

# Aggregate Optimization Chart

## Production Gradation Report

PLANT #: **P-02**

Sample Date: **10/14/24**

Dates Test Represents: **10/15/2024**

through **10/21/2024**

Concrete Grade: **S2M, 3500HP**

Contractor: \_\_\_\_\_

MDOT No.: \_\_\_\_\_

Agg. Class	Pit #	Source	Weight (ssd)	ft <sup>3</sup>	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1470	8.99	2.62	48.2
26A	71-47	Presque Isle	350	2.14	2.62	11.5
ZNS	63-115	Ray Rd	1230	7.44	2.65	40.3
<b>Total Wt</b>			<b>3050</b>	<b>18.57</b>		<b>100.0</b>

Verify this number is 100%

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"	97.7	100.0	100.0	98.9	1.1	1.1
3/4"	76.4	100.0	100.0	88.6	10.3	11.4
1/2"	30.1	95.1	100.0	65.7	22.9	34.3
3/8"	15.5	83.5	100.0	57.4	8.4	42.6
#4	3.0	17.9	94.6	41.7	15.7	58.3
#8	2.3	5.2	78.8	33.5	8.2	66.5
#16	2.2	3.2	64.1	27.3	6.2	72.7
#30	2.1	2.7	49.7	21.4	5.9	78.6
#50	2.0	2.6	27.6	12.4	9.0	87.6
#100	1.9	2.4	7.0	4.0	8.4	96.0
LBW	1.6	2.1	0.8	1.3	2.7	98.7

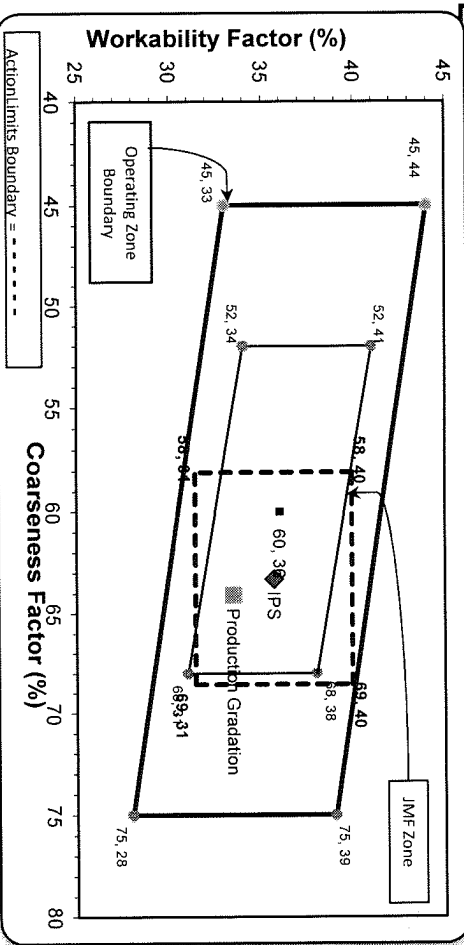
\*Maximum % Retained must be above the 3/8" sieve.  
 \*Any two adjacent sieves must equal 10% except max.  
 nom. max. #100 and #200 sieves.  
 \*% Retained must be at least 4% for each sieve except max.  
 nom. max. #100 and #200 sieves.  
 \*% Retained must be at least 4% for the 3/4" sieve when 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

Production Gradation

Batch Plant Gradations

Aggregate Supplier Gradations

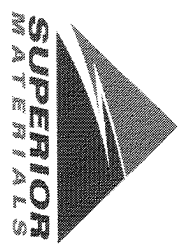
Coarseness Factor: **64** Workability Factor: **33**



Initial Production Sample (IPS)

Coarseness Factor: **63** Workability Factor: **36**

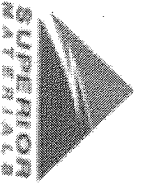
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	100.0	0.0	0.0
3/4"	95.6	4.4	4.4
1/2"	73.1	22.6	26.9
3/8"	59.3	13.8	40.7
#4	42.8	16.5	57.2
#8	35.7	7.1	64.3
#16	28.9	6.8	71.1
#30	20.7	8.2	79.3
#50	9.9	10.8	90.1
#100	2.1	7.8	97.9
LBW	0.9	1.2	99.1



