16 State House Station Augusta, Maine 04333



Transportation Research Division



Technical Report 15-11

Experimental Demonstration of Xypex Additive in Concrete to Improve Durability

Construction & First Interim Report, December, 2015

Transportation Research Division

Experimental Demonstration of Xypex C-500 Additive in Concrete to Improve Durability

Introduction

In 2012 the Maine Department of Transportation reconstructed the Stockton Springs Underpass Bridge #5760 on Church Street over US Route 1. The primary Contractor for this project was the Lane Construction Corporation of Cheshire, Connecticut.

The bridge consists of structural steel girders with a reinforced concrete deck system. Because of the steep profile grade an integral concrete wearing surface was used instead of the typical waterproofing membrane with hot mix asphalt pavement surface.

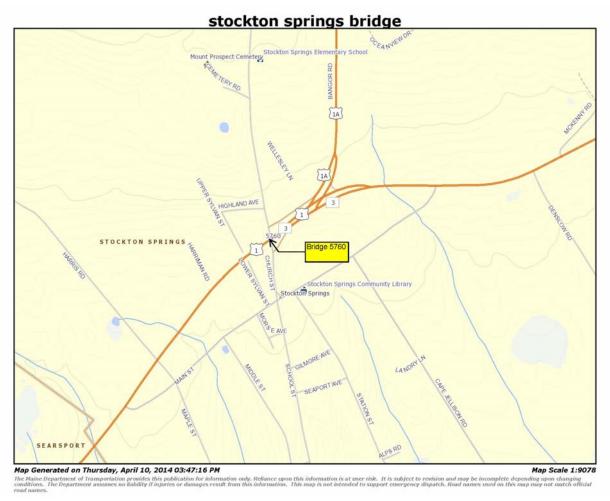
MaineDOT generally uses black bar as reinforcing steel in bridge decks. An opportunity arose on this project to supplement the concrete mix with a waterproofing additive in hope of providing a more durable and impermeable concrete deck.

On this project, the MaineDOT used an alkaline earth silicate cement admixture as an experimental feature to waterproof the concrete. Unlike many other concrete waterproofing solutions, XYPEX ADMIX C-500 is added to the concrete mix at the time of batching, so it becomes integral to the finished product and permanent. The active chemicals in XYPEX react with the moisture in fresh concrete and the by-products of cement hydration to generate a non-soluble crystalline formation throughout the pores and capillary tracts of the concrete, thereby reducing the concrete permeability which in turn increases durability.

This report covers the experimental usage of the Xypex additive, including lab test results and analysis and field observations during construction and subsequent inspections.

Project Location

The Stockton Springs Underpass Bridge #5760 carries Church Street over US Route 1 in the town of Stockton Springs in Waldo County. The project number is BH-1510(800)X, WIN 15108.00 (see Figure 1).





Project Scope

This bridge consists of steel girders with a reinforced concrete deck. The deck includes an integral concrete wearing surface. For this project two classes of concrete are used. Class A is our workhorse concrete mix that is used in the substructures and the deck. The abutments are Class A concrete and the deck is the Class A concrete with Xypex additive. Class LP or Low Permeability mix is used in the concrete curbs, sidewalks, and endposts. The concrete mix designs are included in the Appendix to this report.

The project work plan includes testing to be completed by the University of New Hampshire and our Bangor Central Lab. Test results are reported in the Materials section of this report and in full detail in the Appendix.

Materials

The concrete mix selected uses a highly reactive aggregate in terms of alkali silica reactivity. Previous testing shows this can be mitigated by using slag to replace 50% cement. Therefore the Class A mix includes 320 lb./cu.yd of cement and 320 lb/cu.yd slag, grade 120. Based on manufacturer's

recommendation the Class A with Xypex mix contains the same amount of cement and slag plus 15 lb/cu.yd of Xypex. The Class LP mix contains 381 lb/ cu.yd of cement, 254 lb/cu.yds. slag and 25 lb/cu.yds. of silica fume.

Concrete Class	Cement – lb/cu-yd	Targets	Field Sample Tests
А	320 cement Type II	4350 psi	6600 psi
	320 slab, grade 120	7.3% air	7.3% air
		0.41 w/c	0.40 w/c
		2400 coloumbs	1370 coloumbs
A with Xypex	320 cement Type II	4350 psi	6600 psi
7 1	320 slab, grade 120	7.3% air	7.3% air
	15 Xypex	0.41 w/c	0.41 w/c
		2400 coloumbs	1010 coloumbs
LP	381 cement Type II	5075 psi	7290 psi
	254 Slag, grade 120	7.3% air	6.8% air
	25 silica fume	0.39 w/c	0.40 w/c
		2000 coloumbs	670 coloumbs

The table below summarizes the concrete mix designs, targets and field sample testing.

Figure	2
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Chloride Content Testing

The chloride testing was conducted by the University of New Hampshire on samples collected in the field. Testing followed the standards of ASTM C 1152/C 1152M Test Method for Acid-Soluble Chloride in Mortar and Concrete. The chloride penetration data for 28 days of 3 percent calcium chloride ponding show that the Class A concrete with and without XYPEX is approximately equal however the Class LP mix appears to be more effective in reducing the penetration of chloride ions.

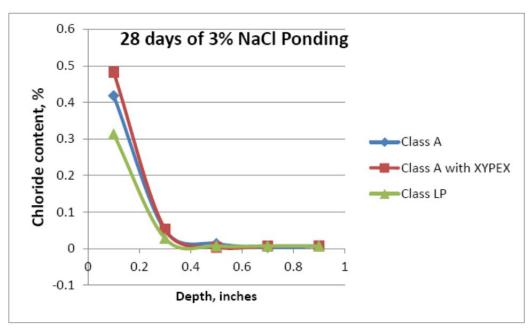


Figure 3

Sequence of construction/ class concrete placed and where.Construction

Sequence of construction/ class concrete placed and where: For abutments and wings, Class A concrete was used. Precast deck panels, approximately 3.5" thick, were used but not included in this evaluation. The deck with integral wearing surface was constructed with Class A with Xypex for the overall depth. The deck concrete also contained 50% slag as an Alkali-Silica Reactivity (ASR) mitigation. Curb, sidewalk and endposts were constructed with Class LP concrete.

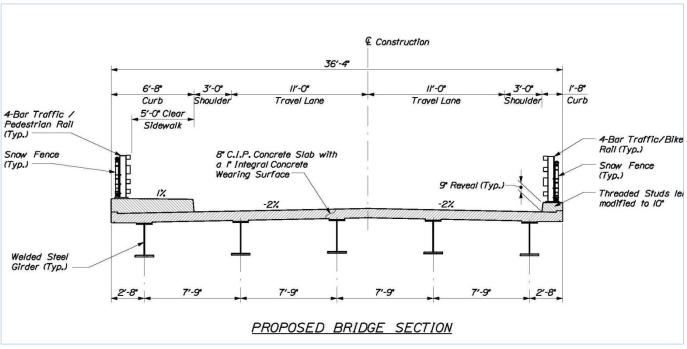


Figure 4

Workers reported finding the concrete with Xypex "sticky" and that the Bidwell finish floats had trouble with dragging. Workers had to spray the surface with Confilm after the Bidwell made its final pass. Confilm is a spray-on evaporation reducer manufactured by BASF.

Once the Confilm had dissipated, the workers could then bull float and groove the finished surface immediately. Without the use of Confilm, the surface was taking an initial set before the bull floating and grooving could be performed. This was demonstrated in the trial batch sample as shown in the picture below (Figure 6). It should be noted however, that these issues are not unique to the Xypex mix, and can be seen in LP mixes as well.

Upon completion of the deck work, the surface was sealed with a silane-based penetrating sealer.



Figure 5 Trial batch materials



Figure 6 Preparing the trial batch sample

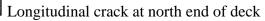
Material Costs

The cost of the XYPEX admixture, C-500, for this experimental project was \$4,000.00 which represented a discount of twenty-five percent from their regular selling price or a net cost of approximately \$1.33 per square foot.

Evaluation Photos 10-7-2015







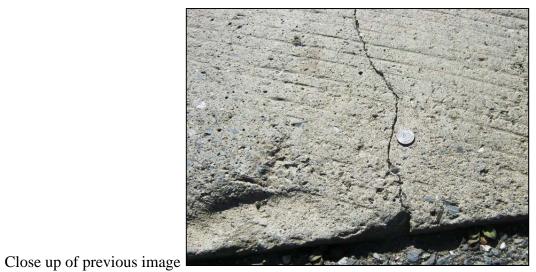


Figure 8



Tined finish of wearing course

Figure 9



South end of deck, note cracking (bottom)





Figure 11

Galvanized girders under deck



Outermost exposed sides of galvanized girders painted green for aesthetics.



Inspection Notes 10-7-2015

Several longitudinal and transverse cracks were noted in the deck surface during the October 7, 2015 inspection. The cause of these cracks is unknown. It may be possible that they are appearing at girder locations and/or at edges of precast stay in place forms. It is also unkown if the Xypex is contributing to the cracking. The worst cracking noted was at the north end of the bridge, near the US Route 1 off ramp (see Figures 7 & 8).

There is some transverse micro-cracking in the sidewalk due to shrinkage (Class LP concrete as noted earlier). However, it wasn't highly visible.

Conclusions

Comments from MaineDOT's Concrete Quality Specialist regarding cracking:

These cracks seem pretty typical of the cracking we almost always get. This was a single span structure so the cracking is not a negative movement type or over a pier so that pretty much points to drying shrinkage type cracking. My guess is it's from high strength concrete placed in a single span with no joints constructed for stress relief or shrinkage cracking control. I guess the questions to ask now are, was it wet cured properly? Was curing started in a timely manner? Were there temperature issues with the concrete during the curing period? It would be easy to blame it on the slag, but I'm pretty sure we were having these types of issues back when everything was done with straight cement.

The Xypex additive likely had no adverse effect on the concrete mix per UNH's report. Test values for air content, water/cement ratio and strength were virtually the same as the untreated concrete. Also, salt ponding test values were very similar. The Xypex mix did not provide additional protection from salt penetration.

Rapid chloride permeability tests (AASHTO T-277) conducted at the Bangor lab did show some improvement with the Xypex mix. However T-277 does caution that tests should be correlated to salt ponding test results.

Field observations after three years show some signs of premature aging of the deck surface after only three years of service. The Transportation Research Division plans to follow up with an inspection and report in two year's time (2017).

Prepared by:

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Special thanks to Richard E. Myers, P.E. and Guy Hews for their assistance with this test.

Appendix A - Experimental Work Plan

Appendix B - UNH Final Testing Report for Stockton Springs Bridge Concrete

Appendix C - Bangor Lab Mix Designs

Appendix D - Bangor Lab Test Results

Appendix E – XYPEX Admix C-500 Tech Data Sheet

APPENDIX A

Stockton Springs PIN 15108 Work Plan for Experimental Use of Xypex Admixture 5/9/2012

Concrete Mix	Compressive Strength	Rapid Chloride Permeability Testing	Air content
Class A	Minimum 3 sets of two cylinders	Minimum 3 sets of two cylinders	Minimum of 3
Class A w/Xypex	Minimum of 3 sets of two cylinders	Minimum 3 sets of two cylinders	Minimum of 3
Class LP	Minimum of 3 sets of two cylinders	Minimum 3 sets of two cylinders	Minimum of 3

The project specifies Class A, Class A with Xypex and Class LP concrete. The testing to be completed by MaineDOT is proposed below:

The testing above is primarily from the project minimum Quality Acceptance requirements. There may be a need to collect a few additional "informational samples" in order to guarantee three samples from each class of concrete. MaineDOT's Bangor lab will complete this testing. The informational sample testing may cost an additional \$500.

A trial batch is recommended prior to placing the Class A with Xypex. Air content and workability should be noted. Cylinders for compressive strength and rapid chloride permeability testing should be prepared.

In addition to the above mentioned testing salt ponding, shrinkage tests, petrographic analysis and alkali-silica reactivity is proposed as summarized in the attached proposal from the University of New Hampshire.

Use of the Xypex material in the proposed concrete slab as well as the associated typical and experimental testing will be handled as a Contract modification. It is expected that the Contractor will be responsible for purchasing the Xypex material. The manufacturer of Xypex has agreed to give the Department a 25% discount on the material which shall be conveyed to the Contractor. The total estimated cost of the Contract modification including materials and testing is shown below.

\$4000 Xypex + \$500 MaineDOT additional testing + \$19,323 UNH testing = **\$23,823**

After completion of all testing, a report will be prepared that documents all of the test results, construction, lessons learned and recommendations on further use of this type of admixture. This report will be completed by summer 2014.

The use of this admixture will be documented in our Bridge Management and Inspection System.

APPENDIX B



January 6, 2014

Dale Peabody Transportation Research Engineer Transportation Research Division Office of Safety, Training & Research Maine DOT 16 State House Station Augusta, ME 04333

Re: Final Testing Report for Stockton Springs Bridge Concrete

Dear Mr. Peabody:

Please be advised we have completed the laboratory testing of the Stockton Springs, Maine Bridge project. The final report follows:

Alkali Silica Reaction Testing

Testing was conducted to determine if there was a potential for alkali silica reaction in the aggregate of the proposed concrete to be used for the Stockton Springs US 1 bridge project. Eleven buckets of the proposed materials were picked up at Freeport for the laboratory testing and transported to the laboratories of the University of New Hampshire. Laboratory evaluation consisted of ASTM 1260 testing of the Hughes Brothers fine and Lane Construction coarse aggregate without any mitigation and ASTM 1157 testing of both fine and coarse aggregate with mitigated mixes using Dragon Grade 120 slag. The effect of C-500 XYPEX with the mitigated mixes was also evaluated. Table 1 shows the mix identifications, their mix design components and ASR expansions at 14 and 28 days.



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The expansions are shown for the Lane coarse aggregate and Hughes fine aggregate in Figures 1 and 2 respectively. These data show the aggressiveness of the unmitigated aggregates. The mitigated mixes as well as the ones incorporating XYPEX are effectively mitigated at 14 days of expansion using Dragon slag at a 50 percent substitution. The XYPEX at a dosage rate of 15 pounds per cubic yard accentuates the expansion of the Hughes sand but not the Lane coarse aggregate however all pass the 14 day 0.10 percent expansion criteria. If the 28 day 0.1 percent criteria are ever specified by MEDOT it is recommended that the current mitigation strategy, when using the Lane aggregate, be revaluated.

Field Concrete Sample Preparation

Concrete samples were cast in the field to evaluate shrinkage and chloride ponding resistance on the three concretes utilized in the construction of the Stocking Springs Bridge. Specimens included shrinkage beams and concrete pads for chloride ponding testing. Molds were provided for the fabrication of the field samples. Resident Engineer Guy Hews fabricated all samples and initiated the wet burlap curing. The samples were field stripped and protected from drying during their transport to the UNH concrete laboratory. Laboratory curing simulated the wet burlap field curing for 7 days. Additional curing of 14 days and 28 days were evaluated to see the benefit of increased curing longer than the specified 7 day cure on shrinkage. This procedure was repeated for each of the three concretes used on the project, Class A, Class A with XYPEX, and Class LP.

Laboratory Concrete Samples

Additional laboratory mixes were made in the laboratory using the materials and admixtures obtained from Lane Construction for ASR testing. A Class A control and a Class A mix with Eclipse[®] Floor 200, a shrinkage reducing admixture, although not used on the Stocking Springs Bridge, were laboratory evaluated for comparison purposes.



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Shrinkage Testing

The shrinkage testing followed ASTM 157 Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete modified for field concrete. Concrete prisms cast on site as well as laboratory prepared mixes as discussed above were evaluated for shrinkage. The concrete shrinkage specimens were cast in steel 3"x3"x11" studded molds. The three concretes placed in the field A, AX, and LP along with the two laboratory mixes, labeled as A and E were evaluated for shrinkage. All beams were cured a minimum of 7 days using wet burlap however to evaluate the potential benefit of continued curing additional specimens were cured for 14 days, and 28 days and for comparison a set was submerged in saturated lime water and never allowed to dry. After the specified curing period the samples were initially measured for length and weight and then stored under laboratory conditions of approximately 50 percent relative humidity. In order for the drying specimens to be evenly exposed to air, they were placed on small hardwood dowels to assure drying on all surfaces. Length change was measured to 0.0001 inches using an electronic dial gauge manufactured by Chicago Dial Indicators. All length measurements were normalized to a standard and recorded with sample weight onto a Microsoft Excel spreadsheet.

The shrinkage data for the field mixes are shown on Figures 3 through 5. One significant observation is that all mixes show approximately the same shrinkage as a function of time for a specific curing. The other observation is that there is a very significant improvement in shrinkage when the curing is increased from 7 to 14 to 28 days. The shrinkage of the 14 and 28 day cures are statistically reduced by about 10 and 15 percent less than the 7 day cured samples after 425 days of drying respectively.

The shrinkage data for the laboratory mixes are shown by Figures 6 and 7. These data show the laboratory Class A mix is approximately equivalent to the Field Class A mix. The special surfactant shrinkage admixture reduced the shrinkage by about 2/3 that of the Class A standard mix after 425 days of drying.



Salt Ponding Testing

Chloride penetration of the concrete pads was determined as per ASTM 1543, Standard Test Method for Determining the Penetration of Chloride Ion into Concrete by Ponding. The salt ponding samples were approximately 8"x8"x3.5" cast in forms made of plywood and 2x4 stock. Three samples from each of the three concretes were randomly selected and Plexiglass 1/16" sheet material was secured on the sides of the concrete pads with 3M 5200 Marine Sealant to act as a dam to hold the 3% Sodium Chloride solution on the top finished surface of the pads. The sides were sealed with the 5200 sealant however the bottom, cast against the plywood base was left unsealed.

Three percent Sodium Chloride solution was applied to the concrete pads after the sealant had cured. The samples were covered by a ceramic tile lid with a foam weather strip attached to prevent evaporation of water from the solution. After 28 days of ponding the samples were air dried and powder samples were obtained as a function of depth into the surface as described below.

Powder sampling

Powder samples of the concrete were obtained by using a 1.25 inch diamond dry cutting core barrel mounted on a drill press. Figures 8 through 10 show the drill press, the core barrel and the dial gauge respectively. The procedure was to set the concrete pad in place and then the barrel was lowered by the drill press lever until it rested on top of the concrete surface. The lever was restrained in place using a bungee cord. The electronic dial gauge, manufactured by Chicago Dial Indicator, was then set to zero. The lever was then pulled downward again in order to make sure that the barrel was in contact with the concrete surface, then the dial gauge was zeroed once more, and then the drilling began. The sample was drilled in independent intervals of 0.2 inches up to 1.0 inches. The powder was collected at the end of each interval by placing a metal cup over the cored hole, taping it to the concrete block, and then flipping the concrete block upside down. This was found to be the most efficient way of recovering the powder. Once the powder



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had been collected, the concrete block was cleaned of all remaining powder by use of a strong vacuum cleaner. Then the entire procedure was repeated starting at the bottom of the hole. It is important to note that the core barrel was not turned on until it was properly placed at the desired layer to prevent any powder from upper layers or the surface from contaminating the powder of the layer being extracted.

Chloride Content Testing

The chloride testing followed the standards of ASTM C 1152/C 1152M Test Method for Acid-Soluble Chloride in Mortar and Concrete and specifically as per section 19. Chloride (*Reference Test Method*) of ASTM C 114, Standard Test Methods for Chemical Analysis of Hydraulic Cement.

The chloride penetration data after 28 days of 3 percent calcium chloride ponding is shown on Figure 11. The chloride test data were determined on powder samples taken every 0.2 inches (i.e. 0 to 0.2, 0.2 to 0.4, 0.4 to 0.6, 0.6 to 0.8 and 0.8 to 1.0) but were plotted at the middle of their actual depth (0.1, 0.3, 0.5, 0.7, and 0.9 inches respectively). These data show that the Class A concrete with and without XYPEX are approximately equal however the Class LP mix appears to be more effective in reducing the penetration of chloride ions. Chloride penetration has advanced to a depth of approximately 0.35 inches after 28 days of ponding.

Figure 12 shows the chloride penetration after 263 days of salt water ponding. The trend of these data are similar to the earlier 28 days of ponding in that there appears to be no benefit of the XYPEX admixture in reducing penetration of chloride. The depth of chloride penetration for the Class A and Class A with XYPEX has increased throughout all tested depths. The approximate depth where it significantly changes is approximately 0.5 inches. The Class LP mix appears to be significantly better than the other two mixes. It does not change slope significantly until at a depth of approximately 0.4 inches.



Air Void Analysis

An air voids analysis as per the standards of ASTM C 457 Standard Test Method for Microscopical Determination of Parameters of the Air-Void System in Hardened Concrete. Samples obtained from the ponding pad specimens made in the field were tested as per Procedure B "Modified Point-Count Method". Sections were cut from the ponding pads using a diamond edged concrete saw. Once cut, the samples were polished to a grit size of 15 µm. After polishing, each specimen was evaluated under a stereographic microscope. The results are presented in Table 2. The air contents, specific surfaces, and spacing factors strongly suggest these concretes are expected to be resistant to freezing and thawing.

Summary and Conclusions

Based on the data obtained during this study it appears there is no detrimental effect of using of using XYPEX at the recommended dosage. The ASR testing was not significantly effected, shrinkage up to 425 days and the ability to entrain air for a viable air void system was equivalent to the Class A control mix. The use of XYPEX to decrease the penetration of chloride from ponding of 3% salt solution could not be shown to be any different than a Class A mix. Overall the Class LP mix outperformed the Class A and the Class A with XYPEX mixes in penetration of chloride.

Respectfully submitted,

Davil & Srew

David Gress



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Table 1 Mix identification, mix design components and ASR expansion data at 14 and 28 days.

