

MODIFIED ASTM E119  
FIRE SCREENING TEST  
FOR KESEM TECHNOLOGIES, INC.  
ON ½"-THICK CEASEFIRE FOR STRUCTURAL STEEL  
ON 14"-SQUARE PANEL  
VTEC #100-2787-2  
TESTED: OCTOBER 23, 2007

October 24, 2007

Client: KESEM Technologies, Inc.  
3373 Patricia Avenue  
Teaneck, NJ 07666

Attn: Mr. Avi Aviner

**Subject:** Modified ASTM E119 Fire Endurance Screening Testing  
of one 14" x 14" thick Coated Steel Plate.

**SAMPLE DESCRIPTION:**

Description: CEASEFIRE for Structural Steel  
Thickness: ½"  
Substrate: ¼" Steel Plate  
Substrate Dimensions: 14" x 14" x 0.25"  
Total Weight: 18.25 lb.

***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. It 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 that takes into account all of the factors that 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. A transition piece was placed on the front of the furnace that had an opening of 12" x 12" where the sample was to be placed.

The sample was oriented vertically in the front opening of the furnace. The unexposed surface temperature of the sample was monitored by two, 20-gauge type K, fiberglass sheathed thermocouples. There were three layers of 1" thick Kaowool insulation over the entire sample on the unexposed side.

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

The endpoint for the ASTM E119 Steel Plate Test occurs when the thermocouples on the sample reach an average of 1,000°F, or when any individual thermocouple on the sample reaches 1,200°F.

**RESULTS :**

At 139 minutes the thermocouples on the unexposed side exceeded an average of 1,000°F, thus reaching an endpoint. At 139 minutes the test was ended and the furnace shut off.

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

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Neil Schultz  
Executive Director

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Amirudin Rahim  
Technical Director

Time (min)	Unexposed Side		Unexposed Side Right (Deg. F) <u>Channel 2</u>	Furnace Temp. (Deg. F) <u>Channel 3</u>	Furnace Temp. (Deg. F) <u>Channel 4</u>	Furnace Temp. (Deg. F) <u>Channel 5</u>	Avg. of Unexposed		Avg. of Furnace (Deg. F) <u>Channel 7</u>
	Left (Deg. F) <u>Channel 1</u>	Side (Deg. F) <u>Channel 6</u>							
0	77	77	106	103	106	106	77	105	
1	78	78	905	843	827	827	78	858	
2	82	84	970	909	891	891	83	923	
3	91	95	977	920	913	913	93	937	
4	102	108	1056	1000	982	982	105	1013	
5	116	123	1106	1054	1032	1032	119	1064	
6	130	139	1107	1056	1036	1036	135	1066	
7	146	155	1155	1102	1088	1088	150	1115	
8	161	171	1189	1127	1110	1110	166	1142	
9	176	187	1286	1233	1221	1221	181	1247	
10	191	201	1311	1263	1241	1241	196	1272	
11	205	215	1352	1303	1279	1279	210	1311	
12	219	228	1368	1311	1294	1294	224	1324	
13	231	241	1380	1326	1313	1313	236	1340	
14	243	253	1418	1362	1337	1337	248	1372	
15	254	264	1432	1379	1347	1347	259	1386	
16	265	275	1467	1413	1390	1390	270	1423	
17	276	285	1476	1427	1405	1405	280	1436	
18	285	294	1487	1435	1423	1423	289	1448	
19	294	303	1508	1454	1422	1422	299	1461	
20	303	312	1519	1461	1438	1438	307	1472	
21	311	319	1527	1467	1453	1453	315	1482	
22	319	327	1536	1482	1472	1472	323	1497	
23	325	333	1556	1501	1471	1471	329	1509	
24	331	338	1553	1499	1484	1484	334	1512	
25	337	342	1558	1511	1487	1487	339	1519	
26	341	347	1548	1496	1488	1488	344	1510	
27	344	352	1580	1526	1501	1501	348	1536	
28	346	356	1580	1526	1495	1495	352	1534	
29	351	361	1596	1540	1524	1524	356	1553	
30	354	365	1607	1549	1536	1536	360	1564	
31	358	371	1614	1555	1542	1542	365	1570	
32	364	376	1624	1569	1550	1550	370	1581	
33	369	382	1627	1572	1560	1560	375	1586	

