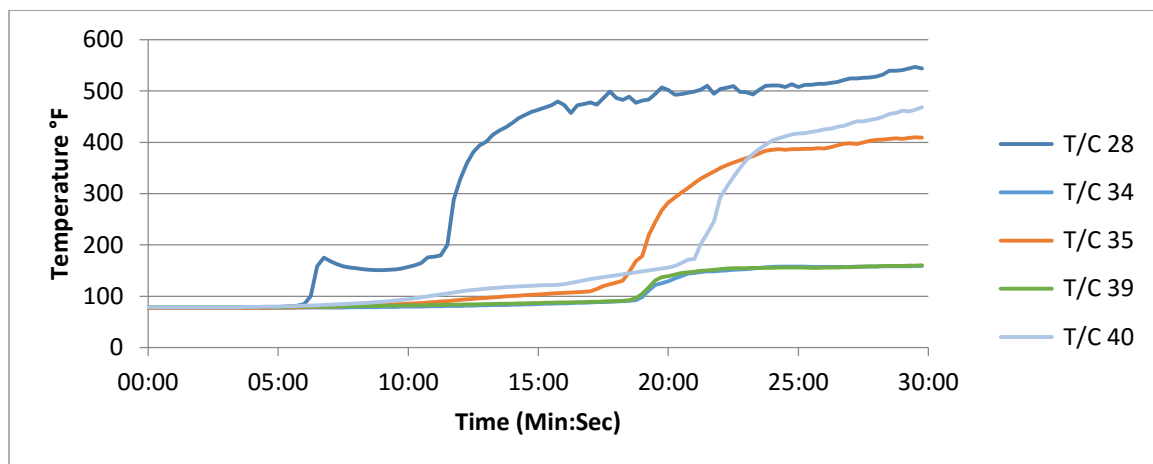
TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Graph No. 5
Assembly Centerline (Air Cavity Space)

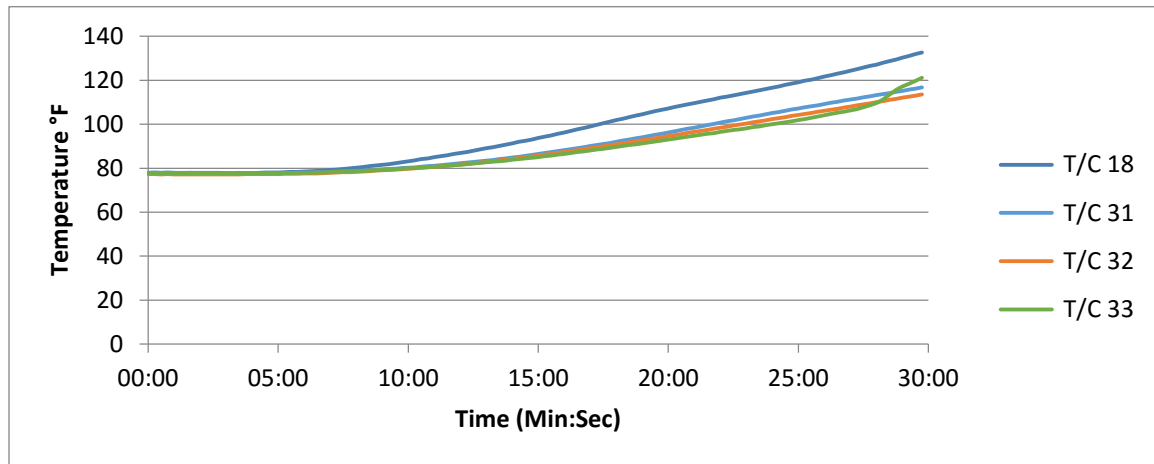


Graph No. 6
10 ft. above the Window Opening Header (Air Cavity Space)

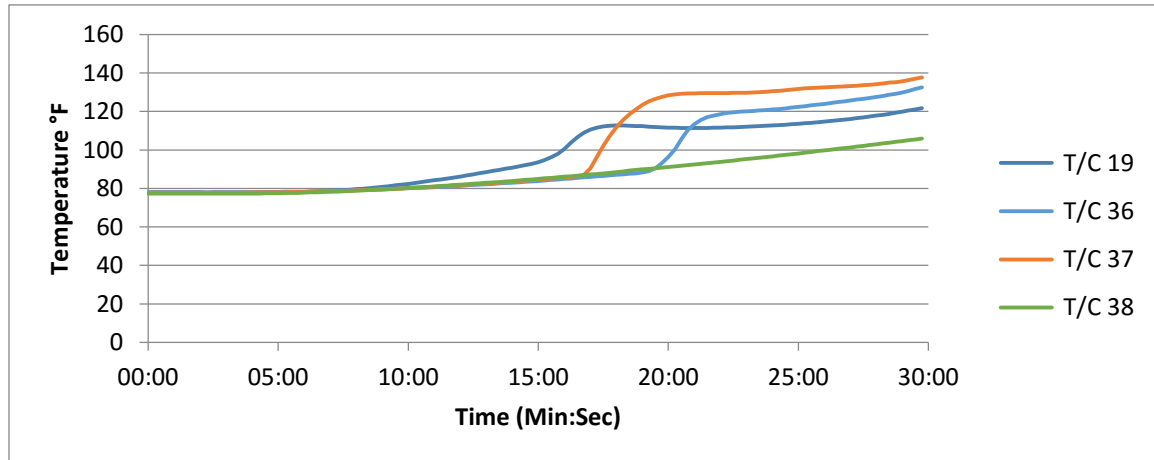
TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



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

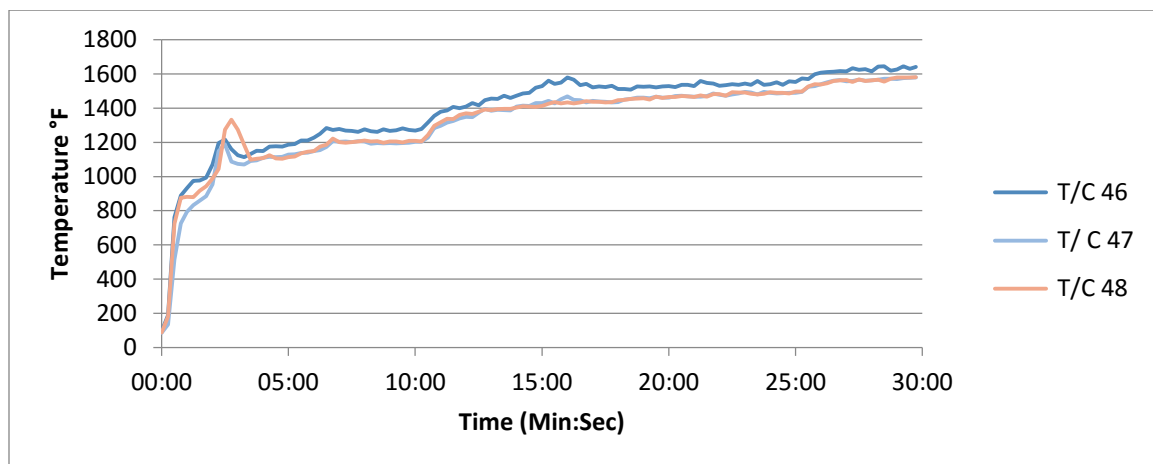
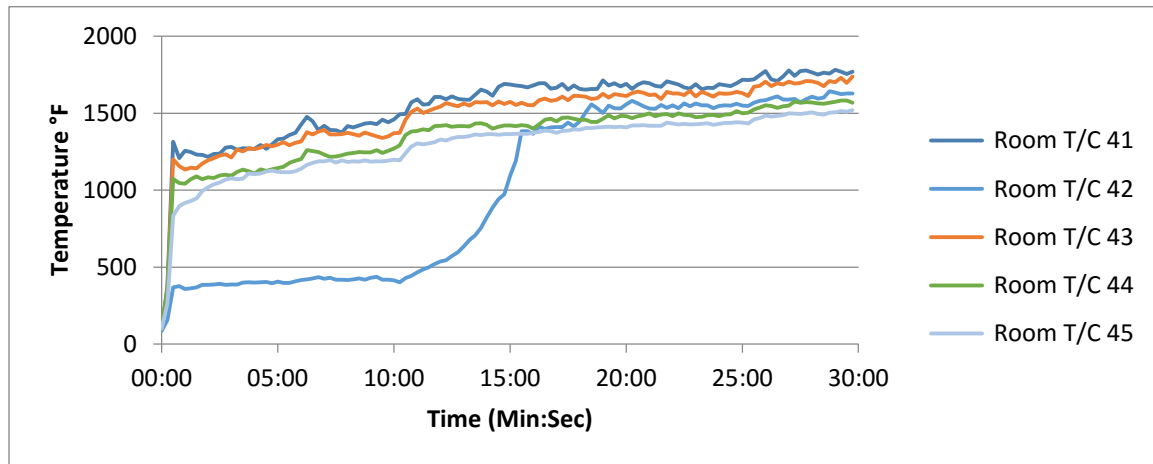


Graph No. 8
Right of Assembly Centerline (Air Cavity Space)

