

APPENDIX A
Results of Laboratory Calcining Petroleum and WVU Green Coke

Petroleum Green Coke Weight Loss

					Start	End					
Run	Calcining	Sample	Tray	Tray	Tray +	Tray +	End	Loss	Coking	Coking	
					Sample	Sample	Sample	Sample	Loss	Yield	
					Temp, C	wt, g	Size	wt, g	wt, g	wt, g	wt, g
6	1310	502.68	Small	563.35	1066.03	1007.1	443.75	58.93	11.7%	88.3%	
7	1305	519.11	Small	908.87	1427.98	1366.64	457.77	61.34	11.8%	88.2%	
8	1315	504.92	Small	633.04	1137.96	1080.66	447.62	57.30	11.3%	88.7%	
9	1325	514.00	Small	921.70	1435.7	1373.59	451.89	62.11	12.1%	87.9%	
10	1315	500.62	Small	561.25	1061.87	1002.94	441.69	58.93	11.8%	88.2%	
11	1315	512.00	Small	905.98	1417.98	1358.3	452.32	59.68	11.7%	88.3%	
12	1325	506.22	Small	631.86	1138.08	1077.21	445.35	60.87	12.0%	88.0%	
13	1319	503.59	Small	918.50	1422.09	1361.09	442.59	61.00	12.1%	87.9%	
14	1321	504.73	Small	559.82	1064.55	1006.37	446.55	58.18	11.5%	88.5%	
15	1315	504.75	Small	903.97	1408.72	1346.27	442.3	62.45	12.4%	87.6%	
Average	1316.5	507.3					447.2	60.1	11.8%	88.2%	
Total Wt, g							4,472				

APPENDIX A (Continued)
Results of Calcining Petroleum and WVU Green Coke

WVU Green Coke Weight Loss

Run	Calcining	Sample	Tray	Tray	Start	End	End	Loss	Coking	Coking
					Tray +	Tray +				
					Sample	Sample				
					Sample	Sample				
Temp, C	wt, g	Size	wt, g	wt, g	wt, g	wt, g	wt, g	%	%	
16	1326	475.88	Small	629.88	1105.76	1078.54	448.66	27.22	5.7%	94.3%
17	1322	501.43	Small	915.63	1417.06	1388.65	473.02	28.41	5.7%	94.3%
18	1323	500.79	Small	558.58	1059.37	1030.11	471.53	29.26	5.8%	94.2%
19	1310	503.90	Small	900.37	1404.27	1374.11	473.74	30.16	6.0%	94.0%
20	1305	503.68	Small	627.48	1131.16	1100.72	473.24	30.44	6.0%	94.0%
21	1320	506.24	Small	912.74	1418.98	1389.26	476.52	29.72	5.9%	94.1%
22	1315	506.11	Small	555.60	1061.71	1033.07	477.47	28.64	5.7%	94.3%
23	1316	505.85	Small	896.90	1402.75	1375.2	478.3	27.55	5.4%	94.6%
24	1325	507.62	Small	625.48	1133.1	1101.94	476.46	31.16	6.1%	93.9%
25	1307	513.85	Small	910.47	1424.32	1394.03	483.56	30.29	5.9%	94.1%
26	1312	504.96	Small	553.22	1058.18	1030.1	476.88	28.08	5.6%	94.4%
27	1310	508.29	Small	894.60	1402.89	1371.13	476.53	31.76	6.2%	93.8%
28	1315	506.67	Small	622.20	1128.87	1100.17	477.97	28.70	5.7%	94.3%
29	1315	509.11	Small	906.91	1416.02	1387.53	480.62	28.49	5.6%	94.4%
30	1320	508.36	Small	551.02	1059.38	1028.82	477.8	30.56	6.0%	94.0%
31	1315	500.49	Small	890.25	1390.74	1361.28	471.03	29.46	5.9%	94.1%
32	1320	500.30	Small	619.75	1120.05	1091.3	471.55	28.75	5.7%	94.3%
33	1319	503.79	Small	904.55	1408.34	1379.96	475.41	28.38	5.6%	94.4%
34	1320	501.15	Small	548.13	1049.28	1019.51	471.38	29.77	5.9%	94.1%
35	1317	500.81	Small	886.61	1387.42	1358.73	472.12	28.69	5.7%	94.3%
36	1317	500.46	Small	616.95	1117.41	1087.85	470.9	29.56	5.9%	94.1%
37	1319	500.85	Small	900.94	1401.79	1372.45	471.51	29.34	5.9%	94.1%
38	1310	501.36	Small	545.43	1046.79	1018.79	473.36	28.00	5.6%	94.4%
Average	1316.4	503.1					473.9	29.2	5.8%	94.2%
Total Wt, g							10,900			

