

Aggregate Optimization Chart

Production Gradation Report

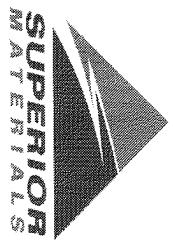
PLANT #: **p11**

Sample Date: **7/15/24**

Dates Test Represents: **7/16/2024** through **7/22/2024**

Concrete Grade: **S2M, 3500HP**

Contractor: _____
 MIDOT No.: _____



Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
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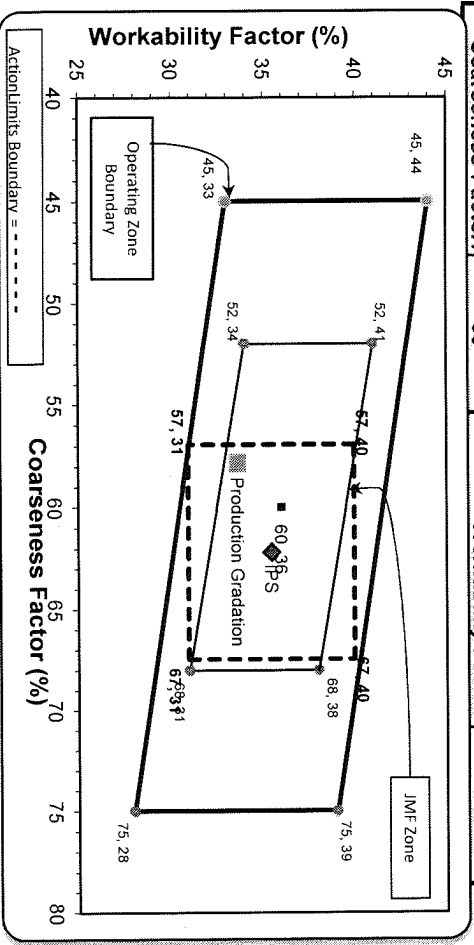
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1570	9.60	2.62	51.5
26A	71-47	Presque Isle	250	1.53	2.62	8.2
ZNS	63-115	Ray Rd	1230	7.44	2.65	40.3
		Total Wt	3050	18.57		100.0

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"	94.9	100.0	100.0	97.4	2.6	2.6
3/4"	79.3	100.0	100.0	89.3	8.0	10.7
1/2"	47.4	93.0	100.0	72.4	17.0	27.6
3/8"	28.6	80.3	100.0	61.6	10.7	38.4
#4	5.7	15.5	95.5	42.7	18.9	57.3
#8	2.6	4.5	79.2	33.6	9.1	66.4
#16	2.2	3.0	64.4	27.3	6.3	72.7
#30	1.9	2.6	49.0	21.0	6.4	79.0
#50	1.8	2.3	26.8	11.9	9.0	88.1
#100	1.7	2.1	6.5	3.7	8.3	96.3
LBW	1.4	1.8	0.6	1.1	2.6	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.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **58** Workability Factor: **34**

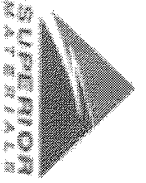


Initial Production Sample (IPS)

Coarseness Factor:	62		
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"	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 Tuesday, July 16, 2024

Sample Id	-674968320	-674949644	-1989664792	-1018110563	-674967447
Plant	S11	S11	S11	S11	S11
Product	1022 ZNS GR	7919 COARSE AGG P1M LS	7920 INTERMED AGG P1M LS	1067 26A Mod LS	1051 6AA LS
Specification	ZNS GR Spec	Coarse Agg P1M LS Target	Intermed Agg P1M LS Target	26A Mod LS Spec	6AA LS
Sample Type	QA	QA	QA	QA	QA
Time	13:57	14:00	14:00	14:15	14:25
2" (50mm)	100.0	100.0	100.0	100.0	100.0
1 1/2" (37.5mm)	92.7	100.0	100.0	100.0	100.0
1" (25mm)	37.9	100.0	100.0	100.0	94.9
3/4" (19mm)	11.4	98.6	98.6	100.0	79.3
1/2" (12.5mm)	2.0	65.0	65.0	93.0	47.4
3/8" (9.5mm)	1.3	33.9	33.9	80.3	28.6
#4 (4.75mm)	95.5	1.0	4.5	15.5	5.7
#8 (2.36mm)	79.2	1.0	1.5	4.5	2.6
#16 (1.18mm)	64.4	1.0	1.1	3.0	2.2
#30 (.6mm)	49.0	1.0	1.0	2.6	1.9
#50 (.3mm)	26.8	0.9	1.0	2.3	1.8
#100 (.15mm)	6.5	0.8	0.9	2.1	1.7
#200 (75µm)	1.0	0.7	0.8	1.9	1.58
Pan	0.0	0.0	0.0	0.0	0.00
FM	2.78				
Wash Loss (#200/75µm)	0.6	0.6	0.7	1.8	1.4
Total Moisture	7.03	3.19	4.27	6.60	5.92