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

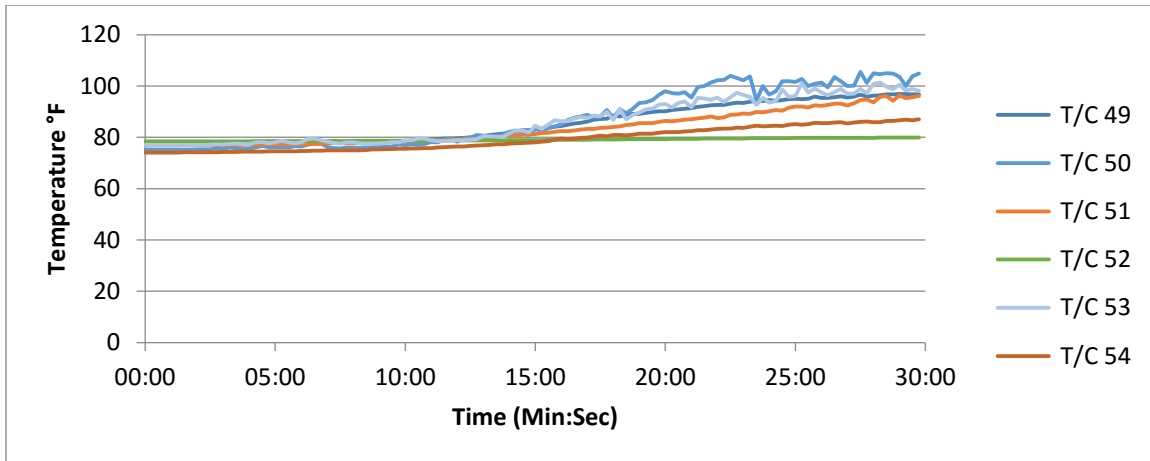
Date: 09/14/17



TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17



Graph No. 11
Second-story Interior Wall Surface

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

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	81	80	80	79	79	80	80	79
00:15	15.5	0.0	261	92	95	93	93	89	90	85	85
00:30	50.0	0.0	901	628	713	673	624	559	500	410	363
00:45	40.1	0.0	912	725	749	686	628	552	503	425	397
01:00	36.1	0.0	939	757	776	706	639	559	488	417	388
01:15	36.4	0.0	961	748	791	735	668	582	517	441	403
01:30	36.4	0.0	974	776	806	747	681	577	506	422	392
01:45	36.4	0.0	972	793	820	763	702	629	557	473	434
02:00	36.4	0.0	998	901	877	773	711	641	559	477	434
02:15	36.4	0.0	1026	966	983	891	813	722	633	528	471
02:30	36.4	0.0	1038	931	943	872	807	712	620	526	490
02:45	36.4	0.0	1041	896	917	840	772	677	599	514	471
03:00	36.4	0.0	1052	890	903	824	769	692	623	530	481
03:15	36.4	0.0	1025	893	916	841	768	693	618	528	491
03:30	36.4	0.0	1051	902	936	874	806	721	643	542	490
03:45	36.5	0.0	1033	899	929	879	818	734	659	557	509
04:00	36.4	0.0	1051	904	953	880	815	713	627	520	465
04:15	36.4	0.0	1060	905	956	886	822	720	652	546	487
04:30	36.4	0.0	1061	933	953	867	790	705	620	535	480
04:45	36.4	0.0	1074	910	965	902	830	742	663	572	512
05:00	36.4	0.0	1062	943	985	908	841	751	663	579	510
05:15	36.4	0.1	1055	949	982	907	828	739	670	584	519
05:30	36.5	1.3	1070	1016	1117	1047	956	855	760	664	574
05:45	36.4	4.4	1118	1094	1214	1153	1079	966	887	763	660
06:00	36.4	4.3	1097	1380	1361	1321	1226	1104	973	835	735
06:15	36.4	4.3	1166	1551	1478	1447	1346	1254	1119	947	823
06:30	36.4	4.4	1154	1593	1474	1436	1318	1230	1083	936	810
06:45	36.4	4.4	1127	1434	1396	1352	1239	1133	994	886	759
07:00	36.5	4.4	1114	1344	1304	1254	1181	1116	1059	986	822
07:15	36.5	4.4	1087	1299	1273	1229	1169	1067	953	868	715
07:30	36.4	4.4	1124	1247	1258	1224	1146	1053	933	869	755
07:45	36.5	4.4	1097	1256	1265	1228	1185	1106	982	858	740
08:00	36.5	4.4	1128	1264	1286	1245	1177	1061	952	825	730
08:15	36.4	4.4	1126	1216	1246	1228	1191	1112	1022	861	763
08:30	36.4	4.4	1097	1228	1252	1223	1183	1103	990	855	749
08:45	36.5	4.4	1098	1201	1245	1202	1142	1054	901	772	684
09:00	36.4	4.4	1089	1231	1249	1195	1122	1010	887	773	687
09:15	36.4	4.4	1127	1264	1288	1210	1126	1024	916	816	723
09:30	36.4	4.4	1145	1272	1288	1241	1191	1087	948	798	700
09:45	36.5	4.4	1147	1291	1300	1236	1174	1078	945	800	694
10:00	36.5	4.4	1114	1260	1266	1206	1108	984	870	756	661
10:15	36.5	4.4	1135	1193	1242	1208	1153	1052	913	775	704
10:30	41.0	4.9	1168	1281	1337	1296	1232	1127	977	841	746

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

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	44.9	5.6	1199	1363	1369	1327	1290	1195	1053	899	792
11:00	45.0	5.7	1192	1400	1391	1317	1245	1151	1031	879	796
11:15	44.9	5.8	1224	1424	1420	1373	1323	1232	1100	924	813
11:30	44.9	5.8	1173	1449	1412	1356	1284	1206	1075	919	827
11:45	44.9	5.8	1239	1449	1423	1364	1301	1205	1101	945	854
12:00	44.9	5.7	1244	1470	1428	1363	1292	1175	1036	875	784
12:15	44.9	5.7	1228	1478	1445	1404	1348	1249	1131	938	834
12:30	44.9	5.7	1216	1569	1499	1443	1369	1259	1105	932	825
12:45	44.9	5.7	1243	1581	1483	1408	1346	1253	1145	950	850
13:00	44.9	5.7	1286	1640	1532	1457	1380	1284	1145	952	843
13:15	44.9	5.7	1223	1629	1564	1463	1343	1214	1069	910	806
13:30	44.9	5.7	1237	1674	1546	1454	1370	1302	1198	1004	894
13:45	44.9	5.7	1239	1675	1550	1464	1354	1240	1113	966	857
14:00	44.9	5.7	1262	1712	1584	1509	1415	1290	1144	966	863
14:15	44.9	5.7	1275	1690	1579	1494	1397	1306	1200	1030	918
14:30	44.9	5.7	1258	1753	1632	1557	1474	1381	1234	1040	947
14:45	44.9	5.7	1230	1707	1571	1483	1379	1287	1166	1012	898
15:00	44.9	5.7	1209	1735	1582	1463	1353	1268	1111	954	863
15:15	44.9	5.8	1233	1728	1600	1530	1442	1327	1190	986	875
15:30	44.8	7.4	1272	1748	1667	1585	1504	1412	1268	1064	963
15:45	44.7	8.2	1221	1732	1608	1535	1465	1364	1220	1058	953
16:00	44.7	8.3	1200	1753	1628	1533	1438	1332	1192	1013	885
16:15	44.7	8.3	1226	1718	1564	1483	1400	1303	1156	1006	901
16:30	44.7	8.3	1228	1748	1617	1531	1447	1330	1208	1045	955
16:45	44.7	8.3	1229	1767	1678	1591	1507	1412	1277	1087	969
17:00	44.7	8.3	1256	1739	1621	1548	1478	1392	1256	1072	965
17:15	44.7	8.3	1256	1729	1609	1524	1417	1292	1136	962	862
17:30	44.7	8.3	1279	1741	1604	1481	1376	1263	1140	977	875
17:45	44.7	8.3	1295	1747	1628	1497	1383	1269	1126	947	841
18:00	44.7	8.3	1286	1739	1608	1490	1398	1287	1164	970	881
18:15	44.7	8.3	1254	1708	1589	1502	1396	1278	1108	942	810
18:30	44.7	8.3	1291	1736	1625	1526	1440	1308	1135	965	858
18:45	44.7	8.3	1240	1677	1577	1491	1364	1246	1114	967	857
19:00	44.7	8.3	1279	1699	1602	1480	1370	1266	1145	989	884
19:15	44.7	8.3	1266	1691	1575	1494	1394	1298	1135	970	865
19:30	44.7	8.3	1297	1703	1580	1484	1403	1302	1173	1007	881
19:45	44.7	8.3	1306	1657	1554	1418	1287	1165	1051	924	837
20:00	44.7	8.2	1306	1696	1575	1460	1332	1218	1080	944	835
20:15	44.7	8.3	1280	1636	1557	1475	1392	1284	1115	953	844
20:30	44.7	10.2	1326	1667	1599	1523	1435	1314	1166	996	893
20:45	44.7	11.4	1309	1667	1586	1505	1425	1318	1173	985	883
21:00	44.7	11.3	1293	1606	1537	1493	1440	1350	1206	1018	901
21:15	44.7	11.3	1334	1646	1611	1539	1480	1402	1260	1040	944
21:30	44.7	11.3	1316	1587	1588	1520	1438	1332	1169	979	886
21:45	44.7	11.3	1344	1608	1571	1505	1464	1393	1244	1039	924
22:00	44.7	11.2	1292	1609	1573	1486	1423	1371	1243	1056	939

