

# TRANSIT MIX CONCRETE CO.

Colorado Springs                      Pueblo  
P.O. Box-1030, CO 80901              P.O. Box-857, CO 81002  
(719) 475-0700 (Fax) 475-0226        (719) 561-8350 (Fax) 566-0231

## CONCRETE MIX DESIGN

July 11, 2011

Secondary Clarifier  
Birdsall Road East of Old Pueblo Road  
El Paso County, CO

### ALTERNATE MIX DESIGN

"Structural Concrete for Liquid Containment Structures - Walls"

4500 PSI @ 28 Days • 15% Fly Ash • Air Entrained • 0.42 Maximum W/CM

GARNEY COMPANIES Inc.  
7911 Shaffer Parkway  
Littleton, Colorado 80127

			<u>ONE CUBIC YARD</u>	
Cement	(	Type I/II	)	559 lbs
Fly Ash	(	Class F	)	99 lbs
AEA	(	Master Builders AE 90	)	6.1 ozs
WRA	(	Master Builders 200N	)	19.7 ozs
MRWRA	(	Master Builders 1020	)	41.5 ozs
Sand	(	Daniels Sand	)	1235 lbs
Rock	(	Castle Concrete	)	1700 lbs
Water				266 lbs

### TM MIX IDENTIFICATION NUMBER

45002110

Approximate Physical Properties:

Unit Weight - PCF

+/- 141.1

Slump - Inches

5" Max.

Air Entrainment - %


6% +/- 1%

Water / Cementitious Ratio

.40

This mix was derived from the enclosed series ( 104-4 ). Compliance information on the various materials is also enclosed.

TRANSIT MIX CONCRETE CO.

  
R. John Ruppert  
Vice President, Sales

# J. B. Morgan, P. E., C.C.E.

CONSULTING STRUCTURAL ENGINEER

## Summary of Concrete Mix Data



Table NO. 104-4 (Air Entrained Flowable Concrete w/ Fly Ash @ 5" - 7" Slump)

Client: Transit Mix Concrete CO  
Project: Plant Mixes  
Aggregates: ASTM C 33 Coarse and Fine  
Cement: ASTM C 150 Type I-II  
Fly Ash: ASTM C 618 Class F  
Admixtures: ASTM C 494 AE, WRA and HRWRA

45002110  
↓

MIX PROPORTIONS	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50
Cement (Type I-II), lbs.	321	360	400	439	480	519	559	599
Fly Ash (Class F), lbs	55	63	70	78	84	92	99	106
Total Cementitious, lbs	376	423	470	517	564	611	658	705
Air Entrainer, oz.	3.1	3.6	4.1	4.5	5.2	5.6	6.1	6.4
Water Reducer, oz.	11.3	12.7	14.1	15.5	16.9	18.3	19.7	21.2
High Range Water Reducer, oz.	18.8	21.2	23.5	25.8	35.8	38.7	41.5	44.3
Fine Aggregate, lbs.	1470	1430	1390	1350	1315	1275	1235	1195
# 57/67 Coarse Aggregate, lbs.	1700	1700	1700	1700	1700	1700	1700	1700
Water, gallons	31.4	31.7	32.0	32.2	30.5	31.5	31.9	33.0
Water, lbs.	261.6	264.1	266.6	268.2	254.1	262.4	265.7	274.9

### PHYSICAL PROPERTIES

Wet Unit WT. (PCF)	139.4	139.7	139.9	140.3	140.6	140.9	141.1	141.3
Slump (Inches)	7.00	6.75	6.50	6.75	6.50	6.50	6.75	6.00
Air Content, %	5.0	5.1	5.5	5.8	5.6	6.0	5.5	5.2
Water Cement Ratio	0.70	0.62	0.57	0.52	0.45	0.43	0.40	0.39
Temperature, (°F)	75	75	76	77	78	78	80	81

### COMPRESSIVE STRENGTH

3 Day Average	1780	2290	2740	3180	3860	4360	4340	4650
7 Day Average	2320	2900	3750	4080	4490	4890	5140	5520
28 Day Average	3000	3510	4040	4610	5690	6250	6610	7060

