

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P11**

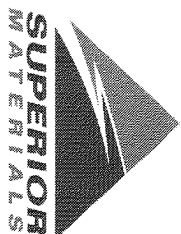
Sample Date: **8/5/24**

Dates Test Represents: **8/6/2024** through **8/12/2024**

Concrete Grade: **P1M, 3500HP**

Contractor: _____

MDOT No.: _____



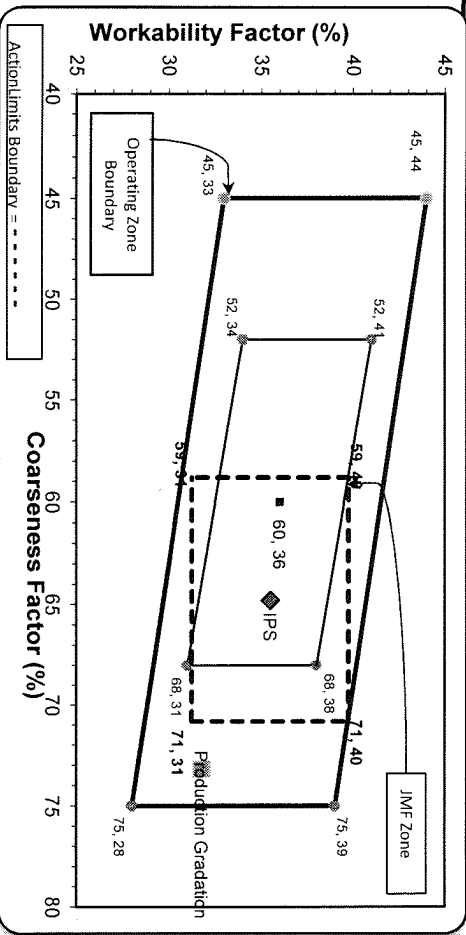
Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

Aggr. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
CA	71-47	Presque Isle	950	5.81	2.62	30.9
IA	71-47	Presque Isle	920	5.63	2.62	30.0
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
			Total Wt	3070	18.70	100.0

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	93.5	100.0	100.0	98.0	2.0	2.0
1"	23.3	100.0	100.0	76.3	21.7	23.7
3/4"	4.8	97.9	100.0	69.9	6.4	30.1
1/2"	1.6	63.4	100.0	58.6	11.3	41.4
3/8"	1.4	35.3	100.0	50.1	8.5	49.9
#4	1.3	4.9	96.5	39.6	10.5	60.4
#8	1.3	2.0	78.8	31.8	7.8	68.2
#16	1.2	1.7	62.2	25.2	6.6	74.8
#30	1.1	1.5	47.4	19.3	5.9	80.7
#50	1.1	1.5	25.7	10.8	8.5	89.2
#100	1.0	1.4	8.1	3.9	6.9	96.1
LBW	0.8	1.0	0.8	0.9	3.0	99.1

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **73** Workability Factor: **32**



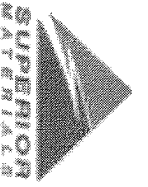
Initial Production Sample (IPS)

Sieve	Coarseness Factor	Workability Factor	Cumulative % Passing	% Retained	Cumulative % Retained
2"	65	36	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

*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.

PREPARED BY:
SM, LLC Technical Service

Approved By:



Daily Summary Report

Date Tuesday, August 6, 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 (.18mm)	#30 (.6mm)	#50 (.3mm)	#100 (.15mm)	#200 (.75um)	Pan	FM	Wash Loss (#200/75um)	Total Moisture
-674979496	S11	7919 COARSE AGG P1M LS	Coarse Agg P1M LS Target	QA	14:42	100.0	93.5	23.3	4.8	1.6	1.4	1.3	1.3	1.2	1.1	1.1	1.0	0.9	0.0	0.0	0.8	1.08
-367921786	S11	1051 6AA LS	6AA LS	QA	14:47	100.0	100.0	97.6	81.3	42.7	24.3	3.9	2.5	2.3	2.2	2.1	2.0	1.75	0.00	0.0	1.2	3.23
-674949544	S11	7920 INTERMED AGG P1M LS	Intermed Agg P1M LS Target	QA	14:48	100.0	100.0	100.0	97.9	63.4	35.3	4.9	2.0	1.7	1.5	1.5	1.4	1.3	0.0	0.0	1.0	2.68
-674935175	S11	1067 26A Mod LS	26A Mod LS Spec	QA	14:49	100.0	100.0	100.0	100.0	94.0	80.2	14.4	3.8	2.6	2.3	2.1	2.0	1.8	0.0	0.0	1.6	3.21
-674892545	S11	1022 ZNS GR	ZNS GR Spec	QA	15:00	100.0	96.5	78.8	62.2	47.4	25.7	8.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	4.93

