TEST REPORT

REPORT NUMBER: 3197280SAT-001
ORIGINAL ISSUE DATE: August 31, 2010
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RENDERED TO

Polycrete International Inc.
355 rue des Recollets
Montreal QC H2Y 1V9

PRODUCT EVALUATED: **Polycrete® Big Block 1600**
EVALUATION PROPERTY: Fire Resistance

Report of Testing Polycrete® Big Block 1600 for compliance with the applicable requirements of the following criteria: *Modified ASTM E 119-10a Standard Test Methods for Fire Tests of Building Construction and Materials*

1 Table of Contents

2 Introduction

Intertek Testing Services NA, Inc. (Intertek) has conducted testing for Polycrete International Inc., on **Big Block 1600,** to evaluate its fire resistance. Testing was conducted in accordance with the applicable requirements of, and following the standard methods of a **Modified ASTM E 119-10a Standard Test Methods for Fire Tests of Building Construction and Materials**. This evaluation took place on August 30, 2010.

3 Test Samples

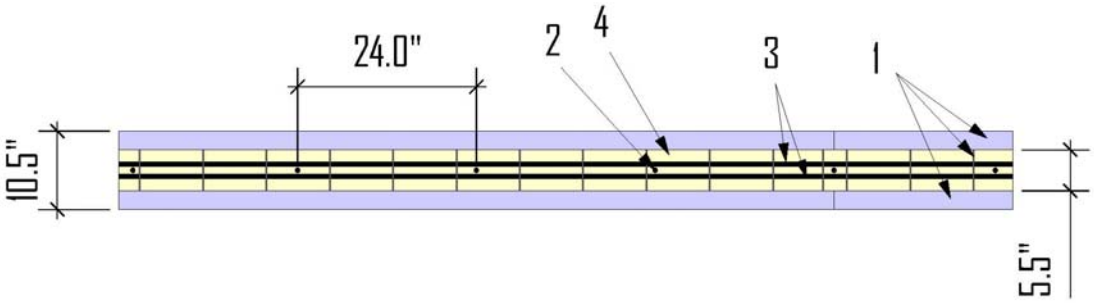
3.1. SAMPLE SELECTION

Samples of Big Block 1600 were randomly selected on October 19, 2009 by Intertek representative Jean-Philippe Plourde, at Polycrete's manufacturing facility, located at .2450 rue Jules Vachon in Trois Riviere, Quebec Canada Samples were received at the Evaluation Center on November 20, 2009

The subject test specimen is a traceable sample selected from the manufacturer's facility. Intertek selected the specimen and has verified the composition, manufacturing techniques and quality assurance procedures.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The load-bearing sample consisted of a nominal 10-1/2" thick, 10' x 10' wall. The Big Block 1600 EPS foam panels consisted of two 2' high by 8' long by 2-1/2" thick foam panels. The Big Block 1600 utilizes .016" thick steel ties that determine the thickness of the hollow core when assembled. The Big Block 1600 panels were assembled to create the wall with a hollow center nominally 6" wide. The walls were assembled using a Polycrete® steel base platform consisting of 20 gauge 1-1/2" by 1-1/2" angles tied with a 0.16" thick steel tie, then stacked in accordance with the manufacturer's instruction. The wall then had a support structure built around it consisting of 7/16" thick OSB panels and 2" x 4" lumber. After the panels were assembled, #5 rebar spaced 24" vertically and horizontally was installed through out the hollow wall assembly with the vertical rebar in the center and the horizontal rebar alternating sides of the vertical rebar. The hollow was then filled with minimum 4000psi design strength normal weight concrete. The wall was then placed in a curing room. The wall cured for eight months at temperatures ranging from 130-160° F. The wall was removed from the curing room when the relative humidity of the wall reached 74.3%.



1. ICF Panels – 8’ long x 2-1/2” thick x 24” high panels; constructed of 1.5 pcf (nominal) density pre-formed polystyrene foam boards. Panels were also cut to 2’ lengths to make the 10’ wide wall. Panels were preformed with 0.16” thick steel ties into panels to form correct spacing of panels. Ties were connected to imbedded steel in the foam panels.
2. Vertical Rebar – 10’ long #5 steel rebar spaced 24” on centers and embedded a minimum of 3” from edges of wall.
3. Horizontal Rebar – 10’ long #5 steel rebar spaced 24” on centers, each horizontal rebar alternated each side of the vertical rebar (Item #2).
4. Concrete – Normal weight, minimum 4000 psi concrete with 3/8” aggregate pumped into air space in the forms through a 4” hose. Force cured over an eight month period to reach a 74.3% R.H.

4 Testing and Evaluation Methods

4.1. INSTRUMENTATION

The unexposed surface of the assembly was instrumented with a total of 11 24 GA, Type K, fiberglass jacketed thermocouples (see Appendix A). The output of the thermocouples and the furnace probes were monitored by a 100-channel Yokogawa, Inc., Darwin Data Acquisition Unit. The computer was programmed to scan and save data every 60 seconds. Following the test, the files were imported into MS Excel for tabular and graphical display (presented in Appendix B).

4.2. TEST STANDARD

The Big Block 1600 was tested in accordance with the applicable requirements of a **Modified ASTM E119-10a Standard Test Methods for Fire Tests of Building Construction and Materials.**

4.2.1. Deviation

- A hose stream test was conducted for a period of 2-1/2 minutes at 30 psig water pressure immediately followed by a 5 minute hose stream conducted at 45 psig water pressure.

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

The assembly was secured to the full scale vertical furnace and was tested to the standard time-temperature curve described in the E 119 standard. Prior to the start of the fire test, a client-requested 10,000 plf live load was applied to the wall using 7 hydraulic actuators, and allowed to rest for 30 minutes. The load was maintained throughout the duration of the fire test and subsequent hose stream test.

The test was initiated on Monday, August 30, 2010. The ambient temperature at the time of the test was 89°F and humidity was 74% R.H.). Immediately following the fire test, the assembly was removed from the furnace, and the exposed surface was subjected to the impact, cooling and erosion effects of the standard hose stream test. The water stream was applied from a distance of 19' at a pressure of 30 psig for 2-1/2 minutes followed by a water stream of 45 psig for 5 minutes.

Observations made during the test are listed below:

Time (min:sec)	Observation
0:00	The test was initiated at 10:26 A.M.
1:00	Foam on exposed side was melting
2:30	Foam on exposed side flaming
7:30	The wires on the exposed surface were exposed; the foam has pooled at the at the bottom of the furnace and is flaming
8:20	The sample was spalling; the foam on the bottom right of unexposed surface has melted
25:00	Spalling of the sample continued; approximately 1" of concrete was missing from the bottom, center
26:00	Water was seeping out from the unexposed surface
33:25	The spalling had almost ceased; approximately 1-3/4" of concrete has degraded from the wall at 1' from the bottom at the center
41:00	Cracks in the foam on the unexposed surface were releasing steam
50:00	There was no more spalling
62:00	Water continued to seep from the unexposed surface; there was no visible change on the exposed surface
90:00	Steam continued to escape from the unexposed surface;
100:00	The foam at the center of the 1st joint from the bottom was melting
110:00	The foam beneath the pad over TC #10 was melting
115:00	The foam at the vertical joint on the 2nd block from the top was melting
122:00	The pad over TC #10 fell
128:00	Replaced TC Pad #10
133:00	Steam continued to exit the unexposed surface, but had slowed
160:00	The foam at the joints at the top was melting
167:00	The foam had melted approximately 1-1/2' up the center on the unexposed surface
179:00	Melting continued at the horizontal joint at the top right side
185:00	The foam was melting along the top of the wall on the unexposed surface
217:00	The foam on the unexposed surface continued to melt
240:00	The test was terminated

The assembly withstood the effects of the live load and the fire test without passage of flame or gasses hot enough to ignite cotton waste. The heat conducted through the assembly did not cause the temperatures measured by the thermocouples to exceed the 250°F rise in average temperature or 325°F rise in individual temperatures over the initial starting temperatures: The highest temperature reached by any thermocouple was 275°F (TC #2) and the highest average TC temperature was 179 °F (see Appendix B).

Immediately following the fire test, the assembly was removed from the furnace, and the exposed surface was subjected to the impact, cooling and erosion effects of the standard hose stream test. The water stream was applied from a distance of 19', at an angle of 100°, at a pressure of 30 psig for 2-1/2 minutes, at which time the pressure was increased to 45 psig for 5 minutes.

Time (min:sec)	Observations of the Hose Stream Test
0:00	The test was initiated
2:30	The hose pressure was increased to 45 psig
7:30	The test was terminated

The wall withstood the hose stream: No openings developed that permitted a projection of water from the stream beyond the unexposed surface during the time of the hose stream test.

Assembly drawings, the test data and photographs documenting the test are located in the Appendices of this test report.

5.2. EXAMINATION OF RESULTS

5.2.1. Correction Factor for the Fire Endurance Test

In accordance with the E119 test standard, a calculation for any correction to the indicated fire resistance period was done. The correction factor was then mathematically added to the indicated fire resistance period, yielding the fire resistance period achieved by this specimen:

Correction Factor for the Fire Endurance Test

ITEM	DESCRIPTION	TEST VALUE
C	correction factor	-0.07 minutes -4 seconds
I	indicated fire-resistance period	240 minutes
A	area under the curve of indicated average furnace temperature for the first three fourths of the indicated period	294234 (°F•min)
As	area under the standard furnace curve for the same part of the indicated period	294365 (°F•min)
ITEM	**DESCRIPTION**	**TEST VALUE**
L	lag correction	3240
	FIRE RESISTANCE PERIOD ACHIEVED BY THIS SPECIMEN ➔	240 minutes

Note: The standard specifies that the fire resistance be determined to the nearest integral minute. Consequently, if the correction factor is less than 30 seconds, and the test specimen met the criteria for the full indicated fire resistance period, no correction is deemed necessary.

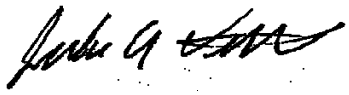
6 Conclusion

Intertek Testing Services NA, Inc. (Intertek) has conducted testing for Polycrete International Inc., on Big Block 1600 Should we call it this throughout the report, to evaluate its fire resistance in a load-bearing assembly. Testing was conducted in accordance with the applicable requirements of, and following the standard methods of a **Modified ASTM E119-010a Standard Test Methods for Fire Tests of Building Construction and Materials. This evaluation took place on August 30, 2010**.

Based on the results of this test, the Big Block 1600 wall assembly achieved a fire resistance rating of 4 hours while maintaining a live load of 10,000 per lineal foot.

The conclusions of this test report may be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

INTERTEK TESTING SERVICES NA, INC.