Mix	Aggregate	ASR Mit	igating Adm	nixture	Expansion, %		
		Lithium	Fly ash	Slag	XYPEX	14 day	28 day
H1	Hughes Sand					0.540	0.859
H2	Hughes Sand			Х		0.038	0.105
H3	Hughes Sand			Х	Х	0.066	0.137
L1	Lane Coarse					0.489	0.804
L2	Lane Coarse			Х		0.032	0.063
L3	Lane Coarse			Х	Х	0.033	0.062

Table 2 Air void analysis of field concrete mixes

Concrete	Air content, %	Specific surface, in ⁻¹	Spacing factor, in
Class A	4.9	595	0.0067
Class A with XYPEX	7.3	688	0.0058
Class LP	8.5	933	0.0042

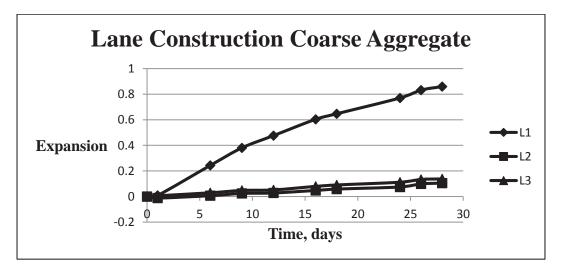


Figure 1 Expansion data for Lane Construction Coarse Aggregate

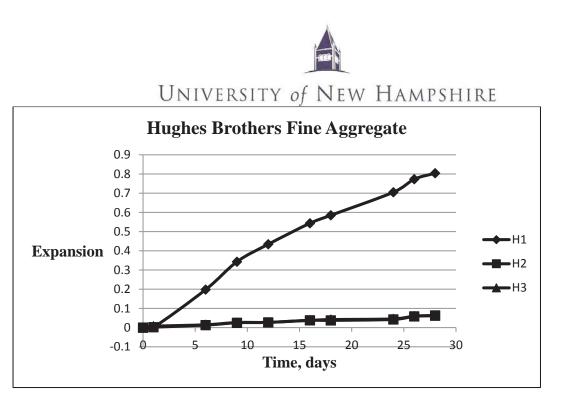


Figure 2 Expansion data for Hughes Brothers Fine Aggregate

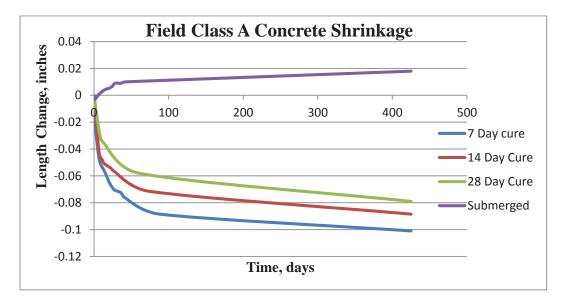
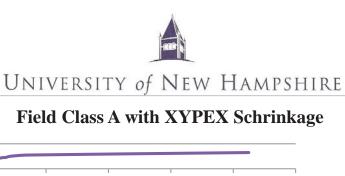
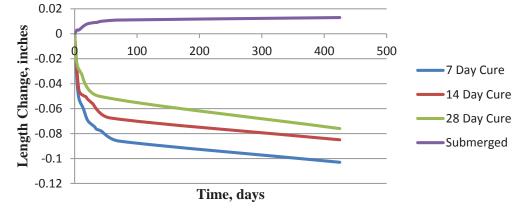
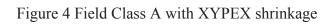


Figure 3 Field Class A concrete shrinkage







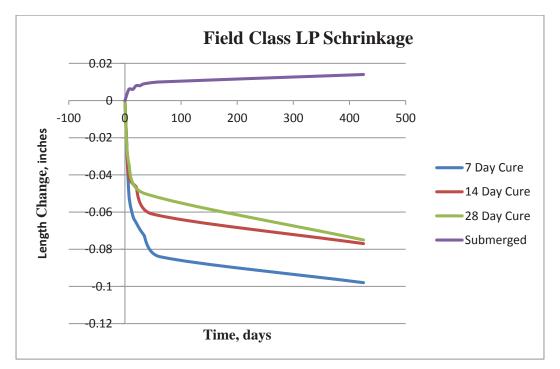


Figure 5 Field Class LP shrinkage



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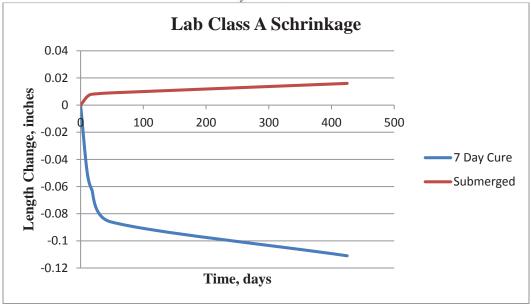


Figure 6 Lab Class A shrinkage

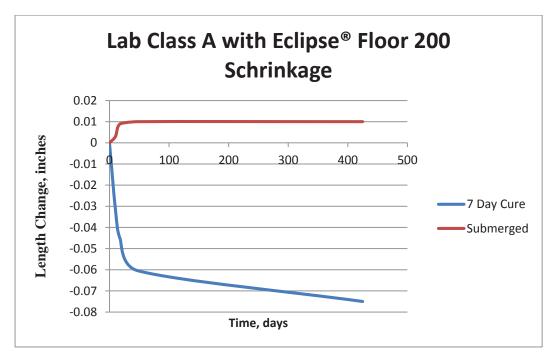


Figure 7 Lab Class A with Eclipse® Floor 200 shrinkage





Figure 8 Drill press used to create powder samples



Figure 9 1¹/₄ dry core barrel





Figure 10 Electronic dial gauge

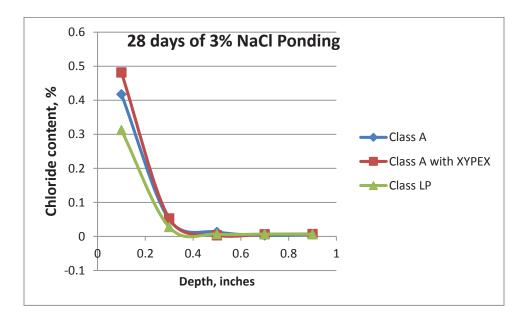


Figure 11 Chloride penetration of the field mixes after 28 days of ponding

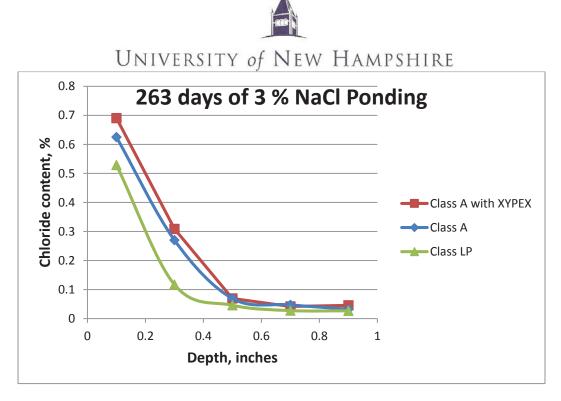


Figure 12 Chloride penetration of the field mixes after 263 days of ponding

APPENDIX C

219 Hogan Rd, Bangor

🕑 MaineDOT

PCC DESIGN

Design No. SUBA-12-1-A

PCC-CLASS A - PCC GRADING A

Plant/Location: SUNRISE - BANGOR WIN/Town: 016784.20 - BANGOR, HERMON, HAMPDEN, WIN/Town: 015108.00 - STOCKTON SPRINGS WIN/Town: WIN/Town: WIN/Town: WIN/Town: Submitter: NADEAU, NORRIS Telephone: 866-2194 Date Submitted: 8/5/2011 Bridge Name:

COARSE AGGREGATE DATA

Size	Sampled Date	Original Source/Owner
PCC LEDGE-3/8 IN.	4/19/2012	ODLIN RD QUARRY (HERMON QUARRY) - BANGOR - LANE CONSTRUCTION CORP
PCC LEDGE-3/4 IN.	4/19/2012	ODLIN RD QUARRY (HERMON QUARRY) - BANGOR - LANE CONSTRUCTION CORP

Size	Bulk Specific Gravity, SSD	Absorption, %	ASR, Initial %	ASR, w/Pozz., %	Elongation, %
PCC LEDGE-3/8 IN.	2.71	0.65	0.550		8
PCC LEDGE-3/4 IN.	2.72	0.36			4
				Elongation, %	4
	AS	R Specification	0.10%, max.	Specification	

Coarse Stockpile Gradation (Percentages Passing Sieve Sizes)

ſ	% Used	2" 50.0 mm	1 1/2" 37.5 mm	1" 25.0 mm	3/4" 19.0 mm	1/2" 12.5 mm	3/8" 9.5 mm	No. 4 4.75 mm	No. 8 2.36 mm	No. 16 1.18 mm	No. 50 .300 mm	No. 200 .075 mm
Ī	10	100	100	100	100	100	99	62	30			1.3
	90	100	100	100	97	27	4	1	1			0.4
_								_	_	_	_	
Res	sultant	100	100	100	97	34	14	7	4			0.5
Uppe	r/Lower Spec.		100%	95 to 100%		25 to 60%		0 to 10%	0 to 5%			1.5%, max.

FINE AGGREGATE DATA

Size Sampled Date			Original Source/Owner				
PCC-CONCRETE SAND 4/19/2012			HUGHES BROS PIT - WINTERPORT - HUGHES BROS				
	Bulk Sp. Grav., SSD		Absorption, %	Organic Impurities			
	2.60		1.27	-1			
			2.30% max	-I to III			

Fine Stockpile Gradation (Percentages Passing Sieve Sizes)

	3/8" 9.5 mm	No. 4 4.75 mm	No. 8 2.36 mm	No. 16 1.18 mm	No. 30 0.600 mm	No. 50 0.300 mm	No. 100 0.150 mm	No. 200 0.075 mm	Fineness Modulus	Base FM
Initial Results	100	99	96	66	45	24	9	3.7	2.61	2.61
Updated Results										2.75
Upper/Lower Spec.	100%	95 to 100%	80 to 100%	50 to 85%	25 to 60%	10 to 30%	2 to 10%	0 to 5.0%	2.26 to 3.14	2.26 to 3.14

Detah W/A CCD Ih/ud3 0:---

Size	Batch Wt, SSD, Ib/yd ³
PCC LEDGE-3/8 IN.	170
PCC LEDGE-3/4 IN.	1530
PCC-CONCRETE SAND	1213

PCC DESIGN

Design No.

PCC-CLASS A

	Target	Specification		Target	Specification
Fine Aggregate, %:	42		Slump, in:	8.0	
Water Content by Volume, gal:	31.40		Spread, in.:		
Concrete Unit Wt, lbs/ft3:	141.3		W/C Ratio:	0.41	0.43, max.
Strength, psi [MPa]:	4,350 [30]	4,350 psi [30 MPa], min.	Temp., °F [°C]:	85 [30]	85°F [30°C], max.
Coulomb:	2400	2,400 coulombs, max.	Air Content, %:	7.3	6.0% to 8.5%

Product Name	Manufacturer/	Wt, Ib/yd ³	Specification	
PORTLAND CEMENT-TYPE II	CIMENT QUEBEC, INC - S	AINT-BASILE, QC	320	635 lb/yd ³ , max.
SLAG, GRADE 120, DRAGON	DRAGON PRODUCTS CO	O - THOMASTON	320	
		Total Cementitious	640	660 lb/yd ³ , max.
		Fly Ash, %		30%, max.
		Slag, %	50	50%, max.
		Silica, %		

Description	Manufacturer	Admixture Usage	Dosage, oz/yd ³
ADVA 140-ADMIXTURE	W R GRACE & CO	H.R.W.R.	76.8
DARATARD 17-ADMIXTURE	W R GRACE & CO	RETARDER	13
DAREX II AEA-ADMIXTURE	W R GRACE & CO	AIR-ENTRAINING	5.8

MAINE DOT USE ONLY

Status: APPROVED

COMMENTS:

Authorized by: **REDMOND, MICHAEL J**

Authorized Date: 8/24/2011

Re-Issued Date: 6/13/2012

MaineDOT

PCC DESIGN

Design No. SUBA-12-1-AXYP

PCC-CLASS A - PCC GRADING A

Plant/Location: SUNRISE - BANGOR			
WIN/Town: 015108.00 - STOCKTON SPRIM	NGS WIN/Town:		
WIN/Town:	WIN/Town:		
WIN/Town:	WIN/Town:		
Submitter: NADEAU, NORRIS	Telephone: 866-2194	Date Submitted:	8/5/2011
Bridge Name:			

COARSE AGGREGATE DATA

Size S	Sampled Date	Original Source/Owner
PCC LEDGE-3/8 IN.	4/19/2012	ODLIN RD QUARRY (HERMON QUARRY) - BANGOR - LANE CONSTRUCTION CORP
PCC LEDGE-3/4 IN.	4/19/2012	ODLIN RD QUARRY (HERMON QUARRY) - BANGOR - LANE CONSTRUCTION CORP

Size	Bulk Specific Gravity, SSD	Absorption, %	ASR, Initial %	ASR, w/Pozz., %	Elongation, %
PCC LEDGE-3/8 IN.	2.71	0.65	0.550		8
PCC LEDGE-3/4 IN.	2.72	0.36			4
				Elongation, %	4
	AS	R Specification	0.10%, max.	Specification	

Coarse Stockpile Gradation (Percentages Passing Sieve Sizes)

	% sed	2" 50.0 mm	1 1/2" 37.5 mm	1" 25.0 mm	3/4" 19.0 mm	1/2" 12.5 mm	3/8" 9.5 mm	No. 4 4.75 mm	No. 8 2.36 mm	No. 16 1.18 mm	No. 50 .300 mm	No. 200 .075 mm
1	10	100	100	100	100	100	99	62	30			1.3
9	90	100	100	100	97	27	4	1	1			0.4
										_		
Result	tant	100	100	100	97	34	14	7	4			0.5
Upper/Lo S	ower Spec.		100%	95 to 100%		25 to 60%		0 to 10%	0 to 5%			1.5%, max.

FINE AGGREGATE DATA

Size		Sampled Date	Origi		
PCC-CONCRETE	SAND	4/19/2012	4/19/2012 HUGHES BROS PIT - WINTERPORT - HUGHES BROS		
	Bulk Sp. Grav., SSD		Absorption, %	Organic Impurities	
	2.60		1.27	-I	
			2.30%, max.	-I to III	

Fine Stockpile Gradation (Percentages Passing Sieve Sizes)

	3/8" 9.5 mm	No. 4 4.75 mm	No. 8 2.36 mm	No. 16 1.18 mm	No. 30 0.600 mm	No. 50 0.300 mm	No. 100 0.150 mm	No. 200 0.075 mm	Fineness Modulus	Base FM
Initial Results	100	99	96	66	45	24	9	3.7	2.61	2.61
Updated Results										2.75
Upper/Lower Spec.	100%	95 to 100%	80 to 100%	50 to 85%	25 to 60%	10 to 30%	2 to 10%	0 to 5.0%	2.26 to 3.14	2.26 to 3.14

Batch Wt, SSD, lb/yd³ Size PCC LEDGE-3/8 IN. 170 PCC LEDGE-3/4 IN. 1530 PCC-CONCRETE SAND 1195

PCC DESIGN

Design No. SUBA-12-1-AXYP

PCC-CLASS A

	Target	Specification		Target	Specification
Fine Aggregate, %:	42		Slump, in:	8.0	
Water Content by Volume, gal:	31.40		Spread, in.:		
Concrete Unit Wt, lbs/ft3:	141.5		W/C Ratio:	0.41	0.43, max.
Strength, psi [MPa]:	4,350 [30]	4,350 psi [30 MPa], min.	Temp., °F [°C]:	85 [30]	85°F [30°C], max.
Coulomb:	2400	2,400 coulombs, max.	Air Content, %:	7.3	6.0% to 8.5%

Product Name	Manufacturer/L	Location	Wt, Ib/yd ³	Specification
PORTLAND CEMENT-TYPE II	CIMENT QUEBEC, INC - SA	AINT-BASILE, QC	320	635 lb/yd ³ , max.
SLAG, GRADE 120, DRAGON	DRAGON PRODUCTS CO	- THOMASTON	320	
XYPEX ADMIX C-500-WATERPROOFER CEMENT	XYPEX CHEMICAL CORPORAT	TION - RICHMOND, BC	15	
		Total Cementitious	655	660 lb/yd ³ , max.
		Fly Ash, %		30%, max.
	-	Slag, %	49	50%, max.
		Silica, %		

Description	Manufacturer	Admixture Usage	Dosage, oz/yd ³
ADVA 140-ADMIXTURE	W R GRACE & CO	H.R.W.R.	78.6
DARATARD 17-ADMIXTURE	W R GRACE & CO	RETARDER	19.7
DAREX II AEA-ADMIXTURE	W R GRACE & CO	AIR-ENTRAINING	5.9
RECOVER-ADMIXTURE	W R GRACE & CO	HYDRATION STABILIZER	19.7

MAINE DOT USE ONLY

Status: APPROVED

COMMENTS:

Contains Xypex C-500 Waterproofing Admixture

Authorized by: **REDMOND, MICHAEL J**

Authorized Date: 6/14/2012

Re-Issued Date:

APPENDIX D

Results
Test
Concrete
Cement
Portland

SUNRISE - BANGOR

WIN/Town	Design	Sampled	Type Ite	ltem	Method	Ref No.	Slump	Air	Temp.	W/C Ratio	Strength 1	Temp. W/C Ratio Strength 1 Strength 2	Avg. Str.	Age	Avg. Coul
015108.00 - Stockton S	SUBA-12-1-A	7/20/2012 A	502	502.219 (M	ИЕТНОВ А)	272134		7.6	75	0.41	6768	6836	6800	56	1178
	SUBA-12-1-A	8/14/2012 A	502	502.219 (N	(METHOD A)	272135		8.4	82	0.39	5749	5659	5700	22	1466
	SUBA-12-1-A	8/17/2012 A	502	2.219 (N	502.219 (METHOD A)	272136		9	83.7	0.39	7264	7344	7300	56	1459
	SUBA-12-1-AXY	9/27/2012 A	202	502.26 (N	(METHOD A)	272140		8.4	69	0.41	6859	6915	6890	61	1132
	SUBA-12-1-AXY	9/27/2012 A	202	502.26 (N	(METHOD A)	272138		7.2	68	0.41	6876	6835	6860	61	1041
	SUBA-12-1-AXY	9/27/2012 A	207	502.26 (N	(METHOD A)	272139		7.7	68	0.41	6476	6615	6550	61	1067
	SUBA-12-1-AXY	6/11/2012 A	207	502.26 O	OTHER	272133		6.6	76	0.41	5208	5126	5170	57	006
	SUBA-12-1-AXY	6/11/2012 A	202	502.26 OT	THER	272133		6.6	76	0.41	7685	7384	7530	22	006
	SUBA-12-2-LP	10/4/2012 LP	63(636.40 (N	(METHOD C)	272141		6.3	62	0.41	7841	7666	7750	56	656
	SUBA-12-2-LP	10/9/2012 LP	636	636.40 (N	(METHOD C)	272142		8	64	0.39	6522	6680	6600	56	809
	SUBA-12-2-LP	10/10/2012 LP	202	502.49 (N	(METHOD C)	272143		6.2	56	0.4	7306	7749	7530	56	552
016784.20 - Bangor, Her SUBA-12-2-LP	SUBA-12-2-LP	6/18/2012 LP	606	606.901 (N	(METHOD C)	275956	7	5.5	71	0.39	6916	6602	6760	57	706
	SUBA-12-2-LP	6/19/2012 LP	606	3.901 (N	606.901 (METHOD C)	275957	7	7.1	69	0.39	6319	6513	6420	56	729
	SUBA-12-2-LP	7/5/2012 LP	606	3.901 (N	606.901 (METHOD C)	275959	7	7	82	0.41	5149	5185	5170	56	1024
	SUBA-12-2-LP	7/10/2012 LP	606	3.901 (N	606.901 (METHOD C)	275960	5.5	8.1	81	0.41	5143	5355	5250	58	816
019020.00 - Bangor	SUBA-12-2-LP	9/6/2012 LP	502	2.341 (N	502.341 (METHOD C)	276358	3	5.3	83.4	0.41	6714	6833	6770	56	771
019304.00 - Milo	SUBA-12-2-LP	10/1/2012 LP	202	502.44 (N	(METHOD A)	275478		7.5	73	0.38	6372	6209	6440	58	578
	SUBA-12-2-LP	10/1/2012 LP	202	502.44 (N	(METHOD A)	275477		7.3	73	0.38	5476	5251	5360	58	792
	SUBA-12-2-LP	10/1/2012 LP	202	502.44 (N	(METHOD A)	275476		7.3	17	0.38	6239	5793	6020	56	710
019432.00 - Brewer	SUBA-12-2-LP	7/24/2012 LP	62(626.34 (N	(METHOD C)	276353		4.5	83.1	0.41	7529	7725	7630	56	650
019435.00 - Brewer	SUBA-12-2-LP	8/3/2012 LP	62(626.34 (N	(METHOD C)	276357	3	6.9	80	0.4	6721	6375	6550	61	862

*Testing prior to 12/3/2002 were measured and tested in SI Units, after that date was measured and tested in US Customary.