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

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	1304	1579	1561	1518	1455	1365	1238	1028	904
22:30	44.7	11.2	1343	1574	1549	1502	1448	1349	1229	1021	915
22:45	44.8	11.2	1304	1534	1527	1475	1439	1378	1255	1045	932
23:00	44.6	11.2	1325	1528	1528	1476	1421	1331	1229	1020	912
23:15	44.8	11.2	1310	1510	1494	1443	1403	1346	1221	1007	903
23:30	44.7	11.3	1310	1525	1537	1494	1429	1332	1234	1030	930
23:45	44.7	11.3	1332	1504	1511	1457	1423	1367	1262	1053	944
24:00	44.7	11.2	1343	1493	1501	1433	1388	1299	1167	981	892
24:15	44.6	11.3	1325	1496	1494	1434	1368	1295	1185	989	879
24:30	44.6	11.3	1305	1445	1493	1459	1417	1333	1220	991	874
24:45	44.7	11.2	1278	1448	1456	1414	1384	1310	1232	1015	924
25:00	44.9	11.2	1332	1443	1454	1417	1375	1314	1212	1026	930
25:15	44.8	11.6	1347	1477	1489	1444	1423	1334	1168	962	878
25:30	47.1	14.5	1339	1448	1502	1479	1447	1401	1302	1058	938
25:45	48.6	16.0	1346	1467	1509	1485	1465	1417	1291	1051	952
26:00	48.7	15.9	1359	1496	1528	1487	1467	1423	1318	1071	966
26:15	48.5	16.0	1361	1483	1525	1501	1468	1403	1305	1048	933
26:30	48.7	15.9	1321	1520	1537	1516	1484	1418	1294	1056	923
26:45	48.6	15.9	1377	1512	1549	1510	1492	1449	1360	1119	970
27:00	48.6	16.0	1339	1510	1527	1490	1461	1422	1332	1089	975
27:15	48.7	16.0	1364	1528	1564	1540	1488	1407	1317	1086	952
27:30	48.5	16.0	1353	1503	1524	1505	1465	1391	1298	1079	975
27:45	48.5	15.9	1354	1486	1516	1489	1444	1402	1287	1081	966
28:00	48.6	15.9	1330	1489	1535	1513	1480	1442	1370	1172	1072
28:15	48.5	16.0	1363	1505	1511	1473	1437	1375	1308	1121	1001
28:30	48.5	16.1	1383	1506	1533	1523	1498	1438	1321	1138	1007
28:45	48.6	16.0	1350	1478	1516	1508	1479	1423	1342	1154	1007
29:00	48.6	16.0	1344	1498	1515	1457	1432	1386	1302	1132	1002
29:15	48.5	16.0	1383	1536	1548	1507	1460	1397	1302	1137	1026
29:30	48.6	16.0	1403	1560	1562	1516	1488	1433	1340	1135	977
29:45	48.6	16.0	1378	1529	1537	1520	1502	1454	1371	1200	1060
30:00	48.6	16.0	1368	1541	1579	1528	1441	1374	1300	1125	1002

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

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	T/C 20
00:00	80	79	79	78	79	78	78	79	78	78	78
00:15	85	81	80	79	79	79	80	80	78	78	78
00:30	331	276	281	255	109	186	226	120	78	78	78
00:45	365	323	311	282	131	215	233	131	78	78	78
01:00	349	313	296	270	124	240	221	125	78	78	78
01:15	360	319	298	274	121	241	211	124	78	78	78
01:30	349	324	299	279	126	219	227	132	78	78	78
01:45	390	353	333	304	115	205	241	130	78	78	78
02:00	388	345	322	296	128	224	249	128	78	78	79
02:15	417	371	349	322	133	225	239	137	78	78	80
02:30	451	389	361	323	124	233	254	140	78	78	142
02:45	424	383	354	324	132	225	258	140	78	78	176
03:00	442	392	371	343	134	245	260	149	78	78	173
03:15	458	397	371	331	123	229	273	138	78	78	171
03:30	449	396	366	336	127	212	254	131	78	78	168
03:45	465	410	391	358	132	244	242	150	78	78	166
04:00	422	376	344	320	136	223	248	151	78	78	164
04:15	450	402	375	343	130	223	247	160	78	78	163
04:30	430	391	367	338	126	228	254	158	78	78	162
04:45	473	409	382	349	132	233	246	154	78	78	162
05:00	458	404	375	346	129	240	257	148	78	78	164
05:15	471	415	388	352	135	244	256	146	78	78	169
05:30	512	449	414	390	130	277	326	145	78	78	186
05:45	599	525	483	440	157	318	329	150	78	78	196
06:00	663	565	524	470	139	351	333	159	79	78	324
06:15	728	592	555	500	151	346	357	158	79	78	389
06:30	740	623	576	511	145	362	362	154	79	78	449
06:45	673	597	534	470	148	337	396	149	79	79	494
07:00	746	633	582	518	141	321	361	153	79	79	526
07:15	640	575	516	477	142	330	396	157	79	79	553
07:30	688	596	539	485	156	325	361	145	80	79	566
07:45	668	579	534	489	147	359	349	160	80	79	580
08:00	667	583	522	479	147	322	329	152	80	80	578
08:15	715	609	572	504	136	352	329	150	81	80	582
08:30	678	603	550	500	143	334	314	158	81	80	580
08:45	631	566	519	481	149	356	334	153	81	81	578
09:00	635	569	529	486	150	367	309	156	82	81	579
09:15	663	583	543	491	150	369	307	151	82	81	573
09:30	634	570	530	484	157	375	320	151	82	82	571
09:45	646	574	539	490	165	370	321	152	83	82	557
10:00	608	551	507	464	157	372	334	152	83	82	560
10:15	657	573	533	478	167	380	311	147	84	83	562
10:30	686	604	576	521	176	381	347	155	84	83	557
10:45	724	625	583	526	190	398	336	157	85	84	556
11:00	722	627	583	524	178	405	336	147	85	84	555
11:15	738	634	594	533	185	400	338	160	85	85	559
11:30	771	662	639	575	188	385	342	156	86	85	563

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

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	T/C 20
11:45	813	679	645	575	183	397	348	167	86	86	566
12:00	712	630	584	526	186	399	379	157	87	86	565
12:15	747	642	587	531	181	377	364	169	87	87	570
12:30	758	653	606	551	185	399	360	169	88	87	575
12:45	771	669	614	561	185	403	370	154	89	88	576
13:00	760	657	603	544	185	409	365	165	89	89	576
13:15	756	658	610	557	189	419	390	164	90	89	583
13:30	814	687	638	576	201	425	395	169	90	90	584
13:45	787	682	627	562	171	405	396	168	91	90	590
14:00	791	689	624	551	181	418	383	179	91	91	600
14:15	830	723	670	597	182	384	401	174	92	92	598
14:30	859	743	701	625	177	403	365	171	92	92	611
14:45	820	708	644	570	184	409	394	172	93	93	609
15:00	804	704	654	586	197	408	438	173	94	94	608
15:15	800	689	641	588	184	405	411	163	94	95	614
15:30	898	762	715	646	185	442	423	169	95	96	617
15:45	870	760	713	645	192	405	416	185	96	98	616
16:00	796	708	647	582	198	446	420	167	96	101	619
16:15	834	723	666	590	200	451	412	167	97	104	618
16:30	901	774	748	671	199	460	398	166	98	107	619
16:45	887	786	731	649	201	455	408	178	98	109	615
17:00	893	775	711	632	206	421	392	168	99	111	614
17:15	781	698	648	583	196	449	399	163	100	112	608
17:30	794	710	660	584	218	432	400	168	100	112	609
17:45	774	691	639	571	217	436	379	165	101	113	611
18:00	814	707	664	604	220	432	401	182	102	113	603
18:15	741	668	611	563	211	460	415	187	103	113	602
18:30	786	713	673	610	192	458	449	182	103	113	598
18:45	795	709	660	600	186	431	437	178	104	113	594
19:00	796	703	652	600	184	452	420	178	105	112	600
19:15	803	707	662	604	201	437	424	184	105	112	593
19:30	803	698	658	603	207	458	421	193	106	112	590
19:45	755	679	628	572	205	423	423	189	107	112	597
20:00	749	673	627	572	213	431	417	181	107	112	605
20:15	773	697	649	594	197	432	436	187	108	112	591
20:30	821	725	676	617	208	467	429	182	109	111	588
20:45	796	708	649	595	222	449	442	189	109	111	596
21:00	832	731	692	620	209	469	442	189	110	111	590
21:15	857	750	690	618	206	447	448	180	110	111	588
21:30	805	718	658	602	191	477	434	177	111	111	581
21:45	844	736	688	614	199	452	413	181	111	112	585
22:00	874	756	710	642	211	491	434	190	112	112	579
22:15	814	702	642	581	218	452	431	200	113	112	574
22:30	831	724	673	608	213	491	424	189	113	112	572
22:45	856	742	695	616	199	499	429	193	114	112	566
23:00	824	724	672	611	207	494	447	182	114	112	570
23:15	829	730	683	622	211	444	428	185	115	112	573

