Sample Date:

8/14/23 Concrete Grade: S2M, 3500HP

Dates Test F	Represents:	0/13/2023	through	8/21/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1625	9.94	2.62	53.2
26A	71-47	Presque Isle	200	1.22	2.62	6.5
2NS	75-051	Mid Michigan	1230	7.41	2.66	40.3
		Total Wt	3055	18.57		100.0

Contractor:

MDOT No.:

SUPERIOR MATERIALS

Superior Materials, LLC 30701 W. 10 Mile Rd. Suite 500

Farmington Hills, MI 48336

	Total Wt	3055	18.57		100.0	< Verify this n	umber is 100%	
Sieve	6AA	26	6 A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained	1
2"	100.0	100	0.0	100.0	100.0	0.0	0.0	ı
1.5"	100.0	100	0.0	100.0	100.0	0.0	0.0	ı
1"	96.7	100	0.0	100.0	98.2	1.8	1.8	ı
3/4"	84.6	100	100.0		91.8	6.4	8.2	l
1/2"	41.8	93	93.4		68.6	23.2	31.4	ı
3/8"	24.5	80.7		100.0	58.6	10.0	41.4	ı
#4	4.2	14	14.3		41.9	16.7	58.1	ı
#8	2.3	2.	2.5		33.7	8.2	66.3	n
#16	2.0	1.2		65.1	27.4	6.3	72.6	ı
#30	2.0	2.0		50.1	21.4	6.0	78.6	n
#50	1.9	0.9		27.8	12.3	9.1	87.7	ı
#100	1.8	0.9		8.5	4.4	7.8	95.6	а
LBW	1.5	0.	0.8		1.3	3.1	98.7	ı

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

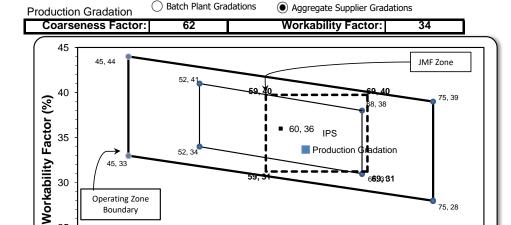
nom. max., #100 and #200 sieves.

*% 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.



Coarseness Factor (%)⁷⁰

80

75

Batch Plant Gradations

Initial Production Sample (IPS)

Coars	seness Factor:	64	
Worl	ability Factor:	35	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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"	93.9	6.1	6.1
1/2"	71.4	22.5	28.6
3/8"	59.0	12.4	41.0
#4	45.1	13.9	54.9
#8	35.5	9.6	64.5
#16	28.3	7.2	71.7
#30	21.3	6.9	78.7
#50	11.0	10.3	89.0
#100	3.4	7.6	96.6
LBW	1.1	2.3	98.9

PREPARED BY: SM, LLC Technical Service

ActionLimits Boundary = - - - -

50

55

Sample Date:

8/14/23 Concrete Grade: S2M, 3500HP

Dates Test F	Represents:	8/15/2023	through	8/21/2023		
Agg. Class	Pit#	Source	Weight (SSD)	ft ³	Specific	%
Agg. Class	rit#	Source	Weight (SSD)	11	Gravity	Contribution
6AA	58-003	Stoneco	1650	9.83	2.69	53.2
26A	58-003	Stoneco	250	1.49	2.69	8.1
2NS	81-019	Pleasant Lake	1200	7.26	2.65	38.7
		Total Wt	3100	18.58		100.0

Contractor:

MDOT No.:

Verify this number is 100%

SUPERIOR	1
MATERIALS	,

Superior Materials, LLC 30701 W. 10 Mile Rd. Suite 500

Farmington Hills, MI 48336

*Maximum % Retained must be above the 3/8" sieve.

nom. max., #100 and #200 sieves.

*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.

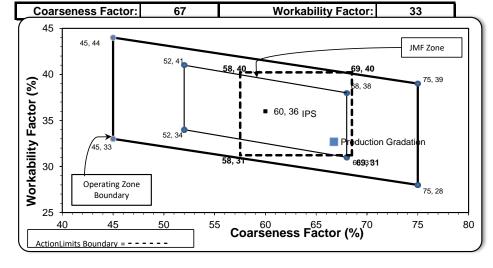
*Any two adjacent sieves must equal 10% except max.,

*% Retained must be at least 4% for the 3/4" sieve when

a 1.5" max. size (nom. Max. 1.0") aggregate is used.

