

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P11

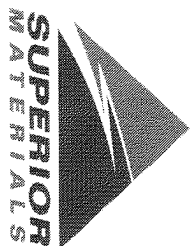
Contractor: _____

Sample Date: 9/30/24

Concrete Grade: DM, 4500HP

Dates Test Represents: 10/1/2024 through 10/7/2024

MDOT No.: _____



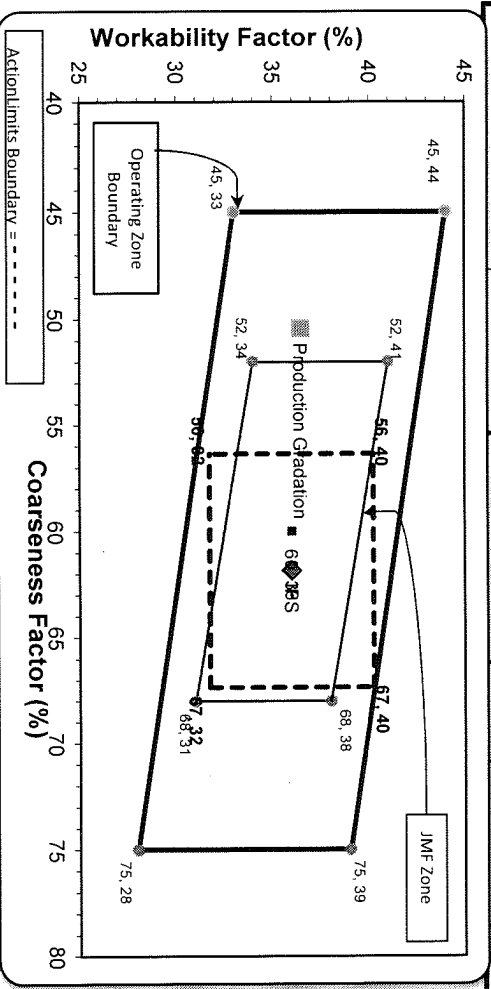
Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %
GAA	71-47	Presque Isle	1335	8.29	2.62	46.6
26A	71-47	Presque Isle	400	2.45	2.62	13.8
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
			Total Wt:	2905		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"	98.9	100.0	100.0	99.5	0.5	0.5
3/4"	85.3	100.0	100.0	93.1	6.3	6.9
1/2"	53.0	95.2	100.0	77.4	15.7	22.6
3/8"	33.4	83.7	100.0	66.7	10.7	33.3
#4	5.6	14.4	95.7	42.5	24.2	57.5
#8	2.2	2.9	82.2	34.0	8.5	66.0
#16	1.9	1.7	68.7	28.3	5.6	71.7
#30	1.9	1.4	55.0	22.9	5.5	77.1
#50	1.8	1.3	31.1	13.3	9.5	86.7
#100	1.8	1.3	8.5	4.4	8.9	95.6
LBW	1.5	1.2	1.3	1.4	3.0	98.6

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 50 Workability Factor: 34 Adjusted WF: 36.5 Initial Production Sample (IPS): 62



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

*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.

PREPARED BY:
SM, LLC Technical Service

Approved By: _____

Daily Summary Report

Date Tuesday, October 1, 2024

Sample Id	-1989624528	- 674898081	-674951888
Plant	Superior Onsite	Superior Onsite	Superior Onsite
Product	1051 6AA LS	1067 26A Mod LS	1022 2NS GR
Specification		26A Mod LS Spec	2NS GR Spec
Sample Type	QA	QA	QA
Time	15:00	15:01	15:03
2" (50mm)	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	95.7
1" (25mm)	98.9	100.0	82.2
3/4" (19mm)	85.3	100.0	68.7
1/2" (12.5mm)	53.0	95.2	55.0
3/8" (9.5mm)	33.4	83.7	31.1
#4 (4.75mm)	5.6	14.4	8.5
#8 (2.36mm)	2.2	2.9	1.6
#16 (1.18mm)	1.9	1.7	0.0
#30 (.6mm)	1.9	1.4	2.59
#50 (.3mm)	1.8	1.3	1.6
#100 (.15mm)	1.8	1.3	1.3
#200 (75µm)	1.65	1.2	1.3
Pan	0.00	0.0	4.7
FM			
-#200 (75µm)			
Wash Loss (#200/75µm)	1.5	1.2	1.3
Total Moisture	3.5	3.0	4.7

