

# Aggregate Optimization Chart

# Production Gradation Report

PLANT #: **P11**

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

Sample Date: 10/21/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 10/22/2024 through 10/28/2024

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

Agg. Class	Pit #	Source	Weight (ssd)	ft <sup>3</sup>	Specific Gravity	Contribution %
CA	71-47	Presque Isle	770	4.71	2.62	25.1
IA	71-47	Presque Isle	1100	6.73	2.62	35.8
NNS	63-115	Ray Rd	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

Sieve	CA	IA	NNS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	90.7	100.0	100.0	97.7	2.3	2.3
1"	25.9	100.0	100.0	81.4	16.3	18.6
3/4"	5.2	99.0	100.0	75.9	5.6	24.1
1/2"	1.6	78.1	100.0	67.5	8.4	32.5
3/8"	1.3	47.6	100.0	56.5	11.0	43.5
#4	1.3	7.1	95.7	40.3	16.2	59.7
#8	1.3	3.9	79.3	32.7	7.6	67.3
#16	1.2	3.4	63.9	26.5	6.2	73.5
#30	1.2	3.3	48.9	20.6	5.9	79.4
#50	1.2	3.2	25.9	11.6	9.0	88.4
#100	1.1	3.1	6.7	4.0	7.6	96.0
LBW	0.9	2.9	1.1	1.7	2.3	98.3



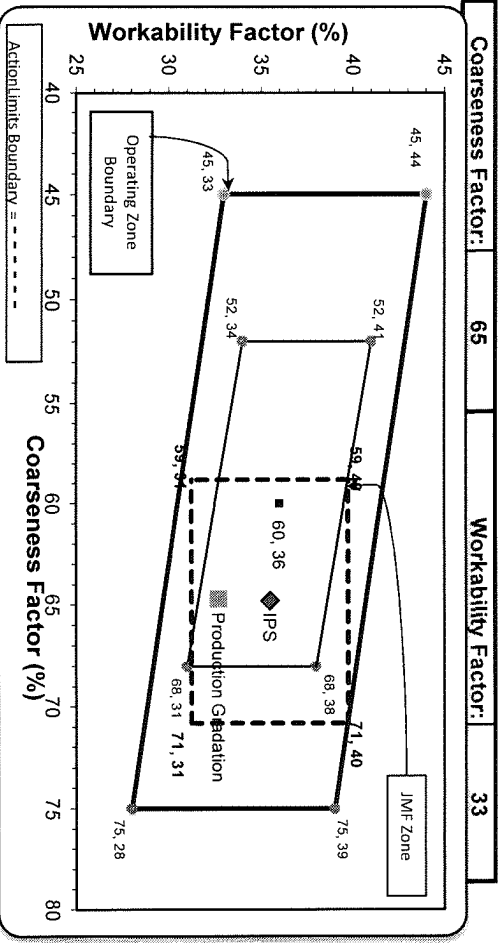
Superior Materials, LLC  
30701 W. 10 Mile Rd.  
Suite 500  
Farmington Hills, MI 48336

Sieve	CA	IA	NNS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	90.7	100.0	100.0	97.7	2.3	2.3
1"	25.9	100.0	100.0	81.4	16.3	18.6
3/4"	5.2	99.0	100.0	75.9	5.6	24.1
1/2"	1.6	78.1	100.0	67.5	8.4	32.5
3/8"	1.3	47.6	100.0	56.5	11.0	43.5
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LBW	0.9	2.9	1.1	1.7	2.3	98.3

\*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 8% for the 1" sieve when a 2" max. size (nom. 1.5") aggregate is used.

Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Initial Production Sample (IPS)



Sieve	CA	IA	NNS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	90.7	100.0	100.0	97.7	2.3	2.3
1"	25.9	100.0	100.0	81.4	16.3	18.6
3/4"	5.2	99.0	100.0	75.9	5.6	24.1
1/2"	1.6	78.1	100.0	67.5	8.4	32.5
3/8"	1.3	47.6	100.0	56.5	11.0	43.5
#4	1.3	7.1	95.7	40.3	16.2	59.7
#8	1.3	3.9	79.3	32.7	7.6	67.3
#16	1.2	3.4	63.9	26.5	6.2	73.5
#30	1.2	3.3	48.9	20.6	5.9	79.4
#50	1.2	3.2	25.9	11.6	9.0	88.4
#100	1.1	3.1	6.7	4.0	7.6	96.0
LBW	0.9	2.9	1.1	1.7	2.3	98.3

