

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **p11**

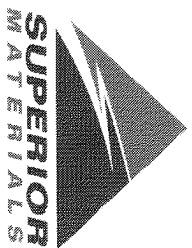
Sample Date: **10/7/24**

Dates Test Represents: **10/8/2024** through **10/14/2024**

Concrete Grade: **DM, 4500HP**

Contractor: _____

MDOT No.: _____

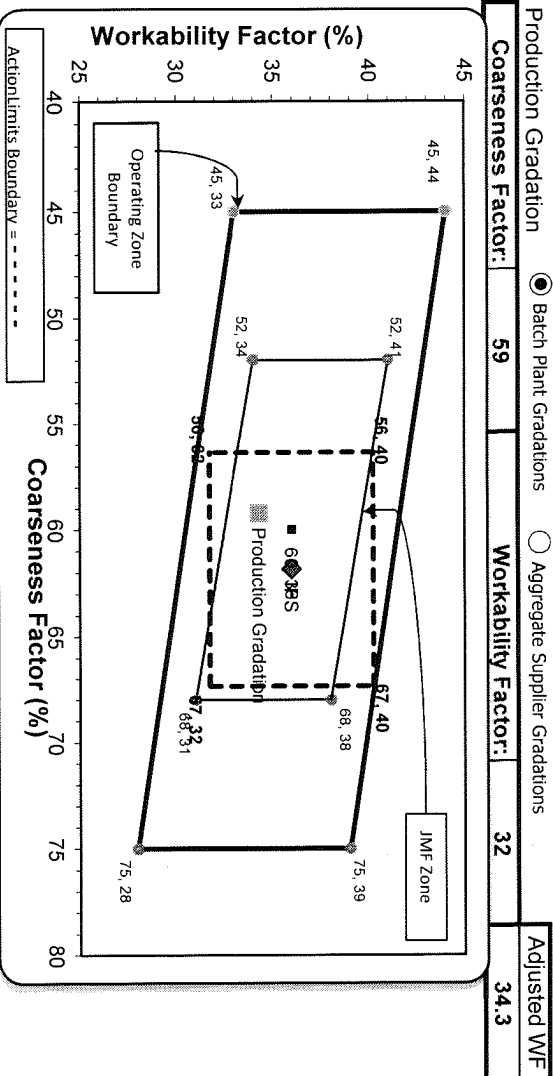


Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %	% Retained	Cumulative % Retained
6AA	71-47	Presque Isle	1355	8.29	2.62	46.6	0.0	0.0
26A	71-47	Presque Isle	400	2.45	2.62	13.8	0.0	0.0
2NS	63-115	Ray Rd	1450	6.95	2.65	39.6	2.1	2.1
Total Wt:						2905	100.0	100.0
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained		
2"	100.0	100.0	100.0	100.0	0.0	0.0		
1.5"	100.0	100.0	100.0	100.0	0.0	0.0		
1"	95.5	100.0	100.0	97.9	2.1	2.1		
3/4"	75.6	100.0	100.0	88.6	9.3	11.4		
1/2"	34.3	95.8	100.0	68.8	19.8	31.2		
3/8"	18.6	82.6	100.0	59.6	9.1	40.4		
#4	3.2	15.0	93.3	40.5	19.1	59.5		
#8	2.0	4.4	76.5	31.8	8.7	68.2		
#16	1.7	2.7	61.3	25.4	6.4	74.6		
#30	1.6	2.4	47.3	19.8	5.6	80.2		
#50	1.5	2.2	26.6	11.5	8.3	88.5		
#100	1.5	2.1	7.4	3.9	7.6	96.1		
LBW	1.3	1.9	0.7	1.1	2.8	98.9		

<----- Verify this number is 100%

*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max.
nom. max. #100 and #200 sieves.
*Retained must be at least 4% for each sieve except max.
nom. max. #100 and #200 sieves.
*Retained must be at least 4% for the 3/4" sieve when
at 1.5" max. size (nom. Max. 1.0") aggregate is used.



