

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P11**

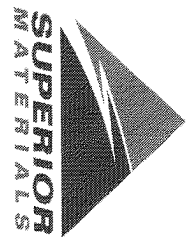
Sample Date: **10/14/24**

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

Concrete Grade: **P1M, 3500HP**

Contractor: _____

MDOT No.: _____



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

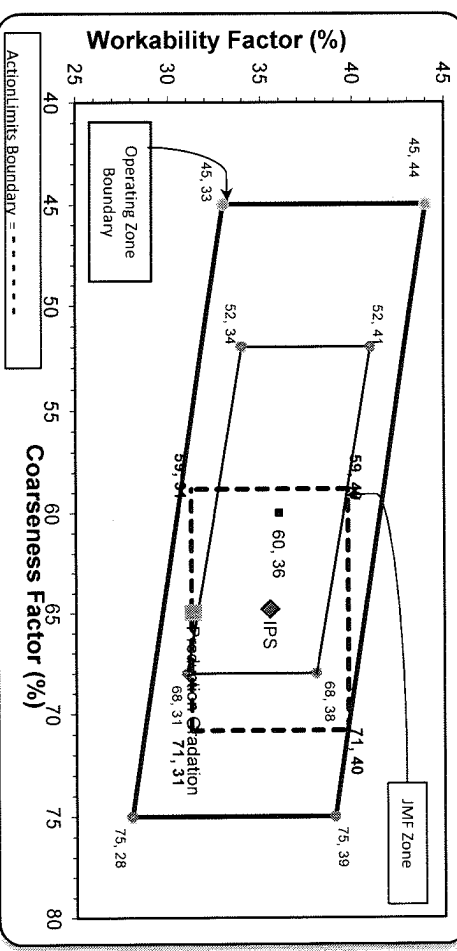
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
CA	71-47	Presque Isle	700	4.28	2.62	22.8
IA	71-47	Presque Isle	1170	7.16	2.62	38.1
ZNS	63-115	Ray Rd	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

Sieve	CA	IA	ZNS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	96.9	100.0	100.0	99.3	0.7	0.7
1"	32.4	100.0	100.0	84.6	14.7	15.4
3/4"	5.7	100.0	100.0	78.5	6.1	21.5
1/2"	2.1	76.4	100.0	68.7	9.8	31.3
3/8"	1.8	41.7	100.0	55.4	13.3	44.6
#4	1.7	3.7	93.4	38.3	17.1	61.7
#8	1.6	2.0	77.3	31.3	7.0	68.7
#16	1.5	1.8	62.7	25.5	5.8	74.5
#30	1.4	1.7	48.7	20.0	5.5	80.0
#50	1.3	1.7	28.4	12.0	8.0	88.0
#100	1.2	1.6	8.5	4.2	7.8	95.8
LBW	1.0	1.4	1.1	1.2	3.0	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.
 *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

Coarseness Factor: **65** Workability Factor: **31**



Initial Production Sample (IPS)

Sieve	% Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.0	0.6	0.6
1"	84.0	15.3	16.0
3/4"	73.5	10.5	26.5
1/2"	65.2	8.2	34.8
3/8"	58.2	7.1	41.8
#4	44.1	14.1	55.9
#8	35.5	8.6	64.5
#16	29.1	6.4	70.9
#30	21.9	7.3	78.1
#50	9.6	12.2	90.4
#100	2.6	7.1	97.4
LBW	1.0	1.6	99.0

PREPARED BY:
 SM, LLC Technical Service

Approved By: _____

Daily Summary Report

Date Thursday, October 17, 2024

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

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

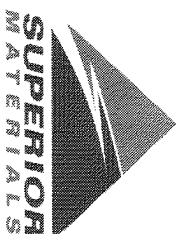
Sample Date: **10/14/24**

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

Concrete Grade: **P1M, 3500HP**

Contractor: _____

MDOT No.: _____



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

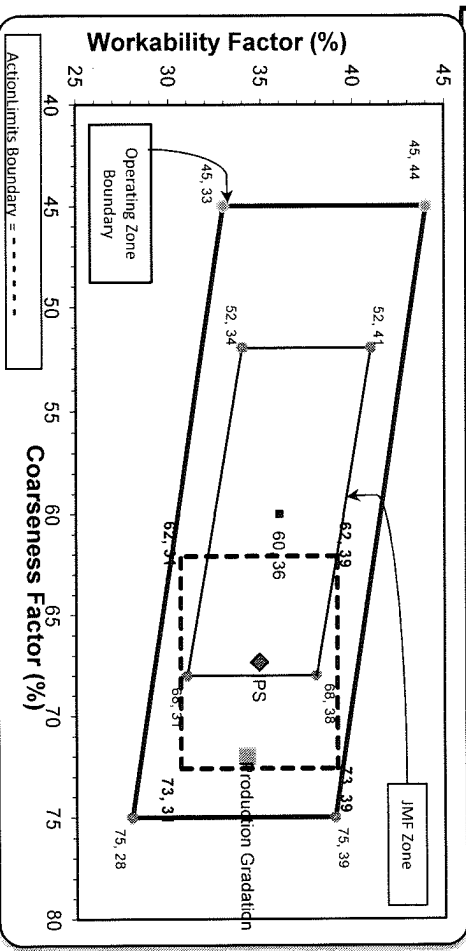
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
CA	58-003	Stoneco	1470	8.76	2.69	47.1
IA	58-003	Stoneco	450	2.68	2.69	14.4
ZNS	63-114	Highland	1200	7.26	2.65	38.5
Total Wt			3120	18.70		100.0

