

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-02**

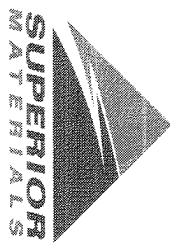
Sample Date: **6/10/24**

Dates Test Represents: **6/11/2024** through **6/17/2024**

Concrete Grade: **DM, 4500HP**

Contractor: _____

MDOT No.: _____



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

<----- Verify this number is 100%

Aggr. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1500	9.17	2.62	51.6
26A	71-47	Presque Isle	255	1.56	2.62	8.8
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
		Total Wt	2905	17.69		100.0

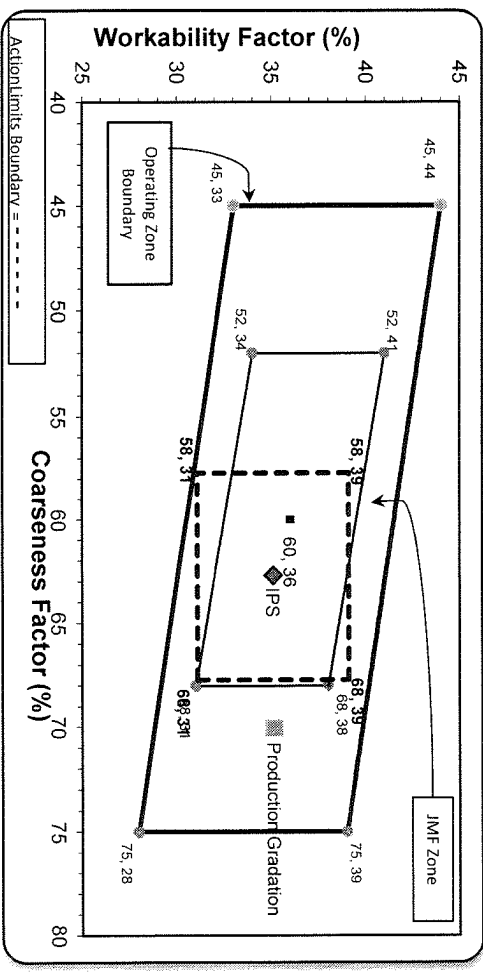
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	98.0	100.0	100.0	99.0	1.0	1.0
3/4"	78.5	100.0	100.0	88.9	10.1	11.1
1/2"	25.8	95.1	100.0	61.3	27.6	38.7
3/8"	11.1	85.3	100.0	52.8	8.5	47.2
#4	2.5	20.0	95.1	40.7	12.1	59.3
#8	2.1	5.5	78.5	32.6	8.1	67.4
#16	2.0	2.9	63.7	26.5	6.1	73.5
#30	1.9	2.1	47.4	19.9	6.6	80.1
#50	1.9	1.8	24.8	11.0	9.0	89.0
#100	1.8	1.7	6.2	3.5	7.4	96.5
LBW	1.4	1.5	1.3	1.4	2.2	98.6

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **70** Workability Factor: **33** Adjusted WF: **35.1**

Initial Production Sample (IPS)

Coarseness Factor: **63** Workability Factor: **35**

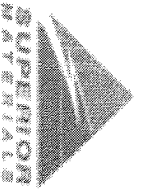


Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	100.0	0.0	0.0
3/4"	95.1	4.9	4.9
1/2"	74.6	20.5	25.4
3/8"	59.3	15.3	40.7
#4	42.1	17.2	57.9
#8	35.1	7.1	64.9
#16	29.2	5.9	70.8
#30	21.9	7.3	78.1
#50	9.6	12.4	90.4
#100	2.4	7.2	97.6
LBW	0.9	1.5	99.1

*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 Wednesday, June 12, 2024

Sample Id -674955049

Plant

-674969941

-674914984

Product

1051
6AA LS

1067
26A Mod LS

1022
2NS GR

Specification 6AA LS

26A Mod LS Spec

2NS GR Spec

Sample Type

QA

QA

QA

Time

13:54

14:03

14:06

2" (50mm)	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	100.0
1" (25mm)	98.0	100.0	100.0
3/4" (19mm)	78.5	100.0	100.0
1/2" (12.5mm)	25.8	95.1	100.0
3/8" (9.5mm)	11.1	85.3	95.1
#4 (4.75mm)	2.5	20.0	78.5
#8 (2.36mm)	2.1	5.5	63.7
#16 (1.18mm)	2.0	2.9	47.4
#30 (.6mm)	1.9	2.1	24.8
#50 (.3mm)	1.9	1.8	6.2
#100 (.15mm)	1.8	1.7	1.6
#200 (75µm)	1.66	1.6	0.0
Pan	0.00	0.0	2.84
FM			1.3
Wash Loss (#200/75µm)	1.4	1.5	3.65
Total Moisture	1.99	0.94	

