

Submittal Number	004.A
Project name	4 th Street Extension – Phase 2 From Tuscola St. To Brainard St
Project Number	PW-7045
Engineer/Architect	HNTB
Prime Contractor	MAJOR CONTRACTING GROUP 15347 DALE STREET DETROIT, MI 48223
Supplier	SRM Concrete (Smyrna Ready Mix)
Specification Section Number	• City of Detroit Special Provision for Pavt Repr, Rem, Modified, Pavt Repr Nonreinf Conc, Modified, Concrete Pavement, Modified and Concrete Base Pavement, Modified • City of Detroit Specification for Sidewalks • City of Detroit Specification for Sidewalk Ramp, ADA and Detectable Warning Surface
Submittal Item	Concrete Mix Design 02
Date Submitted	08/16/2022



August 12, 2022

Major Contracting Group
P.O. Box 23740
Detroit, MI 48223
Attn: Joe Scappaticci

Re: PW-7045 4th Street Road Construction

Joe:

We submit herewith the following concrete mixture/s for the above referenced project:

P1-S25M	3500 MDOT AE w/MR – 5” Slump
P-NC0M	3500 MDOT AE w/MR – 5” Slump
P-NCM	3500 MDOT AE w/MR + NCA – 5” Slump

The above has been designed by M.D.O.T. in accordance with 2020 specifications. These mix designs have been verified in accordance with all applicable standard test methods. These materials will meet the noted criterion when handled, placed, cured, and tested in accordance with current A.S.T.M. and A.C.I. standards and recommended practices. Please refer to the attached concrete mix proportions for further detail.

In accordance with A.S.T.M. C94-05, we hereby request to be placed on the concrete test report distribution of the testing laboratory of record for purposes of quality assurance and future statistical analysis. Please forward this information to the proper individuals for approval and field reference.

Please do not hesitate to contact us if you have any questions or if we may be of additional service.

Respectfully submitted,
SMYRNA READY MIX, LLC.

A handwritten signature in black ink, appearing to read "Doug Rousseau", written in a cursive style.

Doug Rousseau
MCA Level II

This form applies only to the project listed below and is not transferable to other projects

DISTRIBUTION: ORIGINAL – Project Engineer COPIES – Contractor, Lansing CFS, Region, Inspector

CONTROL SECTION	JOB NUMBER	PROJECT LOCATION PW-7045 4th Street Road Construction	PROJECT ENGINEER	
CONCRETE SUPPLIER SRM Concrete (Smyrna Ready Mix)		PLANT LOCATION Detroit, MI / Warren, MI		PLANT NUMBER M-11 / M-24 / M-40
GRADE OF CONCRETE 3500	PSI REQUIREMENT 3500	MIX DESIGN NUMBER P1-S25M	INTENDED USE (S) Pavement	CONTRACTOR QC PLAN Y ☐ SUBMITTED? (MDOT use only) N ☐
PRIME / SUBCONTRACTOR(S) Major Contracting Group / All Sub Contractors				
STANDARD SPEC DATE 01/01/20		QC/QA SPECIAL PROVISION DATE 06/14/19	JMF EFFECTIVE DATE 08/12/22	AGG. CORRECTION 0.2%

MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	Limestone	Aggregate Type	-	Source Name	Spring Mill
Source Name	Carmeuse -Port In	Source Name	-	MDOT Source No.	47-003
MDOT Source No.	75-005	MDOT Source No.	-	MDOT Series Class	2NS
MDOT Series Class	6AA	MDOT Series Class	-	Specific Gravity (Bulk Dry)*	2.62
Specific Gravity (Bulk Dry)*	2.67	Specific Gravity (Bulk Dry)*	-	Specific Gravity (Bulk SSD) optional	2.65
Specific Gravity (Bulk SSD) optional	2.68	Specific Gravity (Bulk SSD) optional	-	Absorption	1.01%
Absorption	0.53%	Absorption	-	Fineness Modulus (FM)	2.75
Unit Weight (Dry Rodded) DR or	97	Unit Weight (Dry Rodded) DR or	-		
Unit Weight (Dry Loose) DL	91	Unit Weight (Dry Loose) DL	-		
Percent Crushed	100%	Percent Crushed	-		
MDOT Freeze-Thaw (F-T) Dilation	.008	MDOT Freeze-Thaw (F-T) Dilation	-		
Specific Gravity (Bulk Dry) of F-T	2.67	Specific Gravity (Bulk Dry) of F-T	-		
Sample*		Sample*			
Date of MDOT Freeze-Thaw Report	08/22/18	Date of MDOT Freeze-Thaw Report	08/22/18		

* If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

CEMENTITIOUS		ADMIXTURES	
Cement Source / Plant	Holcim - Alpena, MI	Air Entrainment	MasterAir AE 200 - AIR
Cement Type	Type I	Water Reducer	MasterGlenium 7925 - SUPER
Cement Specific Gravity	3.15	Water Reducer	-
Fly Ash Source (distributer & plant)	-	Water Reducer	-
Fly Ash Class	-	Accelerator	-
Fly Ash Specific Gravity	-	Other	-
Slag Cement Source	Holcim - South Chicago, IL	(Indicate Source & Product name with ticket code)	
Slag Cement Grade	100		
Slag Cement Specific Gravity	2.90	TYPE OF MIX WINTER/SUMMER	All Year
Other	-		

MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	69%	Design Slump	5"
Coarse Aggregate Weight (Dry)	1769 (1780) SSD	Specified Slump	0-6"
Intermediate Aggregate Weight (Dry)	-	Design Air %	6.5%
Fine Aggregate Weight (Dry)	1337 (1350) SSD	Specified Air %	5.5% - 8.5%
Portland Cement Weight	394	PSI minimum required	3500
Fly Ash Weight	-	Total Cementitious	526
Fly Ash Percent of Cementitious	-	Yield cu/ft	27.0 +/- 0.3
Slag Cement Weight	132		
Slag Cement Percent of Cementitious	25%		
Total Water Weight	259		
Net Water Weight	237		
WC (as designed)	0.45		
Air Entrainment (dosage)	1.0 oz/cwt.		
Water Reducer (dosage)	2.0 oz/cwt		
Other (dosage)			

I certify that all applicable standard test methods have been followed verifying the mix design and JMF:

Signature **Doug Rousseau**

Digitally signed by Doug Rousseau
DN: cn=Doug Rousseau, o=SRM Concrete, ou,
email=drousseau@smymareadymix.com, c=US
Date: 2020.11.20 09:52:13 -05'00'

MCA Level II Expiration Date: 04/15/25

Date: 08/12/22



Concrete Mix Evaluation Report

ACI 318 Required Average Strength

Mix ID P1-S25M
Mix Name MDOT P1 S25 MR
Design Strength (f'c) 3500 psi @ 28 Days
Required Strength (f'cr) 4700 psi @ 28 Days

Number Of Tests 3
Average Strength 5590 psi
St Dev 125 psi
St Dev (Modified) 125 psi