Time (min)	Unexposed Side		Unexposed Side Right (Deg. F) <u>Channel 2</u>	Furnace Temp.		Furnace Temp. (Deg. F) <u>Channel 4</u>	Furnace Temp.		Avg. of Unexposed Side (Deg. F) <u>Channel 6</u>	Avg. of Furnace (Deg. F) <u>Channel 7</u>
	Left (Deg. F) <u>Channel 1</u>			(Deg. F) <u>Channel 3</u>	(Deg. F) <u>Channel 5</u>					
34	374		388	1618	1567	1558	381	1581		
35	379		394	1620	1574	1555	387	1583		
36	385		400	1621	1569	1560	392	1584		
37	390		406	1634	1579	1575	398	1596		
38	396		412	1642	1582	1568	404	1597		
39	402		418	1653	1594	1579	410	1609		
40	407		423	1660	1613	1594	415	1622		
41	412		429	1670	1615	1585	420	1624		
42	418		434	1668	1619	1593	426	1627		
43	422		440	1666	1610	1601	431	1626		
44	428		444	1678	1622	1602	436	1634		
45	433		450	1674	1617	1609	441	1633		
46	437		455	1670	1624	1604	446	1633		
47	442		460	1684	1631	1614	451	1643		
48	447		464	1681	1630	1619	456	1643		
49	451		469	1695	1640	1630	460	1655		
50	456		474	1695	1649	1625	465	1656		
51	460		479	1700	1649	1630	469	1660		
52	464		484	1702	1652	1628	474	1661		
53	468		488	1707	1655	1648	478	1670		
54	473		493	1713	1663	1633	483	1670		
55	477		497	1713	1658	1649	487	1673		
56	481		502	1723	1671	1648	491	1681		
57	485		506	1712	1663	1647	495	1674		
58	489		510	1737	1686	1671	499	1698		
59	494		514	1758	1703	1673	504	1711		
60	497		518	1742	1692	1674	508	1703		
61	502		523	1756	1704	1684	512	1715		
62	506		527	1766	1711	1689	516	1722		
63	510		531	1766	1707	1694	521	1722		
64	514		535	1769	1715	1689	525	1724		
65	519		540	1770	1716	1684	529	1723		
66	523		544	1771	1712	1700	534	1728		
67	528		550	1770	1717	1692	539	1726		

Time (min)	Unexposed Side		Unexposed Side		Furnace Temp.		Furnace Temp.		Furnace Temp.		Avg. of Unexposed		Avg. of	
	Left (Deg. F) <u>Channel 1</u>	Right (Deg. F) <u>Channel 2</u>	(Deg. F) <u>Channel 3</u>	(Deg. F) <u>Channel 4</u>	(Deg. F) <u>Channel 5</u>	(Deg. F) <u>Channel 6</u>	(Deg. F) <u>Channel 7</u>	Side (Deg. F) <u>Channel 6</u>	Furnace (Deg. F) <u>Channel 7</u>	Side (Deg. F) <u>Channel 6</u>	Furnace (Deg. F) <u>Channel 7</u>	Side (Deg. F) <u>Channel 6</u>	Furnace (Deg. F) <u>Channel 7</u>	Side (Deg. F) <u>Channel 6</u>
68	533	554	1765	1710	1698	543	1724							
69	538	559	1773	1721	1707	549	1734							
70	543	565	1788	1729	1711	554	1742							
71	548	570	1772	1720	1711	559	1734							
72	553	577	1779	1729	1713	563	1740							
73	558	582	1786	1725	1710	570	1740							
74	564	587	1783	1734	1719	575	1745							
75	569	595	1793	1736	1712	582	1747							
76	574	598	1782	1734	1715	584	1744							
77	581	606	1804	1758	1738	593	1767							
78	589	611	1803	1752	1739	596	1764							
79	595	615	1812	1757	1727	604	1765							
80	597	622	1810	1762	1740	608	1771							
81	604	628	1811	1756	1747	616	1772							
82	611	634	1818	1764	1737	623	1773							
83	616	639	1816	1766	1742	627	1775							
84	622	641	1809	1759	1744	632	1771							
85	629	651	1816	1760	1754	637	1777							
86	637	655	1822	1764	1749	646	1779							
87	643	661	1826	1777	1763	653	1789							
88	650	667	1831	1782	1759	658	1791							
89	657	677	1838	1777	1766	665	1794							
90	664	684	1834	1781	1761	673	1792							
91	669	687	1841	1787	1779	675	1803							
92	675	695	1853	1796	1775	685	1808							
93	683	701	1837	1791	1770	692	1799							
94	687	706	1838	1783	1779	697	1800							
95	698	716	1842	1789	1758	705	1796							
96	701	718	1841	1795	1771	710	1802							
97	711	724	1851	1798	1777	720	1809							
98	716	733	1856	1798	1775	726	1810							
99	724	738	1850	1791	1781	734	1807							
100	732	748	1844	1795	1778	740	1806							
101	740	752	1857	1804	1780	745	1814							