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

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	T/C 20
23:30	858	747	698	622	217	447	445	197	115	112	575
23:45	868	767	713	644	213	448	442	188	116	113	571
24:00	829	734	692	633	232	454	474	192	117	113	565
24:15	811	720	666	605	225	444	472	193	117	113	561
24:30	816	723	672	613	218	460	477	189	118	113	568
24:45	856	751	704	620	212	442	460	195	119	113	569
25:00	847	754	702	631	233	429	431	193	119	114	555
25:15	803	711	663	599	227	476	458	184	120	114	555
25:30	840	728	663	591	234	495	432	194	120	114	559
25:45	860	755	703	647	241	474	433	223	121	114	567
26:00	869	755	709	638	229	481	470	206	122	115	568
26:15	851	746	693	645	235	463	446	200	122	115	572
26:30	829	743	687	631	224	507	503	214	123	115	569
26:45	859	751	697	632	219	469	492	189	124	116	582
27:00	885	773	724	656	231	510	464	188	124	116	585
27:15	870	771	715	666	233	445	463	197	125	117	585
27:30	877	791	738	678	240	483	443	192	126	117	582
27:45	886	763	715	637	227	485	487	199	126	117	585
28:00	981	848	807	715	233	468	431	185	127	118	589
28:15	912	809	758	692	243	504	464	192	128	118	588
28:30	912	792	728	651	237	440	469	206	129	119	611
28:45	938	803	778	716	234	466	450	204	129	119	600
29:00	914	809	745	673	228	468	443	203	130	120	594
29:15	945	833	788	700	229	463	490	195	131	121	592
29:30	880	790	729	652	223	463	471	194	132	121	604
29:45	967	833	776	694	227	461	435	190	133	122	604
30:00	915	795	752	675	244	484	493	201	133	122	613

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	T/C 21	T/C 22	T/C 23	T/C 24	T/C 25	T/C 26	T/C 27	T/C 28	T/C 29	T/C 30	T/C 31
00:00	79	79	78	78	78	78	78	78	78	78	78
00:15	79	79	78	78	78	78	78	78	78	78	78
00:30	79	79	78	78	78	78	78	78	78	78	78
00:45	79	79	78	78	78	78	78	78	78	78	78
01:00	79	79	78	78	78	78	78	78	78	78	78
01:15	79	79	78	78	78	78	78	78	78	78	78
01:30	79	79	78	78	78	78	78	78	78	78	78
01:45	79	79	78	78	78	78	78	78	78	78	78
02:00	79	79	78	78	78	78	78	78	78	78	78
02:15	79	79	78	78	78	78	78	78	78	78	78
02:30	80	79	78	78	78	78	78	78	78	78	78
02:45	84	80	78	78	78	78	78	78	78	78	78
03:00	92	81	78	78	78	78	78	78	78	78	78
03:15	99	85	78	78	78	78	78	78	78	78	78
03:30	105	89	79	79	78	78	78	78	78	78	78
03:45	110	93	81	80	79	78	78	78	78	78	78
04:00	114	97	83	81	79	79	78	78	78	78	78
04:15	118	101	86	82	80	79	79	79	78	79	78
04:30	121	104	89	83	81	79	79	79	78	79	78
04:45	124	107	93	84	82	80	79	79	79	79	78
05:00	128	110	96	86	84	80	80	79	79	80	78
05:15	133	113	99	88	86	81	80	80	79	80	78
05:30	140	116	102	90	88	82	80	80	79	80	78
05:45	149	121	105	92	91	84	81	82	80	81	78
06:00	169	130	108	94	94	94	82	85	80	82	78
06:15	198	155	111	97	98	132	83	100	81	83	78
06:30	310	189	115	100	101	149	84	158	81	85	78
06:45	429	392	120	103	105	149	86	175	82	89	78
07:00	522	497	132	107	109	147	87	169	84	96	78
07:15	554	557	188	114	115	146	88	163	89	128	78
07:30	567	575	408	177	123	145	89	159	103	152	79
07:45	572	584	476	346	139	145	91	156	128	166	79
08:00	574	584	501	437	183	144	92	155	149	178	79
08:15	575	576	521	485	378	143	94	153	162	186	79
08:30	573	578	535	515	423	144	96	152	157	187	79
08:45	570	578	545	527	452	149	97	151	151	185	79
09:00	568	571	543	529	471	153	99	151	147	183	79
09:15	564	570	547	525	483	155	101	151	145	182	80
09:30	563	562	544	525	490	160	103	152	144	181	80
09:45	561	564	538	518	494	163	105	154	143	180	80
10:00	558	559	538	517	495	168	107	157	142	179	80
10:15	554	555	532	510	486	179	111	161	142	179	80
10:30	550	548	524	506	479	184	115	165	142	178	81
10:45	548	544	519	499	476	329	121	176	142	178	81
11:00	548	548	523	504	480	385	149	177	142	178	81
11:15	550	550	519	504	481	425	253	180	142	178	81
11:30	553	549	519	501	484	446	310	200	143	178	82

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	T/C 21	T/C 22	T/C 23	T/C 24	T/C 25	T/C 26	T/C 27	T/C 28	T/C 29	T/C 30	T/C 31
11:45	554	553	523	504	484	457	343	289	143	179	82
12:00	556	556	523	508	486	460	368	328	144	179	82
12:15	559	559	526	512	489	463	385	359	146	179	83
12:30	563	565	530	513	490	465	404	381	148	180	83
12:45	568	566	535	516	496	467	423	394	150	180	83
13:00	572	569	539	521	500	472	443	401	155	181	83
13:15	573	574	542	524	502	477	453	415	176	181	84
13:30	578	574	541	522	507	476	463	423	200	183	84
13:45	585	578	545	527	507	480	475	429	301	183	84
14:00	592	585	553	535	509	482	476	438	373	205	85
14:15	595	590	557	538	512	487	478	447	408	274	85
14:30	605	600	561	539	516	486	474	453	427	293	86
14:45	609	605	569	548	532	496	485	459	434	307	86
15:00	615	613	573	555	543	507	494	464	442	331	86
15:15	620	616	575	558	543	509	501	468	447	351	87
15:30	621	616	579	559	551	513	507	472	453	363	87
15:45	622	619	584	566	554	527	518	480	457	376	88
16:00	624	622	590	573	564	518	500	473	462	385	88
16:15	627	624	594	576	567	529	488	457	459	395	89
16:30	628	626	596	580	571	532	498	472	465	409	89
16:45	627	626	599	582	568	531	515	475	469	425	90
17:00	626	625	603	588	576	528	507	478	468	433	90
17:15	623	621	601	585	579	537	495	473	467	444	91
17:30	623	620	600	587	575	537	523	486	473	452	91
17:45	621	618	600	584	575	544	528	499	476	459	92
18:00	616	615	599	582	573	544	520	486	473	462	92
18:15	613	611	598	580	572	538	511	483	470	458	93
18:30	610	607	596	578	571	543	524	489	471	463	93
18:45	608	605	595	577	568	531	488	477	462	458	94
19:00	610	606	594	580	570	535	496	481	465	459	94
19:15	605	601	591	574	566	533	505	483	466	461	95
19:30	604	600	592	576	567	540	532	495	470	464	95
19:45	603	597	590	576	565	540	534	507	487	466	96
20:00	607	597	585	576	569	535	532	502	482	464	96
20:15	604	600	588	573	563	534	509	492	473	457	97
20:30	596	595	586	572	562	538	530	494	482	457	97
20:45	600	596	586	571	561	536	522	497	484	460	98
21:00	602	599	589	569	560	530	515	499	475	460	98
21:15	595	592	588	567	561	537	524	503	482	461	99
21:30	598	597	588	566	563	541	534	510	491	467	100
21:45	599	596	591	567	561	544	534	494	479	465	100
22:00	589	589	587	566	560	539	530	504	484	463	101
22:15	590	587	583	564	560	542	534	507	487	467	101
22:30	591	587	582	560	555	535	528	509	494	471	102
22:45	585	585	580	560	556	539	532	498	483	464	102
23:00	584	584	579	560	551	538	528	498	484	464	103
23:15	590	586	581	560	554	540	528	493	482	462	103

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	T/C 21	T/C 22	T/C 23	T/C 24	T/C 25	T/C 26	T/C 27	T/C 28	T/C 29	T/C 30	T/C 31
23:30	586	582	576	558	556	539	532	503	490	467	104
23:45	583	578	574	556	554	536	531	510	492	472	105
24:00	578	575	571	554	551	534	531	511	497	471	105
24:15	577	572	566	548	546	532	528	511	493	473	106
24:30	579	572	569	553	551	533	529	507	497	472	106
24:45	580	575	567	549	545	532	526	513	501	474	107
25:00	571	569	564	549	545	529	523	508	490	467	107
25:15	572	567	564	549	547	531	526	512	491	468	108
25:30	574	570	564	549	548	530	523	512	496	473	108
25:45	576	570	566	552	549	531	521	514	501	474	109
26:00	581	576	570	555	551	532	519	514	501	474	109
26:15	585	577	571	556	554	536	523	516	500	477	110
26:30	584	580	573	558	558	537	524	518	506	482	110
26:45	588	579	574	561	559	541	527	522	512	485	111
27:00	587	581	580	567	560	538	525	524	506	486	111
27:15	595	586	578	565	560	541	528	524	508	481	112
27:30	599	589	578	562	562	544	528	526	511	485	112
27:45	597	589	581	566	564	548	529	526	511	489	113
28:00	604	595	587	571	570	549	531	528	511	489	113
28:15	606	607	589	569	564	550	534	532	513	494	114
28:30	618	609	598	581	575	558	543	540	527	501	114
28:45	613	607	599	582	575	559	543	539	525	501	115
29:00	612	607	599	579	575	557	542	541	524	503	115
29:15	608	605	601	582	575	559	543	544	530	507	116
29:30	619	616	606	584	578	562	548	547	534	513	116
29:45	619	621	614	589	581	562	547	544	529	510	117
30:00	624	618	614	592	579	565	555	551	532	511	117