Date Tested: Tuesday, May 05, 2009

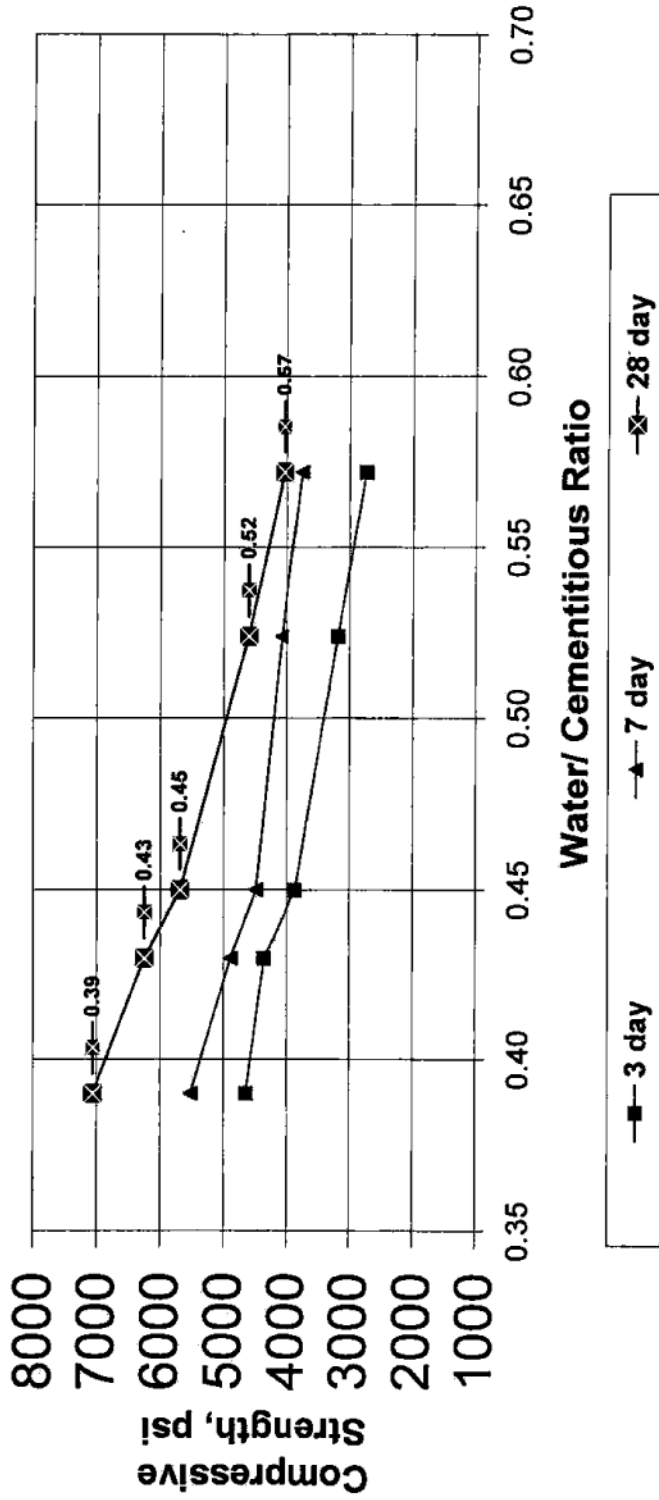
400 South 7th Street, Raton, New Mexico 87740

Phone: (575) 445-8738 • Mobile: (719) 332-4557 • Fax: (575) 445-7055

# Transit Mix Concrete Company

Table NO. 104-4-WC

## Compressive Strength vs. Water Cementitious Ratio



# Material Certification Report

Material: Portland Cement  
Type: I-II(MH) (ASTM C 150)

Test Period: 01-Mar-2011  
To: 31-Mar-2011

## Certification

Holcim cement meets the specifications of ASTM C 150 for Type I-II(MH) cement.

## General Information

Supplier: Holcim (US) Inc.  
Address: 3500 State Highway 120  
Florence, Co. 81226  
Telephone: 719-714-1307  
Date Issued: 08-Apr-2011

Source Location: Portland Plant  
3500 State Highway 120  
Florence, Co. 81226  
Contact: Dick Roush

The following information is based on average test data during the test period. The data is typical of cement shipped by Holcim; individual shipments may vary.

## Tests Data on ASTM Standard Requirements

Chemical			Physical		
Item	Limit <sup>A</sup>	Result	Item	Limit <sup>A</sup>	Result
SiO <sub>2</sub> (%)	-	19.7	Air Content (%)	12 max	6
Al <sub>2</sub> O <sub>3</sub> (%)	6.0 max	4.8	Blaine Fineness (m <sup>2</sup> /kg)	260 min 430 max	389
Fe <sub>2</sub> O <sub>3</sub> (%)	6.0 max	3.2			
CaO (%)	-	63.4			
MgO (%)	6.0 max	1.5	Autoclave Expansion (%) (C 151)	0.80 max	0.02
SO <sub>3</sub> (%) <sup>C</sup>	3.0 max	3.3	Compressive Strength MPa (psi):		
Loss on Ignition (%)	3.0 max	2.4			
Insoluble Residue (%)	0.75 max	0.44	3 days	10.0 (1450) min	31.0 (4500)
CO <sub>2</sub> (%)	-	1.2	7 days	17.0 (2470) min	37.8 (5480)
Limestone (%)	5.0 max	3.2			
CaCO <sub>3</sub> in Limestone (%)	70 min	84	Initial Vicat (minutes)	45-375	127
Inorganic Processing Additions	5.0 max	0.0			
Potential Phase Composition <sup>D</sup> :			Mortar Bar Expansion (%) (C 1038)		0.014
C <sub>3</sub> S (%)	-	59			
C <sub>2</sub> S (%)	-	11			
C <sub>3</sub> A (%)	8 max	7			
C <sub>4</sub> AF (%)	-	10			
C <sub>3</sub> S + 4.75C <sub>3</sub> A (%)	100 max	92			

