SAINT-GOBAIN CONTAINERS

Air Emission Tests - Seattle Furnaces

Last Update - 01/09/2004

SO_2 limit 1.6

														Particulate Matter (PM)			Nitrogen Oxides (NOx)				Sulfur Oxides (SOx)			
Furnace	Test Date	Melter sq. ft.	Furnace Type	Pull (T/D)	Pull (ft2/ton)	Batch (T/D)	Color	Nat Gas (CFH)	Oil (GPH)	Boost (KWH/hr)	Cullet (%)	BWF	O2/Gas Ratio	Conc. (gr/dscf)	Mass (lb/hr)	lb/ton	Conc. (PPM dry)	Mass (lb/hr)	lb/ton	lb/ MMBtu	SOx PPM dry	SOx lb/hr	SOx lb/ton	lb/ MMBtu
Seattle #2	5/17/94	790	OF	144.6	5.46		F	23710		0	39.0	2655		0.028	2.63	0.44	76	5.9	0.97		55	6.0	0.99	
	6/13/95	790	OF	178.9	4.42		DLG	21500		1896	27.0	2696	2.00	0.034	3.57	0.48								
	8/27/96	790	OF	201.1	3.93		DLG	27667		1920	14.0	2744	2.01	0.066	5.75	**0.69**								
	1/22/97	790	OF	190.2	4.15		DLG	25583		1935	20.0	2740	2.00	0.028	2.79	0.35								
	7/18/97	790	OF	191.6	4.12		DLG	25583		1935	20.0	2740	2.14	0.026	2.28	0.29								
	11/18/98	790	OF	200.9	3.93		DLG	26792		1904	18.9	2735	2.53	0.122	5.29	**0.63**								
	1/14/99	790	OF	203.5	3.88		AT	27333		1883	22.6	2728	2.21	0.031	2.63	0.31								
	2/18/99	790	OF	201.5	3.92		DLG	26333		1792	27.8	2767	2.19	0.029	2.44	0.29								
	3/18/99	790	OF	193.6	4.08		DLG	24375		1771	29.7	2724	2.16	0.021	1.87	0.23								
	7/26/00	790	OF	200.8	3.93		AT	26640		1304	22.0	2712	2.24	0.037	3.14	0.38								
	11/8/01	790	OF	196.2	4.03		AT	26700		1538	30.0	2707	2.00	0.053	4.47	**0.55**								
	3/13/02	790	OF	200.0	3.95		AT	27400		1526	23.0	2734	2.00	0.054	4.16	0.50								
	10/8/02	790	OF	196.7	4.02		AG	25593		1399	49.1	2680	1.99	0.048	3.95	0.48								
	2/21/03	790	OF	200.8	3.93		AG	26852		1015	34.3	2687	2.10	0.041	3.23	0.39								
	5/8/03	790	OF	205.9	3.84		AG	26356		1250	40.0	2674	2.10	0.044	3.04	0.35								
	9/10/03	790	OF	211.5	3.74		AG	26750		1111	40.0	2680	2.20	0.041	3.32	0.38								
	11/5/03	790	OF	201.8	3.91		AG	25958		1248	40.0	2699	2.20	0.041	3.59	0.43	61	4.4	0.52		244.0	24.60	**2.93**	
	12/11/03	790	OF	162.1	4.87		DLG	22000		1160	35.0	2674	2.11	0.027	2.21	0.33					125.2	11.70	**1.73**	
Seattle #3	3/24/93	661	OF	172.4	3.83		DLG	22314		1196	29.0	2714		0.041	3.61	0.50	165	27.5	3.83		50	11.6	1.61	
																	108-231	17.7-38.2	2.46-5.32		30.7-71.2	7.0-16.4	0.97-2.28	
	3/24/94	661	OF	186.0	3.55		DLG	24000		1333	6.0	2735	2.24	0.034	6.39	0.82	45	7.3	0.94					
	5/18/94	661	OF	166.8	3.96		DLG	21450		1250	22.0	2705		0.022	4.15	0.60	34	5.3	0.76		22	4.7	0.68	
	6/14/95	661	OF	201.7	3.28		DLG	26666		1650	22.0	2738		0.034	6.07	0.72								
	8/28/96	661	OF	183.2	3.61		AT	23625		1450	21.0	2733	1.84	0.024	4.55	0.60								
	7/17/97	661	OF	201.7	3.28		DLG	28708		1454	28.3	2750	1.79	0.036	5.44	0.65								
	11/11/98	661	OF	192.9	3.42		DLG	25083		1471	34.1	2741	2.02	0.022	4.30	0.53								
	5/5/99	661	OF	192.8	3.42		DLG	28200		1633	32.2	2742	2.05	0.021	4.05	0.50								
	5/31/00	661	OF	202.9	3.26		DLG	25288		1567	45.2	2793	1.87	0.032	4.85	0.57								
	7/26/00	661	OF	199.2	3.32		DLG	23103		1433	38.0	2721	2.14	0.030	3.05	0.37								
	11/8/01	661	OF	197.4	3.34		DLG	26830		1204	43.0	2764	2.05	0.050	5.93	0.72								
	3/13/02	661	OF	189.9	3.48		DLG	24500		1146	28.0	2750	2.27	0.044	5.04	0.64								
	2/21/03	661	OF	194.3	3.40		DLG	31077		980	27.8	2782	2.05	0.054	6.49	0.80								
	5/8/03	661	OF	203.1	3.25		DLG	29395		948	50.0	2728	2.15	**0.058**	5.37	0.63								
	7/17/03	661	OF	199.3	3.31		DLG	28511		1199	35.0	2761	2.12	0.032	4.35	0.52								
	9/9/03	661	OF	195.8	3.37		DLG	27785		1192	50.0	2690	2.10	0.034	4.01	0.49								
	12/10/03	661	OF	195.1	3.39		DLG	29200		1200	35.0	2670	2.11	0.034	4.58	0.56								

