

Aggregate Optimization Chart

Production Gradation Report

PLANT #: p11

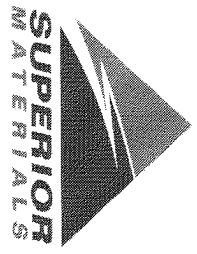
Sample Date: 7/1/24

Dates Test Represents: 7/2/2024 through 7/8/2024

Concrete Grade: DM, 4500HP

Contractor: _____

MDOT No.: _____



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

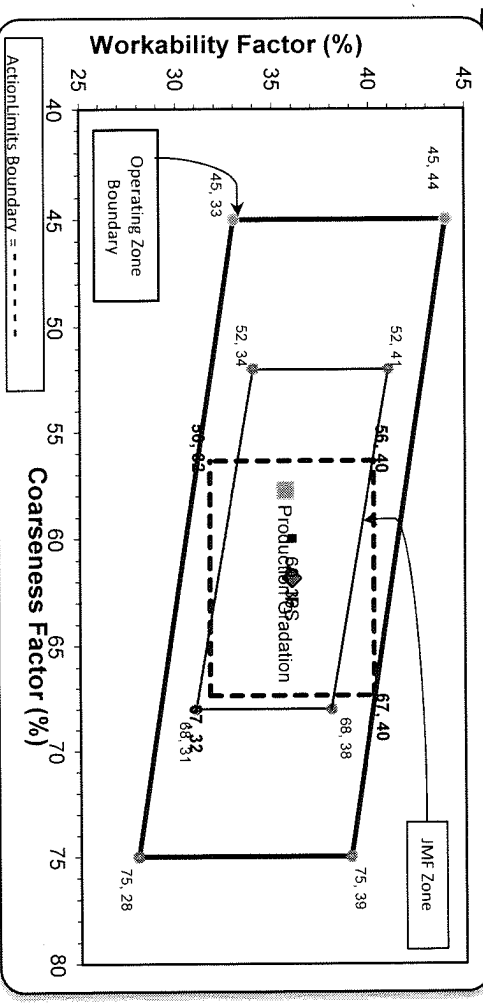
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %	% Retained	Cumulative % Retained	
GAA	71-47	Presque Isle	1455	8.90	2.62	50.1	0.0	0.0	
26A	71-47	Presque Isle	300	1.83	2.62	10.3	0.0	0.0	
NNS	63-115	Ray Rd	1150	6.95	2.65	39.6	1.8	1.8	
		Total Wt	2905			100.0			
Sieve		6AA		26A		2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"		100.0		100.0		100.0	0.0	0.0	
1.5"		100.0		100.0		100.0	0.0	0.0	
1"		96.4		100.0		98.2	1.8	1.8	
3/4"		82.9		100.0		91.4	6.8	8.6	
1/2"		44.2		95.0		71.5	19.9	28.5	
3/8"		27.3		78.8		61.4	10.1	38.6	
#4		4.9		14.7		41.7	19.7	58.3	
#8		2.5		4.2		33.2	8.6	66.8	
#16		2.1		2.7		27.0	6.2	73.0	
#30		2.0		2.3		21.2	5.8	78.8	
#50		1.9		2.2		12.1	9.0	87.9	
#100		1.8		2.0		3.7	8.4	96.3	
LBW		1.5		1.8		1.3	2.4	98.7	

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Initial Production Sample (IPS)

Coarseness Factor: **58** Workability Factor: **33** Adjusted WF: **35.7**

Coarseness Factor: **62** Workability Factor: **36**

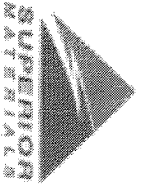


Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	100.0	0.0	0.0
3/4"	95.0	5.0	5.0
1/2"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	98.7

*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.

PREPARED BY:
 SM, LLC Technical Service

Approved By: _____



Daily Summary Report

Date Monday, July 1, 2024

Sample Id	Plant	Product	Specification	Sample Type	Time
-674955060	S11	7920 INTERMED AGG P1M LS	Intermed Agg P1M LS Target	QA	08:10
-674904021	S11	1067 26A Mod LS	26A Mod LS Spec	QA	08:15
-1989660399	S101	7919 COARSE AGG P1M LS	Coarse Agg P1M LS Target	QA	08:25
-1989650308	S11	1051 6AA LS	6AA LS	QA	08:35
-1989643794	S11	1022 2NS GR	2NS GR Spec	QA	08:40
2" (50mm)					100.0
1 1/2" (37.5mm)					100.0
1" (25mm)					100.0
3/4" (19mm)					99.2
1/2" (12.5mm)					76.3
3/8" (9.5mm)					41.8
#4 (4.75mm)					5.1
#8 (2.36mm)					2.2
#16 (1.18mm)					1.8
#30 (.6mm)					1.7
#50 (.3mm)					1.6
#100 (.15mm)					1.6
#200 (75µm)					1.4
Pan					0.0
FM					
Wash Loss (#200/75µm)					1.3
Total Moisture					1.85
					1.8
					1.31
					100.0
					97.0
					45.3
					11.5
					3.0
					2.7
					14.7
					4.2
					2.7
					2.3
					2.2
					2.0
					1.9
					1.8
					1.7
					1.5
					0.0
					1.3
					0.95
					100.0
					100.0
					96.4
					82.9
					44.2
					27.3
					4.9
					2.5
					2.1
					2.0
					50.3
					27.7
					6.6
					1.3
					0.0
					2.76
					1.0
					3.93