Time (min)	Unexposed Side		Unexposed Side Right (Deg. F) <u>Channel 2</u>	Furnace Temp. (Deg. F) <u>Channel 3</u>	Furnace Temp. (Deg. F) <u>Channel 4</u>	Furnace Temp. (Deg. F) <u>Channel 5</u>	Avg. of Unexposed		Avg. of Furnace (Deg. F) <u>Channel 7</u>
	Left (Deg. F) <u>Channel 1</u>	Side (Deg. F) <u>Channel 6</u>							
102	745	759	1864	1811	1793	1823	749	1824	
103	752	768	1868	1817	1787	1824	760	1838	
104	758	774	1884	1824	1806	1828	763	1829	
105	763	778	1871	1817	1796	1830	772	1831	
106	772	784	1874	1816	1797	1827	781	1845	
107	779	790	1876	1816	1798	1842	785	1852	
108	783	796	1873	1818	1800	1853	793	1856	
109	794	808	1877	1827	1804	1862	801	1866	
110	801	813	1870	1821	1802	1872	806	1872	
111	807	816	1864	1810	1806	1845	811	1837	
112	817	827	1880	1817	1804	1842	822	1837	
113	823	834	1885	1828	1806	1845	827	1842	
114	829	837	1892	1832	1812	1845	834	1842	
115	836	846	1883	1834	1810	1845	841	1842	
116	840	852	1888	1827	1810	1842	848	1837	
117	849	860	1883	1825	1804	1842	855	1837	
118	858	865	1875	1822	1814	1842	861	1846	
119	864	873	1893	1831	1814	1845	867	1845	
120	868	880	1884	1834	1817	1845	874	1845	
121	873	884	1888	1838	1809	1845	883	1852	
122	880	894	1896	1840	1820	1852	886	1853	
123	889	902	1894	1838	1828	1856	895	1856	
124	898	908	1894	1849	1827	1862	902	1866	
125	904	912	1907	1847	1834	1860	910	1872	
126	909	918	1912	1855	1831	1866	913	1867	
127	919	930	1897	1843	1840	1866	924	1866	
128	925	932	1917	1858	1843	1860	929	1872	
129	930	940	1911	1852	1836	1867	934	1867	
130	937	945	1910	1853	1835	1866	939	1866	
131	942	955	1917	1858	1847	1874	948	1874	
132	951	959	1916	1862	1833	1870	955	1870	
133	958	969	1907	1845	1834	1862	964	1862	
134	963	975	1909	1853	1841	1868	969	1868	
135	973	980	1914	1865	1850	1876	976	1876	

Time (min)	Unexposed Side Left (Deg. F) <u>Channel 1</u>	Unexposed Side Right (Deg. F) <u>Channel 2</u>	Furnace Temp. (Deg. F) <u>Channel 3</u>	Furnace Temp. (Deg. F) <u>Channel 4</u>	Furnace Temp. (Deg. F) <u>Channel 5</u>	Avg. of Unexposed Side (Deg. F) <u>Channel 6</u>	Avg. of Furnace (Deg. F) <u>Channel 7</u>
136	978	989	1919	1863	1842	983	1874
137	984	994	1920	1864	1843	990	1876
138	991	997	1920	1864	1839	994	1874
139	996	1003	1918	1862	1837	1000	1872