



PRI Construction Materials Technologies LLC

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Laboratory Test Report

Report for: Leonel Aarón Borja Alemán
Aircrete Mexico
Calle 3, Número 7 Parque, Industrial PLATAH
Villa of Tezontepec Hidalgo, 43880

Product Name(s): Aircrete Cladding 2”

Project No.: 2351T0001.01

Date(s) Tested: February 17th – March 18th, 2021

Test Methods: ASTM C1585

Results Summary: See Results Table herein

Purpose: Evaluate the water absorption rate of Aircrete Mexico’s, light weight concrete cladding per the methods described in ASTM C1585 Standard Test Method for Measurement of Rate of Absorption of Water by Hydraulic-Cement Concretes.

Test Methods: Testing was conducted in accordance with ASTM C1585-20 Standard Test Method for Measurement of Rate of Absorption of Water by Hydraulic-Cement Concretes. Test methods assigned or referenced include ASTM C1202 Standard Test Method for Electrical Indication of Concrete’s Ability to Resist Chloride Ion Penetration.

Sampling: The following materials were received via common carrier by PRI.

<u>Product</u>	<u>Source</u>	<u>Date</u>	<u>Sampling</u>
Aircrete Cladding 2”	Villa of Tezontepec Hidalgo, Mexico	Jan. 18 th , 2020	Aircrete Mexico

Sample Description:

Manufacturing Date:	November 11 th , 2021
Age:	98 days
Finishing Type:	Without Finishing
Curing:	Autoclave Process
Mixing:	General Mixture contained in Appendix A

Testing Location: Testing was conducted at PRI-CMT located in Tampa, FL. Calibration of testing instrumentation was performed by either an ISO accredited calibration laboratory or by a PRI-CMT representative in compliance with PRI-CMT In-House quality control program governed by ISO/IEC 17025-17.

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Test Results: Conditions at beginning of testing 22°C (73°F) with 50% Rh.

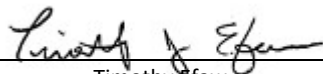
Table 1: ASTM C1585

Physical Property	Test Method	Result ¹						Requirement
		1	2	3	4	5	Avg.	
Rate of Absorption of Water Aircrete; 5 specimens; 100mm Ø x 50mm; Vacuum Saturate 4hrs @ 6650Pa; followed by Water Immersion for 18hrs; followed by Condition 3d @ 50°C w/ 80%Rh; followed by Condition in sealed container 15d @ 23°C; followed by Test @ 23°C.	ASTM C1585							
Diameter (mm)		94	93	94	93	94	94	Report
Thickness (mm)		49	49	48	49	49	49	Report
Initial Rate – S _i (Nearest 0.1 x 10 ⁻⁴ mm/s ^{1/2})		216.2	229.6	204.5	198.0	306.8	231.0	Report
Secondary Rate – S _s (Nearest 0.1 x 10 ⁻⁴ mm/s ^{1/2})		53.1	51.8	58.3	56.2	39.4	51.8	Report

Notes: 1 – Tabulated data and graphs for each sample are contained in Appendix A.

Statement of Attestation:

The material was evaluated in accordance with ASTM C1585-20 Standard Test Method for Measurement of Rate of Absorption of Water by Hydraulic-Cement Concretes. The laboratory test results presented in this report are representative of the material supplied.

Signed: 
 Timothy Efaw
 Manager

Date: March 18th, 2021

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	03/18/2021	5	NA
Revision	03/22/2021	All	Added sample description and tabulated data.

APPENDIX FOLLOWS...

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General Mixture – (Provided by Client)

Mixture parameters	
Density of design (490 kg/m3)	kg/m3
Cement	108
Lime (available CaO ~87 scada)	81.4
Gypsum	25.3
Additive (lt)	0.46
Fresh mud (.= 1,7kg/m3)	371
Silica sand on fresh sludge	244.8
Return sludge (20,3%) (.= 1,4kg/m3) dry	124.4
Total water	379.7
Aluminum 19F 75% / 7004 25%	0.3
Soap	0.07

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Tabulated Data

Client:	Aircrete
Project:	2351T0001
Test Method:	ASTM C 1585-20: Standard Test Method for Measurement of Rate of Absorption of Water by Hydraulic-Cement Concretes
Technician:	TDT
Date:	3/11/2021

