

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-02**

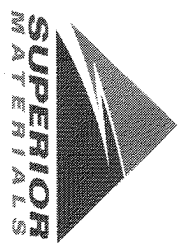
Sample Date: **9/2/24**

Dates Test Represents: **9/3/2024** through **9/9/2024**

Concrete Grade: **S2M 3500HP**

Contractor: _____

MDOT No.: _____



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

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

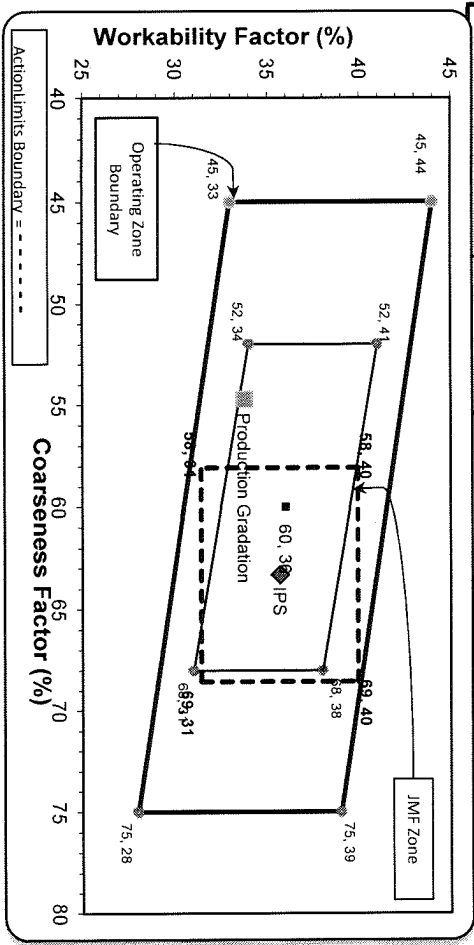
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1520	9.30	2.62	49.8
26A	71-47	Presque Isle	300	1.83	2.62	9.8
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3
		Total Wt:	3050	18.57		100.0

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"	82.8	100.0	100.0	91.4	8.6	8.6
1/2"	46.4	94.3	100.0	72.7	18.7	27.3
3/8"	30.5	83.6	100.0	63.8	9.0	36.2
#4	4.1	18.9	96.9	43.0	20.8	57.0
#8	1.3	4.1	81.1	33.8	9.2	66.2
#16	1.2	2.4	66.0	27.5	6.3	72.5
#30	1.1	2.1	50.4	21.1	6.4	78.9
#50	1.1	1.9	25.4	11.0	10.1	89.0
#100	1.0	1.8	5.1	2.7	8.2	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: **55** Workability Factor: **34**



Initial Production Sample (IPS)

Sieve	Coarseness Factor:	Workability Factor:	Cumulative % Passing	% Retained	Cumulative % Retained
2"	63	36	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

PREPARED BY:
SM, LLC Technical Service

Approved By:



Plant S02-Superior Hoover

Product 1051-6AA LS

Period: 09/01/2024 - 09/07/2024

Name/Title Doug Storey / QC Technician

Report Date 09/07/2024

Procedure	Sieve/Test	Result	Unit	6AA LS
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	100.0	%	95-100
	3/4" (19mm)	82.8	%	
	1/2" (12.5mm)	46.4	%	30-60
	3/8" (9.5mm)	30.5	%	
	#4 (4.75mm)	4.1	%	0-8
	#8 (2.36mm)	1.3	%	
	#16 (1.18mm)	1.2	%	
	#30 (.6mm)	1.1	%	
	#50 (.3mm)	1.1	%	
	#100 (.15mm)	1.0	%	
	#200 (75µm)	0.96	%	
	Wash Loss (#200/75um)	0.9	%	0-2
	Total Moisture	3.23	%	



Plant S02-Superior Hoover

Product 1067-26A Mod LS

Period: 09/01/2024 - 09/07/2024

Name/Title Doug Storey / QC Technician

Report Date 09/07/2024

Procedure	Sieve/Test	Result	Unit	26A LS Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	
	1" (25mm)	100.0	%	
	3/4" (19mm)	100.0	%	100-100
	1/2" (12.5mm)	94.3	%	95-100
	3/8" (9.5mm)	83.6	%	60-95
	#4 (4.75mm)	18.9	%	5-30
	#8 (2.36mm)	4.1	%	0-12
	#16 (1.18mm)	2.4	%	
	#30 (.6mm)	2.1	%	
	#50 (.3mm)	1.9	%	
	#100 (.15mm)	1.8	%	
	#200 (75µm)	1.7	%	
	Wash Loss (#200/75um)	1.6	%	0-3
	Total Moisture	3.30	%	