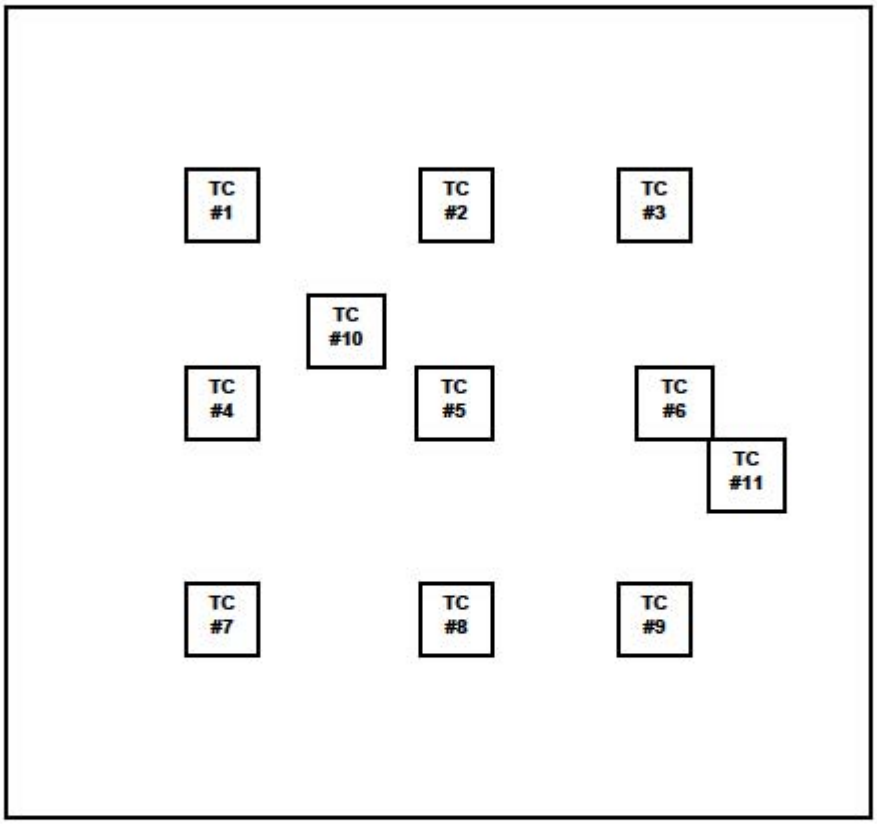
Tested by: _____
Joshua Vestal
Project Engineer

Reported by: _____
Michael A Brown
Technical Writer

Reviewed by: _____
Joseph Zatopek
Test Engineer

APPENDIX A
Assembly Drawings

Wall Assembly:
Layout of Thermocouples on the Unexposed Surface

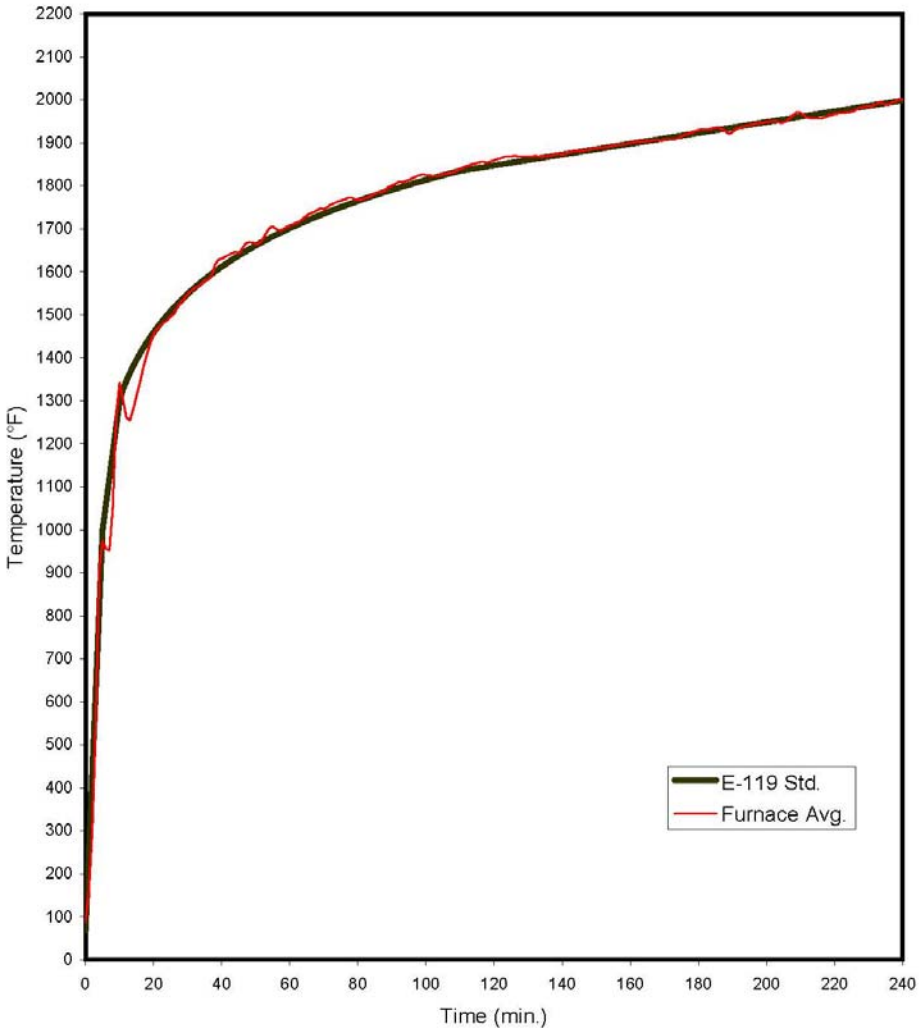


TC # 10 was located over a **horizontal joint**
TC #11 was located over a **vertical joint**

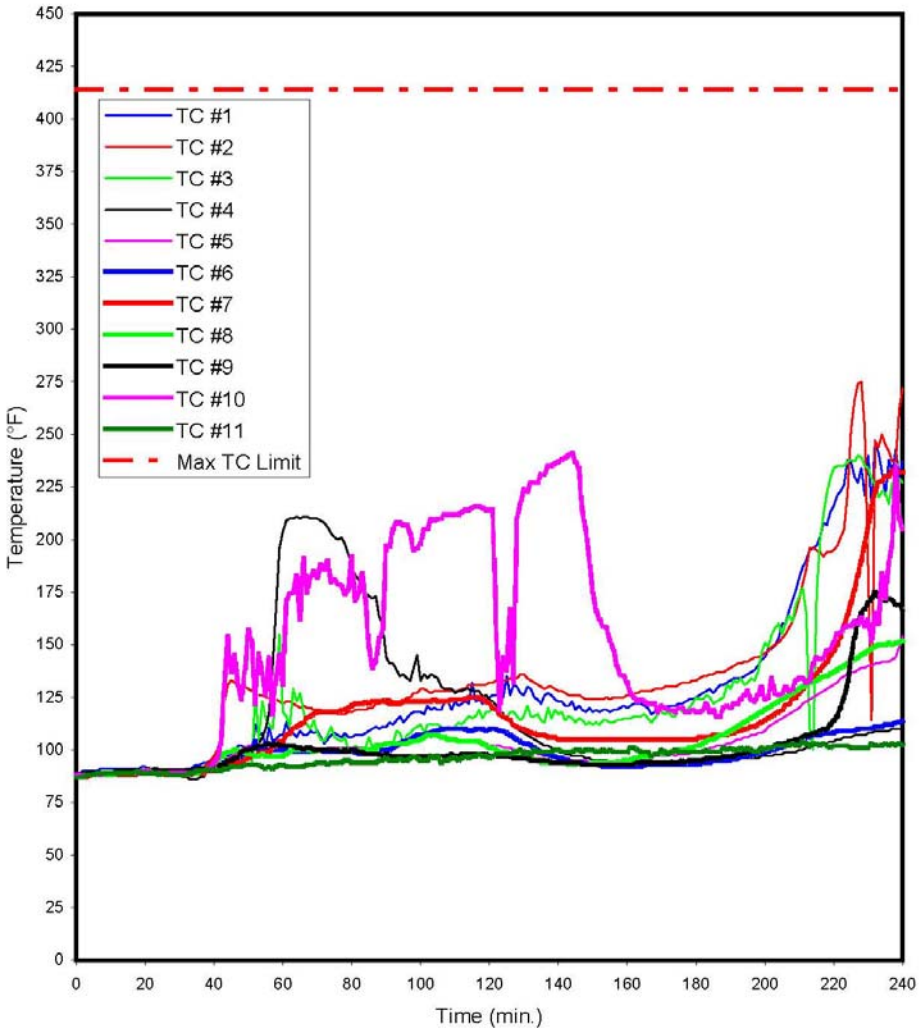
(Drawing not to scale)

APPENDIX B
Temperature Data

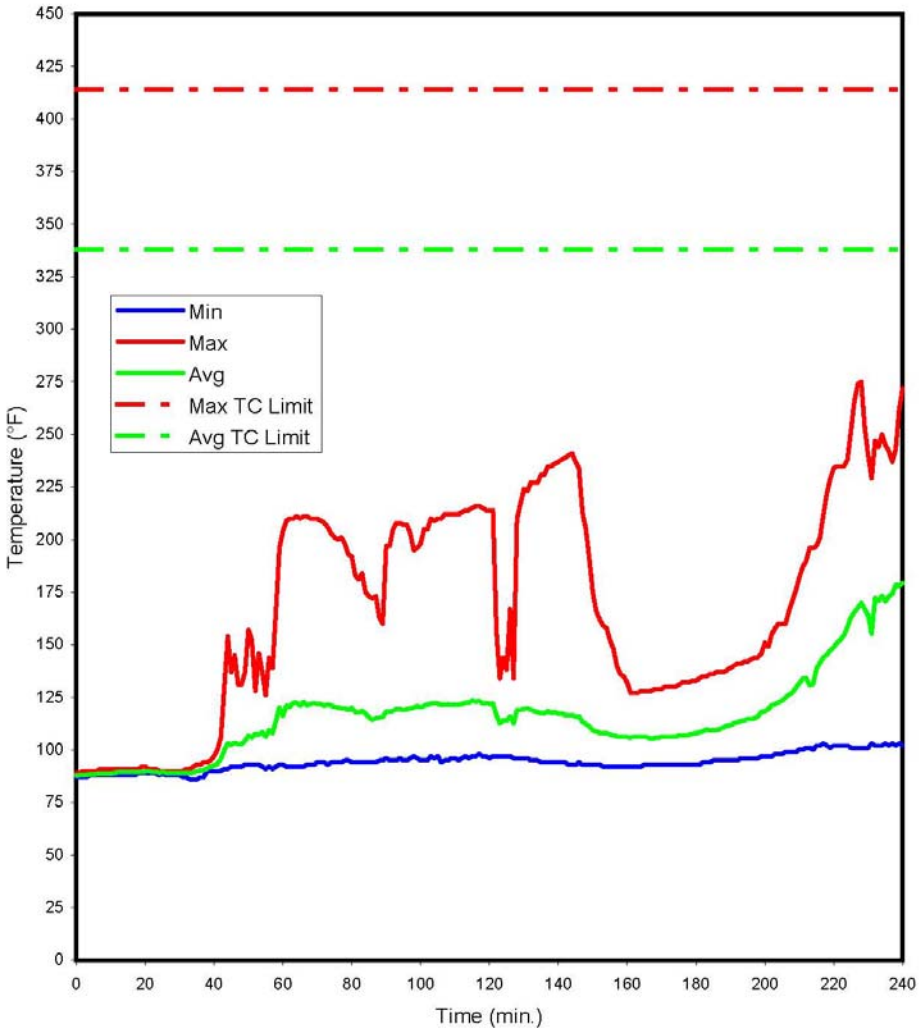
Polycrete International Inc.
Project No. 3197280SAT-001
30 August 2010
Furnace Interior Temperatures



Polycrete International Inc.
Project No. 3197280SAT-001
30 August 2010
Individual Cold Side Temperatures



Polycrete International Inc.
Project No. 3197280SAT-001
30 August 2010
Min, Avg, Max Cold Side Temperatures