Sample No.	1 to 5					Date/Time Soak	3/11/21 7:00 AM					M _s	Measurement Due
	Description					Dimensions (mm)	100						
Results													
	Recorded Absorption - grams					Δ mass - grams "m _t "							
	1	2	3	4	5	1	2	3	4	5			
Cylinder Diameter (mm)	94	93	94	93	94	-	-	-	-	-	-	-	
Absorbing Surface Area "a" (mm ²)	6940	6793	6940	6793	6940	-	-	-	-	-	-	-	
Water Density (g/mm ³)	0.001	0.001	0.001	0.001	0.001	-	-	-	-	-	-	-	
Initial Mass (nearest 0.01 grams)	250.02	244.22	245.11	258.00	257.91	250.020	244.220	245.110	258.000	257.910	0	-	
Mass 60±2sec (m _{60sec} - grams)	250.28	244.23	245.45	258.09	258.08	0.260	0.010	0.340	0.090	0.170	60	3/11/21 7:01 AM	
Mass 5min±10sec (m _{5min} - grams)	256.06	248.02	248.62	260.42	261.64	6.040	3.800	3.510	2.420	3.730	300	3/11/21 7:05 AM	
Mass 10±2min (m _{10min} - grams)	258.23	250.55	250.63	262.17	265.62	8.210	6.330	5.520	4.170	7.710	600	3/11/21 7:10 AM	
Mass 20±2min (m _{20min} - grams)	260.29	252.78	252.47	264.21	269.81	10.270	8.560	7.360	6.210	11.900	1200	3/11/21 7:20 AM	
Mass 30±2min (m _{30min} - grams)	261.65	254.44	253.91	265.32	272.56	11.630	10.220	8.800	7.320	14.650	1800	3/11/21 7:30 AM	
Mass 60±2min (m _{60min} - grams)	264.25	257.27	256.30	267.76	276.52	14.230	13.050	11.190	9.760	18.610	3600	3/11/21 8:00 AM	
Mass 2hr±2min (m _{2hr} - grams)	267.24	260.60	259.52	270.69	281.09	17.220	16.380	14.410	12.690	23.180	7200	3/11/21 9:00 AM	
Mass 3hr±5min (m _{3hr} - grams)	270.11	263.56	262.37	273.22	284.47	20.090	19.340	17.260	15.220	26.560	10800	3/11/21 10:00 AM	
Mass 4hr±5min (m _{4hr} - grams)	271.12	264.71	263.54	274.74	286.03	21.100	20.490	18.430	16.740	28.120	14400	3/11/21 11:00 AM	
Mass 5hr±5min (m _{5hr} - grams)	273.08	266.51	265.12	276.14	287.63	23.060	22.290	20.010	18.140	29.720	18000	3/11/21 12:00 PM	
Mass 6hr±5min (m _{6hr} - grams)	274.28	267.53	266.60	277.88	289.03	24.260	23.310	21.490	19.880	31.120	21600	3/11/21 1:00 PM	
Mass 1d±2hr (m _{1d} - grams)	289.38	281.23	281.53	291.38	302.42	39.360	37.010	36.420	33.380	44.510	92220	3/12/21 8:37 AM	
Mass 2d±2hr (m _{2d} - grams)	299.36	290.56	292.43	301.21	308.87	49.340	46.340	47.320	43.210	50.960	193200	3/13/21 12:40 PM	
Mass 3d±2hr (m _{3d} - grams)	302.90	293.72	296.23	304.72	311.04	52.880	49.500	51.120	46.720	53.130	268500	3/14/21 9:35 AM	
Mass 4d±2hr (m _{4d} - grams)	304.61	295.57	298.32	306.66	312.68	54.590	51.350	53.210	48.660	54.770	343800	3/15/21 6:30 AM	
Mass 5d±2hr (m _{5d} - grams)	306.10	296.93	299.93	308.16	314.02	56.080	52.710	54.820	50.160	56.110	432000	3/16/21 7:00 AM	
Mass 6d±2hr (m _{6d} - grams)	307.21	298.21	301.02	309.80	315.12	57.190	53.990	55.910	51.800	57.210	537580	3/17/21 12:19 PM	
Mass 7d±2hr (m _{7d} - grams)	308.27	299.18	302.25	310.72	316.21	58.250	54.960	57.140	52.720	58.300	604800	3/18/21 7:00 AM	

