LAFARGE
NORTH AMERICA

Cement

Mr. Josh Edwards
Apple Valley Ready Mix

Dear Mr. Edwards,

This letter is to present the preliminary results of the recent testing that was performed at our Kansas City Performance Center. The testing was performed in anticipation of the upcoming Performance Specifications for Mn/DOT bridges. The testing included three mix designs provided by Apple Valley Ready Mix 3Y33LCHPC, 3Y36AF, and AVRHPBD. The testing program included:

Plastic Concrete: Air, slump, and unit weight
Compressive Strength: 1, 3, 7, 28, and 56 day cylinders
Rapid Chloride Permeability (RPC): 28 and 56 day specimens
Shrinkage: 28 days (specification time period), 8 and 16 weeks

The AVRHPBD performed well having a 28 day strength of 8,700psi and 56 RCP value of 762 Coulombs. The specified values were a 28 day strength of 5,000psi and 56 RCP of 1,500 Coulombs. and The shrinkage value at 28 days was 0.011%.
It is important to note that the air content of 5.6% and slump of 3" were lower than the target of 6%-8% and 4"-6" targets.

If you have any questions, feel free to contact me.

Sincerely,

Justin Lashley
Lafarge North America
800-234-0974

LAFARGE NORTH AMERICA

Kansas City Performance Center
15100 E. Courtney Atherton Rd. Sugar Creek, MO 64056
Phone: (816)257-4093 Fax: (816)257-5930

Report To: **Justin Lashley** Date: 3/26/09

Subject: Apple Valley Ready Mix Testing using applicable ASTM Procedures
Tested Materials: Date Received: January 2009
Source of Aggregates: Fischer Sand, Fischer Metroseal,
Fischer Stone - 1" minus, ¾" minus, 1 ½" minus

Cement &
Cementitious materials: Lafarge Davenport Type I/II
Lafarge Sugar Creek Silica Fume Cement
Coal Creek F ash
Portage C ash

Results: ASTM Concrete Testing Procedures* As Per Instructions

Date Tested	28-Jan-09		28-Jan-09		28-Jan-09	
Sample Contents	**3Y33LCHPC**		**3Y36AF**		**AVRHPBD**	
Sample Number	012809-1		012809-2		012809-3	
CONCRETE TESTING						
Unit Weight (lbs/ft^3) C-138	141.45		141.21		148.34	
Air Content (%) C-231	9.8		9		5.6	
Slump (inches) C-143	4.75		4		3	
Concrete Temperature (°F) C-1064	70		70		70	
Yeild (ft^3/yd^3) Example = 27.00	27.18		26.97		26.33	
W / C Ratio	0.42		0.37		0.40	
Initial Set (hours)	4.5		6.7		5.7	
Compressive Strength Breaks C-39	**ave. pounds**	**psi**	**ave. pounds**	**psi**	**ave. pounds**	**psi**
1 - Day Concrete Cylinders (psi) 70 deg cure	**42545**	3387	**23981**	1909	**36127**	2876
3 - Day Concrete Cylinders (psi) 70 deg.cure	**63565**	5061	**44197**	3519	**64461**	5132
7 - Day Concrete Cylinders (psi)70deg.cure	**77109**	6139	**54983**	4378	**83142**	6620
28 - Day Concrete Cylinders (psi)70deg.cure	**90806**	7230	**71423**	5687	**109280**	8701
56 - Day Concrete Cylinders (psi)70deg.cure	**97242**	7742	**73893**	5883	**123267**	9814
RCP Testing C-1202						
28 Day RCP, Ave. Coulombs		3156		3283		1487
56 Day RCP, Ave. Coulombs		2365		1836		762

The test result is only valid if the sample(s) is(are) representative of the current production and it is to be noted that Lafarge has no knowledge of the representatives of the sample received for testing. Also, material quality can vary with different locations in a quarry and silo. It is recommended that testing be carried out on an annual basis or more frequently if a variation in stone or cementitious quality is suspected.

Although the Kansas City Performance Center applies state-of-the-art test methods, Lafarge North America. and its affiliates (Lafarge) can not guarantee the results shown above and shall assume no liability whatsoever for any errors in such results and for the consequence of such errors.

Tina M. Tucholski
KCPC Laboratory Manager
Lafarge North America

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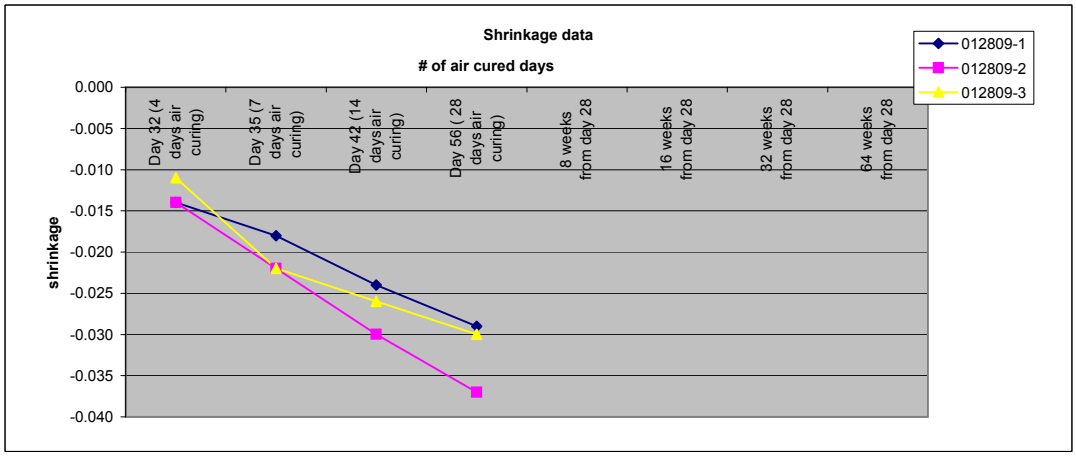
Date Run AVR	012809-1	012809-2	012809-3
Sample Contents	3Y33LCHPC	3Y36AF	AVRHPBD
Average % Change in Length Day#			
Day 32 (4 days air curing)	-0.014	-0.014	-0.011
Day 35 (7 days air curing)	-0.018	-0.022	-0.022
Day 42 (14 days air curing)	-0.024	-0.030	-0.026
Day 56 (28 days air curing)	-0.029	-0.037	-0.030
8 weeks from day 28			
16 weeks from day 28			
32 weeks from day 28			
64 weeks from day 28			



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