Plant S02-Superior Hoover

Product 1022-2NS GR

Name/Title Doug Storey / QC Technician

Period: 09/01/2024 - 09/07/2024

Report Date 09/07/2024

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	96.9	%	95-100
	#8 (2.36mm)	81.1	%	65-95
	#16 (1.18mm)	66.0	%	35-75
	#30 (.6mm)	50.4	%	20-55
	#50 (.3mm)	25.4	%	10-30
	#100 (.15mm)	5.1	%	0-10
	#200 (75µm)	0.9	%	
	FM	2.75		2.6-3
	Wash Loss (#200/75um)	0.7	%	0-3
	Total Moisture	4.04	%	

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P11

Sample Date: 9/2/24

Dates Test Represents: 9/3/2024 through 9/9/2024

Concrete Grade: S2M, 3500HP

Contractor: _____

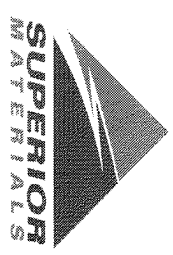
MIDOT No.: _____

Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1520	9.30	2.62	49.8
26A	71-47	Presque Isle	300	1.83	2.62	9.8
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3
Total Wt			3050	18.57		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"	95.7	100.0	100.0	97.9	2.1	2.1
3/4"	73.9	98.9	100.0	86.9	11.0	13.1
1/2"	30.8	90.9	100.0	64.6	22.3	35.4
3/8"	15.7	70.5	100.0	55.1	9.5	44.9
#4	3.0	9.5	95.8	41.1	14.0	58.9
#8	1.9	2.8	80.9	33.8	7.2	66.2
#16	1.6	2.0	65.7	27.5	6.4	72.5
#30	1.6	1.8	49.5	20.9	6.6	79.1
#50	1.5	1.6	26.0	11.4	9.5	88.6
#100	1.4	1.5	6.7	3.5	7.8	96.5
LBW	1.1	1.1	0.8	1.0	2.6	99.0

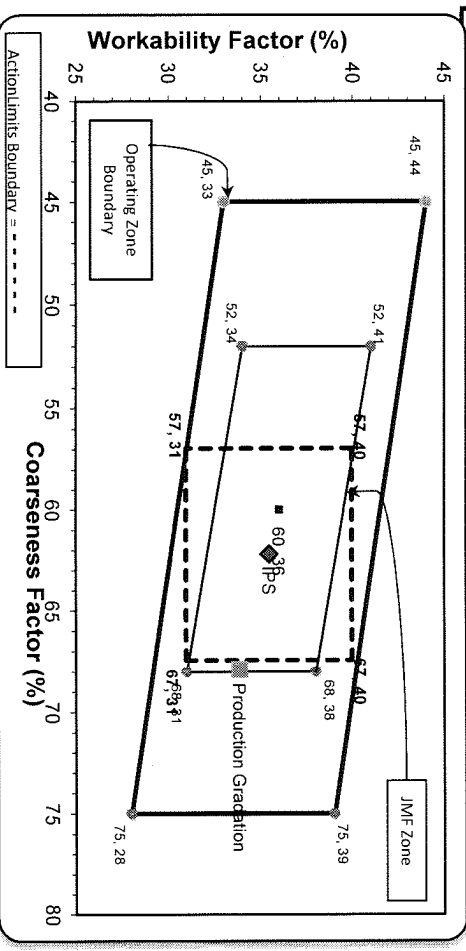
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max.
 nom. max. #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max.
 nom. max. #100 and #200 sieves.
 *% Retained must be at least 4% for the 3/4" sieve when
 a 1.5" max size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



Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
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Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **68** Workability Factor: **34**

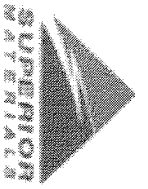


Initial Production Sample (IPS)

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	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: _____



Daily Summary Report

Date Thursday, September 5, 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 (.75um)	Pan	FM	Wash Loss (#200/75um)	Total Moisture
-674952066	S11	7919 COARSE AGG P1M LS	Coarse Agg P1M LS Target	QA	16:14	100.0	96.7	32.0	7.6	2.4	1.9	1.8	1.7	1.7	1.6	1.6	1.5	1.3	0.0	0.0	1.2	0.09
-667669438	S11	1051 6AA LS	6AA LS	QA	16:15	100.0	100.0	95.7	73.9	30.8	15.7	3.0	1.9	1.6	1.6	1.5	1.4	1.24	0.00	0.0	1.1	2.42
-674897218	S11	1067 26A Mod LS	26A Mod LS Spec	QA	16:16	100.0	100.0	100.0	98.9	90.9	70.5	9.5	2.8	2.0	1.8	1.6	1.5	1.3	0.0	0.0	1.1	2.15
-367922331	S11	7920 INTERMED AGG P1M LS	Intermed Agg P1M LS Target	QA	16:16	100.0	100.0	100.0	99.6	76.2	50.9	9.4	3.3	2.4	2.2	2.1	1.9	1.7	0.0	0.0	1.5	1.53
-674933763	S11	1022 2NS GR	2NS GR Spec	QA	16:17	100.0	95.8	80.9	65.7	49.5	26.0	6.7	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	3.76