APPENDIX B Formulation of Cokes, Pitches, and Mixes

ATC - R&DC mixer											
5,500 g batch 19% pitch (average) 4,455 g coke 1,045 g pitch				12 samples (@400g each)							
All Coal											
Description of Test	Priority	Coke	Petroleum Coke Aggregate Straight Pitch				Anode		All Coal		
			STD	No Oil Equiv.	Calcliner Check	WVU Pitch	WVU Coke	WVU Pitch	Petroleum Coke Aggr Bl. Pitch	Blended Coke CT Pitch	Petroleum Coke Aggr CT Pitch
			Mix 1	Mix 2	Mix 3	Mix 4	Mix 5	Mix 6	Mix 7	Mix 8	Mix 9
			PC	PC	WVU calcliner PC	PC	WVUC	WVUC	PC	PC	WVUC
			CTP	PP	CTP	WVUP	CTP	WVUP	85/15 CTP/PP	85/15 CTP/WVU ^P	85/15 CTP/WVU
			Pitch								
Pitch % start			14	15	13.5	14	14	14	14.5	14.5	14
Pitch % end			18.5	19.5	18	18.5	18.5	19	19	18.5	
Total, g			4,455	4,455	4,455	4,455	4,455	4,455	4,455	4,393	
Total, lb			9.82	9.82	9.82	9.82	9.82	9.82	9.82	9.75	
WVU Calclined Pet Coke			25,616	56.47						1,485	
WVU Coke, Phase 1			4,455	9.82							
WVU Coke, Phase 2			8,310	19.64							
CT Pitch			5,569	12.28							
Pet Pitch			6,345	15.09							
WVU Pitch, Phase 1			1,202	2.65							
WVU Pitch, Phase 2			2,090	4.61							
WVU Pitch, Phase 2			662	1.46							
Required Materials											
g			lb								
25,000			55.11								
25,000			55.11								
4,455			9.82								
14,479			31.92								
6,345			15.09								
1,202			2.65								
2,752			6.07								
Green Petroleum Coke											
Calclined Petroleum Coke, green source same as or similar to above											
WVU Calclined Petroleum Coke, green source same as or similar to above											
WVU Calclined WVU Coke											
Coal Tar Pitch											
Petroleum Pitch											
WVU Pitch											

APPENDIX C
Data Table for Mix 1 – Mix 4

Mix No	Anode No	Binder Level, wt%	Alcoa GAD, g/cc	Alcoa BAD, g/cc	Koppers BAD, g/cc	ER, micro ohms-m
Mix 1	M1-1	14	1.543	1.511		
Mix 1	M1-2	14.5	1.549	1.507		
Mix 1	M1-3	15	1.554	1.503		
Mix 1	M1-4	15.5	1.555	1.508	1.501	70.7
Mix 1	M1-5	16	1.564	1.512	1.506	67.7
Mix 1	M1-6	16.5	1.565	1.516	1.51	67.2
Mix 1	M1-7	17	1.561	1.512	1.511	67.8
Mix 1	M1-8	17.5	1.573	1.518	1.515	65.2
Mix 1	M1-9	18	1.577	1.513		
Mix 1	M1-10	18.5	1.579	1.518		
Mix 2	M2-1	15	1.569	1.499		
Mix 2	M2-2	15.5	1.564	1.492	1.487	81.9
Mix 2	M2-3	16	1.567	1.49	1.488	74.1
Mix 2	M2-4	16.5	1.572	1.496	1.49	72.1
Mix 2	M2-5	17	1.573	1.494	1.49	68.2
Mix 2	M2-6	17.5	1.581	1.493	1.493	63.8
Mix 2	M2-7	18	1.588	1.493		
Mix 2	M2-8	18.5	1.587	1.491		
Mix 2	M2-9	19	1.59			
Mix 2	M2-10	19.5	1.597			
Mix 3	M3-1	13.5	1.574	1.545		
Mix 3	M3-2	14	1.595	1.554		
Mix 3	M3-3	14.5	1.602	1.56		
Mix 3	M3-4	15	1.606	1.564	1.557	63.6
Mix 3	M3-5	15.5	1.614	1.567	1.565	60.8
Mix 3	M3-6	16	1.621	1.572	1.557	58.6
Mix 3	M3-7	16.5	1.623	1.569	1.565	57.4
Mix 3	M3-8	17	1.63	1.574	1.573	55.6
Mix 3	M3-9	17.5	1.634	1.557		
Mix 3	M3-10	18	1.634			
Mix 4	M4-1	14	1.542			
Mix 4	M4-2	14.5	1.548			
Mix 4	M4-3	15	1.551	1.503		
Mix 4	M4-4	15.5	1.556	1.49	1.488	77.1
Mix 4	M4-5	16	1.568	1.49	1.491	72.2
Mix 4	M4-6	16.5	1.572	1.492	1.49	70.4
Mix 4	M4-7	17	1.576	1.495	1.491	65.6
Mix 4	M4-8	17.5	1.583	1.493	1.489	64.7
Mix 4	M4-9	18	1.581	1.491		
Mix 4	M4-10	18.5	1.591	1.491		

