

MODIFIED ASTM E119  
FIRE RESISTANCE  
FOR  
ADVANCED BASEMENT PRODUCTS  
ON  
THE BASEMENT TUXEDO  
TESTED: JULY 2, 2008  
VTEC #100-2989



# VTEC Laboratories Inc.

July 2, 2008

**Client:** Advanced Basement Products  
7017 Americana Parkway  
Reynoldsburg, OH 43068

**Attn:** Laura Daugherty

**Subject:** Fire Resistance Testing According to Modified ASTM  
E119 Specifications.

**SAMPLE DESCRIPTION:** The Basement Tuxedo

The 36"x36"x3-1/4" thick Advanced Basement wall panel was fabricated by Advanced Basement Products and provided to VTEC Laboratories Inc. for ASTM E119 fire endurance testing. The wall was made up of 2 pieces of 1/4" thick Magnesium Oxide Board (MSP) with 2-3/4" thick high-density foam sandwiched between the two boards. The Magnesium Oxide Board (MSP) on one side was finished with fiberglass mesh fabric scrim covered with vinyl coating. The finished side was exposed to the flame.

**DISCLAIMER:** This test should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazards or fire risks of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment, which takes into account all of the factors which are pertinent to an assessment of fire hazard of a particular end use.

**Notice:** VTEC Laboratories Inc. will not be liable for any loss or damage resulting from the use of the data in this report, in excess of the invoice. This report pertains to the sample tested only. Such report shall not be interpreted to be a warranty, either expressed or implied as to the suitability or fitness of said sample for such uses or applications, as the party contracting for the report may apply such sample.

**PROCEDURE:**

The furnace used in this test measures 3ft x 3ft x 3ft. The outside construction is steel and the furnace is lined with a ceramic refractory insulation. The furnace dimensions inside the insulation are nominally 27" x 27" x 27". A single burner is centered vertically in the wall opposite the sample. This burner is rated for 1.5 million Btu/hr and is of the flat flame or non-impinging flame design. Furnace conditions are monitored by three Inconel-sheathed chromel-alumel thermocouples. These thermocouples are positioned 6" from the face of the sample.

The sample was oriented vertically in the front opening of the furnace. The unexposed surface temperature of the sample was monitored by six, 20 gauge type K, fiberglass sheathed thermocouples. An insulating pad was placed over each thermocouple on the unexposed side of the sample.

The fire test was run following the ASTM E119 time-temperature curve.

The endpoint for the ASTM E119 test occurs when either all the thermocouples on the sample reach an average of 250°F + ambient starting temperature, any individual thermocouple on the sample exceeds 325°F + ambient starting temperature, or when the sample experiences burn-through.

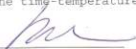
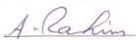
**RESULTS:**

The ambient temperature was 79°F.

At 14.5 minutes a crack formed in the unexposed side along the vent hole. At 28 minutes the average temperature on the unexposed side of the wall panel exceeded 329°F indicating failure. At 30 minutes thermocouple #6 exceeded 404°F thus reaching another failure criteria.

The sample met the passing requirements for 15 minutes of ASTM E119 Exposure.

The time-temperature data are contained on the following pages.

  
Neil Schultz  
Executive Director  
Amirudin Rahim  
Technical Director

Time (mins.)	Sample 1 deg.F	Sample 2 deg.F	Sample 3 deg.F	Sample 4 deg.F	Sample 5 deg.F	Sample 6 deg.F	Furnace deg.F	Furnace deg.F	Furnace deg.F	Sample Average	Furnace Average
0	79	79	79	79	79	79	80	80	80	79	80
1	79	79	79	78	78	79	228	257	220	79	235
2	79	79	79	78	79	79	696	676	665	79	679
3	79	79	78	78	79	79	733	710	705	79	716
4	79	79	79	79	79	79	876	830	826	79	844
5	79	79	79	78	79	80	1014	832	958	79	935
6	79	81	80	79	81	85	1026	875	970	81	957
7	80	88	86	81	86	108	1209	994	1148	88	1117
8	86	97	94	85	92	139	1279	1016	1190	99	1162
9	90	103	100	88	95	157	1365	1160	1324	106	1283
10	92	107	103	90	98	167	1423	1272	1386	110	1360
11	94	110	105	92	100	174	1432	1282	1397	112	1370
12	95	111	107	93	101	178	1464	1321	1436	114	1407
13	96	115	111	94	104	188	1473	1343	1449	118	1421
14	97	131	124	99	127	211	1494	1353	1469	131	1439
15	100	154	147	118	158	233	1490	1354	1460	152	1435
16	118	179	172	143	192	253	1509	1390	1487	175	1462
17	145	207	201	163	221	271	1480	1367	1463	201	1437
18	172	237	228	183	245	285	1485	1360	1460	225	1435
19	201	260	248	207	263	298	1486	1364	1466	246	1438
20	232	274	263	229	275	307	1504	1394	1483	263	1460
21	251	285	273	244	285	313	1512	1393	1492	275	1466
22	262	293	283	253	292	319	1518	1413	1497	284	1476
23	273	300	290	258	297	327	1532	1427	1513	291	1491
24	282	307	298	263	303	336	1550	1445	1535	298	1510
25	290	313	304	268	311	346	1555	1453	1539	305	1515
26	298	318	314	275	318	357	1559	1443	1540	313	1514
27	303	325	324	283	325	370	1573	1483	1557	322	1538
28	307	332	332	291	332	384	1568	1468	1554	330	1530
29	310	340	340	297	341	399	1579	1480	1562	338	1540
30	314	349	348	301	351	414	1584	1489	1569	346	1547