	Total Wt	3100	18.58		100.0	< Verify this n	umber is 100%
Sieve	6AA	26	6 A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	10	0.0	100.0	100.0	0.0	0.0
1.5"	100.0	10	0.0	100.0	100.0	0.0	0.0
1"	100.0	10	0.0	100.0	100.0	0.0	0.0
3/4"	77.4	10	0.0	100.0	88.0	12.0	12.0
1/2"	35.3	99	9.8	100.0	65.5	22.4	34.5
3/8"	17.4	88	3.0	100.0	55.1	10.5	44.9
#4	3.7	9	.7	97.3	40.4	14.7	59.6
#8	2.1	3	.1	80.9	32.7	7.7	67.3
#16	1.5	2.2		63.7	25.6	7.1	74.4
#30	1.4	1.9		45.3	18.4	7.2	81.6
#50	1.3	1.8		22.8	9.7	8.8	90.3
#100	1.2	1.8		7.0	3.5	6.2	96.5
LBW	1.2	1.6		1.2	1.2	2.3	98.8

Aggregate Supplier Gradations **Production Gradation** Batch Plant Gradations



Intial Production Sample (IPS)

Coars	eness Factor:	63	
Work	ability Factor:	36	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

8/14/23

PLANT #: P-103

Sample Date:

Concrete Grade: S2M, 3500HP

Contractor:

Dates Test Represents: 8/15/2023

15/2023 through 8/21/2023

MDOT	No.
------	-----

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1650	9.83	2.69	53.2
26A	58-003	Stoneco	250	1.49	2.69	8.1
2NS	81-019	Pleasant Lake	1200	7.26	2.65	38.7
		Total Wt	3100	18.58		100.0

Varify this number is 100%

SUPER	RIOR

Superior Materials, LLC 30701 W. 10 Mile Rd. Suite 500

Farmington Hills, MI 48336

Total Wt		3100	18.58		100.0	umber is 100%	
Sieve	6AA	26	SA.	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	10	0.0	100.0	100.0	0.0	0.0
1.5"	100.0	10	0.0	100.0	100.0	0.0	0.0
1"	100.0	10	100.0		100.0	0.0	0.0
3/4"	77.4	100.0		100.0	88.0	12.0	12.0
1/2"	35.3	99.8		100.0	65.5	22.4	34.5
3/8"	17.4	88	3.0	100.0	55.1	10.5	44.9
#4	3.7	9	.7	97.3	40.4	14.7	59.6
#8	2.1	3	.1	80.9	32.7	7.7	67.3
#16	1.5	2	2.2		25.6	7.1	74.4
#30	1.4	1.9		45.3	18.4	7.2	81.6
#50	1.3	1.8		22.8	9.7	8.8	90.3
#100	1.2	1.8		7.0	3.5	6.2	96.5
LBW	1.2	1.	.6	1.2	1.2	2.3	98.8

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

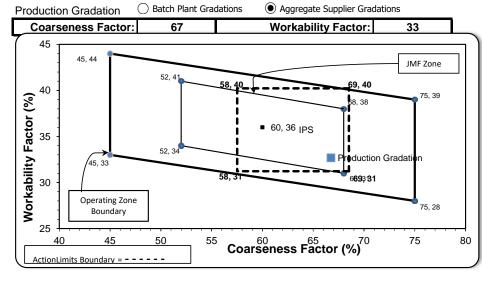
nom. max., #100 and #200 sieves.

 $^{\star}\%$ 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.