APPENIX C (Continued)
Data Table for Mix 1 – Mix 4

Mix No	Anode No	CO2 React Air Perm nPm	CO2 React wt loss %	CO2 Residue, wt%	%Dust + % Attr	Air wt loss, wt%	Air Residue, wt%	Air % dust + % Attr
Mix 1	M1-1							
Mix 1	M1-2							
Mix 1	M1-3							
Mix 1	M1-4					25.67	66.99	7.28
Mix 1	M1-5					24.73	68.91	6.32
Mix 1	M1-6					24.68	68.44	6.83
Mix 1	M1-7		8.39	90.34	1.23			
Mix 1	M1-8	1.48	7.73	90.75	1.5			
Mix 1	M1-9							
Mix 1	M1-10							
Mix 2	M2-1							
Mix 2	M2-2					24.78	66.81	8.36
Mix 2	M2-3	2.09						
Mix 2	M2-4	1.93				23.69	67.72	8.55
Mix 2	M2-5	1.9						
Mix 2	M2-6	1.96	5.67	93.39	0.93			
Mix 2	M2-7							
Mix 2	M2-8							
Mix 2	M2-9							
Mix 2	M2-10							
Mix 3	M3-1							
Mix 3	M3-2							
Mix 3	M3-3							
Mix 3	M3-4					23.56	69.06	7.35
Mix 3	M3-5	0.89				22.5	69.62	7.83
Mix 3	M3-6		6.7	91.88	1.41			
Mix 3	M3-7		6.19	92.84	0.96			
Mix 3	M3-8					20.16	74.23	5.57
Mix 3	M3-9							
Mix 3	M3-10							
Mix 4	M4-1							
Mix 4	M4-2							
Mix 4	M4-3							
Mix 4	M4-4					26.25	85.72	7.98
Mix 4	M4-5					25.23	67.45	7.26
Mix 4	M4-6					29.92	61.37	8.66
Mix 4	M4-7		6.79	92.46	0.73	24.94	69.48	5.56
Mix 4	M4-8	2.52	6.49	92.89	0.61			
Mix 4	M4-9							
Mix 4	M4-10							

APPENIX C (Continued)
Data Table for Mix 1 – Mix 4

Mix No	Anode No	Flexural Strength, MPa	Compressive Strength, MPa	CTE, E-6/C @ 300C	Thermal Cond, W/mK
Mix 1	M1-1				
Mix 1	M1-2				
Mix 1	M1-3				
Mix 1	M1-4	4.39	26.4	4.709	
Mix 1	M1-5	5.11	28.32	5.035	
Mix 1	M1-6	6.19	31.89	5.026	
Mix 1	M1-7	4.51	29.57	5.141	
Mix 1	M1-8	5.9		4.947	3.118
Mix 1	M1-9				
Mix 1	M1-10				
Mix 2	M2-1				
Mix 2	M2-2	3.16	21.22	4.897	
Mix 2	M2-3	4.07	23.32	4.926	2.538
Mix 2	M2-4				2.784
Mix 2	M2-5	4.52	21.27	5.014	2.64
Mix 2	M2-6	5.2		4.817	2.252
Mix 2	M2-7				
Mix 2	M2-8				
Mix 2	M2-9				
Mix 2	M2-10				
Mix 3	M3-1				
Mix 3	M3-2				
Mix 3	M3-3				
Mix 3	M3-4	7.44	33.3	5.218	
Mix 3	M3-5	7.91		5.304	2.28
Mix 3	M3-6	9.19	24.09	5.242	
Mix 3	M3-7	9.37	30.92	5.182	
Mix 3	M3-8	10.08	41.65	4.591	
Mix 3	M3-9				
Mix 3	M3-10				
Mix 4	M4-1				
Mix 4	M4-2				
Mix 4	M4-3				
Mix 4	M4-4	3.75	23.19	4.636	
Mix 4	M4-5	5.32	23.41	4.947	
Mix 4	M4-6	4.32	24.66	4.939	
Mix 4	M4-7	5.78	21.77	4.983	
Mix 4	M4-8	6.13		4.95	2.969
Mix 4	M4-9				
Mix 4	M4-10				