Test Date	Mix	Lab	Temp (Concrete) (°F)	Slump (in)	Air Content (%)	Unit Weight (lb/ft3)	Comp Strength (7-Day) (psi)	Acceptance Strength (28-Day) (psi)	Moving Average (psi)
03/09/2022	P1-S25M		73	6	6.2	144.8	3400	5450	
03/09/2022	P1-S25M		73	6	6.2	144.8	3180	5630	
03/09/2022	P1-S25M		73	6	6.2	144.8	3260	5690	5590

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CONTROL SECTION	JOB NUMBER	PROJECT LOCATION PW-7045 4th Street Road Construction	PROJECT ENGINEER	
CONCRETE SUPPLIER SRM Concrete (Smyrna Ready Mix)		PLANT LOCATION Detroit, MI / Warren, MI		PLANT NUMBER M-40 / M-11 / M-24
GRADE OF CONCRETE 3500	PSI REQUIREMENT 3500	MIX DESIGN NUMBER P-NC0M	INTENDED USE (S) High Early Pavement	CONTRACTOR QC PLAN Y ☐ SUBMITTED? (MDOT use only) N ☐
PRIME / SUBCONTRACTOR(S) Major Contracting Group / All Sub Contractors				
STANDARD SPEC DATE 01/01/20		QC/QA SPECIAL PROVISION DATE 06/14/19	JMF EFFECTIVE DATE 08/12/22	AGG. CORRECTION 0.2%

MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	Limestone	Aggregate Type	-	Source Name	Spring Mill
Source Name	Carmeuse -Port In	Source Name	-	MDOT Source No.	47-003
MDOT Source No.	75-005	MDOT Source No.	-	MDOT Series Class	2NS
MDOT Series Class	6AA	MDOT Series Class	-	Specific Gravity (Bulk Dry)*	2.62
Specific Gravity (Bulk Dry)*	2.67	Specific Gravity (Bulk Dry)*	-	Specific Gravity (Bulk SSD) optional	2.65
Specific Gravity (Bulk SSD) optional	2.68	Specific Gravity (Bulk SSD) optional	-	Absorption	1.01%
Absorption	0.53%	Absorption	-	Fineness Modulus (FM)	2.75
Unit Weight (Dry Rodded) DR or	97	Unit Weight (Dry Rodded) DR or	-		
Unit Weight (Dry Loose) DL	91	Unit Weight (Dry Loose) DL	-		
Percent Crushed	100%	Percent Crushed	-		
MDOT Freeze-Thaw (F-T) Dilation	.008	MDOT Freeze-Thaw (F-T) Dilation	-		
Specific Gravity (Bulk Dry) of F-T	2.67	Specific Gravity (Bulk Dry) of F-T	-		
Sample*		Sample*			
Date of MDOT Freeze-Thaw Report	08/22/18	Date of MDOT Freeze-Thaw Report	08/22/18		

* If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

CEMENTITIOUS		ADMIXTURES	
Cement Source / Plant	Holcim - Alpena, MI	Air Entrainment	MasterAir AE 200 - AIR
Cement Type	Type IL	Water Reducer	MasterGlenium 7925 - SUPER
Cement Specific Gravity	3.15	Water Reducer	-
Fly Ash Source (distributer & plant)	-	Water Reducer	-
Fly Ash Class	-	Accelerator	-
Fly Ash Specific Gravity	-	Other	-
Slag Cement Source	-	(Indicate Source & Product name with ticket code)	
Slag Cement Grade	-		
Slag Cement Specific Gravity	-	TYPE OF MIX WINTER/SUMMER	All Year
Other	-		

MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	68%	Design Slump	5"
Coarse Aggregate Weight (Dry)	1771 (1780 SSD)	Specified Slump	0-6"
Intermediate Aggregate Weight (Dry)	-	Design Air %	6.5%
Fine Aggregate Weight (Dry)	1168 (1180 SSD)	Specified Air %	5.5% - 8.5%
Portland Cement Weight	658	PSI minimum required	3500
Fly Ash Weight	-	Total Cementitious	658
Fly Ash Percent of Cementitious	-	Yield cu/ft	27.0 +/- 0.3
Slag Cement Weight	-		
Slag Cement Percent of Cementitious	-	I certify that all applicable standard test methods have been followed verifying the mix design and JMF:	
Total Water Weight	284	Signature	Doug Rousseau
Net Water Weight	263		
WC (as designed)	.40		
Air Entrainment (dosage)	1.0 oz/cwt	MCA Level II Expiration Date:	04/15/25
Water Reducer (dosage)	2.0 oz/cwt	Date:	08/12/22
Other (dosage)	-		

Digitally signed by Doug Rousseau
DN: cn=Doug Rousseau, o=SRM Concrete, ou,
email=drousseau@smymareadymix.com, c=US
Date: 2020.11.20 09:52:13 -05'00'



Concrete Mix Evaluation Report

ACI 318 Required Average Strength

Mix ID P-NC0M
Mix Name MDOT P-NC W/ MR
WO/NCA
Design Strength (f'c) 3500 psi @ 28 Days
Required Strength (f'cr) 4700 psi @ 28 Days

Number Of Tests 3
Average Strength 6177 psi
St Dev 40 psi
St Dev (Modified) 40 psi

Test Date	Mix	Temp (Concrete) (°F)	Slump (in)	Air Content (%)	Unit Weight (lb/ft3)	Comp Strength (7-Day) (psi)	Acceptance Strength (28-Day) (psi)	Moving Average (psi)
04/04/2022	P-NC0M	60	5	7.6	142	4520	6130	
04/04/2022	P-NC0M	60	5	7.6	142	4580	6200	
04/04/2022	P-NC0M	60	5	7.6	142	4700	6200	6177

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CONCRETE SUPPLIER SRM Concrete (Smyrna Ready Mix)		PLANT LOCATION Detroit, MI / Warren, MI		PLANT NUMBER M-40 / M-11 / M-24
GRADE OF CONCRETE 3500	PSI REQUIREMENT 3500	MIX DESIGN NUMBER P-NCM	INTENDED USE (S) High Early Pavement	CONTRACTOR QC PLAN Y ☐ SUBMITTED? (MDOT use only) N ☐
PRIME / SUBCONTRACTOR(S) Major Contracting Group / All Sub Contractors				
STANDARD SPEC DATE 01/01/20		QC/QA SPECIAL PROVISION DATE 06/14/19	JMF EFFECTIVE DATE 08/12/22	AGG. CORRECTION 0.2%