## Tests Data on ASTM Optional Requirements

Chemical			Physical		
Item	Limit <sup>A</sup>	Result	Item	Limit <sup>B</sup>	Result
Equivalent Alkalies (%)		0.73	Heat of Hydration: 7 days, kJ/kg (cal/g) <sup>B</sup>		354 (85)

## Notes

<sup>A</sup> Dashes in the limit / result columns mean Not Applicable.

<sup>B</sup> Test result represents most recent value and is provided for information only. Analysis of Heat of Hydration has been carried out by CTLGroup, Skokie, IL.

<sup>C</sup> It is permissible to exceed the specification limit provided ASTM C 1038 Mortar Bar Expansion does not exceed 0.020 %.

<sup>D</sup> Adjusted per Annex A1.8 of ASTM C150 and AASHTO M85.

This data may have been reported on previous mill certificates. It is typical of the cement being currently shipped.

Transit Mix Concrete  
 Attn: Robert Montoya  
 444 E Costilla St.  
 Colorado Springs, CO 80903-3761

**PHOENIX CEMENT**

Product: AA:HTO M 295 Class F Fly Ash, Cholla  
 AS M C 618

**Corporate Headquarters**  
 8800 E Chaparral Rd, Ste 155  
 Scottsdale, AZ 85250  
 Phone: 480-850-5757  
 Fax: 480-850-5758

**Cement Manufacturing**  
 601 N Cement Plant Rd  
 Clarkdale, AZ 86324  
 Phone: 928-634-2261  
 Fax: 928-634-3543

**19th Avenue Facility**  
 1802 W Lower Buckeye Rd  
 Phoenix, AZ 85007  
 Phone: 602-253-9149  
 Fax: 602-253-9160

**Lower Buckeye Facility**  
 1941 W Lower Buckeye Rd  
 Phoenix, AZ 85009  
 Phone: 602-258-7798  
 Fax: 602-252-3362

**21st Avenue Facility**  
 1325 N 21st Avenue  
 Phoenix, AZ 85009  
 Phone: 602-254-3824  
 Fax: 602-254-3825

**Mesa Community Storage**  
 Dobson & McKellips  
 Mesa, AZ 85211  
 Phone: 480-990-7847

**Cholla Fly Ash Facility**  
 P O Box 380  
 Joseph City, AZ 86032  
 Phone: 928-288-1661  
 Fax: 928-288-1663

**Four Corners Fly Ash Facility**  
 P O Box 1007  
 Fruitland, NM 87416  
 Phone: 505-598-8657  
 Fax: 505-598-8633

**San Juan Fly Ash Facility**  
 San Juan Generating Station  
 Waterflow, NM 87421  
 Phone: 505-598-7546  
 Fax: 505-598-7547

**Escalante Fly Ash Facility**  
 CR19 / P O Box 620  
 Prewitt, NM 87405  
 Phone: 505-285-4590  
 Fax: 505-285-4667

**Gallup Fly Ash Facility**  
 9001/4 N 9th St.  
 Gallup, NM 87305

**3-24-11 POZZOLAN TEST REPORT** Cti#: 51000

Lot: 2083	Results	Specifications
<b>Chemical Analysis</b> (C311 / C114 / D4326)		
Silicon Dioxide, SiO <sub>2</sub>	60.69 %	---
Aluminum Oxide, Al <sub>2</sub> O <sub>3</sub>	22.89 %	---
Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>	6.36 %	---
SiO <sub>2</sub> + Al <sub>2</sub> O <sub>3</sub> + Fe <sub>2</sub> O <sub>3</sub>	89.94 %	70.00 Min
Calcium Oxide, CaO	3.14 %	---
Magnesium Oxide, MgO	1.24 %	---
Sulfur Trioxide, SO <sub>3</sub>	0.31 %	5.00 Max
Moisture Content	0.02 %	3.00 Max
Loss on Ignition	0.26 %	6.00 Max
Available Alkalis as Na <sub>2</sub> O	0.22 %	---
Alkalis (%Na <sub>2</sub> O + 0.658% K <sub>2</sub> O)	1.12 %	---
R Factor (%CaO -5) / (%FeO)	-0.29 %	---