Intial Production Sample (IPS)

Coars	eness Factor:	63	
Worl	ability Factor:	36	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

PREPARED BY: SM, LLC Technical Service Approved BY:

PLANT #: Contractor: 8/14/23 Concrete Grade: S2M, 3500HP Sample Date:

Dates Test I	Represents:	6/15/2023	through	8/21/2023		
Agg. Class	Pit#	Source	Weight (SSD)	ft ³	Specific	%
Agg. Olass	116#	Odicc	vveight (SSD)		Gravity	Contribution
6AA	58-003	Stoneco	1575	9.38	2.69	50.6
26A	58-003	Stoneco	325	1.94	2.69	10.5
2NS	19-04	Schlegel	1210	7 26	2 67	38.9

MDOT No.:



Builders Redi-Mix 30701 W. 10 Mile Rd.

Suite 500

Farmington Hills, MI 48336

Total Wt		3110	18.58		100.0	< Verify this number is 1	
Sieve	6AA	26	26A		Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100	0.0	100.0	100.0	0.0	0.0
1.5"	100.0	100	0.0	100.0	100.0	0.0	0.0
1"	100.0	100	100.0		100.0	0.0	0.0
3/4"	77.4	100	100.0		88.6	11.4	11.4
1/2"	35.3	99	99.8		67.2	21.3	32.8
3/8"	17.4	88	88.0		56.9	10.3	43.1
#4	3.7	9.	.7	99.9	41.8	15.2	58.2
#8	2.1	3.	.1	90.1	36.4	5.3	63.6 r
#16	1.5	2.	2.2		28.0	8.5	72.0
#30	1.4	1.	1.9		18.2	9.8	81.8 r
#50	1.3	1.8		14.3	6.4	11.8	93.6
#100	1.2	1.8		2.7	1.8	4.6	98.2
LBW	1.2	1.	.6	0.2	0.9	1.0	99.1

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

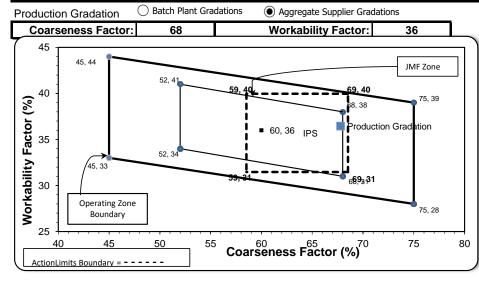
nom. max., #100 and #200 sieves.

*% 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.



Intial Production Sample (IPS)

Coars	eness Factor:	64	
Work	ability Factor:	36	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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"	59.2	12.1	40.8
#4	41.5	17.7	58.5
#8	35.7	5.8	64.3
#16	27.9	7.9	72.1
#30	18.3	9.5	81.7
#50	7.3	11.0	92.7
#100	2.0	5.3	98.0
LBW	0.9	1.1	99.1

1620

200

1230

8/15/2023

Source

Presque Isle

Presque Isle

Ray Rd

Approved By:

PLANT #: 12

Pit#

71-47

71-47

63-115

Sample Date:

Agg. Class

6AA

26A

2NS

Dates Test Represents:

8/14/23 Concrete Grade: S2M, 3500HP

1.22

7.44

through	8/21/2023		
Weight (SSD)	ft ³	Specific Gravity	% Contribution
1620	9.91	2.62	53.1

2.62

2.65

Contractor:

MDOT No.:



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

Total Wt		3050	18.57		100.0		< Verify this number is 100%	
Sieve	6AA	26	6 A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained	
2"	100.0	10	0.0	100.0	100.0	0.0	0.0	
1.5"	100.0	10	0.0	100.0	100.0	0.0	0.0	
1"	98.7	10	100.0		99.3	0.7	0.7	
3/4"	78.0	10	100.0		88.3	11.0	11.7	
1/2"	39.0	92	92.2		67.1	21.2	32.9	
3/8"	19.2	79	9.0	100.0	55.7	11.4	44.3	
#4	4.3	11	1.6	96.2	41.8	13.9	58.2	
#8	2.3	2	.6	80.3	33.8	8.1	66.2	
#16	2.1	1	.3	64.2	27.1	6.7	72.9	
#30	2.0	1.0		47.7	20.4	6.7	79.6	
#50	1.9	0.9		24.2	10.8	9.5	89.2	
#100	1.8	0	.9	5.2	3.1	7.7	96.9	
LBW	1.6	0	.7	0.6	1.1	2.0	98.9	

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

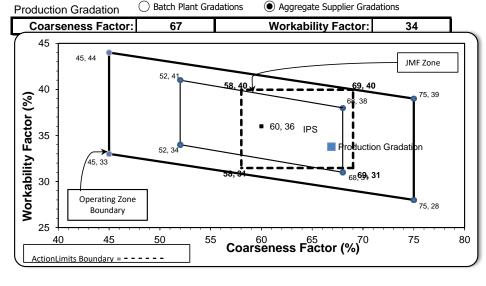
nom. max., #100 and #200 sieves.