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

PREPARED BY:  
 SM, LLC Technical Service

Approved By: \_\_\_\_\_



# Daily Summary Report

Date Thursday, October 17, 2024

Sample Id	-1989640311	-674982100	-1989634488
Plant	S101 Superior Hoover	S101 Superior Hoover	S101 Superior Hoover
Product	6AA LS	26A Mod LS	2NS GR
Specification	6AA LS	26A Mod LS Spec	2NS GR Spec
Sample Type	QA	QA	QA
Time	11:22	11:25	11:26
2" (50mm)	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	94.6
1" (25mm)	97.7	100.0	78.8
3/4" (19mm)	76.4	100.0	64.1
1/2" (12.5mm)	30.1	95.1	49.7
3/8" (9.5mm)	15.5	83.5	27.6
#4 (4.75mm)	3.0	17.9	7.0
#8 (2.36mm)	2.3	5.2	1.2
#16 (1.18mm)	2.2	3.2	0.0
#30 (.6mm)	2.1	2.7	2.78
#50 (.3mm)	2.0	2.6	0.8
#100 (.15mm)	1.9	2.4	
#200 (75µm)	1.72	2.2	
Pan	0.00	0.0	
FM			
Wash Loss (#200/75µm)	1.6	2.1	
Total Moisture	3.51	4.36	7.18

# Aggregate Optimization Chart

# Production Gradation Report

**PLANT #:** p11

Sample Date: 10/14/24

Dates Test Represents: 10/15/2024 through 10/21/2024

Concrete Grade: S2M, 3500HP

Contractor: \_\_\_\_\_

MDOT No.: \_\_\_\_\_



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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	Contribution %	
6AA	71-47	Presque Isle	1420	8.69	2.62	46.6	
26A	71-47	Presque Isle	400	2.45	2.62	13.1	
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3	
Total Wt						3050	100.0

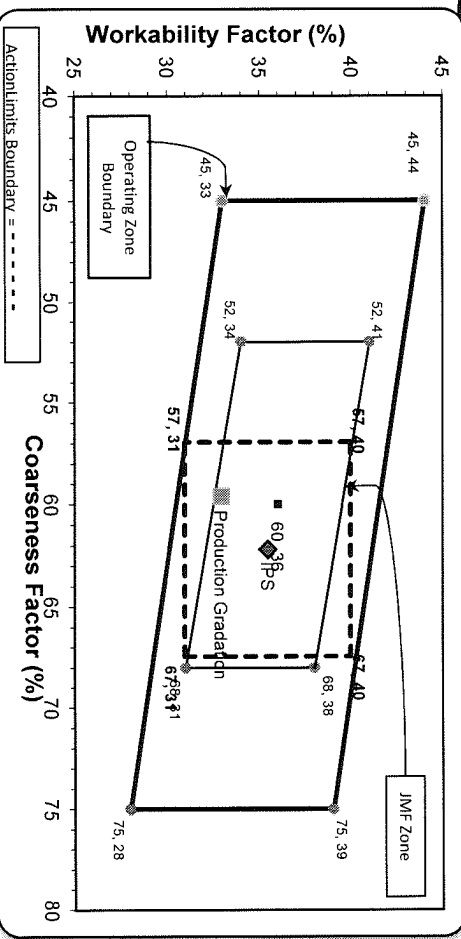
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	87.2	100.0	100.0	94.0	6.0	6.0
1/2"	39.1	95.3	100.0	71.0	29.0	29.0
3/8"	19.2	82.1	100.0	60.0	40.0	40.0
#4	3.8	15.5	93.4	41.5	58.5	58.5
#8	2.6	4.2	77.3	32.9	67.1	67.1
#16	2.4	2.8	62.7	26.8	73.2	73.2
#30	2.3	2.5	48.7	21.0	79.0	79.0
#50	2.3	2.3	28.4	12.8	87.2	87.2
#100	2.1	2.2	8.5	4.7	95.3	95.3
LBW	1.8	1.9	1.1	1.5	98.5	98.5

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 a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Coarseness Factor: 60 Workability Factor: 33



Initial Production Sample (IPS)