APPENDIX D
Data Table for Mix 5 – Mix 8

Mix No	Anode No	Binder Level, wt%	Alcoa GAD, g/cc	Alcoa BAD, g/cc	Koppers BAD, g/cc	ER, micro ohms-m
Mix 5	M5-1	14	1.598			
Mix 5	M5-2	14.5	1.606	1.573	1.568	74.7
Mix 5	M5-3	15	1.609	1.57	1.568	74.9
Mix 5	M5-4	15.5	1.614	1.575	1.573	69.1
Mix 5	M5-5	16	1.625	1.581	1.579	64.2
Mix 5	M5-6	16.5	1.633	1.58	1.578	62.4
Mix 5	M5-7	17	1.639	1.578	1.574	59.3
Mix 5	M5-8	17.5	1.644	1.576	1.575	56
Mix 5	M5-9	18	1.648	1.578	1.575	55
Mix 5	M5-10	18.5	1.652	1.575		
Mix 6	M6-1	14	1.626	1.564	1.561	69.3
Mix 6	M6-2	14.5	1.625	1.562	1.558	69.3
Mix 6	M6-3	15	1.632	1.563	1.561	66.7
Mix 6	M6-4	15.5	1.636	1.566	1.558	65.8
Mix 6	M6-5	16	1.64	1.568	1.561	61.7
Mix 6	M6-6	16.5	1.645	1.562	1.558	58.7
Mix 6	M6-7	17	1.647	1.559	1.554	57.4
Mix 6	M6-8	17.5	1.648	1.554	1.544	55.9
Mix 6	M6-9	18	1.646			
Mix 6	M6-10	18.5	1.648			
Mix 7	M7-1	14.5	1.543			
Mix 7	M7-2	15	1.543			
Mix 7	M7-3	15.5	1.553	1.507		
Mix 7	M7-4	16	1.561	1.51		
Mix 7	M7-5	16.5	1.566	1.512		
Mix 7	M7-6	17	1.569	1.513	1.51	70.4
Mix 7	M7-7	17.5	1.573	1.515	1.512	69
Mix 7	M7-8	18	1.575	1.509	1.507	68.3
Mix 7	M7-9	18.5	1.583	1.512	1.517	60.4
Mix 7	M7-10	19	1.589	1.507	1.51	59.2
Mix 8	M8-1	14.5	1.541			
Mix 8	M8-2	15	1.548	1.505		
Mix 8	M8-3	15.5	1.557	1.508		
Mix 8	M8-4	16	1.558	1.513	1.511	74.6
Mix 8	M8-5	16.5	1.566	1.515	1.512	71.9
Mix 8	M8-6	17	1.571	1.513	1.511	69.5
Mix 8	M8-7	17.5	1.575	1.511	1.511	67
Mix 8	M8-8	18	1.579	1.51	1.512	63
Mix 8	M8-9	18.5	1.579	1.507		
Mix 8	M8-10	19	1.593	1.507		

APPENDIX D (Continued)
Data Table for Mix 5 – Mix 8

Mix No	Anode No	CO2 React Air Perm nPm	CO2 React wt loss %	CO2 Residue, wt%	%Dust + % Attr	Air wt loss, wt%	Air Residue, wt%	Air % dust + % Attr
Mix 5	M5-1							
Mix 5	M5-2		3.34	95.12	1.52			
Mix 5	M5-3					2.06	97.79	
Mix 5	M5-4					1.75	97.86	0.37
Mix 5	M5-5							
Mix 5	M5-6	1.76				1.73	98.24	0.03
Mix 5	M5-7		5.26	92.04	2.66			
Mix 5	M5-8	1.98	4.09	94.64	1.25			
Mix 5	M5-9		4.56	93.8	1.63			
Mix 5	M5-10							
Mix 6	M6-1		7.42	87.81	4.75	2.45	97.42	0.12
Mix 6	M6-2		6.12	90.17	3069			
Mix 6	M6-3	1.62	11.08	83.08	5.79			
Mix 6	M6-4	1.58						
Mix 6	M6-5					2.34	97.52	0.14
Mix 6	M6-6	1.53						
Mix 6	M6-7	2.27						
Mix 6	M6-8					2.29	97.43	0.28
Mix 6	M6-9							
Mix 6	M6-10							
Mix 7	M7-1							
Mix 7	M7-2							
Mix 7	M7-3							
Mix 7	M7-4							
Mix 7	M7-5							
Mix 7	M7-6					20.83	75.33	3.81
Mix 7	M7-7	2.63				23.79	70.6	5.57
Mix 7	M7-8		5.38	94.26	0.35			
Mix 7	M7-9		5.91	92.05	2			
Mix 7	M7-10		5.37	94.08	0.53			
Mix 8	M8-1							
Mix 8	M8-2							
Mix 8	M8-3							
Mix 8	M8-4					23.52	71.68	4.74
Mix 8	M8-5					24.47	70.93	4.57
Mix 8	M8-6	1.32				24.07	69.96	5.91
Mix 8	M8-7		6	93.53	0.44			
Mix 8	M8-8		5.81	93.78	0.41			
Mix 8	M8-9							
Mix 8	M8-10							