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SAINT-GOBAIN CONTAINERS

Air Emission Tests - Seattle Furnaces

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														Particulate Matter (PM)			Nitrogen Oxides (NOx)				Sulfur Oxides (SOx)			
Furnace	Test Date	Melter sq. ft.	Furnace Type	Pull (T/D)	Pull (ft2/ton)	Batch (T/D)	Color	Nat Gas (CFH)	Oil (GPH)	Boost (KWH/hr)	Cullet (%)	BWF	O2/Gas Ratio	Conc. (gr/dscf)	Mass (lb/hr)	lb/ton	Conc. (PPM dry)	Mass (lb/hr)	lb/ton	lb/ MMBtu	SOx PPM dry	SOx lb/hr	SOx lb/ton	lb/ MMBtu
Seattle #5	3/25/94	661	OF	149.6	4.42		F	21300		0	49.0	2735	2.16	0.020	2.10	0.34	35	3.1	0.50					
	5/20/94	661	OF	130.7	5.06		F	19860		0	45.0	2714	2.17	0.024	2.69	0.49	47	4.1	0.75		67	8.1	1.49	
	6/15/95	661	OF	134.5	4.91		DLG	12690		1435	45.0	2699		0.009	1.34	0.24								
	8/30/96	661	OF	138.1	4.79		EG	16042		1290	64.0	2766	1.75	0.020	2.76	0.48								
	7/16/97	661	OF	151.2	4.37		F	21250		1361	32.6	2725	1.48	0.023	3.47	**0.55**								
	1/13/98	661	OF	160.7	4.11		F	20250		1256	66.0	2725	1.63	0.026	3.48	0.52								
	4/15/98	661	OF	187.0	3.53		CH	18230		1243	66.0	2767	1.81	0.015	2.77	0.36								
	11/12/98	661	OF	186.5	3.54		CH	24250		1352	41.7	2765	1.84	0.026	3.17	0.41								
	5/6/99	661	OF	197.1	3.35		DLG	25810		1385	41.2	2787	1.88	0.028	3.63	0.44								
	7/8/99	661	OF	189.2	3.50		CH	25042		1289	48.0	2744	1.87	0.023	3.19	0.40								
	8/5/99	661	OF	173.1	3.81		F	21167		1165	52.0	2624	1.84	0.018	2.56	0.35								
	9/16/99	661	OF	123.1	5.37		F	18458		816	52.0	2692	1.89	0.017	2.21	0.43								
	11/18/99	661	OF	165.3	4.00		F	24416		954	42.0	2741	1.69	0.026	3.67	0.53								
	2/23/00	661	OF	148.0	4.46		DLG	22800		985	55.0	2773	1.79	0.019	3.31	0.54								
	3/23/00	661	OF	202.0	3.27		CH	23500		1603	61.0	2750	1.66	0.026	3.70	0.44								
	4/27/00	661	OF	152.6	4.33		CH	17500		1288	57.0	2698	1.71	0.016	2.80	0.44								
	5/3/00	661	OF	155.9	4.24		CH	17800		1197	57.0	2675	1.69	0.016	3.03	0.47								
	6/1/00	661	OF	198.6	3.32		DLG	27020		1360	50.2	2768	1.62	0.032	4.85	**0.59**								
	7/26/00	661	OF	137.5	4.81		A	19822		1086	56.0	2768	1.68	0.013	2.71	0.47								
	11/8/01	661	OF	146.1	4.52		F	26667		0	25.0	2779	1.80	0.022	4.79	**0.79**								
	3/13/02	661	OF	150.0	4.41		DLG	21500		835	20.0	2768	1.87	0.033	4.52	**0.72**								