<b>Physical Analysis</b>		
Fineness, amount retained on #325 sieve, % (C430)	17.70	34.00 Max
variation, points from average	0.66	5.00 Max
Density, g/cm <sup>3</sup> (C188)	2.20	---
Variation from average, %	0.00	5.00 Max
<b>Strength Activity Index</b>		
with Portland Cement (C311 / C109)		
at 7 days, % of cement control	78.75	---
at 28 days, % of cement control	87.69	75.00 Min
<b>Water Requirement (C311)</b>		
% of cement control	95.87	105.00 Max
<b>Soundness, autoclave expansion (C311 / C151)</b>		
or contraction, %	-0.03	0.80 Max

All tests have been made in strict accordance with the current standards of the American Society for Testing and Materials covering the type of material specified.

*Lee Gorby*  
 Lee Gorby, Quality Assurance Manager  
 27 APR 2011





# ASTM C 618 TEST REPORT

Sample Number: S-110208024  
Sample Date: January 2011

Report Date: 3/24/2011  
Sample Source: Denver  
Tested By: jx

TESTS	RESULTS	ASTM C 618 CLASS F/C	AASHTO M 295 CLASS F/C
<b>CHEMICAL TESTS</b>			
Silicon Dioxide (SiO <sub>2</sub> ), %	54.61		
Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> ), %	22.61		
Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> ), %	5.22		
Sum of SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> , %	82.44	70.0/50.0 min.	70.0/50.0 min.
Calcium Oxide (CaO), %	9.62		
Magnesium Oxide (MgO), %	2.53		
Sulfur Trioxide (SO <sub>3</sub> ), %	0.39	5.0 max.	5.0 max.
Sodium Oxide (Na <sub>2</sub> O), %	0.33		
Potassium (K <sub>2</sub> O), %	1.18		
Total Alkalies (as Na <sub>2</sub> O), %	1.11		
<b>PHYSICAL TESTS</b>			
Moisture Content, %	0.03	3.0 max.	3.0 max.
Loss on Ignition, %	0.67	6.0 max.	5.0 max.
Amount Retained on No. 325 Sieve, %	17.30	34 max.	34 max.
Specific Gravity	2.36		
Autoclave Soundness, %	0.03	0.8 max.	0.8 max.
SAI, with Portland Cement at 7 Days, % of Control	79.7	75 min.*	75 min.*
SAI, with Portland Cement at 28 Days, % of Control	90.5	75 min.*	75 min.*
Water Required, % of Control	95.9	105 max.	105 max.
Loose, Dry Bulk Density, lb/cu. ft.	74.40		

Meets ASTM C 618 and AASHTO M 295, FDOT Section 929, TxDOT DMS 4610, SCDHPT and MDOT specifications for Class F Fly Ash

\* Meeting the 7 day or 28 day Strength Activity Index will indicate specification compliance.

Approved By:

Diana Benfield  
QC Specialist

Approved By:

Brian Shaw  
Materials Testing Manager



The Chemical Company

May 12, 2011

Transit Mix Concrete CO  
444 East Costilla  
Colorado Springs, Colorado 80903

**Attention:** Robert Montoya  
**Project:** Various  
**Project location:** Various

Certificate of Conformance  
Pave-Air™ 90  
BASF Corporation\* Air-Entraining Admixture for Concrete

\*(successor in interest to BASF Construction Chemicals, LLC, which is successor by merger to BASF Admixtures, Inc., formerly known as Degussa Admixtures, Inc., formerly known as Master Builders, Inc.)

I, Richard Hubbard, Sr. Technical Marketing Specialist for BASF Corporation, Cleveland, Ohio, certify:

That Pave-Air 90 is a BASF Corporation Air-Entraining Admixture for concrete; and

That no calcium chloride or chloride based ingredient is used in the manufacture of Pave-Air 90; and

That Pave-Air 90, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.000068 percent (0.68 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That Pave-Air 90 meets the requirements of ASTM C 260, Corps of Engineers' CRD-C 13 and AASHTO M154, the Standard Specifications for Air-Entraining Admixtures for Concrete.

Richard Hubbard  
Sr. Technical Marketing Specialist, BASF Corporation

**BASF Corporation**  
23700 Chagrin Boulevard  
Cleveland, OH 44122  
216 839-7500 ph  
www.masterbuilders.com

**Master  
Builders**  
Admixture Solutions



The Chemical Company

May 12, 2011

Transit Mix Concrete CO  
444 East Costilla  
Colorado Springs, Colorado 80903

**Attention:** Robert Montoya  
**Project:** Various  
**Project location:** Various

Certificate of Conformance  
Pozzolith® 200 N  
BASF Corporation\* Admixture for Concrete

\*(successor in interest to BASF Construction Chemicals, LLC, which is successor by merger to BASF Admixtures, Inc., formerly known as Degussa Admixtures, Inc., formerly known as Master Builders, Inc.)

