

# VTEC Laboratories Inc.

February 28, 2007

**Client:** Supress Products, LLC  
PO Box 3472  
San Rafael, CA 94912

**Attn:** Mr. Bruce Donaldson

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

**SAMPLE DESCRIPTION:** SED 3448 Wall Assembly

The 36"x36"x5.75" thick Supress Wall Assembly was fabricated by Supress Products, LLC and provided to VTEC Laboratories Inc. for ASTM E119 fire endurance testing. The wall was made up of 5 pieces of 2"x4" wood studs, 4 pieces forming a 36"x36" square frame and the fifth piece placed 18" inches from one side of the frame. Two layers of 5/8" gypsum board was attached to one side of the frame using standard drywall screws and one layer of 3/4" SED 3448 Supress Board was attached to the other side. The cavity in the frame was filled with one layer of R13 fiberglass insulation. The sample was orientated so that the gypsum board side was facing the fire.

**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 59°F.

At 2 hours 28 minutes the average of all thermocouples exceeded 309°F thus indicating failure. At 2 hours 33 minutes the test was stopped and the furnace was shut off.

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

  
Neil Schultz  
Executive Director

  
Amirudin Rahim  
Technical Director

<u>Time</u> <u>(mins.)</u>	<u>Sample 1</u> <u>deg.F</u>	<u>Sample 2</u> <u>deg.F</u>	<u>Sample 3</u> <u>deg.F</u>	<u>Sample 4</u> <u>deg.F</u>	<u>Sample 5</u> <u>deg.F</u>	<u>Sample 6</u> <u>deg.F</u>	<u>Furnace</u> <u>deg.F</u>	<u>Furnace</u> <u>deg.F</u>	<u>Furnace</u> <u>deg.F</u>	<u>Sample</u> <u>Average</u>	<u>Furnace</u> <u>Average</u>
0	59	57	59	58	59	59	54	54	55	58	54
1	59	57	59	58	59	59	474	489	464	58	475
2	59	57	59	58	59	59	493	490	477	58	487
3	59	57	59	58	58	59	529	566	527	58	540
4	59	57	59	58	58	58	744	761	736	58	747
5	59	57	59	58	58	58	1015	982	996	58	997
6	59	57	59	58	58	59	1165	842	1083	58	1030
7	59	57	59	58	58	58	1255	1157	1191	58	1201
8	59	57	59	58	58	58	1270	1161	1230	58	1220
9	59	57	59	58	58	58	1306	1190	1240	58	1246
10	59	57	59	58	58	59	1330	1225	1294	58	1283
11	59	57	59	58	57	59	1330	1258	1308	58	1298
12	59	57	59	59	58	59	1405	1291	1355	58	1350
13	59	57	59	58	57	59	1429	1304	1365	58	1366
14	59	58	59	59	57	59	1432	1323	1387	58	1381
15	59	58	60	59	58	59	1450	1325	1413	59	1396
16	60	58	60	59	58	59	1480	1352	1438	59	1423
17	60	58	60	59	58	59	1490	1388	1451	59	1443
18	60	58	60	59	58	59	1497	1401	1460	59	1453
19	61	59	61	60	58	60	1508	1411	1469	60	1463
20	62	59	61	60	58	60	1516	1420	1477	60	1471
21	62	60	62	61	59	61	1518	1430	1484	61	1477
22	63	61	63	61	59	61	1520	1436	1485	61	1480
23	64	62	63	62	59	62	1531	1444	1493	62	1489
24	66	63	64	62	60	62	1540	1454	1497	63	1497
25	67	65	65	63	60	63	1547	1459	1507	64	1504
26	68	67	66	64	61	64	1550	1471	1513	65	1511
27	70	68	67	65	61	65	1568	1480	1515	66	1521
28	71	71	68	66	62	65	1568	1490	1531	67	1530
29	73	73	69	67	62	66	1579	1508	1549	68	1543
30	74	76	71	68	63	67	1584	1510	1556	70	1551
31	76	79	72	69	64	68	1584	1516	1561	71	1553
32	78	83	74	71	65	69	1588	1522	1559	73	1558
33	80	87	76	72	66	70	1598	1528	1568	75	1564
34	82	91	78	73	67	71	1604	1533	1576	77	1571
35	85	96	81	75	68	72	1600	1537	1578	79	1571
36	87	101	84	76	69	73	1605	1545	1584	82	1576
37	90	107	87	78	71	75	1613	1551	1585	84	1583
38	93	113	90	79	72	76	1658	1593	1634	87	1628
39	96	119	94	81	73	78	1676	1609	1648	90	1644
40	99	124	98	83	75	79	1678	1616	1650	93	1648
41	102	130	102	85	77	80	1690	1628	1663	96	1660
42	105	136	107	86	79	82	1693	1635	1669	99	1666