Polycrete International Inc. Project No. 3197280SAT-001 30 August 2010

Time (min)	E119 Std Average (°F)	Furnace Average (°F)	Integration of Furnace Average (°F•min)	Integration of E119 Std Average (°F•min)	Error (%)	Furnace Probe #1 (°F)	Furnace Probe #2 (°F)	Furnace Probe #3 (°F)	Furnace Probe #4 (°F)	Furnace Probe #5 (°F)
0	68	90	0	0	0.00%	89	89	90	90	89
1	254	160	57	93	-38.89%	160	180	197	197	161
2	441	304	221	373	-40.69%	301	343	371	353	304
3	627	543	577	839	-31.27%	520	582	644	593	541
4	814	906	1233	1491	-17.33%	902	948	1007	982	896
5	1000	974	2105	2330	-9.66%	1003	972	1034	1023	978
6	1060	956	3002	3292	-8.81%	984	941	987	978	972
7	1120	952	3888	4314	-9.87%	968	934	968	959	970
8	1180	1053	4823	5396	-10.62%	1043	1028	1066	1062	1051
9	1240	1266	5914	6538	-9.54%	1257	1254	1298	1284	1270
10	1300	1341	7150	7740	-7.62%	1340	1323	1360	1346	1349
11	1328	1302	8404	8986	-6.48%	1297	1276	1301	1283	1313
12	1347	1262	9618	10255	-6.21%	1247	1233	1248	1227	1272
13	1364	1254	10807	11543	-6.37%	1230	1222	1230	1218	1263
14	1381	1280	12006	12847	-6.55%	1248	1245	1246	1247	1287
15	1396	1313	13235	14167	-6.58%	1277	1276	1273	1281	1317
16	1410	1343	14495	15503	-6.50%	1309	1306	1304	1315	1348
17	1424	1379	15788	16851	-6.31%	1343	1340	1335	1349	1380
18	1436	1408	17113	18213	-6.04%	1369	1370	1363	1375	1410
19	1448	1432	18465	19587	-5.73%	1392	1393	1385	1398	1437
20	1459	1455	19841	20973	-5.40%	1414	1417	1404	1422	1460
21	1470	1467	21233	22370	-5.08%	1430	1428	1421	1438	1473
22	1480	1475	22636	23777	-4.80%	1440	1436	1429	1447	1480
23	1490	1482	24047	25194	-4.55%	1451	1445	1437	1455	1487
24	1499	1487	25464	26621	-4.35%	1456	1450	1443	1460	1492
25	1508	1496	26888	28057	-4.17%	1465	1460	1451	1469	1501
26	1517	1502	28319	29502	-4.01%	1471	1467	1458	1476	1508
27	1525	1517	29761	30955	-3.86%	1485	1483	1470	1491	1522
28	1533	1529	31216	32416	-3.70%	1498	1497	1483	1504	1536
29	1541	1537	32681	33886	-3.56%	1508	1504	1494	1513	1542
30	1549	1549	34156	35363	-3.41%	1519	1515	1506	1526	1554
31	1556	1555	35640	36847	-3.28%	1526	1522	1515	1534	1561
32	1563	1562	37130	38338	-3.15%	1533	1530	1520	1541	1568
33	1570	1565	38626	39837	-3.04%	1538	1535	1525	1545	1573
34	1576	1571	40126	41342	-2.94%	1542	1541	1528	1551	1579
35	1583	1579	41633	42853	-2.85%	1550	1550	1533	1558	1587
36	1589	1582	43145	44371	-2.76%	1556	1555	1542	1564	1591
37	1595	1590	44663	45895	-2.68%	1564	1562	1552	1572	1598
38	1601	1617	46198	47424	-2.59%	1590	1589	1578	1600	1623
39	1606	1627	47752	48960	-2.47%	1601	1600	1585	1611	1634
40	1612	1631	49314	50501	-2.35%	1605	1603	1588	1614	1637
41	1617	1635	50878	52048	-2.25%	1609	1607	1592	1618	1641
42	1623	1639	52447	53600	-2.15%	1614	1611	1596	1623	1645
43	1628	1643	54020	55158	-2.06%	1619	1617	1601	1627	1651
44	1633	1646	55597	56720	-1.98%	1623	1619	1606	1632	1654
45	1638	1644	57174	58288	-1.91%	1624	1618	1612	1631	1651
46	1643	1653	58755	59860	-1.85%	1631	1628	1614	1638	1661
47	1648	1666	60346	61437	-1.78%	1642	1639	1626	1650	1672
48	1652	1669	61946	63019	-1.70%	1647	1642	1630	1655	1675
49	1657	1669	63547	64606	-1.64%	1647	1642	1631	1653	1677
50	1661	1664	65145	66197	-1.59%	1642	1639	1627	1648	1673
51	1666	1667	66743	67792	-1.55%	1644	1642	1630	1651	1675
52	1670	1676	68346	69392	-1.51%	1652	1651	1639	1659	1684
53	1674	1689	69960	70996	-1.46%	1666	1661	1657	1674	1696
54	1678	1702	71588	72604	-1.40%	1679	1676	1673	1687	1710
55	1682	1705	73224	74216	-1.34%	1683	1680	1671	1690	1714
56	1686	1699	74858	75832	-1.28%	1680	1673	1668	1686	1707
57	1690	1696	76488	77452	-1.25%	1675	1671	1657	1680	1705
58	1694	1699	78117	79076	-1.21%	1676	1674	1662	1684	1708
59	1698	1705	79751	80704	-1.18%	1683	1680	1668	1690	1713
60	1701	1708	81389	82336	-1.15%	1685	1683	1671	1693	1716

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Time (min)	E119 Std Average (°F)	Furnace Average (°F)	Integration of Furnace Average (°F•min)	Integration of E119 Std Average (°F•min)	Error (%)	Furnace Probe #1 (°F)	Furnace Probe #2 (°F)	Furnace Probe #3 (°F)	Furnace Probe #4 (°F)	Furnace Probe #5 (°F)
61	1705	1711	83030	83971	-1.12%	1688	1687	1673	1696	1719
62	1709	1714	84675	85610	-1.09%	1692	1691	1675	1699	1723
63	1712	1718	86323	87252	-1.06%	1695	1695	1681	1703	1726
64	1716	1725	87976	88898	-1.04%	1702	1702	1688	1710	1732
65	1719	1731	89636	90547	-1.01%	1709	1708	1696	1717	1738
66	1722	1736	91302	92200	-0.97%	1713	1712	1699	1722	1743
67	1726	1739	92971	93856	-0.94%	1716	1716	1700	1724	1746
68	1729	1743	94644	95515	-0.91%	1722	1720	1706	1729	1751
69	1732	1747	96321	97178	-0.88%	1727	1724	1713	1734	1755
70	1735	1746	97999	98844	-0.85%	1727	1723	1721	1735	1754
71	1738	1750	99679	100513	-0.83%	1730	1727	1723	1738	1758
72	1742	1756	101365	102185	-0.80%	1735	1733	1727	1744	1763
73	1745	1759	103054	103860	-0.78%	1738	1736	1726	1746	1765
74	1748	1763	104747	105538	-0.75%	1743	1741	1733	1750	1771
75	1751	1765	106444	107219	-0.72%	1743	1743	1733	1751	1773
76	1753	1768	108143	108903	-0.70%	1746	1746	1735	1755	1775
77	1756	1772	109844	110590	-0.67%	1751	1750	1737	1758	1779
78	1759	1773	111549	112280	-0.65%	1754	1751	1740	1760	1781
79	1762	1769	113252	113972	-0.63%	1749	1747	1735	1756	1776
80	1765	1768	114953	115668	-0.62%	1747	1744	1736	1754	1774
81	1768	1768	116653	117366	-0.61%	1747	1747	1736	1754	1775
82	1770	1771	118354	119067	-0.60%	1749	1749	1736	1756	1778
83	1773	1773	120058	120770	-0.59%	1752	1751	1739	1759	1781
84	1776	1777	121765	122476	-0.58%	1755	1755	1746	1763	1784
85	1778	1783	123477	124185	-0.57%	1761	1761	1751	1770	1789
86	1781	1785	125193	125897	-0.56%	1765	1764	1754	1772	1791
87	1783	1786	126910	127611	-0.55%	1767	1765	1759	1773	1793
88	1786	1791	128630	129327	-0.54%	1770	1769	1763	1778	1798
89	1788	1797	130356	131046	-0.53%	1775	1775	1769	1784	1803
90	1791	1801	132087	132768	-0.51%	1780	1779	1770	1788	1808
91	1793	1805	133821	134491	-0.50%	1783	1783	1776	1792	1810
92	1796	1809	135561	136218	-0.48%	1789	1787	1784	1797	1815
93	1798	1808	137301	137947	-0.47%	1789	1786	1781	1796	1814
94	1800	1811	139043	139678	-0.45%	1791	1790	1783	1798	1818
95	1803	1814	140787	141370	-0.41%	1795	1793	1789	1801	1820
96	1805	1817	142535	143105	-0.40%	1799	1796	1793	1805	1824
97	1807	1821	144286	144843	-0.38%	1801	1800	1794	1809	1827
98	1809	1825	146042	146583	-0.37%	1804	1803	1797	1812	1830
99	1812	1827	147799	148325	-0.35%	1805	1804	1799	1814	1833
100	1814	1825	149557	150069	-0.34%	1804	1804	1797	1811	1831
101	1816	1824	151314	151815	-0.33%	1804	1803	1794	1811	1831
102	1818	1823	153069	153564	-0.32%	1803	1803	1794	1810	1830
103	1820	1823	154825	155315	-0.32%	1802	1803	1793	1809	1831
104	1823	1824	156580	157068	-0.31%	1802	1803	1793	1810	1831
105	1825	1827	158338	158823	-0.31%	1806	1807	1798	1813	1834
106	1827	1829	160098	160580	-0.30%	1808	1808	1800	1816	1835
107	1829	1830	161859	162339	-0.30%	1809	1809	1801	1817	1836
108	1831	1832	163622	164100	-0.29%	1811	1811	1803	1818	1838
109	1833	1836	165388	165863	-0.29%	1815	1816	1810	1823	1842
110	1835	1840	167158	167628	-0.28%	1820	1819	1820	1828	1845
111	1836	1843	168931	169395	-0.27%	1823	1823	1818	1831	1850
112	1838	1847	170708	171164	-0.27%	1827	1826	1822	1834	1853
113	1839	1849	172488	172933	-0.26%	1829	1828	1824	1837	1855
114	1840	1851	174270	174704	-0.25%	1831	1831	1826	1840	1858
115	1841	1853	176054	176477	-0.24%	1833	1834	1828	1841	1860
116	1843	1855	177841	178250	-0.23%	1835	1835	1830	1844	1861
117	1844	1855	179628	180025	-0.22%	1837	1835	1833	1844	1862
118	1845	1854	181415	181801	-0.21%	1837	1836	1832	1843	1861
119	1846	1857	183203	183578	-0.20%	1838	1838	1833	1845	1865
120	1848	1860	184993	185357	-0.20%	1840	1840	1834	1848	1866
121	1849	1862	186786	187136	-0.19%	1842	1842	1837	1850	1868