Maine DOT, Materials Testing & Exploration, 219 Hogan Road, Bangor, Maine 04401

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

Days Dia., in in² Load, lb Type % Origin, psi Dia., in in² Load, lb Type % Origin, psi psi 28 4.02 12.69 85880 c 5 6768 4.03 12.76 87225 a 5 6836 6800 Test Comments: Meets Specification? YES Specification 4,350 psi [30 MPa], min Meets Specification? YES Specimen 1 Specimen 2 Chloride lon Avg. Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb Avg. of 8 Avg. of 8 Avg. of 8 28 24.2 22.7 25.8 Avg. of 24 24 Chloride lon Days Days 1165 M 1192 LOW 1178 Meets Spec? YES Specification 2,400 coulombs, max. 56 20.9 20.0 21.8 Avg. of 24 24 21 Chloride lon Penetrability MODERAT This result not used in payfactor calculation be	Courses.															
272134 69342 PCC-CLASS A ACCEPT (METHOD A) 502.219 Jampler: HEWS, GUY F Sampled: 7/20/2012 Design No: SUBAL324 Lot No: 1 Sublot No: 1 VINTorw:: S10180.0 - STOCKTON SPRINGS Ontractor: LANE CONSTRUCTION CORP. (THE) Sublot Size, yd* 40 Member/Structure Autometer Resident: HEWS, GUY Field Admixtures Used Total (plant + jobsite) Design No: Subal No: 1 Sublot No: 1 Yindge No/Name: Ozydy3 Ozydy3 Ozydy3 Concrete Field Test Data Admixture 02/yd3 Ozydy3 Subit No: 1 Subit No: 1 ADAVA 140-ADMIXTURE 94.7 76.8 Subit No: 1 Subit No: 1 ADAVA 140-ADMIXTURE 94.7 76.8 Subit No: 1 Subit No: 1 ADAVA 140-ADMIXTURE 94.7 76.8 Subit No: 1 Subit No: 1 ADAVA 140-ADMIXTURE 94.7 76.8 Subit No: 1 Subit No: 1 ADRATARD 17-ADMIXTURE 94.7 76.8 Subit No: 1 Subit No: 1 Age at Aug. 17-ADMIXTURE 94.7 76.8 Subit No: 1 Subit No: 1 Age at Aug. 17-ADMIXTURE 94.7 76.8 Subit No: 1 Subit No: 1 Age at Aug. 17-ADMIXTURE Specimen 1 Avg. Area, In In 1 Marea, In In 1 Marea No: 1			S A	MPL	E INF	ORM	ΑΤΙ	ON AI	ND FIE	LD RE	SUL.	ΓS				
Bampler: HEWS, GUY F Sampled: 7720/2012 Design No.: SUBA12:1:4 VINTown: 015108:00 - STOCKTON SPRINGS Sublot Size, yd ³ 40 Contractor: LANE CONSTRUCTION CORP (THE) Sublot Size, yd ³ 40 Resident: HEWS, GUY Field Admixtures Used Total (plant + jobsite) Design No.: SUBA12:1:4 Lot No.: 1 Pield Admixtures Used Total (plant + jobsite) Design No.: Superint in the sup	Reference I	No.	Ticket I	No.		Sample	Descr	ription		Sam	nple Typ	e		Item		
Plant/Location: SUNRISE - BANGOR 1 VIN/Tow: 015108.00 - STOCKTON SPRINGS Subid Size, 93 40 Contractor: LABE CONSTRUCTION CORP. (THE) Subid Size, 93 40 Monty Admixture o2/yd* o2/yd* 02/yd* DAREX II AEA-ADMIXTURE 8.47 5.83 76.83 DAREX II AEA-ADMIXTURE 8.47 76.83 Stump, in DARATARD 17-ADMIXTURE 8.47 76.83 Stump, in Specification JARATARD 17-ADMIXTURE 8.47 76.83 Stump, in Specification JARATARD 17-ADMIXTURE 8.47 76.83 Stump, in Specification? YES LA B O R AT O RY TEST RESULTS Stump, in Specification? YES Air Content, % 7.6 6.0% to 8.5% Meets Specification? YES Specification? YES Avg. Area, to 8.88 C 5 6768 4.03 12.76 872.97 Avg. Secting, Strength, MPa 28 4.02 1.269 Specification? YES Specification Avg. of 8.25 Avg. of 8.25 Avg. of 8.26 Avg. of 8.26 Avg. of 8.26 Avg	272134		6934	2		PCC-	CLAS	SA		ACCEPT	(METH	OD A)		502.219		
Plant/Location: SUNRISE - BANGOR 1 VIN/Tow: 015108.00 - STOCKTON SPRINGS Subid Size, 93 40 Contractor: LABE CONSTRUCTION CORP. (THE) Subid Size, 93 40 Monty Admixture o2/yd* o2/yd* 02/yd* DAREX II AEA-ADMIXTURE 8.47 5.83 76.83 DAREX II AEA-ADMIXTURE 8.47 76.83 Stump, in DARATARD 17-ADMIXTURE 8.47 76.83 Stump, in Specification JARATARD 17-ADMIXTURE 8.47 76.83 Stump, in Specification JARATARD 17-ADMIXTURE 8.47 76.83 Stump, in Specification? YES LA B O R AT O RY TEST RESULTS Stump, in Specification? YES Air Content, % 7.6 6.0% to 8.5% Meets Specification? YES Specification? YES Avg. Area, to 8.88 C 5 6768 4.03 12.76 872.97 Avg. Secting, Strength, MPa 28 4.02 1.269 Specification? YES Specification Avg. of 8.25 Avg. of 8.25 Avg. of 8.26 Avg. of 8.26 Avg. of 8.26 Avg	Sampler: HI	EWS, (GUY F] [Sa	ampled:	7/20/2	012	Des	ign No.: S	UBA-12-1	-A	5			
Member/Structure ABUTMENT Member/Structure ABUTMENT Member/Structure ABUTMENT Member/Structure ABUTMENT Member/Structure ABUTMENT Member/Structure ABUTMENT Admixtures Used Total (plant + jobsite) Design Admixture Specification Member/Structure ABUTMENT Admixture Specification DarAtara 17: ADMIXTURE Specification Admixture Specification DarAtara 17: ADMIXTURE Specification Admixture Specification Concrete Cylinder Compressive Strength (T 22) Meets Specification? YES Specimen 1 Specimen 1 Specimen 1 Specimen 1 Meets Specification? YES Specification? YES Specification 2:400 coulomb, max. Neeted, Specification 2:400 coulomb, max. Specification 2:400 coulomb, max.				BANGO						0	Contraction of the local division of the loc	000		1		
Addt! Info: South abut footing Represents 9.5 of 32 yd ³ Addt! Info: South abut footing Represents 9.5 of 32 yd ³ Concrete Field Test Data (T19.1132.1309) DAREX IN REA-ADMIXTURE DARATARD 17-ADMIXTURE DARATARD 17-ADMIXTURE DAREX IN REA-ADMIXTURE DARATARD 17-ADMIXTURE DAREX IN REA-ADMIXTURE DARATARD 17-ADMIXTURE DAREX IN REA-ADMIXTURE DARATARD 17-ADMIXTURE DAREX IN REA-ADMIXTURE DARATARD 17-ADMIXTURE Concrete Cylinder Compressive Strength (T2) Concrete Cylinder Compressive Strength (T 22) Meets Specification? YES Specimen 1 Specimen 1 Specimen 2 Arg. Arg. Arg. Arg. Arg. Arg. Area, Load, Ib Type % Specimen 2 Arg. Arg. Area, Load, Ib Type % Specimen 2 Arg. Arg. Arg. Area, Load, Ib Type % Specimen 1 Specimen 1 Break, Fract., Type % Specimen 1 Specimen 2 Arg. Arg. Arg. 5 6 6386 Arg. Arg. Arg. 5 6 23 0.5 6386 Arg. Arg. 5 636 6800 Test Comments: Arg. 5 6836 Conclot Arg. Break, Fract., Type % <th< td=""><td>WIN/Town: (</td><td>015108</td><td>3.00 - STC</td><td>оскто</td><td></td><td>GS</td><td></td><td></td><td>Sub</td><td>lot Size, yd</td><td>³ 40</td><td></td><td></td><td></td></th<>	WIN/Town: (015108	3.00 - STC	оскто		GS			Sub	lot Size, yd	³ 40					
Addt! Info: South abut footing Addt! Info: South abut footing Represents 9.5 of 32 yd ³ Concrete Field Admixture Admixture oulyd ³ ozlyd ³ DAREX II AEA-ADMIXTURE 8.47 5.8 Test Active Specification DAREX II AEA-ADMIXTURE Add II Info: South abut footing DAREX II AEA-ADMIXTURE Add II Info: South abut footing DAREX II AEA-ADMIXTURE Add II Info: South abut footing DAREX II AEA-ADMIXTURE Add II Info: South abut footing DAREX II AEA-ADMIXTURE Add II Info: South abut footing DAREX II AEA-ADMIXTURE Add II Info: South abut footing DAREX II AEA-ADMIXTURE Add II Info: South abut footing DAREX II AEA-ADMIXTURE Add II Info: South abut footing DAREX II AEA-ADMIXTURE Add II Info: South abut footing DAREX II AEA-ADMIXTURE Add II Info: South abut footing Add II Info: South abut footing South colspan= 2 Add II Info: South abut f							N		Me	nber/Struct	ure ABL	ITMENT				
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Admixture ozlyd³ ozlyd³ ozlyd³ ozlyd³ DAREX II BEAADMIXTURE 847 7.6 Name Sterny, in Specification DARATARD 17-ADMIXTURE 13.05 13 Sterny, in Spread, in W/C Ratio 0.41 0.43, max. Test Result 0.41 0.43, max. Test, of 6,0% to 8.5% Meets Specification? YES Age at Specimen 1 Strength, pin Specimen 2 Avg. Area, of 6,0% to 8.5% Meets Specification? YES Age at Specimen 1 Strength, pin Strength, pin Avg. Area, bas for 6,0% to 8.5% Meets Specification? YES Age at Specimen 1 Specimen 1 Strength, pin Strength, pin Avg. Area, bas for 6,0% to 8.5% Strength, pin					100		- 1	10	Rep	oresents	9.5	of 3	2 yd	3		
DAREX II AEA-ADMIXTURE 8.47 5.8 ADVA 140-ADMIXTURE 94.7 76.8 DARATARD 17-ADMIXTURE 94.7 76.8 DARATARD 17-ADMIXTURE 13.05 13 Spread, in W/C Ratio 0.41 W/C Ratio 0.41 0.43, max. Temp. 'F 75 85'F [30'C], max. Air Content, % 7.6 6.0% to 8.5% Meets Specification? YES Concrete Cylinder Compressive Strength (T 22) Arg. Arga, raga Load, lb Break, ppi Dara, in in'a' Load, lb Break Fract., strength, Arg. Days Dia, in in'a' Load, lb Break Strength, Arg. Days Dia, in in'a' Strength, MPa Arg. d Arg. d Strength, MPa Meets Specification? YES Specimen 1 Specimen 2 Specimen 2 Specimen 2 Days Loc. Coulomb Penetrability Coulomb Arg. d Arg. of 8 Arg. of 8 Arg. of 8 Days Loc. Coulomb Loc. Co	Field A	dmixtu	ures Usec	Total (plant + j	obsite)		Design		Concr	ete Fiel	d Test D	ata			
ADVA 140-ADMIXTURE 94.7 76.8 Slump, in Specimen 1 DARATARD 17-ADMIXTURE 13.05 13 Slump, in Specimen 1 W/C Ratic 0.41 0.43, max. Air Content, % 7.6 6.0% to 8.5% Meets Specification? YES Age at Data Specimen 1 Strength, Pail Avg. Area, Load, Ib Break Fract., Strength, Pail Strength, Pail Avg. Area, Load, Ib Break Fract., Strength, Pail Strength, Pail Avg. Area, Load, Ib Break Fract., Strength, Pail Strength, Pail May Break, Dia., in Load, Ib Type % 5 6360 Break, Dia., in in2 Load, Ib Break Fract., Strength, Dia., in in2 Load, Ib Strength, MPa 28 4.02 12.69 8580 c 5 6768 4.03 12.76 87225 a 5 6830 Test Comments: Avg. Strength, MPa Meets Specification? YES Specimen 1 Specimen 2 Specimen 2 Meets Specification? YES Specimen 1 Specimen 2 Specimen 2 Specimen 2 Start Coulomb udge a 0.87 correction for eat-th dameter specimen Avg. of 8 Avg. of 8 Avg. of 8 S6 T </td <td></td> <td>A</td> <td>dmixture</td> <td></td> <td>S</td> <td>oz/yd</td> <td>3</td> <td>oz/yd³</td> <td>10</td> <td><u>(T 1</u></td> <td>19, T 1</td> <td><u>52, T 309</u></td> <td><u>))</u></td> <td></td>		A	dmixture		S	oz/yd	3	oz/yd ³	10	<u>(T 1</u>	19, T 1	<u>52, T 309</u>	<u>))</u>			
DARATARD 17-ADMIXTURE 13.05 13 Slump, in Spread, in W/C Ratio Slump, in Spread, in W/C Ratio Slump, in O.41 O.43, max. Temp. 'F 75 85"F [30°C], max. Air Content, % 7.6 6.0% to 8.5% Meets Specification? YES LA B O R AT O R Y T E ST RE SULT S Concrete Cvlinder Compressive Strength (T 22) Age at Days Specimen 1 Specimen 2 Avg. Strength, Dia., in in ² Load, Ib Type % Specimen 2 Avg. Strength, Dia, in in ² Load, Ib Type % Avg. Strength, MPa 28 4.02 12.69 85880 c 5 6768 4.03 12.76 87225 a 5 6836 6800 Test Comments: Meets Specification? YES Specification 4,350 psi [30 MPa], min Meets Specification? YES Surface Resistivity (T XXX-10), KOhm-cm) Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 A				-	· ·		-	THE TAX OF A	Te	st	Result	t S	Specific	cation		
Spread, in W/C Ratio 0.41 0.43, max. Temp. °F 75 85°F [30°C], max. Air Content, % 7.6 6.0% to 8.5% Meets Specification? YES Specimen 1 Specimen 2 Specimen 1 Specimen 2 Avg. Area, Dad, Ib Break Fract., Strength, Psi Dia., in in² Load, Ib Test Comments: Avg. Strength, MPa Meets Specification? YES Specimen 1 Specimen 2 Avg. 12.69 85880 C 5 Meets Specification? YES Avg. Strength, MPa Meets Specification? YES Specimen 1 Specimen 2 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 24 Chloride lon Penetrability LOW Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb Avg. of 24 24 Chloride a 0.479 correction for a 4-in. diameter specimen. 56 T 1165 M </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>and the second s</td> <td></td> <td>Slump, in</td> <td></td> <td></td> <td></td> <td></td>								and the second s		Slump, in						
Temp. °F 75 85°F [30°C], max. Air Content, % Air Content, % 7.6 6.0% to 8.5% Meets Specification? VES LA B O R A T O R Y T E S T R E S U L T S Concrete Cylinder Compressive Strength (T 22) Arg. area, Dia., in in² Load, lb Break, Type % Arg. Strength, Dia., in in² Load, lb Break Fract., Strength, Dia., in in² Load, lb Break Fract., Strength, Dia., in in² Arg. 4.02 Load, lb Break Fract., Strength, Dia., in in² Arg. 4.02 Load, lb Break Fract., Strength, MPa Z8 A.02 12.69 8580 C 5 Grote dual to the for the strength (T 27) Kge Tested, Specimen 1 Specimen 2 Specimen 2 Dist Coulomb Loc. Coulomb Loc. Coulomb Penetrability Coulomb Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb Days Arg. of 8 Arg. of 8	DF			ATORE		15.05		13	S	pread, in						
Air Content, % 7.6 6.0% to 8.5% Meets Specification? VES LABORATORY TEST RESULTS Concrete Cylinder Compressive Strength (T 22) Age at Break, Dia, in in ² Load, lb Break Fract., Dia, in in ² Specimen 2 Avg. Strength, psi Dia, in Jua, in Dia, in in ² Load, lb Loc Break Type Fract., % Strength, psi Avg. Dia, in in ² Load, lb Loc Break Type Fract., % Strength, psi Main Avg. Strength, MPa Meets Specification? YES Specification 4,350 psi [30 MPa], min Meets Specification? YES Specification 4,350 psi [30 MPa], min Meets Specification? YES Specimen 1 Specimen 2 Specimen Days Avg. of 8 Avg. of 24 24 Chloride lon Penetrability LOW Specification 2,400 coulombs, max. S6 <td <="" colspan="2" td=""><td></td><td></td><td></td><td>B a</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td>	<td></td> <td></td> <td></td> <td>B a</td> <td></td>					B a										
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Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 9/25/2012

Maine DOT, Materials Testing & Exploration, 219 Hogan Road, Bangor, Maine 04401

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

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Concrete Cylinder Compressive Strength (T 22) Specimen 1 Specimen 2 Specimen 2 Specimen 1 Specimen 1 Specimen 2 Avg. Specimen 1 Specimen 2 Specimen 1 Specimen 1 Specimen 1 Specimen 1 Specimen 2 Specimen 1 Specimen 1 Specimen 2 Specimen 1 Specimen 1 Specimen 1 Specimen 2 Cloride Lor. Coulomb Peretrability (T 277) Specimen 1 Specimen 2 Cloride Ion Avg. Specimen 1 Specimen 2 Specimen 2 Specimen 1 Specimen 2 Specimen 1 Specimen 2 Specimen 1 Specimen 1 <th cols<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Me</td><td>ets Spec</td><td>ificatio</td><td>n?</td><td>YE:</td><td>5</td></th>	<td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Me</td> <td>ets Spec</td> <td>ificatio</td> <td>n?</td> <td>YE:</td> <td>5</td>									Me	ets Spec	ificatio	n?	YE:	5
Specimen 1 Specimen 2 Specimen 2 Specimen 1 Specimen 2 Chloride In Mathematication in Specimen 2 Specimen 1 Specimen 1 Specimen 1 Specimen 1 Specimen 1 Specimen 2 Chloride In Mathematication in Specimen 2 Specimen 1 Specimen 2 Specimen 2 Specimen 2 Specimen 1 Specimen 2 Specimen 2 <td></td> <td></td> <td></td> <td></td> <td>LAB</td> <td>ORA</td> <td>TORY</td> <td>TES</td> <td>T RESU</td> <td>LTS</td> <td></td> <td></td> <td></td> <td></td>					LAB	ORA	TORY	TES	T RESU	LTS					
Break, Days Avg. Dia., in Area, in² Load, Ib Break Type Fract., % Strengt, psi Dia., in Area, in² Load, Ib Break Type Kengt, psi Strengt, psi <t< td=""><td></td><td></td><td></td><td></td><td></td><td>ete Cylii</td><td>nder Com</td><td>pressiv</td><td>ve Strength (</td><td></td><td></td><td></td><td></td><td></td></t<>						ete Cylii	nder Com	pressiv	ve Strength (
Dia., in in² Load, ib Type % orgin psi Dia., in in² Load, ib Type % orgin psi 28 4.02 12.69 72960 a 35 5749 4.02 12.69 71810 a 35 5659 5700 Test Comments: Avg. Strength, MPa Meets Specification? YES Specification 4,350 psi [30 MPa], min ge Tested, Specimen 1 Specimen 2 Chloride lon Avg. Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb 37 T 1441 M 1491 LOW 1466 Meets Spec? YES Specification 2,400 coulombs, max. 57 26.4 27.2 26.3 Avg. of 24 19 Chloride lon Penetrability LOW 1466 Avg. of 24 27 Chloride lon Penetrability LOW Value based on a single result. not in payfactor calculation because no assignable cause could be determined for the outlier. 27 Chloride lon Penetra	_	Ava	Aree	Specime		Freet	Fract Strength Avg Area Break Fract Strength								
28 4.02 12.69 72960 a 35 5749 4.02 12.69 71810 a 35 5659 5700 Test Comments: Avg. Strength, MPa Meets Specification? YES Specification 4,350 psi [30 MPa], min Meets Specification? YES Specification 4,350 psi [30 MPa], min ge Tested, Specimen 1 Specimen 2 Chloride Ion Avg. Days C. Coulomb Loc. Coulomb Coulomb Avg. of 8 Avg. of 8 Avg. of 8 The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. S7 T 1441 M 1491 LOW 1466 Meets Spec? YES Specification 2,400 coulombs, max. S7 2 19 Chloride Ion Penetrability Meets Spec? YES Specification 2,400 coulombs, max. S7 2 19 Chl	Days	-		Load, Ib						Load, Ib			_		
Rapid Chloride Permeability (T 277) Surface Resistivity (T XXX-10). KOhm-cm) ge Tested, Specimen 1 Specimen 2 Chloride lon Avg. Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. 28 19.2 19.6 19.0 57 T 1441 M 1491 LOW 1466 Meets Spec? YES Specification 2,400 coulombs, max. 57 26.4 27.2 26.3 Avg. of 24 27 Chloride lon Penetrability LOW LOW LOW LOW LOW his result not used in payfactor calculation because no assignable cause could be determined for the outlier. 26.3 Avg. of 24 27 Chloride lon Penetrability LOW his result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. Comments:	-			72960						71810				5700	
Surface Resistivity (T XXX-10), KOhm-cm) Surface Resistivity (T XXX-10), KOhm-cm) ge Tested, Specimen 1 Specimen 2 Chloride Ion Avg. Days Loc. Coulomb Coulomb Tereported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. 57 T 1441 M 1491 LOW 1466 Meets Spec? YES Specification 2,400 coulombs, max. For a 4-in. diameter specimen. Specimen 1 Specimen 2 Specimen 3 57 T 1441 M 1491 LOW 1466 Avg. of 24 19 Penetrability MODERATI 57 Z 1441 M 1491 LOW 1466 Avg. of 24 19 Penetrability MODERATI 57 Z 26.4 27.2 26.3 Avg. of 24 27 Chloride Ion Penetrability bis result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. LOW Value baset Diverse Comments: Comments: <td< td=""><td>Tes</td><td>t Comme</td><td>nts:</td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td>Avg</td><td>. Streng</td><td>gth, MPa</td><td>1</td></td<>	Tes	t Comme	nts:			1					Avg	. Streng	gth, MPa	1	
ge Tested, Days Specimen 1 Specimen 2 Chloride Ion Penetrability Avg. Coulomb The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. Age Tested, Days Specimen 1 Specimen 2 Specimen 3 57 T 1441 M 1491 LOW 1466 Avg. of 24 19 Chloride Ion Penetrability MODERATI Meets Spec; YES Specification 2,400 coulombs, max. 57 26.4 27.2 26.3 Avg. of 24 27 Chloride Ion Penetrability LOW LOW <td< td=""><td></td><td></td><td>N</td><td>leets Spe</td><td>cificati</td><td>on?</td><td>YES</td><td></td><td>;</td><td>Specifica</td><td>tion</td><td>4,350 p</td><td>si [30 M</td><td>Pa], min.</td></td<>			N	leets Spe	cificati	on?	YES		;	Specifica	tion	4,350 p	si [30 M	Pa], min.	
ge Tested, Days Specimen 1 Specimen 2 Chloride Ion Penetrability Avg. Coulomb The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. Age Tested, Days Specimen 1 Specimen 2 Specimen 3 57 T 1441 M 1491 LOW 1466 Avg. of 24 19 Chloride Ion Penetrability MODERATI Meets Spec; YES Specification 2,400 coulombs, max. 57 26.4 27.2 26.3 Avg. of 24 27 Chloride Ion Penetrability LOW LOW <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>															
Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. Days Avg. of 8 Avg. of 24 19.0 Davs Avg. of 24 19 Chloride lon Penetrability MODERATI 57 26.4 27.2 26.3 Avg. of 24 27 Chloride lon Penetrability LOW his result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. Comments: Comments:		Ē	Rapid Chlo	oride Perm	eability	<u>(T 277)</u>			<u>Surf</u>	ace Resist	tivity (T	<u>XXX-10)</u> ,	KOhm-o	<u>;m)</u>	
The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. 28 19.2 19.6 19.0 57 T 1441 M 1491 LOW 1466 Avg. of 24 19 Chloride lon Penetrability MODERATI 57 T 1441 M 1491 LOW 1466 Avg. of 24 19 Chloride lon Penetrability MODERATI 57 T 1441 M 1491 LOW 1466 Avg. of 24 19 Chloride lon Penetrability MODERATI 57 26.4 27.2 26.3 Avg. of 24 27 Chloride lon Penetrability LOW his result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. LOW *ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. Comments: Comments: Comments:	-	ed, Spe	cimen 1	Specir	nen 2			•	-	Specim	en 1	Specime	en 2 S	pecimen	
57 T 1441 M 1491 LOW 1466 Meets Spec? YES Specification 2,400 coulombs, max. Avg. of 24 19 Chloride Ion Penetrability MODERATI 57 26.4 27.2 26.3 Avg. of 24 27 Chloride Ion Penetrability LOW his result not used in payfactor calculation because no assignable cause could be determined for the outlier. LOW Value based on a single result. Comments: Comments:			1			1	-		-					-	
Meets Spec? YES Specification 2,400 coulombs, max. Avg. of 24 19 Onentasion Penetrability MODERATION Penetrability 57 26.4 27.2 26.3 Avg. of 24 27 Chloride lon Penetrability LOW his result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. 'ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. Comments:			1				1		28	19.2	2			19.0	
Avg. of 24 27 Chloride Ion Penetrability LOW his result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. *ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. USE USE Comments: Comments: USE USE	-	-							Avg. of 24	19			N/I	ODERAT	
Avg. of 24 27 Penetrability LOW his result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. *ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. Comments:									57	26.4	1	27.2		26.3	
Value based on a single result. ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. Comments:									Avg. of 24	27				LOW	
Final report. The sample tag was sent in missing placement location.	Value bas **ADMIXT	sed on a sii URES LIST <u>ts:</u>	ngle result. ED IN RED	FONT HAVE	NOT BE	EN APPR	OVED FOR		be determined f	or the outli	er.				

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 10/17/2012

Maine DOT, Materials Testing & Exploration, 219 Hogan Road, Bangor, Maine 04401

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

CHOIL DA							atery					
	S A	MPLE	INF	ORM	ATION	N A N	D FIEL	DRE	SULI	r s		
Reference No.	Ticket	No.		Sample	e Descripti	ion		Sam	ple Typ	е		Item
272136	5771	10		PCC	-CLASS A	4		ACCEPT	(METHO	OD A)		502.219
Sampler: THOM	PSON. CA		: Si		8/17/2012		Desia	n No.: <mark>Sl</mark>	JBA-12-1	-A	5	
Plant/Location:	-						Lot No		and the second se	blot No.:		3
WIN/Town: 0151	08.00 - ST	OCKTON	SPRIN	GS		-	North North No.	t Size, yd ^a	100			
Contractor: LAN			CORP.	(THE) 📢	10	G		per/Structu		TMENT 2		
Resident: HEWS			10	-	I I a		Addt'l	Info: Sten	n wall			
Bridge No/Name:	CC	511			-	10	Repre	sents	2	of	12 yd	3
Field Admix	tures Use	d Total (p	lant + j	obsite)	De	sign		Concre	ete Fiel	d Test D	Data	
1	Admixture		5	oz/yo	d ³ OZ	/yd³	TA	<u>(T 1</u>	<u>19, T 1</u>	52, T 30	<u>9)</u>	
	II AEA-ADM	-		9.17		5.8	Test		Result	:	Specific	ation
	140-ADMIX			51.5	the second	6.8 13	Slu	ump, in				
DARAT	ARD 17-ADM	IATURE		13		13	Spr	ead, in				
		1 m						C Ratio	0.39		0.43, r	nax.
								emp. °F	83.7		5°F [30°C	
							Air Con		6		6.0% to	
								ets Spec	ificatio	n ?	YE	5
					TORY							
• • •		Specime		ete Cyli	nder Com	pressiv	<u>e Strength (</u>					-
Age at Break, Avg.	Area,	Specime	en 2 Break	Fract.,	0	Avg. Strength						
Days Dia., in	Area, in ²	Load, Ib	Break Type	Fract., %	Strength, psi	Avg. Dia.,		Load, Ib	Туре	%	Strengtl psi	n, burengu psi
28 4.02	12.69	92180	a	40	7264	4.02		93195	a	40	7344	7300
Test Comm	ents:		1	I					Avg	. Streng	gth, MPa	1
	Ν	leets Spe	cificati	on?	YES		:	Specifica	tion	4,350 p	si [30 M	Pa], min.
	Rapid Chlo	oride Perm	eability	<u>(T 277)</u>			<u>Surf</u>	ace Resist	tivity (T	<u>XXX-10)</u> ,	KOhm-o	<u>;m)</u>
•	ecimen 1	Specir	nen 2	Chloric		Avg.	Age Tested,	Specim	en 1	Specime	en 2 S	pecimen 3
Days Loc.						oulomb	Days	Avg. o		Avg. of		Avg. of 8
The reported coulo	1453	Ides a 0.879 co M	orrection for 1465	or a 4-in. di LO		^{men.} 1459	28	17.3	3	17.3		18.5
Meets Spec					oulombs,		Avg. of 24	18		Chloride Penetra	bility ^M	ODERATE
							56	28.0)	27.9		30.0
							Avg. of 24	29		Chloride Penetra		LOW
This result not used *Value based on a s **ADMIXTURES LIS	ingle result.						e determined f	or the outli	er.			

