

# Aggregate Optimization Chart

## Production Gradation Report

PLANT #: **12**

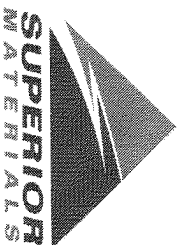
Sample Date: **8/12/24**

Dates Test Represents: **8/13/2024** through **8/19/2024**

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 <sup>3</sup>	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1450	8.87	2.62	49.9
26A	71-47	Presque Isle	305	1.87	2.62	10.5
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
		<b>Total Wt</b>	<b>2905</b>	<b>17.69</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"	97.5	100.0	100.0	98.8	1.2	1.2
3/4"	81.3	98.8	100.0	90.5	8.2	9.5
1/2"	44.3	92.8	100.0	71.4	19.1	28.6
3/8"	25.9	80.4	100.0	61.0	10.5	39.0
#4	5.1	17.3	95.5	42.2	18.8	57.8
#8	2.5	3.9	78.5	32.7	9.4	67.3
#16	2.1	2.3	60.6	25.3	7.5	74.7
#30	2.0	1.9	42.2	17.9	7.4	82.1
#50	2.0	1.7	18.8	8.6	9.3	91.4
#100	1.9	1.6	4.0	2.7	5.9	97.3
LBW	1.5	1.3	0.9	1.2	1.5	98.8

\*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.

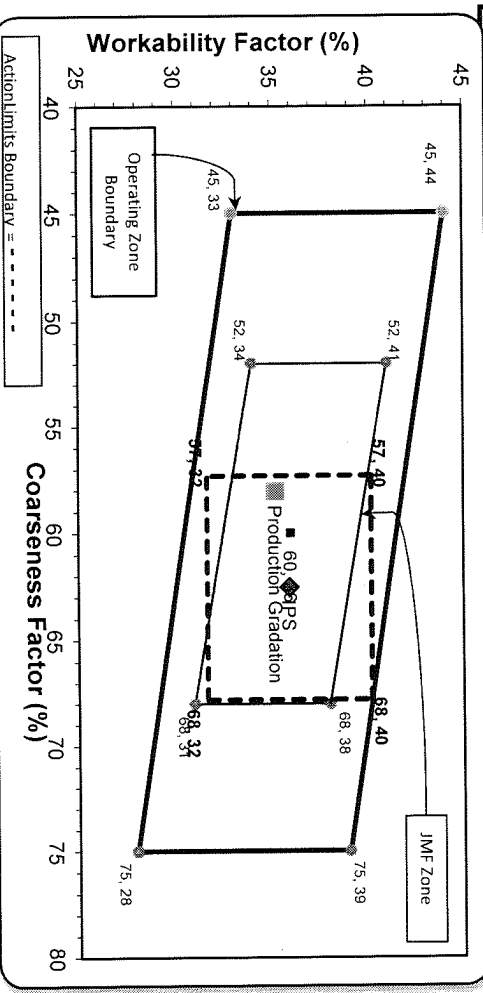
Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Adjusted W/F

Initial Production Sample (IPS)

Coarseness Factor:	58	Workability Factor:	33	Adjusted W/F	35.2
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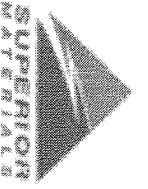
Coarseness Factor:	63
Workability Factor:	36



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

PREPARED BY:  
SM, LLC Technical Service

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



# Daily Summary Report

Date Friday, August 16, 2024

Sample Id -1989616230

-674919691

-674964143

Plant

Product 1051  
6AA LS

1022  
ZNS GR

1067  
26A Mod LS

Specification 6AA LS

ZNS GR Spec

26A Mod LS Spec

Sample Type QA

QA

QA

Time 13:10

13:12

13:12

2" (50mm)	100.0		100.0
1 1/2" (37.5mm)	100.0		100.0
1" (25mm)	97.5		100.0
3/4" (19mm)	81.3		98.8
1/2" (12.5mm)	44.3		92.8
3/8" (9.5mm)	25.9	100.0	80.4
#4 (4.75mm)	5.1	95.5	17.3
#8 (2.36mm)	2.5	78.5	3.9
#16 (1.18mm)	2.1	60.6	2.3
#30 (.6mm)	2.0	42.2	1.9
#50 (.3mm)	2.0	18.8	1.7
#100 (.15mm)	1.9	4.0	1.6
#200 (75um)	1.68	1.1	1.4
Pan	0.00	0.0	0.0
FM		3.00	
Wash Loss (#200/75um)	1.5	0.9	1.3
Total Moisture	3.28	3.61	3.47