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Time (min)	E119 Std Average (°F)	Furnace Average (°F)	Integration of Furnace Average (°F•min)	Integration of E119 Std Average (°F•min)	Error (%)	Furnace Probe #1 (°F)	Furnace Probe #2 (°F)	Furnace Probe #3 (°F)	Furnace Probe #4 (°F)	Furnace Probe #5 (°F)
122	1850	1864	188581	188917	-0.18%	1844	1844	1840	1852	1870
123	1851	1867	190379	190700	-0.17%	1847	1847	1845	1856	1873
124	1853	1868	192178	192483	-0.16%	1847	1848	1844	1857	1874
125	1854	1868	193978	194268	-0.15%	1848	1849	1844	1857	1875
126	1855	1870	195780	196054	-0.14%	1850	1850	1849	1858	1876
127	1856	1869	197581	197841	-0.13%	1848	1849	1841	1856	1875
128	1858	1868	199382	199630	-0.12%	1848	1849	1843	1856	1875
129	1859	1868	201182	201419	-0.12%	1848	1848	1842	1857	1874
130	1860	1869	202983	203210	-0.11%	1848	1849	1843	1857	1876
131	1861	1868	204783	205003	-0.11%	1848	1849	1842	1857	1875
132	1863	1870	206584	206796	-0.10%	1850	1851	1845	1858	1876
133	1864	1869	208385	208591	-0.10%	1850	1851	1843	1856	1875
134	1865	1867	210185	210387	-0.10%	1847	1849	1840	1854	1874
135	1866	1869	211985	212184	-0.09%	1849	1850	1845	1857	1876
136	1868	1869	213787	213983	-0.09%	1850	1851	1845	1858	1876
137	1869	1872	215589	215782	-0.09%	1852	1853	1846	1861	1877
138	1870	1874	217394	217583	-0.09%	1854	1855	1850	1863	1881
139	1871	1875	219200	219386	-0.08%	1856	1856	1854	1864	1882
140	1873	1872	221006	221189	-0.08%	1853	1854	1850	1861	1879
141	1874	1876	222812	222994	-0.08%	1856	1858	1853	1864	1883
142	1875	1878	224621	224801	-0.08%	1858	1861	1855	1866	1885
143	1877	1880	226432	226608	-0.08%	1860	1862	1859	1869	1887
144	1878	1882	228245	228417	-0.08%	1862	1863	1859	1871	1888
145	1879	1881	230059	230227	-0.07%	1861	1863	1858	1870	1888
146	1880	1881	231872	232038	-0.07%	1860	1863	1857	1870	1888
147	1882	1883	233686	233851	-0.07%	1862	1865	1860	1871	1889
148	1883	1884	235502	235664	-0.07%	1864	1867	1861	1873	1892
149	1884	1886	237319	237479	-0.07%	1866	1868	1864	1874	1893
150	1885	1888	239138	239296	-0.07%	1867	1870	1865	1876	1894
151	1887	1889	240959	241113	-0.06%	1867	1870	1864	1877	1896
152	1888	1890	242780	242932	-0.06%	1869	1872	1867	1878	1897
153	1889	1892	244603	244752	-0.06%	1870	1874	1870	1880	1898
154	1890	1892	246427	246573	-0.06%	1871	1874	1868	1880	1899
155	1892	1894	248251	248396	-0.06%	1875	1876	1874	1883	1900
156	1893	1895	250078	250219	-0.06%	1876	1878	1874	1884	1902
157	1894	1896	251906	252044	-0.05%	1876	1878	1876	1885	1902
158	1895	1896	253734	253871	-0.05%	1876	1879	1874	1885	1903
159	1897	1898	255563	255698	-0.05%	1879	1881	1877	1887	1905
160	1898	1900	257394	257527	-0.05%	1880	1882	1879	1889	1907
161	1899	1902	259227	259357	-0.05%	1881	1884	1881	1890	1909
162	1900	1903	261061	261188	-0.05%	1882	1886	1881	1892	1909
163	1902	1902	262896	263021	-0.05%	1882	1884	1883	1891	1909
164	1903	1903	264730	264854	-0.05%	1883	1885	1885	1893	1910
165	1904	1904	266566	266689	-0.05%	1884	1887	1884	1894	1911
166	1905	1905	268403	268526	-0.05%	1886	1888	1885	1895	1913
167	1907	1906	270240	270363	-0.05%	1886	1889	1887	1896	1912
168	1908	1907	272079	272202	-0.05%	1888	1891	1889	1897	1914
169	1909	1904	273916	274042	-0.05%	1886	1888	1885	1894	1911
170	1910	1908	275754	275883	-0.05%	1889	1892	1888	1897	1916
171	1912	1908	277594	277726	-0.05%	1888	1892	1888	1897	1916
172	1913	1908	279435	279569	-0.05%	1890	1892	1891	1899	1916
173	1914	1908	281275	281414	-0.05%	1889	1892	1889	1898	1916
174	1915	1911	283117	283261	-0.05%	1891	1895	1892	1900	1918
175	1917	1915	284962	285108	-0.05%	1895	1899	1900	1905	1922
176	1918	1919	286811	286957	-0.05%	1901	1903	1902	1910	1926
177	1919	1921	288663	288807	-0.05%	1902	1905	1901	1911	1928
178	1921	1923	290517	290658	-0.05%	1904	1908	1905	1912	1931
179	1922	1927	292374	292511	-0.05%	1907	1911	1911	1916	1934
180	1923	1930	294234	294365	-0.04%	1910	1914	1915	1920	1936
181	1924	1931	296097	296220	-0.04%	1912	1916	1915	1921	1939
182	1926	1930	297959	298077	-0.04%	1912	1915	1914	1921	1937

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Time (min)	E119 Std Average (°F)	Furnace Average (°F)	Integration of Furnace Average (°F•min)	Integration of E119 Std Average (°F•min)	Error (%)	Furnace Probe #1 (°F)	Furnace Probe #2 (°F)	Furnace Probe #3 (°F)	Furnace Probe #4 (°F)	Furnace Probe #5 (°F)
183	1927	1931	299822	299934	-0.04%	1912	1915	1914	1921	1939
184	1928	1933	301686	301793	-0.04%	1913	1917	1915	1923	1941
185	1929	1936	303552	303654	-0.03%	1916	1920	1921	1926	1943
186	1931	1937	305420	305515	-0.03%	1918	1921	1921	1927	1944
187	1932	1931	307286	307378	-0.03%	1911	1915	1910	1921	1939
188	1933	1927	309147	309242	-0.03%	1907	1911	1907	1916	1935
189	1934	1921	311003	311107	-0.03%	1902	1905	1902	1910	1928
190	1936	1925	312858	312974	-0.04%	1906	1910	1908	1914	1934
191	1937	1931	314718	314841	-0.04%	1911	1916	1915	1920	1939
192	1938	1935	316583	316710	-0.04%	1915	1919	1920	1924	1942
193	1939	1938	318451	318581	-0.04%	1917	1922	1920	1926	1945
194	1941	1939	320321	320452	-0.04%	1917	1924	1918	1926	1946
195	1942	1941	322193	322325	-0.04%	1920	1925	1923	1930	1947
196	1943	1943	324067	324199	-0.04%	1923	1927	1928	1933	1950
197	1944	1945	325943	326074	-0.04%	1924	1929	1928	1934	1952
198	1946	1946	327821	327951	-0.04%	1925	1931	1928	1935	1953
199	1947	1947	329700	329828	-0.04%	1926	1931	1927	1935	1954
200	1948	1948	331579	331707	-0.04%	1928	1933	1930	1937	1955
201	1949	1950	333460	333588	-0.04%	1929	1934	1932	1939	1956
202	1951	1950	335342	335469	-0.04%	1929	1934	1933	1939	1957
203	1952	1950	337224	337352	-0.04%	1930	1935	1933	1940	1958
204	1953	1947	339105	339236	-0.04%	1928	1933	1931	1937	1955
205	1954	1947	340984	341121	-0.04%	1928	1932	1931	1937	1955
206	1956	1951	342865	343008	-0.04%	1931	1936	1935	1940	1958
207	1957	1958	344751	344895	-0.04%	1939	1943	1944	1948	1965
208	1958	1965	346645	346784	-0.04%	1946	1950	1952	1956	1973
209	1959	1971	348545	348675	-0.04%	1951	1955	1957	1961	1979
210	1961	1970	350448	350566	-0.03%	1951	1955	1954	1960	1978
211	1962	1964	352346	352459	-0.03%	1945	1949	1947	1954	1971
212	1963	1958	354240	354353	-0.03%	1939	1943	1940	1948	1966
213	1964	1957	356129	356248	-0.03%	1938	1942	1941	1946	1964
214	1966	1957	358018	358145	-0.04%	1937	1942	1939	1945	1964
215	1967	1956	359907	360043	-0.04%	1937	1942	1940	1945	1963
216	1968	1956	361795	361942	-0.04%	1936	1942	1939	1945	1963
217	1970	1959	363684	363843	-0.04%	1939	1945	1942	1947	1968
218	1971	1962	365577	365744	-0.05%	1943	1948	1948	1952	1970
219	1972	1964	367472	367647	-0.05%	1945	1950	1951	1955	1971
220	1973	1967	369370	369552	-0.05%	1948	1953	1953	1957	1974
221	1975	1968	371269	371457	-0.05%	1950	1955	1954	1958	1976
222	1976	1968	373169	373364	-0.05%	1950	1955	1954	1958	1977
223	1977	1970	375070	375272	-0.05%	1951	1956	1954	1960	1977
224	1978	1970	376972	377181	-0.06%	1952	1957	1955	1960	1979
225	1980	1972	378876	379092	-0.06%	1953	1958	1958	1963	1979
226	1981	1975	380781	381003	-0.06%	1957	1962	1961	1965	1984
227	1982	1981	382691	382916	-0.06%	1962	1969	1968	1971	1989
228	1983	1983	384605	384831	-0.06%	1965	1970	1970	1974	1991
229	1985	1984	386520	386746	-0.06%	1966	1971	1970	1974	1994
230	1986	1984	388436	388663	-0.06%	1966	1972	1971	1975	1993
231	1987	1985	390353	390581	-0.06%	1967	1972	1972	1975	1994
232	1988	1989	392272	392500	-0.06%	1972	1977	1976	1980	1998
233	1990	1994	394196	394421	-0.06%	1977	1982	1982	1985	2003
234	1991	1992	396121	396342	-0.06%	1975	1980	1980	1983	2000
235	1992	1989	398044	398265	-0.06%	1972	1976	1976	1979	1998
236	1993	1989	399965	400190	-0.06%	1972	1978	1976	1980	1998
237	1995	1994	401888	402115	-0.06%	1976	1982	1980	1985	2003
238	1996	1997	403816	404042	-0.06%	1980	1985	1985	1988	2006
239	1997	2000	405746	405970	-0.06%	1983	1989	1986	1991	2008
240	1998	2002	407679	407899	-0.05%	1985	1991	1989	1993	2011