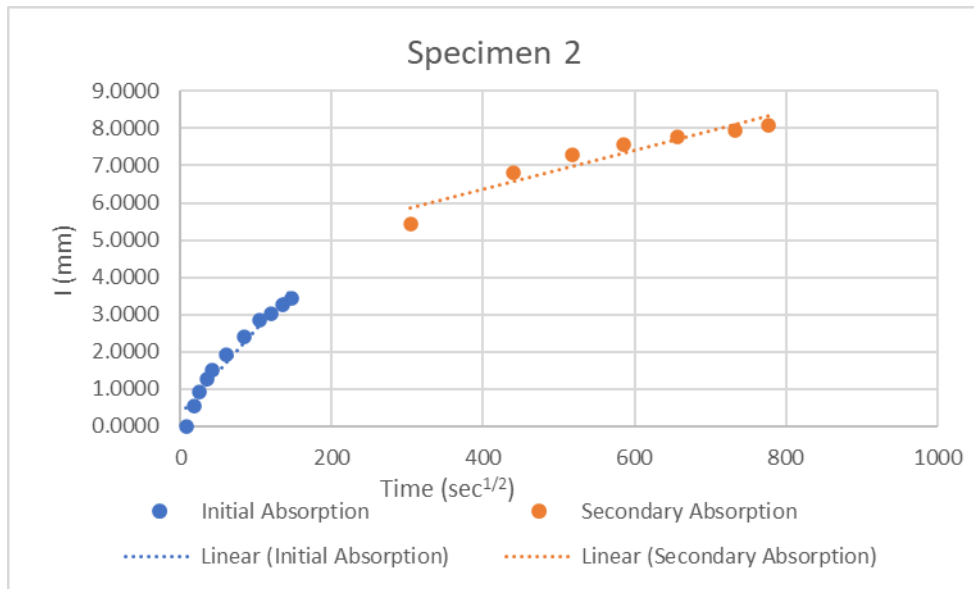
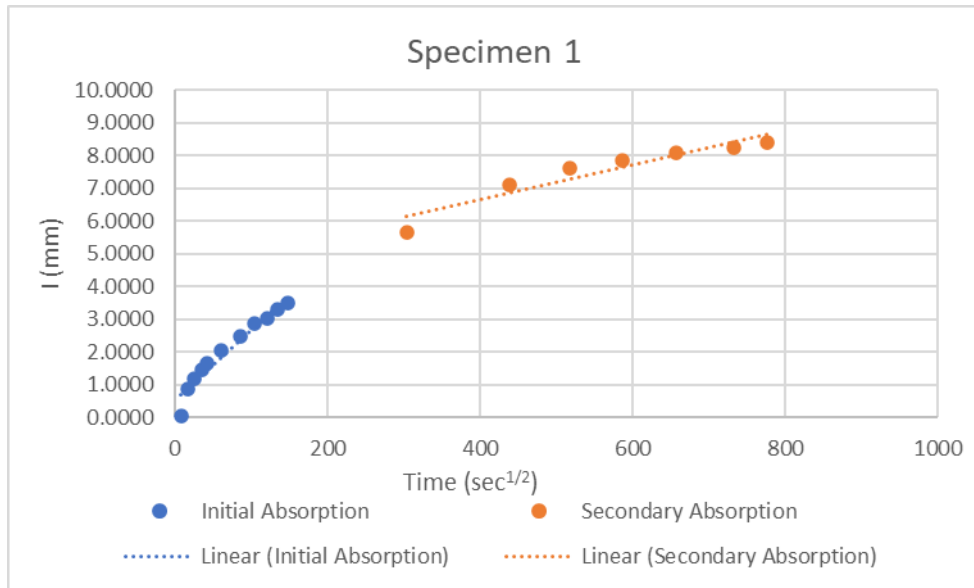
	"I"					M _s	
	1	2	3	4	5		
Mass 0±2sec (m _{0sec} - grams)	0.0000	0.0000	0.0000	0.0000	0.0000	0	
Mass 60±2sec (m _{60sec} - grams)	0.0375	0.0015	0.0490	0.0132	0.0245	8	
Mass 5min±10sec (m _{5min} - grams)	0.8703	0.5594	0.5058	0.3562	0.5375	17	
Mass 10±2min (m _{10min} - grams)	1.1830	0.9318	0.7954	0.6139	1.1110	24	
Mass 20±2min (m _{20min} - grams)	1.4798	1.2601	1.0605	0.9142	1.7147	35	
Mass 30±2min (m _{30min} - grams)	1.6758	1.5045	1.2680	1.0776	2.1110	42	
Mass 60±2min (m _{60min} - grams)	2.0504	1.9211	1.6124	1.4368	2.6816	60	
Mass 2hr±2min (m _{2hr} - grams)	2.4813	2.4113	2.0764	1.8681	3.3401	85	
Mass 3hr±5min (m _{3hr} - grams)	2.8948	2.8470	2.4870	2.2405	3.8271	104	
Mass 4hr±5min (m _{4hr} - grams)	3.0403	3.0163	2.6556	2.4643	4.0519	120	
Mass 5hr±5min (m _{5hr} - grams)	3.3228	3.2813	2.8833	2.6704	4.2824	134	
Mass 6hr±5min (m _{6hr} - grams)	3.4957	3.4315	3.0965	2.9265	4.4841	147	
Mass 1d±2hr (m _{1d} - grams)	5.6715	5.4483	5.2478	4.9139	6.4135	304	
Mass 2d±2hr (m _{2d} - grams)	7.1095	6.8217	6.8184	6.3610	7.3429	440	
Mass 3d±2hr (m _{3d} - grams)	7.6196	7.2869	7.3660	6.8777	7.6556	518	
Mass 4d±2hr (m _{4d} - grams)	7.8660	7.5593	7.6671	7.1633	7.8919	586	
Mass 5d±2hr (m _{5d} - grams)	8.0807	7.7595	7.8991	7.3841	8.0850	657	
Mass 6d±2hr (m _{6d} - grams)	8.2406	7.9479	8.0562	7.6255	8.2435	733	
Mass 7d±2hr (m _{7d} - grams)	8.3934	8.0907	8.2334	7.7609	8.4006	778	
Initial Absorption (S _i)	2.162E-02	2.296E-02	2.045E-02	1.980E-02	3.068E-02	2.310E-02	Average
Secondary Absorption (S _s)	5.31E-03	5.18E-03	5.83E-03	5.62E-03	3.94E-03	5.18E-03	Average