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **12**

Sample Date: **9/30/24**

Dates Test Represents: **10/1/2024** through **10/7/2024**

Concrete Grade: **DM, 4500HP**

Contractor: _____

MDOT No.: _____



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

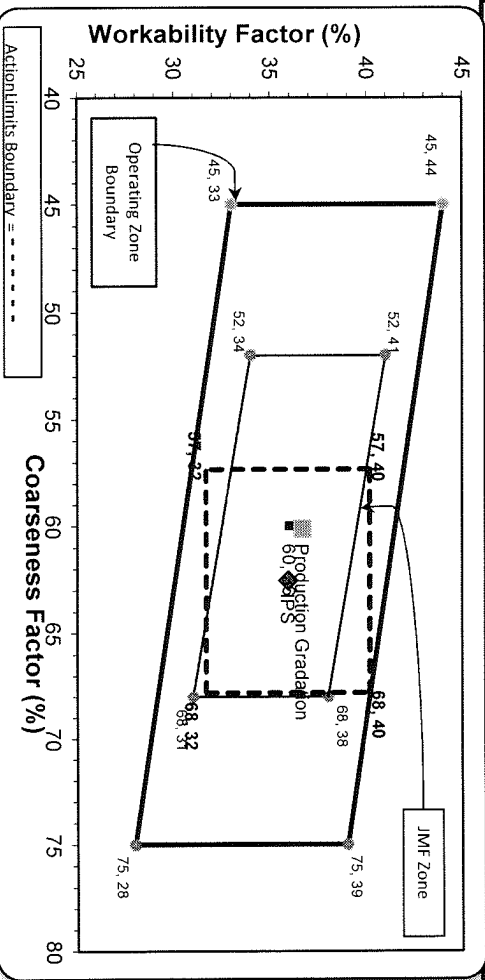
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %	
6AA	71-47	Presque Isle	1350	8.26	2.62	46.5	
26A	71-47	Presque Isle	405	2.48	2.62	13.9	
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6	
Total Wt						2905	100.0
Verify this number is 100%							
Sieve	6AA	26A	2NS	Cumulative % Passing	% 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"	98.7	100.0	100.0	99.4	0.6	0.6	
3/4"	81.8	100.0	100.0	91.5	7.9	8.5	
1/2"	37.2	90.8	100.0	69.5	22.0	30.5	
3/8"	21.8	76.7	100.0	60.4	9.1	39.6	
#4	5.6	13.3	94.7	41.9	18.5	58.1	
#8	2.9	4.0	81.5	34.2	7.8	65.8	
#16	2.6	2.8	68.5	28.7	5.5	71.3	
#30	2.5	2.4	54.2	23.0	5.8	77.0	
#50	2.4	2.0	29.2	13.0	10.0	87.0	
#100	2.2	1.7	7.4	4.2	8.8	95.8	
LBW	1.9	1.4	0.9	1.4	2.8	98.6	

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **60** Workability Factor: **34** Adjusted WF: **36.7**

Initial Production Sample (IPS)

Coarseness Factor: **63** 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"	89.0	10.3	11.0
1/2"	70.3	18.7	29.7
3/8"	59.9	10.4	40.1
#4	41.9	18.0	58.1
#8	35.9	6.0	64.1
#16	27.8	8.2	72.2
#30	18.9	8.8	81.1
#50	6.3	12.6	93.7
#100	1.7	4.6	98.3
LBW	1.0	0.7	99.0

*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 1/2" max. size (nom. Max. 1.0") aggregate is used.

PREPARED BY:
 SM, LLC Technical Service

Approved By: _____



EDW. C. LEVY CO.
 8300 Dix Avenue, Detroit, MI 48206
 (313) 843-7200

Superior Onsite
 Jefferson

Daily Summary Report

Date Tuesday, October 1, 2024

Sample Id -1989624528 - 674898081

-674951888

Plant Superior Onsite

Superior Onsite

Superior Onsite

Superior Onsite

Product 1051
6AA LS

1067
26A Mod LS

1022
2NS GR

Specification

26A Mod LS Spec

2NS GR Spec

Sample Type	QA	QA	QA
Time	15:00	15:01	15:03
2" (50mm)	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	96.7
1" (25mm)	98.9	100.0	82.2
3/4" (19mm)	85.3	100.0	68.7
1/2" (12.5mm)	53.0	95.2	55.0
3/8" (9.5mm)	33.4	83.7	31.1
#4 (4.75mm)	5.6	14.4	8.5
#8 (2.36mm)	2.2	2.9	1.6
#16 (1.18mm)	1.9	1.7	0.0
#30 (.6mm)	1.9	1.4	2.59
#50 (.3mm)	1.8	1.3	1.6
#100 (.15mm)	1.8	1.3	1.3
#200 (75µm)	1.65	1.2	1.3
Pan	0.00	0.0	4.7
FM			
#200 (75µm)	1.5	1.2	1.3
Wash Loss (#200/75µm)	1.5	1.2	1.3
Total Moisture	3.5	3.0	4.7