MATERIAL DESIGN SOURCES AND PROPERTIES

COARSE AGGREGATE		INTERMEDIATE AGGREGATE		FINE AGGREGATE	
Aggregate Type	Limestone	Aggregate Type	-	Source Name	Spring Mill
Source Name	Carmeuse -Port In	Source Name	-	MDOT Source No.	47-003
MDOT Source No.	75-005	MDOT Source No.	-	MDOT Series Class	2NS
MDOT Series Class	6AA	MDOT Series Class	-	Specific Gravity (Bulk Dry)*	2.62
Specific Gravity (Bulk Dry)*	2.67	Specific Gravity (Bulk Dry)*	-	Specific Gravity (Bulk SSD) optional	2.65
Specific Gravity (Bulk SSD) optional	2.68	Specific Gravity (Bulk SSD) optional	-	Absorption	1.01%
Absorption	0.53%	Absorption	-	Fineness Modulus (FM)	2.75
Unit Weight (Dry Rodded) DR or	97	Unit Weight (Dry Rodded) DR or	-		
Unit Weight (Dry Loose) DL	91	Unit Weight (Dry Loose) DL	-		
Percent Crushed	100%	Percent Crushed	-		
MDOT Freeze-Thaw (F-T) Dilation	.008	MDOT Freeze-Thaw (F-T) Dilation	-		
Specific Gravity (Bulk Dry) of F-T	2.67	Specific Gravity (Bulk Dry) of F-T	-		
Sample*		Sample*			
Date of MDOT Freeze-Thaw Report	08/22/18	Date of MDOT Freeze-Thaw Report	08/22/18		

* If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to the use on Department projects.

CEMENTITIOUS		ADMIXTURES	
Cement Source / Plant	Holcim - Alpena, MI	Air Entrainment	MasterAir - AE 200 - AIR
Cement Type	Type IL	Water Reducer	MasterGlenium 7925 - SUPER
Cement Specific Gravity	3.15	Water Reducer	-
Fly Ash Source (distributer & plant)	-	Water Reducer	-
Fly Ash Class	-	Accelerator	Masterset AC 534 - NC ACCEL
Fly Ash Specific Gravity	-	Other	-
Slag Cement Source	-	(Indicate Source & Product name with ticket code)	
Slag Cement Grade	-		
Slag Cement Specific Gravity	-	TYPE OF MIX WINTER/SUMMER	All Year
Other	-		

MIX PROPORTIONS

Volume of Coarse Aggregate (DR)	68%	Design Slump	5"
Coarse Aggregate Weight (Dry)	1769 (1780 SSD)	Specified Slump	0-6"
Intermediate Aggregate Weight (Dry)	-	Design Air %	6.5%
Fine Aggregate Weight (Dry)	1168 (1180 SSD)	Specified Air %	5.5% - 8.5%
Portland Cement Weight	658	PSI minimum required	3500
Fly Ash Weight	-	Total Cementitious	658
Fly Ash Percent of Cementitious	-	Yield cu/ft	27.0 +/- 0.3
Slag Cement Weight	-		
Slag Cement Percent of Cementitious	-	I certify that all applicable standard test methods have been followed verifying the mix design and JMF:	
Total Water Weight	286	Signature	Doug Rousseau
Net Water Weight	263	Digitally signed by Doug Rousseau DN: cn=Doug Rousseau, o=SRM Concrete, ou, email=drousseau@smymareadymix.com, c=US Date: 2020.11.20 09:52:13 -05'00'	
WC (as designed)	.40	MCA Level II Expiration Date:	04/15/25
Air Entrainment (dosage)	1.0 oz/cwt	Date:	08/12/22
Water Reducer (dosage)	4 oz/cwt		
Other (dosage)	10-90 oz/cwt		



Concrete Mix Evaluation Report

ACI 318 Required Average Strength

Mix ID P-NCM
 Mix Name MDOT P-NC PAVEMENT
 PATCH MR
 Design Strength (f'c) 3500 psi @ 28 Days
 Required Strength (f'cr) 4700 psi @ 28 Days

Number Of Tests 6
 Average Strength 6390 psi
 St Dev 1204 psi
 St Dev (Modified) 1204 psi

Test Date	Mix	Lab	Temp (Concrete) (°F)	Slump (in)	Air Content (%)	Unit Weight (lb/ft3)	Comp Strength (7-Day) (psi)	Acceptance Strength (28-Day) (psi)	Moving Average (psi)
02/10/2022	P-NCM		58	5.5	7.2	140	4100	4890	
03/31/2022	P-NCM		68	5	5.5		4540	6370	
04/02/2022	P-NCM		69	5	6.6			4950	5403
04/04/2022	P-NCM		60	5	5.6	145.6	5580	7450	6257
04/04/2022	P-NCM		60	5	5.6	145.6	5840	7360	6587
04/04/2022	P-NCM		60	5	5.6	145.6	5380	7320	7377



44265 Plymouth Oaks Blvd.
Plymouth, MI 48170
T 734-455-8600
F 734-455-8608
www.ttlassoc.com

May 16, 2022

TTL Project No. 2230501

Mr. Doug Rousseau
Smyrna Ready Mix.
12100 Wayne Road
Romulus, Michigan 48174

RE: Concrete Plant Inspection for SRM, Plant 817, Detroit, MI

Dear Mr. Rousseau:

TTL Associates, Inc. (TTL) on behalf of Smyrna Ready Mix (SRM) performed a concrete plant inspection of the SRM Plant No. 817 located at 500 Seven Mile East in Detroit, Michigan on May 12, 2022.

This inspection was performed by Mr. Jeffrey Elliott, PE who is a National Ready Mixed Concrete Association (NRMCA) Inspecting Engineer along with the NRMCA's Plant Certification Checklist, Revision 12. Based on this inspection, it has been determined that SRM Plant No.817 is in conformance with the applicable NRMCA requirements.

If you have any questions or require further information, please feel free to contact us.

Respectfully submitted,

TTL Associates, Inc.

Jeffrey S. Elliott, P.E.
Vice President
(NRMCA Inspecting Engineer #803871)

Attachment



PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

SCALE CALIBRATION REPORT

82007

TECHNICIAN: <i>Alvin Lulle / Mike Lulle</i>		DATE: <i>3-14-22</i> Next Due:	
SCALE MFG: ALKON		CUSTOMER: SRM KOENIG FUEL & SUPPLY CO.	
MODEL NO: Spectrum		ADDRESS: 500 E. SEVEN MILE	
SERIAL NO: N/A2			
LOCATION: Agg Scale Plt. 1		DETROIT, MI 48203	
CAPACITY/RESOLUTION: 36,000 X 20 LB			
CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR – UNABLE TO CAL.			
UNITS OF MEASURE: ☒ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:			
CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE			
APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:
	BEFORE	AFTER	
0 LB	0	0	<i>0N16, 0N77, 0N7A, 115, 22217, 22227 @ 1000 Lb</i>
2000LB	<i>2000</i>	<i>2000</i>	
4000LB	<i>4000</i>	<i>4000</i>	
6000LB	<i>6000</i>	<i>6000</i>	
12,000 LB	<i>12,020</i>	<i>12,020</i>	
18,000 LB	<i>18,020</i>	<i>18,020</i>	
24,000 LB	<i>24,140</i>	<i>24,140</i>	
30,000 LB	<i>30,000</i>	<i>30,000</i>	
36,000 LB	<i>36,020</i>	<i>36,020</i>	

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

- SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
- DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILABLE UPON REQUEST.
- CALIBRATION COMPLIES WITH MSC INSTRUCTION QW 4.11.02, ISO IEC 17025:2017 AND WITH REFERENCE TO NIST HANDBOOK 44 WHERE APPLICABLE.
- RESULTS OF THIS CALIBRATION RELATE ONLY TO THE ITEMS SPECIFIED ABOVE.
- THIS REPORT IS NOT TO BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN PERMISSION OF MSC.
- ALL CALIBRATIONS PERFORMED UNDER NORMAL WORKING ENVIRONMENTAL CONDITIONS UNLESS NOTED UNDER COMMENTS.
- THE UNCERTAINTY CALCULATIONS ARE AVAILABLE UPON WRITTEN REQUEST FROM THE CUSTOMER.
- END OF REPORT.