Sieve	CA	IA	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"	51.3	100.0	100.0	77.1	22.9	22.9
3/4"	23.7	100.0	100.0	64.1	35.9	35.9
1/2"	10.2	95.4	100.0	57.0	43.0	43.0
3/8"	6.3	77.7	100.0	52.6	47.4	47.4
#4	2.0	23.6	98.9	42.4	57.6	57.6
#8	1.7	7.9	83.9	34.2	65.8	65.8
#16	1.6	3.6	64.3	26.0	74.0	74.0
#30	1.5	2.4	42.1	17.2	82.8	82.8
#50	1.4	2.0	18.0	7.9	92.1	92.1
#100	1.4	1.8	4.2	2.5	97.5	97.5
LBW	1.2	1.7	0.6	1.0	99.0	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 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

Coarseness Factor: **72** Workability Factor: **34**

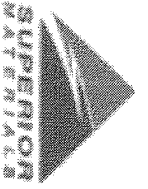


Initial Production Sample (IPS)

Sieve	Coarseness Factor:	Workability Factor:	Cumulative % Passing	% Retained	Cumulative % Retained
2"	67	35	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 Tuesday, October 15, 2024

Sample Id	-674940099	-674948288	-1989635858	-674972279	-674983415
Plant	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi
Product	1051 6AA LS	1067 26A Mod LS	7920 INTERMED AGG P1M LS	7919 COARSE AGG P1M LS	1022 2NS GR
Specification	6AA LS	26A Mod LS Spec	Intermed Agg P1M LS Target	Coarse Agg P1M LS Target	2NS GR Spec
Sample Type	QA	QA	QA	QA	QA
Time	12:45	13:14	14:30	14:31	14:50
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	98.9
1" (25mm)	100.0	100.0	100.0	51.3	83.9
3/4" (19mm)	77.9	100.0	100.0	23.7	64.3
1/2" (12.5mm)	28.9	99.2	95.4	10.2	42.1
3/8" (9.5mm)	10.6	86.7	77.7	6.3	18.0
#4 (4.75mm)	1.9	3.7	23.6	2.0	4.2
#8 (2.36mm)	1.2	1.2	7.9	1.7	0.8
#16 (1.18mm)	1.0	1.0	3.6	1.6	0.0
#30 (.6mm)	0.9	0.8	2.4	1.5	2.89
#50 (.3mm)	0.8	0.7	2.0	1.4	0.6
#100 (.15mm)	0.8	0.7	1.8	1.4	0.6
#200 (75um)	0.72	0.7	1.7	1.3	0.6
Pan	0.00	0.0	0.0	0.0	0.6
FM					2.89
Wash Loss (#200/75um)	0.6	0.6	1.7	1.2	0.6
Total Moisture	2.74	3.40	3.12	1.85	3.98

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-103**

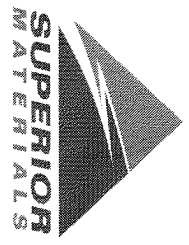
Sample Date: **10/14/24**

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

Concrete Grade: **P1M, 3500HP**

Contractor: _____

MDOT No.: _____



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

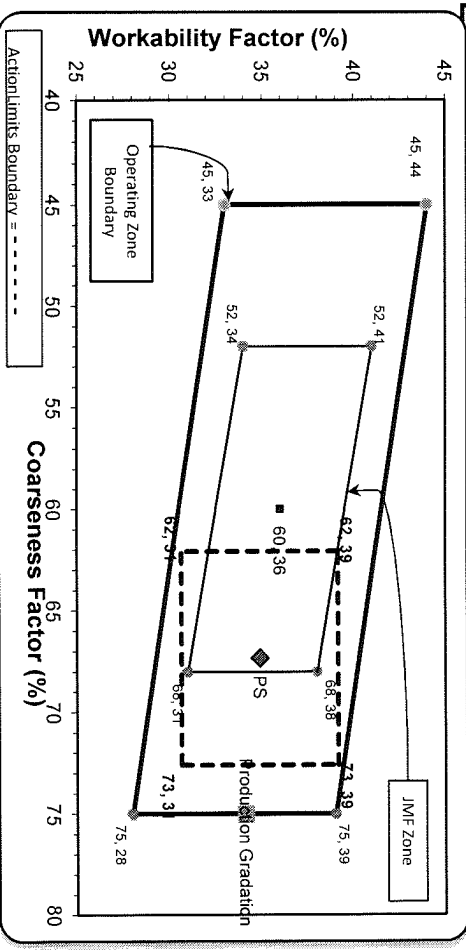
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1470	8.76	2.69	47.1
IA	58-003	Stoneco	460	2.68	2.69	14.4
ZNS	63-114	Highland	1200	7.26	2.65	38.5
		Total Wt	3120	18.70		100.0

Sieve	CA	IA	ZNS	Cumulative % Passing
2"	100.0	100.0	100.0	100.0
1.5"	100.0	100.0	100.0	100.0
1"	56.1	100.0	100.0	79.3
3/4"	17.0	100.0	100.0	60.9
1/2"	5.3	89.5	100.0	53.9
3/8"	3.2	73.6	100.0	50.6
#4	2.3	20.5	98.7	42.0
#8	2.2	8.6	82.8	34.1
#16	2.1	5.9	62.2	25.8
#30	1.9	4.8	39.4	16.7
#50	1.7	3.7	15.8	7.4
#100	1.5	3.1	3.4	2.5
LBW	1.3	2.7	0.5	1.2

*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.
 *Retained must be at least 8% for the 1" sieve when 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

Coarseness Factor: **75** Workability Factor: **34**

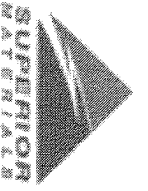


Initial Production Sample (IPS)

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	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 Tuesday, October 15, 2024

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