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

Sample Date: **6/10/24**

Dates Test Represents: **6/11/2024** through **6/17/2024**

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
						100.0

<----- Verify this number is 100%

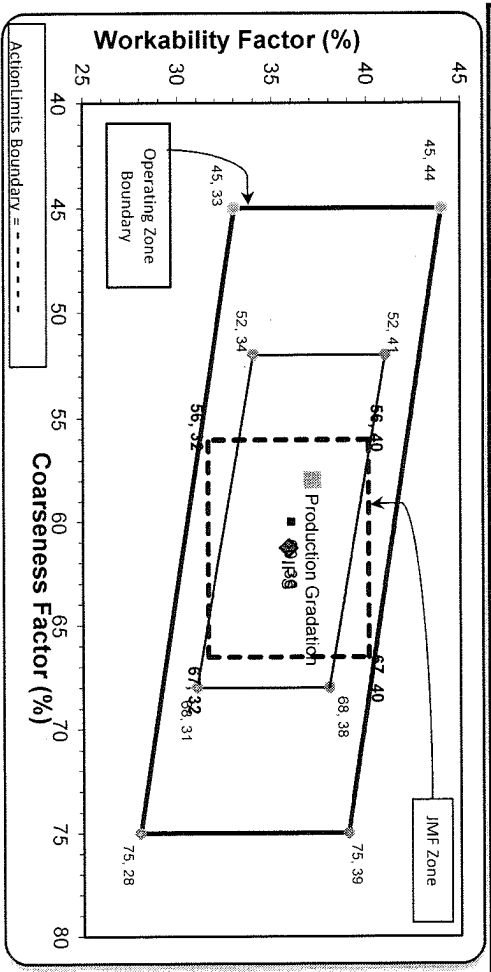
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	84.5	100.0	100.0	92.6	7.4	7.4
1/2"	44.0	99.8	100.0	73.4	19.2	26.6
3/8"	23.3	89.0	100.0	62.1	11.3	37.9
#4	6.5	7.3	99.1	42.7	19.4	57.3
#8	2.6	2.5	84.8	34.6	8.1	65.4
#16	2.0	2.0	67.1	27.4	7.3	72.6
#30	1.8	1.8	47.4	19.6	7.8	80.4
#50	1.7	1.7	15.9	7.2	12.3	92.8
#100	1.6	1.6	2.9	2.1	5.1	97.9
LBW	1.4	1.5	0.0	0.9	1.2	99.1

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Adjusted WF **37.1** Initial Production Sample (IPS)

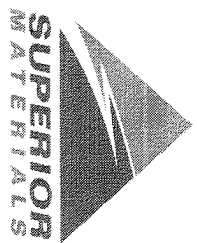
Coarseness Factor: **58** Workability Factor: **35**

Coarseness Factor: **61** 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"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

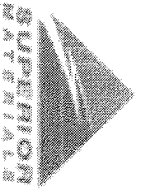
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336



*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. 1.0") aggregate is used.

PREPARED BY:
 SM, LLC Technical Service

Approved By: _____



Daily Summary Report

Date Monday, June 10, 2024

Sample Id	-1376934402	-1989637907	-674973834
Plant	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi
Product	1067 26A Mod LS	1022 2NS GR	1051 6AA LS
Specification	26A Mod LS Spec	2NS GR Spec	6AA LS
Sample Type	Production	QA	QA
Time	14:08	14:10	14:15
2" (50mm)	100.0	100.0	100.0
1 1/2" (37.5mm)	100.0	100.0	100.0
1" (25mm)	100.0	100.0	100.0
3/4" (19mm)	100.0	84.5	84.5
1/2" (12.5mm)	99.8	44.0	44.0
3/8" (9.5mm)	89.0	100.0	23.3
#4 (4.75mm)	7.3	99.1	6.5
#8 (2.36mm)	2.5	84.8	2.6
#16 (1.18mm)	2.0	67.1	2.0
#30 (.6mm)	1.8	47.4	1.8
#50 (.3mm)	1.7	15.9	1.7
#100 (.15mm)	1.6	2.9	1.6
#200 (75µm)	1.6	0.2	1.50
Pan	0.0	0.0	0.00
FM		2.83	
Wash Loss (#200/75µm)	1.5	0.0	1.4
Total Moisture	3.06	3.24	2.68