APPENDIX D (Continued)
Data Table for Mix 5 – Mix 8

Mix No	Anode No	Flexural Strength, MPa	Compressive Strength, MPa	CTE, E-6/C @ 300C	Thermal Cond, W/mK
Mix 5	M5-1				
Mix 5	M5-2				
Mix 5	M5-3				
Mix 5	M5-4	5.78	21.57	3.859	
Mix 5	M5-5	7.37	22.62	4.504	
Mix 5	M5-6	7.14		4.615	2.889
Mix 5	M5-7	7.89	26.02	3.613	
Mix 5	M5-8	8.99		3.604	3.046
Mix 5	M5-9				
Mix 5	M5-10				
Mix 6	M6-1				
Mix 6	M6-2				
Mix 6	M6-3	6.7		3.776	2.854
Mix 6	M6-4	6.71	20.74	4.083	2.46
Mix 6	M6-5	7.05	21.27	3.999	
Mix 6	M6-6	6.95	19.56	3.997	3.082
Mix 6	M6-7		23.64	3.933	3.063
Mix 6	M6-8				
Mix 6	M6-9				
Mix 6	M6-10				
Mix 7	M7-1				
Mix 7	M7-2				
Mix 7	M7-3				
Mix 7	M7-4				
Mix 7	M7-5				
Mix 7	M7-6	4.8	28.21	4.52	
Mix 7	M7-7	5.57		4.458	2.92
Mix 7	M7-8	6.05	23.49	5.302	
Mix 7	M7-9	7.51	28.78	5.549	
Mix 7	M7-10	8.99	31.71	4.602	
Mix 8	M8-1				
Mix 8	M8-2				
Mix 8	M8-3				
Mix 8	M8-4	4.08	26.78	4.54	
Mix 8	M8-5	5.09	30.52	4.495	
Mix 8	M8-6	5.45		4.561	3.118
Mix 8	M8-7	6.31	25.14	4.182	
Mix 8	M8-8	6.56	25.03	4.372	
Mix 8	M8-9				
Mix 8	M8-10				

APPENDIX E
Data Table for Mix 9 – Mix 12

Mix No	Anode No	Binder Level, wt%	Alcoa GAD, g/cc	Alcoa BAD, g/cc	Koppers BAD, g/cc	ER, micro ohms-m
Mix 9	M9-1	14	1.6			
Mix 9	M9-2	14.5	1.609			
Mix 9	M9-3	15	1.614			
Mix 9	M9-4	15.5	1.623		1.559	67.4
Mix 9	M9-5	16	1.627		1.566	63.6
Mix 9	M9-6	16.5	1.634		1.566	60.8
Mix 9	M9-7	17	1.638		1.571	58.1
Mix 9	M9-8	17.5	1.645		1.568	56
Mix 9	M9-9	18	1.646		1.559	56.2
Mix 9	M9-10	18.5	1.651			
Mix 10	M10-1	14.5	1.559			
Mix 10	M10-2	15	1.572			
Mix 10	M10-3	15.5	1.574			
Mix 10	M10-4	16	1.581		1.521	69.9
Mix 10	M10-5	16.5	1.588		1.521	67
Mix 10	M10-6	17	1.597		1.524	64
Mix 10	M10-7	17.5	1.605		1.528	61.2
Mix 10	M10-8	18	1.605		1.522	60.2
Mix 10	M10-9	18.5	1.61		1.515	58.3
Mix 10	M10-10	19	1.619			
Mix 11	M11-1	14	1.524			
Mix 11	M11-2	14.5	1.533			
Mix 11	M11-3	15	1.541			
Mix 11	M11-4	15.5	1.55		1.493	78.2
Mix 11	M11-5	16	1.547		1.484	80
Mix 11	M11-6	16.5	1.559		1.494	74.2
Mix 11	M11-7	17	1.565		1.494	73.9
Mix 11	M11-8	17.5	1.564		1.502	67.3
Mix 11	M11-9	18	1.577		1.508	65.3
Mix 11	M11-10	18.5	1.582			
Mix 12	M12-1	17.5	1.573			
Mix 12	M12-2	17.5	1.587		1.476	59.1
Mix 12	M12-3	17.5	1.589		1.479	60.9