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 10/12/2012

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

								atory					
		S A	MPLE	INF	ORM	ΑΤΙΟΙ	N A N	D FIEL	D R E	SULT	S		
Reference	e No.	Ticket I	No.		Sample	Descript	ion		Sam	ple Typ	е		Item
27214	0	5786	5		PCC-	CLASS A	4		ACCEPT	(METHO	OD A)		502.26
Sampler: I	HEWS,	GUY F	J [S	ampled:	9/27/2012	2	Design	No.: <mark>Sl</mark>	JBA-12-1	AXYP	5	
•		UNRISE -	BANGO	र				0	.: 1	Contraction of the local division of the loc	blot No.:	6	
VIN/Town:	01510	8.00 - STC	OCKTON	SPRIN	GS			Sublot	Size, yd	3 29			
Contractor:	LANE	CONSTR	UCTION	CORP.	(THE) 📹	11	G	Memb	er/Structu	ure <mark>отн</mark>	ER		
Resident:	HEWS,	GUY		10	311	11.0		Addt'l	Info: decl	c placeme	ent south	1/3	
ridge No/I	Name:	CC	511			-	10	Repre	sents	60	of 8	37 yd ³	
Field	Admixt	ures Used	d Total (p	lant + j	obsite)	De	sign		Concr	ete Fiel	d Test D	Data	
11 4	A	dmixture			oz/yd	³ OZ	/yd³	TA	<u>(T 1</u>	19, T 1	52, T 309	9)	
		AEA-ADMIX	-		44	the second se	5.9	Test		Result		Specifica	ation
		140-ADMIXT	-		52.5 19.7		8.6 9.7	Slu	ımp, in				
	RECOV		URE		19.7	0	9.7	Spre	ead, in				
			E a					W/C	Ratio	0.41		0.43, m	ax.
									mp. °F	69		5°F [30°C]	
								Air Cont		8.4		6.0% to	
								Ме	ets Spec	cificatio	n?	YES	
				LAB	ORAT	ORY	TES	T RESUL	. T S				
		L A B O R A T O R Y Concrete Cylinder Con				pressi	ve Strength (
Age at	•		Specime						Specime	1	-		Avg
	Avg. Dia., in	Area, in ²	Load, Ib	Break Type	Fract., %	Strength, psi	Avg Dia.,		Load, Ib	Break Type	Fract., %	Strength, psi	Streng
-	4.02	12.69	87035	a	15	6859	4.02		87755	a	15	6915	689
	Comme											th, MPa	
			leets Spe	cificati	on?	YES		S	Specifica	· · · · · · ·	-	si [30 MF	a], mir
		Rapid Chlo	rido Dorm	ophility	(T 277)			Surfa	ace Resis	tivity /T	<u></u>	KOhm ci	<u>m)</u>
ge Tested			1		· · · · ·	o lon	Ava	Age Tested,					-
Days	Loc.	cimen 1 Coulomb	Specir Loc. C		Chlorid Penetra		Avg. oulomb	Days	Specim Avg. c		Specime Avg. of		ecimen
-		b value includ	1			-		28	24.9		24.8		24.5
The report		1171	M	1093	LO\	N	1132		25		Chloride	lon	LOW
61	T Spec?		-	cation	2,400 cc	oulombs.	, max.	Avg. of 24			Penetra	bility	LOW
61	Spec?		-	cation	2,400 cc	oulombs,	, max.	61	30.3		Penetra 30.3	bility	29.8

Comments:

Final report. Sublot has been changed due to duplicate sublot. I changed it from sublot 3 to 6. The sample tag was sent in missing actual w/c ratio.

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

SAMPLE INFORMATION AN Reference No. Ticket No. Sample Description						
	D FIEL	D RES	SULT	S		
		Samp	ole Typ	е		Item
272138 27859 PCC-CLASS A		ACCEPT (METHO	DD A)		502.26
Sampler: THOMPSON, CANDACE C Sampled: 9/27/2012	Design	ו No.: SU	BA-12-1-	AXYP		
Plant/Location: SUNRISE - BANGOR	Lot No	100	Contraction of the local division of the loc	olot No.:	4	
VIN/Town: 015108.00 - STOCKTON SPRINGS	100 M	Size, yd ³	100		_	
Contractor: LANE CONSTRUCTION CORP. (THE)		er/Structu		ER		
Resident: HEWS, GUY		Info: deck			3	
Bridge No/Name:	Repre		5	of 87		
Field Admixtures Used Total (plant + jobsite) Design				d Test Da		
Admixture oz/yd ³ oz/yd ³				52, T 309)		
DAREX II AEA-ADMIXTURE 49 5.9	Test		Result		pecifica	ation
ADVA 140-ADMIXTURE 54.5 78.6	Slu	ımp, in			•	
RECOVER-ADMIXTURE 19.7 19.7		ead, in				
#Error -1 #Error		C Ratio	0.41		0.43, m	ax.
		mp. °F	68		F [30°C	
	Air Cont	ent, %	7.2	6	.0% to	8.5%
	Me	ets Speci	ficatio	n?	YES	
LABORATORY TEST	T RESUL	_ T S				
Concrete Cylinder Compressiv	e Strength (T 22)				
Age at Specimen 1		Specime				Avg.
Break, Avg. Area, Load, Ib Break Fract., Strength, Avg.		Load, Ib	Break		Strength	Strengtl psi
Days Dia., in in ² Type % psi Dia., i	in in²		Туре	%	psi	-
28 4.02 12.69 87260 a 10 6876 4.02	12.69	86735	a	10	6835	6860
Test Comments: Meets Specification? YES	c	Specificat	-	. Strengtl 4,350 psi		lol min
	•	pecificati		4,550 psi		aj, min.
Rapid Chloride Permeability (T 277)	Surfa	ace Resisti	ivity (T	XXX-10), K	(Ohm-ci	n)
Age Tested, Specimen 1 Specimen 2 Chloride Ion Avg.	Age Tested,	Specime		Specimen		ecimen 3
Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb	Days	Avg. of		Avg. of 8		vg. of 8
The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen.	28	25.9		25.6		23.5
61 T 1077 M 1005 LOW 1041	Avg. of 24	25		Chloride I Penetrabi		LOW
Mosts Space VES Specification 2 400 coulombs max	61	32.6		31.8	,	29.1
Meets Spec? YES Specification 2,400 coulombs, max.				Chloride I	on	
Meets Spec? YES Specification 2,400 coulombs, max.	Avg. of 24	31		Penetrabi		LOW

Final report. Sublot has been changed due to duplicate sublot. I changed it from sublot 1 to 4.

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

272143 57941 PCC-CLASS LP ACCEPT (METHOD C) 502.4 Sampler: HEWS, GUY F Sampled: 10/10/2012 Design No.: SUBA-12.2-JP Lot No.: 1 Sublet No.: 3 Plant/Location: SUNRISE - BANGOR WIN/Town: 015108.00 - STOCKTON SPRINGS Contractor: LANE CONSTRUCTION CORP. (THE) Design No.: SUBA-12.2-JP Lot No.: 1 Sublet No.: 3 Resident: HEWS, GUY Bridge No/Name: Towns of the structure suber Mark Addt! Info: and curb Represents 6 of 2.6 yd³ Field Admixture 02/yd³ 02/yd³ 02/yd³ It 19. T 152. T 309) Test Result Specification Admixture 0.5 7.9 19.2 W/C Ratio 0.40 0.41, max. Temp. °F 56 85°F [30°C], ma Air Content, % 6.2 6.0% to 8.5% Member/Structure 19.76 19.2 W/C Ratio 0.40 0.41, max. Temp. °F 56 85°F [30°C], ma Air Content, % 6.2 6.0% to 8.5% Member/Structure 19.76 19.2 W/C Ratio 0.40 0.41, max. Temp. °F 56 85°F [30°C], ma Air Content, % 6.2 6.0% to 8.5% Member/Structure 19.76 19.2 W/C Ratio 0.40 0.749 <td< th=""><th>STADE OF</th><th></th><th></th><th></th><th></th><th>00</th><th></th><th></th><th></th><th>..,</th><th></th><th></th><th></th><th></th><th></th></td<>	STADE OF					00				. .,						
272143 57941 PCC-CLASS LP ACCEPT (METHOD C) 502.4 Sampler: HEWS, GUY F Sampled: 10/10/2012 Design No.: SUBA-12.2-JP Lot No.: 1 Sublet No.: 3 Plant/Location: SUNRISE - BANGOR WIN/Town: 015108.00 - STOCKTON SPRINGS Contractor: LANE CONSTRUCTION CORP. (THE) Besign No.: SUBA-12.2-JP Lot No.: 1 Sublet Size, yd ² 3 Contractor: LANE CONSTRUCTION CORP. (THE) Bridge No/Name: Sublet Size, yd ² 15 Member/Structure SIDEWALK Addmixture 0.2/yd ³ 0.2/yd ³ 0.2/yd ³ 0.2/yd ³ Concrete Field Test Data Markara 17-ADMIXTURE 0.5 7.9 19.2 Member/Structure SiDEWALK Addril Info: and curb Result Specification Slump, in DAREX II AEA-ADMIXTURE 0.5 7.9 Slump, in DARATARD 17-ADMIXTURE 19.76 19.2 W/C Ratio 0.40 0.41, max. Temp. °F 56 85°F [30°C], ma Air Content, % 6.2 6.0% to 8.5% Metric Specimen 1 Break Avg. Area, Ioad, Ib Treps Strength, MPa 28 4.02 12.69 92710 10 7306 4.02 12.69 98330 10 7749 28 4.02 12.69 92710			S A	MPL	E INF	ORM	ΑΤΙ	ΟΝ ΑΝ	D	FIEL	D R E	SULI	r s			
Sampler: HEWS, GUY F Sampled: 10/10/2012 Plant/Location: SUNRISE - BANGOR WIN/Town: 015108.00 - STOCKTON SPRINGS Contractor: LANE CONSTRUCTION CORP. (THE) Resident: HEWS, GUY Bridge No/Name: Field Admixtures Used Total (plant + jobsite) Design Admixture 02/yd ² 02/yd ³ DAREX II AEA-ADMIXTURE 00 13 RECOVER-ADMIXTURE 100 792 DARATARD 17-ADMIXTURE 100 792 DARATARD 17-ADMIXTURE 100 792 DARATARD 17-ADMIXTURE 19.76 19.2 Kets Specification? YES LA B O R A T O R Y T E S T R E S U L T S Concrete CVInder Compressive Strength, 1% 6.2 6.0% to 8.5% Meets Specification? YES LA B O R A T O R Y T E S T R E S U L T S Concrete CVInder Compressive Strength, 100 738 Adva, Area, Load, 1b Break Fract., Strength, Avg. Area, Load, 1b Break Fract., Strength, MP a 28 4.02 12.69 92710 a 10 7306 4.02 12.69 98330 c 10 7749 7 Test Comments: Meets Specification? YES Specification 5,075 psi [35 MPa], r Meets Specification? YES Specification 5,075 psi [35 MPa], r Age Tested, Specimen 1 Specimen 2 Meets Specification? YES Specification 5,075 psi [35 MPa], r Age Tested, Specimen 1 Specimen 2 Chloride Ion Avg. Penetrability Coulomb Age Tested, Specimen 1 Specimen 2 Surface Resistivity (T XXX-10), KOhm-cm) Age Tested, Specimen 1 Specimen 2 Chloride Ion Avg. Penetrability Coulomb Age Tested, Specimen 1 Specimen 2 Surface Resistivity (T XXX-10), KOhm-cm)	Reference	e No.	Ticket I	No.		Sample	Desci	ription			Sam	ple Typ	е		Item	
Plant/Location: SUNRISE - BANGOR MIN/Town: 015108.00 - STOCKTON SPRINGS Contractor: LANE CONSTRUCTION CORP. (THE) Resident: HEWS, GUY Addy Name: Field Admixtures Used Total (plant + jobsite) DAREX II AEA-ADMIXTURE 0 2/yd ³ 0/2/yd ³ 0/2/yd ³ DARX II AEA-ADMIXTURE 0 13 RECOVER-ADMIXTURE 19.76 19.2 L A B O R A T O R Y T E S T R E S U L T S Concrete Cylinder Compressive Strength, Net Specification? W/C Ratio 0.40 0.40 0.41, max. Temp. °F 56 85°F (30°C), ma Air Content, % 6.2 0.40 0.40 0.41, max. Temp. °F 56 85°F (30°C), ma Air Content, % 6.2 0.40 0.41, max. Temp. °F 56 85°F (30°C), ma Air Content, % 6.2 0.40 0.40, lb Break Fract., Strength, Avg. Avg. Strength, MPa Meets Specification? YES Specification 5,075 psi [35 MPa], r Age Tested, Specimen 1 Specimen 2 Specimen 2 Specimen 2 Specimen 1 Specimen 3 Specimen 3 Specimen 3 Specimen 3 Specimen 3 Specimen 3 Specimen 3	272143	3	5794	1		PCC-0	CLASS	S LP			ACCEPT	(METH	OD C)		502.49	
Plant/Location: SUNRISE - BANGOR MIN/Town: 015108.00 - STOCKTON SPRINGS Contractor: LANE CONSTRUCTION CORP. (THE) Resident: HEWS, GUY Addy Name: Field Admixtures Used Total (plant + jobsite) DAREX II AEA-ADMIXTURE 0 2/yd ³ 0/2/yd ³ 0/2/yd ³ DARX II AEA-ADMIXTURE 0 13 RECOVER-ADMIXTURE 19.76 19.2 L A B O R A T O R Y T E S T R E S U L T S Concrete Cylinder Compressive Strength, Net Specification? W/C Ratio 0.40 0.40 0.41, max. Temp. °F 56 85°F (30°C), ma Air Content, % 6.2 0.40 0.40 0.41, max. Temp. °F 56 85°F (30°C), ma Air Content, % 6.2 0.40 0.41, max. Temp. °F 56 85°F (30°C), ma Air Content, % 6.2 0.40 0.40, lb Break Fract., Strength, Avg. Avg. Strength, MPa Meets Specification? YES Specification 5,075 psi [35 MPa], r Age Tested, Specimen 1 Specimen 2 Specimen 2 Specimen 2 Specimen 1 Specimen 3 Specimen 3 Specimen 3 Specimen 3 Specimen 3 Specimen 3 Specimen 3	Sampler: F	IEWS.	GUY F] [Sa	ampled:	10/10/	2012		Desig	n No.: <mark>Sl</mark>	JBA-12-2	-LP	1		
WIN/Town: 015108.00 - STOCKTON SPRINGS Subici Size, yd ^a 15 Contractor: LANE CONSTRUCTION CORP. (THE) Resident: HEWS, GUY Member/Structure SIDEWALK Bridge No/Name: 6 of 26 yd ^a Field Admixtures Used Total (plant + jobsite) Design Concrete Field Test Data (T 119, T 152, T 309) Concrete Field Test Data (T 119, T 152, T 309) DAREX II AEA-ADMIXTURE 8.5 7.9 30 2/yd ³ 0z/yd ³ Admixture 0 13 79.2 Spread, in Spre	•			BANG	DR	·						Statement of the local division in the local	NC	1 3	3	
Contractor: LANE CONSTRUCTION CORP. (THE) Resident: HEWS, GUY Ardige No/Name: Field Admixture Josd Total (plant + jobsite) Admixture oz/yd ³ oz/yd ³ DAREX II AEA-ADMIXTURE 8.5 7.9 DARATARD 17-ADMIXTURE 00 13 RECOVER-ADMIXTURE 100 79.2 DARATARD 17-ADMIXTURE 10.7 AUX 140-ADMIXTURE 10.7 DARATARD 17-ADMIXTURE 0.13 RECOVER-ADMIXTURE 10.7 DARATARD 17-ADMIXTURE 10.7 DARATARD 17-ADMIXTURE 0.13 RECOVER-ADMIXTURE 10.7 DARATARD 17-ADMIXTURE 10.7 DARATARD 17-ADMIXTURE 0.4 DARATARD 17-ADMIXTURE 0.4 DARATARD 17-ADMIXTURE 10.7 DARATARD 17-ADMIXTURE 0.7 DARATARD 17-ADMIXTURE 0.4 DARATARD 17-ADMIXTURE 0.7 DARATARD 17-ADMI	VIN/Town:	01510	8.00 - STC	оскто		GS			C	No.	LAG COMPANY	100				
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Represents 6 of 26 yd³ Stidge No/Name: Represents 6 of 26 yd³ Concrete Field Test Data (T 119, T 152, T 309) DAREX II AEA-ADMIXTURE 0 o2/yd³ OZ/yd³ DAREX II AEA-ADMIXTURE 0 o2/yd³ Concrete Field Test Data (T 119, T 152, T 309) DAREX II AEA-ADMIXTURE 0 o2/yd³ DARATARD 17-ADMIXTURE 0 0 Test Result Specification OLARATARD 17-ADMIXTURE 0 13 DARATARD 17-ADMIXTURE 0 13 Spread, in W/// C Ratio 0.40 OLARATARD 17-ADMIXTURE 0 13 Spread, in W/// C Ratio 0.40 Meets Specification ? Y ES Concrete Cylinder Compressive Strength, T 22) Area, Dia., in in² Area, Load, Ib Break Fract., T psi Strength, MPa Avg. Strength, MPa VES <td></td> <td></td> <td></td> <td>-</td> <td>10</td> <td></td>				-	10											
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Admixture oz/yd³ oz/yda oz/yda oz/yda oz/yda <thod fille<="" th=""> oz/yda oz/yda<td></td><td>the second second</td><td>ures Used</td><td>Total</td><td>(plant + je</td><td>obsite)</td><td></td><td>Design</td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td></thod>		the second second	ures Used	Total	(plant + je	obsite)		Design				-				
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Kebever/vability for the control of	0			No. of Concession, Name			y 14									
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Air Content, % 6.2 6.0% to 8.5% Meets Specification? YES													8			
LABORATORY TEST RESULTSConcrete Cylinder Compressive Strength (T 22)Specimen 1Specimen 1Specimen 1Avg. Dia., in in2Index Fract., TypeStrength, PsiArea, Dia., in in2Index Fract., Strength, PsiSpecimen 1Specimen 1Specimen 2Area, Dia., in in2Load, lb Break TypeFract., % psiStrength, Dia., in in2Area, Load, lb Break TypeFract., % %Specimen 2284.0212.6992710a1073064.0212.6998330c10774975Test Comments:Meets Specification?YESSpecification5,075 psi [35 MPa], rMeets Specification?YESSpecification5,075 psi [35 MPa], rArge Tested, DaysSpecimen 1Specimen 2Specimen 2Age Tested, DaysSpecimen 1Specimen 2Chloride lon PenetrabilityAvg. CoulombAvg. of 8Avg. of 8														6.0% to	8.5%	
Concrete Cylinder Compressive Strength (T 22) Age at Break, Days Avg. Dia., in in ² Area, in ² Load, lb Load, lb Type Break Type Fract., % Strength, psi Avg. Dia., in psi Area, Dia., in in ² Load, lb Load, lb Break Type Fract., % Strength, psi Area, Dia., in psi Load, lb Break Type Fract., % Strength, psi Strength, psi Area, Dia., in psi Load, lb Break Type Fract., % Strength, psi Strength, psi Strength, psi Strength, psi MPa 28 4.02 12.69 92710 a 10 7306 4.02 12.69 98330 c 10 7749 74 Test Comments: Weets Specification? YES Specification 5,075 psi [35 MPa], r 1 Age Tested, Days Specimen 1 Specimen 2 Chloride lon Penetrability Avg. Coulomb Specimen 1 Specimen 2 Specime										M	eets Spec	ificatio	n?	YE	S	
Age at Break, Days Avg. Dia., in Area, in ² Area, Load, lb Area, Type Break, Type Strength, % Avg. Dia., in Area, in ² Load, lb Break, Type Fract, % Strength, psi Avg. Dia., in Area, in ² Load, lb Break, Type Fract, % Strength, psi Strength, Dia., in Area, in ² Load, lb Break, Type Strength, % Strength, psi Strength, Type Type Type <th< td=""><td></td><td></td><td></td><td></td><td>LAB</td><td>ORAT</td><td>OR</td><td>Y TES</td><td>Т</td><td>RESU</td><td>LTS</td><td></td><td></td><td></td><td></td></th<>					LAB	ORAT	OR	Y TES	Т	RESU	LTS					
Break, Days Avg. Dia., in Area, in² Load, Ib Break Type Fract., % Strength, psi Avg. Dia., in Area, in² Load, Ib Break Type Fract., % Strength, psi Avg. Dia., in Inadd, Ib Break Type Fract., % Strength, psi Avg. Dia., in Inadd, Ib Break Type Fract., % Strength, psi Avg. Dia., in Inadd, Ib Break Type Fract., % Strength, psi Avg. Dia., in Inadd, Ib Break Type Fract., % Strength, psi Strength, psi Avg. Dia., in Inadd, Ib Break Type Fract., % Strength, psi Strength, psi Strength, psi Strength, psi Inadd Inad Inadd Inadd					Concre	ete Cylin	nder C	ompressi	ve S	Strength	(T 22)					
DaysDia., inin2Load, lbType%psiDia., inin2Load, lbType%psi284.0212.6992710a1073064.0212.6998330c10774975Test Comments:Meets Specification?YESSpecification5,075 psi [35 MPa], nMeets Specification?YESSpecification5,075 psi [35 MPa], nAvg. Strength (T 277)Age Tested, DaysSpecimen 1Specimen 2 Loc.Chloride Ion PenetrabilityAvg. CoulombAvg. CoulombSpecimen 1Specimen 2 Specimen 2Specimen 1Loc.CoulombLoc.CoulombCoulombAvg. CoulombAvg. of 8Avg. of 8Avg. of 8				Specin	nen 1						Specime	en 2			Avg.	
Star, in		-		Load, I					-		Load, Ib			-	n, Strengt psi	
Avg. Strength, MPa Meets Specification? YES Specification 5,075 psi [35 MPa], n Meets Specification? YES Specification 5,075 psi [35 MPa], n Meets Specification? YES Specification 5,075 psi [35 MPa], n Meets Specification? YES Specification 5,075 psi [35 MPa], n Meets Specification? YES Specification 5,075 psi [35 MPa], n Meets Specification? YES Specification 5,075 psi [35 MPa], n Meets Specification? YES Specification 5,075 psi [35 MPa], n Meets Specification? YES Specification 5,075 psi [35 MPa], n Age Tested, Specimen 1 Specimen 2 Specimen 2 Avg. followide Ion Avg. Days Avg. of 8 Avg. of 8 Avg. of 8				02740							09220			-	7530	
Meets Specification? YES Specification 5,075 psi [35 MPa], n Meets Specification? YES Specification 5,075 psi [35 MPa], n Rapid Chloride Permeability (T 277) Surface Resistivity (T XXX-10), KOhm-cm) Age Tested, Days Specimen 1 Specimen 2 Chloride Ion Avg. Avg. Penetrability Coulomb Avg. of 8 Avg. of 8 Avg. of 8				92710	a	10	1300	0 4.04	2	12.09	90330	-				
Rapid Chloride Permeability (T 277) Surface Resistivity (T XXX-10), KOhm-cm) Age Tested, Specimen 1 Specimen 2 Chloride Ion Avg. Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb Avg. Specimen 1 Specimen 2 Specimen 2	Test C	Jomme		aata Sr	acificati	on2	VES				Specifica	-	-			
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Age Tested, Days Specimen 1 Specimen 2 Chloride Ion Penetrability Avg. Coulomb Age Tested, Days Specimen 1 Specimen 2 Specima2 Specimen 2 Specimen 2<																
Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb Days Avg. of 8 Avg. of 8 Avg. of 8		-	-	T	· · · · ·			_			1					
	-	· · ·	1	- · ·					Ag				-		pecimen 3	
The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. 28 30 0 29 5 30 6	-		1	1			-								Avg. of 8	
The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. 28 30.0 29.5 30.6 56 T 554 M 551 VERY LOW 552 Chloride Ion Low	•	1		1 1		1		-		28	30.0	J			30.6	
Meets Spec? YES Specification 2,000 coulombs, max. Avg. of 24 30 Chioride fon Penetrability LOV										Avg. of 24	4 30				LOW	
										56	54.1	1	54.0		54.5	
Avg. of 24 54 Chloride Ion Penetrability VERY L										Avg. of 24	4 54			V	ERY LOW	
This result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. *ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. <u>Comments:</u> Final report. The sample tag was sent in missing item number.	Value based *ADMIXTUR Comments:	d on a si ES LIST	ngle result. ED IN RED F	ONT HA	VE NOT BE	EN APPRO	OVED F		be de	etermined	for the outli	er.				

Final report. The sample tag was sent in missing item number.