*% 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.



Intial Production Sample (IPS)

Coars	eness Factor:	64	
Workability Factor:		36	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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"	59.2	12.1	40.8
#4	41.5	17.7	58.5
#8	35.7	5.8	64.3
#16	27.9	7.9	72.1
#30	18.3	9.5	81.7
#50	7.3	11.0	92.7
#100	2.0	5.3	98.0
LBW	0.9	1.1	99.1

PLANT #: 20

Sample Date:

8/14/23 Concrete Grade: S2M, 3500HP

Dates Test F	rest Represents: 8/15/2023 through 8/21/2023					
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1600	9.79	2.62	52.5
26A	71-47	Presque Isle	200	1.22	2.62	6.6
2NS	63-92	Grange Hall	1250	7.56	2.65	41.0

MDOT No.:

Contractor:

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

Total Wt		3050 18.57	'	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"	99.1	100.0	100.0	99.5	0.5	0.5	
3/4"	80.4	100.0	100.0	89.7	9.8	10.3	
1/2"	47.3	97.5	100.0	72.2	17.5	27.8	
3/8"	28.9	87.2	100.0	61.9	10.3	38.1	
#4	6.5	20.2	97.4	44.7	17.2	55.3	
#8	3.2	5.8	84.2	36.6	8.1	63.4	
#16	2.4	2.6	70.3	30.2	6.3	69.8	
#30	2.2	2.0	51.2	22.3	8.0	77.7	
#50	2.1	1.8	20.5	9.6	12.6	90.4	
#100	2.0	1.7	3.1	2.4	7.2	97.6	
LBW	1.7	1.6	0.5	1.2	1.2	98.8	

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

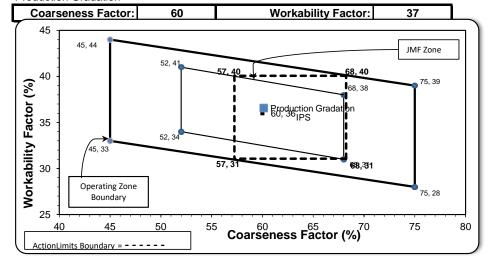
nom. max., #100 and #200 sieves.

*% 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.

Aggregate Supplier Gradations Batch Plant Gradations **Production Gradation**



Intial Production Sample (IPS)

Coars	Coarseness Factor:		
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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"	93.3	6.7	6.7
1/2"	70.6	22.6	29.4
3/8"	59.6	11.0	40.4
#4	43.9	15.7	56.1
#8	35.6	8.4	64.4
#16	28.4	7.2	71.6
#30	19.4	9.0	80.6
#50	7.5	11.9	92.5
#100	0.9	6.6	99.1
LBW	0.9	0.1	99.1

PLANT #: p11

6AA

100.0

100.0

95.8

70.6

30.6

17.0

3.8

1.8

1.6

1.4

1.3

1.2

Sample Date:

Sieve

2"

1.5"

3/4"

1/2'

3/8'

#4

#8

#16

#30

#50

#100

8/14/23 Concrete Grade: S2M, 3500HP 8/21/2023

Dates Test F	Represents:	8/15/2023	through	8/21/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1500	9.17	2.62	49.2
26A	71-47	Presque Isle	320	1.96	2.62	10.5
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
		Total Wt	3050	18.57		100.0

26A

100.0

100.0

100.0

100.0

92.2

79.0

11.6

2.6

1.3

1.0

0.9

0.9

Contractor:

MDOT No.:

2.1

12.4

20.5

8.1

14.8

6.3

6.2

8.3

11.1

6.9

2.6

Cumulative

% Passing

100.0

100.0

97.9

85.5

65.1

57.0

42.2

35.9

29.7

21.4

10.4

3.4

2NS

100.0

100.0

100.0

100.0

100.0

100.0

97.0

86.1

71.4

51.2

23.9

6.8



---- Verify this number is 100%

% Retained	Cumulative % Retained	
0.0	0.0	Suit
0.0	0.0	Farr
0.0	0.0	

2.1

14.5

34.9

43.0

57.8

64.1

70.3

78.6

89.6

96.6

99.1



perior Materials, LLC 701 W. 10 Mile Rd. te 500 mington Hills, MI 48336

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

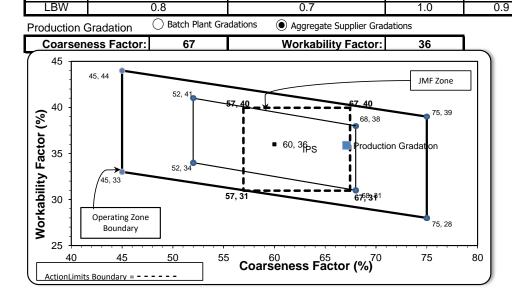
nom. max., #100 and #200 sieves.

*% 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. Max. 1.0") aggregate is used.



Intial Production Sample (IPS)

Coars	Coarseness Factor:		
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

1.8

1.6

1.4

1.3

1.2

0.8

Sample Date:

#8

#16

#30

#50

#100

LBW

8/14/23 Concrete Grade: S2M, 3500HP

Dates Test F	Represents:	8/15/2023	through	8/21/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1500	9.17	2.62	49.2
26A	71-47	Presque Isle	320	1.96	2.62	10.5
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
		Total Wt	3050	18.57		100.0

2.6

1.3

1.0

0.9

0.9

Contractor:

MDOT No.:



---- 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	ı
1.5"	100.0	100.0	100.0	100.0	0.0	0.0	ı
1"	95.8	100.0	100.0	97.9	2.1	2.1	ı
3/4"	70.6	100.0	100.0	85.5	12.4	14.5	i
1/2"	30.6	92.2	100.0	65.1	20.5	34.9	i
3/8"	17.0	79.0	100.0	57.0	8.1	43.0	*1
#4	3.8	11.6	97.0	42.2	14.8	57.8	*/

86.1

71.4

51.2

23.9

6.8

35.9

29.7

21.4

10.4

3.4

0.9

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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.

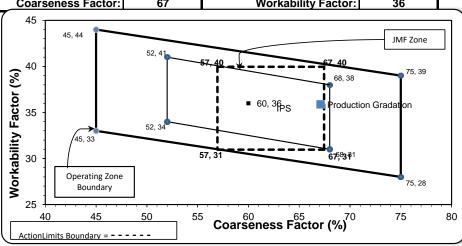
*% Retained must be at least 4% for each sieve except max.,

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.

Batch Plant Gradations Aggregate Supplier Gradations **Production Gradation Coarseness Factor:** 67 **Workability Factor:** 36



Intial Production Sample (IPS)

64.1

70.3

78.6

89.6

96.6

99.1

6.3

6.2

8.3

11.1

6.9

2.6

Coars	eness Factor:	62	
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

6AA

100.0

100.0

100.0

77.4

35.3

17.4

3.7

2.1

1.5

1.4

1.3

1.2

Sample Date:

Sieve

2"

1.5"

3/4"

1/2'

3/8'

#4

#8

#16

#30

#50

#100

LBW

8/14/23 Concrete Grade: S2M, 3500HP

Dates Test F	Represents:	8/15/2023	through	8/21/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1650	9.83	2.69	53.2
26A	58-003	Stoneco	250	1.49	2.69	8.1
2NS	81-019	Pleasant Lake	1200	7.26	2.65	38.7
		Total Wt	3100	18.58		100.0

26A

100.0

100.0

100.0

100.0

99.8

88.0

9.7

3.1

2.2

1.9

1.8

1.8

1.6

Contractor:

MDOT No.:

0.0

0.0

0.0

12.0

22.4

10.5

14.7

7.7

7.1

7.2

8.8

6.2

Cumulative

% Passing

100.0

100.0

100.0

0.88

65.5

55.1

40.4

32.7

25.6

18.4

9.7

3.5

2NS

100.0

100.0

100.0

100.0

100.0

100.0

97.3

80.9

63.7

45.3

22.8

7.0



---- Verify this number is 100%

Retained	Cumulative % Retained	
----------	--------------------------	--

% R

0.0

81.6

90.3

96.5

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0.0 12.0 34.5 44.9 59.6 67.3 74.4

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

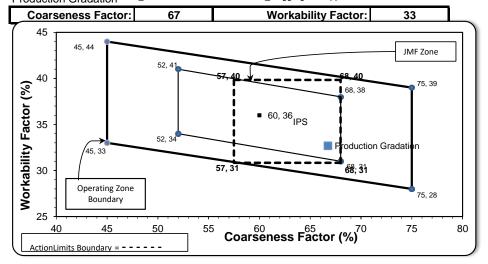
nom. max., #100 and #200 sieves.

*% 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.

Production Gradation	Batch Plant Gradations	 Aggregate Supplier Gradations



Intial Production Sample (IPS)

Coars	Coarseness Factor:		
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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"	59.4	11.9	40.6
#4	43.0	16.5	57.0
#8	35.3	7.6	64.7
#16	28.2	7.1	71.8
#30	21.6	6.6	78.4
#50	9.1	12.5	90.9
#100	1.7	7.4	98.3
LBW	1.1	0.6	98.9

8/14/23

PLANT #: P-36

Sample Date:

Concrete Grade: S2M, 3500HP

Contractor:

MDOT No.:

Dates Test Represents:		8/15/2023	through	8/21/2023		
Agg. Class	Pit#	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1600	9.79	2.62	52.5
26A	71-47	Presque Isle	250	1.53	2.62	8.2
2NS	63-92	Grange Hall	1200	7.26	2.65	39.3
		Total Wt	2050	19.57		100.0

Source	Weight (SSD)	ft°	Gravity	Contribution
Presque Isle	1600	9.79	2.62	52.5
Presque Isle	250	1.53	2.62	8.2
Grange Hall	1200	7.26	2.65	39.3
Total Wt	3050	18.57		100.0

---- Verify this number is 100%

SUPERIOR	

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					. ,	
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"	98.7	100.0	100.0	99.3	0.7	0.7
3/4"	78.0	100.0	100.0	88.5	10.9	11.5
1/2"	39.0	92.2	100.0	67.4	21.1	32.6
3/8"	19.2	79.0	100.0	55.9	11.5	44.1
#4	4.3	11.6	97.4	41.5	14.4	58.5
#8	2.3	2.6	84.2	34.5	7.0	65.5 r
#16	2.1	1.3	70.3	28.9	5.7	71.1
#30	2.0	1.0	51.2	21.3	7.6	78.7 r
#50	1.9	0.9	20.5	9.1	12.1	90.9
#100	1.8	0.9	3.1	2.2	6.9	97.8 a
LBW	1.6	0.7	0.5	1.1	1.1	98.9

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

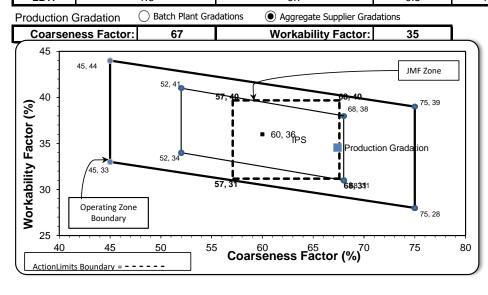
nom. max., #100 and #200 sieves.

*% 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.