Sieve	CA	IA	NNS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	90.7	100.0	100.0	97.7	2.3	2.3
1"	25.9	100.0	100.0	81.4	16.3	18.6
3/4"	5.2	99.0	100.0	75.9	5.6	24.1
1/2"	1.6	78.1	100.0	67.5	8.4	32.5
3/8"	1.3	47.6	100.0	56.5	11.0	43.5
#4	1.3	7.1	95.7	40.3	16.2	59.7
#8	1.3	3.9	79.3	32.7	7.6	67.3
#16	1.2	3.4	63.9	26.5	6.2	73.5
#30	1.2	3.3	48.9	20.6	5.9	79.4
#50	1.2	3.2	25.9	11.6	9.0	88.4
#100	1.1	3.1	6.7	4.0	7.6	96.0
LBW	0.9	2.9	1.1	1.7	2.3	98.3

PREPARED BY: SM, LLC Technical Service

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



EDW. C. LEVY CO.  
 6300 Dix Avenue, Dalton, MA 04223  
 (313) 643-7250

Superior Onsite  
 Jefferson

# Daily Summary Report

Date Wednesday, October 23, 2024

Sample Id	Plant	Product	Specification	Sample Type	Time
-1989628691	S000 Superior Onsite	7920 INTERMED AGG P1M LS	Intermed Agg P1M LS Target	QA	14:33
-1989648941	S000 Superior Onsite	1067 26A Mod LS	26A Mod LS Spec	QA	14:38
-1989651570	S000 Superior Onsite	1051 6AA LS		QA	14:39
-1178926332	S000 Superior Onsite	1022 2NS GR	2NS GR Spec	QA	14:40
-1989620765	S000 Superior Onsite	7919 COARSE AGG P1M LS	Coarse Agg P1M LS Target	QA	14:41
2" (50mm)				100.0	100.0
1 1/2" (37.5mm)				100.0	90.7
1" (25mm)				100.0	25.9
3/4" (19mm)				99.0	5.2
1/2" (12.5mm)				78.1	1.6
3/8" (9.5mm)				47.6	1.3
#4 (4.75mm)				7.1	1.3
#8 (2.36mm)				3.9	1.3
#16 (1.18mm)				3.4	1.2
#30 (.6mm)				3.3	1.2
#50 (.3mm)				3.2	1.2
#100 (.15mm)				3.1	1.1
#200 (75µm)				3.0	1.0
Pan				0.0	0.0
FM				0.0	2.80
-#200 (75µm)				2.9	1.5
Wash Loss (#200/75µm)				2.3	1.1
Total Moisture				2.8	4.1
					0.1

# Aggregate Optimization Chart

# Production Gradation Report

**PLANT #:** P-103

**Sample Date:** 10/21/24

**Dates Test Represents:** 10/22/2024 through 10/28/2024

**Concrete Grade:** P1M, 3500HP

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

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



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

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

Agg. Class	Pit #	Source	Weight (ssd)	ft <sup>3</sup>	Specific Gravity	Contribution %
CA	58-003	Stoneco	1470	8.76	2.69	47.1
IA	58-003	Stoneco	450	2.68	2.69	14.4
NNS	63-114	Highland	1200	7.26	2.65	38.5
		<b>Total Wt</b>	<b>3120</b>	<b>18.70</b>		<b>100.0</b>

Sieve	CA	IA	NNS	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"	42.5	100.0	100.0	72.9	27.1	27.1
3/4"	15.7	100.0	100.0	60.3	39.7	60.3
1/2"	9.9	93.4	100.0	56.6	43.4	93.4
3/8"	7.1	78.2	100.0	53.1	46.9	99.1
#4	3.7	15.4	99.0	42.0	58.0	99.1
#8	2.6	5.0	82.6	33.7	66.3	99.1
#16	2.2	3.1	63.3	25.8	74.2	99.1
#30	1.9	2.6	40.5	16.8	83.2	99.1
#50	1.6	2.2	15.9	7.2	92.8	99.1
#100	1.3	2.0	3.3	2.2	97.8	99.1
LBW	1.0	1.9	0.5	0.9	99.1	99.1