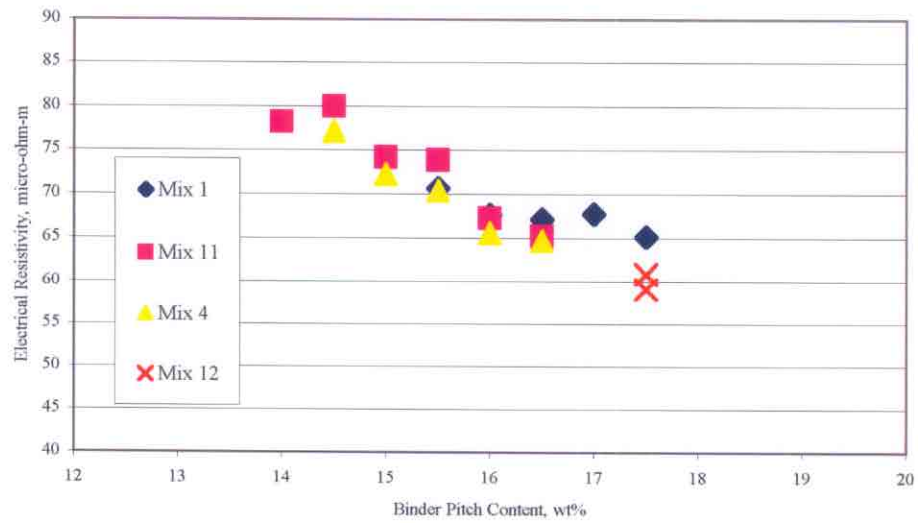
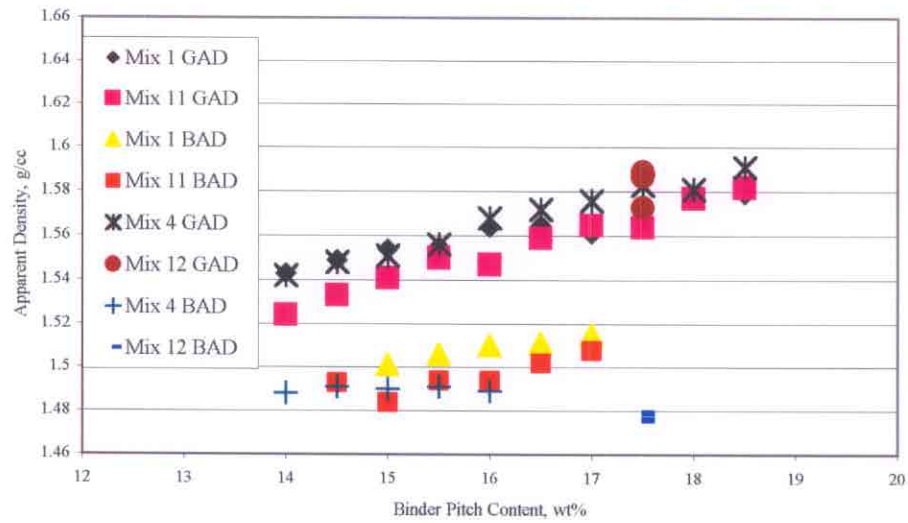
APPENDIX E (Continued)
Data Table for Mix 9 – Mix 12

Mix No	Anode No	CO2 React Air Perm nPm	CO2 React wt loss %	CO2 Residue, wt%	%Dust + % Attr	Air wt loss, wt%	Air Residue, wt%	Air % dust + % Attr
Mix 9	M9-1							
Mix 9	M9-2							
Mix 9	M9-3							
Mix 9	M9-4					2.45	97.31	0.23
Mix 9	M9-5	1.71				2.07	97.7	0.22
Mix 9	M9-6		8.18	88.87	2.93			
Mix 9	M9-7	1.77	6.69	90.59	2.7			
Mix 9	M9-8	1.62						
Mix 9	M9-9	1.93						
Mix 9	M9-10							
Mix 10	M10-1							
Mix 10	M10-2							
Mix 10	M10-3							
Mix 10	M10-4	1.57						
Mix 10	M10-5					16.74	79.55	3.7
Mix 10	M10-6	1.23						
Mix 10	M10-7	1.42				17.43	78.53	4.04
Mix 10	M10-8	1.84	3.81	95.76	0.42			
Mix 10	M10-9		4.87	94.73	0.39			
Mix 10	M10-10							
Mix 11	M11-1							
Mix 11	M11-2							
Mix 11	M11-3							
Mix 11	M11-4		2.99	96.73	0.28			
Mix 11	M11-5							
Mix 11	M11-6					21.17	72.36	6.47
Mix 11	M11-7		4.74	94.87	0.38			
Mix 11	M11-8		6.98	92.37	0.64			
Mix 11	M11-9					23.32	70.62	6.06
Mix 11	M11-10							
Mix 12	M12-1							
Mix 12	M12-2							
Mix 12	M12-3		4.04	95.43	0.52			