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

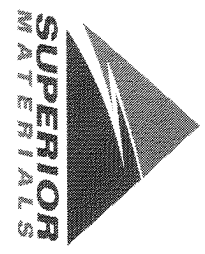
Sample Date: **9/30/24**

Dates Test Represents: **10/1/2024** through **10/7/2024**

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 %
6AA	58-003	Stoneco	1450	8.64	2.69	49.2
26A	58-003	Stoneco	350	2.09	2.69	11.9
2NS	63-114	Highland	1150	6.95	2.65	39.0
Total Wt			2950	17.68		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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	76.5	100.0	100.0	99.5	11.6	11.6
1/2"	35.7	99.5	100.0	99.5	20.1	31.7
3/8"	15.5	89.5	100.0	89.5	11.1	42.8
#4	3.1	6.0	98.2	6.0	16.7	59.5
#8	1.5	2.6	81.3	2.6	7.8	67.3
#16	1.3	2.2	62.7	2.0	7.4	74.7
#30	1.2	2.0	43.7	1.7	7.5	82.1
#50	1.1	1.9	21.3	1.1	8.8	90.9
#100	1.1	1.8	4.9	0.7	6.4	97.3
LBW	0.9	1.6	0.7	0.9	1.8	99.1

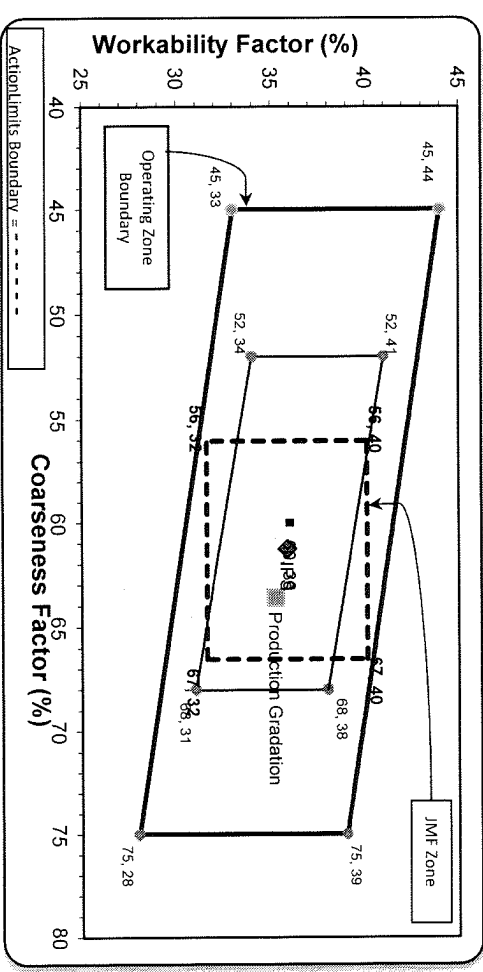
*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
*Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
*Retained must be at least 4% for the 3/4" sieve when a 1.5" max. size (nom.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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **64** Workability Factor: **33** Adjusted WF: **35.2**

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 Monday, September 30, 2024

Sample Id	-674918708	-674942175	-1989635277
Plant	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi
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	14:51	14:53	14:54
2" (50mm)	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	98.2
1" (25mm)	100.0	100.0	81.3
3/4" (19mm)	76.5	100.0	62.7
1/2" (12.5mm)	35.7	99.5	43.7
3/8" (9.5mm)	15.5	89.5	21.3
#4 (4.75mm)	3.1	6.0	4.9
#8 (2.36mm)	1.5	2.6	1.0
#16 (1.18mm)	1.3	2.2	0.0
#30 (6mm)	1.2	2.0	2.88
#50 (3mm)	1.1	1.9	0.7
#100 (.15mm)	1.1	1.8	0.7
#200 (75µm)	0.98	1.7	0.7
Pan	0.00	0.0	0.7
FM			2.88
Wash Loss (#200/75µm)	0.9	1.6	0.7
Total Moisture	3.08	3.76	3.78