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Time (min)	Furnace Probe #6 (°F)	Furnace Probe #7 (°F)	Furnace Probe #8 (°F)	Furnace Probe #9 (°F)	Furnace Probe #10 (°F)	Furnace Probe #11 (°F)	Furnace Probe #12 (°F)	Cold Side Min (°F)	Cold Side Avg (°F)	Cold Side Max (°F)
0	91	90	90	bad/probe	91	88	89	87	88	89
1	176	195	144	bad/probe	149	155	121	87	88	89
2	285	360	270	bad/probe	272	277	208	87	88	90
3	508	628	528	bad/probe	496	575	356	87	88	90
4	847	1053	887	bad/probe	962	817	662	88	88	90
5	919	1082	1002	bad/probe	1051	820	833	88	88	90
6	901	1029	1002	bad/probe	1015	831	877	88	89	90
7	908	1003	998	bad/probe	995	869	904	88	89	91
8	1023	1098	1086	bad/probe	1102	1022	999	88	89	91
9	1221	1348	1266	bad/probe	1329	1232	1171	88	89	91
10	1331	1411	1345	bad/probe	1409	1249	1293	88	89	91
11	1307	1346	1321	bad/probe	1357	1200	1321	88	89	91
12	1267	1287	1289	bad/probe	1306	1194	1307	88	89	91
13	1257	1273	1282	bad/probe	1293	1219	1304	88	89	91
14	1282	1295	1306	bad/probe	1318	1273	1334	88	89	91
15	1317	1326	1338	bad/probe	1348	1315	1371	88	89	91
16	1350	1353	1364	bad/probe	1372	1348	1409	88	89	91
17	1386	1383	1398	bad/probe	1402	1390	1460	88	89	91
18	1417	1411	1433	bad/probe	1429	1411	1497	89	90	91
19	1441	1436	1460	bad/probe	1453	1440	1521	89	90	92
20	1465	1461	1484	bad/probe	1476	1460	1541	89	90	92
21	1478	1473	1493	bad/probe	1487	1463	1550	89	90	91
22	1486	1480	1500	bad/probe	1494	1479	1555	89	90	91
23	1493	1487	1506	bad/probe	1500	1485	1561	89	90	91
24	1496	1492	1510	bad/probe	1503	1496	1562	88	89	90
25	1505	1500	1519	bad/probe	1509	1503	1572	89	89	90
26	1511	1507	1524	bad/probe	1514	1516	1575	88	89	90
27	1527	1522	1539	bad/probe	1530	1532	1588	88	89	90
28	1541	1534	1551	bad/probe	1540	1540	1600	88	89	90
29	1548	1540	1558	bad/probe	1545	1549	1605	88	89	90
30	1561	1552	1569	bad/probe	1557	1562	1615	88	89	90
31	1566	1559	1574	bad/probe	1563	1567	1618	87	89	90
32	1574	1567	1582	bad/probe	1572	1577	1622	87	89	91
33	1576	1570	1585	bad/probe	1571	1574	1624	86	89	91
34	1582	1577	1591	bad/probe	1579	1585	1625	86	89	92
35	1590	1586	1600	bad/probe	1586	1594	1633	86	90	93
36	1594	1589	1601	bad/probe	1587	1588	1635	87	90	93
37	1601	1595	1609	bad/probe	1591	1605	1638	87	90	94
38	1626	1625	1636	bad/probe	1623	1635	1658	90	91	94
39	1638	1640	1648	bad/probe	1636	1637	1672	90	92	95
40	1642	1643	1651	bad/probe	1640	1638	1678	90	93	97
41	1645	1647	1653	bad/probe	1645	1644	1682	90	93	100
42	1651	1648	1658	bad/probe	1646	1649	1688	90	96	106
43	1656	1648	1664	bad/probe	1644	1655	1694	91	100	130
44	1658	1654	1664	bad/probe	1650	1651	1695	91	103	154
45	1657	1649	1659	bad/probe	1641	1650	1689	92	102	137
46	1664	1662	1668	bad/probe	1658	1665	1698	92	103	145
47	1675	1676	1682	bad/probe	1674	1677	1711	92	103	131
48	1680	1679	1686	bad/probe	1675	1676	1716	92	103	131
49	1681	1676	1686	bad/probe	1671	1675	1717	93	104	137
50	1678	1670	1683	bad/probe	1665	1670	1713	93	107	157
51	1679	1673	1683	bad/probe	1668	1677	1711	93	106	152
52	1687	1685	1693	bad/probe	1680	1686	1720	93	108	128
53	1696	1701	1703	bad/probe	1698	1697	1729	93	107	146
54	1710	1713	1716	bad/probe	1712	1706	1741	92	108	137
55	1717	1715	1722	bad/probe	1712	1707	1748	91	106	126
56	1713	1707	1715	bad/probe	1703	1700	1742	92	109	144
57	1710	1702	1713	bad/probe	1698	1702	1743	91	108	139
58	1712	1704	1715	bad/probe	1701	1706	1743	92	114	167
59	1719	1710	1722	bad/probe	1704	1713	1748	93	120	196
60	1722	1716	1725	bad/probe	1712	1714	1751	93	116	204

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Time (min)	Furnace Probe #6 (°F)	Furnace Probe #7 (°F)	Furnace Probe #8 (°F)	Furnace Probe #9 (°F)	Furnace Probe #10 (°F)	Furnace Probe #11 (°F)	Furnace Probe #12 (°F)	Cold Side Min (°F)	Cold Side Avg (°F)	Cold Side Max (°F)
61	1725	1718	1728	bad/probe	1713	1717	1754	92	121	209
62	1728	1721	1732	bad/probe	1717	1721	1758	92	120	210
63	1732	1725	1734	bad/probe	1722	1723	1761	92	122	210
64	1737	1732	1740	bad/probe	1732	1731	1765	92	122	211
65	1743	1741	1747	bad/probe	1739	1735	1771	92	121	210
66	1747	1747	1751	bad/probe	1745	1739	1775	92	123	211
67	1752	1749	1754	bad/probe	1746	1741	1780	93	121	211
68	1756	1752	1759	bad/probe	1748	1748	1784	93	122	210
69	1761	1756	1763	bad/probe	1750	1750	1789	93	122	210
70	1759	1751	1760	bad/probe	1743	1743	1785	94	122	210
71	1762	1759	1763	bad/probe	1755	1754	1786	94	122	209
72	1767	1765	1770	bad/probe	1764	1758	1794	94	121	208
73	1770	1768	1773	bad/probe	1767	1761	1797	93	122	206
74	1776	1770	1778	bad/probe	1767	1765	1802	94	121	203
75	1778	1773	1781	bad/probe	1771	1768	1805	94	121	201
76	1781	1776	1782	bad/probe	1775	1770	1808	94	120	200
77	1785	1779	1787	bad/probe	1776	1773	1812	94	120	201
78	1787	1779	1789	bad/probe	1776	1775	1816	95	120	198
79	1785	1776	1785	bad/probe	1772	1771	1811	95	119	193
80	1784	1773	1782	bad/probe	1771	1771	1807	94	120	192
81	1783	1775	1783	bad/probe	1772	1772	1808	94	118	183
82	1785	1778	1786	bad/probe	1776	1775	1811	94	118	181
83	1787	1780	1789	bad/probe	1778	1777	1812	94	119	184
84	1790	1784	1791	bad/probe	1781	1780	1814	94	117	175
85	1796	1790	1798	bad/probe	1788	1786	1821	94	115	173
86	1797	1792	1799	bad/probe	1790	1785	1823	94	114	172
87	1799	1793	1799	bad/probe	1789	1782	1824	94	115	173
88	1802	1800	1804	bad/probe	1797	1792	1826	95	115	163
89	1808	1807	1808	bad/probe	1808	1797	1831	95	116	160
90	1815	1808	1815	bad/probe	1804	1802	1838	96	118	197
91	1818	1814	1819	bad/probe	1813	1804	1841	95	118	197
92	1822	1817	1822	bad/probe	1815	1809	1846	95	119	205
93	1822	1815	1821	bad/probe	1814	1806	1845	95	119	208
94	1824	1818	1825	bad/probe	1817	1812	1848	96	119	208
95	1826	1821	1826	bad/probe	1820	1811	1849	95	119	207
96	1829	1825	1829	bad/probe	1823	1817	1852	95	119	207
97	1833	1830	1834	bad/probe	1831	1821	1856	96	120	203
98	1837	1833	1838	bad/probe	1833	1824	1861	97	120	195
99	1838	1836	1838	bad/probe	1840	1825	1860	96	121	196
100	1837	1833	1838	bad/probe	1835	1824	1861	95	120	198
101	1837	1832	1838	bad/probe	1831	1824	1861	95	121	205
102	1837	1829	1837	bad/probe	1828	1823	1861	95	122	205
103	1837	1829	1838	bad/probe	1828	1824	1863	97	122	210
104	1838	1831	1839	bad/probe	1830	1827	1863	96	122	209
105	1842	1833	1842	bad/probe	1831	1828	1866	97	122	210
106	1842	1836	1841	bad/probe	1837	1828	1865	94	121	210
107	1842	1838	1842	bad/probe	1842	1829	1865	95	122	212
108	1844	1839	1843	bad/probe	1842	1832	1867	95	122	212
109	1848	1843	1847	bad/probe	1846	1837	1869	96	121	212
110	1851	1848	1850	bad/probe	1848	1835	1873	96	122	212
111	1854	1851	1854	bad/probe	1853	1841	1876	95	121	212
112	1858	1854	1858	bad/probe	1857	1845	1879	96	122	213
113	1862	1856	1861	bad/probe	1855	1847	1882	97	122	214
114	1864	1859	1863	bad/probe	1861	1849	1884	96	123	214
115	1866	1860	1865	bad/probe	1862	1851	1888	97	123	215
116	1868	1863	1867	bad/probe	1865	1853	1889	97	123	216
117	1868	1864	1865	bad/probe	1864	1849	1888	98	123	216
118	1868	1859	1865	bad/probe	1857	1850	1889	97	122	215
119	1869	1862	1868	bad/probe	1863	1855	1890	97	122	214
120	1872	1866	1871	bad/probe	1868	1858	1893	96	122	214
121	1875	1868	1874	bad/probe	1870	1861	1895	97	122	214