SCALE CALIBRATION REPORT

82006

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

1. SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
2. DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILABLE UPON REQUEST.
3. CALIBRATION COMPLIES WITH MSC INSTRUCTION QW 4.11.02, ISO IEC 17025:2017 AND WITH REFERENCE TO NIST HANDBOOK 44 WHERE APPLICABLE.
4. RESULTS OF THIS CALIBRATION RELATE ONLY TO THE ITEMS SPECIFIED ABOVE.
5. THIS REPORT IS NOT TO BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN PERMISSION OF MSC.
6. ALL CALIBRATIONS PERFORMED UNDER NORMAL WORKING ENVIRONMENTAL CONDITIONS UNLESS NOTED UNDER COMMENTS.
7. THE UNCERTAINTY CALCULATIONS ARE AVAILABLE UPON WRITTEN REQUEST FROM THE CUSTOMER.
8. END OF REPORT.



This letter is to certify that the following Master Builders Solutions dispensing systems installed at this location were tested and meet the specifications of ASTM C-94 section 9.4.

ASTM C-94 section 9.4: Chemical admixtures in powdered form shall be measured by mass. Liquid chemical admixtures shall be batched by mass or volume. Admixtures measured by either mass or volume, shall be batched with an accuracy of plus or minus 3 % of the total amount required or plus or minus the amount or dosage required for 100 lb [50 kg] of hydraulic cement, whichever is greater.

ADMIXTURE (PRODUCT NAME)	TARGET AMOUNT	ACTUAL READING	PERCENT VARIANCE
1. Masterlife CI 30	128 oz.	128 oz.	----
2. Master Glenium7925	32 oz.	32 oz.	----
3. Masterset DELVO	48 oz.	48 oz.	
4. Masterlife SRA 035	128 oz	128 oz.	----
5. MasterSet AC 534 V1	96 oz.	96 oz.	-----
6. MasterAir AE 200	48 oz.	48 oz.	-----
7. MasterAir AE 400	32 oz.	32 oz.	

CUSTOMER: Smyrna Ready Mix

PLANT LOCATION: SRM Detroit, MI (7 Mile)

TESTED AND APPROVED BY *Bobby Cassidy* DATE: 6/1/2022

CUSTOMER VERIFICATION BY: _____ DATE: _____



Water Meter Accuracy Verification

55 Gallon Drum Calibration Sheet

90 Day Requirement for Volumetric Water Batching Devices per MDOT (sect 601.03 A. 1. a.)

Plant Information

Plant Name:	Koenig	Meter Type:	Flow
Plant Number:	1	Meter Brand name:	Badger
MDOT Plant Number:	M-11	Plant Meter No.:	No. 1
Water Temperature:	75°F	Meter Serial No.:	
Ambient Temperature:	75°F	Meter Setting:	0.0413
		Pulse Count:	1.0 Gallons

Date Information

Calibration Date: 6/11/2022
Next Calibration Date: 9/9/2022

Test 1

Metered Quantity	50 gallons	Measure Quantity	45 gallons
Meter Setting	0.0413	Adjusted Setting	0.0372

Test 2

Metered Quantity	50 gallons	Measure Quantity	50 gallons
Meter Setting	0.0372	Adjusted Setting	Not Required

Test 3

Metered Quantity	50 gallons	Measure Quantity	50 gallons
Meter Setting	0.0372	Adjusted Setting	Not Required

I certify the above information and test results are accurate.

Mark Groves

Test Performed By:

Robert Esch

Test Witnessed By:

Signature:

Date

Signature:

Date

06/11/2022

6/11/22



44265 Plymouth Oaks Blvd.
Plymouth, MI 48170
T 734-455-8600
F 734-455-8608
www.ttlassoc.com

May 16, 2022

TTL Project No. 2230501

Mr. Doug Rousseau
Smyrna Ready Mix.
12100 Wayne Road
Romulus, Michigan 48174

RE: Concrete Plant Inspection for SRM, Plant 818, Warren, MI

Dear Mr. Rousseau:

TTL Associates, Inc. (TTL) on behalf of Smyrna Ready Mix (SRM) performed a concrete plant inspection of the SRM Plant No. 818 located at 23055 Groesbeck Highway in Warren, Michigan on May 12, 2022.

This inspection was performed by Mr. Jeffrey Elliott, PE who is a National Ready Mixed Concrete Association (NRMCA) Inspecting Engineer along with the NRMCA's Plant Certification Checklist, Revision 12. Based on this inspection, it has been determined that SRM Plant No.818 is in conformance with the applicable NRMCA requirements.

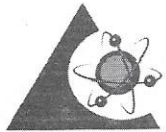
If you have any questions or require further information, please feel free to contact us.

Respectfully submitted,

TTL Associates, Inc.

Jeffrey S. Elliott, P.E.
Vice President
(NRMCA Inspecting Engineer #803871)

Attachment



PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

SCALE CALIBRATION REPORT

82067

TECHNICIAN: <i>Alex Bulko / Mike Bulko</i>	DATE: <i>3-21-22</i> Next Due:
SCALE MFG: ALKON	CUSTOMER: SRM WARREN EASTSIDE CONCRE
MODEL NO: Spectrum	ADDRESS: 23055 GROESBECK HWY
SERIAL NO: CBS61566	
LOCATION: Cement Scale	WARREN, MI 48089

CAPACITY/RESOLUTION: 10,000 X 5 LB

CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR - UNABLE TO CAL.