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	100.0	0.0	0.0
3/4"	95.0	5.0	5.0
1/2"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	98.7

PREPARED BY:
SM, LLC Technical Service

Approved By: _____



EDW. C. LEVY CO.
8800 Dix Avenue Detroit, MI 48235
(313) 643-7200

Daily Summary Report

Date: Thursday, October 10, 2024

Sample Id	Plant	Product	Specification	Sample Type	Time
-1989627531	S000 Superior Onsite	26A Mod LS	26A Mod LS Spec	QA	11:35
-674949461	S000 Superior Onsite	1022 2NS GR	2NS GR Spec	QA	11:37
-67494992	S000 Superior Onsite	1051 6AA LS		QA	11:49
-1018110270	S000 Superior Onsite	7919 COARSE AGG P1M LS	Coarse Agg P1M LS Target	QA	17:36
-674986765	S000 Superior Onsite	7920 INTERMED AGG P1M LS	Intermed Agg P1M LS Target	QA	17:37
2" (50mm)	100.0	100.0	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	98.0	100.0	100.0
1" (25mm)	100.0	95.5	31.0	100.0	100.0
3/4" (19mm)	100.0	75.6	9.2	99.0	99.0
1/2" (12.5mm)	95.8	34.3	3.5	66.8	66.8
3/8" (9.5mm)	82.6	18.6	3.1	41.7	41.7
#4 (4.75mm)	15.0	3.2	2.5	9.4	9.4
#8 (2.36mm)	4.4	2.0	2.2	3.9	3.9
#16 (1.18mm)	2.7	1.7	2.1	2.8	2.8
#30 (.6mm)	2.4	1.6	2.0	2.6	2.6
#50 (.3mm)	2.2	1.5	1.9	2.4	2.4
#100 (.15mm)	2.1	1.5	1.8	2.3	2.3
#200 (75um)	2.0	1.39	1.6	2.2	2.2
Pan	0.0	0.00	0.0	0.0	0.0
FM	2.88				
#200 (75um)	1.0	1.3	1.4	2.0	2.0
Wash Loss (#200/75um)	0.7		0.1		
Total Moisture	1.1	2.4		1.5	

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-102

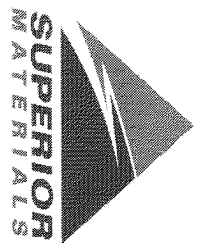
Sample Date: 10/7/24

Dates Test Represents: 10/8/2024 through 10/14/2024

Concrete Grade: DM, 4500HP

Contractor: _____

MDOT No.: _____



Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

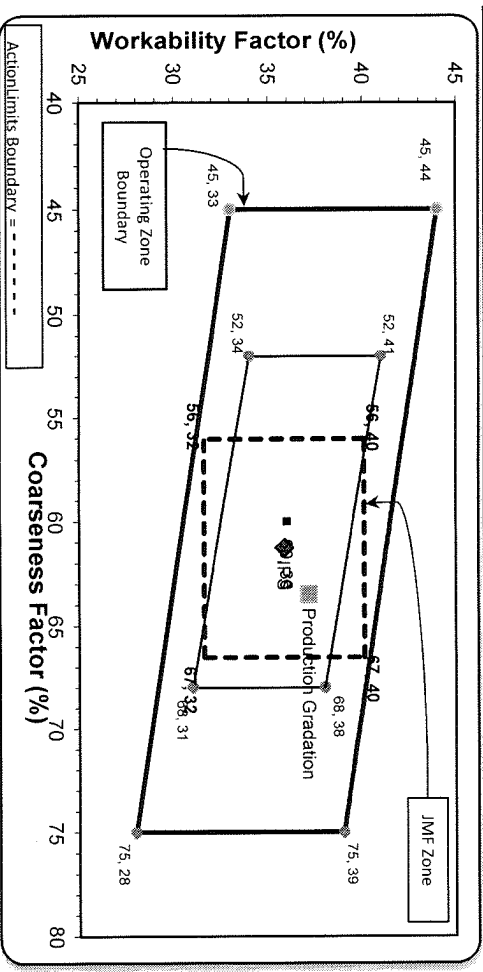
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
GAA	58-003	Stonoco	1450	8.64	2.69	49.2
26A	58-003	Stonoco	350	2.09	2.69	11.9
ZNS	63-114	Highland	1150	6.95	2.65	39.0
Total Wt			2950	17.68		100.0