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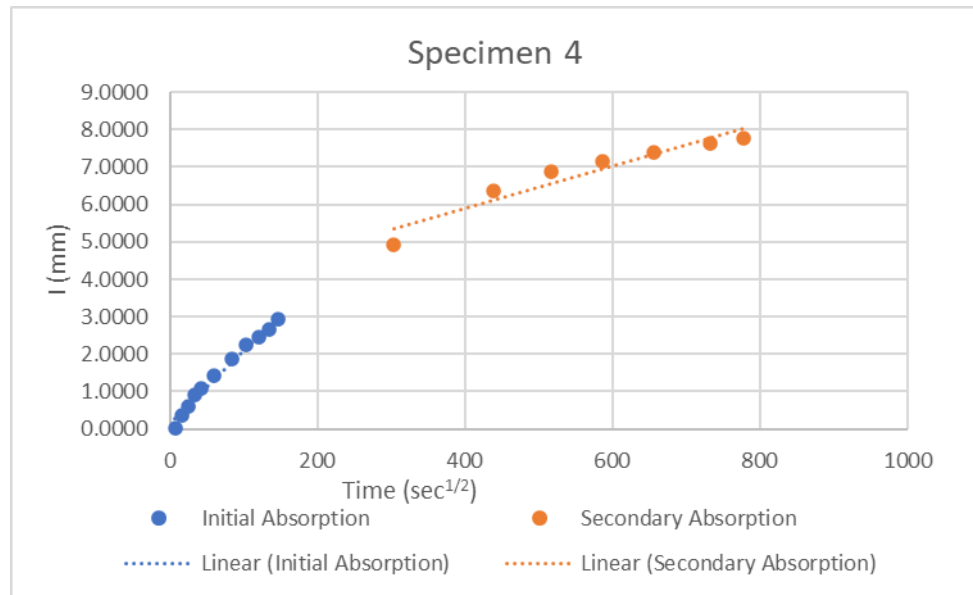
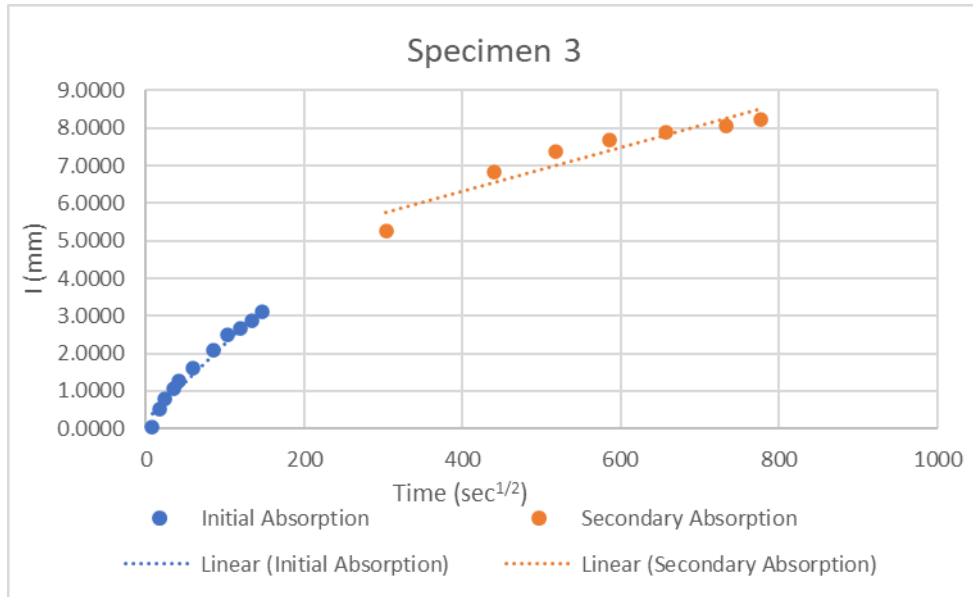
Initial/Secondary Absorption Graphs