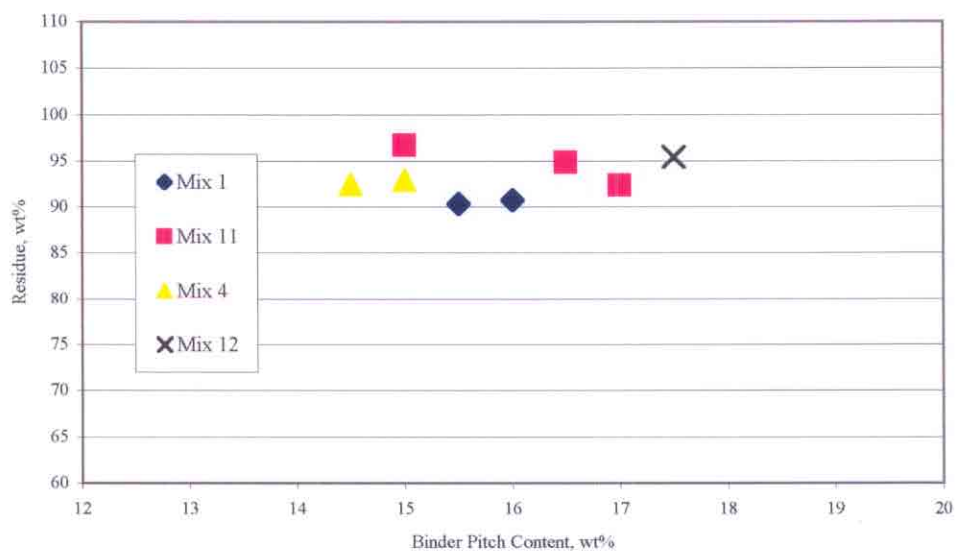
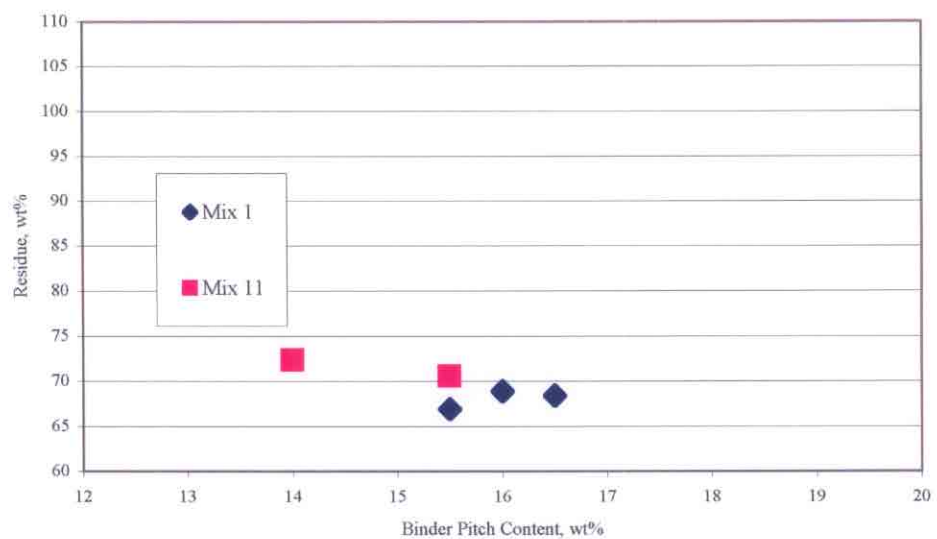
APPENDIX E (Continued)
Data Table for Mix 9 – Mix 12

Mix No	Anode No	Flexural Strength, MPa	Compressive Strength, MPa	CTE, E-6/C @ 300C	Thermal Cond, W/mK
Mix 9	M9-1				
Mix 9	M9-2				
Mix 9	M9-3				
Mix 9	M9-4	6.12	25.73	3.365	
Mix 9	M9-5	7.8		3.498	2.818
Mix 9	M9-6	8.37	27	3.617	
Mix 9	M9-7	9.05		3.685	2.928
Mix 9	M9-8	9.16	26.14	3.258	2.994
Mix 9	M9-9	9.83	32.31	3.42	3.09
Mix 9	M9-10				
Mix 10	M10-1				
Mix 10	M10-2				
Mix 10	M10-3				
Mix 10	M10-4	5.16	29.95	4.427	2.729
Mix 10	M10-5	4.94	26.24	4.388	
Mix 10	M10-6	6.17	28.84	4.134	2.661
Mix 10	M10-7	6.92		4.356	2.947
Mix 10	M10-8	6.45		4.429	3.16
Mix 10	M10-9	8.69	33.88	4.386	
Mix 10	M10-10				
Mix 11	M11-1				
Mix 11	M11-2				
Mix 11	M11-3				
Mix 11	M11-4	2.43		4.395	2.47
Mix 11	M11-5	3.58		4.631	2.393
Mix 11	M11-6	3.78	20.33	4.792	
Mix 11	M11-7	3.79	19.35	4.753	
Mix 11	M11-8	4.34	27.93	4.362	
Mix 11	M11-9	4.91	30.92	4.502	
Mix 11	M11-10				
Mix 12	M12-1				
Mix 12	M12-2	7.34	24.49	4.257	
Mix 12	M12-3	7.01	25.45	4.364	