<b>Time</b>	<b>Sample 1</b>	<b>Sample 2</b>	<b>Sample 3</b>	<b>Sample 4</b>	<b>Sample 5</b>	<b>Sample 6</b>	<b>Furnace</b>	<b>Furnace</b>	<b>Furnace</b>	<b>Sample</b>	<b>Furnace</b>
<b>(mins.)</b>	<b>deg F</b>	<b>deg F</b>	<b>deg F</b>	<b>deg F</b>	<b>deg F</b>	<b>deg F</b>	<b>deg F</b>	<b>deg F</b>	<b>deg F</b>	<b>Average</b>	<b>Average</b>
43	108	141	111	88	81	83	1689	1632	1666	102	1660
44	112	145	115	90	83	85	1673	1620	1646	105	1649
45	115	149	119	92	85	86	1668	1613	1644	108	1642
46	118	153	124	94	87	88	1674	1613	1648	110	1645
47	121	157	128	96	89	89	1673	1615	1647	113	1645
48	124	160	131	98	92	90	1674	1617	1648	116	1646
49	127	163	135	100	94	92	1672	1620	1648	118	1649
50	130	166	138	102	96	93	1694	1637	1669	121	1663
51	133	168	142	103	98	94	1703	1644	1675	123	1676
52	136	171	145	105	101	96	1699	1646	1676	126	1677
53	138	173	148	107	102	97	1713	1655	1688	128	1683
54	141	175	151	109	104	98	1713	1654	1687	130	1685
55	143	177	154	111	107	100	1713	1658	1692	132	1685
56	145	179	156	112	109	101	1726	1667	1699	134	1697
57	148	180	159	114	111	102	1724	1669	1698	136	1697
58	150	182	162	116	113	103	1720	1672	1704	138	1697
59	152	183	164	118	115	105	1732	1675	1705	139	1707
60	154	184	166	119	117	106	1726	1676	1702	141	1701
61	155	185	168	121	119	107	1733	1681	1710	143	1708
62	157	185	170	122	121	109	1735	1682	1714	144	1710
63	158	186	171	124	123	110	1742	1687	1718	146	1715
64	160	186	172	126	125	113	1742	1687	1719	147	1717
65	161	186	172	128	127	115	1742	1691	1719	148	1714
66	162	186	173	129	129	117	1736	1694	1721	149	1716
67	163	186	173	132	132	120	1747	1700	1729	151	1723
68	164	186	173	135	134	124	1751	1700	1731	152	1726
69	165	186	173	137	136	127	1756	1702	1735	154	1730
70	166	186	174	140	138	131	1754	1704	1732	156	1729
71	167	186	175	144	140	134	1749	1707	1734	158	1729
72	169	187	175	147	142	138	1756	1709	1732	160	1732
73	170	187	176	151	145	143	1758	1711	1741	162	1737
74	171	188	178	154	148	147	1774	1719	1753	164	1751
75	174	189	180	158	150	151	1780	1728	1758	167	1756
76	175	189	181	162	153	156	1785	1737	1760	169	1761
77	177	191	183	165	155	160	1787	1739	1768	172	1763
78	179	191	185	169	158	164	1789	1743	1771	174	1767
79	181	192	187	173	160	168	1789	1746	1775	177	1772
80	183	193	189	176	162	172	1789	1744	1774	179	1768
81	185	194	191	180	165	176	1798	1752	1777	182	1777
82	187	195	193	183	167	180	1800	1751	1784	184	1778
83	189	197	196	187	169	183	1798	1755	1782	187	1777
84	190	198	198	190	171	186	1795	1756	1778	189	1778
85	192	199	200	194	173	190	1798	1757	1786	191	1781

<u>Time</u> <u>(mins.)</u>	<u>Sample 1</u> <u>deg.F</u>	<u>Sample 2</u> <u>deg.F</u>	<u>Sample 3</u> <u>deg.F</u>	<u>Sample 4</u> <u>deg.F</u>	<u>Sample 5</u> <u>deg.F</u>	<u>Sample 6</u> <u>deg.F</u>	<u>Furnace</u> <u>deg.F</u>	<u>Furnace</u> <u>deg.F</u>	<u>Furnace</u> <u>deg.F</u>	<u>Sample</u> <u>Average</u>	<u>Furnace</u> <u>Average</u>
86	194	200	203	197	176	193	1802	1763	1781	194	1782
87	196	202	205	200	178	196	1803	1759	1791	196	1784
88	198	203	207	203	180	198	1803	1761	1788	198	1785
89	199	204	209	206	182	201	1807	1765	1785	200	1789
90	201	205	211	209	185	204	1806	1764	1788	202	1786
91	203	207	213	211	187	207	1813	1769	1797	204	1793
92	205	208	215	214	189	209	1810	1766	1795	207	1791