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 12/14/2012

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

		S A	MPLE	INF	ORMA	ΑΤΙΟΙ	N AN	D FIEL	D RE	SULTS	5		
Refere	nce No.	Ticket	No.		Sample	Descript	tion		Sam	ple Type			ltem
272	2142	5793	35		PCC-C	LASS L	.P		ACCEPT	(METHOD) C)	6	36.40
Sampler	: HEWS,	GUY F		Sa	mpled:	10/9/2012	2	Desig	n No.: <mark>S</mark> l	JBA-12-2-LF	>		
Plant/Lo	cation: S	UNRISE ·		R	-			Lot N	0.: 1	Suble	ot No.:	2	
WIN/To	wn: 01510	8.00 - ST	OCKTON	SPRING	S			Sublo	t Size, yd ³	15			
Contract	tor: LANE	CONSTR		CORP. (THE) 🐔	10	G	Memb	per/Structu	ire OTHER	t		
Residen	t: HEWS,	GUY	10	1C	311			Addt'l	Info: Sout	h Upper Co	oping		
Bridge N	lo/Name:	CC	515			-	10	Repre	esents	3.5 c	of 7	yd³	
Fie	Id Admixt	ures Use	d Total (p	lant + jo	obsite)	De	sign			and the second second	Test Data	<u>l</u>	
		dmixture		5	oz/yd ³	³ OZ	z/yd³	170	<u>(T 1</u>	<u>19, T 152</u>	<u>, T 309)</u>		
		AEA-ADM			8.57	and the second s	7.9	Test		Result	Spe	ecificat	tion
		140-ADMIX ⁻ RD 17-ADM			120.28 0		79.2 13	SI	ump, in				
		ER-ADMIX	the second se		19.85		13		read, in				
			. W. m.				_		C Ratio	0.39		41, ma	
									emp. °F	64		[30°C],	
								Air Con	eets Spec	8 ification?		<mark>% to 8</mark> . YES	.5%
									-	incation	f	TES	
								T RESU					
A ma at			Cracima		te Cylin	der Con	npressiv	ve Strength					
Age at Break,	Avg.	Area,	Specime		Fract.,	Strength,	Avg	. Area,	Specime		ract., Str	ength,	Avg. Strengtl
· · · ·	-		Load, Ib						Load, lb			- · ·	psi
Days	Dia., in	in²		Туре	%	psi	Dia.,	in in²	· · · · , · · ·	Туре	%	psi	P.0.
Days 28	Dia., in 4.02	12.69	82765	a a	% 10	psi 6522	Dia., 4.02		84775	l ype a		psi 680	6600
28		12.69	82765							а		680	-
28	4.02	12.69 nts:	82765 Aeets Spe	а	10			12.69		a Avg. S	10 6	680 MPa	6600
28	4.02 st Comme	12.69 nts: N		a	10 on?	6522		2 12.69	84775	a Avg. Stion 5,	10 6 Strength, 075 psi [3	680 MPa 35 MPa	6600 a], min.
28 Tes	4.02 st Comme <u>F</u> ted, Spe	12.69 nts: N	Aeets Spe	a cificatio	10 on? <u>T 277)</u> Chloride	6522 YES	4.02	2 12.69 Surf Age Tested,	84775 Specifica	a Avg. Stion 5,	10 6 Strength, 075 psi [3	680 MPa 35 MPa	6600 a], min.
28 Tes Age Tes Days	4.02 st Comme <u>f</u> ted, Spe Loc.	12.69 nts: M Rapid Chia cimen 1 Coulomb	Aleets Spe Dride Perma Specin D Loc. Co	a cificatio eability (nen 2 oulomb	10 on? <u>T 277)</u> Chloride Penetral	6522 YES e Ion bility Co	4.02 Avg. pulomb	2 12.69 Surf Age Tested, Days	84775 Specifica ace Resist Specim Avg. o	a Avg. S tion 5,	106Strength,075 psi [3(X-10), KObecimen 2Avg. of 8	680 MPa 35 MPa hm-cm Spe Av	6600 a], min. a], cimen 3 yg. of 8
28 Tes Age Test Days The rep	4.02 st Comme <u>F</u> ted, Spe Loc. ported coulom	12.69 nts: N Rapid Chlo cimen 1 Coulomt b value inclu	Aleets Spe Dride Permo Specin D Loc. Co ddes a 0.879 co	a cificatio eability (nen 2 oulomb orrection fo	10 on? <u>T 277)</u> Chloride Penetral r a 4-in. diar	6522 YES e Ion bility Co meter speci	Avg. oulomb	2 12.69 Surf Age Tested,	84775 Specifica ace Resist	a Avg. S tion 5, tivity (T X) en 1 Sp f 8 4	106Strength,075 psi [3(X-10), KObecimen 2Avg. of 821.9	680 MPa 35 MPa bm-cm Spe Av	6600 a], min. a], cimen 3
28 Tes Age Test Days The rep 56	4.02 st Comme <u>f</u> ted, Spe Loc.	12.69 nts: N Rapid Chlo cimen 1 Coulomt b value inclu 858	Aleets Spe Dride Perma Specin D Loc. Co des a 0.879 co M	a cificatio eability (nen 2 oulomb orrection fo 760	10 on? <u>T 277)</u> Chloride Penetral	6522 YES e Ion bility Co meter speci -OW	Avg. oulomb imen. 809	2 12.69 Surf Age Tested, Days	84775 Specifica ace Resist Specim Avg. o 22.3	a Avg. § tion 5, ivity (T X) en 1 Sp f 8 A g	106Strength,075 psi [3(X-10), KObecimen 2Avg. of 8	680 MPa 35 MPa hm-cm Spe Av	6600 a], min. a], cimen 3 yg. of 8
28 Tes Age Test Days The rep 56	4.02 st Comme feed, Spe Loc. ported coulom	12.69 nts: N Rapid Chlo cimen 1 Coulomt b value inclu 858	Aleets Spe Dride Perma Specin D Loc. Co des a 0.879 co M	a cificatio eability (nen 2 oulomb orrection fo 760	10 on? Chloride Penetral r a 4-in. diar VERY L	6522 YES e Ion bility Co meter speci -OW	Avg. oulomb imen. 809	2 12.69 Surf Age Tested, Days 28	84775 Specifica ace Resist Specim Avg. o 22.3	a Avg. § tion 5, en 1 Sp f 8 A g C F	106Strength,075 psi [3(X-10), KObecimen 2Avg. of 821.9Chloride Ion	hm-cm	6600 a], min. a], cimen 3 rg. of 8 22.6
28 Tes Age Test Days The rep 56	4.02 st Comme feed, Spe Loc. ported coulom	12.69 nts: N Rapid Chlo cimen 1 Coulomt b value inclu 858	Aleets Spe Dride Perma Specin D Loc. Co des a 0.879 co M	a cificatio eability (nen 2 oulomb orrection fo 760	10 on? Chloride Penetral r a 4-in. diar VERY L	6522 YES e Ion bility Co meter speci -OW	Avg. oulomb imen. 809	2 12.69 Surf Age Tested, Days 28 Avg. of 24	84775 Specifica ace Resist Specim Avg. o 22.3 22 46.8	a Avg. S tion 5, tivity (T XX) en 1 Sp f 8 A 3 C F 8 C 5 C	106Strength,075 psi [3075 psi [3(X-10), KObecimen 2Avg. of 821.9Chloride IonPenetrability	680 MPa 35 MPa 35 MPa 35 MPa 35 MPa 4 5 MPa 4 5 MPa 4 5 MPa 4 5 MPa 4 5 MPa 4 5 MPa 5 MPa	6600 a], min. a], min. 22.6 LOW 45.4
28 Tes Age Test Days The rep 56 Me This resu	4.02 st Comme feed, Spe Loc. ported coulom T eets Spec?	12.69 nts: N Rapid Chlo cimen 1 Coulomt b value inclu 858 YES in payfacto ngle result.	Aeets Spe Dride Perma Specin D Loc. Co des a 0.879 cc M Specific r calculation	a cificatio	10 on? <u>T 277)</u> Chloride Penetral r a 4-in. diar VERY L 2,000 co no assign	e Ion bility Co meter speci OW oulombs	Avg. oulomb imen. 809 , max. se could l	2 12.69 Surf Age Tested, Days 28 Avg. of 24 56	84775 Specification ace Resist Specimic Avg. or 22.3 4 22 46.8 45	a Avg. § tion 5, ivity (T X) en 1 Sp f 8 A b C F B C F B C F	106Strength, 075 psi [3075 psi [3075 psi [3(X-10), KO becimen 2Avg. of 821.9Chloride Ion Penetrability43.8Chloride Ion	680 MPa 35 MPa 35 MPa 35 MPa 35 MPa 4 5 MPa 4 5 MPa 4 5 MPa 4 5 MPa 4 5 MPa 4 5 MPa 5 MPa	6600 a], min. a], min. 2, of 8 22.6 LOW
28 Tes Age Test Days The rep 56 Me This resu	4.02 st Comme feed, Spe Loc. ported coulom T eets Spec? ult not used ased on a sin TURES LIST nts:	12.69 nts: N Rapid Chlo cimen 1 Coulomt b value inclu 858 YES in payfacto ngle result.	Aeets Spe oride Perma Specin b Loc. Co des a 0.879 cc M Specific r calculation	a cificatio	10 on? <u>T 277)</u> Chloride Penetral r a 4-in. diar VERY L 2,000 co no assign	e Ion bility Co meter speci OW oulombs	Avg. oulomb imen. 809 , max. se could l	2 12.69 Surf Age Tested, Days 28 Avg. of 24 56 Avg. of 24	84775 Specification ace Resist Specimic Avg. or 22.3 4 22 46.8 45	a Avg. § tion 5, ivity (T X) en 1 Sp f 8 A b C F B C F B C F	106Strength, 075 psi [3075 psi [3075 psi [3(X-10), KO becimen 2Avg. of 821.9Chloride Ion Penetrability43.8Chloride Ion	680 MPa 35 MPa 35 MPa 35 MPa 35 MPa 4 5 MPa 4 5 MPa 4 5 MPa 4 5 MPa 4 5 MPa 4 5 MPa 5 MPa	6600 a], min. a], min. 22.6 LOW 45.4

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 12/11/2012

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

CONTEN SA													
		S A	MPLE	EINF	ORM	ATI	ON AN	D FIEL	D R E	SULT	S		
Reference	No.	Ticket I	No.		Sample	e Descr	ription		Sam	ple Type)	I	tem
272141		5789 [.]	1		PCC-	CLASS	S LP		ACCEPT	(METHO	D C)	6	36.40
Sampler: H I	EWS, (GUY F		Sa	ampled:	10/4/2	012	Desig	ın No.: <mark>Sı</mark>	JBA-12-2-I	P		
Plant/Locatio			BANGC	R				Lot N	0.: 1	Sub	lot No.:	1	
VIN/Town:	015108	3.00 - STC	осктом		GS			No.	ot Size, yd	³ 15			
Contractor:	LANE	CONSTR	UCTION	CORP.	(THE) 📢	A	NG.	Mem	ber/Struct	ure OTHE	R		
Resident: H	IEWS,	GUY		10	31	11.		Addt	I Info: Nort	h Upper C	oping		
Bridge No/Na	lame:		500	-			10	Repr	esents	7	of 8	yd ³	
Field A	dmixtu	ires Used	Total (plant + jo	obsite)		Design		Concr	ete Field	Test Data	-	
	A	dmixture		S	oz/yc	3	oz/yd ³	AT	<u>(T 1</u>	19, T 15	<u>2, T 309)</u>		
		AEA-ADMIX		· ·	52		7.9	Test		Result	Spe	cificat	ion
		40-ADMIXT			54.5		79.2	S	ump, in				
		D 17-ADMIX	Test and the		0 19.8		13 19.2		read, in				
	RECOV		UKE		19.0		19.2		C Ratio	0.41	0.4	41, ma	х.
									emp. °F	62	85°F	[30°C],	max.
									ntent, %	6.3		% to 8.	5%
								М	eets Spec	cificatior	1?	YES	
				LAB	ORA	TOR	Y TES	T RESU	LTS				
				Concre	ete Cylii	nder C	ompressi	ve Strength					
Age at		-	Specim		-				Specimo				Avg.
	Avg. ia., in	Area, in ²	Load, Ib	Break Type	Fract., %	Streng psi		-	Load, Ib	Break Type	Fract., Str %	ength, psi	Streng psi
	.03	12.76	100050		10	7841			97280	C		666	7750
Test Co										-	Strength,		
			eets Sp	ecificatio	on?	YES			Specifica	-	5,075 psi [3		ıl. min
	R	apid Chlo	ride Perr	neability	(T 277)			Sur	face Resis	tivity (T X	(XX-10), KO	hm-cm)
ge Tested,	Spee	cimen 1	Spec	imen 2	Chloric	de Ion	Avg.	Age Tested	Specim	en 1 S	Specimen 2	Spe	cimen
Days	Loc.	Coulomb	Loc.	Coulomb	Penetra	ability	Coulomb	Days	Avg. o	of 8	Avg. of 8	Av	g. of 8
The reported					1			28	29.0	D	31.3		30.4
56 Meets	T Spec?	679 YES	M	633 fication	VERY		656 hs. max	Avg. of 24	4 30		Chloride Ion Penetrability		_ow
mooto	0,000.		opeen	loution	<u>_,000 0</u>	ouronn		56	48.0	0	52.7		51.6
								Avg. of 24	1 51		Chloride Ion Penetrability		RY LOW
This result no Value based *ADMIXTURE	on a sin	gle result.						be determined	for the outli	er.			

Final report. Need test results for special work order.

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 12/10/2012

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

SAMPLE INFORMATION AN Reference No. Ticket No. Sample Description						
	D FIEL	D RES	SULT	S		
		Samp	ole Typ	е		Item
272138 27859 PCC-CLASS A		ACCEPT (METHO	DD A)		502.26
Sampler: THOMPSON, CANDACE C Sampled: 9/27/2012	Design	ו No.: SU	BA-12-1-	AXYP		
Plant/Location: SUNRISE - BANGOR	Lot No	100	Contraction of the local division of the loc	olot No.:	4	
VIN/Town: 015108.00 - STOCKTON SPRINGS	100 M	Size, yd ³	100		_	
Contractor: LANE CONSTRUCTION CORP. (THE)		er/Structu		ER		
Resident: HEWS, GUY		Info: deck			3	
Bridge No/Name:	Repre		5	of 87		
Field Admixtures Used Total (plant + jobsite) Design				d Test Da		
Admixture oz/yd ³ oz/yd ³				52, T 309)		
DAREX II AEA-ADMIXTURE 49 5.9	Test		Result		pecifica	ation
ADVA 140-ADMIXTURE 54.5 78.6	Slu	ımp, in			•	
RECOVER-ADMIXTURE 19.7 19.7		ead, in				
#Error -1 #Error		C Ratio	0.41		0.43, m	ax.
		mp. °F	68		F [30°C	
	Air Cont	ent, %	7.2	6	.0% to	8.5%
	Me	ets Speci	ficatio	n?	YES	
LABORATORY TEST	T RESUL	_ T S				
Concrete Cylinder Compressiv	e Strength (T 22)				
Age at Specimen 1		Specime				Avg.
Break, Avg. Area, Load, Ib Break Fract., Strength, Avg.		Load, Ib	Break		Strength	Strengtl psi
Days Dia., in in ² Type % psi Dia., i	in in²		Туре	%	psi	-
28 4.02 12.69 87260 a 10 6876 4.02	12.69	86735	a	10	6835	6860
Test Comments: Meets Specification? YES	c	Specificat	-	. Strengtl 4,350 psi		lol min
	•	pecificati		4,550 psi		aj, min.
Rapid Chloride Permeability (T 277)	Surfa	ace Resisti	ivity (T	XXX-10), K	(Ohm-ci	n)
Age Tested, Specimen 1 Specimen 2 Chloride Ion Avg.	Age Tested,	Specime		Specimen		ecimen 3
Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb	Days	Avg. of		Avg. of 8		vg. of 8
The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen.	28	25.9		25.6		23.5
61 T 1077 M 1005 LOW 1041	Avg. of 24	25		Chloride I Penetrabi		LOW
Mosts Space VES Specification 2 400 coulombs max	61	32.6		31.8	,	29.1
Meets Spec? YES Specification 2,400 coulombs, max.				Chloride I	on	_
Meets Spec? YES Specification 2,400 coulombs, max.	Avg. of 24	31		Penetrabi		LOW

Final report. Sublot has been changed due to duplicate sublot. I changed it from sublot 1 to 4.

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

COMPLEX.					-								
		S A	MPLE	E INF	ORM	ATI	ΟΝ ΑΝ	D FIEI	D RE	SULT	S		
Reference	No.	Ticket I	No.		Sample	e Descr	ription		Sam	ple Type	1	I	tem
272139)	5786	2		PCC	-CLAS	SA		ACCEPT	(METHO	D A)	5	02.26
Sampler: T	HOMP	SON, CAN		C Sa	ampled:	9/27/2	012	Desi	gn No.: S	UBA-12-1-/	ХҮР		
· Plant/Locatio					·				lo.: 1	The second se	lot No.:	5	
VIN/Town:	015108	8.00 - STC	осктом		GS			No.	ot Size, yd	³ 29			
Contractor:	LANE	CONSTR	UCTION	CORP.	(THE) 📢	N	1G	Mem	ber/Struct	ure OTHE	R		
Resident: H	IEWS,	GUY		10	31	11.		Addt	'l Info: decl	k placemei	nt south 1/3		
Bridge No/N	lame:		510			-	10	Rep	esents	29	of 87	yd ³	
Field A	dmixtu	ires Usec	Total (plant + j	obsite)		Design		Concr	ete Field	Test Data		
	A	dmixture	1	S	oz/yc	3	oz/yd ³	7-0	<u>(T 1</u>	19, T 15	<u>2, T 309)</u>		
D		AEA-ADMIX	-		53	-	5.9	Tes	t	Result	Spe	cificat	ion
		40-ADMIXT		n T	54.5	tion with	78.6	S	lump, in				
	RECOV	ER-ADMIXT	URE		19.7		19.7		pread, in				
			N N						/C Ratio	0.41	0.4	13, ma	Х.
									emp. °F	68		30°C],	
									ntent, %	7.7		% to 8	5%
									leets Spec	cification	17	YES	
				LAB	ORA	TOR	Y TES	T RESU	LTS				
			<u> </u>		ete Cylii	nder C	ompressiv	ve Strength					
Age at Break,	Avg.	Area,	Specim	en 1 Break	Fract.,	01	ith. Avg	. Area,	Specim		Fract., Str		Avg. Streng
	ia., in	in ²	Load, Ib	Туре	%	Streng psi			Load, Ib	Туре		ength, psi	psi
	.02	12.69	82185	a	15	6476			83940	C	15 6	615	6550
Test C	omme	nts:				•	•	I	1	Avg.	Strength,	MPa	
		М	eets Sp	ecificatio	on?	YES			Specifica	tion 4	l,350 psi [3	0 MPa	ı], min
	R	apid Chlo	ride Perr	neability	<u>(T 277)</u>			<u>Su</u>	face Resis	<u>tivity (T X</u>	XX-10), KO	<u>hm-cm</u>)
ge Tested,	Spee	cimen 1	Speci	imen 2	Chloric		Avg.	Age Testec	l, Specim	ien 1 S	pecimen 2	Spe	cimen
Days	1	Coulomb	-	Coulomb	Penetra	-	Coulomb	Days	Avg. d		Avg. of 8		g. of 8
The reported 61	d coulomb	value includ 1136	es a 0.879 (M	correction fo 998	or a 4-in. di LO		1067	28	25.	6	27.6		26.6
Meets	-	YES					bs, max.	Avg. of 2	4 27		Chloride Ion Penetrability	, I	_OW
meeto	opeo.	120	opcon	loation	2,400 0	ouloin	00 , 1110 , 1	61	33.	0	35.2		34.3
								Avg. of 2			Chloride Ion Penetrability		_OW
This result no Value based *ADMIXTURE Comments:	on a sin	gle result.						be determined	for the outli	ier.			

Final report. Sublot has been changed due to duplicate sublot. I changed it from sublot 2 to 5.

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

								atory					
		S A	MPLE	INF	ORM	ΑΤΙΟΙ	N A N	D FIEL	D R E	SULT	S		
Reference	e No.	Ticket I	No.		Sample	Descript	ion		Sam	ple Typ	е		Item
27214	0	5786	5		PCC-	CLASS A	A		ACCEPT	(METHO	OD A)		502.26
Sampler: I	HEWS,	GUY F	J [S	ampled:	9/27/2012	2	Design	No.: <mark>Sl</mark>	JBA-12-1	AXYP	5	
•		UNRISE -	BANGO	र				0	.: 1	And in case of	blot No.:	6	
VIN/Town:	01510	8.00 - STC	OCKTON	SPRIN	GS			Sublot	Size, yd	3 29			
Contractor:	LANE	CONSTR	UCTION	CORP.	(THE) 📹	11	G	Memb	er/Structu	ure <mark>отн</mark>	ER		
Resident:	HEWS,	GUY		10	311	11.0		Addt'l	Info: decl	c placeme	ent south	1/3	
sridge No/I	Name:	CC	511			-	10	Repre	sents	60	of 8	37 yd ³	
Field	Admixt	ures Used	d Total (p	lant + j	obsite)	De	sign		Concr	ete Fiel	d Test D	Data	
11 4	A	dmixture			oz/yd	³ OZ	/yd³	TA	<u>(T 1</u>	19, T 1	52, T 309	9)	
		AEA-ADMIX	-		44	and the second s	5.9	Test		Result		Specifica	ation
		140-ADMIXT	-		52.5 19.7		8.6 9.7	Slu	ımp, in				
	RECOV		URE		19.7	0	9.7	Spre	ead, in				
			E a					W/C	Ratio	0.41		0.43, m	ax.
									mp. °F	69		5°F [30°C]	
								Air Cont		8.4		6.0% to	
								Ме	ets Spec	cificatio	n?	YES	
				LAB	ORAT	ORY	TES	T RESUL	. T S				
		L A B O R A T O R Y Concrete Cylinder Con				pressi	ve Strength (
Age at	•		Specime						Specime	1	-		Avg
	Avg. Dia., in	Area, in ²	Load, Ib	Break Type	Fract., %	Strength, psi	Avg Dia.,		Load, Ib	Break Type	Fract., %	Strength, psi	Streng
-	4.02	12.69	87035	a	15	6859	4.02		87755	a	15	6915	689
	Comme											th, MPa	
			leets Spe	cificati	on?	YES		S	Specifica	· · · · · · ·	-	si [30 MF	a], mir
		Rapid Chlo	rido Porm	ophility	(T 277)			Surfa	ace Resis	tivity /T	<u></u>	KOhm ci	<u>m)</u>
ge Tested			1		· · · · ·	o lon	Ava	Age Tested,					
Days	Loc.	cimen 1 Coulomb	Specir Loc. C		Chlorid Penetra		Avg. oulomb	Days	Specim Avg. c		Specime Avg. of		ecimen
-		b value includ	1			-		28	24.9		24.8		24.5
The report		1171	M	1093	LO\	N	1132		25		Chloride	lon	LOW
61	T Spec?		-	cation	2,400 cc	oulombs.	, max.	Avg. of 24			Penetra	bility	LOW
61	Spec?		-	cation	2,400 cc	oulombs,	, max.	61	30.3		Penetra 30.3	bility	29.8

Comments:

Final report. Sublot has been changed due to duplicate sublot. I changed it from sublot 3 to 6. The sample tag was sent in missing actual w/c ratio.

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

Course													
		S A	MPLE	INF	ORM	ATIC	ON AN	D FIEL	D RES	SUL	ΓS		
Referen	ice No.	Ticket	No.		Sample	Descr	iption		Sam	ple Typ	e		Item
2515	544	08282	012	PCC	CLASS	P (535	SECTION	1)	VERIF	FICATIO	ON		
Sampler:	COLBU	RN III, W	LLIAM L	S	ampled:	8/28/20	012	Desig	n No.: oo	CAB-12-5	5-5000	1	
Plant/Loc	cation: 0	LDCAST	LE PRECA	AST - A	UBURN			Lot No	0.:	Su	blot No.:	M.	
VIN/Tow	n: 01510	8.00 - ST	OCKTON	SPRIN	GS			Sublo	t Size, yd ³				
Contracto	or: LANE	CONSTR		CORP.	(THE) 📹	N		Memb	per/Structu	ire PRE	CAST DEC	K PANEL	S
Resident	: HEWS,	GUY	10	10	5	11.		Addt'l	Info: Pane	els A5, A	6, and B17	-B24	
Bridge No	o/Name:	CC	511			-	10	Repre	sents	7.4	of 7	.4 yd [:]	3
Field	d Admixt	ures Use	d Total (p	lant + j		A COLORADO AND A COLO	Design		100 March 100 Ma	and the second	ld Test D		
10		dmixture			oz/yd	3	oz/yd³	AT		9	52, T 309		
		90-ADMIX1 3400 NV-AD			22.6	5	7 50	Test	1984	Result	t \$	Specific	ation
		TE CNI-AD		T	703.9		704	Slu	ump, in				
									ead, in	25		22 to 2	
			All an						C Ratio	0.33		0.40, n	
								Air Con	emp. °F	83 7.2		5°F [35°C 5.5% to	
									ets Spec			<u>3.3 % to</u> YES	
							/ Т Г С		-	moune	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
							YTES						
Age at			Specime		ete Cyllr	nder Co	ompressi	ve Strength (<u>1 22)</u> Specime	n 2			Avg.
Break,	Avg.	Area,		Break	Fract.,	Streng	th. Avg	. Area,		Break	Fract.,	Strength	-
Days	Dia., in	in²	Load, Ib	Туре	%	psi		in in²	Load, Ib	Туре	%	psi	psi
56	4.02	12.69	118510	а	50	9339	4.02	12.69	117195	а	50	9235	9290
Test	t Comme										g. Streng		
		N	leets Spe	cificati	on?	YES		ę	Specificat	tion	5,000 [34] psi [N	IPa], min
		-	oride Permo	-				-	ace Resist				-
Age Teste Days	ea, Spe Loc.	cimen 1 Coulomb	Specin Loc. Co	nen 2 oulomb	Chlorid Penetra		Avg. Coulomb	Age Tested, Days	Specime		Specimer		becimen (
-			des a 0.879 cc			-		28	Avg. o 9.6		Avg. of 10.0	0	Avg. of 8 10.0
121	Т	705	Μ	722	VERY		714				Chloride	lon	
Мее	ets Spec?	YES	Specific	cation	2400 c	olumb	s, max.	Avg. of 24	10		Penetral	oility	HIGH
								121	46.4	,	47.8		48.8
								Avg. of 24	48		Chloride Penetrat		ERY LOW
*Value bas	sed on a si	ngle result.	r calculation FONT HAVE					be determined f	or the outlie	er.			
Comment	<u>ts:</u>												
Final repo	ort. Send re	esults to Ro	land Cote.										