UNITS OF MEASURE: ☒ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:

CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE

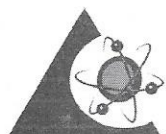
APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:			
	BEFORE	AFTER				
0 LB	0	0	<i>0N76, 0N77, 0N7A, 115, 22222, 22217 @ 1000Lb</i>			
2000LB	<i>2000</i>	<i>2000</i>				
4000LB	<i>4000</i>	<i>4000</i>				
6000LB	<i>6000</i>	<i>6000</i>				
			Shift Test: Before <u>L/C Cable/Indicator</u> After			
			Position 1:	1	2	NA
			Position 2:			
			Position 3:			
			Position 4:			
				3	4	

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

- SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
- DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILIABLE UPON REQUEST.
- CALIBRATION COMPLIES WITH MSC INSTRUCTION QW 4.11.02, ISO IEC 17025:2017 AND WITH REFERENCE TO NIST HANDBOOK 44 WHERE APPLICABLE.
- RESULTS OF THIS CALIBRATION RELATE ONLY TO THE ITEMS SPECIFIED ABOVE.
- THIS REPORT IS NOT TO BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN PERMISSION OF MSC.
- ALL CALIBRATIONS PERFORMED UNDER NORMAL WORKING ENVIORNMENTAL CONDITIONS UNLESS NOTED UNDER COMMENTS.
- THE UNCERTAINTY CALCULATIONS ARE AVAILABLE UPON WRITTEN REQUEST FROM THE CUSTOMER.
- END OF REPORT.



PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

SCALE CALIBRATION REPORT

82068

TECHNICIAN: <i>Alvin Lull, M.L. Lull</i>	DATE: <i>3-21-22</i> Next Due:
SCALE MFG: ALKON	CUSTOMER: SRM WARREN EASTSIDE CONCRETE
MODEL NO: Spectrum	ADDRESS: 23055 GROESBECK HWY
SERIAL NO: CBS61566	
LOCATION: Agg Scale	WARREN, MI 48089

CAPACITY/RESOLUTION: 36,000 X 20 LB

CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR - UNABLE TO CAL.

UNITS OF MEASURE: ☒ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:

CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE

APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:
	BEFORE	AFTER	
0 LB	0	0	<i>0N76, 0N77, 0N7A, 115, 22222, 22217 C1000Lb</i>
2000LB	<i>2000</i>	<i>2000</i>	
4000LB	<i>4000</i>	<i>4000</i>	
6000LB	<i>6000</i>	<i>6000</i>	
12,000 LB	<i>12,000</i>	<i>12,000</i>	
18,000 LB	<i>18,000</i>	<i>18,000</i>	
24,000 LB	<i>23,980</i>	<i>23,980</i>	
30,000 LB	<i>29,980</i>	<i>29,980</i>	
36,000 LB	<i>35,980</i>	<i>35,980</i>	

Shift Test:	Before	L/C Cable/Indicator		After
Position 1:	<i>NA</i>	1	2	<i>NA</i>
Position 2:				
Position 3:				
Position 4:		3	4	

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

- SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
- DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILABLE UPON REQUEST.
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- THE UNCERTAINTY CALCULATIONS ARE AVAILABLE UPON WRITTEN REQUEST FROM THE CUSTOMER.
- END OF REPORT.



This letter is to certify that the following Master Builders Solutions dispensing systems installed at this location were tested and meet the specifications of ASTM C-94 section 9.4.

ASTM C-94 section 9.4: Chemical admixtures in powdered form shall be measured by mass. Liquid chemical admixtures shall be batched by mass or volume. Admixtures measured by either mass or volume, shall be batched with an accuracy of plus or minus 3 % of the total amount required or plus or minus the amount or dosage required for 100 lb [50 kg] of hydraulic cement, whichever is greater.

ADMIXTURE (PRODUCT NAME)	TARGET AMOUNT	ACTUAL READING	PERCENT VARIANCE
1. MasterAir AE 200	40 oz.	40 oz.	----
2. MasterSet AC 534	32 oz.	32 oz.	----
3. MasterGlenium 7925	40 oz.	40 oz.	-----
4. MasterSet DELVO	32 oz.	32 oz.	----
5. MasterAir AE 400	32 oz.	32 oz.	----

	----	-----	----
	-----	-----	----
	-----	-----	-----

CUSTOMER: Smyrna Ready Mix

PLANT LOCATION: SRM Warren (Eastside)

TESTED AND APPROVED BY Bobby Cassidy DATE: 06- 09-2022

CUSTOMER VERIFICATION BY: DATE: 6-9-22

**Water Meter Accuracy Verification
55 Gallon Drum Calibration Sheet**

90 Day Requirement for Volumetric Water Batching Devices per MDOT (sect 601.03 A. 1. a.)

Plant Information

Plant Name:	Eastside	Meter Type:	Flow
Plant Number:	818	Meter Brand name:	Badger
MDOT Plant Number:	M-24	Plant Meter No.:	No. 1
Water Temperature:	55F	Meter Serial No.:	123456
Ambient Temperature:	58F	Meter Setting:	0.2445
		Pulse Count:	16 oz

Date Information

Calibration Date:	6/9/2022	Previous Calibration Date:	3/10/2022
Next Calibration Date:	9/9/2022		

Test 1

Metered Quantity	50 gallons	Measure Quantity	50 gallons
Meter Setting	0.2445	Adjusted Setting	Not Required

Test 2

Metered Quantity	50 gallons	Measure Quantity	50 gallons
Meter Setting	0.2445	Adjusted Setting	Not Required

Test 3

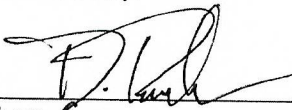
Metered Quantity	Not Required	Measure Quantity	Not Required
Meter Setting	Not Required	Adjusted Setting	Not Required

I certify the above information and test results are accurate, no adjustment to the meter was required at this time.

Duane Poucher

Test Performed By:

Signature:



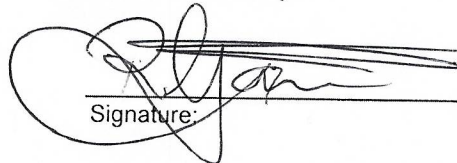
Date

6-9-22

Randy Garvin

Test Witnessed By:

Signature:



Date

6-9-22

National Ready Mixed Concrete Association



Certificate of Conformance For Concrete Production Facilities

THIS IS TO CERTIFY THAT

McCoig Springwells Plant 820, Detroit, MI

SRM Concrete

has been inspected by the undersigned licensed professional engineer for conformance with the requirements of the *Check List for Ready Mixed Concrete Production Facilities*. As of the inspection date, the facilities met the requirements for production by

***Central Mixing with Automatic Batching and Recordings of
Cementitious Materials, Aggregate, Water, and Chemical Admixtures***



A handwritten signature in blue ink, likely of Ruben E. Ramos, written over a horizontal line.

Signature of Licensed Professional Engineer

March 16, 2021

Inspection Date

March 16, 2023

Certification Expiration Date

This company will maintain these facilities in compliance with the *Check List* requirements and will correct promptly any deficiencies which develop.

A handwritten signature in black ink, likely of a company official, written over a horizontal line.

Signature of Company Official

A handwritten signature in black ink, likely of the Plant Manager, written over a horizontal line.

Title of Company Official

NOTICE: The Check List indicates only that plant facilities are satisfactory for the production of concrete when properly operated. Conformance of the concrete itself with specification requirements must be verified by usual inspection methods in accordance with sales agreements.