Intial Production Sample (IPS)

Coarseness Factor:		62	
Workability Factor:		35	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.1	0.9	0.9
3/4"	90.5	8.6	9.5
1/2"	69.8	20.7	30.2
3/8"	59.8	10.0	40.2
#4	42.2	17.6	57.8
#8	35.4	6.7	64.6
#16	28.8	6.7	71.2
#30	21.4	7.4	78.6
#50	8.8	12.6	91.2
#100	1.8	7.0	98.2
LBW	0.7	1.0	99.3

8/14/23

PLANT #: P-38

Sample Date:

Concrete Grade: S2M, 3500HP

Dates Test Represents:		0/13/2023	through	8/21/2023		
Agg. Class Pit #		Pit # Source We		ft ³	Specific	%
Agg. Oldoo	,,	004.00	Weight (SSD)		Gravity	Contribution
6AA	58-003	Stoneco	1650	9.83	2.69	53.2
26A	58-003	Stoneco	250	1.49	2.69	8.1
2NS	81-019	Pleasant Lake	1200	7.26	2.65	38.7

Contractor:

MDOT No.:



Superior Materials, LLC
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Suite 500
Farmington Hills, MI 48336

	Total Wt	Total Wt 3100		18.58		< Verify this number is 100%		
Sieve	6AA	26	i A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained	
2"	100.0	10	0.0	100.0	100.0	0.0	0.0	
1.5"	100.0	10	0.0	100.0	100.0	0.0	0.0	
1"	100.0	10	0.0	100.0	100.0	0.0	0.0	
3/4"	77.4	100.0		100.0	88.0	12.0	12.0	
1/2"	35.3	99	0.8	100.0	65.5	22.4	34.5	
3/8"	17.4	88	3.0	100.0	55.1	10.5	44.9	
#4	3.7	9.	.7	97.3	40.4	14.7	59.6	
#8	2.1	3	.1	80.9	32.7	7.7	67.3	
#16	1.5	2	2	63.7	25.6	7.1	74.4	
#30	1.4	1.9		45.3	18.4	7.2	81.6	
#50	1.3	1.8		22.8	9.7	8.8	90.3	
#100	1.2	1.	.8	7.0	3.5	6.2	96.5	
LBW	1.2	1.	.6	1.2	1.2	2.3	98.8	

*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

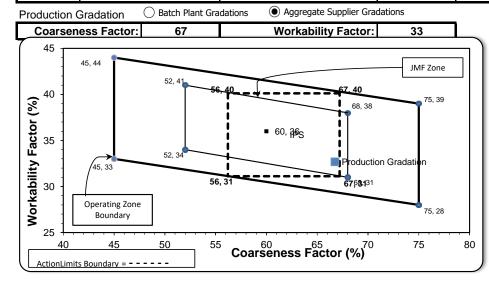
nom. max., #100 and #200 sieves.

 $\ensuremath{^{*}\%}$ 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.



Intial Production Sample (IPS)

Coars	eness Factor:	62	
Workability Factor:		36	
Sieve	Cumulative	%	Cumulative
	% Passing	Retained	% 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"	91.1	8.1	8.9
1/2"	72.0	19.1	28.0
3/8"	60.3	11.7	39.7
#4	43.4	16.9	56.6
#8	35.6	7.8	64.4
#16	28.4	7.2	71.6
#30	21.8	6.7	78.2
#50	9.1	12.6	90.9
#100	1.7	7.4	98.3
LBW	1.1	0.6	98.9

PREPARED BY:
SM, LLC Technical Service

Approved By:

Total W/s

PLANT #: P-39

Sample Date:

Concrete Grade: S2M, 3500HP 8/14/23

ates Test Represents:		8/15/2023	through	8/21/2023		
\gg. Class	Pit#	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1600	9.79	2.62	52.5
26A	71-47	Presque Isle	200	1.22	2.62	6.6
2NS	44-051	Krake Willis Rd	1250	7.56	2.65	41.0

Contractor:

MDOT No.:



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Suite 500
Farmington Hills, MI 48336

	i otai Wt	3050	18.57		100.0	< Verify this n	umber is 100%	
Sieve	6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained	
2"	100.0	100	0.0	100.0	100.0	0.0	0.0	l
1.5"	100.0	100	0.0	100.0	100.0	0.0	0.0	l
1"	96.7	100	0.0	100.0	98.3	1.7	1.7	l
3/4"	84.6	100	0.0	100.0	91.9	6.3	8.1	l
1/2"	41.8	93	.4	100.0	69.0	22.9	31.0	l
3/8"	24.5	80	.7	100.0	59.1	9.9	40.9	l
#4	4.2	14	.3	97.7	43.2	15.9	56.8	l
#8	2.3	2.	5	83.2	35.5	7.7	64.5	n
#16	2.0	1.	2	67.2	28.7	6.8	71.3	l
#30	2.0	2.	0	49.3	21.4	7.3	78.6	n
#50	1.9	0.	9	22.5	10.3	11.1	89.7	l
#100	1.8	0.	9	6.3	3.6	6.7	96.4	а
LBW	1.5	0.	8	1.3	1.4	2.2	98.6	l

*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 Gra	dations Aggregate Supplier Gradation	s
Coarseness Factor:	63	Workability Factor:	35
45 45, 44 45, 44 45, 33 Operating Zone Boundary	52, 41	68, 38 60, 36 PSoduction Gradation	75, 39 75, 28
40 45 ActionLimits Boundary =	50 55	Coarseness Factor (%) ⁷⁰	75 80

Intial Production Sample (IPS)

Coarseness Factor:		63	
Workability Factor:		36	
Sieve	Cumulative	%	Cumulative
	% Passing	Retained	% 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"	89.8	10.2	10.2
1/2"	70.7	19.1	29.3
3/8"	59.6	11.1	40.4
#4	43.2	16.4	56.8
#8	35.8	7.4	64.2
#16	29.2	6.6	70.8
#30	21.4	7.8	78.6
#50	9.8	11.6	90.2
#100	3.7	6.1	96.3
LBW	1.2	2.5	98.8

Total Wt

PLANT #: P-02

Sample Date:

100.0

8/14/23 Concrete Grade: S2M, 3500HP 8/15/2023 8/21/2023 through

18.57

Dates Test F	Represents:	8/15/2023	through	8/21/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1620	9.91	2.62	53.1
26A	71-47	Presque Isle	200	1.22	2.62	6.6
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3

3050

MDOT No.:

Contractor:

<---- Verify this number is 100%

S	UPE ATER	RIC	PR
_			

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*Maximum % Retained must be above the 3/8" sieve.

*Any two adjacent sieves must equal 10% except max.,

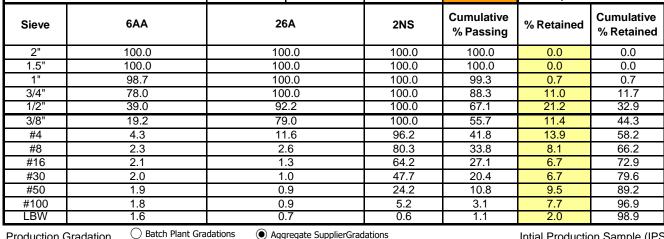
nom. max., #100 and #200 sieves.

*% Retained must be at least 4% for each sieve except max.,

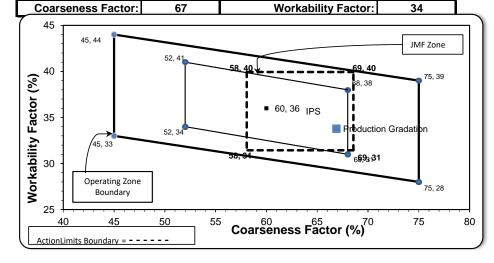
nom. max., #100 and #200 sieves.

*% Retained must be at least 4% for the 3/4" sieve when

a 1.5" max. size (nom. Max. 1.0") aggregate is used.



 Aggregate SupplierGradations **Production Gradation**



Intial Production Sample (IPS)

Coarseness Factor:		63	
Workability Factor:		36	
Sieve	Cumulative	%	Cumulative
	% Passing	Retained	% 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"	95.6	4.4	4.4
1/2"	73.1	22.6	26.9
3/8"	59.3	13.8	40.7
#4	42.8	16.5	57.2
#8	35.7	7.1	64.3
#16	28.9	6.8	71.1
#30	20.7	8.2	79.3
#50	9.9	10.8	90.1
#100	2.1	7.8	97.9
LBW	0.9	1.2	99.1