# Aggregate Optimization Chart

## Production Gradation Report

PLANT #: **P-102**

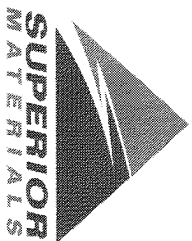
Sample Date: **8/12/24**

Dates Test Represents: **8/13/2024** through **8/19/2024**

Concrete Grade: **DM, 4500HP**

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

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



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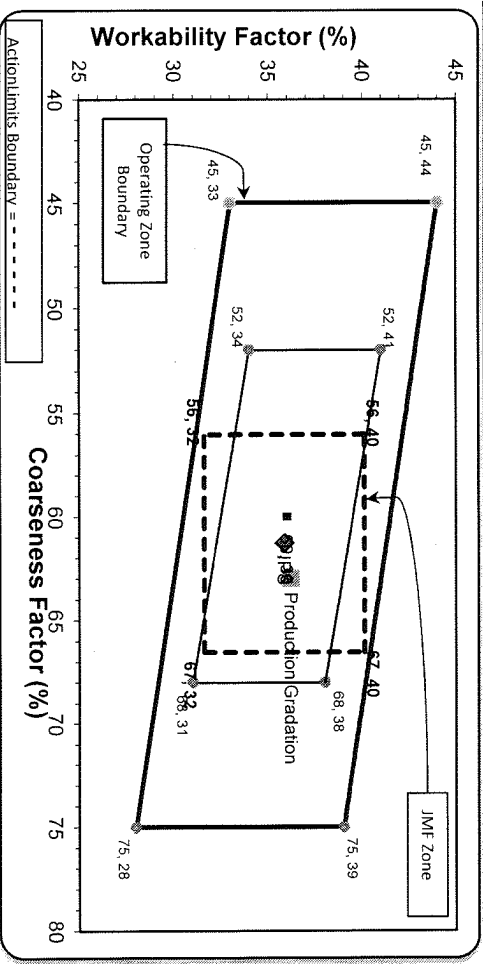
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	Contribution %
6AA	58-003	Stoneco	1475	8.79	2.69	50.0
26A	58-003	Stoneco	325	1.94	2.69	11.0
ZNS	63-114	Highland	1150	6.95	2.65	39.0
<b>Total Wt</b>			<b>2950</b>	<b>17.68</b>		<b>100.0</b>

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"	99.3	100.0	100.0	99.7	0.3	0.3
3/4"	77.6	100.0	100.0	88.8	10.9	11.2
1/2"	39.6	98.8	100.0	69.7	19.1	30.3
3/8"	19.2	87.9	100.0	58.3	11.4	41.7
#4	4.8	12.6	98.3	42.1	16.2	57.9
#8	2.0	4.0	82.8	33.7	8.4	66.3
#16	1.6	2.6	64.6	26.3	7.4	73.7
#30	1.5	2.3	44.9	18.5	7.8	81.5
#50	1.4	2.1	17.1	7.6	10.9	92.4
#100	1.4	2.1	3.0	2.1	5.5	97.9
LBW	1.2	2.0	0.7	1.1	1.0	98.9

Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Coarseness Factor: **63** Workability Factor: **34** Adjusted WF: **36.2**

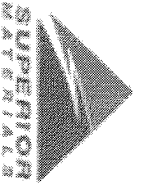


Sieve	Coarseness Factor:	Workability Factor:	Adjusted WF:
2"	61	36	36.2
1.5"	61	36	36.2
1"	61	36	36.2
3/4"	61	36	36.2
1/2"	61	36	36.2
3/8"	61	36	36.2
#4	61	36	36.2
#8	61	36	36.2
#16	61	36	36.2
#30	61	36	36.2
#50	61	36	36.2
#100	61	36	36.2
LBW	61	36	36.2

\*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.

PREPARED BY:  
SM, LLC Technical Service

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



# Daily Summary Report

Date Thursday, August 15, 2024

Sample Id	-674969680	-674969547	-674917552	-674893616	-674905182
<b>Plant</b>	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi
<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>	13:07	13:08	13:08	13:09	13:10
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	100.0
1" (25mm)	58.3	99.3	100.0	100.0	98.3
3/4" (19mm)	31.8	77.6	100.0	100.0	82.8
1/2" (12.5mm)	16.8	39.6	96.3	98.8	82.8
3/8" (9.5mm)	9.7	19.2	80.7	87.9	98.3
#4 (4.75mm)	3.6	4.8	28.2	12.6	98.3
#8 (2.36mm)	2.7	2.0	9.1	4.0	82.8
#16 (1.18mm)	2.3	1.6	3.3	2.6	64.6
#30 (.6mm)	2.1	1.5	2.0	2.3	44.9
#50 (.3mm)	1.9	1.4	1.7	2.1	17.1
#100 (.15mm)	1.8	1.4	1.6	2.1	3.0
#200 (75µm)	1.6	1.28	1.5	2.0	0.9
Pan	0.0	0.00	0.0	0.0	0.0
FM					2.89
Wash Loss (#200/75µm)	1.5	1.2	1.5	2.0	0.7
Total Moisture	1.66	2.46	2.81	3.46	2.44