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	T/C 32	T/C 33	T/C 34	T/C 35	T/C 36	T/C 37	T/C 38	T/C 39	T/C 40	Room T/C 41	Room T/C 42
00:00	77	78	77	77	78	78	77	79	78	103	85
00:15	77	78	77	77	78	78	77	79	79	374	157
00:30	77	78	77	77	78	78	77	79	79	1315	370
00:45	77	78	77	77	78	78	77	79	79	1209	378
01:00	77	78	77	77	78	78	77	79	79	1256	359
01:15	77	78	77	77	78	78	77	79	79	1249	362
01:30	77	78	77	77	78	78	77	79	79	1231	369
01:45	77	78	77	77	78	78	77	79	79	1229	385
02:00	77	78	77	77	78	78	77	79	79	1218	385
02:15	77	78	77	77	78	78	77	79	79	1235	388
02:30	77	78	77	77	78	78	77	79	79	1237	391
02:45	77	78	77	77	78	78	77	79	79	1277	386
03:00	77	78	77	77	78	78	77	79	79	1281	388
03:15	77	78	77	77	78	78	77	79	79	1262	388
03:30	77	78	77	77	78	78	77	79	79	1272	399
03:45	77	78	77	77	78	78	77	79	79	1271	401
04:00	77	78	78	77	78	78	77	79	79	1269	399
04:15	77	78	77	77	78	78	77	79	79	1294	402
04:30	77	78	78	78	78	78	77	79	80	1268	404
04:45	77	78	78	78	78	78	77	79	80	1298	397
05:00	77	78	78	78	78	78	78	79	80	1331	407
05:15	77	78	78	78	78	78	78	80	80	1335	397
05:30	77	78	78	78	78	78	78	80	81	1359	397
05:45	78	78	78	78	78	78	78	80	81	1373	408
06:00	78	78	78	79	78	78	78	80	82	1427	417
06:15	78	78	78	79	78	78	78	80	82	1476	422
06:30	78	78	78	79	79	78	78	80	83	1448	427
06:45	78	78	78	79	79	78	78	80	83	1390	434
07:00	78	78	78	80	79	79	78	80	84	1418	424
07:15	78	78	78	80	79	79	78	80	84	1391	431
07:30	78	78	78	80	79	79	79	80	85	1390	419
07:45	78	79	78	81	79	79	79	81	85	1375	419
08:00	78	79	79	81	79	79	79	81	86	1416	417
08:15	79	79	79	82	79	79	79	81	87	1407	421
08:30	79	79	79	82	79	79	79	81	88	1422	426
08:45	79	79	79	83	79	79	79	81	88	1432	420
09:00	79	79	79	83	80	80	79	81	89	1437	432
09:15	79	79	79	84	80	80	80	82	90	1429	438
09:30	79	80	79	84	80	80	80	82	91	1458	419
09:45	80	80	80	85	80	80	80	82	93	1442	419
10:00	80	80	80	85	80	80	80	82	94	1460	414
10:15	80	80	80	86	80	80	80	82	96	1494	403
10:30	80	80	80	87	80	81	81	83	98	1495	429
10:45	80	81	80	88	81	81	81	83	100	1571	444
11:00	81	81	81	89	81	81	81	83	102	1591	467
11:15	81	81	81	90	81	81	81	83	104	1555	485
11:30	81	81	81	91	81	81	82	83	106	1560	500

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	T/C 32	T/C 33	T/C 34	T/C 35	T/C 36	T/C 37	T/C 38	T/C 39	T/C 40	Room T/C 41	Room T/C 42
11:45	81	81	81	92	81	81	82	84	107	1605	521
12:00	82	82	81	93	81	82	82	84	109	1606	538
12:15	82	82	82	94	82	82	82	84	111	1590	546
12:30	82	82	82	95	82	82	82	84	112	1609	573
12:45	83	82	82	96	82	82	83	85	114	1594	598
13:00	83	83	82	97	82	83	83	85	115	1589	634
13:15	83	83	83	98	82	83	83	85	116	1588	676
13:30	84	83	83	99	83	83	83	85	117	1619	708
13:45	84	84	83	100	83	83	84	86	118	1653	755
14:00	84	84	84	100	83	84	84	86	119	1642	825
14:15	85	84	84	101	83	84	84	86	119	1613	886
14:30	85	84	84	102	83	84	84	86	120	1672	943
14:45	85	85	85	103	84	84	85	87	120	1691	973
15:00	86	85	85	104	84	85	85	87	121	1687	1093
15:15	86	85	85	104	84	85	85	87	121	1681	1193
15:30	87	86	86	105	84	85	85	87	122	1676	1383
15:45	87	86	86	106	85	85	86	88	122	1668	1384
16:00	87	87	86	107	85	86	86	88	124	1680	1366
16:15	88	87	87	107	85	86	86	88	126	1694	1412
16:30	88	87	87	108	85	86	87	89	129	1696	1398
16:45	89	88	87	109	86	87	87	89	131	1660	1407
17:00	89	88	88	110	86	91	87	89	133	1666	1410
17:15	90	88	88	114	86	96	88	89	135	1691	1411
17:30	90	89	89	120	87	102	88	90	137	1653	1439
17:45	90	89	89	123	87	107	88	90	139	1681	1415
18:00	91	90	90	127	87	112	88	91	141	1658	1448
18:15	91	90	90	131	87	115	89	91	143	1654	1505
18:30	92	91	91	147	88	118	89	92	145	1658	1557
18:45	92	91	92	168	88	121	90	96	147	1657	1533
19:00	93	91	99	178	88	123	90	105	148	1713	1502
19:15	93	92	111	219	89	125	90	117	150	1681	1549
19:30	94	92	122	245	91	127	91	131	152	1696	1534
19:45	94	93	125	268	93	128	91	137	154	1674	1531
20:00	95	93	129	282	96	128	91	139	156	1691	1557
20:15	95	93	135	292	100	129	91	142	159	1658	1580
20:30	96	94	139	302	106	129	92	145	165	1686	1565
20:45	96	94	144	311	110	129	92	147	171	1702	1546
21:00	97	95	145	321	113	129	92	148	173	1694	1532
21:15	97	95	147	330	116	130	93	150	202	1678	1529
21:30	97	96	148	336	117	130	93	151	223	1673	1555
21:45	98	96	148	343	118	130	93	152	246	1708	1536
22:00	98	96	150	350	119	130	94	153	293	1698	1552
22:15	99	97	151	356	119	130	94	154	313	1686	1533
22:30	99	97	152	360	120	130	95	155	332	1668	1565
22:45	100	98	152	365	120	130	95	155	350	1659	1546
23:00	100	98	153	369	120	130	95	155	366	1688	1565
23:15	101	99	154	373	120	130	96	155	378	1655	1551

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	T/C 32	T/C 33	T/C 34	T/C 35	T/C 36	T/C 37	T/C 38	T/C 39	T/C 40	Room T/C 41	Room T/C 42
23:30	101	99	155	378	121	130	96	155	387	1666	1551
23:45	102	100	156	383	121	130	96	155	396	1664	1533
24:00	102	100	157	386	121	131	97	156	403	1689	1546
24:15	103	100	158	387	121	131	97	156	408	1682	1552
24:30	103	101	158	386	122	131	97	156	412	1677	1549
24:45	104	101	158	387	122	131	98	156	415	1694	1561
25:00	104	102	158	387	122	132	98	156	417	1717	1549
25:15	105	102	158	388	123	132	99	156	418	1715	1547
25:30	105	103	157	388	123	132	99	155	420	1720	1568
25:45	106	103	157	389	124	132	99	155	422	1746	1581
26:00	106	104	157	388	124	133	100	156	425	1775	1586
26:15	107	105	157	391	124	133	100	156	427	1721	1596
26:30	107	105	157	394	125	133	101	156	430	1710	1611
26:45	108	106	157	398	125	133	101	156	432	1740	1590
27:00	108	106	157	398	126	133	101	157	436	1778	1588
27:15	109	107	158	397	126	133	102	157	441	1742	1593
27:30	109	108	158	400	127	134	102	158	441	1774	1571
27:45	110	109	158	403	127	134	103	158	444	1778	1591
28:00	110	110	158	405	128	134	103	159	446	1765	1607
28:15	110	111	158	406	128	135	103	159	450	1751	1595
28:30	111	113	158	406	129	135	104	159	455	1764	1601
28:45	112	116	158	408	129	135	104	159	457	1758	1643
29:00	112	117	159	407	130	136	105	159	462	1782	1635
29:15	113	118	159	408	131	136	105	160	460	1770	1624
29:30	113	120	159	410	132	137	106	160	463	1756	1628
29:45	114	121	159	409	133	138	106	160	468	1770	1628
30:00	114	123	159	410	134	138	106	160	468	1773	1632



Total Quality. Assured.