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Time (min)	Furnace Probe #6 (°F)	Furnace Probe #7 (°F)	Furnace Probe #8 (°F)	Furnace Probe #9 (°F)	Furnace Probe #10 (°F)	Furnace Probe #11 (°F)	Furnace Probe #12 (°F)	Cold Side Min (°F)	Cold Side Avg (°F)	Cold Side Max (°F)
122	1876	1871	1875	bad/probe	1874	1861	1897	97	117	157
123	1878	1875	1877	bad/probe	1881	1864	1898	97	113	134
124	1879	1876	1878	bad/probe	1881	1864	1899	97	114	144
125	1880	1876	1879	bad/probe	1879	1866	1900	97	114	138
126	1882	1877	1880	bad/probe	1883	1866	1902	97	116	167
127	1881	1877	1879	bad/probe	1882	1866	1901	96	113	134
128	1881	1876	1879	bad/probe	1880	1865	1901	96	119	210
129	1880	1875	1879	bad/probe	1880	1866	1901	96	119	217
130	1881	1876	1879	bad/probe	1878	1867	1903	96	119	224
131	1881	1874	1879	bad/probe	1878	1867	1902	96	120	223
132	1883	1874	1881	bad/probe	1876	1868	1904	95	119	227
133	1884	1871	1882	bad/probe	1872	1869	1904	95	118	227
134	1882	1871	1880	bad/probe	1871	1867	1902	95	118	227
135	1883	1874	1880	bad/probe	1877	1868	1903	94	117	231
136	1883	1873	1881	bad/probe	1872	1869	1903	94	117	231
137	1885	1877	1883	bad/probe	1881	1870	1903	94	118	235
138	1887	1880	1884	bad/probe	1883	1872	1906	94	118	235
139	1888	1881	1885	bad/probe	1882	1868	1906	94	118	236
140	1885	1878	1881	bad/probe	1882	1869	1902	94	117	237
141	1888	1880	1886	bad/probe	1884	1874	1905	94	117	238
142	1891	1883	1889	bad/probe	1887	1877	1909	94	117	239
143	1893	1886	1890	bad/probe	1890	1878	1910	93	117	240
144	1895	1888	1892	bad/probe	1892	1879	1912	93	117	241
145	1895	1886	1892	bad/probe	1888	1879	1913	93	116	237
146	1895	1886	1893	bad/probe	1890	1880	1913	94	116	234
147	1896	1889	1894	bad/probe	1892	1881	1915	93	113	213
148	1898	1889	1896	bad/probe	1892	1882	1915	93	112	205
149	1900	1890	1897	bad/probe	1895	1886	1917	93	111	191
150	1901	1893	1898	bad/probe	1898	1884	1920	93	109	175
151	1902	1895	1899	bad/probe	1900	1886	1921	93	109	166
152	1903	1896	1900	bad/probe	1901	1887	1921	93	108	162
153	1905	1897	1902	bad/probe	1901	1888	1923	92	108	159
154	1905	1896	1902	bad/probe	1900	1890	1923	92	108	158
155	1907	1898	1904	bad/probe	1901	1890	1924	92	107	152
156	1908	1899	1905	bad/probe	1904	1892	1926	92	107	148
157	1907	1903	1905	bad/probe	1909	1892	1925	92	106	140
158	1909	1901	1906	bad/probe	1907	1892	1926	92	106	136
159	1912	1903	1908	bad/probe	1908	1895	1927	92	106	135
160	1913	1904	1909	bad/probe	1909	1898	1930	92	106	132
161	1914	1906	1911	bad/probe	1913	1897	1931	92	106	127
162	1915	1908	1912	bad/probe	1915	1899	1932	92	106	127
163	1914	1907	1910	bad/probe	1913	1898	1931	92	106	127
164	1915	1909	1911	bad/probe	1916	1899	1932	92	106	128
165	1916	1909	1913	bad/probe	1914	1900	1933	93	106	128
166	1918	1910	1913	bad/probe	1916	1901	1934	93	106	128
167	1918	1911	1914	bad/probe	1918	1899	1934	93	105	128
168	1919	1912	1915	bad/probe	1917	1899	1934	93	106	129
169	1917	1909	1913	bad/probe	1912	1901	1932	93	106	129
170	1921	1911	1916	bad/probe	1915	1905	1937	93	106	129
171	1921	1911	1916	bad/probe	1916	1904	1938	93	106	130
172	1921	1913	1916	bad/probe	1917	1901	1937	93	106	130
173	1921	1912	1917	bad/probe	1917	1905	1936	93	106	130
174	1924	1915	1919	bad/probe	1921	1907	1939	93	106	130
175	1927	1919	1922	bad/probe	1925	1910	1942	93	107	131
176	1931	1923	1926	bad/probe	1929	1914	1946	93	107	132
177	1934	1925	1929	bad/probe	1929	1918	1949	93	107	132
178	1936	1927	1932	bad/probe	1932	1919	1952	93	107	132
179	1938	1932	1934	bad/probe	1938	1920	1954	93	108	133
180	1941	1934	1936	bad/probe	1939	1923	1957	93	108	133
181	1943	1935	1939	bad/probe	1939	1925	1958	93	108	134
182	1944	1932	1939	bad/probe	1933	1926	1959	94	109	135

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Time (min)	Furnace Probe #6 (°F)	Furnace Probe #7 (°F)	Furnace Probe #8 (°F)	Furnace Probe #9 (°F)	Furnace Probe #10 (°F)	Furnace Probe #11 (°F)	Furnace Probe #12 (°F)	Cold Side Min (°F)	Cold Side Avg (°F)	Cold Side Max (°F)
183	1944	1935	1938	bad/probe	1939	1926	1959	94	110	135
184	1945	1937	1940	bad/probe	1942	1928	1961	94	109	136
185	1948	1939	1942	bad/probe	1945	1929	1962	95	109	136
186	1949	1940	1943	bad/probe	1945	1931	1963	95	110	137
187	1944	1934	1938	bad/probe	1939	1925	1960	95	110	137
188	1940	1930	1935	bad/probe	1934	1923	1958	95	111	137
189	1935	1924	1929	bad/probe	1928	1917	1951	95	112	138
190	1938	1928	1932	bad/probe	1932	1924	1953	95	112	139
191	1943	1934	1937	bad/probe	1940	1928	1958	95	113	140
192	1946	1938	1940	bad/probe	1945	1930	1961	95	113	141
193	1950	1940	1944	bad/probe	1945	1941	1965	96	114	141
194	1951	1941	1945	bad/probe	1946	1946	1967	96	114	142
195	1953	1942	1947	bad/probe	1948	1950	1968	96	115	142
196	1955	1944	1948	bad/probe	1950	1950	1968	96	115	143
197	1956	1946	1950	bad/probe	1952	1952	1971	96	115	144
198	1959	1947	1952	bad/probe	1953	1953	1973	96	116	144
199	1960	1947	1953	bad/probe	1952	1955	1975	97	118	146
200	1960	1949	1954	bad/probe	1955	1957	1975	97	118	151
201	1961	1951	1955	bad/probe	1957	1958	1976	97	119	149
202	1962	1950	1954	bad/probe	1956	1957	1976	97	121	155
203	1963	1951	1955	bad/probe	1957	1955	1977	98	122	158
204	1959	1947	1952	bad/probe	1949	1950	1974	98	123	160
205	1960	1948	1952	bad/probe	1953	1952	1973	98	123	160
206	1963	1952	1955	bad/probe	1958	1954	1976	99	125	160
207	1969	1959	1961	bad/probe	1967	1963	1982	99	126	166
208	1976	1967	1968	bad/probe	1973	1970	1989	99	127	171
209	1982	1973	1974	bad/probe	1980	1973	1995	99	130	176
210	1982	1971	1973	bad/probe	1977	1970	1996	100	132	182
211	1977	1965	1969	bad/probe	1969	1966	1992	100	134	187
212	1971	1959	1962	bad/probe	1965	1961	1986	101	134	190
213	1970	1958	1961	bad/probe	1964	1964	1983	101	131	196
214	1969	1956	1961	bad/probe	1963	1963	1984	100	131	196
215	1969	1956	1961	bad/probe	1962	1961	1983	102	139	197
216	1969	1956	1961	bad/probe	1961	1962	1984	102	142	201
217	1971	1958	1963	bad/probe	1963	1963	1986	103	144	212
218	1974	1962	1965	bad/probe	1969	1966	1987	102	145	222
219	1976	1965	1966	bad/probe	1973	1966	1988	101	147	229
220	1979	1967	1969	bad/probe	1973	1971	1991	102	149	234
221	1981	1967	1972	bad/probe	1972	1971	1994	102	151	235
222	1981	1968	1971	bad/probe	1973	1971	1994	102	153	235
223	1982	1969	1973	bad/probe	1974	1974	1996	102	155	235
224	1983	1970	1973	bad/probe	1976	1973	1997	102	159	238
225	1984	1972	1975	bad/probe	1978	1974	1998	101	163	252
226	1988	1974	1979	bad/probe	1979	1978	2001	101	165	266
227	1993	1979	1983	bad/probe	1986	1982	2005	101	168	274
228	1995	1982	1984	bad/probe	1989	1983	2007	101	170	275
229	1997	1983	1985	bad/probe	1989	1983	2009	101	167	253
230	1997	1984	1987	bad/probe	1991	1984	2009	101	164	240
231	1997	1985	1987	bad/probe	1992	1985	2009	103	155	229
232	2002	1988	1991	bad/probe	1996	1990	2012	102	172	247
233	2007	1994	1995	bad/probe	2001	1996	2016	102	171	244
234	2004	1992	1994	bad/probe	2000	1991	2015	102	173	250
235	2002	1988	1991	bad/probe	1994	1987	2014	103	171	245
236	2002	1988	1990	bad/probe	1995	1991	2014	102	173	242
237	2006	1992	1994	bad/probe	2000	1994	2017	103	174	237
238	2010	1996	1998	bad/probe	2003	1999	2019	102	178	243
239	2013	1998	2002	bad/probe	2005	2001	2024	103	178	262
240	2016	2001	2004	bad/probe	2008	2003	2026	102	179	272
Max Temp								103	179	275
Max Allowed									338	414

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Time (min)	Cold Side TC #1 (°F)	Cold Side TC #2 (°F)	Cold Side TC #3 (°F)	Cold Side TC #4 (°F)	Cold Side TC #5 (°F)	Cold Side TC #6 (°F)	Cold Side TC #7 (°F)	Cold Side TC #8 (°F)	Cold Side TC #9 (°F)	Cold Side TC #10 (°F)	Cold Side TC #11 (°F)
0	89	88	88	87	88	87	87	88	88	88	87
1	89	88	88	88	88	88	87	88	88	88	87
2	90	88	88	88	88	88	87	88	89	88	87
3	90	88	88	88	88	88	87	88	88	88	88
4	90	89	89	88	88	88	88	88	89	88	88
5	90	89	89	88	88	88	88	88	89	88	88
6	90	89	89	88	88	88	88	88	89	89	89
7	91	89	89	88	88	88	88	88	89	88	89
8	91	89	89	88	88	88	88	88	89	89	89
9	91	89	89	88	88	88	88	88	89	89	89
10	91	89	89	88	88	88	88	88	89	89	89
11	91	89	90	89	89	88	88	88	89	89	89
12	91	90	90	89	89	89	88	89	90	89	89
13	91	90	90	89	89	89	88	89	90	89	89
14	91	90	90	89	89	89	88	89	90	89	89
15	91	90	90	89	89	89	88	89	90	89	89
16	91	90	90	89	89	89	88	89	90	89	89
17	91	90	90	89	89	89	88	89	90	89	89
18	91	90	90	89	89	89	89	89	90	89	90
19	92	90	90	89	89	89	89	89	90	90	89
20	92	90	90	89	89	89	89	89	90	90	89
21	91	90	91	89	89	89	89	89	91	90	89
22	91	90	91	89	89	89	89	89	90	89	89
23	91	90	90	89	89	89	89	89	91	89	89
24	90	90	90	89	89	89	88	89	90	89	88
25	90	90	90	89	89	89	89	89	90	89	89
26	90	90	90	89	89	89	88	89	90	89	89
27	90	90	90	89	89	89	88	89	90	89	88
28	90	90	90	89	89	89	88	89	90	89	88
29	90	90	90	89	89	89	88	89	90	89	88
30	90	90	90	88	89	89	88	89	90	89	88
31	90	90	90	87	89	89	88	89	90	89	88
32	91	90	90	87	89	89	88	89	90	89	88
33	91	90	90	86	89	89	88	89	90	89	89
34	92	91	90	86	89	89	89	89	90	89	89
35	93	91	91	86	89	89	89	89	91	90	90
36	93	91	91	87	90	90	89	90	91	90	90
37	94	92	91	87	90	90	89	90	91	90	90
38	94	93	92	90	90	90	90	91	91	91	91
39	95	95	92	93	91	91	90	91	92	92	90
40	95	97	92	94	91	91	90	92	92	94	91
41	96	100	94	94	91	91	90	94	92	96	90
42	97	106	97	93	92	92	91	98	93	103	90
43	98	122	96	92	93	94	91	98	93	130	91
44	97	131	94	92	95	94	92	99	95	154	91
45	98	133	95	92	97	94	93	99	95	137	92
46	99	132	94	92	98	96	93	100	96	145	92
47	102	131	95	93	99	96	94	100	97	131	92
48	102	131	96	94	100	97	94	99	99	124	92
49	101	130	97	95	101	99	95	99	100	137	93
50	102	129	101	96	102	100	96	98	100	157	93
51	100	128	93	99	102	101	97	98	100	152	93
52	112	128	128	101	102	104	97	97	101	122	93
53	107	126	105	103	102	100	98	97	102	146	93
54	108	126	123	106	102	100	99	98	102	137	92
55	101	125	115	110	102	100	99	97	102	126	91
56	111	125	112	118	102	100	99	97	103	144	92
57	104	125	110	139	101	100	101	97	102	117	91
58	105	124	127	167	101	100	102	97	103	134	92
59	107	123	155	196	100	100	104	97	102	145	93
60	107	122	118	204	100	100	104	97	102	131	93