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-103**

Sample Date: **9/2/24**

Dates Test Represents: **9/3/2024**

through **9/9/2024**

Concrete Grade: **S2M, 3500HP**

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	58-003	Stoneco	1600	9.53	2.69	51.6
26A	58-003	Stoneco	300	1.79	2.69	9.7
2NS	63-114	Highland	1200	7.26	2.65	38.7
Total Wt			3100	18.58		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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	83.7	100.0	100.0	91.6	8.4	8.4
1/2"	40.2	99.9	100.0	69.1	22.5	30.9
3/8"	19.3	89.7	100.0	57.4	11.8	42.6
#4	4.6	5.6	99.3	41.4	16.0	58.6
#8	2.4	1.3	86.1	34.7	6.7	65.3
#16	1.9	0.9	70.3	28.3	6.4	71.7
#30	1.7	0.9	52.0	21.1	7.2	78.9
#50	1.6	0.8	23.3	9.9	11.2	90.1
#100	1.5	0.8	4.8	2.7	7.2	97.3
LBW	1.3	0.7	1.0	1.1	1.6	98.9

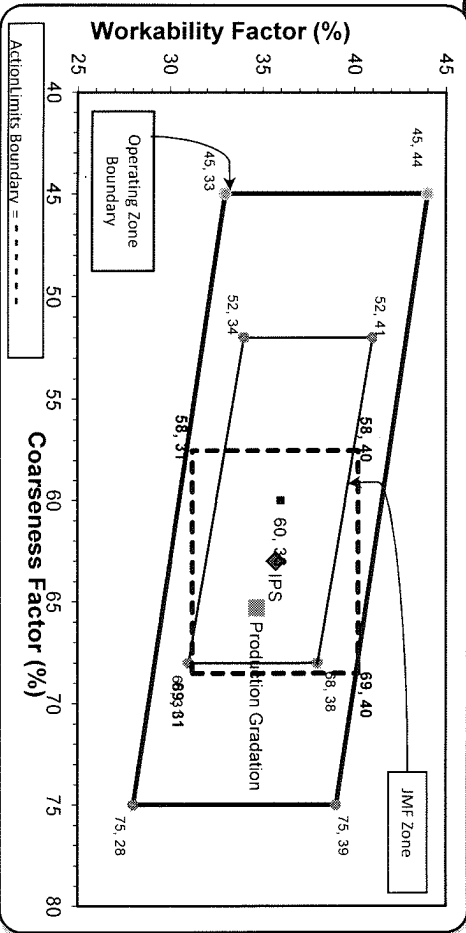
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max.
 nom. max. #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max.
 nom. max. #100 and #200 sieves.
 *% Retained must be at least 4% for the 3/4" sieve when
 a 1.5" max. size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



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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **65** Workability Factor: **35**

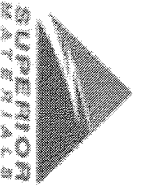


Initial Production Sample (IPS)

Coarseness Factor:	Workability Factor:	IPS	
63	36		
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

PREPARED BY:
 SM, LLC Technical Service

Approved BY:



Daily Summary Report

Date Tuesday, September 3, 2024

Sample Id	-1989627643	-1989648617	-674905736
Plant	S103 Superior Brighton	S103 Superior Brighton	S103 Superior Brighton
Product	1067 26A Mod LS	1051 6AA LS	1022 2NS GR

Specification	26A Mod LS Spec	6AA LS	2NS GR Spec
Sample Type	QA	QA	QA
Time	12:22	16:20	16:21
2" (50mm)	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	99.3
1" (25mm)	100.0	100.0	86.1
3/4" (19mm)	100.0	83.7	70.3
1/2" (12.5mm)	99.9	40.2	52.0
3/8" (9.5mm)	89.7	19.3	23.3
#4 (4.75mm)	5.6	4.6	4.8
#8 (2.36mm)	1.3	2.4	1.4
#16 (1.18mm)	0.9	1.9	0.0
#30 (.6mm)	0.9	1.7	2.64
#50 (.3mm)	0.8	1.6	1.0
#100 (.15mm)	0.8	1.5	1.0
#200 (75µm)	0.7	1.38	1.0
Pan	0.0	0.00	1.0
FM			2.64
Wash Loss (#200/75µm)	0.7	1.3	1.0
Total Moisture	0.87	1.71	3.23