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	Room T/C 43	Room T/C 44	Room T/C 45	T/C 46	T/C 47	T/C 48	T/C 49	T/C 50	T/C 51	T/C 52	T/C 53
00:00	105	117	100	95	85	88	77	75	77	78	77
00:15	350	348	266	188	136	182	77	75	77	78	77
00:30	1200	1074	834	761	514	725	77	75	77	78	77
00:45	1157	1047	897	889	726	876	77	75	77	78	77
01:00	1134	1043	917	932	794	882	77	75	77	78	77
01:15	1146	1072	931	974	833	879	77	75	77	78	77
01:30	1142	1090	948	977	860	916	77	75	77	78	77
01:45	1174	1072	995	994	885	943	77	75	77	78	77
02:00	1194	1084	1020	1070	955	988	77	75	77	78	77
02:15	1209	1080	1037	1195	1149	1044	77	75	77	78	77
02:30	1225	1097	1051	1217	1189	1274	77	75	77	78	77
02:45	1233	1100	1068	1160	1087	1333	77	76	77	78	77
03:00	1213	1094	1078	1124	1075	1274	77	75	77	78	77
03:15	1265	1118	1072	1114	1070	1184	77	76	77	78	77
03:30	1252	1133	1075	1131	1091	1099	77	76	77	78	78
03:45	1274	1123	1108	1151	1094	1103	77	75	77	78	77
04:00	1268	1108	1104	1149	1109	1108	77	76	77	78	77
04:15	1278	1135	1109	1175	1115	1124	77	76	77	78	78
04:30	1293	1125	1122	1177	1114	1106	77	77	77	78	78
04:45	1285	1135	1127	1175	1115	1105	77	76	77	78	78
05:00	1296	1143	1119	1187	1128	1114	77	76	77	78	78
05:15	1313	1153	1116	1190	1130	1117	77	76	77	79	79
05:30	1292	1177	1118	1212	1137	1135	77	76	77	79	78
05:45	1308	1193	1123	1212	1139	1146	77	76	77	79	78
06:00	1317	1201	1139	1227	1149	1149	77	76	77	79	78
06:15	1378	1260	1165	1250	1154	1175	77	77	77	79	79
06:30	1363	1254	1177	1283	1173	1185	77	77	77	79	79
06:45	1380	1248	1187	1272	1208	1221	78	78	78	79	79
07:00	1391	1232	1187	1278	1204	1201	78	76	78	79	78
07:15	1362	1218	1195	1268	1204	1198	78	76	78	79	78
07:30	1363	1220	1180	1268	1202	1201	78	76	78	79	78
07:45	1365	1226	1195	1262	1207	1205	78	76	78	79	78
08:00	1372	1237	1184	1275	1205	1211	78	76	78	79	78
08:15	1365	1243	1188	1265	1192	1204	78	76	78	79	78
08:30	1354	1249	1185	1261	1196	1207	78	76	78	79	78
08:45	1376	1246	1193	1276	1193	1198	78	76	78	79	78
09:00	1363	1246	1185	1267	1196	1204	78	76	78	79	78
09:15	1350	1262	1188	1271	1194	1206	78	76	78	79	78
09:30	1339	1242	1188	1281	1196	1200	78	76	78	79	78
09:45	1351	1257	1192	1273	1197	1209	78	77	78	79	78
10:00	1370	1271	1198	1269	1203	1208	79	77	79	79	79
10:15	1374	1293	1193	1278	1203	1205	79	77	79	79	79
10:30	1458	1358	1239	1316	1228	1243	79	77	79	79	80
10:45	1509	1381	1284	1355	1284	1297	79	77	79	79	79
11:00	1530	1386	1305	1379	1297	1318	79	78	79	79	79
11:15	1501	1396	1299	1387	1315	1339	79	78	79	79	79
11:30	1516	1389	1303	1407	1326	1336	80	79	79	79	78

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	Room T/C 43	Room T/C 44	Room T/C 45	T/C 46	T/C 47	T/C 48	T/C 49	T/C 50	T/C 51	T/C 52	T/C 53
11:45	1530	1417	1313	1399	1341	1360	80	79	79	79	79
12:00	1544	1419	1329	1408	1348	1370	80	78	79	79	79
12:15	1566	1422	1323	1430	1347	1366	80	80	79	79	79
12:30	1556	1412	1338	1417	1374	1379	80	80	79	79	79
12:45	1545	1416	1346	1446	1396	1391	80	81	79	79	79
13:00	1564	1416	1347	1455	1386	1388	81	81	80	79	80
13:15	1551	1414	1352	1454	1391	1394	81	80	80	79	80
13:30	1573	1433	1363	1474	1389	1396	81	80	80	79	80
13:45	1570	1436	1357	1460	1387	1396	81	81	80	79	80
14:00	1572	1425	1364	1472	1409	1404	82	82	81	79	82
14:15	1552	1400	1364	1485	1414	1410	82	83	81	79	83
14:30	1577	1412	1360	1490	1413	1409	83	81	81	79	83
14:45	1560	1421	1364	1519	1430	1408	83	81	81	79	82
15:00	1575	1420	1365	1530	1429	1413	83	84	81	79	85
15:15	1553	1416	1367	1561	1442	1426	83	82	82	79	83
15:30	1568	1422	1366	1542	1427	1435	84	84	82	79	85
15:45	1555	1418	1366	1549	1451	1427	84	84	82	79	87
16:00	1552	1399	1372	1578	1470	1433	84	85	82	79	86
16:15	1586	1428	1379	1566	1449	1428	85	87	82	79	86
16:30	1595	1459	1387	1535	1447	1434	85	88	83	79	87
16:45	1581	1464	1384	1543	1433	1441	86	88	83	79	88
17:00	1587	1447	1373	1521	1443	1437	86	89	83	79	87
17:15	1609	1471	1386	1527	1439	1437	87	88	83	79	89
17:30	1584	1473	1387	1523	1437	1433	87	88	84	79	88
17:45	1614	1463	1396	1530	1433	1435	87	91	84	79	90
18:00	1612	1457	1394	1511	1435	1446	88	87	84	79	87
18:15	1607	1457	1404	1512	1450	1448	88	91	84	79	91
18:30	1592	1445	1405	1509	1454	1455	89	89	85	79	87
18:45	1598	1443	1409	1527	1462	1455	89	91	85	79	89
19:00	1626	1465	1410	1525	1461	1457	89	93	85	79	90
19:15	1602	1488	1412	1528	1458	1449	89	94	86	79	91
19:30	1623	1466	1411	1521	1467	1467	90	95	86	79	91
19:45	1618	1483	1412	1527	1461	1460	90	96	86	79	93
20:00	1612	1481	1408	1528	1462	1464	90	98	86	79	93
20:15	1630	1469	1420	1523	1471	1465	91	97	86	79	92
20:30	1641	1481	1422	1536	1472	1471	91	97	87	79	93
20:45	1633	1486	1422	1536	1469	1468	91	98	87	79	94
21:00	1618	1499	1419	1528	1467	1466	91	96	87	79	92
21:15	1622	1481	1419	1559	1468	1475	92	100	87	79	95
21:30	1594	1492	1418	1548	1472	1468	92	100	88	79	95
21:45	1639	1495	1439	1543	1486	1482	93	101	88	79	95
22:00	1629	1480	1434	1531	1478	1481	93	102	88	80	96
22:15	1628	1500	1427	1535	1473	1473	93	102	88	80	94
22:30	1619	1489	1432	1539	1480	1493	93	104	89	80	96
22:45	1645	1488	1427	1537	1486	1491	93	103	89	80	97
23:00	1611	1474	1428	1544	1496	1491	93	102	89	80	96
23:15	1639	1478	1431	1535	1491	1485	94	104	89	80	96

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	Room T/C 43	Room T/C 44	Room T/C 45	T/C 46	T/C 47	T/C 48	T/C 49	T/C 50	T/C 51	T/C 52	T/C 53
23:30	1624	1488	1435	1558	1480	1481	94	94	90	80	93
23:45	1608	1489	1425	1536	1495	1484	94	100	90	80	95
24:00	1632	1481	1431	1540	1490	1493	94	97	90	80	93
24:15	1626	1491	1437	1550	1486	1490	94	98	91	80	94
24:30	1629	1493	1437	1537	1488	1490	95	102	90	80	99
24:45	1639	1514	1442	1557	1489	1486	95	102	92	80	96
25:00	1631	1500	1439	1553	1490	1497	95	102	92	80	96
25:15	1611	1504	1433	1574	1496	1498	95	103	92	80	101
25:30	1672	1524	1460	1570	1524	1526	95	100	92	80	98
25:45	1679	1536	1468	1598	1530	1539	96	101	92	80	99
26:00	1705	1552	1484	1607	1539	1539	95	101	92	80	98
26:15	1676	1548	1480	1612	1551	1545	95	99	93	80	96
26:30	1695	1536	1483	1612	1560	1560	96	104	93	80	98
26:45	1687	1546	1487	1616	1565	1562	96	102	93	80	99
27:00	1706	1549	1500	1615	1556	1565	95	100	92	80	97
27:15	1694	1576	1497	1633	1558	1552	96	100	93	80	97
27:30	1697	1569	1495	1623	1566	1568	97	106	94	80	99
27:45	1709	1573	1499	1627	1560	1559	96	101	95	80	97
28:00	1707	1570	1505	1615	1562	1563	96	105	94	80	101
28:15	1698	1565	1496	1643	1567	1567	96	105	96	80	101
28:30	1677	1563	1492	1644	1571	1555	97	105	96	80	100
28:45	1709	1567	1504	1618	1572	1571	97	105	94	80	99
29:00	1702	1575	1505	1627	1571	1579	97	104	96	80	100
29:15	1729	1583	1515	1646	1575	1579	97	100	95	80	98
29:30	1696	1584	1510	1630	1578	1580	97	104	96	80	99
29:45	1739	1569	1520	1641	1579	1580	97	105	96	80	98
30:00	1719	1568	1514	1657	1585	1585	97	103	95	80	99



Total Quality. Assured.