I, Richard Hubbard, Sr. Technical Marketing Specialist for BASF Corporation, Cleveland, Ohio, certify:

That Pozzolith 200 N is a BASF Corporation Water-Reducing Admixture for concrete; and

That no calcium chloride or chloride based ingredient is used in the manufacture of Pozzolith 200 N; and

That Pozzolith 200 N, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.00013 percent (1.3 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That, depending on the dosage used, Pozzolith 200 N meets the requirements for a Type A, Water-Reducing, Type B, Retarding, and Type D, Water Reducing and Retarding Admixture as specified in ASTM C 494, Corps of Engineers' CRD-C 87 and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Richard Hubbard  
Sr. Technical Marketing Specialist, BASF Corporation

**BASF Corporation**  
23700 Chagrin Boulevard  
Cleveland, OH 44122  
216 839-7500 ph  
[www.masterbuilders.com](http://www.masterbuilders.com)

**Master  
Builders**  
Admixture Solutions





The Chemical Company

May 12, 2011

Transit Mix Concrete CO  
444 East Costilla  
Colorado Springs, Colorado 80903

**Attention:** Robert Montoya  
**Project:** Various  
**Project location:** Various

Certificate of Conformance  
PolyHeed® 1020  
BASF Corporation\* Admixture for Concrete

\*(successor in interest to BASF Construction Chemicals, LLC, which is successor by merger to BASF Admixtures, Inc., formerly known as Degussa Admixtures, Inc., formerly known as Master Builders, Inc.)

I, Richard Hubbard, Sr. Technical Marketing Specialist for BASF Corporation, Cleveland, Ohio, certify:

That PolyHeed 1020 is a BASF Corporation Mid-Range Water-Reducing Admixture for concrete; and

That no calcium chloride or chloride based ingredient is used in the manufacture of PolyHeed 1020; and

That PolyHeed 1020, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.00014 percent (1.4 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That, depending on the dosage used, PolyHeed 1020 meets the requirements for a Type A, Water-Reducing and Type F, Water-Reducing, High Range Admixture specified in ASTM C 494, Corps of Engineers' CRD-C 87 and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Richard Hubbard  
Sr. Technical Marketing Specialist, BASF Corporation

BASF Corporation  
23700 Chagrin Boulevard  
Cleveland, OH 44122  
216 839-7500 ph  
[www.masterbuilders.com](http://www.masterbuilders.com)

**Master  
Builders**  
Admixture Solutions

# Transit Mix Concrete Co. Materials Laboratory

444 East Costilla Avenue  
Colorado Springs, Colorado 80903  
Ph. (719) 475-0700 Fax (719) 475-0226

2596 Hwy 96 East  
Pueblo, Colorado 81002  
Ph. (719) 543-7898 Fax (719) 583-0345

February 17, 2011

RE: Fine Concrete Aggregate  
Daniels Sand Pit  
3710 Bradley Road  
Colorado Springs, Colorado 80916

Gentlemen:

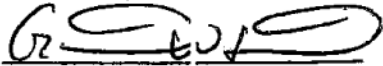
This letter presents the results of physical properties and deleterious substances tests performed on a Fine Concrete Aggregate that was sampled on January 6, 2011 at Daniels Sand Pit. The results are as follows:

Sieve Size	Percent Passing	Specifications
		ASTM C 33 Fine Concrete Agg.
9.5 mm, 3/8"	100	100
4.75 mm, No. 4	100	95 - 100
2.36 mm, No. 8	89	80 - 100
1.18 mm, No. 16	69	50 - 85
600 um, No. 30	51	25 - 60
300 um, No. 50	28	10 - 30
150 um, No. 100	8.2	0 - 10
75 um, No. 200	1.0	0 - 3
Fineness Modulus: 2.60		AASHTO T-37
Bulk Specific Gravity (SSD): 2.59 Absorption: 1.0%		AASHTO T-85
Magnesium Sulfate Soundness (Five Cycles): 2.1% Loss		AASHTO T-104
Sodium Sulfate Soundness (Five Cycles): 1.0% Loss		AASHTO T-104
Average Sand Equivalent: 87		AASHTO T-176
Organic Impurities: Clear		AASHTO T-21
Mortar Bar Expansion (ASR) - Sodium Hydroxide: 0.04%		AASHTO T-303

The above sample was tested according to American Society for Testing and Materials (ASTM) procedures D-75, D-2419, C-702, C-117, C-136, C-33, C-40, C-88, C-128 and C-1260.