Sieve	6AA	26A	ZNS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.5	100.0	100.0	99.8	0.2	0.2
3/4"	79.8	100.0	100.0	90.1	9.7	30.3
1/2"	38.4	99.7	100.0	69.7	20.4	30.3
3/8"	17.6	91.9	100.0	58.5	11.1	41.5
#4	3.6	9.2	99.6	41.7	16.8	58.3
#8	1.7	3.0	85.9	34.7	7.0	65.3
#16	1.4	2.3	67.0	27.1	7.6	72.9
#30	1.3	2.1	46.6	19.1	8.0	80.9
#50	1.2	1.9	21.2	9.1	10.0	90.9
#100	1.2	1.8	4.8	2.7	6.4	97.3
LBW	0.9	1.6	0.6	0.9	1.8	99.1

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max.
 nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max.
 nom. max., #100 and #200 sieves.
 **% Retained must be at least 4% for the 3/4" sieve when
 a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

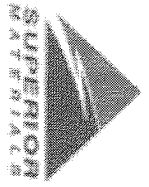
Coarseness Factor: 63	Workability Factor: 35	Adjusted WF
		37.2



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

PREPARED BY:
 SM, LLC Technical Service

Approved By: _____



Daily Summary Report

Date Tuesday, October 8, 2024

Sample Id	Plant	Product	Specification	Sample Type	Time	2" (50mm)	1 1/2" (37.5mm)	1" (25mm)	3/4" (19mm)	1/2" (12.5mm)	3/8" (9.5mm)	#4 (4.75mm)	#8 (2.36mm)	#16 (1.18mm)	#30 (.6mm)	#50 (.3mm)	#100 (.15mm)	#200 (.075mm)	Pan	FM	Wash Loss (#200/75um)	Total Moisture	
-1989626397	Superior Novi	COARSE AGG P1M LS	Coarse Agg P1M LS Target	QA	13:05	100.0	100.0	63.2	27.6	16.9	10.7	4.6	3.5	3.1	2.8	2.6	2.4	2.2	0.0	0.0	2.1	1.30	
-674933011	Superior Novi	6AA LS	6AA LS	QA	13:11	100.0	100.0	99.5	79.8	38.4	17.6	3.6	1.7	1.4	1.3	1.2	1.2	1.07	0.00	0.00	0.9	2.97	
-315824750	Superior Novi	INTERMED AGG P1M LS	Intermed Agg P1M LS Target	QA	14:51	100.0	100.0	100.0	100.0	94.8	76.2	20.8	7.7	4.1	2.9	2.4	2.2	2.1	0.0	0.0	2.0	1.55	
-1989634204	Superior Novi	26A Mod LS	26A Mod LS Spec	QA	14:53	100.0	100.0	100.0	100.0	99.7	91.9	9.2	3.0	2.3	2.1	1.9	1.8	1.8	0.0	0.0	1.6	3.77	
-674929719	Superior Novi	2NS GR	2NS GR Spec	QA	14:54	100.0	100.0	99.6	85.9	67.0	46.6	21.2	4.8	0.9	0.0	0.0	0.0	0.0	0.0	0.0	2.75	0.6	3.53

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-103**

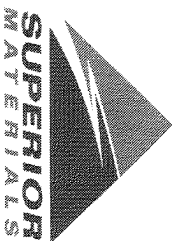
Sample Date: **10/7/24**

Dates Test Represents: **10/8/2024** through **10/14/2024**

Concrete Grade: **DM, 4500HP**

Contractor: _____

MDOT No.: _____



Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
GAA	58-003	Stonoco	1450	8.64	2.69	49.2
26A	58-003	Stonoco	350	2.09	2.69	11.9
ZNS	63-114	Highland	1150	6.95	2.65	39.0
Total Wt						2950
						17.68
						100.0