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	T/C 54
00:00	74
00:15	74
00:30	74
00:45	74
01:00	74
01:15	74
01:30	74
01:45	74
02:00	74
02:15	74
02:30	74
02:45	74
03:00	74
03:15	74
03:30	74
03:45	74
04:00	74
04:15	74
04:30	74
04:45	74
05:00	75
05:15	75
05:30	75
05:45	75
06:00	75
06:15	75
06:30	75
06:45	75
07:00	75
07:15	75
07:30	75
07:45	75
08:00	75
08:15	75
08:30	75
08:45	75
09:00	75
09:15	75
09:30	75
09:45	76
10:00	76
10:15	76
10:30	76
10:45	76
11:00	76
11:15	76
11:30	76



Total Quality. Assured.

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	T/C 54
11:45	76
12:00	76
12:15	76
12:30	77
12:45	77
13:00	77
13:15	77
13:30	77
13:45	77
14:00	77
14:15	78
14:30	78
14:45	78
15:00	78
15:15	78
15:30	79
15:45	79
16:00	79
16:15	79
16:30	80
16:45	80
17:00	80
17:15	80
17:30	81
17:45	80
18:00	81
18:15	81
18:30	81
18:45	81
19:00	81
19:15	81
19:30	81
19:45	82
20:00	82
20:15	82
20:30	82
20:45	82
21:00	82
21:15	83
21:30	83
21:45	83
22:00	83
22:15	83
22:30	83
22:45	84
23:00	84
23:15	84



Total Quality. Assured.

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

TIME (Min:Sec)	T/C 54
23:30	85
23:45	84
24:00	84
24:15	85
24:30	84
24:45	85
25:00	85
25:15	85
25:30	85
25:45	86
26:00	85
26:15	86
26:30	86
26:45	86
27:00	85
27:15	86
27:30	86
27:45	86
28:00	86
28:15	86
28:30	86
28:45	86
29:00	87
29:15	87
29:30	87
29:45	87
30:00	87



Total Quality. Assured.

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

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.

TEST REPORT FOR ENERGEX WALL SYSTEMS

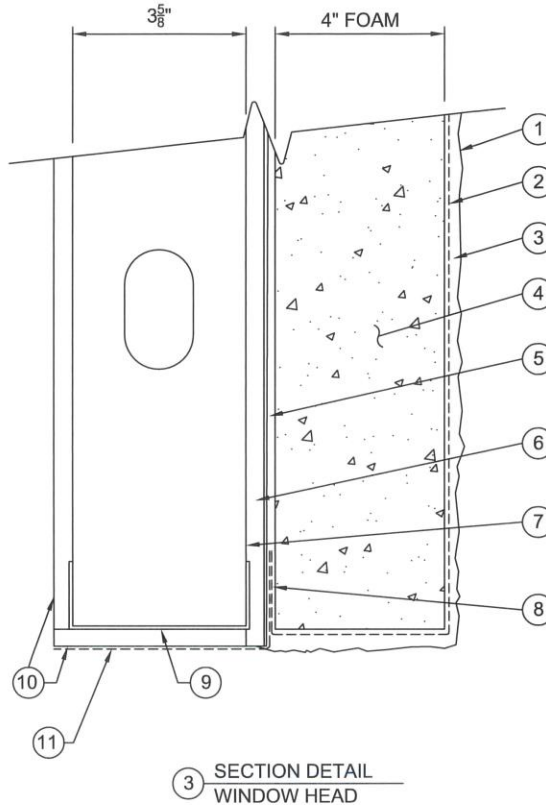
Report No.: H1637.01-121-24-R0

Date: 09/14/17

Assembly drawing as tested

KEY NOTES:

1. ENERGEX FINISH
2. ENERMIX BASE COAT
3. ENERGEX MESH. AT JOINTS, OVERLAP 2-1/2" MIN.
4. 4" EXPANDED POLYSTYRENE (EPS) FOAM
5. ADHESIVE, APPLIED WITH VERTICAL RIDGES FOR DRAINAGE
6. 5/8" GLASS MAT GYPSUM SHEATHING
7. 33 MIL MINIMUM STEEL STUDS AT 16" ON CENTER
8. ENERGEX MESH, BACK-WRAPPED A MINIMUM OF 2 INCHES FRONT AND BACK
9. 33 MIL TRACK, CONTINUOUS ACROSS WINDOW OPENING
10. 5/8" TYPE X GYPSUM BOARD
11. ENERSHIELD ROLL ON MESH



intertek Total Quality. Assured.	Report #:	H1637.01-121-24
	Date:	09/14/17
	Verified by:	<i>[Signature]</i>

NFPA 285
TEST SAMPLE
DETAIL

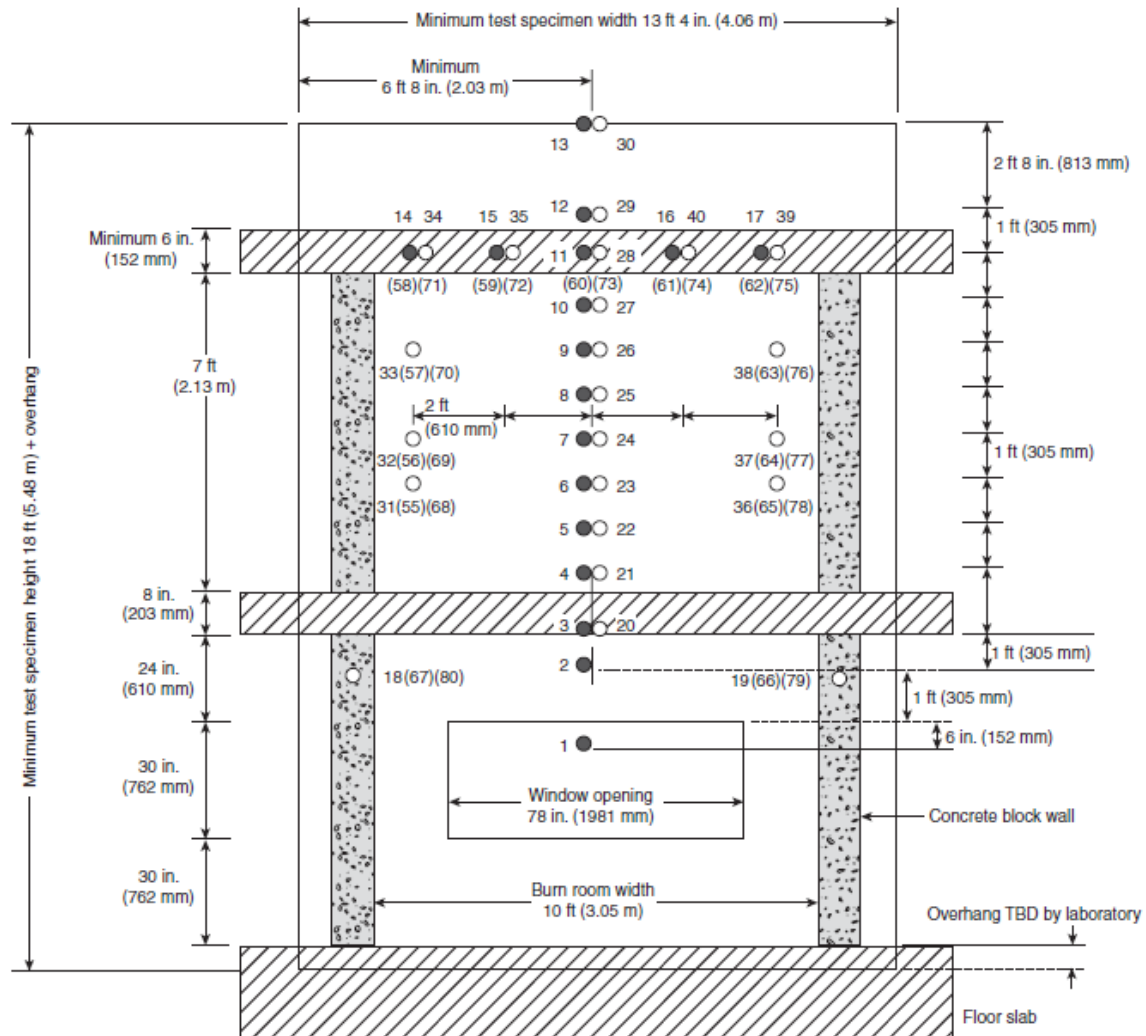
energex® wall systems 888-343-7462		
DATE:	REVISION	
4-26-17	0	
DRAWN	CHECKED	PAGE
AB	CG	2 OF 2