If you have any questions feel free to contact me at your earliest convenience.

Respectfully Submitted,



Grant W. Smith  
Quality Control Manager



# Transit Mix Concrete Co. Materials Laboratory

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 Colorado Springs, Colorado 80903  
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## Modified ASTM C 1260 / C 1567 Tests

No. 1025D-1-6

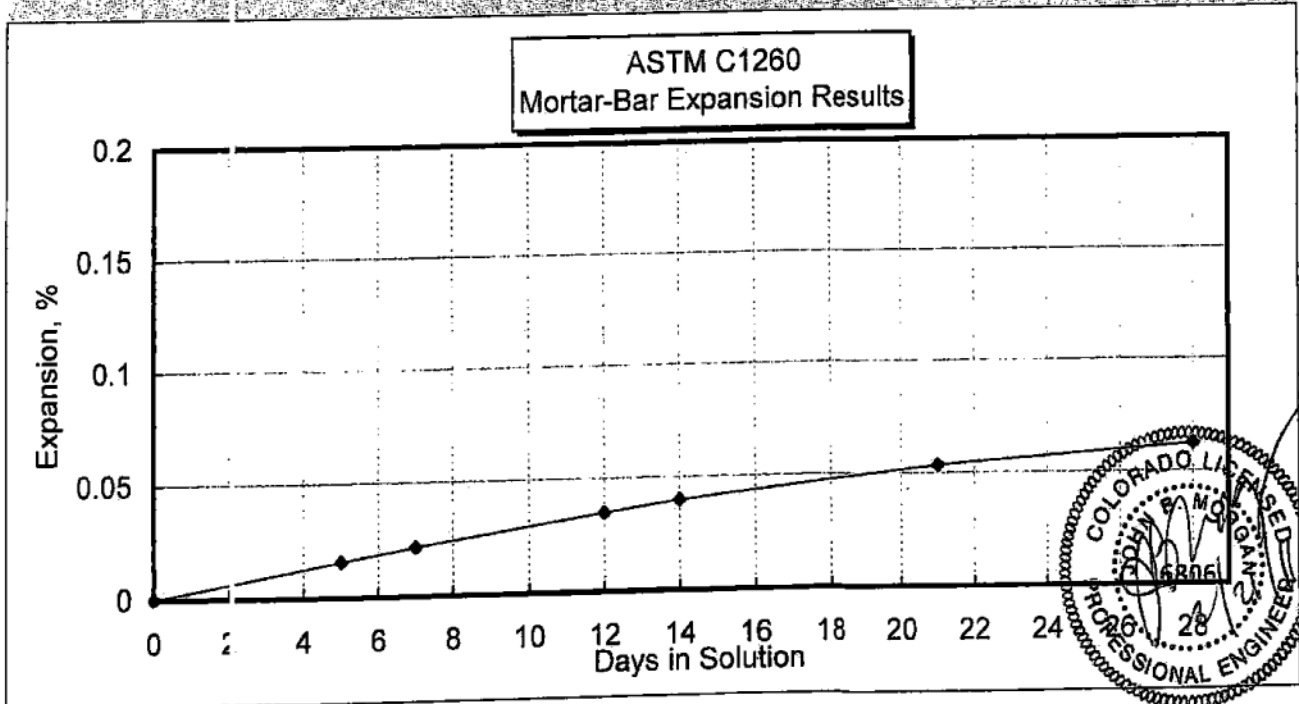
Standard Test Method for Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction

Materials	Source	Product	Blend	Batch Weights, g		Notes
Cement	Holcim Florence, CO	Type I/II	100%	440	440	Batched: 1/17/2011
Flyash						
Coarse Sand	Daniels Colo Spgs, CO	FCA	100%	990	990	
Water				206.8		
W/C Ratio				0.47		Completed: 2/16/2011

Specimen ID:		D-1, 2, 3			Mortar Bar Expansion, %			Average
Days	Date	Comparator Readings			1	2	3	
		1	2	3				
0	1/19/2011	0.1700	0.1700	0.1710				0.0000
5	1/24/2011	0.1716	0.1714	0.1727	0.0160	0.0140	0.0170	0.0157
7	1/26/2011	0.1721	0.1722	0.1732	0.0210	0.0220	0.0220	0.0217
12	1/31/2011	0.1735	0.1735	0.1745	0.0350	0.0350	0.0350	0.0350
14	2/2/2011	0.1740	0.1740	0.1750	0.0400	0.0400	0.0400	0.0400
21	2/9/2011	0.1753	0.1754	0.1764	0.0530	0.0540	0.0540	0.0537
28	2/16/2011	0.1763	0.1762	0.1772	0.0630	0.0620	0.0620	0.0623