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Time (min)	Cold Side TC #1 (°F)	Cold Side TC #2 (°F)	Cold Side TC #3 (°F)	Cold Side TC #4 (°F)	Cold Side TC #5 (°F)	Cold Side TC #6 (°F)	Cold Side TC #7 (°F)	Cold Side TC #8 (°F)	Cold Side TC #9 (°F)	Cold Side TC #10 (°F)	Cold Side TC #11 (°F)
61	113	123	116	209	100	100	107	98	102	171	92
62	108	123	111	210	99	99	108	99	102	174	92
63	108	122	129	210	99	99	110	100	102	175	92
64	106	121	123	211	99	99	111	100	101	183	92
65	109	120	127	210	99	99	112	100	101	162	92
66	107	121	118	211	99	99	113	100	100	191	92
67	107	120	112	211	99	99	115	100	101	175	93
68	109	120	110	210	100	99	116	100	101	182	93
69	108	119	114	210	100	99	117	99	100	185	93
70	109	119	108	210	100	100	118	100	100	182	94
71	106	119	105	209	100	100	118	100	100	188	94
72	103	118	104	208	100	99	118	100	100	186	94
73	105	118	107	206	101	99	118	100	100	190	93
74	107	118	111	203	101	99	118	100	100	180	94
75	108	118	106	201	101	99	118	100	100	181	94
76	107	117	105	200	101	99	118	100	100	179	94
77	106	117	104	201	101	99	119	100	99	178	94
78	108	117	106	198	101	99	119	100	100	174	95
79	106	118	100	193	101	99	120	100	99	176	95
80	106	118	100	189	101	99	121	100	100	192	94
81	107	119	102	183	101	99	122	100	100	171	94
82	107	119	101	181	101	98	122	100	99	174	94
83	107	119	101	179	101	98	122	100	99	184	94
84	108	119	101	175	100	99	123	100	98	172	94
85	109	120	106	173	100	99	122	100	98	149	94
86	110	120	101	172	100	99	123	100	98	139	94
87	111	122	103	173	101	99	123	100	98	142	94
88	110	122	102	163	101	99	123	102	98	153	95
89	111	124	102	160	102	100	123	102	97	156	95
90	111	124	102	144	103	100	123	103	98	197	96
91	113	124	104	141	103	100	122	103	97	197	95
92	112	123	103	141	102	101	122	103	97	205	95
93	114	123	109	138	102	102	122	103	97	208	95
94	116	123	108	135	102	103	122	103	97	208	96
95	113	123	103	136	103	104	123	103	97	207	95
96	115	125	107	134	103	104	123	103	97	207	95
97	117	125	108	133	104	105	123	104	97	203	96
98	118	127	110	139	105	106	123	104	97	195	97
99	118	127	111	145	105	107	123	104	97	196	96
100	118	129	112	133	106	107	123	105	97	198	95
101	117	129	108	136	107	107	123	106	97	205	95
102	121	128	112	134	107	108	123	107	97	205	95
103	119	127	112	136	106	108	123	107	97	210	97
104	120	128	112	135	107	109	124	107	97	209	96
105	119	128	112	134	107	109	123	107	97	210	97
106	119	128	111	130	106	110	123	106	97	210	94
107	123	128	109	129	105	110	123	106	97	212	95
108	123	128	111	129	105	110	123	105	97	212	95
109	119	128	110	129	105	110	124	105	98	212	96
110	123	128	111	127	104	110	124	105	97	212	96
111	121	128	113	128	104	110	124	104	97	212	95
112	122	129	112	128	104	110	124	104	98	213	96
113	123	129	114	129	104	110	124	104	98	214	97
114	122	131	116	129	104	109	125	104	98	214	96
115	132	131	115	128	104	109	125	104	98	215	97
116	123	131	116	128	104	110	125	104	98	216	97
117	124	131	119	128	104	110	125	104	98	216	98
118	122	131	115	125	103	110	124	103	98	215	97
119	124	131	118	126	103	109	123	102	98	214	97
120	125	132	118	124	102	110	122	101	97	214	96
121	126	132	120	123	102	110	120	101	97	214	97

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Time (min)	Cold Side TC #1 (°F)	Cold Side TC #2 (°F)	Cold Side TC #3 (°F)	Cold Side TC #4 (°F)	Cold Side TC #5 (°F)	Cold Side TC #6 (°F)	Cold Side TC #7 (°F)	Cold Side TC #8 (°F)	Cold Side TC #9 (°F)	Cold Side TC #10 (°F)	Cold Side TC #11 (°F)
122	126	133	119	121	102	110	119	100	97	157	98
123	125	134	120	119	102	109	117	99	97	119	98
124	125	133	117	117	101	109	116	99	97	144	98
125	135	133	115	115	101	108	115	99	97	138	98
126	126	134	118	114	101	107	114	98	97	167	98
127	131	134	118	112	100	106	112	98	96	132	99
128	130	134	116	110	100	105	111	97	96	210	99
129	127	136	114	109	100	104	110	97	96	217	100
130	126	136	116	108	100	103	110	96	96	224	98
131	130	134	121	107	99	103	109	96	96	223	99
132	129	133	116	106	99	102	108	96	95	227	98
133	125	132	116	105	99	101	108	95	95	227	100
134	124	131	117	104	98	100	107	95	95	227	99
135	122	130	114	103	98	99	107	94	95	231	99
136	126	129	113	102	97	98	107	94	95	231	99
137	127	130	120	102	97	98	106	94	95	235	99
138	126	130	115	101	97	97	106	94	94	235	99
139	124	129	119	100	97	97	106	94	94	236	100
140	123	128	117	100	96	96	105	94	94	237	100
141	123	128	118	99	96	96	105	94	94	238	99
142	121	127	114	98	96	95	105	94	94	239	99
143	121	126	116	98	96	95	105	93	94	240	99
144	123	126	115	97	95	94	105	93	94	241	99
145	119	126	113	97	95	94	105	93	94	237	100
146	121	126	115	97	95	94	105	94	94	234	100
147	119	125	114	97	95	94	105	93	93	213	99
148	118	124	112	96	95	93	105	93	93	205	100
149	120	124	113	96	94	93	105	93	93	191	100
150	118	124	112	95	94	93	105	94	93	175	100
151	119	124	113	95	94	93	105	94	93	166	99
152	118	124	112	95	94	93	105	94	93	162	99
153	119	124	114	95	94	92	105	94	93	159	100
154	119	125	114	95	94	92	105	94	93	158	99
155	118	124	113	94	94	92	105	94	93	152	100
156	119	125	113	94	94	92	105	94	93	148	99
157	119	125	114	94	95	92	105	94	93	140	99
158	120	125	114	94	95	92	105	94	93	136	99
159	121	125	115	94	95	92	105	95	93	135	99
160	120	126	115	94	95	92	105	95	93	132	99
161	121	126	115	94	96	92	105	95	93	127	101
162	122	127	116	94	96	92	105	96	93	125	101
163	122	127	116	95	96	92	105	96	94	123	100
164	122	128	116	95	97	92	105	97	94	124	99
165	121	128	117	95	97	93	105	97	94	123	99
166	120	128	115	95	97	93	105	97	94	122	99
167	117	128	113	95	97	93	105	97	94	122	97
168	118	129	115	94	97	93	105	98	94	122	98
169	120	129	117	94	97	93	105	98	94	118	98
170	120	129	118	94	97	93	105	98	94	121	100
171	121	130	117	94	97	93	105	98	94	120	99
172	121	130	118	94	97	93	105	99	94	119	98
173	121	130	116	95	98	93	105	99	94	119	99
174	121	130	116	94	97	93	105	99	94	118	100
175	122	131	120	94	98	93	105	100	94	120	99
176	122	132	118	94	98	93	105	100	95	120	99
177	123	132	118	94	98	93	105	100	94	118	99
178	124	132	120	94	98	93	105	101	95	118	99
179	124	133	122	94	99	93	105	101	95	119	99
180	125	133	125	94	99	93	105	102	95	118	99
181	126	134	124	94	99	93	106	102	95	118	99
182	127	135	124	95	100	94	106	103	95	119	99

Polycrete International Inc. Project No. 3197280SAT-001 30 August 2010

Time (min)	Cold Side TC #1 (°F)	Cold Side TC #2 (°F)	Cold Side TC #3 (°F)	Cold Side TC #4 (°F)	Cold Side TC #5 (°F)	Cold Side TC #6 (°F)	Cold Side TC #7 (°F)	Cold Side TC #8 (°F)	Cold Side TC #9 (°F)	Cold Side TC #10 (°F)	Cold Side TC #11 (°F)
183	128	135	126	95	100	94	106	104	96	122	100
184	129	136	125	95	101	94	106	105	96	118	99
185	127	136	122	95	101	95	107	105	96	119	99
186	129	137	123	95	102	95	107	106	96	116	99
187	131	137	124	95	102	95	107	107	96	116	99
188	131	137	125	95	102	95	107	107	97	120	101
189	132	138	131	95	103	95	107	108	97	121	100
190	133	139	129	95	103	95	108	109	97	120	101
191	134	140	133	95	104	96	108	110	97	122	100
192	134	141	132	95	105	96	109	111	98	122	100
193	134	141	134	96	105	97	109	112	98	124	101
194	135	142	131	96	106	97	110	113	98	126	100
195	136	142	132	96	106	97	110	114	99	128	101
196	137	143	134	96	107	97	111	115	99	124	100
197	138	144	133	96	107	98	111	116	99	123	99
198	140	144	137	96	108	98	112	117	99	126	99
199	143	145	146	97	108	98	113	118	100	130	101
200	144	146	151	97	109	99	114	119	100	124	100
201	148	147	149	97	111	99	115	120	101	125	101
202	148	149	155	97	112	100	116	121	101	134	101
203	150	150	158	98	113	100	117	122	102	127	102
204	153	151	160	98	114	101	118	123	103	126	102
205	160	153	155	98	115	101	119	124	103	127	102
206	160	155	160	99	116	102	121	125	103	130	102
207	166	158	164	99	117	103	122	126	104	128	102
208	171	161	161	99	118	103	124	127	104	129	103
209	176	166	169	99	119	103	125	128	105	133	102
210	182	172	173	100	120	105	127	129	105	134	102
211	187	179	177	100	122	105	129	130	106	134	104
212	190	186	165	101	123	106	131	131	107	132	103
213	195	196	110	101	124	106	133	132	107	133	102
214	196	196	100	102	125	107	134	132	108	141	103
215	197	195	173	102	126	107	136	133	108	144	103
216	201	194	199	103	127	107	138	134	109	143	102
217	208	192	212	103	128	108	140	135	110	144	103
218	207	194	222	103	129	108	142	135	110	147	102
219	213	194	229	104	130	108	145	136	112	148	101
220	216	195	234	104	131	108	147	137	114	151	102
221	221	197	235	105	132	109	150	138	116	155	102
222	223	201	235	105	134	109	154	139	120	156	102
223	226	205	235	106	135	109	159	140	125	158	102
224	238	222	237	106	136	109	164	141	131	159	102
225	237	252	238	106	137	109	170	142	144	159	101
226	230	266	237	107	137	109	176	143	153	161	101
227	227	274	240	107	138	110	183	144	160	160	101
228	234	275	239	107	139	110	190	145	165	163	101
229	221	253	235	107	139	110	198	146	167	159	101
230	240	184	234	108	140	110	206	147	170	162	101
231	215	114	229	108	140	110	216	148	172	152	103
232	247	247	226	109	141	111	223	149	175	165	102
233	241	244	220	109	141	111	227	150	173	160	102
234	232	250	223	109	142	111	228	150	174	184	102
235	221	245	222	109	142	112	230	150	171	172	103
236	238	242	217	109	142	112	230	151	172	189	102
237	232	237	227	110	143	112	233	150	171	198	103
238	243	237	227	110	144	113	232	151	169	235	102
239	230	262	229	110	149	113	232	151	169	210	103
240	237	272	227	110	154	114	232	152	167	205	102
Max Temp	247	275	240	211	154	114	233	152	175	241	104
Max Allowed	414	413	413	412	413	412	412	413	413	413	412