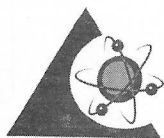
This certificate is issued by the National Ready Mixed Concrete Association on verification that the production facility conforms to the requirements of the NRMCA Certification of Ready Mixed Concrete Production Facilities, QC3. Unauthorized reproduction or misuse of this certificate may result in legal action.

Plant ID #: 818491

Certification ID #: 27364

© 1965, 1992, 2001, 2002, 2006, 2007, 2012

National Ready Mixed Concrete Association 66 Canal Center Plaza, Suite 250 • Alexandria • Virginia 22314



PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

SCALE CALIBRATION REPORT

82615

TECHNICIAN: <i>Alan Lull / Mike Lull</i>	DATE: <i>4-6-21</i> Next Due:
SCALE MFG: Cardinal	CUSTOMER: SRM MC COIG CONCRETE(MAIN
MODEL NO: 201	ADDRESS: 1441 SPRINGWELLS COURT
SERIAL NO: E03021-0042	
LOCATION: Water Scale	DETROIT, MI 48209

CAPACITY/RESOLUTION: 4000 X 2 LB

CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR - UNABLE TO CAL.

UNITS OF MEASURE: ☒ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:

CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE

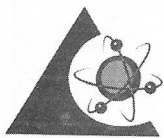
APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:				
	BEFORE	AFTER					
0 LB	0	0	0N17, 22217, 103, 104 & 1000 Lb				
1000LB	1000	1000					
2000LB	2000	2000					
4000LB	4000	4000					

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

- SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
- DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILIABLE UPON REQUEST.
- CALIBRATION COMPLIES WITH MSC INSTRUCTION QW 4.11.02, ISO IEC 17025:2017 AND WITH REFERENCE TO NIST HANDBOOK 44 WHERE APPLICABLE.
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- THE UNCERTAINTY CALCULATIONS ARE AVAILABLE UPON WRITTEN REQUEST FROM THE CUSTOMER.
- END OF REPORT.



PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

SCALE CALIBRATION REPORT

82616

TECHNICIAN: <i>Alex Lulla / Mike Lulla</i>	DATE: <i>4-6-22</i> Next Due:
SCALE MFG: Cardinal	CUSTOMER: SRM MC COIG CONCRETE(MAIN
MODEL NO: 201	ADDRESS: 1441 SPRINGWELLS COURT
SERIAL NO: E03021-0048	
LOCATION: Cement Scale	DETROIT, MI 48209

CAPACITY/RESOLUTION: 10,000 X 5 LB

CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR - UNABLE TO CAL.

UNITS OF MEASURE: ☒ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:

CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE

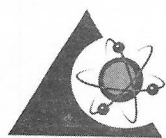
APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:
	BEFORE	AFTER	
0 LB	0	0	<i>0N76, 0N77, 22227, 22217, 103, 104 @ 1000 Lb</i>
2000LB	<i>1995</i>	<i>1995</i>	
4000LB	<i>4005</i>	<i>4005</i>	
6000LB	<i>6000</i>	<i>6000</i>	Shift Test: Before <u>L/C Cable/Indicator</u> After
			Position 1: <i>NA</i> 1 2 <i>NA</i>
			Position 2: 3 4
			Position 3:
			Position 4:

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

- SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
- DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILABLE UPON REQUEST.
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- END OF REPORT.



PJLA
Calibration
Accreditation # 59303

METRO SCALE COMPANY, INC.
17670 ALLEN ROAD, MELVINDALE, MI 48122
PHONE: (313) 382-6190 FAX: (313) 382-6194

SCALE CALIBRATION REPORT

82614

TECHNICIAN: <i>Alex Lull / Mike Lull</i>		DATE: <i>4-6-22</i> Next Due:			
SCALE MFG: Cardinal		CUSTOMER: SRM MC COIG CONCRETE(MAIN)			
MODEL NO: 201		ADDRESS: 1441 SPRINGWELLS COURT			
SERIAL NO: E03021-0032					
LOCATION: Agg Scale		DETROIT, MI 48209			
CAPACITY/RESOLUTION: 40,000 X 20 LB					
CONDITION PRIOR TO CALIBRATION: ☒ ACCEPTABLE ☐ NEEDS REPAIR - UNABLE TO CAL.					
UNITS OF MEASURE: ☒ POUNDS ☐ KG ☐ GRAMS ☐ OTHER:					
CALIBRATED TO HANDBOOK 44 TOLERANCE: ☐ YES ☐ NO ☐ LEGAL FOR TRADE					
APPLIED WEIGHT	TEST READING		SERIAL NUMBERS OF WEIGHTS USED:		
	BEFORE	AFTER			
0 LB	0	0	<i>0N76, 0N77, 22212, 22217, 103, 104 @ 1000 Lb</i>		
2000LB	2000	2000			
4000LB	4000	4000			
6000LB	6000	6000	Shift Test: Before	L/C Cable/Indicator	After
12,000 LB	12,000	12,000	Position 1: <i>NA</i>	1	2
18,000 LB	18,100	18,100	Position 2:		
24,000 LB	24,020	24,020	Position 3:		
30,000 LB	30,260	30,260	Position 4:	3	4
36,000 LB	36,080	36,080			

COMMENTS:

SCALE OK FOR USE ☒ YES ☐ NO

NOTES:

1. SCALE TOLERANCE AS APPLIED TO NIST HANDBOOK 44 REQUIREMENTS.
2. DEVICES LISTED ON THIS SHEET WERE CHECKED AND CALIBRATED WITH WEIGHTS TRACEABLE TO SI THROUGH N.I.S.T. CERTIFICATIONS FOR TEST WEIGHTS ARE AVAILABLE UPON REQUEST.
3. CALIBRATION COMPLIES WITH MSC INSTRUCTION QW 4.11.02, ISO IEC 17025:2017 AND WITH REFERENCE TO NIST HANDBOOK 44 WHERE APPLICABLE.
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7. THE UNCERTAINTY CALCULATIONS ARE AVAILABLE UPON WRITTEN REQUEST FROM THE CUSTOMER.
8. END OF REPORT.



This letter is to certify that the following Master Builders Solutions dispensing systems installed at this location were tested and meet the specifications of ASTM C-94 section 9.4.

ASTM C-94 section 9.4: Chemical admixtures in powdered form shall be measured by mass. Liquid chemical admixtures shall be batched by mass or volume. Admixtures measured by either mass or volume, shall be batched with an accuracy of plus or minus 3 % of the total amount required or plus or minus the amount or dosage required for 100 lb [50 kg] of hydraulic cement, whichever is greater.

ADMIXTURE (PRODUCT NAME)	TARGET AMOUNT	ACTUAL READING	PERCENT VARIANCE
1. MasterSet AC 534 V1	96 oz.	96 oz.	----
2. MasterGlenium 7925	128 oz.	128 oz.	-----
3. MasterSet DELVO	32 oz.	32 oz.	----
4. MasterAir AE 200	64 oz.	64 oz.	----
5. MasterAir AE 400	32 oz.	32 oz.	----
6. CI 30	48 oz.	48 oz.	
7. SRA 035	64 oz.	64 oz.	
8. Z 60	128 oz.	128 oz.	
9. VMA 362	96 oz.	96 oz.	