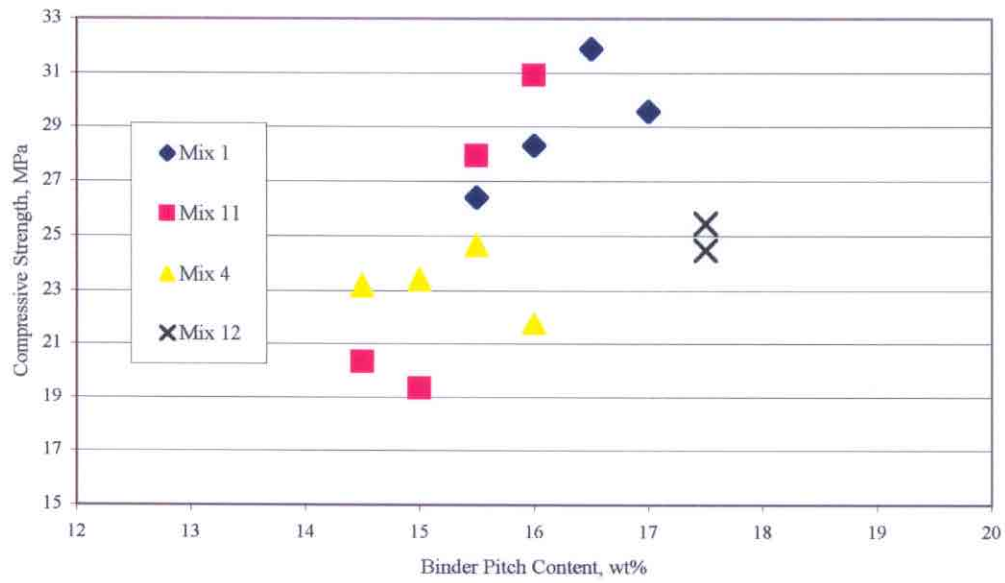
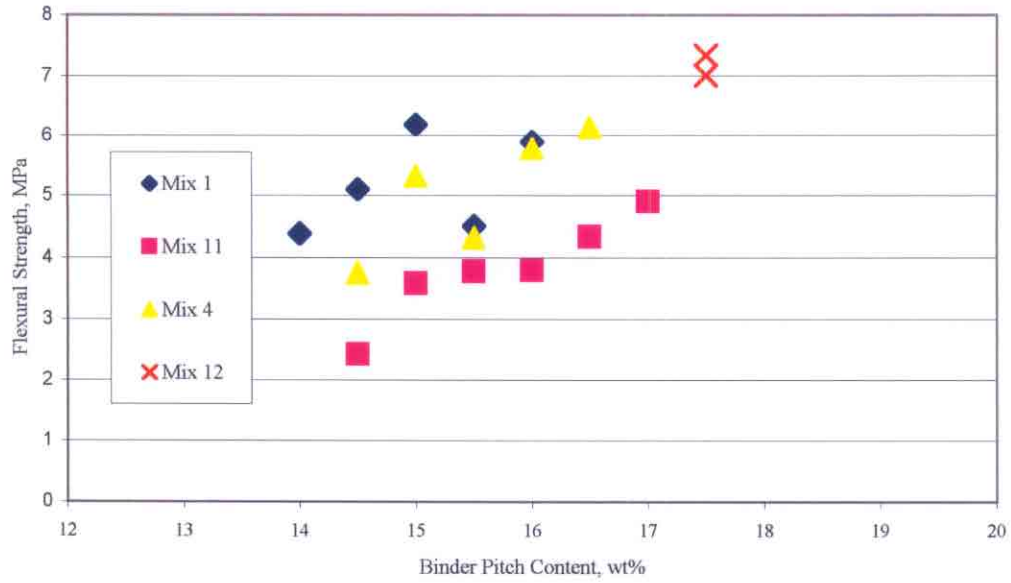
APPENDIX F Reproducibility of Mix 1 and Mix 11 And Mix 4 and Mix 12



APPENDIX F (Continued) Reproducibility of Mix 1 and Mix 11 And Mix 4 and Mix 12



APPENDIX F (Continued) Reproducibility of Mix 1 and Mix 11 And Mix 4 and Mix 12



APPENDIX F (Continued)
Reproducibility of Mix 1 and Mix 11
And
Mix 4 and Mix 12