APPENDIX C
Compressive Strength Data and Mix Design

Engineering • Testing • Environmental • Facilities • Infrastructure

Raba Kistner

Raba-Kistner Consultants Inc.
12821 W. Golden Lane
P.O. Box 690287, San Antonio, TX 78269-0287
(210) 699-9090 • FAX (210) 699-6426
www.rkci.com
TBPE Firm F-3257

LABORATORY TEST REPORT

Compressive Strength Test

ATTN.: MR. VICTOR M. BURGOS
TO: INTERTEK TESTING
15015 SHADY FALLS ROAD
ELMENDORF, TEXAS 78112-9764

PROJECT NO.: ASD09-011-00
CAST DATE: 12/09/2009
ASSIGNMENT NO.: SC9-029905
REPORT VERSION: A
TECHNICIAN: BENNY ELIZONDO

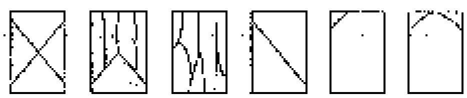
PROJECT: (Intertek) Testing Services
SAMPLE LOCATION: Poly Crete Walls at 15015 Shady Falls, Test "A"

SET INDEX:	Set 1 of 2				
SUPPLIER:	Alamo Concrete	BATCH TIME:	9:08 a.m.	AIR CONTENT (%):	ND
TRUCK NO:	255	SAMPLE TIME:	10:20 a.m.	UNIT WEIGHT (pcf):	ND
TICKET NO:	340353	CONCRETE TEMP. (°F):	69	FIELD CURED (day):	1
SAMPLED AT (cu yds):	9	AMBIENT TEMP. (°F):	40	SAMPLE TYPE:	Cylinder
DESIGN STR.(psi):	4,000	SLUMP (in.):	6.00	SAMPLE SIZE(in.):	4 x 8
PRODUCT NO.:	3240411	ARRIVE SITE:	9:30 a.m.	DEPART SITE:	2:15 p.m.

SPECIMEN NUMBER	DATE OF TEST	AGE (days)	LOAD (lbs)	AREA (in.²)	STRENGTH (psi)	PERCENT OF DESIGN	FRACTURE TYPE
23	12/16/2009	7	48,380	12.57	3,850	96	Type 3
24	12/16/2009	7	44,720	12.57	3,560	89	Type 4
25	01/06/2010	28	68,780	12.57	5,470	137	Type 2
26	01/06/2010	28	68,000	12.57	5,400	137	Type 4
27	01/06/2010	28	66,310	12.57	5,280	132	Type 2

NOTE: Some information on this test report provided by others. Testing and reporting was conducted in general accordance with the following applicable A.S.T.M. references: C31, C39, C138, C143, C172, C173, C231, C495, C1019, and C1064.

TYPES OF FRACTURE



Type 1 Type 2 Type 3 Type 4 Type 5 Type 6

REMARKS: Josh with Intertek Testing was notified of field test results. ND-Not Determined; NP-Not Provided; NA-Not Applicable; 30 Gallons of water was add by contractor to make it 6" slump Test "A".

COPIES TO: Above (1)

RABA-KISTNER CONSULTANTS, INC

STATE OF TEXAS
KENNETH W. MARQUARDT
22371
LICENSED
PROFESSIONAL ENGINEER

BY:
01/06/2010

Updated by ... 1:51 pm

Raba Kistner SINCE 1968

Mix design report

CERTIFICATE NO :

Mix design No. :	**3240411**	**Client :**	**Intertech Labs**
Plant :	**Alamo Concrete Products, Ltd.**	**Project :**	
Strength :	4 000 psi at 28 Day	w/cm Ratio :	0.50
Aggregate size :	# 8 (3/8")	Slump	6.00 ± 1.00 in
Usage :		Slump with SuperP	
Placement :		Air % :	2.5 to 5.5 %

Mix analysis

Material - Type - Supplier - City	F.M.	Gsb	Abs.	Qty SSD	Volume
Stone & Sand					
3/8" Limestone - # 8 (3/8") - LimestoneAlamo Concrete Products, Ltd.	2.88	2.580	3.00	1750 lb	10.87 ft³
Manufactured Sand - 0.39 in - Manufactured SandAlamo Concrete Products,	3.43	2.610	3.00	809 lb	4.97 ft³
Silica Sand - 0.39 in - Silica SandAlamo Concrete Products, Ltd.	1.63	2.630	1.00	544 lb	3.31 ft³
Cement & Mineral additive					
101 - Portland - Type I/II LAAlamo Cement,San Antonio		3.150		414 lb	2.11 ft³
510 - Fly Ash Class C - Class CBoral,Deely		2.690		103 lb	0.61 ft³
Water					
200 - Standard water - Standard water - Not defined		1.000		259.0 lb	4.15 ft³
Air 4.0 %					1.08 ft³
Admixture & Other constituent					
951A - Daravair 1000 - ASTM C 260 Air EntrainingW.R. Grace,Houston		1.000		1.29 oz	0.00 ft³
961A - WRDA 35 - ASTM C 494 Type A (Winter)W.R. Grace,Houston		1.000		12.42 oz	0.01 ft³
965A - Mira 59 - ASTM C 494 Type F (MRWR)W.R. Grace,Houston		1.000		41.36 oz	0.04 ft³
960Z - ZYLA R - ASTM C 494 Type D (Summer)W.R. Grace,Houston		1.000		10.35 oz	0.01 ft³
		Total		3879 lb	27.10 ft³

Unit Weight : 143.1 lb/ft³ Total mix cost :

Remarks :

Prepared by : Gregory L. Stai	Approved by : _____
Date : 12/08/2009	Date : 12/08/2009

BC051

APPENDIX D
Load Calculation

CALCULATION SHEET: PRESSURE IN HYDRAULIC LINES

Force (lbs) = W(bar) + W(blocks) + Design Load/stud or ft
W(bar) = Weight of Load Bar (lbs)
W(blocks) = Weight of Concrete Blocks (pounds)

Total Force (pounds) = W(bar) + W(blocks)
+ Design Load x No. of Studs (or No. of Ft)

Pressure in Hydraulic Line (psi) = Total Force (lbs)/(18.665 sq.in.
x No. of Actuators)

Desired Load per foot =	10000	lbs/foot
Height of Wall:	120	inches
Width of Wall:	120	inches
No. of Feet:	10	each
Weight of Wall:	7500	lbs
Weight of Bottom & Side Blocks:	1187	lbs
No. of Actuators:	7	(18.665 sq.in. each)
Required Hydraulic Pressure ===>	**832**	**psi**

APPENDIX E
Photographs


12/08/2009 11:08


12/08/2009 11:18


DITEQ
Difference!
12/08/2009 11:46


12/08/2009 11:50


12/08/2009 11:58

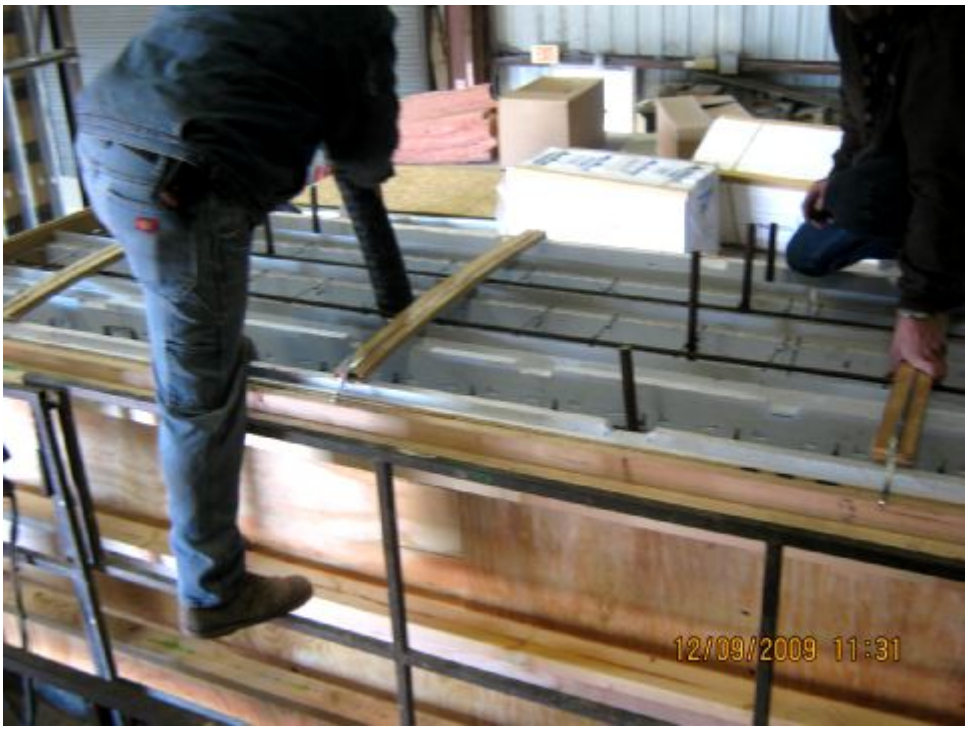

12/08/2009 11:00


12/08/2009 11:18


12/08/2009 11:53


12/09/2009 08:55


12/09/2009 08:57


12/09/2009 11:31


12/09/2009 12:10


TECH
EasyView 20
Hygro-Thermometer
93.0
74.3
%RH
MX/MN
H
%RH TEMP
Time
°C/°F
DEW
REL
WET
08/27/2010 10:04


33926
08/27/2010 16:47


08/30/2010 10:26


08/30/2010 10:27


08/30/2010 10:27


08/30/2010 10:34


08/30/2010 10:41


08/30/2010 10:49


08/30/2010 10:59


08/30/2010 11:15


08/30/2010 11:22


08/30/2010 12:20


08/30/2010 12:35


09/30/2010 13:20


09/30/2010 13:30


08/30/2010 13:33


08/30/2010 13:35


08/30/2010 13:56


08/30/2010 14:30


08/30/2010 14:32


08/30/2010 14:33


08/30/2010 14:35


08/30/2010 14:39


08/30/2010 14:40


08/30/2010 14:40


08/30/2010 14:43


08/30/2010 14:44


08/30/2010 14:43


08/30/2010 14:44

CALIBRATED INSTRUMENTATION USED FOR TESTING

Description	Serial No.	Calibration Due Date
Thermo-Hydrometer	101549662	3/5/2012
100-channel Darwin Data Acquisition Unit	99LE006	12/2/2010
Pressure Gauge	99LE002	11/19/2010
Stop Watch	91260704	11/24/11
Hyrgo-Thermometer	091002371	6/4/2011

REVISION SUMMARY

DATE	SUMMARY
August 31, 2010	Original Issue Date