CUSTOMER: Smyrna Ready Mix

PLANT LOCATION: SRM Springwells

TESTED AND APPROVED BY *Bobby Cassidy* DATE: 6/1/2022

CUSTOMER VERIFICATION BY: _____ DATE: _____



Certified to
NSF/ANSI CAN 61
& NSF/ANSI 372

Brand: OneCem®
Material: Blended Cement
Type: IL (10)

Material Certification Report

Test Period: 01-Jun-2022 to 30-Jun-2022

Date Issued: 15-Jul-2022

Certification

This cement meets the specifications of ASTM C595 and AASHTO M 240 for Type IL cement.

General Information

Supplier: Holcim (US) Inc.
Address: 8700 West Bryn Mawr Ave
Chicago, IL 60631

Source Location: Alpena Plant
1435 Ford Ave
Alpena, MI 49707

Contact: Janelle Baier / (989) 358-3253

The following is based on average test data during the test period. The data is typical of product shipped from this source; individual shipments may vary.

Test Data on ASTM Standard Requirements

Chemical			Physical		
Item	Limit ¹	Result	Item	Limit ¹	Result
Sulfate as SO ₃ (%) ²	3.0 max	2.6	+45 um (No. 325) Sieve (%)	-	2.8
Loss on Ignition (%)	10.0 max	5.1	Blaine Fineness (m ² /kg)	-	465
			Density (g/cm ³) (Specific Gravity)	-	3.11
CaCO ₃ in Limestone (%)	70.0 min	89.1	Autoclave (%) (C151)	-0.20-0.80	0.01
Equivalent Alkalies (%)	-	0.53	Initial Vicat (minutes)	45-420	122
			Air Content (%)	12 max	7
			Compressive Strength MPa (psi)		
			3 day	13.0 (1890) min	26.3 (3810)
			7 day	20.0 (2900) min	32.0 (4640)
			28 day (previous month's data)	25.0 (3630) min	40.5 (5870)
			Mortar Bar Expansion (%) (C1038)	0.020 max	0.002

Test Data on ASTM Optional Requirements

Chemical			Physical		
Item	Limit ¹	Result	Item	Limit ¹	Result
Limestone (%) (ASTM)	12.5 max	8.8			

Notes (*1-9)

¹ Dashes in the Limit/Result columns mean Not Applicable

² It is permissible to exceed the specification limit provided that ASTM C1038 Mortar Bar Expansion does not exceed 0.020% at 14 days.

³ This data may have been reported on previous mill certificates. It is typical of the cement being currently shipped.

Janelle K. Baier



Brand: NewCem®
Material: Slag Cement
Type: Grade 100

Material Certification Report

Test Period: 01-Jan-2022 to 31-Jan-2022
Lot Number: Multiple Lots

Certification

This material meets the specifications of ASTM C989 and AASHTO M 302 for Grade 100 slag cement.

General Information

Supplier: Holcim (US) Inc. d/b/a LafargeHolcim US
Address: 8700 West Bryn Mawr Ave
Chicago, IL 60631
Source Location: **South Chicago Plant**
2150 East 130th Street
Chicago, IL 60633
Contact: Brian Borowski (630) 561-1198

The following is based on average test data during the test period. The data is typical of product shipped from this source; individual shipments may vary.

Test Data on ASTM Standard Requirements

Chemical			Physical		
Item	Limit ¹	Result	Item	Limit ¹	Result
Sulfide Sulfur (S) (%)	2.5 max	0.76	45 µm (No. 325) Sieve (% retained)	20 max	1.0
			Blaine Fineness (m²/kg)	-	423
Sulfate Sulfur (as SO ₃) ² (%)	-	0.10	Air Content (%)	12 max	4.4
Aluminum Oxide (as Al ₂ O ₃) (%)	-	10.5	Slag Activity Index (%)		
			Avg 7 Day Index	-	94
Chloride (Cl) (%)	-	0.052	Avg 28 Day Index(previous month's data)	95 min	124
Equivalent Alkalies (%)	-	0.49	Compressive Strength MPa (psi)		
			Slag + Reference Cement		
			7 Day	-	32.0 (4640)
			28 Day (previous month's data)	-	49.6 (7200)

Test Data on Reference Cement

Chemical			Physical		
Item	Limit ¹	Result	Item	Limit ¹	Result
Equivalent Alkalies (%)	0.60 - 0.90	0.80	7 Day	-	34.0 (4930)
			28 Day (previous month's data)	5000 min	40.1 (5820)

Notes (*1-5)

- 1 - Dashes in the limits columns means Not Applicable
- 2 - If calcium sulfate is added to slag cement, measure in accordance with Test Method C1038/C1038M. Slag cement with added calcium sulfate will not develop expansion exceeding 0.020% at 14 days.
- 3 - Information on Reference Cement test data available upon request.
- 4 - Specific Gravity: 2.93
- 5 - This data may have been reported on previous Material Certification Reports. It is typical of the cement being currently shipped.

Date Issued: 2/25/2022

Brian Borowski
Quality Manager, US MPC



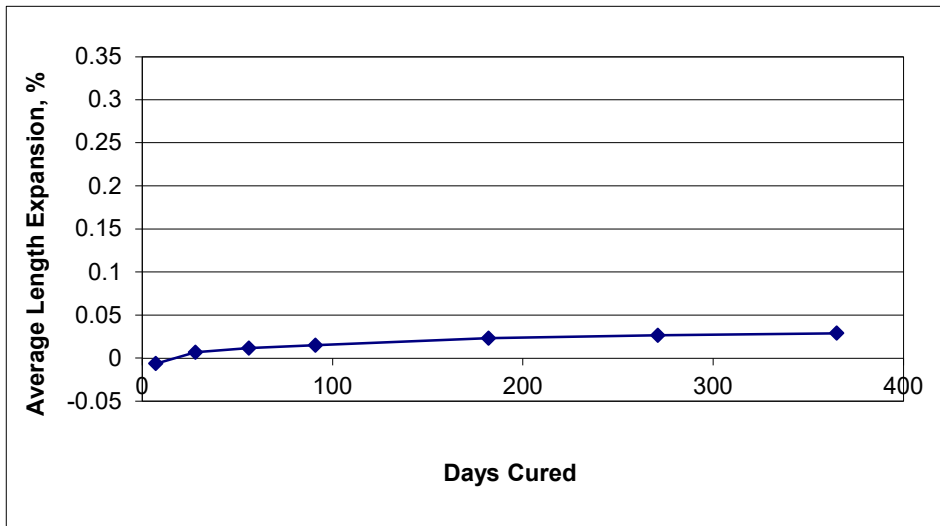
Potential Alkali Reactivity of Aggregates ASTM C 1293

Project: 2020 Spring Mill Lab Testing
Project No.: 83665
Client: Spring Mill LLC

Date: 2/17/2021
Prepared By: Ryan Wilk

Date Molded: 02/18/20
Portland Cement: CRH Type I

Fine Aggregate: Spring Mill South
Coarse Aggregate: MDOT Pit #58-011



Date	Days Cured	Specimen			Average Expansion, %
		1	2	3	
02/25/20	7	-0.010	-0.003	-0.006	-0.0064
03/17/20	28	0.004	0.010	0.007	0.0069
04/14/20	56	0.008	0.012	0.014	0.0115
05/19/20	91	0.014	0.014	0.017	0.0149
08/18/20	182	0.024	0.022	0.023	0.0229
11/15/20	271	0.027	0.025	0.027	0.0264
02/17/21	365	0.030	0.027	0.030	0.0289

Notes: Aggregates that exceed 0.04% expansion at one year using this test criteria could be considered potentially reactive.