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

Sample Date: **7/1/24**

Dates Test Represents: **7/2/2024** through **7/8/2024**

Concrete Grade: **DM, 4500HP**

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %
6AA	58-003	Stoneco	1400	8.34	2.69	47.5
26A	58-003	Stoneco	400	2.38	2.69	13.6
2NS	63-114	Highland	1150	6.95	2.65	39.0
Total Wt						2950
						17.68

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"	98.5	100.0	100.0	99.3	0.7	0.7
3/4"	64.7	100.0	100.0	83.2	16.0	16.8
1/2"	12.2	99.2	100.0	58.2	25.0	41.8
3/8"	3.4	90.0	100.0	52.8	5.4	47.2
#4	1.7	7.6	98.9	40.4	12.4	59.6
#8	1.6	2.3	84.9	34.2	6.2	65.8
#16	1.5	1.9	68.5	27.7	6.5	72.3
#30	1.4	1.8	49.1	20.0	7.6	80.0
#50	1.4	1.8	19.9	8.7	11.4	91.3
#100	1.3	1.7	4.2	2.5	6.2	97.5
LBW	1.1	1.5	0.6	1.0	1.5	99.0

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

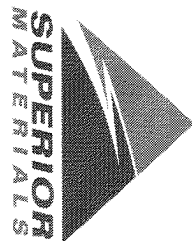
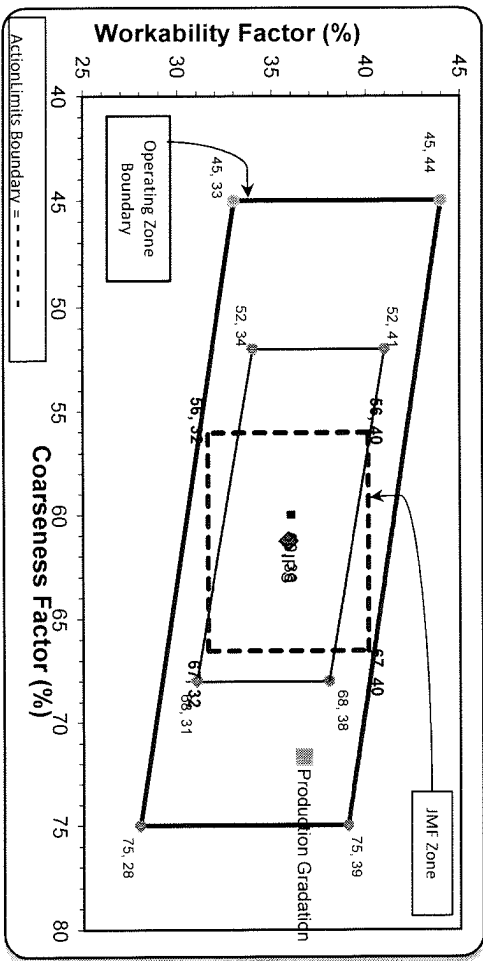
Coarseness Factor:	72	Workability Factor:	34	Adjusted WF	36.7
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Initial Production Sample (IPS)

Coarseness Factor:	61
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Workability Factor: **36**

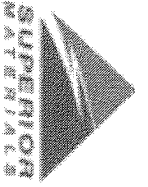
Sieve	Cumulative % Passing	% Retained	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0	0.0
1.5"	100.0	0.0	0.0	0.0
1"	99.3	0.7	0.7	0.7
3/4"	89.2	10.1	10.8	10.8
1/2"	70.7	18.5	29.3	29.3
3/8"	60.7	10.0	39.3	39.3
#4	44.4	16.3	55.6	55.6
#8	35.9	8.5	64.1	64.1
#16	27.3	8.6	72.7	72.7
#30	19.1	8.2	80.9	80.9
#50	7.4	11.7	92.6	92.6
#100	1.9	5.6	98.1	98.1
LBW	0.7	1.2	99.3	99.3



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*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.

Approved By: _____



Daily Summary Report

Date Wednesday, July 3, 2024

Sample Id	Plant	Product	Specification	Sample Type	Time
-674976655	S102 Superior Novi	1067 26A Mod LS	26A Mod LS Spec	QA	15:57
-1989617171	S102 Superior Novi	1051 6AA LS	6AA LS	QA	15:59
-674980356	S102 Superior Novi	7919 COARSE AGG P1M LS	Coarse Agg P1M LS Target	QA	16:11
-1989626771	S102 Superior Novi	7920 INTERMED AGG P1M LS	Intermed Agg P1M LS Target	QA	16:16
-1989622920	S102 Superior Novi	1022 ZNS GR	ZNS GR Spec	QA	16:21
2" (50mm)					100.0
1 1/2" (37.5mm)					100.0
1" (25mm)					100.0
3/4" (19mm)					100.0
1/2" (12.5mm)					99.2
3/8" (9.5mm)					90.0
#4 (4.75mm)					7.6
#8 (2.36mm)					2.3
#16 (1.18mm)					1.9
#30 (.6mm)					1.8
#50 (.3mm)					1.8
#100 (.15mm)					1.7
#200 (75um)					1.7
Pan					0.0
FM					
Wash Loss (#200/75um)					1.5
Total Moisture					5.63
					1.1
					2.89
					1.4
					1.39
					1.7
					2.81
					100.0
					98.9
					84.9
					68.5
					49.1
					19.9
					4.2
					0.8
					0.0
					2.74
					0.6
					4.94