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 1/4/2013

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

	- iPOR					•••			atory						
251541 08242012 PCC-CLASS P (33 5 SECTION) VERIFICATION Gampler: COLBURN III, WILLIAM L Sampled: 824/2012 Design No: OCA8-12-5600. Cold All Statement S			S A	MPLE	INF	ORM	ΑΤΙΟ	N A N	D FIEL	D RES	SULT	S			
Brampler: COLBURN III, WILLIAM L Sampled: 324/2012 Branz Location: OLCASTLE PRECAST - AUBURN Design No:: OCAB-12-8-5000 VIN/Town: 01508.00 - STOCKTON SPRINGS Sublot No:: Sublot No:: Sontractor: LANE CONSTRUCTION CORP. (THE) Reside No/Name: 7.3 of 7.3 yd³ Field Admixtures Osci (1) Design Concrete Field Test Data (T13: T52, T.309) Test Resolution 300 NV-ADMIXTURE 76 50 Spread, in 25 22 to 28 in, W/VC Ratio 0.44 max. Test Result Specification? YES Location: Design No:: Octent N, % 6.5 5.5% to 7.5% Meed Specification? YES LA B O R A T O R Y T E S T R E S U L T S Content, % 6.5 5.5% to 7.5% Spead, in in in Preak, Arg, Area, Load, ib Break Fract, Strength, Streng	Referen	ce No.	Ticket I	No.		Sample	Descript	tion		Sam	ple Type	е		Item	
Plant/Location: OLDCASTLE PRECAST - AUBURN VIN/Town: 015108.00 - STOCKTON SPRINGS Contractor: LANE CONSTRUCTION CORP. (THE) Resident: HEWS, GUY ridge No/Name: Field Admixture <u>00/yd</u> ² 02/yd ² <u>Mea E 90-ADMIXTURE</u> 20.4 <u>7</u> 04 <u>Mea E 90-ADMIXTURE</u> 20.4 <u>10</u> <u>MED PA E 80-ADMIXED 20.4 <u>10</u> <u>MEA E 80-ADMIX</u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u>	2515	541	082420	12	PCC-	CLASS	P (535 S	ECTION	I)	VERIF	ICATIO	N			
VIIV/Town: 015108.00 - STOCKTON SPRINGS Contractor: LANE CONSTRUCTION CORP. (THE) Resident: HEWS, GUY Midge No/Name: <u>Resident: HEWS, GUY</u> Marke 90-ADMIXTURE <u>CLENUM 3400 NV-ADMIXTURE</u> <u>CLENUM 3400 NV-ADMIXTURE</u> <u>CONCRETE CNI-ADMIXTURE</u> <u>CLENUM 3400 NV-ADMIXTURE</u> <u>CONCRETE CNI-ADMIXTURE</u> <u>CONCRETE CNI-CNI-ADMIXTURE</u> <u>CONCRETE CNI-CNI-ADMIXTURE</u> <u>CON</u>	Sampler:	COLBU	JRN III, WI	LIAM L	Sa	ampled:	8/24/2012	2	Desig	n No.: oc	CAB-12-5	-5000			
Contractor: LANE CONSTRUCTION CORP. (THE) Cesident: HEWS, GUY Cesi	Plant/Loc	ation: C	DLDCASTL	E PREC	AST - A	UBURN			Lot N	0.:	Sub	olot No.:	A.;		
Addtl Into: panels A1,42 and B1-88 Represents A1,42 and B1-88 Concrete Field Test Data Concrete Colspan="2">Represents A1,42 and B1-88 Meets Specification 7 YES Concrete Cylinder Compressive Strength (T 22) Area, Load, Ib Break Fract, Strength, Area, Load, Ib Type 7%, D1 / 5%	WIN/Tow	n: 01510)8.00 - STC	OCKTON	SPRING	GS	-		Sublo	t Size, yd ³					
Represents 7.3 of 7.3 yd ³ Represents 7.3 of 7.3 yd ³ Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2" Colspan="2" <th col<="" td=""><td>Contracto</td><td>or: LANE</td><td></td><td></td><td>CORP.</td><td>(THE)</td><td>N</td><td></td><td></td><td></td><td></td><td></td><td>PANELS</td><td>5</td></th>	<td>Contracto</td> <td>or: LANE</td> <td></td> <td></td> <td>CORP.</td> <td>(THE)</td> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>PANELS</td> <td>5</td>	Contracto	or: LANE			CORP.	(THE)	N						PANELS	5
Field Admixtures Used Total (plant + jobsite) Design ozyd³ Concrete Field Test Data (T 119, T 152, T 309) MB E 90-ADMIXTURE GLENUW 3400 NV-ADMIXTURE Zo Specification GLENUW 3400 NV-ADMIXTURE RHEOCRETE CNI-ADMIXTURE 76 50 RHEOCRETE CNI-ADMIXTURE 76 50 Test Result Specification Sump, in 25 22 to 28 in. W/C Ratio 0.34 0.40, max. Area, in 25 22 to 28 in. W/C Ratio 0.34 0.40, max. Air Content, % 6.5 5.5% to 7.5% Meets Specification? YES Spread, in a² Concrete CVInder Compressive Strength (T 22) Area, Arg, Area, Load, Ib Break Fract., Strength, Arg. Strength pail Jaa, in in² Load, Ib Break Fract., Strength, Pail Jaa, in in² Load, Ib Break Fract., Strength, MPa Sectiments: Arg. Area, Load, Ib Break Fract., Strength, MPa Strength pail Meets Specification? YES Specimen 1 Specimen 2 Specimen 3 Strength Specinten 1 Specimen 2 <t< td=""><td>Resident</td><td>: HEWS,</td><td>GUY</td><td>A D.</td><td>10</td><td>51</td><td>11-</td><td></td><td>Addt'l</td><td>Info: pane</td><td>ls A1,A2</td><td>and B1-B8</td><td></td><td></td></t<>	Resident	: HEWS,	GUY	A D.	10	51	11-		Addt'l	Info: pane	ls A1,A2	and B1-B8			
Admixture oz/yd³ oz/yd³ MB AE 90-ADMIXTURE 20.4 7 GLENUM 3400 NV-ADMIXTURE 704 704 Strength 704 704 WC Ratio 0.34 0.40, max. Temp. °F 83 95°F [35°C], max. Air Cohent, % 6.5 5.5% to 7.5% Meets Specification? YES Specimen 1 Specimen 2 Avg. Break, Avg. Area, Load, Ib Break Fract., Strength, Avg. Break, Avg. Area, Load, Ib Break Fract., Strength, MPa Sterength Dia., in in² Load, Ib Break Fract., Strength, MPa Sterest Dia., in in² Load, Ib Type %, Strength, MPa Sterest Avg. Area, Load, Ib Type Strength, MPa Avg. Strength, MPa May Loc. Coulomb Loc. Coulomb Avg. Avg. of 8 Avg. of 8 Avg. of 8 Meets Spec? YES Specimen 1 Specimen 2 Specimen 3	Bridge No	o/Name:	CŚ	211			-	10	Repre						
MB AE 90-ADMIXTURE GLENIUM 3400 NV-ADMIXTURE 20.4 7 RHEOCRETE CNI-ADMIXTURE 76 50 RHEOCRETE CNI-ADMIXTURE 76 50 RHEOCRETE CNI-ADMIXTURE 76 50 RHEOCRETE CNI-ADMIXTURE 76 50 NUC Ratio 0.34 0.40, max. Speciad, in 25 22 to 28 in. W/C Ratio 0.34 0.40, max. Temp. 'F 83 95°F [35°C], max. Air Content, % 6.5 5.5% to 7.5% Meets Specification? YES YES Age at Specimen 1 Specimen 2 Spreat, Das, in In² Load, Ib Break, Type % Yos Specimen 1 Spreat, Psi Specimen 2 Arg. Jaa, in In² Load, Ib Break Strength, Psi Specimen 3 Jaa, in In² Load, Ib Test Specimen 3 Specimen 3 Test Comments: Meets Specification? YES Specimen 3 Specimen 3 Meets Spe	Fiel	And the second		Total (p	lant + j	10 Mar. 10	Value Value Value				the same second of	200	a		
GLENIUM 3400 NV-ADMIXTURE 76 50 RHEOCRETE CNI-ADMIXTURE 76 704 Spread, in 25 22 to 28 in. WC Ratio 0.34 0.40, max. Temp. °F 83 95°F [35°C], max. Air Content, % 6.5 5.5% to 7.5% Meets Specification? YES Age at Break, Dia., in in² Specimen 1 Specimen 1 Specimen 1 Specimen 2 Avg. Area, Load, Ib Break Fract., Strength, Dia., in in² Load, Ib Break, Pisi Dia., in in² 12.5 12.69 11145 a 50 8758 Break, Dia., in in² 12.69 11145 a 50 8758 Days Avg. Strength, MPa Meets Specification? YES Specimen 1 Specimen 2 Meets Specification? YES Specimen 1 Specimen 2 Meets Spec? YES Specimen 2 Avg. of 8 Meets Spec? YES Specification 2400 columbs, max. 125 T 542 M 582 VERY LOW Meets Spec? YES Specification 2400 columbs, max. 125 125 T 542 M 582 VERY LOW <td>100</td> <td></td> <td></td> <td></td> <td>5</td> <td></td> <td></td> <td>-</td> <td>TA</td> <td></td> <td>9</td> <td></td> <td></td> <td></td>	100				5			-	TA		9				
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Spread, in 25 22 to 28 in. W/C Ratio 0.34 0.40, max. Temp. 'F 83 95'F [35'C], max. Air Content, % 6.5 5.5% to 7.5% Meets Specification? YES Specimen 1 Specimen 1 Specimen 2 Area, Avg. Area, Doad, Ib Break Fract., Strength, Avg. Dia., in in ² Load, Ib Break Fract., Strength, Avg. Area, Load, Ib Break Fract., Strength, May. Area, Load, Ib Break Fract., Strength, MPa 56 4.02 12.69 125270 a 50 9872 4.02 12.69 111145 a 50 8758 9320 Test Comments: Avg. Strength, MPa Meets Specification? YES Specimen 1 Specimen 2 Specimen 3 Days Loc. Coulomb Loc. Coulomb Avg. Avg. of 8 Avg. of 8 Avg. of 8 Days Loc. Coulomb View Includes a 0.879 correction for a 4-in diameter specimen. 28 10.3 10.1 10.6 125 T 542 M 582 VERY LOW 562 Meets Specification 2400 columbs, max. 28 10.3 10.1 10.6 125	,				NE			101							
Temp. °F 83 95°F [35°C], max. Air Content, % 6.5 5.5% to 7.5% Meets Specification? YES Specimen 1 Specimen 2 Arge at Break, Avg. Specimen 1 Specimen 2 Avg. Avg. Arge, Avg. Arge			-												
Air Content, % 6.5 5.5% to 7.5% Meets Specification? VES LABORATORY TEST RESULTS Concrete Cylinder Compressive Strength (T 22) Age at Break, Dia, in in ² Specimen 1 Specimen 2 Avg. Strength, psi Avg. psi 56 4.02 12.69 125270 a 50 9872 4.02 12.69 111145 a 50 8758 9320 Test Comments: Meets Specification? YES Specification 5,000 [34] psi [MPa], min Meets Specification? YES Specification 5,000 [34] psi [MPa], min Meets Specification? YES Specification 5,000 [34] psi [MPa], min Meets Specification? YES Specimen 1 Specimen 2 Specimen 3 Days Loc. Coulomb Loc. Coulomb Avg. 6.6 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 24 10 Chloride lon HIGH Avg. of 24 Chloride lon Avg. of 24															
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LABORATORY TEST RESULTS Concrete Cylinder Compressive Strength (T 22) Age at Break, Dia, in Days Specimen 1 in ² Specimen 2 Load, lb Avg. Break Type Avg. % Break Type Fract., % Strength, psi Avg. Dia., in Dia., in Dia., in Break In ² Fract., Load, lb Break Type Kapt % Avg. Strength, psi Avg. psi Strength, psi Break Psi Fract., psi Strength, psi Avg. psi Strength, psi Break Psi Strength, psi Mage Psi Strength, psi Strength, psi Mage Psi Strength, psi Strength, psi Strength, psi Strength, psi Mage Test Comments: Meets Specification? YES Specimen 1 Specimen 2 Specimen 3 Mage Tested, Days Specimen 1 Specimen 2 Chloride Ion Penetrability Avg. Coulomb Specimen 1 Specimen 2 Specimen 3 The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. Specimen 1 Specimen 2 Specimen 3 The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. Avg. of 24 10 Chloride Ion Penetrability HIGH 125 T 542 M															
Concrete Cylinder Compressive Strength (T 22) Age at Break, Days Specime 1 Specime 2 Avg. Break, Dia., in in ² Load, lb Break, Dia., in in ² Break, Load, lb Type Break, Specimen 2 Avg. Strength, Dia., in in ² Load, lb Type Break, Specimen 1 Specimen 3 56 4.02 12.69 125270 a 50 9872 4.02 12.69 111145 a 50 8758 9320 Test Comments: Meets Specification? YES Specification 5,000 [34] psi [MPa], min Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 8 Avg. of 24 10 Chloride Ion Penetrability VERY LOW Testord columb value includes a 0.872 VES Specimen 1 Specimen 2 Specimen 3 Days Loc. Coulomb Coulomb Coulomb Vestor Coulomb Avg. o					LAR			TES							
Age at Break, Days Specimen 1 in ² Specimen 1 Load, lb Break Type Fract., % Strength, psi Avg. Dia., in Area, in ² Load, lb Break Type Fract., % Strength, psi Strength, Strength, Strength, MPa test Specimen 1 Specimen 2 Chloride Ion 200 YES Specimen 1 Specimen 2 Specimen 3 Specimen 3 Days Avg. of 8															
Break, Days Avg., Ia, In Area, In² Load, Ib Break Type Fract., % Strength, psi Dia., In² Load, Ib Break Type % Strength, psi 56 4.02 12.69 125270 a 50 9872 4.02 12.69 111145 a 50 8758 9320 Test Comments: Vers Specification? YES Vers Area, In² Load, Ib Break Type % 9320 Neets Specification? YES Specification YES Specification Specimen 1 Specimen 2 Specimen 3 Specimen 3 Specimen 3 Specimen 4 Specimen 2 Specimen 3 Specimen 3 Specimen 3 Specimen 3 Specimen 3 Specimen 4 Specimen 4 Specime 3 Specim	Age at			Specime					<u>le Strengtin</u>		en 2			Ava.	
Days Dia., in	Break,	Avg.			1	Fract.,	Strength,	Avg	. Area,		1		trength,	Strength	
Test Comments: Avg. Strength, MPa Meets Specification? YES Specification 5,000 [34] psi [MPa], min Meets Specification? YES Specification 5,000 [34] psi [MPa], min Meets Specification? YES Specification 5,000 [34] psi [MPa], min Meets Specification Specimen 1 Specimen 2 Specimen 3 Days Loc. Coulomb Avg. Penetrability Avg. of 8 The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. 28 10.3 10.1 10.6 125 T 542 M 582 VERY LOW 562 Meets Spec? YES Specification 2400 columbs, max. 125 50.3 48.2 50.8 Avg. of 24 10 Penetrability HIGH 125 50.3 48.2 50.8 Avg. of 24 50 Chloride Ion Penetrability VERY LOW This result not used in payfactor calculation because no assignable cause could be determined for the outlier. VERY LOW Value based on a single result. *AOMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. Comments:					Туре		-				Туре		-	-	
Rapid Chloride Permeability (T 277) Surface Resistivity (T XXX-10), KOhm-cm) Age Tested, Specimen 1 Specimen 2 Chloride lon Avg. Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb Avg. of 8 Avg. of 8 Avg. of 8 125 T 542 M 582 VERY LOW 562 Meets Spec? YES Specification 2400 columbs, max. 125 50.3 48.2 50.8 Avg. of 24 50 Chloride lon Penetrability VERY LOW 562 Meets Spec? YES Specification 2400 columbs, max. 125 50.3 48.2 50.8 Avg. of 24 50 Chloride lon Penetrability VERY LOW 562 Meets Spec? YES Specification 2400 columbs, max. 125 50.3 48.2 50.8 Avg. of 24 50 Chloride lon Penetrability VERY LOW 562 VERY LOW 562 Meets Spec? YES Specification 2400 columbs, max. 125 50.3 48.2 50.8 <td></td> <td></td> <td></td> <td>125270</td> <td>а</td> <td>50</td> <td>9872</td> <td>4.02</td> <td>12.69</td> <td>111145</td> <td></td> <td></td> <td></td> <td>9320</td>				125270	а	50	9872	4.02	12.69	111145				9320	
Rapid Chloride Permeability (T 277) Surface Resistivity (T XXX-10), KOhm-cm) Age Tested, Days Specimen 1 Specimen 2 Chloride Ion Penetrability Avg. Coulomb The reported coulomb value includes a 0.879 correction for a 4-in, diameter specimen. Penetrability Coulomb 28 10.3 10.1 10.6 125 T 542 M 582 VERY LOW 562 Avg. of 24 10 Chloride Ion Penetrability HIGH 125 T 542 M 582 VERY LOW 562 Meets Spec? YES Specification 2400 columbs, max. Avg. of 24 10 Chloride Ion Penetrability HIGH 125 50.3 48.2 50.8 Avg. of 24 50 Chloride Ion Penetrability VERY LOW This result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. *AOMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. Comments:	Tes	t Comme				0				o	-			<u> </u>	
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Age Tested, Days Specimen 1 Specimen 2 Loc. Chloride Ion Penetrability Avg. Coulomb The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. Age Tested, Days Specimen 1 Specimen 2 Specimen 3 125 T 542 M 582 VERY LOW 562 Meets Spec? YES Specification 2400 columbs, max. Avg. of 24 10 Chloride Ion Penetrability HIGH 125 T 542 M 582 VERY LOW 562 Avg. of 24 10 Chloride Ion Penetrability HIGH 125 T 542 M 582 VERY LOW 562 Avg. of 24 10 Chloride Ion Penetrability HIGH 125 50.3 48.2 50.8 Avg. of 24 50 Chloride Ion Penetrability VERY LOW This result not used in payfactor calculation because no assignable cause could be determined for the outlier. Very LOW Value based on a single result. *ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. Comments:			Dawid Chia	ida Darma		(T 077)			Quet	Desist			Olere er		
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125 T 542 M 582 VERY LOW 562 Meets Spec? YES Specification 2400 columbs, max. Avg. of 24 10 Chloride Ion Penetrability HIGH 125 50.3 48.2 50.8 Avg. of 24 50 Chloride Ion Penetrability VERY LOW This result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. *ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. Comments:							-		-				A	-	
Meets Spec? YES Specification 2400 columbs, max. Image: Columbs and the second	125	Т	542	Μ	582	VERY	LOW	562			,		n		
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Avg. of 24 50 Penetrability VERY LOW This result not used in payfactor calculation because no assignable cause could be determined for the outlier. Value based on a single result. *ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. Comments: Value based on a single result.									125	50.3	6	48.2		50.8	
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Final report.	**Value bas	sed on a si URES LIST	ngle result.						be determined f	or the outlie	er.				
Sample Meete All Paguiremente? VES															

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 1/4/2013

Paper Copy: Structure File Electronic Copy: Resident; Redmond, Michael; Cote, Roland

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

CHOIL DA							atery					
	S A	MPLE	INF	ORM	ATION	N A N	D FIEL	DRE	SULI	r s		
Reference No.	Ticket	No.		Sample	e Descripti	ion		Sam	ple Typ	е		Item
272136	5771	10		PCC	-CLASS A	4		ACCEPT	(METHO	OD A)		502.219
Sampler: THOM	PSON. CA		: Si		8/17/2012		Desia	n No.: <mark>Sl</mark>	JBA-12-1	-A		
Plant/Location:	-						Lot No		and the second se	blot No.:	1	3
WIN/Town: 0151				GS			North North No.	t Size, yd ^a	100			
Contractor: LAN			CORP.	(THE) 📢	N	G	Memb	per/Structu	ure ABU	TMENT 2		
Resident: HEWS			10	-	I I a		Addt'l	Info: Sten	n wall			
Bridge No/Name:	CC	511			-	10	Repre	sents	2	of	12 yd	3
Field Admix	tures Use	d Total (p	lant + j	obsite)	De	sign		Concre	ete Fiel	d Test D	Data	
1	Admixture		5	oz/yo	d ³ OZ	/yd³	TA	<u>(T 1</u>	<u>19, T 1</u>	52, T 30	<u>9)</u>	
	II AEA-ADM	-		9.17		5.8	Test		Result	:	Specific	ation
	140-ADMIX			51.5	the second	6.8 13	Slu	ump, in				
DARAT	ARD 17-ADM	IATURE		13		13	Spr	ead, in				
		1 m						C Ratio	0.39		0.43, n	nax.
								emp. °F	83.7		5°F [30°C	
							Air Con		6		6.0% to	
								ets Spec	ificatio	n ?	YE	5
					TORY							
				ete Cyli	nder Com	pressiv	e Strength (-
Age at Break, Avg.	Area,	Specime	en 1 Break	Fract.,	0 , , , , , , , , , , , , , , , , , , ,	Avg.	Area,	Specime	en 2 Break	Fract.,	a , , , ,	Avg. Strength
Days Dia., in	in ²	Load, Ib	Туре	%	Strength, psi	Dia.,		Load, Ib	Туре	%	Strengtł psi	n, burengu psi
28 4.02	12.69	92180	a	40	7264	4.02		93195	a	40	7344	7300
Test Comm	ents:			I					Avg	. Streng	, th, MPa	1
	Ν	leets Spe	cificati	on?	YES		:	Specifica	tion	4,350 p	si [30 M	Pa], min.
	Rapid Chlo	oride Perm	eability	<u>(T 277)</u>			<u>Surf</u>	ace Resist	tivity (T	<u>XXX-10),</u>	KOhm-o	<u>em)</u>
• •	ecimen 1	Specir		Chlorid		Avg.	Age Tested,	Specim	en 1	Specime	n 2 S	pecimen 3
Days Loc.						oulomb	Days	Avg. o		Avg. of		Avg. of 8
The reported coulor	1453	M	1465	or a 4-in. di LO		^{men.} 1459	28	17.3	3	17.3		18.5
Meets Spec					oulombs,		Avg. of 24	18		Chloride Penetra	bility M	ODERATE
							56	28.0)	27.9		30.0
							Avg. of 24	29		Chloride Penetra		LOW
This result not used *Value based on a s **ADMIXTURES LIS	ingle result.						e determined f	or the outli	er.			