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

Sample Date: **8/5/24**

Dates Test Represents: **8/6/2024** through **8/12/2024**

Concrete Grade: **P1M, 3500HP**

Contractor: _____

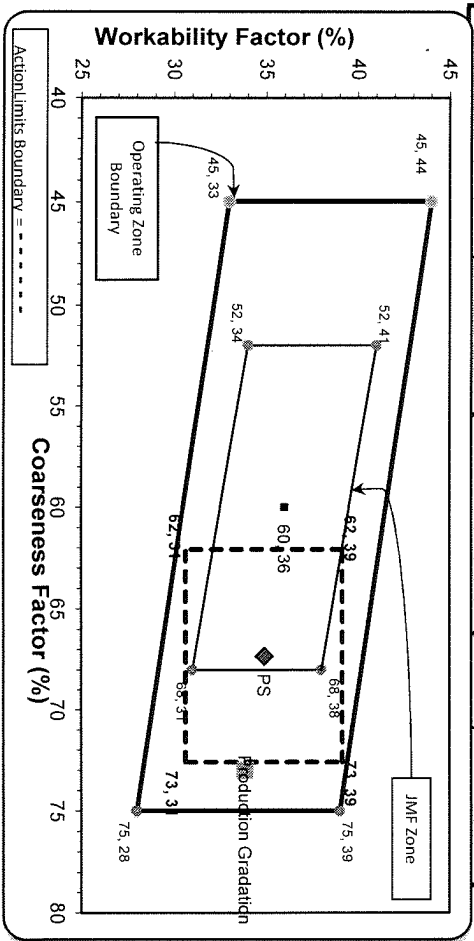
MDOT No.: _____

Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1420	8.46	2.69	45.5
IA	58-003	Stoneco	500	2.98	2.69	16.0
N2S	63-114	Highland	1200	7.26	2.65	38.5
Total Wt			3120	18.70		100.0

Sieve	CA	IA	N2S	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"	35.5	100.0	100.0	70.6	29.4	29.4
3/4"	7.0	100.0	100.0	57.7	42.3	42.3
1/2"	2.2	95.5	100.0	54.8	45.2	45.2
3/8"	1.5	78.6	100.0	51.7	48.3	48.3
#4	1.1	21.6	98.9	42.0	58.0	58.0
#8	1.1	6.7	84.0	33.9	66.1	66.1
#16	1.0	2.8	65.9	26.3	73.8	73.8
#30	1.0	1.7	45.3	18.2	81.8	81.8
#50	0.9	1.4	17.6	7.4	92.6	92.6
#100	0.8	1.3	3.3	1.8	98.2	98.2
LBW	0.7	1.2	0.4	0.7	99.3	99.3

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **73** Workability Factor: **34**



Initial Production Sample (PS)

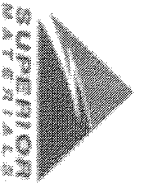
Sieve	Coarseness Factor:	Workability Factor:	% Retained	Cumulative % Retained
2"	73	34	0.0	0.0
1.5"	73	34	0.0	0.0
1"	73	34	0.0	0.0
3/4"	73	34	14.5	14.5
1/2"	73	34	12.1	26.6
3/8"	73	34	12.4	39.0
#4	73	34	4.8	43.8
#8	73	34	13.1	56.9
#16	73	34	8.2	65.1
#30	73	34	5.5	70.6
#50	73	34	7.8	78.4
#100	73	34	13.4	91.9
LBW	73	34	5.9	97.8
	73	34	0.8	98.6



*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.

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-1989659476	S102 Superior Novi	7919 COARSE AGG P1M LS	Coarse Agg P1M LS Target	QA	14:53	100.0	100.0	35.5	7.0	2.2	1.5	1.1	1.1	1.0	1.0	0.9	0.8	0.8	0.0	0.0	0.7	1.32
-1989640677	S102 Superior Novi	1051 6AA LS	6AA LS	QA	14:55	100.0	100.0	100.0	82.4	43.4	21.4	3.2	1.4	1.1	1.0	0.9	0.9	0.79	0.00	0.0	0.7	3.33
-1989660741	S102 Superior Novi	7920 INTERMED AGG P1M LS	Intermed Agg P1M LS Target	QA	14:56	100.0	100.0	100.0	100.0	95.5	78.6	21.6	6.7	2.8	1.7	1.4	1.3	1.3	0.0	0.0	1.2	2.49
-674931847	S102 Superior Novi	1067 26A Mod LS	26A Mod LS Spec	QA	14:58	100.0	100.0	100.0	100.0	99.3	92.5	23.3	6.8	3.1	2.0	1.7	1.6	1.6	0.0	0.0	1.5	2.91
-1989664056	S102 Superior Novi	1022 2NS GR	2NS GR Spec	QA	14:59	100.0	100.0	100.0	100.0	98.9	98.9	84.0	65.9	45.3	17.6	3.3	0.7	0.0	0.0	2.85	0.4	3.15