**Average Percent Expansion at 14 days in solution (16 days of age) 0.04**

*28 Day expansion results are for informational purposes only 0.06*



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Pueblo, Colorado 81002  
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February 17, 2011

RE: No. 57/67 Coarse Concrete Aggregate  
Castle Concrete  
725C Allegheny Drive  
Colorado Springs, CO 80919

Gentlemen:

This letter presents the results of physical properties and deleterious substances tests performed on a coarse aggregate that was sampled on January 7, 2011 at Black Canyon Quarry. The results are as follows:

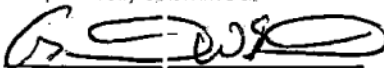
Sieve Size	Percent Passing	Specifications	
		No. 57	No. 67
37.5 mm, 1 1/2"	100	100	----
25.0 mm, 1"	100	95 - 100	100
19.0 mm, 3/4"	93	----	90 - 100
12.5 mm, 1/2"	43	25 - 60	----
9.5 mm, 3/8"	23	----	20 - 55
4.75 mm, No. 4	2.5	0 - 10	0 - 10
2.36 mm, No. 8	1.8	0 - 5	0 - 5
75 um, No. 200	1.2	0 - 1.5	0 - 1.5
Los Angeles Abrasion (Grading B):	27.0% Loss	AASHTO	T-96
Bulk Specific Gravity (SSD):	2.63 Absorption: 1.5%	AASHTO	T-85
Magnesium Sulfate Soundness (Five Cycles):	6.3% Loss	AASHTO	T-104
Sodium Sulfate Soundness (Five Cycles):	4.2% Loss	AASHTO	T-104
Clay Lumps and Friable Particles:	0	AASHTO	T-112
Fractured Particles (2 Fractured Faces):	100%		
Organic Impurities:	Clear	AASHTO	T-21
Bulk Density by Rodding:	98 lb/ft <sup>3</sup> Voids: 40%	AASHTO	T-19
Mortar Bar Expansion (ASR) - Sodium Hydroxide:	0.03%	ASTM C	1260

The above sample was tested according to American Society for Testing and Materials (ASTM) procedures D-75, D-5821, C-702, C-117, C-136, C-33, C-40, C-142, C-88, C-127, C-131, C-29 and C-1567.

The above sample conforms to the requirements of ASTM C 33, TABLE 3, *Limits for Deleterious Substances and Physical Property Requirements of Coarse Aggregate for Concrete*, (1S, 2S, 3S, 4S, 5S, 1M, 2M, 3M, 4M, 5M, 1N and 2N).

If you have any questions feel free to contact me at your earliest convenience.

Respectfully Submitted,



Grant W. Smith  
Quality Control Manager



# Transit Mix Concrete Co. Materials Laboratory

44 East Costilla Avenue  
 Colorado Springs, Colorado 80903  
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 Pueblo, Colorado 81002  
 Ph. (719) 543-7898 Fax (719) 583-0345

## Modified ASTM C 1260 / C 1567 Tests

No. 1037BC-1-7

Standard Test Method for Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction