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

Plant/Location: SUNRISE - BANGOR Lot WIN/Town: 015108.00 - STOCKTON SPRINGS Sut Contractor: LANE CONSTRUCTION CORP. (THE) Me Resident: HEWS, GUY Admixtures Admixture Bridge No/Name: 02/yd3 02/yd3 02/yd3 Admixture 02/yd3 02/yd3 02/yd3 DAREX II AEA-ADMIXTURE 9 5.8 Te ADAVA 140-ADMIXTURE 9 5.8 Te DARATARD 17-ADMIXTURE 12.9 13 C V Air C V Air C Streak, Days Avg. Area, Load, Ib Break, Type % Avg. Area, in² 28 4.02 12.69 72960 a 35 5749 4.02 12.69 Test Comments: U U In² In² In² In² In²	Sam ACCEPT sign No.: S No.: 1 blot Size, yd mber/Struct dt'l Info: foot oresents <u>Concr</u> (T 1 st Slump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec	Subla 40 sure ABUTN ting 19 c rete Field 119, T 152 Result 0.39 82 8.4 cification cification	D A) Dot No.: MENT 2 Df 38 Test Data 0, T 309) Spect 0.4 85°F [: 6.0%	Item 502.21 2 yd ³ cification 43, max. 30°C], max 6 to 8.5% YES Avength, Streep Psi
272135 57677 PCC-CLASS A Sampler: THOMPSON, CANDACE C Sampled: 8/14/2012 Des Plant/Location: SUNRISE - BANGOR Lot WIN/Town: 015108.00 - STOCKTON SPRINGS Sut Contractor: LANE CONSTRUCTION CORP. (THE) Me Resident: HEWS, GUY Add Bridge No/Name: 02/yd3 02/yd3 02/yd3 DAREX II AEA-ADMIXTURE 9 5.8 Te ADVA 140-ADMIXTURE 51.3 76.8 Te DARATARD 17-ADMIXTURE 12.9 13 C L A B O R A T O R Y T E S T R E S Concrete Cylinder Compressive Strengt Age at Specimen 1 V Break, Days Ina ² Load, Ib Break Fract., Strength, Avg. Area, Dia., in in ² 28 4.02 12.69 72960 a 35 5749 4.02 12.69 Test Comments:	ACCEPT sign No.: S No.: 1 blot Size, yd mber/Struct dt'l Info: foot oresents Concr (T 1 st Slump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	(METHOD UBA-12-1-A Subla 3 40 cure ABUTN ting 19 C rete Field 119, T 152 Result 0.39 82 8.4 cification en 2 Break F	ot No.: MENT 2 of 38 <u>Test Data</u> <u>2. T 309</u>) Spec 0.4 85°F [: 6.0% ? Fract., Stree	2 yd ³ cification 13, max. 30°C], max 6 to 8.5% YES
Sampler: THOMPSON, CANDACE C Sampled: 8/14/2012 Des Plant/Location: SUNRISE - BANGOR Lot WIN/Town: 015108.00 - STOCKTON SPRINGS Contractor: LANE CONSTRUCTION CORP. (THE) Resident: HEWS, GUY Bridge No/Name: Field Admixtures Used Total (plant + jobsite) Design Admixture 02/yd³ 02/yd³ DAREX II AEA-ADMIXTURE 9 5.8 ADVA 140-ADMIXTURE 51.3 76.8 DARATARD 17-ADMIXTURE 12.9 13 COncrete Cylinder Compressive Strengt Age at Break, Days Dia., in in² Load, lb Break Fract., Dia., in in² Load, lb Break Fract., Dia., in in² Load, lb Break Fract., Strength, Avg. Area, Dia., in in² Load, lb Break Fract., % Strength, Avg. Area, Dia., in in² Load, lb Break Fract., % Strength, Avg. Area, Dia., in in² Load, lb Type % Pisi Dia., in in² 28 4.02 12.69 72960 a 35 5749 4.02 12.69 Test Comments:	sign No.: S No.: 1 blot Size, yd mber/Struct dt'l Info: foot bresents <u>Concr</u> (T 1 st Slump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	UBA-12-1-A Sublo sure ABUTN ting 19 c rete Field 119, T 152 Result 0.39 82 8.4 cification en 2 Break F	ot No.: MENT 2 of 38 <u>Test Data</u> <u>2. T 309</u>) Spec 0.4 85°F [: 6.0% ? Fract., Stree	2 yd ³ cification i3, max. 30°C], max 6 to 8.5% YES
Plant/Location: SUNRISE - BANGOR Lot WIN/Town: 015108.00 - STOCKTON SPRINGS Sut Contractor: LANE CONSTRUCTION CORP. (THE) Me Resident: HEWS, GUY Add Bridge No/Name: Oz/yd3 Oz/yd3 Oz/yd3 DAREX II AEA-ADMIXTURE 9 5.8 Te ADVA 140-ADMIXTURE 51.3 76.8 Te DARATARD 17-ADMIXTURE 12.9 13 C L A B O R A T O R Y T E S T R E S Concrete Cylinder Compressive Strengt Age at Specimen 1 Me Break, Days Area, Load, Ib Break Fract., Strength, Pisi Dia., in in² 28 4.02 12.69 72960 a 35 5749 4.02 12.69 Test Comments:	No.: 1 blot Size, yd mber/Struct dt'l Info: foot presents <u>Concr</u> <u>(T 1</u> st Slump, in Spread, in V/C Ratio Temp. °F pontent, % Meets Spec U L T S h (T 22) <u>Specim</u>	Sublo 40 sure ABUTN ting 19 C rete Field 119, T 152 Result 0.39 82 8.4 cification en 2 Break F	ot No.: MENT 2 of 38 Test Data 0.4 85°F [: 6.0% ? Fract., Stree	yd ³ cification 43, max. 30°C], max 6 to 8.5% YES
Plant/Location: SUNRISE - BANGOR Lot WIN/Town: 015108.00 - STOCKTON SPRINGS Sut Contractor: LANE CONSTRUCTION CORP. (THE) Me Resident: HEWS, GUY Add Bridge No/Name: Oz/yd3 Oz/yd3 Oz/yd3 DAREX II AEA-ADMIXTURE 9 5.8 Te ADVA 140-ADMIXTURE 51.3 76.8 Te DARATARD 17-ADMIXTURE 12.9 13 C L A B O R A T O R Y T E S T R E S Concrete Cylinder Compressive Strengt Age at Specimen 1 Me Break, Days Area, Load, Ib Break Fract., Strength, Pisi Dia., in in² 28 4.02 12.69 72960 a 35 5749 4.02 12.69 Test Comments:	No.: 1 blot Size, yd mber/Struct dt'l Info: foot presents <u>Concr</u> <u>(T 1</u> st Slump, in Spread, in V/C Ratio Temp. °F pontent, % Meets Spec U L T S h (T 22) <u>Specim</u>	Sublo 40 sure ABUTN ting 19 C rete Field 119, T 152 Result 0.39 82 8.4 cification en 2 Break F	ot No.: MENT 2 of 38 Test Data 0.4 85°F [: 6.0% ? Fract., Stree	yd ³ cification 43, max. 30°C], max 6 to 8.5% YES
Contractor: LANE CONSTRUCTION CORP. (THE) Me Resident: HEWS, GUY Bridge No/Name: Rep Field Admixtures Used Total (plant + jobsite) Design Admixture 02/yd³ 02/yd³ DAREX II AEA-ADMIXTURE 9 5.8 ADVA 140-ADMIXTURE 51.3 76.8 DARATARD 17-ADMIXTURE 12.9 13 CONCrete Cylinder Compressive Strengt Admic Concrete Cylinder Compressive Strengt Age at Break, Avg. Area, Load, Ib Break Avg. Area, Load, Ib Break Fract., Strength, Avg. Area, Dia., in in ² Load, Ib Break Type % psi Dia., in in ² 28 4.02 12.69 72960 a 35 5749 4.02 12.69 Test Comments:	mber/Struct dt'l Info: foot presents <u>Concr</u> (T 1 st Slump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	ture ABUTN ting 19 c rete Field 119, T 152 Result 0.39 82 8.4 cification en 2 Break F	of 38 Test Data (), T 309) Spec 0.4 85°F [: 6.0% ? Fract., Stree	cification 43, max. 30°C], max 6 to 8.5% YES YES
Resident: HEWS, GUY Add Bridge No/Name: Rej Field Admixtures Used Total (plant + jobsite) Design Admixture oz/yd³ oz/yd³ DAREX II AEA-ADMIXTURE 9 5.8 ADVA 140-ADMIXTURE 9 5.8 DARATARD 17-ADMIXTURE 51.3 76.8 DARATARD 17-ADMIXTURE 12.9 13 L A B O R A T O R Y T E S T R E S Concrete Cylinder Compressive Strengt Air C Specimen 1 Break, Days Area, in² Load, lb Break Fract., strength, psi Avg. Area, in² Days 12.69 72960 a 35 5749 4.02 12.69 Test Comments:	dt'l Info: foot presents Concr (T 1 st Slump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	ting 19 C rete Field 119, T 152 Result 0.39 82 8.4 cification en 2 Break F	of 38 Test Data (), T 309) Spec 0.4 85°F [: 6.0% ? Fract., Stree	cification 43, max. 30°C], max 6 to 8.5% YES YES
Bridge No/Name: Rep Field Admixtures Used Total (plant + jobsite) Design Admixture oz/yd³ oz/yd³ DAREX II AEA-ADMIXTURE 9 5.8 ADVA 140-ADMIXTURE 9 5.8 DARATARD 17-ADMIXTURE 12.9 13 Te Air C Concrete Cylinder Compressive Strength Area, Age at Break, Daa, in Specimen 1 Area, Area, Area, Area, Area, Type % Strength, Avg. Area, in² 28 4.02 12.69 72960 a 35 5749 4.02 12.69 Test Comments: U I <	Silump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	19 c ete Field 119, T 152 Result 0.39 82 8.4 cification en 2 Break F	Test Data . T 309) Spec 0.4 85°F [: 6.0% ? Fract., Stree	cification 43, max. 30°C], max 6 to 8.5% YES YES
Field Admixtures Used Total (plant + jobsite) Design Admixture oz/yd³ oz/yd³ oz/yd³ DAREX II AEA-ADMIXTURE 9 5.8 Te ADVA 140-ADMIXTURE 9 5.8 Te DARATARD 17-ADMIXTURE 12.9 13 C V 12.9 13 C V Air C Air C Age at Break, Dia., in in² Specimen 1 Area, Dia., in in² Break, Days Area, in² Load, lb Break Fract., % psi Strength, Avg. Dia., in in² Area, in² 28 4.02 12.69 72960 a 35 5749 4.02 12.69 Test Comments:	Concr (T 1 st Slump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	en 2 Break F	Test Data . T 309) Spec 0.4 85°F [: 6.0% ? Fract., Stree	cification 43, max. 30°C], max 6 to 8.5% YES YES
Admixture oz/yd³ oz/yd³ <thoz th="" yd³<=""> <thoz th="" yd³<=""> <thoz td="" yd³<<=""><td><u>(T 1</u> st Slump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim</td><td>119, T 152 Result 0.39 82 8.4 cification en 2 Break F</td><td> T 309) Spec 0.4 85°F [: 6.0% ?</td><td>cification I3, max. 30°C], max 6 to 8.5% YES YES</td></thoz></thoz></thoz>	<u>(T 1</u> st Slump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	119, T 152 Result 0.39 82 8.4 cification en 2 Break F	T 309) Spec 0.4 85°F [: 6.0% ?	cification I3, max. 30°C], max 6 to 8.5% YES YES
DAREX II AEA-ADMIXTURE 9 5.8 ADVA 140-ADMIXTURE 51.3 76.8 DARATARD 17-ADMIXTURE 12.9 13 C	st Slump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	Result 0.39 82 8.4 cification? en 2 Break F	0.4 85°F [: 6.0% ?	I3, max. 30°C], max 6 to 8.5% YES YES
ADVA 140-ADMIXTURE 51.3 76.8 DARATARD 17-ADMIXTURE 12.9 13 C 12.9 13 ADVA 140-ADMIXTURE 12.9 13 C V V ADVA 140-ADMIXTURE 12.9 13 C V V ADVA 140-ADMIXTURE 12.9 13 ADVA 140-ADMIXTURE V V ADVA 140-ADMIXTURE V V Air C V V Air C V Air C Age at Avg. Area, Break, Dia., in in² Load, Ib Break Strength, psi Avg. Dia., in in² V N N N N 28 4.02 12.69 72960 a 35 5749	Slump, in Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	0.39 82 8.4 cification? en 2 Break F	0.4 85°F [: 6.0% ?	I3, max. 30°C], max 6 to 8.5% YES YES
DARATARD 17-ADMIXTURE 12.9 13 Air C Air C Air C Air C Break, Days Area, Dia., in in² Load, Ib Break Fract., Type % Strength, Psi Avg. Area, Dia., in in² 28 4.02 12.69 72960 a 35 5749 4.02 12.69	Spread, in V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	82 8.4 cification? en 2 Break F	85°F [: 6.0% ?	30°C], max 6 to 8.5% YES YES
Age at Break, DaysArea, in2Load, lbBreak TypeFract., % yeinStrength, psiAvg. Dia., inArea, in2284.0212.6972960a3557494.0212.69	V/C Ratio Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	82 8.4 cification? en 2 Break F	85°F [: 6.0% ?	30°C], max 6 to 8.5% YES YES
Air CAir CAir CL A B O R A T O R Y TEST RESConcrete Cylinder Compressive StrengtAge at Break, DaysArea, in²Break Load, lb Load, lbBreak Fract., TypeStrength, psiAvg. Dia., inArea, in²284.0212.6972960a3557494.0212.69Test Comments:	Temp. °F ontent, % Meets Spec U L T S h (T 22) Specim	82 8.4 cification? en 2 Break F	85°F [: 6.0% ?	30°C], max 6 to 8.5% YES YES
Air CAir CAir CConcrete Cylinder Compressive StrengtAge at Break, DaysArea, in²Break, Load, lbFract., TypeStrength, %Avg. psiAvg. Dia., inArea, in²284.0212.6972960a3557494.0212.69Test Comments:	ontent, % Meets Spec U L T S h (T 22) Specim	8.4 cification? en 2 Break F	6.0%	<mark>6 to 8.5%</mark> YES Avength, Stree
L A B O R A T O R Y T E S T R E SConcrete Cylinder Compressive StrengtAge at Break, DaysArea, in²Load, lb in²Break TypeFract., %Strength, psiAvg. Dia., inArea, in²284.0212.6972960a3557494.0212.69Test Comments:	Meets Spec U L T S h (T 22) Specim	cification? en 2 Break F	? Fract., Stre	YES Avength, Street
L A B O R A T O R Y TEST RESConcrete Cylinder Compressive StrengtAge at Break, DaysArea, in²Load, lb Load, lbBreak TypeFract., %Strength, psiAvg. Dia., inArea, in²284.0212.6972960a3557494.0212.69Test Comments:	U L T S h (T 22) Specim	en 2 Break F	Fract., Stre	Avength, Stree
Concrete Cylinder Compressive StrengtAge at Break, DaysAvg. Ina., inArea, in²Break, Load, lbFract., TypeStrength, %Avg. psiAvg. Dia., inArea, in²284.0212.6972960a3557494.0212.69Test Comments:	h (T 22) Specim	Break F		ength, Stre
Age at Break, DaysAvg. Dia., inArea, in²Break, Load, lbFract., TypeStrength, psiAvg. Dia., inArea, in²284.0212.6972960a3557494.0212.69Test Comments:	Specim	Break F		ength, Stre
Break, DaysAvg. Dia., inArea, in²Load, lbBreak TypeFract., %Strength, psiAvg. Dia., inArea, in²284.0212.6972960a3557494.0212.69Test Comments:		Break F		ength, Stre
Days Dia., in in ² Load, lb Type % psi Dia., in in ² 28 4.02 12.69 72960 a 35 5749 4.02 12.69 Test Comments:	Load, lb			, gui,
Test Comments:		Type		
	71810	а	35 56	659 57
		Avg. S	Strength, M	MPa
Meets Specification? YES	Specifica	ation <mark>4</mark> ,	,350 psi [3	0 MPa], m
Rapid Chloride Permeability (T 277)	urface Resis	tivity (T X)	(X-10), KOh	nm-cm)
Age Tested, Specimen 1 Specimen 2 Chloride Ion Avg. Age Tested			pecimen 2	Specime
Days Loc. Coulomb Loc. Coulomb Penetrability Coulomb Days	Avg. o		Avg. of 8	Avg. of
The reported coulomb value includes a 0.879 correction for a 4-in. diameter specimen. 28	19.		19.6	19.0
57 T 1441 M 1491 LOW 1466 Meets Spec? YES Specification 2,400 coulombs, max. Avg. of	24 19		Chloride Ion Penetrability	MODERA
57	26.	4	27.2	26.3
Avg. of	24 27		Chloride Ion Penetrability	LOW
This result not used in payfactor calculation because no assignable cause could be determine Value based on a single result. **ADMIXTURES LISTED IN RED FONT HAVE NOT BEEN APPROVED FOR USE. <u>Comments:</u> Final report. The sample tag was sent in missing placement location.	d for the outl	ier.		

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 10/17/2012

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

Courses.															
		S A	MPLE	INF	ORM	ΑΤΙΟ	N A N	D FIEL	D R E	SUL	ΓS				
Reference	No.	Ticket	No.		Sample	Descrip	otion		Sam	ple Typ	e		Item		
272134	1	6934	2		PCC-	CLASS	Α		ACCEPT	(METH	OD A)	1	502.219		
Sampler: H	IEWS, (GUY F		S	ampled:	7/20/20	12	Desig	n No.: <mark>s</mark> l	JBA-12-1	-A				
Plant/Locati	-		BANGO	R	·			Lot N	0.: 1	Su	blot No.:	1			
WIN/Town:	015108	3.00 - STO	OCKTON	SPRIN	GS			Sublo	t Size, yd	40					
Contractor:	LANE	CONSTR	UCTION	CORP.	(THE) 📹	N	G	Mem	per/Structu	ure ABL	JTMENT				
Resident: H	IEWS,	GUY		10	31	10-		Addt'l	Info: Sout	th abut f	ooting				
Bridge No/N	lame:		511			-	10	Repre	esents	9.5	of 32	yd ³	ł		
Field A	Admixtu	ures Used	d Total (p	olant + j	obsite)	D	esign			and the second	ld Test Da				
		dmixture		S	oz/yd	z/yd³	AT	<u>(T 1</u>	<u>19, T 1</u>	<u>52, T 309)</u>					
0		AEA-ADMI	-		8.47	5.8	Test		Result	t Sj	pecific	ation			
		40-ADMIXT		N T	94.7 13.05	100 VII 100	76.8 13	SI	ump, in						
			ATONE		15.05		15		read, in						
			B a					C Ratio	0.41		0.43, max.				
									emp. °F	75		°F [30°C], max.			
									Air Content, % 7.6 Meets Specification			6.0% to 8.5% on? YES			
									-	mcatic	DN ?	TEC)		
							TES								
A			0		ete Cylir	nder Co	mpressiv	ve Strength							
Age at Break,	Avg.	Area,	Specim	Break	Fract.,	Strength	n. Avg	Avg. Area, Logit Break Fract., Strength, Strengt							
	ia., in	in ²	Load, Ib	Туре	%	psi	Dia.,		Load, Ib	Туре	%	Strength psi	, psi		
28 4	1.02	12.69	85880	С	5	6768	4.03	12.76	87225	a	5	6836	6800		
Test C	ommei	nts:								Avg	g. Strength	n, MPa			
		M	leets Spe	ecificati	on?	YES		Specification 4,350 psi [30 MPa], min.							
	1	apid Chlo	1		1		_				<u>XXX-10), K</u>				
Age Tested, Days	-	cimen 1	Speci		Chloric Penetra		Avg. Coulomb	Age Tested, Days	-		Specimen		becimen 3		
-	Loc.	Coulomb value inclue		coulomb		-			Avg. o		Avg. of 8	4	Avg. of 8		
56	Τ	1165	M	1192	LO		1178	28	24.2		22.7 Chloride lo	on	25.8		
	Spec?				2,400 co			Avg. of 24	24		Penetrabi		LOW		
								56	20.9)	20.0		21.8		
								Avg. of 24	21		Chloride lo Penetrabil	N/I C	ODERATE		
Value based *ADMIXTURI Comments:	l on a sin ES LISTE	gle result.						be determined t	for the outli	er.					
Final report.															

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 9/25/2012

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

										<u></u>						
		S A	MPLE	INF	ORM	ΑΙΙ	ΟΝ ΑΝ	D FIEL	D KE	S U L 1	r s					
Refere	nce No.	Ticket	No.		Sample	Desci	ription		Sam	ple Typ	е		Item			
251	303	280257	719	PCC-	CLASS	P (700) SECTION)	VERI	FICATIO	N					
Sampler		WN AT T	HIS TIME		ampled:	•			Design No.: WDSV-12-1-5000							
•	cation: D				SBURY,	VT		Lot No.: Sublot No.:								
WIN/Tov	wn: 01510	8.00 - STO	OCKTON	SPRING	GS		-	Sublo	t Size, yd ³							
Contract	tor: LANE	CONSTR	UCTION	CORP.	(THE) 📹	N	1G	Memb	per/Structu	ure						
Residen	t: HEWS,	GUY		10	311	7.6		Addt'l	Info:							
Bridge N	lo/Name:	CC	511			-	10	Repre	sents		of 8	3.4 yd ³				
Fie	Id Admixt	ures Used	d Total (p	olant + jo	obsite)		Design			and the second second	d Test D					
		dmixture			oz/yd	3	oz/yd ³	TA	<u>(T 1</u>	<u>19, T 1</u>	<u>52, T 30</u>	<u>9)</u>				
		90-ADMIXT	-		8.4	8	Test		Result	:	Specifica	tion				
		3400 NV-AD			90.3 384		91 384	Sl	ump, in							
	KHEUCKE		MIXTORE	16	304	304	Spr	ead, in	25.5		22 to 28	in.				
			10 m					C Ratio	0.35		0.40, m	ax.				
									mp. °F	78	8	5°F [30°C]				
								Air Con		5.9		5.5% to 7				
									ets Spec	ificatio	n?	YES				
							Y TESI									
				Concre	to Cylin			Ctronath ((T 00)							
	Specimen 1						ompressiv	<u>e Strength (</u>								
Age at		Area	Specime	en 1					<u>Specime</u>		Front		Avg.			
Age at Break, Days	Avg. Dia., in	Area, in ²	Specime Load, Ib	en 1 Break	Fract.,	Streng	gth, Avg.	Area,		Break	Fract., %	Strength, psi	Avg. Strength psi			
Break,	Avg. Dia., in 4.02			en 1	Fract.,		gth, Avg. i Dia., i	Area,	Specime			Strength, psi 8436	Strength			
Break, Days 56	Dia., in	in² 12.69	Load, Ib	en 1 Break Type	Fract., %	Strenç psi	gth, Avg. i Dia., i	Area, in in ²	Specime Load, lb	Break Type a	% 20	psi	Strength psi			
Break, Days 56	Dia., in 4.02	in ² 12.69 ents:	Load, Ib	en 1 Break Type a	Fract., % 15	Strenç psi	gth, Avg. i Dia., i	Area, in in ² 12.63	Specime Load, lb	Break Type a Avg	% 20 J. Streng	psi 8436	Strength psi 8540			
Break, Days 56	Dia., in 4.02 st Comme	in² 12.69 nts: N	Load, Ib 109705 leets Spe	en 1 Break Type a ecificatio	Fract., % 15 on?	Streng psi 864	gth, Avg. i Dia., i	in Area, in² 12.63	Specime Load, Ib 106545 Specifica	Break Type a Avg tion	% 20 J. Streng 5,000 [34	psi 8436 jth, MPa 4] psi [MI	Strength psi 8540 Pa], min.			
Break, Days 56 Tes	Dia., in 4.02 st Comme	in² 12.69 Ints: N	Load, Ib 109705 leets Spe	en 1 Break Type a ecificatio	Fract., % 15 on?	Streng psi 864	gth, Avg. Dia., 5 4.01	in Area, in² 12.63	Specime Load, lb 106545 Specifica	Break Type a Avg tion	% 20 J. Streng 5,000 [34 XXX-10].	psi 8436 gth, MPa 4] psi [MI	Strength psi 8540 Pa], min.			
Break, Days 56 Tes Age Test	Dia., in 4.02 st Comme	in ² 12.69 Ints: N Rapid Chlo	Load, Ib 109705 leets Spe ride Perm Specin	en 1 Break Type a ecification meability (men 2	Fract., % 15 on? (<u>T 277)</u> Chlorid	Streng psi 864 YES	Avg.	Area, in 12.63	Specime Load, lb 106545 Specifica ace Resist	Break Type a Avg tion	% 20 J. Streng 5,000 [34 XXX-10]. Specime	psi 8436 jth, MPa 4] psi [MI <u>4] psi [MI</u> <u>KOhm-cr</u> m 2 Sp	Strength psi 8540 Pa], min. Pa], min.			
Break, Days 56 Tes	Dia., in 4.02 st Comme	in² 12.69 Ints: N	Load, Ib 109705 leets Spe ride Perm Specin	en 1 Break Type a ecificatio	Fract., % 15 on?	Streng psi 864 YES	gth, Avg. Dia., 5 4.01	in Area, in² 12.63	Specime Load, lb 106545 Specifica	Break Type a Avg tion	% 20 J. Streng 5,000 [34 XXX-10].	psi 8436 jth, MPa 4] psi [MI <u>4] psi [MI</u> <u>KOhm-cr</u> m 2 Sp	Strength psi 8540 Pa], min.			
Break, Days 56 Tes Age Test Days	Dia., in 4.02 st Comme	in ² 12.69 Ints: N Rapid Chlo ccimen 1 Coulomb	Load, Ib 109705 leets Spe ride Perm Specin Loc. C	en 1 Break Type a ecificatio	Fract., % 15 on? (T 277) Chlorid Penetra	Streng psi 864 YES	Avg. Coulomb	Area, in 12.63	Specime Load, lb 106545 Specifica ace Resist Specim Avg. o	Break Type a A∨g tion tivity (T en 1 of 8	% 20 J. Streng 5,000 [34 XXX-10]. Specime	psi 8436 jth, MPa 4] psi [MI <u>4] psi [MI</u> <u>KOhm-cr</u> m 2 Sp	Strength psi 8540 Pa], min.			
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amount the sample represents.