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

Standard TC Locations



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

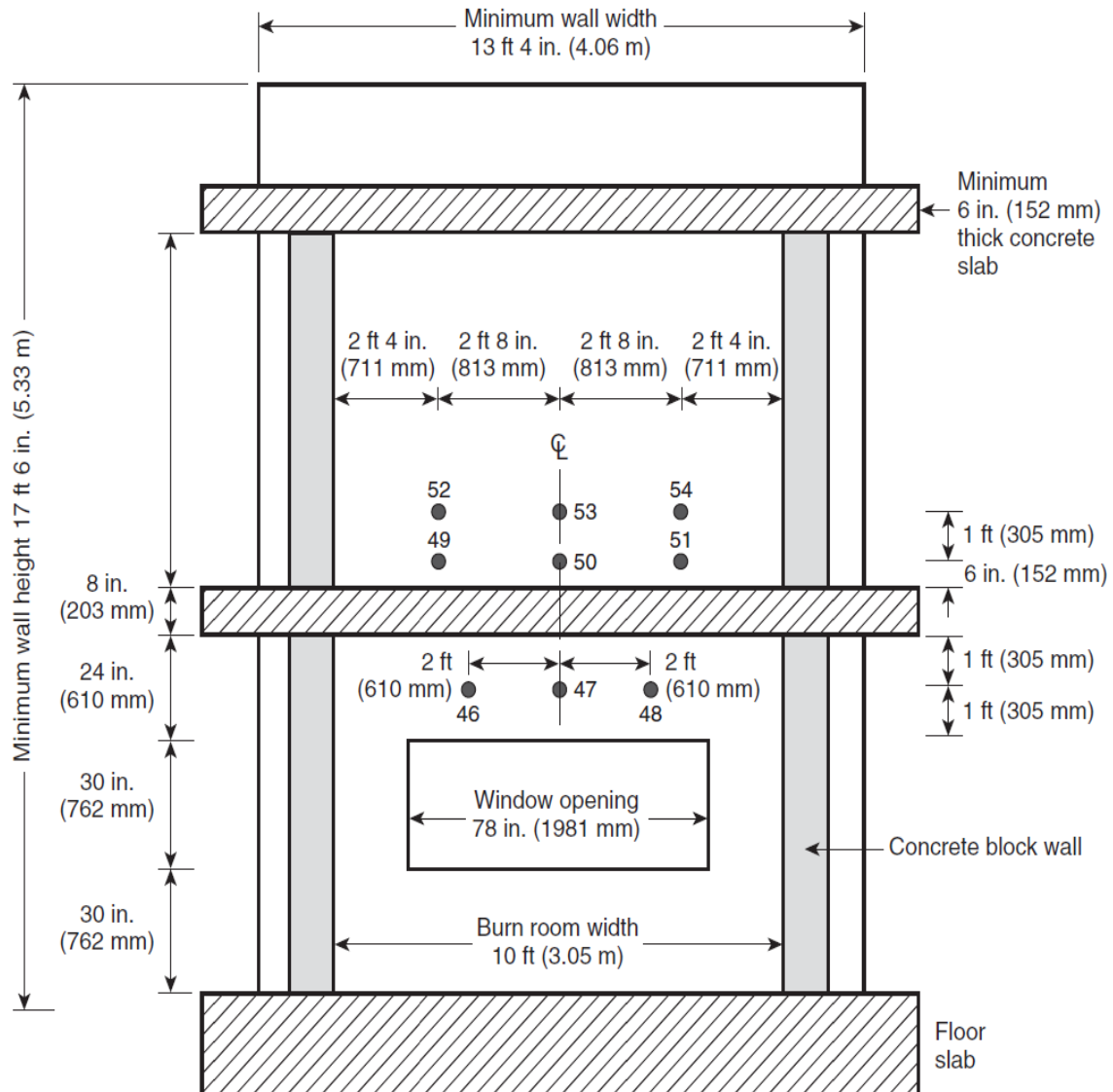
○ Thermocouples — In the wall cavity air space or the insulation, or both, as shown in Figure 6.1(b) Details A through I.

() 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.

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

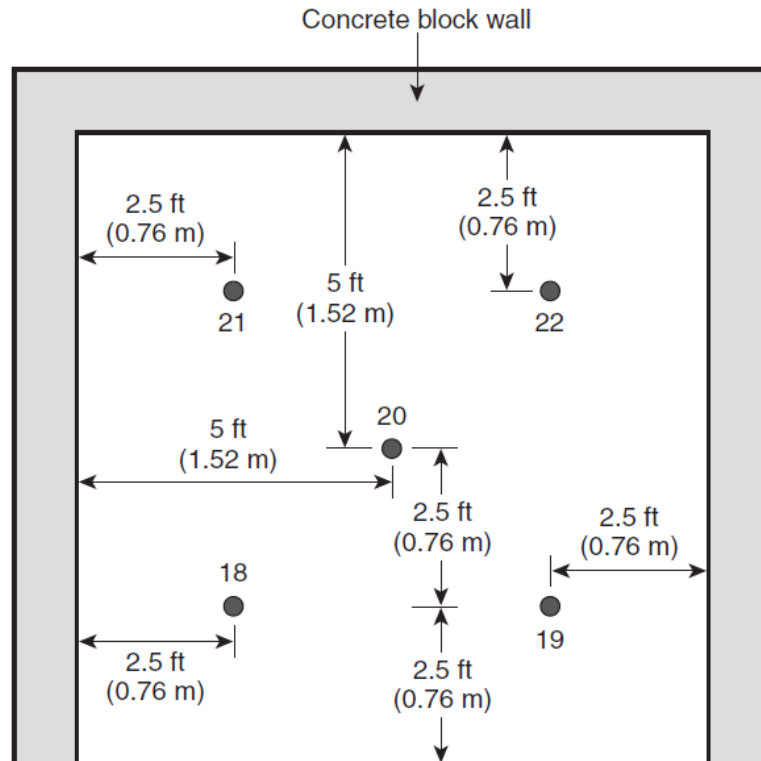


● Thermocouples — 1 in. (25 mm) from interior wall surface

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

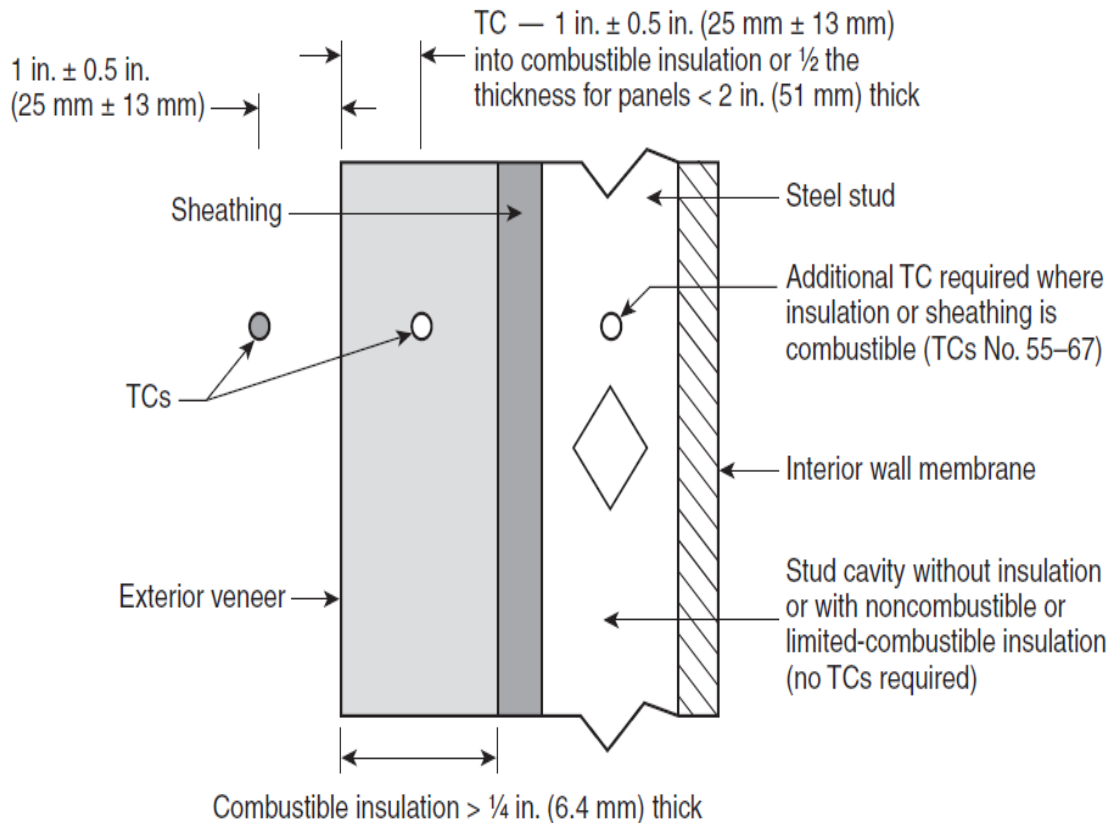


- Thermocouples (5) inside burn room 6 in. (152 mm) below ceiling

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17





Total Quality. Assured.

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR ENERGEX WALL SYSTEMS

Report No.: H1637.01-121-24-R0

Date: 09/14/17

SECTION 10

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	09/14/17	N/A	Original Report Issue