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-103

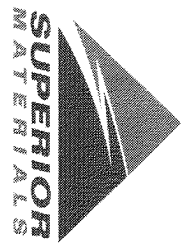
Sample Date: 9/30/24

Dates Test Represents: 10/1/2024 through 10/7/2024

Concrete Grade: DM, 4500HP

Contractor: _____

MDOT No.: _____



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

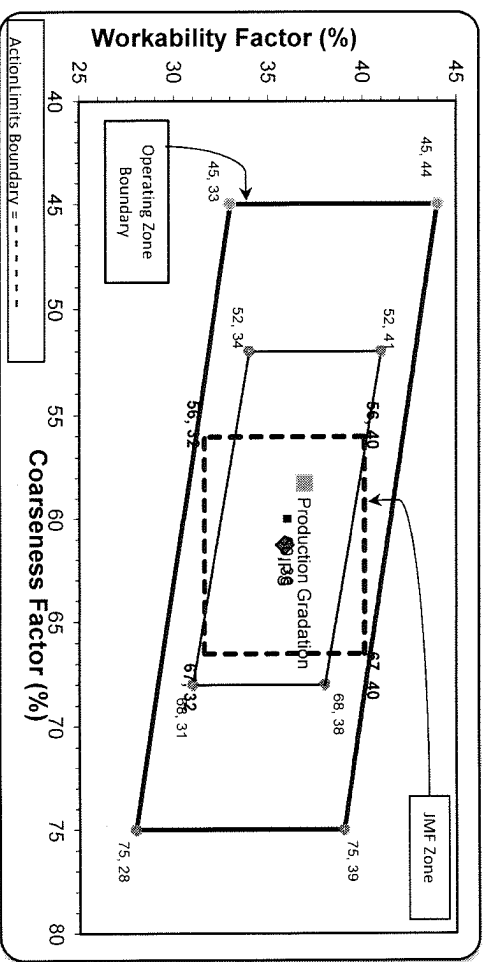
Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %
6AA	58-003	Stoneco	1450	8.64	2.69	49.2
26A	58-003	Stoneco	350	2.09	2.69	11.9
2NS	63-114	Highland	1150	6.95	2.65	39.0
Total Wt			2950	17.68		100.0

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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	90.8	100.0	100.0	95.5	4.5	4.5
1/2"	50.0	100.0	100.0	75.4	20.1	24.6
3/8"	24.2	92.0	100.0	61.8	38.2	38.2
#4	3.7	9.1	99.0	41.5	20.3	58.5
#8	1.6	2.9	85.4	34.4	7.1	65.6
#16	1.4	2.3	65.7	26.6	7.8	73.4
#30	1.3	2.1	44.6	18.3	8.3	81.7
#50	1.2	2.0	21.1	9.1	9.2	90.9
#100	1.1	1.9	4.4	2.5	6.6	97.5
LBW	1.0	1.7	0.5	0.9	1.6	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

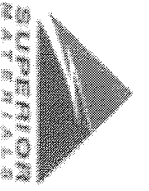
Coarseness Factor: 58 Workability Factor: 34 Adjusted WF: 36.9



Sieve	Coarseness Factor:	Workability Factor:	Adjusted WF:	Initial Production Sample (IPS)
2"	100.0	100.0	0.0	61
1.5"	100.0	100.0	0.0	36
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 Monday, September 30, 2024

Sample Id	-674942931	-674922450	-674945861
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	14:55	14:57	14:59
2" (50mm)	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	99.0
1" (25mm)	100.0	100.0	85.4
3/4" (19mm)	90.8	100.0	65.7
1/2" (12.5mm)	50.0	100.0	44.6
3/8" (9.5mm)	24.2	92.0	21.1
#4 (4.75mm)	3.7	9.1	4.4
#8 (2.36mm)	1.6	2.9	0.6
#16 (1.18mm)	1.4	2.3	0.0
#30 (.6mm)	1.3	2.1	2.80
#50 (.3mm)	1.2	2.0	0.5
#100 (.15mm)	1.1	1.9	
#200 (75µm)	1.08	1.8	
Pan	0.00	0.0	
FM			
Wash Loss (#200/75µm)	1.0	1.7	
Total Moisture	2.55	3.43	3.73