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

Sample Date: **7/15/24**

Dates Test Represents: **7/16/2024** through **7/22/2024**

Concrete Grade: **S2M, 3500HP**

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1550	9.23	2.69	50.0
26A	58-003	Stoneco	350	2.09	2.69	11.3
ZNS	63-114	Highland	1200	7.26	2.65	38.7
Total Wt			3100	18.58		100.0

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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	86.5	100.0	100.0	93.3	6.8	6.8
1/2"	37.0	99.7	100.0	68.5	24.8	31.5
3/8"	15.1	90.9	100.0	56.5	11.9	43.5
#4	2.6	9.5	98.4	40.5	16.1	59.5
#8	1.5	2.7	85.7	34.2	6.2	65.8
#16	1.3	1.9	70.2	28.0	6.2	72.0
#30	1.2	1.7	50.7	20.4	7.6	79.6
#50	1.2	1.7	19.7	8.4	12.0	91.6
#100	1.1	1.7	3.6	2.1	6.3	97.9
LBW	1.0	1.7	0.7	1.0	1.2	99.0

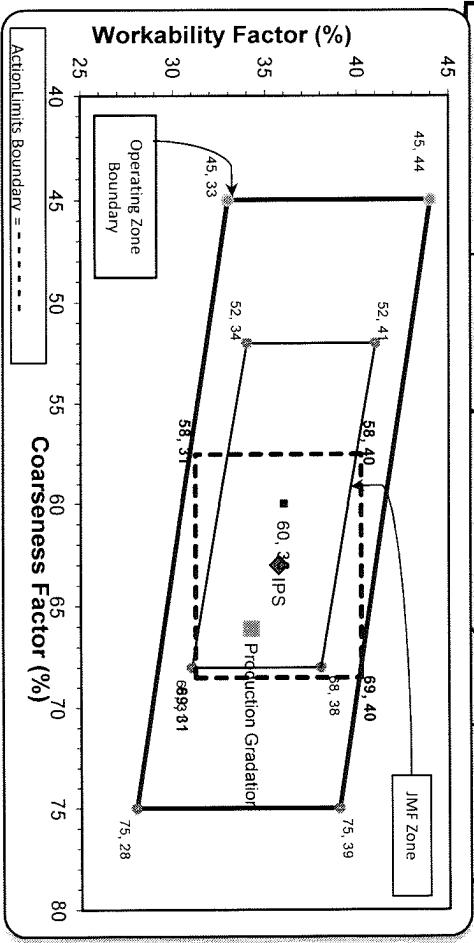


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*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max.
nom. max. #100 and #200 sieves.
*% Retained must be at least 4% for each sieve except max.
nom. max. #100 and #200 sieves.
*% Retained must be at 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: **66** Workability Factor: **34**



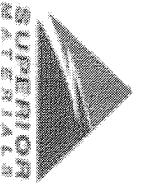
Initial Production Sample (IPS)

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	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: **63** Workability Factor: **36**

PREPARED BY:
SM, LLC Technical Service

Approved By: _____



Daily Summary Report

Date Monday, July 15, 2024

Sample Id	-674954216	-674908849	-1989638436	-1590544857	-1073647886
Plant	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi
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	12:55	12:56	12:57	12:58	12:59
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)	39.2	100.0	100.0	100.0	
3/4" (19mm)	6.1	86.5	100.0	100.0	
1/2" (12.5mm)	1.9	37.0	95.6	99.7	100.0
3/8" (9.5mm)	1.4	15.1	78.1	90.9	98.4
#4 (4.75mm)	0.8	2.6	17.3	9.5	85.7
#8 (2.36mm)	0.8	1.5	7.0	2.7	70.2
#16 (1.18mm)	0.8	1.3	4.3	1.9	50.7
#30 (6mm)	0.8	1.2	3.4	1.7	19.7
#50 (.3mm)	0.8	1.2	3.0	1.7	3.6
#100 (.15mm)	0.7	1.1	2.9	1.7	0.9
#200 (75µm)	0.7	1.08	2.8	1.7	0.0
Pan	0.0	0.00	0.0	0.0	2.72
FM					0.7
Wash Loss (#200/75µm)	0.6	1.0	2.7	1.7	4.51
Total Moisture	2.05	3.92	5.27	2.79	