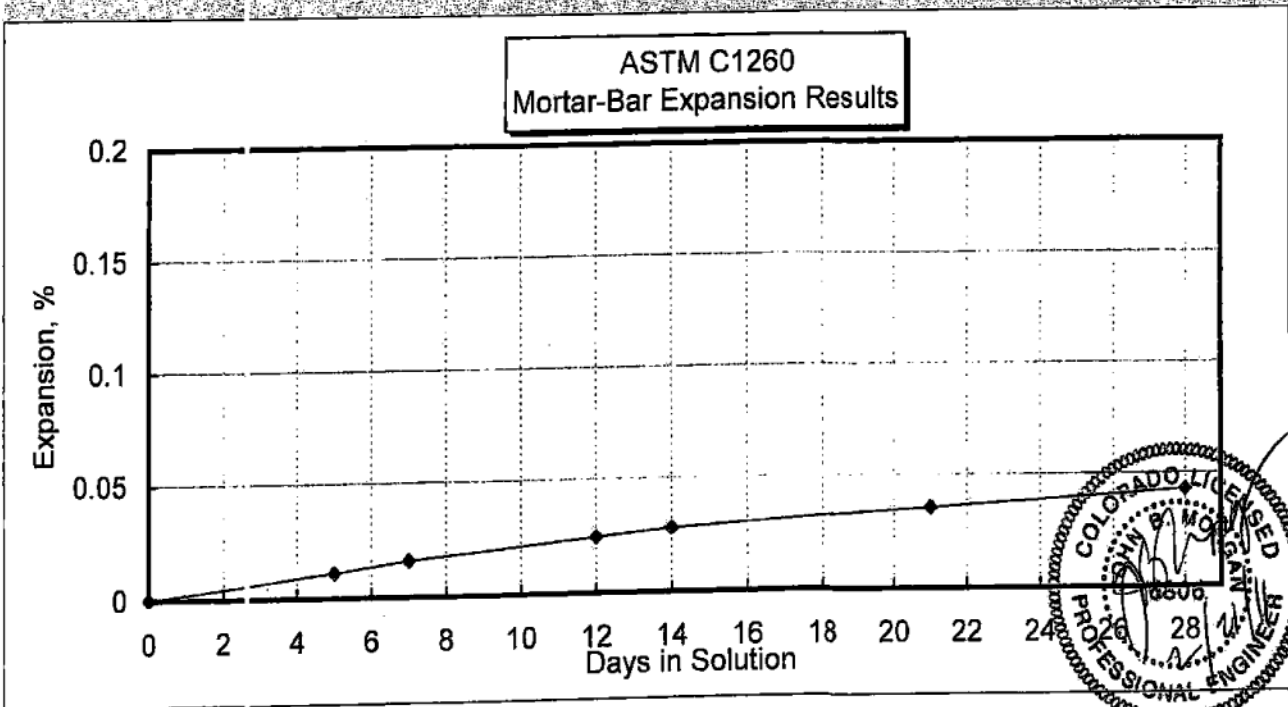
Materials	Source	Product	Blend	Batch Weights, g		Notes
Cement	Holcim Florence, CO	Type I/II	100%	440	440	Batched: 1/17/2011
Flyash						
Coarse Sand	Blk Crn Colo Spgs, CO	57/67	100%	990	990	
Water				206.8		
W/C Ratio				0.47		Completed: 2/16/2011

**Specimen ID: BC-1, 2, 3**

Days	Date	Comparator Readings			Mortar Bar Expansion, %			Average
		1	2	3	1	2	3	
0	1/19/2011	0.1699	0.1695	0.1705				0.0000
5	1/24/2011	0.1709	0.1707	0.1716	0.0100	0.0120	0.0110	0.0110
7	1/26/2011	0.1714	0.1711	0.1722	0.0150	0.0160	0.0170	0.0160
12	1/31/2011	0.1723	0.1720	0.1730	0.0240	0.0250	0.0250	0.0247
14	2/2/2011	0.1726	0.1723	0.1734	0.0270	0.0280	0.0290	0.0280
21	2/9/2011	0.1733	0.1732	0.1741	0.0340	0.0370	0.0360	0.0357
28	2/16/2011	0.1741	0.1739	0.1748	0.0420	0.0440	0.0430	0.0430

**Average Percent Expansion at 14 days in solution (16 days of age) 0.03**

*8 Day expansion results are for informational purposes only 0.04*





**WEAVER GENERAL CONSTRUCTION COMPANY**  
 3679 S. Huron St., Suite 404  
 Englewood, CO 80110  
 Phone: (303) 789-4111 FAX: (303) 789-4310

**SUBMITTAL TRANSMITTAL**

July 18, 2011

**WGC Submittal No: 03300-010.C**

**PROJECT:** **Harold Thompson Regional WRF**  
 Birdsall Rd.  
 Fountain, CO 80817  
 Job No. 2908

**ENGINEER:** **GMS, Inc.**  
 611 No. Weber St., #300  
 Colorado Springs, CO 80903  
 719-475-2935 Roger Sams

**OWNER:** **Lower Fountain Metropolitan  
 Sewage Disposal District**  
 901 S. Santa Fe Ave.  
 Fountain, CO 80817  
 719-382-5303 James Heckman

**CONTRACTOR:** **Garney Companies Inc.**  
 7911 Shaffer Parkway  
 Littleton, CO 80127

**SUBJECT:** Resubmittal: Clarifier Concrete Wall Mix 5” Slump.  
 Test data and specific mix design with stated proportions and design parameters provided as requested in review comments.

**SPEC SECTION:** 03300 - Cast-In-Place Concrete

**PREVIOUS SUBMISSION DATES:** 6/29/11

**DEVIATIONS FROM SPEC:** \_\_\_ YES X NO

**CONTRACTOR’S STAMP:** This submittal has been reviewed by Weaver General Construction and approved with respect to the means, methods, techniques, & safety precautions & programs incidental thereto. Weaver General Construction also warrants that this submittal complies with contracted documents and comprises on deviations thereto:

**Contractor’s Stamp:**

**Engineer’s Stamp:**

Date: July 18, 2011  
 Reviewed by: H.C. Myers  
 ( X ) Reviewed Without Comments  
 ( ) Reviewed With Comments

**ENGINEER’S  
 COMMENTS:** \_\_\_\_\_