	10/9/02	661	OF	145.0	4.56		F	32850		1324	51.6	2697	1.88	0.025	3.06	0.51								
	2/21/03	661	OF	178.4	3.71		CG	17780		998	55.1	2702	2.00	0.030	2.96	0.40								
	5/8/03	661	OF	181.7	3.64		DLG	12150		1281	50.0	2700	2.15	0.044	3.47	0.46								
	9/11/03	661	OF	215.0	3.07		DLG	24600		1007	50.0	2710	2.10	0.040	6.05	**0.68**								
	11/6/03	661	OF	211.8	3.12		DLG	25698		1026	50.0	2657	2.13	0.032	5.70	**0.65**	82	12.2	1.38		68.0	13.90	1.57	
	12/9/03	661	OF	189.0	3.50		F	19000		1400	50.0	2650	2.26	0.022	3.51	0.45	40	5.3	0.67		25.3	4.63	0.59	
Seattle #4	6/5/86	440	EP	125.2	3.51		DLG	18500		875				0.089	3.59	0.69								14673
	12/13/89	440	EP	129.6	3.40		F	27000		1097	20.0	2780		0.059	6.62	1.23	875	158.2	29.30	14	3.4	0.63		24506
	1/11/91	440	EP	120.4	3.65		CH	17500		2000	45.0	2580		0.057	6.83	1.36								
	4/5/91	440	EP	142.0	3.10		DLG	17000		2100	50.0	2735		0.032	3.14	0.53	*** 1 run = 0.009Front/0.017Back, 2 runs avg. = 0.0075Front/0.0045Back							
	2/6/92	440	EP	127.9	3.44		DLG	24500		2100	40.0	2625		0.074	8.02	1.50								
	6/2/92	440	EP	131.0	3.36		DLG	19000		2100	40.0	2630		0.047	5.83	1.07								
	3/23/93	440	EP	121.7	3.62		F	21623		1278	61.0	2600		0.033	3.49	0.69								
	5/19/94	440	EP	131.3	3.35		A	20800		0	47.0	2710		0.051	7.18	1.31	518	79.3	14.50	19	4.1	0.74		
	6/16/95	440	EP	123.4	3.57		EG	16000		1360	60.0	2742		0.065	3.31	0.64								
	8/29/96	440	EP	138.7	3.17		A	20583		1321	71.0	2805		0.029	4.17	0.72								

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														Particulate Matter (PM)			Nitrogen Oxides (NOx)				Sulfur Oxides (SOx)			
Furnace	Test Date	Melter sq. ft.	Furnace Type	Pull (T/D)	Pull (ft2/ton)	Batch (T/D)	Color	Nat Gas (CFH)	Oil (GPH)	Boost (KWH/hr)	Cullet (%)	BWF	O2/Gas Ratio	Conc. (gr/dscf)	Mass (lb/hr)	lb/ton	Conc. (PPM dry)	Mass (lb/hr)	lb/ton	lb/ MMBtu	SOx PPM dry	SOx lb/hr	SOx lb/ton	lb/ MMBtu
	11/19/98	440	EP	141.9	3.10		F	20583		1480	44.7	2822		0.026	3.93	0.66								
	3/13/02	440	EP	132.0	3.33		DLG	33400		963	16.0	2798		0.025	3.66	0.67								
	2/21/03	440	EP	132.9	3.31		CH	31906		800	47.0	2807		0.031	3.88	0.70								
	5/8/03	440	EP	122.4	3.59		CH	29882		868	50.0	2795		0.035	4.87	0.95								
	9/12/03	440	EP	131.6	3.34		CH	33765		777	50.0	2775		0.023	3.22	0.58								
	12/8/03	440	EP	135.5	3.24		CH	33000		750	50.0	2770		0.030	3.78	0.67								