Sieve	% 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"	94.0	6.0	6.0
1/2"	70.2	23.7	29.8
3/8"	59.9	10.4	40.1
#4	42.7	17.2	57.3
#8	35.5	7.2	64.5
#16	28.4	7.0	71.6
#30	19.2	9.2	80.8
#50	8.9	10.3	91.1
#100	3.1	5.9	96.9
LBW	1.4	1.7	98.6

PREPARED BY: SM, LLC Technical Service

Approved By: \_\_\_\_\_



EDW. C. LEVY CO.  
8300 Dix Avenue, Detroit, MI 48209  
(313) 643-1700

Superior Onsite  
Jefferson

# Daily Summary Report

Date Thursday, October 17, 2024

Sample Id	-674935850	-1124319770	-674912127	-1989648247	-1409968138
<b>Plant</b>	S000 Superior Onsite	S000 Superior Onsite	S000 Superior Onsite	S000 Superior Onsite	S000 Superior Onsite
<b>Product</b>	7919 COARSE AGG P1M LS	1051 6AA LS	7920 INTERMED AGG P1M LS	1067 26A Mod LS	1022 2NS GR
<b>Specification</b>	Coarse Agg P1M LS Target		Intermed Agg P1M LS Target	26A Mod LS Spec	2NS GR Spec
<b>Sample Type</b>	QA	QA	QA	QA	QA
<b>Time</b>	13:43	13:45	13:50	13:56	13:58
2" (50mm)	100.0	100.0	100.0	100.0	100.0
1 1/2" (37.5mm)	96.9	100.0	100.0	100.0	93.4
1" (25mm)	32.4	100.0	100.0	100.0	77.3
3/4" (19mm)	5.7	87.2	100.0	100.0	62.7
1/2" (12.5mm)	2.1	39.1	76.4	95.3	48.7
3/8" (9.5mm)	1.8	19.2	41.7	82.1	28.4
#4 (4.75mm)	1.7	3.8	3.7	15.5	8.5
#8 (2.36mm)	1.6	2.6	2.0	4.2	1.5
#16 (1.18mm)	1.5	2.4	1.8	2.8	0.0
#30 (.6mm)	1.4	2.3	1.7	2.5	2.81
#50 (.3mm)	1.3	2.3	1.7	2.3	1.5
#100 (.15mm)	1.2	2.1	1.6	2.2	1.1
#200 (75µm)	1.1	1.98	1.5	2.0	0.0
Pan	0.0	0.00	0.0	0.0	0.0
FM					2.81
-#200 (75µm)					1.5
Wash Loss (#200/75µm)	1.0	1.8	1.4	1.9	1.1
Total Moisture	1.3	3.6	0.7	1.1	5.4

# Aggregate Optimization Chart

## Production Gradation Report

PLANT #: **P-103**

Sample Date: **10/14/24**

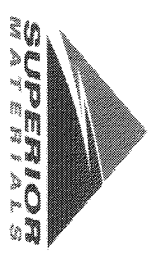
Dates Test Represents: **10/15/2024**

through **10/21/2024**

Concrete Grade: **S2M, 3500HP**

Contractor: \_\_\_\_\_

MIDOT No.: \_\_\_\_\_



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

Agg. Class	Pit #	Source	Weight (ssd)	ft <sup>3</sup>	Specific Gravity	Contribution %
6AA	58-003	Stoneco	1500	8.94	2.69	48.4
26A	58-003	Stoneco	400	2.38	2.69	12.9
2NS	63-114	Highland	1200	7.26	2.65	38.7
<b>Total Wt:</b>			<b>3100</b>	<b>18.58</b>		<b>100.0</b>

