

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P11**

Sample Date: **8/19/24**

Dates Test Represents: **8/20/2024** through **8/26/2024**

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	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"	96.7	100.0	100.0	99.0	1.0	1.0
1"	28.2	100.0	100.0	77.8	21.2	22.2
3/4"	7.1	97.1	100.0	70.4	7.4	29.6
1/2"	2.0	64.9	100.0	59.2	11.2	40.8
3/8"	1.8	36.4	100.0	50.6	8.6	49.4
#4	1.7	4.2	95.4	39.1	11.5	60.9
#8	1.7	2.1	79.3	32.2	6.9	67.8
#16	1.7	1.7	64.7	26.3	5.8	73.7
#30	1.6	1.6	49.6	20.4	6.0	79.6
#50	1.6	1.6	26.4	11.3	9.1	88.7
#100	1.5	1.5	6.9	3.6	7.7	96.4
LBW	1.3	1.3	1.0	1.2	2.4	98.8

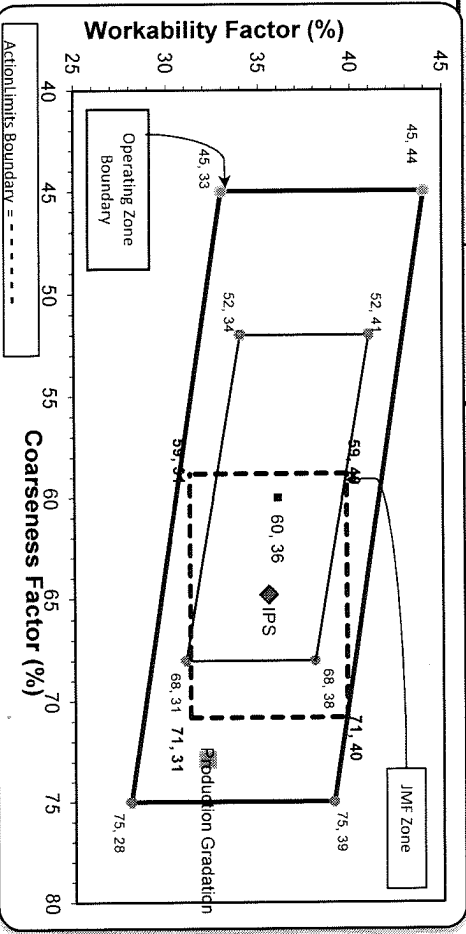
Verify this number is 100%

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



Initial Production Sample (IPS)

Sieve	Cumulative % 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 Wednesday, August 21, 2024

Sample Id -1989658289

Plant

- 674955789

-1989663003

-1989659318

-1989655370

Product

7920
INTERMED AGG
P1M LS

1067
26A Mod LS

1051
6AA LS

7919
COARSE AGG
P1M LS

1022
2NS GR

Specification Intermed Agg P1M
LS Target

26A Mod LS Spec

6AA LS

Coarse Agg P1M
LS Target

2NS GR Spec

Sample Type QA

QA

QA

QA

QA

Time

13:39

13:43

13:47

13:49

13:55

2" (50mm)	100.0	100.0	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	100.0	96.7	100.0
1" (25mm)	100.0	100.0	91.9	28.2	
3/4" (19mm)	97.1	100.0	60.1	7.1	
1/2" (12.5mm)	64.9	95.2	23.1	2.0	
3/8" (9.5mm)	36.4	72.5	13.0	1.8	
#4 (4.75mm)	4.2	12.6	3.3	1.7	95.4
#8 (2.36mm)	2.1	3.6	2.3	1.7	79.3
#16 (1.18mm)	1.7	2.5	2.1	1.7	64.7
#30 (.6mm)	1.6	2.2	1.9	1.6	49.6
#50 (.3mm)	1.6	2.1	1.8	1.6	26.4
#100 (.15mm)	1.5	1.9	1.7	1.5	6.9
#200 (75µm)	1.4	1.8	1.50	1.4	1.0
Pan	0.0	0.0	0.00	0.0	0.0
FM					2.78
Wash Loss (#200/75um)	1.3	1.7	1.4	1.3	1.0
Total Moisture	2.86	1.57	2.53	1.38	5.09

Aggregate Optimization Chart

PLANT #: **P-102**

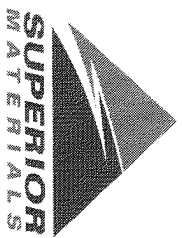
Sample Date: **8/19/24**

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Concrete Grade: **P1M, 3500HP**

Contractor: _____

MDOT No.: _____



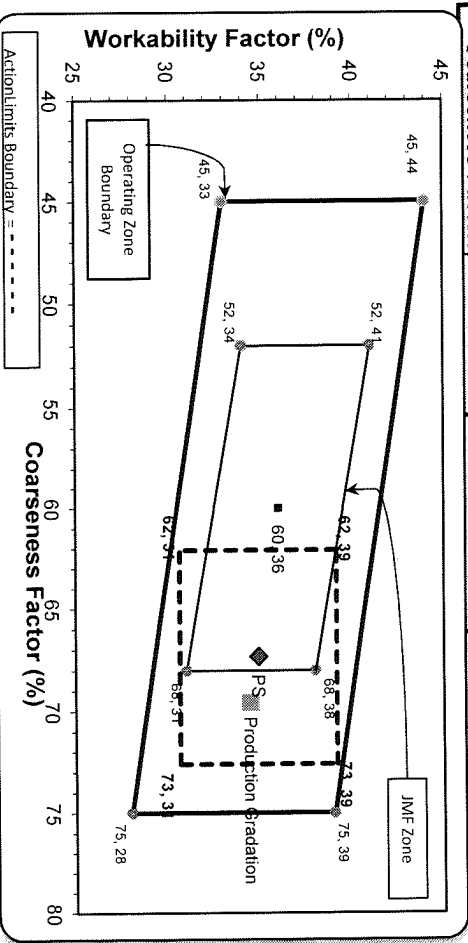
Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %
CA	58-003	Stonoco	1420	8.46	2.69	45.5
IA	58-003	Stonoco	500	2.98	2.69	16.0
2NS	63-114	Highland	1200	7.26	2.65	38.5
		Total Wt	3120			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"	100.0	100.0	100.0	100.0	0.0	0.0
1"	66.2	100.0	100.0	84.6	15.4	15.4
3/4"	29.8	100.0	100.0	68.1	16.6	32.0
1/2"	13.0	94.4	100.0	59.5	8.5	40.5
3/8"	7.4	78.4	100.0	54.4	5.1	45.6
#4	2.5	20.7	99.0	42.5	11.9	57.5
#8	2.0	5.3	85.0	34.5	8.1	65.5
#16	1.9	2.6	68.2	27.5	6.9	72.5
#30	1.8	2.0	49.1	20.0	7.5	80.0
#50	1.6	1.8	19.3	8.4	11.6	91.6
#100	1.5	1.7	3.5	2.3	6.1	97.7
LBW	1.2	1.6	0.7	1.1	1.2	98.9

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **70** Workability Factor: **34**



Initial Production Sample (PS)

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

Coarseness Factor: **67** Workability Factor: **35**

*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.