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 8/21/2012

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

1200	CEN.					cintial	LUNCI	atory							
		S A	MPLE	INF	ORM	ΑΤΙΟ	N A N	D FIEL	D R E	SULI	S				
Refere	nce No.	Ticket	No.		Sample	e Descrip	otion		Sam	ple Typ	е		Item		
251	302	28025	666	PCC	-CLASS	P (700 S	SECTION)	VERI	FICATIO	N				
Sampler		RIS, LINI	DA	S	ampled:	6/19/201	2	Desig	n No.: 🛛 🖤	DSV-12-1	-5000				
	cation: D	•		SHAFT	SBURY	′, VT		Lot N		and the second second	blot No.:	1			
	wn: 01510							Sublo	t Size, yd						
Contract	or: LANE	CONSTR		CORP.	(THE)	1AI	G		per/Structu		GWALL				
	t: HEWS,			NC	-			Addt'l	Info: abut	ment and	d retaining	g wall as w	ell		
	lo/Name:	CC	2112				10	Repre	esents	1	of (5.8 yd ³			
	ld Admixt	ures Use	d Total (p	lant + j	obsite)	D	esign			ete Fiel	d Test D				
	time the sec	dmixture			oz/yo	And and a second	z/yd³	AT		and the second	52, T 30				
	MB AE	90-ADMIX	TURE		8	-	8	Test		Result		Specifica	ation		
	GLENIUM 3			-	91		91	SI	ump, in			•			
	RHEOCRE	TE CNI-ADI	MIXTURE		384		384		read, in	25.5		22 to 28	in.		
			1 1						C Ratio	0.37		0.40, m			
								Te	emp. °F	80	8	5°F [30°C]	, max.		
								Air Con	tent, %	5.7		5.5% to 7	7.5%		
								Meets Specification? YES							
				LAB	ORA	TORY	TES	T RESU	LTS						
				Concr	ete Cyli	nder Coi	mpressiv	ve Strength	(T 22)						
Age at		1	Specime	en 1				Specimen 2 A							
Break,	Avg.	Area,	Load, Ib	Break		Strength			Load, Ib	Break	Fract.,	Strength,	Strength psi		
Days 56	Dia., in 4.02	in ²	110455	Туре	% 10	psi	Dia.,		400095	Туре	% 10	psi	-		
	4.02 st Comme	12.69	110455	а	10	8704	4.02	12.69	109985	a		8667	8690		
Tes	si comme		/leets Spe	oificati	002	YES			Specifica			gth, MPa 4] psi [MI	Dol min		
		n	leets Spe	cincati		TES			Specifica		5,000 [5	+] psi [iwi	-aj, mm.		
	E	Rapid Chlo	oride Perm	eability	<u>(T 277)</u>			<u>Surf</u>	ace Resis	tivity (T	<u>XXX-10)</u> ,	KOhm-cr	<u>n)</u>		
Age Test		cimen 1	Specir	men 2	Chlorie		Avg.	Age Tested,	Specim	en 1	Specime	en 2 Sp	ecimen 3		
Days	Loc.	Coulomb	D Loc. C	oulomb	Penetr	ability C	oulomb	Days	Avg. o	of 8	Avg. of	8 A	vg. of 8		
**Value ba	llt not used ased on a sin FURES LIST	ngle result.						be determined	or the outli	er.					
Commer				la alu di											
Final rep	port. The sar	mple tag wa	as sent in m	issing th	e correct	design nu	mber and	placement loca	ition.						

Sample Meets All Requirements?

AUTHORIZATION AND DISTRIBUTION

YES

Reported by: HARADON, ROBERT S

Date Reported: 8/17/2012

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

		S A	MPLE	INF	ORM		ΟN	ΑN	D FIEL	D R E	SULT	S				
Referen	ce No.	Ticket	No.		Sampl	e Descr	ription			Sam	ple Type	e		Item		
2513	01	28025	572	PCC	CLASS	6 P (700) SEC	TION)	VERI	FICATIO	N				
Sampler:	LEMOR	RIS, LIND	DA	S	ampled	: 6/12/2	012		Design No.: WDSV-12-1-5000							
Plant/Loc	ation: D		RECAST -	SHAFT	SBUR	Lot No.: Sublot No.:										
WIN/Tow	n: 01510	8.00 - ST	OCKTON	SPRIN	GS			-	Suble	ot Size, yd	3					
Contracto	or: LANE	CONSTR		CORP.	(THE)	10	22	J	Mem	ber/Struct	ure OTH	ER				
Resident:	HEWS,	GUY	10	10	31	N. W.			Addt	I Info: 4x4	mini slab	fo observ	vation			
Bridge No	and the second s	CŚ				-	-		Repr	esents	1	(25 yd ³			
Field	the second second		d Total (p	lant + j		the second second	Desig oz/yd					d Test D				
100		dmixture		2	oz/y	AT	-	9	52, T 309		_					
		90-ADMIX1 400 NV-AD	-		10.	Test		Result	:	Specifica	ation					
				NE	380		ump, in									
			11.				read, in	22.5		22 to 28						
							C Ratio	0.35 70		<mark>0.40</mark> , m 5°F [30°C]						
					ntent, %	70		5.5% to 7								
										eets Spec	-		YES			
				LAB	ORA	TORY	ΥT	ES		-						
									ve Strength							
Age at			Specime	en 1						Specime				Avg.		
Break, Days	Avg. Dia., in	Area, in²	Load, Ib	Break Type	Fract., %	psi	i	Avg. Dia.,		Load, Ib	Break Type	Fract., %	Strength, psi	Strength, psi		
7	4.02	12.69	81925	а	30	6456								**6456		
	Comme				1	cylind					Avg		th, MPa			
56	4.00	12.57	108220	С	20	8609		4.02	12.69	107170	а	25	8445	8530		
Test	Comme				•	Cylinde	ers o\	val		0			th, MPa			
		N	leets Spe	cificati	on?	YES			Specification 5,000 [34] psi [MPa], min.							
					(7.077)						· · · · · · · · · · · · · · · · · · ·					
			oride Perm	-	1	de len	A.,	~		face Resis		<u>XXX-10).</u> Specime		-		
Age Teste Days	Loc.	cimen 1 Coulomb	Specin Loc. C	nen z oulomb		ide Ion rability	Avg Could		Age Tested, Days	, Specim Avg. c		Avg. of		ecimen 3 vg. of 8		
,.	LUC.	Soulonin		ouioinb					.,-	Avy. C		Avg. 01		vg. 010		
**Value bas	ed on a sir	ngle result.				-			be determined	for the outli	er.					
Comment	<u>s:</u>															
									at 56 days. Th as the wrong			nt in miss	sing placen	nent		
				Sam	ple Mee	ets All Re	equiren	nents	? YES							

AUTHORIZATION AND DISTRIBUTION

Reported by: HARADON, ROBERT S

Date Reported: 8/7/2012

Paper Copy: Structure File Electronic Copy: Resident; Redmond, Michael; Cote, Roland

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

		s /	AMPLE				N A N [) FIEL	D DE	SULT	° C			
Refere	ence No.	Ticket				e Descripti				ple Type			Item	
	2133	701			•	-CLASS A				THER	0		502.26	
			55	C.		6/11/2012		Design No.: SUBA-12-1-AXYP						
•	r: HEWS		- BANGOF		ampieu.	0/11/2012	2	Lot N		and the second s	olot No.:			
					26			No.	o ot Size, yd ^a	100	5101 110			
						n N	C		ber/Structu		FR			
	nt: HEWS		RUCTION	CORP.		11-1	$\mathbf{\mathbf{\nabla}}$		Info: trial					
	No/Name:		217	a -		24		No.	esents	2	of	4 yd ³		
			d Total (p	lant + i	obsite)	De	sign	Пори		ete Fiel				
	A NAME AND ADDR	Admixture			oz/yc	And and a support	/yd³	-	100 C 100 C 100 C	19, T 15	200			
	DAREX	II AEA-ADM	IXTURE		6		5.9	Test		Result		Specifica	ation	
<u> </u>		140-ADMIX		-	78.25	100. 10. 10.	8.6	SI	ump, in			-		
	RECO	VER-ADMIX	TURE		19.75	1	9.7		read, in					
			N N						C Ratio	0.41		0.43, m	ax.	
									emp. °F	76				
							Air Con		6.6					
									eets Spec	ificatio	n?	YES		
								RESU						
Age at			Specime		ete Cylii	nder Com	pressive	Strength						
Break,	Avg.	Area,		Break	Fract.,	Strength,	Avg.	Area,	Specimen 2		Fract.,	Strength,	Avg. Strength,	
Days	Dia., in	in²	Load, Ib	Туре	%	psi	Dia., in		Load, Ib	Туре	%	psi	psi	
7	4.01	12.63	65775	С	10	5208	4.00	12.57	64435	С	5	5126	5170	
	st Comm	-		[[]				Avg. Strength, MPa					
28	4.00	12.57	96605	С	5	7685	4.01	12.63	93260	С	10	7384	7530	
Te	st Comm				•				• •		. Streng	gth, MPa		
		ľ	Meets Spe	cificatio	on?	N/A			Specifica	tion				
		Rapid Chl	oride Perm	eability	<u>(T 277)</u>			<u>Surf</u>	ace Resist	tivity (T)	<u>XXX-10),</u>	KOhm-cr	<u>n)</u>	
Age Tes	ted, Sp	ecimen 1	Specir	nen 2	Chloric			Age Tested,					ecimen 3	
Days	200.				Penetra		oulomb	Days	Days Avg. of 8 Avg. of			8 A	vg. of 8	
The re 57	ported coulor	nb value inclu 935	ides a 0.879 co M	orrection for 866	or a 4-in. di VERY		men. 900							
-	ets Spec		Specifi		VENT	LOW	900							
INIC	ets opec		Specifi	cation										
				because	e no assig	gnable caus	e could be	determined	for the outli	er.				
		ingle result. TED IN RED	FONT HAVE	NOT BE	EN APPR	OVED FOR	USE.							
<u>Comme</u>	ents:													
Final re	port. Send ı	esults to G	uy Hews. Bre	eak 2 at 7	and 28 d	ays. 15 lbs	of xypex p	er cubic yd.						
				Sam	inle Meet	s All Requi	irements?	N/A						
			AUT		IZAT				BUTL	0 N				
		Renor	ted by: HA						Date Repo		18/2012			
		Kepu			а, ков					51100. 0	UZUIZ			

PORTLAND CEMENT CONCRETE TEST REPORT

Central Laboratory

SPORTA								andi	atory							
		S A	MPLE	INF	ORM	ΑΤΙ	ΟN	ΑN	D FIEL	D R E	SULI	S				
Reference	No.	Ticket I	No.		Sample	Desci	riptio	n		Sam	ple Typ	е		Item		
272133	•	7019	9		PCC	-CLAS	SA			C			502.26			
Sampler: H	IEWS.	GUY F		Sa	ampled:				Desid	gn No.: <mark>Sl</mark>	UBA-12-1	-AXYP				
Plant/Locati			BANGO	R					Lot N			blot No.:				
WIN/Town:	01510	8.00 - STC	OCKTON	SPRING	GS				Sublot Size, yd ³							
Contractor:	LANE	CONSTR	UCTION	CORP.	(THE)				Member/Structure OTHER							
Resident: H					. ,				Addt	l Info: trial	batch					
Bridge No/N	lame:								Repr	esents	2	of	4 yd ³			
Field A	dmixt	ures Used	l Total (p	olant + jo	obsite)		Desi	ign		Concr	ete Fiel	d Test I	Data			
	Α	dmixture			oz/yo	d3	oz/y	/d³		<u>(T 1</u>	19, T 1	52, T 30	<u>9)</u>			
0		I AEA-ADMIX 140-ADMIXT	-		6		5.9		Tes	t	Result	:	Specifica	ation		
		78.25		78. 19.		S	lump, in									
	RECOV	ER-ADMIXT	UKE		19.75)	19.	/		read, in						
										C Ratio	0.41 76		0.43, m	ax.		
										Temp. °F						
											tent, % 6.6		• YES			
									r resu							
A == a +			0		ete Cylir	<u>nder C</u>	omp	ressiv	e Strength					. .		
Age at Break,	Avg.	Area,	Specime	Break	Fract.,	Streng	ath	Avg.	Area,	Specimo	Break	Fract.,	Strength	Avg. Strengtl		
	ia., in	in ²	Load, Ib	Туре	%	ps		Dia.,		Load, Ib	Туре	%	psi	psi		
7 4	.01	12.63	65775	С	10	520	-		12.57	64435	С	5	5126	5170		
Test C	omme	nts:				-			l		Avg. Stre		gth, MPa			
28 4	.00	12.57	96605	С	5	768	5	4.01	12.63	93260	С	10	7384	7530		
Test C	omme	nts:									Avg	j. Strenç	gth, MPa			
		Μ	eets Spe	ecificatio	on?	N/A			Specification							
		Rapid Chlo	ride Perm	neability ((<u>T 277)</u>		1		Surface Resistivity (T XXX-10), KOhm-cm)					<u>m)</u>		
Age Tested, Days	-	cimen 1	Speci		Chlorid Penetra			vg. Iomb	Age Tested Days	-		Specime		ecimen 3		
Days	Loc.	Coulomb	Loc. C	oulomb	Fenetra	ability	Cou	dinoi	Days	Avg. o	of 8	Avg. of	f 8 A	vg. of 8		
*This result no **Value based ***ADMIXTUR	on a sir	ngle result.			-				e determined	for the outli	er.					
•																
Comments:		[ve etranati	h and to Co	البدوم الم	o 40 O	, Llass	a Dua-	k 2 at 7 and 28	dava 45 ll	• •f ······· -		ie vel			

Sample Meets All Requirements? N/A

AUTHORIZATION AND DISTRIBUTION

Date Reported: 7/9/2012

APPENDIX E



Concrete Waterproofing

Description

Xypex is a unique chemical treatment for the waterproofing, protection and improvement of concrete. XYPEX ADMIX C-500 is added to the concrete mix at the time of batching. Xypex Admix C-500 consists of Portland cement, very fine treated silica sand and various active, proprietary chemicals. These active chemicals react with the moisture in fresh concrete and with the by-products of cement hydration to cause a catalytic reaction which generates a non-soluble crystalline formation throughout the pores and capillary tracts of the concrete. Thus the concrete becomes permanently sealed against the penetration of water or liquids from any direction. The concrete is also protected from deterioration due to harsh environmental conditions.

Xypex Admix C-Series

The Admix C-Series has been specially formulated to meet varying project and temperature conditions. Xypex Admix C-500 is specifically formulated to meet modern concrete practices that incorporate additives such as fly ash and slag. For most concrete mix designs adding the Admix C-500 will have minimal or no effect on setting time. Xypex Admix C-1000 is designed for typical Portland cement-rich concrete, where normal to a mild retarded set is desired. Xypex Admix C-2000 is designed for projects where extended retardation is required due to high ambient temperatures or long ready-mix delivery times. See Setting Time and Strength for more details. Consult with a Xypex technical services representative for the most appropriate Xypex Admix for your project.

Recommended for:

- Reservoirs
- Sewage and Water Treatment Plants
- Secondary Containment Structures
- Tunnels and Subway Systems
- Underground Vaults
- Foundations
- · Parking Structures
- Swimming Pools
- Precast Components

Advantages

- · Resists extreme hydrostatic pressure from either positive or negative surface of the concrete
- · Becomes an integral part of the substrate

- · Highly resistant to aggressive chemicals
- · Can seal static hairline cracks up to 0.4 mm
- Allows concrete to breather
- Non-toxic
- · Less costly to apply than most other methods
- Permanent
- Added to the concrete at time of batching and therefore is not subject to climatic restraints
- · Increases flexibility in construction scheduling

Packaging

Xypex Admix C-500 is available in 50 lb. (22.7 kg) bags and in cartons containing 10 lb. (4.5 kg), 12 lb. (5.5 kg), and 15 lb. (6.8 kg) soluble bags. For specific projects, contact the manufacturer for availability of custom sized packaging.

Storage

Xypex products must be stored dry at a minimum temperature of 45°F (7°C). Shelf life is one year when stored under proper conditions.

Dosage Rates

Xypex Admix C-500: 2% - 3% by weight of cement

Xypex Admix C-500 NF (No Fines Grade):

1% - 1.5% by weight of cement

NOTE: Under certain conditions, the dosage rate for No Fines Grade may be as low as 0.8% depending on the quantity and type of total cementitious materials. The maximum use level is 2% by weight of cement for potable water applications.

Consult with Xypex's Technical Services Department for assistance in determining the appropriate dosage rate and for further information regarding enhanced chemical resistance, optimum concrete performance, or meeting the specific requirements and conditions of your project.

Test Data

PERMEABILITY

U.S. Army Corps of Engineers CRD C48-73, "Permeability of Concrete", Aviles Engineering Corp., Houston, USA

Two concrete samples containing Xypex Admix at 3% and 5% respectively, and an untreated control sample were tested for water permeability. Both the treated and untreated samples were subjected to a pressure of 150 psi (350 ft. water head). Results showed moisture and permeated water throughout the untreated sample after 24 hours. However, the Xypex Admix samples showed no leakage, and water penetration of only 1.5 mm after 120 hours (5 days).

U.S. Army Corps of Engineers CRD C48-73, "Permeability of Concrete", Setsco Services, Pte Ltd., Singapore

Six Xypex Admix-treated and six untreated concrete samples were tested for water permeability. Pressure was gradually increased over five days and then maintained at 7 bars (224 ft. water head) for 10 days. While the six reference samples showed water leakage beginning on the fifth day and increasing throughout the test period, the Xypex Admix samples showed no water leakage at any time during the test.

DIN 1048, "Water Impermeability of Concrete", DICTU S.A., Dept. of Engineering and Construction Mgt., Santiago, Chile

Concrete samples 120 mm thick containing Xypex Admix were tested with the same size reference samples for water impermeability. Samples were subjected to hydrostatic pressure for 28 days. Water totally permeated the untreated samples but no water penetration was detected in any of the Xypex Admix-treated samples.

COMPRESSIVE STRENGTH

ASTM C 39, "Compressive Strength of Cylindrical Concrete Specimens", HBT Agra, Vancouver, Canada

Concrete samples containing Xypex Admix at various dosage rates (1%, 2% and 5%) were tested against an untreated concrete control sample. Compressive strength test results after 28 days indicated a significant strength increase in the samples incorporating Xypex Admix. The compressive strength increase varied between 5% and 20% (depending on the Xypex Admix dosage rate) over that of the reference sample.

ASTM C 39, "Compressive Strength of Cylindrical Concrete Specimens", Kleinfelder Laboratories, San Francisco, USA

At 28 days, the compressive strength test of the concrete containing Xypex Admix measured 7160 psi as compared to the reference sample at 6460 psi (a 10% increase).

CHEMICAL RESISTANCE

JIS, "Chemical Durability Test", Japanese Utility Company, In-house Test Report, Tokyo, Japan

Concrete samples containing Xypex Admix were tested against five samples containing other admixtures and against a control sample, to determine resistance to corrosion and deterioration caused by contact with aggressive chemicals. All samples were soaked in a 5% sulfuric acid solution at 20°C for six months. Various evaluations and measurements were assessed every month during the test period, including: photographic comparisons, relative dynamic modulus of elasticity, percentage change in length, weight and flexural rigidity. Although the Xypex Admix sample was subjected to acid conditions well outside its published range, the results confirmed Xypex with the best performance among the seven samples tested.

"Sulfuric Acid Resistance Test", Aviles Engineering Corporation, Houston, USA

Concrete samples containing Xypex Admix at different dosage rates (3%, 5% and 7%) were tested against untreated control samples for sulfuric acid resistance. After immersion in the sulfuric acid, each sample was tested for weight loss on a daily basis until a weight loss of 50% or a definite response trend was obtained. The percentage weight loss of the samples containing Xypex Admix tested significantly lower than the control samples.

"Sulphate Resistance Test", Taywood Engineering Ltd., Perth, Australia

Xypex Admix-treated concrete samples were immersed in an ammonium-sulphate solution and tested for "resistance in a harsh environment". The performance of the Xypex crystalline technology was compared with five other concretes, including one containing a sulphateresistant cement. Each of the test samples was cured for seven days and then placed in an ammonium-sulphate solution (132 g/litre) for 180 days. The rate of corrosion was determined by measuring weight loss, and length change was noted on a weekly basis. The Xypex crystalline technology substantially improved concrete performance as compared to the reference concrete and tested very similar to the sulphate-resistant concrete. The Xypex Admix-treated samples also provided the highest level of protection as measured by change in length.

FREEZE/THAW DURABILITY

ASTM C 666, "Freeze/Thaw Durability", Independent Laboratory, Cleveland, USA

After 300 freeze/thaw cycles, the Xypex Admix-treated samples indicated 94% relative durability.

POTABLE WATER EXPOSURE

NSF 61, "Drinking Water System Component-Health Effects", NSF International, Ann Arbor, USA

Exposure testing of potable water in contact with Xypextreated samples indicated no harmful effects.

Directions for Use

Xypex Admix C-500 must be added to the concrete at the time of batching. The sequence of procedures for addition will vary according to the type of batch plant operation and equipment:

1. READY MIX PLANT - DRY BATCH OPERATION Add

Xypex Admix in powder form to the drum of the readymix truck. Drive the ready-mix truck under the batch plant and add the balance of the materials in accordance with standard concrete batching practices. Mix materials for a minimum of 5 minutes to ensure that the Xypex Admix has been thoroughly dispersed throughout the concrete.

2. READY MIX PLANT - CENTRAL MIX OPERATION Mix

Xypex Admix with water to form a very thin slurry (e.g. 15 - 20 lb./6.75 - 9 kg of powder mixed with 3 U.S. gallons/ 13.6 litres of water). Pour the required amount of material into the drum of the ready-mix truck. The aggregate, cement and water should be batched and mixed in the plant in accordance with standard practices (taking into account the quantity of water that has already been placed in the ready-mix truck). Pour the Admix slurry into the truck and mix for at least 5 minutes to ensure even distribution of the Xypex Admix throughout the concrete.

3. **PRECAST BATCH PLANT** Add Xypex Admix to the rock and sand, then mix thoroughly for 2 - 3 minutes before adding the cement and water. The total concrete mass should be blended using standard practices.

NOTE:

i. It is important to obtain a homogeneous mixture of Xypex Admix with the concrete. Therefore, do not add dry Admix powder directly to wet concrete as this may cause clumping and thorough dispersion will not occur.

ii. Concrete containing the Xypex Admix does not preclude the requirement for design of crack control, construction joint detailing and measures for repairing defects in concrete (i.e. honeycombing, tie holes, cracks beyond specified limits).

For further information regarding the proper use of Xypex Admix for a specific project, consult with a Xypex technical services representative.

Setting Time and Strength

The setting time of concrete is affected by the chemical and physical composition of ingredients, temperature of the concrete and climatic conditions. Xypex Admix C-500 is specifically formulated to meet modern concrete practices that incorporate additives such as fly ash and slag. For most concrete mix designs adding the Xypex Admix C-500 will have minimal or no effect on setting time. Concrete containing the Xypex Admix C-500 may develop higher early and ultimate strengths than plain concrete particularly where fly ash and slag are used. Trial mixes should be carried out under project conditions to determine the setting time and strength of the concrete dosed with Xypex Admix C-500. Consult with a Xypex technical services representative for the most appropriate Xypex Admix for your project.

Limitations

When incorporating Xypex Admix, the temperature of the concrete mix should be above 40°F (4°C).

Technical Services

For more instructions, alternative installation methods, or information concerning the compatibility of the Xypex treatment with other products or technologies, contact the Technical Services Department of Xypex Chemical Corporation or your local Xypex representative.

Safe Handling Information

Xypex is alkaline. As a cementitious powder or mixture, Xypex may cause significant skin and eye irritation. Directions for treating these problems are clearly detailed on all Xypex pails and packaging. The Manufacturer also maintains comprehensive and up-to-date Material Safety Data Sheets on all its products. Each sheet contains health and safety information for the protection of workers and customers. The Manufacturer recommends you contact Xypex Chemical Corporation or your local Xypex representative to obtain copies of Material Safety Data Sheets prior to product storage or use.

Warranty

The Manufacturer warrants that the products manufactured by it shall be free from material defects and will be consistent with its normal high quality. Should any of the products be proven defective, the liability to the Manufacturer shall be limited to replacement of the product ex factory. The Manufacturer makes no warranty as to merchantability or fitness for a particular purpose and this warranty is in lieu of all other warranties expressed or implied. The user shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith.



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