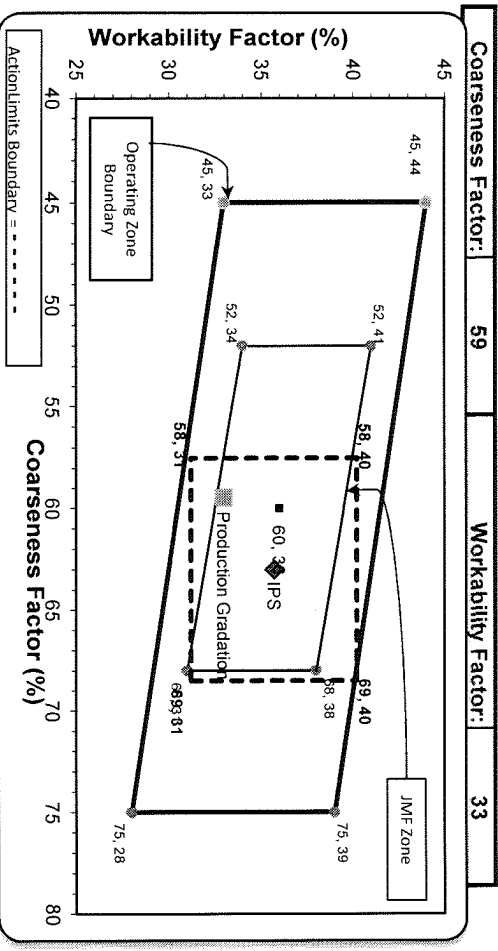
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	78.0	100.0	100.0	100.0	10.6	10.6
1/2"	39.8	99.7	100.0	100.0	18.5	29.2
3/8"	19.7	92.3	100.0	100.0	10.7	39.8
#4	3.5	8.2	98.7	100.0	19.2	59.0
#8	1.3	2.4	82.8	100.0	8.0	67.0
#16	1.0	1.8	62.2	100.0	8.2	75.2
#30	0.9	1.5	39.4	100.0	8.9	84.1
#50	0.8	1.4	15.8	100.0	9.2	93.3
#100	0.8	1.3	3.4	100.0	4.8	98.1
LBW	0.6	1.1	0.5	100.0	1.2	99.4

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 a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Initial Production Sample (IPS)



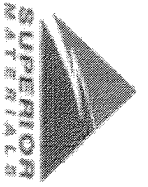
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.2	0.8	0.8
3/4"	90.9	8.3	9.1
1/2"	71.3	19.6	28.7
3/8"	59.5	11.8	40.5
#4	43.8	15.7	56.2
#8	35.7	8.1	64.3
#16	27.0	8.7	73.0
#30	18.6	8.4	81.4
#50	6.8	11.8	93.2
#100	1.4	5.4	98.6
LBW	0.6	0.8	99.4

Coarseness Factor: **59** Workability Factor: **33**

Coarseness Factor: **63** Workability Factor: **36**

PREPARED BY:  
 SM, LLC Technical Service

Approved BY:



# Daily Summary Report

Date Tuesday, October 15, 2024

Sample Id	-674979899	-674960491	-1989637293	-674940167	-674965843
<b>Plant</b>	S103 Superior Brighton	S103 Superior Brighton	S103 Superior Brighton	S103 Superior Brighton	S103 Superior Brighton
<b>Product</b>	7919 COARSE AGG P1M LS	1051 6AA LS	7920 INTERMED AGG P1M LS	1067 26A Mod LS	1022 2NS GR
<b>Specification</b>	Coarse Agg P1M LS Target	6AA LS	Intermed Agg P1M LS Target	26A Mod LS Spec	2NS GR Spec
<b>Sample Type</b>	QA	QA	QA	QA	QA
<b>Time</b>	13:15	13:16	13:17	13:18	14:40
2" (50mm)	100.0	100.0	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	100.0	100.0	98.7
1" (25mm)	56.1	100.0	100.0	100.0	82.8
3/4" (19mm)	17.0	78.0	100.0	100.0	62.2
1/2" (12.5mm)	5.3	39.8	89.5	99.7	39.4
3/8" (9.5mm)	3.2	19.7	73.6	92.3	15.8
#4 (4.75mm)	2.3	3.5	20.5	8.2	3.4
#8 (2.36mm)	2.2	1.3	8.6	2.4	0.7
#16 (1.18mm)	2.1	1.0	5.9	1.8	0.0
#30 (.6mm)	1.9	0.9	4.8	1.5	0.0
#50 (.3mm)	1.7	0.8	3.7	1.4	0.0
#100 (.15mm)	1.5	0.8	3.1	1.3	0.0
#200 (75um)	1.4	0.72	2.9	1.2	0.0
Pan	0.0	0.00	0.0	0.0	0.0
FM					2.98
Wash Loss (#200/75um)	1.3	0.6	2.7	1.1	0.5
Total Moisture	1.75	2.90	3.10	3.66	3.41