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-103**

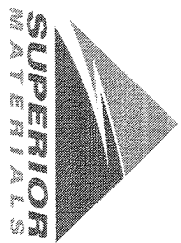
Sample Date: **6/10/24**

Dates Test Represents: **6/11/2024** through **6/17/2024**

Concrete Grade: **DM, 4500HP**

Contractor: _____

MDOT No.: _____



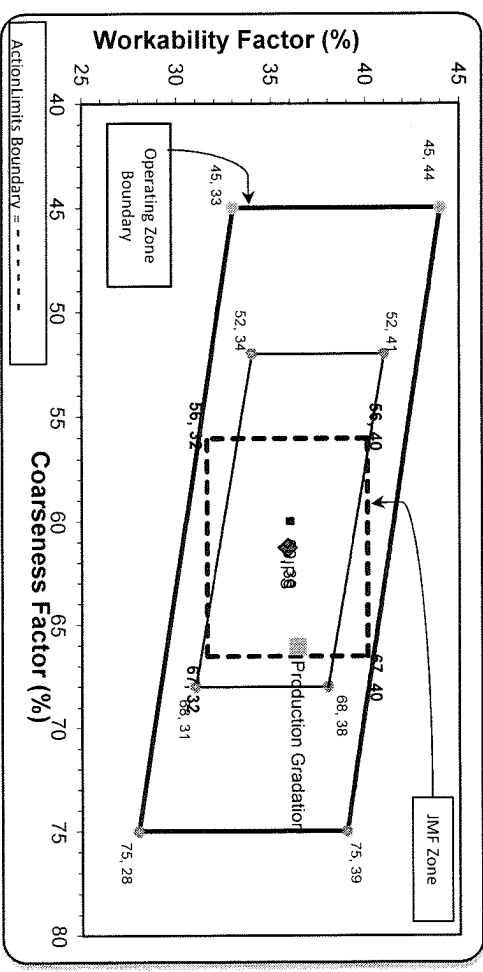
Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

Aggr. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %
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		100.0

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"	99.5	100.0	100.0	99.8	0.2	0.2
3/4"	71.1	100.0	100.0	86.3	13.5	13.7
1/2"	26.0	98.8	100.0	64.7	21.6	35.3
3/8"	11.0	89.5	100.0	56.3	8.4	43.7
#4	3.9	5.0	98.5	40.9	15.4	59.1
#8	2.7	1.7	83.1	33.9	7.0	66.1
#16	2.2	1.3	64.7	26.4	7.5	73.6
#30	2.0	1.1	44.2	18.3	8.1	81.7
#50	1.9	1.0	13.5	6.3	12.0	93.7
#100	1.8	0.9	2.0	1.8	4.5	98.2
LBW	1.6	0.8	0.3	1.0	0.8	99.0

Production Gradation: Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **66** Workability Factor: **34** Adjusted WF: **36.4**

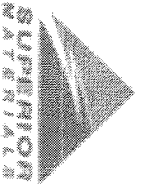


Sieve	Coarseness Factor:	Workability Factor:	Adjusted WF:
2"	61	36	36.4
1.5"	61	36	36.4
1"	61	36	36.4
3/4"	61	36	36.4
1/2"	61	36	36.4
3/8"	61	36	36.4
#4	61	36	36.4
#8	61	36	36.4
#16	61	36	36.4
#30	61	36	36.4
#50	61	36	36.4
#100	61	36	36.4
LBW	61	36	36.4

*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, June 10, 2024

Sample Id	-667669176	-674925752	-1989620972
Plant	S103 Superior Brighton	S103 Superior Brighton	S103 Superior Brighton
Product	1067 26A Mod LS	1022 2NS GR	1051 6AA LS
Specification	26A Mod LS Spec	2NS GR Spec	6AA LS
Sample Type	QA	QA	QA
Time	14:11	14:12	14:13
2" (50mm)	100.0		100.0
1 1/2" (37.5mm)	100.0		100.0
1" (25mm)	100.0		99.5
3/4" (19mm)	100.0		71.1
1/2" (12.5mm)	98.8		26.0
3/8" (9.5mm)	89.5	100.0	11.0
#4 (4.75mm)	5.0	98.5	3.9
#8 (2.36mm)	1.7	83.1	2.7
#16 (1.18mm)	1.3	64.7	2.2
#30 (.6mm)	1.1	44.2	2.0
#50 (.3mm)	1.0	13.5	1.9
#100 (.15mm)	0.9	2.0	1.8
#200 (75µm)	0.9	0.3	1.68
Pan	0.0	0.0	0.00
FM		2.94	
Wash Loss (#200/75µm)	0.8	0.2	1.6
Total Moisture	1.61	3.28	2.33