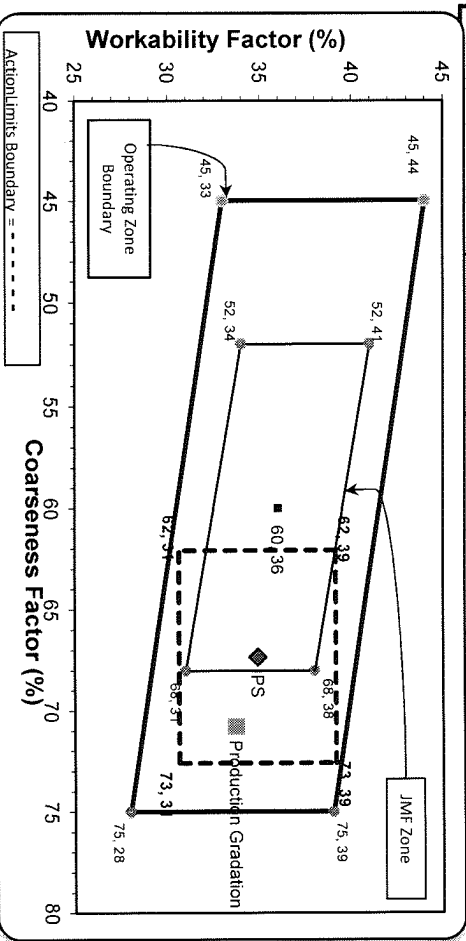
\*Maximum % Retained must be above the 3/8" sieve.  
 \*Any two adjacent sieves must equal 10% except max.  
 nom. max., #100 and #200 sieves.  
 \*\*% Retained must be at least 4% for each sieve except max.  
 nom. max., #100 and #200 sieves.  
 \*\*\*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

**Production Gradation**  Batch Plant Gradations  Aggregate Supplier Gradations

**Initial Production Sample (IPS)**

**Coarseness Factor:** 71 **Workability Factor:** 34

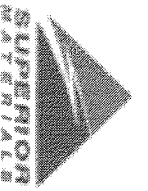
**Coarseness Factor:** 67 **Workability Factor:** 35



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	85.5	14.5	14.5
3/4"	73.4	12.1	26.6
1/2"	61.0	12.4	39.0
3/8"	56.2	4.8	43.8
#4	43.1	13.1	56.9
#8	34.9	8.2	65.1
#16	29.4	5.5	70.6
#30	21.6	7.8	78.4
#50	8.1	13.4	91.9
#100	2.2	5.9	97.8
LBW	1.4	0.8	98.6

PREPARED BY:  
 SM, LLC Technical Service

Approved BY:



# Daily Summary Report

Date Monday, October 21, 2024

Sample Id	-1989635065	-1989662079	-674948310	-1018111509	-674912158
Plant	S103 Superior Brighton	S103 Superior Brighton	S103 Superior Brighton	S103 Superior Brighton	S103 Superior Brighton
Product	1051 6AA LS	1067 26A Mod LS	1022 2NS GR	7919 COARSE AGG P1M LS	7920 INTERMED AGG P1M LS
Specification	6AA LS	26A Mod LS Spec	2NS GR Spec	Coarse Agg P1M LS Target	Intermed Agg P1M LS Target
Sample Type	QA	QA	QA	QA	QA
Time	10:30	10:31	10:32	11:34	11:35
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)	99.4	100.0	42.5	100.0	100.0
3/4" (19mm)	84.3	100.0	15.7	100.0	100.0
1/2" (12.5mm)	40.6	100.0	9.9	93.4	93.4
3/8" (9.5mm)	17.1	89.4	7.1	78.2	78.2
#4 (4.75mm)	2.6	9.1	3.7	15.4	15.4
#8 (2.36mm)	1.2	2.4	82.6	2.6	5.0
#16 (1.18mm)	1.1	1.7	63.3	2.2	3.1
#30 (.6mm)	1.0	1.5	40.5	1.9	2.6
#50 (.3mm)	1.0	1.3	15.9	1.6	2.2
#100 (.15mm)	1.0	1.2	3.3	1.3	2.0
#200 (75um)	0.90	1.2	0.8	1.2	1.9
Pan	0.00	0.0	0.0	0.0	0.0
FM			2.95		
Wash Loss (#200/75um)	0.8	1.1	0.5	1.0	1.9
Total Moisture	1.80	3.00	3.60	0.47	2.48