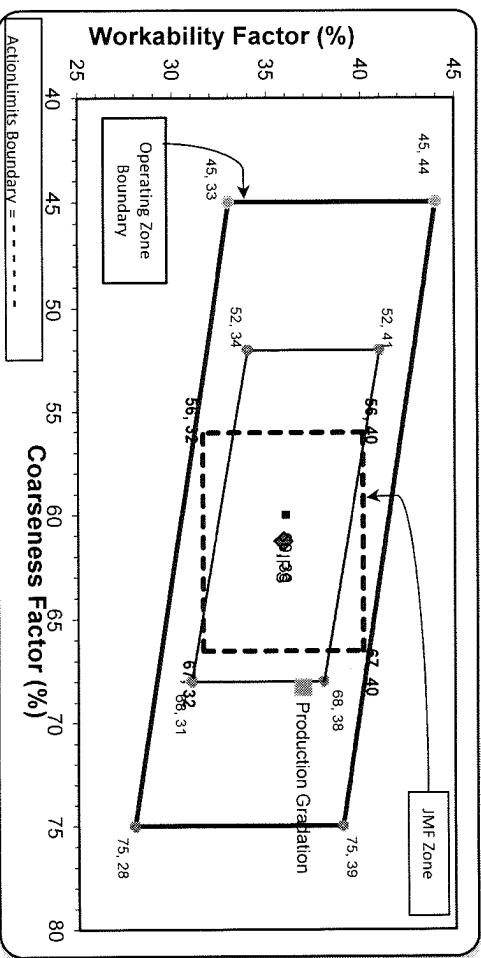
Sieve	6AA	26A	ZNS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.2	100.0	100.0	99.6	0.4	0.4
3/4"	73.7	100.0	100.0	87.1	12.9	12.9
1/2"	25.7	99.5	100.0	63.4	23.7	36.6
3/8"	10.9	91.4	100.0	55.2	8.2	44.8
#4	2.4	9.5	99.6	41.1	14.1	58.9
#8	1.2	2.3	86.0	34.4	6.7	65.6
#16	1.0	1.8	65.2	26.1	8.3	73.9
#30	0.9	1.6	43.9	17.7	8.4	82.3
#50	0.8	1.6	19.2	8.1	9.7	91.9
#100	0.8	1.4	4.7	2.4	5.7	97.6
LBW	0.6	1.3	0.6	0.7	1.7	99.3

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max.
 nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max.
 nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for the 3/4" sieve when
 a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **68** Workability Factor: **34** Adjusted WF **36.9**

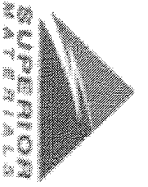
Initial Production Sample (IPS) Coarseness Factor: **61** Workability Factor: **36**



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

PREPARED BY:
SM, LLC Technical Service

Approved BY: _____



Daily Summary Report

Date Tuesday, October 8, 2024

Sample Id	-1989645004	-674961855	-674891314
Plant	S103 Superior Brighton	S103 Superior Brighton	S103 Superior Brighton
Product	1051 6AA LS	1067 26A Mod LS	1022 2NS GR

Specification	6AA LS	26A Mod LS Spec	2NS GR Spec
Sample Type	QA	QA	QA
Time	13:13	14:55	14:56

2" (50mm)	100.0	100.0	
1 1/2" (37.5mm)	100.0	100.0	
1" (25mm)	99.2	100.0	
3/4" (19mm)	73.7	100.0	
1/2" (12.5mm)	25.7	99.5	100.0
3/8" (9.5mm)	10.9	91.4	99.6
#4 (4.75mm)	2.4	9.5	86.0
#8 (2.36mm)	1.2	2.3	65.2
#16 (1.18mm)	1.0	1.8	43.9
#30 (.6mm)	0.9	1.6	19.2
#50 (.3mm)	0.8	1.4	4.7
#100 (.15mm)	0.8	1.4	0.9
#200 (75µm)	0.69	1.4	0.0
Pan	0.00	0.0	2.81
FM			0.6
Wash Loss (#200/75um)	0.6	1.3	3.17
Total Moisture	3.02	1.61	