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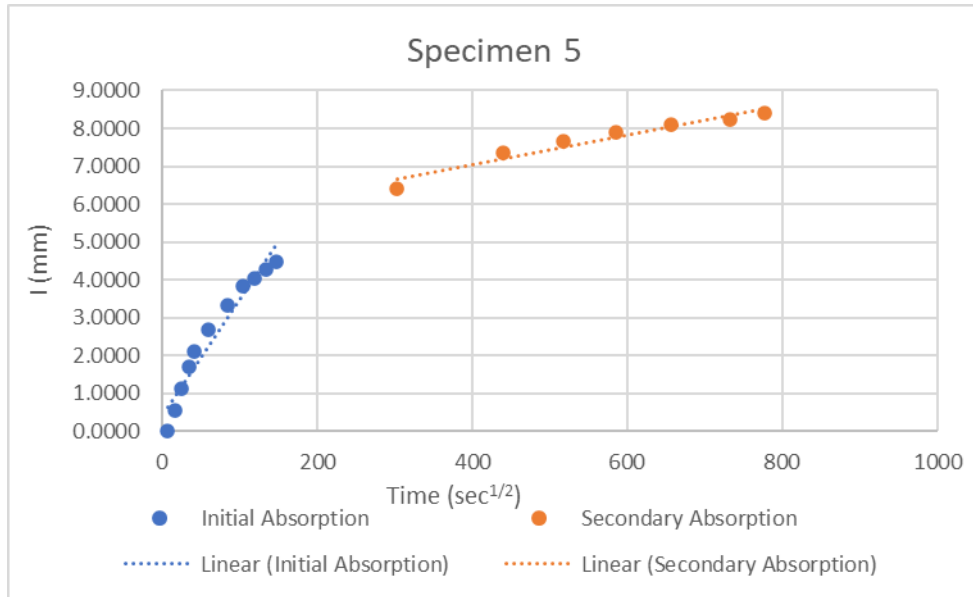
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