Remarks: Aggregates were tested in accordance to ASTM C1293.

Tested by: Ryan Wilk

Reviewed by: Nick Atkins



Carmeuse Americas
Port Inland Quarry
15 W County Road 432
Gulliver, MI 49840

Crushed Limestone
Michigan DOT Pit # 75-005
Penn DOT Supplier Code: CALMIC14
Ohio DOT Producer: 05106-01
IL DOT Producer: 52602-01

2022
PRODUCT TYPICAL ANALYSIS

Typical Properties			
Property		Value	Test
Specific Gravity	Oven Dry	2.665	ASTM C127 – ECS MIDWEST, LLC .
	Saturated Surface Dry	2.681	
Abrasion Resistance (Los Angeles)		30.7%	ASTM C131 – ECS MIDWEST, LLC
Freeze Thaw Durability		0.008%	100 Cycles – MDOT 2018
AWI (Aggregate Wear Index)		203	MTM 111 – MDOT 2019
Sodium Sulfate Soundness		6.4%	ASTM C88 – ECS MIDWEST, LLC .
Clay Lumps and Friable Particles		0.0%	ASTM C142 – ECS MIDWEST, LLC .
Chert		0.04%	ASTM C123 – ECS MIDWEST, LLC .
Sum of Clay Lumps, Friable Particles and Chert		0.04%	ASTM C142, ASTM C123 -- ECS MIDWEST, LLC
Coal and Lignite		0.0%	ASTM C123 – ECS MIDWEST, LLC
Flat/Elongated Particle 5:1 ratio		0.40%	ASTM D4791 – ECS MIDWEST, LLC
Chloride Content	Acid Soluble	0.020%	ASTM C1152 – CTL Group
	Water Soluble	0.008%	ASTM C1218 – CTL Group
Water Absorption		0.58%	ASTM C127 – ECS MIDWEST, LLC
Crushed Pieces/Particles		100%	ASTM D5821 – ECS MIDWEST, LLC
Loose Bulk Density		88.6 pcf	ASTM C29 – ECS MIDWEST, LLC
Rodded Bulk Density		98.3 pcf	ASTM C29 – ECS MIDWEST, LLC

This product meets the requirements of:
ASTM C33 Standard Specification for Concrete Aggregates
AASHTO M80 Coarse Aggregate for Hydraulic Cement Concrete

Product Approved By: Michigan DOT Pennsylvania DOT Ohio DOT Illinois DOT

The information contained in this product information sheet is, to the best of our knowledge, true and accurate, but any typical values given are subject to occasional variations based on variations in the raw material inputs and processing operations. Each user is advised to evaluate the product (specific compositions, physical properties and performance characteristics) independently for suitability in the intended use.

Issue Date: February 14, 2022



Admixture General Certification

<u>Spec.# and Material Name</u>	<u>Manufacturer</u>	<u>Product Name</u>	<u>SRM Ticket Code</u>
903.01 – Air Entraining Admix	Master Builders	MasterAir AE 200	AIR
903.02 – Water Reducing Admix	Master Builders	MasterGlenium 7925	SUPER
903.04 – Concrete Accelerators	Master Builders	MasterSet AC 534	NC ACCEL
903.02 – Water Reducing Retarding	Master Builders	MasterSet Delvo	RETARDER

We certify that the above QPL materials indicated were provided and incorporated into the identified project.

Respectfully submitted,

Doug Rousseau
QC Manager
Smyrna Ready Mix, LLC.

cc:

SRM Concrete, LLC

CONTRACTOR/PRODUCER AGGREGATE STOCKPILE MANAGEMENT PLAN

Submitted By:

SRM Concrete, LLC
12100 Wayne Road,
Romulus, MI 48174

SRM Concrete, LLC

MDOT – Stockpile Management Plan

The plan covers the procedures SRM Concrete intends to use to ensure compliance with MDOT for Portland Cement Concrete.

All SRM Concrete plants are MDOT qualified and NRMCA certified per ASTM C-94 Standards.

Aggregates utilized for MDOT projects are from approved manufactures for Coarse, Intermediate and 2NS aggregates. All aggregates will be delivered to the plants via gravel bulk haulers.

Material

Aggregates delivered to our production facilities are from the Approved Manufactures list with MDOT. Aggregates purchased from this list are produced with strict compliance with MDOT standards and testing according to the suppliers Quality Control Plan as submitted by them to MDOT for review and approval.

Supplier production and load out sample gradation analysis are provided weekly by supplier.

Project specifications will be followed to ensure the correct aggregate is being utilized per the project requirements. Specifically, Absorption limits and Freeze thaw requirements will be strictly followed.

Stock Pile Management

Aggregates are stockpiled by loader or loaded directly into plant bins dependent on plant configuration.

Stockpiles shall be maintained to eliminate contamination from vehicle tracking.

Stockpiles shall be maintained in separate piles and/or bins.

All attempts will be employed to maintain aggregate moisture contents to SSD, provided it does not compromise mix uniformity due to excess moisture contents.

Handling and moving aggregates will be kept to a minimum to decrease the amount of material degradation occurring that will contribute to LBW.

Action & Suspension Limits:

<u>Quality Characteristic</u>	<u>Action Limits</u>	<u>Suspension Limits</u>
Coarseness Factor	< 50 or > 73	< 45 or > 75
Workability Factor	< 30 or > 38	< 28 or > 44

Corrective Action Limits

Action Limits will be monitored throughout the production process

Action limits are set at the operation boundary limits as established in subsection 3.09.04D.4 (Figure 2).

The Contractor/Engineer will be notified whenever the process approaches an action limit.

Suspension of Work Limits

When and if the production gradations have resulted in a value that is outside the operational limits as set forth by the chart provided by MDOT, production will cease and the following will be implemented to correct the gradation back within the action limits / operational boundaries lines.

Material causing values to exceed limits will be removed from production operations and stockpiled separately as to not be incorporated into production.

Stockpile to be investigated for segregation possibilities

Suppliers Load out reports to be reviewed for discrepancies

Supplier to be contacted and revise producing operations if gradations need to be altered and brought back within MDOT requirements.