Production Gradation Report

PLANT #: P-101 Contractor:

Concrete Grade: DM, 4500HP Sample Date: 10/30/23 Dates Test Represents: 10/31/2023 11/6/2023 through

Dates Test I	represents.	10/31/2023	unougn	11/0/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1450	8.87	2.62	50.0
26A	71-47	Presque Isle	300	1.83	2.62	10.3
2NS	75-051	Mid Michigan	1150	6.93	2.66	39.7

MDOT No.:

Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:



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

	Total Wt	2900	17.63		100.0	< Verify this n	umber is 100%
Sieve	6AA	26	6A	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"	98.4	10	0.0	100.0	99.2	0.8	0.8
3/4"	82.9	10	0.0	100.0	91.5	7.8	8.6
1/2"	34.7	96	5.9	100.0	67.0	24.4	33.0
3/8"	17.1	87	7.3	100.0	57.2	9.8	42.8
#4	2.6	20).6	96.4	41.7	15.6	58.3
#8	1.6	4	.1	81.2	33.4	8.2	66.6
#16	1.5	2	.1	66.2	27.2	6.2	72.8
#30	1.4	1	.7	51.8	21.4	5.8	78.6
#50	1.4	1	.5	26.8	11.5	9.9	88.5
#100	1.4	1	.4	6.6	3.5	8.0	96.5
LBW	1.1	1	.3	0.7	1.0	2.5	99.0
Production Grad	dation O Batch Plant Gra	dations	regate Supplier Gra	adations	Adjusted WF	Initial Producti	on Sample (IP

*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:	64	Workability Factor:	33	35.9
45 45, 44 45, 44 45, 33 Operating Zone Boundary	52, 41	57, 39 68, 38 60, 36s Production Gradat 57, 31 67, 63,131	75, 39 ion	
40 45 ActionLimits Boundary =	50	Coarseness Factor (%)	75	80

Work	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"	95.0	5.0	5.0
1/2"	70.5	24.5	29.5
3/8"	60.0	10.5	40.0
#4	44.4	15.6	55.6
#8	35.5	9.0	64.5
#16	28.5	7.0	71.5
#30	21.5	7.0	78.5
#50	10.2	11.3	89.8
#100	3.1	7.1	96.9
LBW	1.3	1.8	98.7

62

PREPARED BY: SM, LLC Technical Service

11/6/2023

PLANT #: P-102

10/31/2023

Dates Test Represents:

Concrete Grade: DM, 4500HP Sample Date: 10/30/23

through

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1375	8.19	2.69	46.6
26A	58-003	Stoneco	425	2.53	2.69	14.4
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0
	•	Total Wt	2050	17 69		100.0

MDOT No.:

Contractor:

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

lotai vvt		2950	17.08	100.0	< Verity this n	umber 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"	76.1	100.0	100.0	88.9	11.1	11.1
1/2"	36.6	99.3	100.0	70.3	18.5	29.7
3/8"	10.3	87.1	100.0	56.3	14.0	43.7
#4	2.5	9.9	98.0	40.8	15.5	59.2
#8	1.7	3.2	84.1	34.0	6.8	66.0
#16	1.1	2.6	66.0	26.6	7.4	73.4
#30	1.1	2.3	45.1	18.4	8.2	81.6
#50	1.0	2.2	19.9	8.5	9.9	91.5
#100	0.9	2.1	3.3	2.0	6.5	98.0
LBW	1.0	2.0	0.4	0.9	1.1	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.

#100		0.9	2.1	ა.ა	2.0	0.5	90.0	a
LBW		1.0	2.0	0.4	0.9	1.1	99.1	ì
Production G	Gradation	O Batch Plant Gra	dations	dations	Adjusted WF	Intial Production	on Sample (IPS)
Coarsen	ess Factor:	66	Workability Factor:	34	36.5	Coars	eness Factor:	
45 —					IJ	Work	ability Factor:	
	45, 44			JMF Zone	7 I II	Sieve	Cumulative	
1 1	10, 11			31111 20110	I	Sieve	% Passing	F
40		52, 41	40			2"	100.0	

45 -	45, 44 JMF Zone
ctor (%)	52, 41 56, 40 68, 38 75, 39 60 Production Gradation
Workability Factor (%)	52, 34 45, 33 56, 32 67, 32, 31 Operating Zone
Mo 25	Boundary 75, 28
	00 45 50 55 60 65 70 75 80 mits Boundary =

Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

PREPARED BY: SM, LLC Technical Service

PLANT #: P-103

Concrete Grade: DM, 4500HP Sample Date: 10/30/23

Contractor:

MDOT No.:

Dates Test F	Represents:	10/31/2023	through	11/6/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1375	8.19	2.69	46.6
26A	58-003	Stoneco	425	2.53	2.69	14.4
2NS	81-019	Pleasant Lake		6.95	2.65	39.0

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1375	8.19	2.69	46.6
26A	58-003	Stoneco	425	2.53	2.69	14.4
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0
	•	Total Wt	2950	17.68		100.0

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

	Total Wt	2950 17.68		100.0	< Verify this n	umber 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"	76.1	100.0	100.0	88.9	11.1	11.1
1/2"	36.6	99.3	100.0	70.3	18.5	29.7
3/8"	10.3	87.1	100.0	56.3	14.0	43.7
#4	2.5	9.9	98.0	40.8	15.5	59.2
#8	1.7	3.2	84.1	34.0	6.8	66.0
#16	1.1	2.6	66.0	26.6	7.4	73.4
#30	1.1	2.3	45.1	18.4	8.2	81.6
#50	1.0	2.2	19.9	8.5	9.9	91.5
#100	0.9	2.1	3.3	2.0	6.5	98.0
LBW	1.0	2.0	0.4	0.9	1.1	99.1
		O :				

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

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

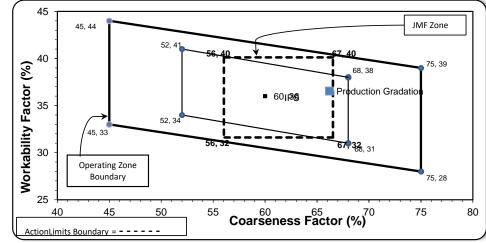
nom. max., #100 and #200 sieves.

*% 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		n		Adjusted WF	Intial Production Sample (IPS	5)
	Coarseness Factor:	66		Workability Factor:	34	36.5	Coarseness Factor:	61
•							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"	99.3	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		

PREPARED BY: SM, LLC Technical Service

PLANT #: Contractor:

Concrete Grade: DM, 4500HP Sample Date: 10/30/23 Dates Test Represents: 10/31/2023 11/6/2023 through

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1375	8.19	2.69	46.5
26A	58-003	Stoneco	485	2.89	2.69	16.4
2NS	19-04	Schlegel	1100	6.60	2.67	37.2
		Total Wt	2060	17 69		100.0

MDOT No.:



Builders Redi-Mix
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

lota		al Wt 2960 17.68			100.0	< Verify this number is 100%		
Sieve	6AA	26	6A	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"	76.1	10	0.0	100.0	88.9	11.1	11.1	
1/2"	36.6	99).3	100.0	70.4	18.5	29.6	
3/8"	10.3	87	' .1	100.0	56.2	14.2	43.8	
#4	2.5	9	.9	100.0	39.9	16.3	60.1	
#8	1.7	3.	.2	90.0	34.8	5.2	65.2	
#16	1.1	2	.6	70.0	27.0	7.8	73.0	
#30	1.1	2	.3	45.0	17.6	9.3	82.4	
#50	1.0	2	.2	16.0	6.8	10.8	93.2	
#100	0.9	2	.1	3.0	1.9	4.9	98.1	
LBW	1.0	2	.0	0.3	0.9	1.0	99.1	

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

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

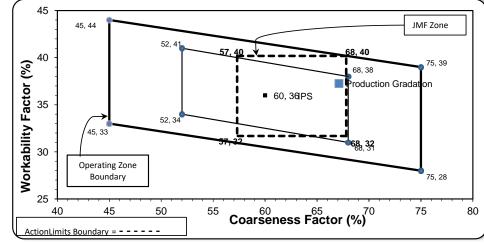
nom. max., #100 and #200 sieves.

*% 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.

Production Gradation	Batch Plant Gra	adations Aggregate Supplier Gra	Aggregate Supplier Gradations		Intial Production Sample (IPS))
Coarseness Factor	67	Workability Factor:	35	37.3	Coarseness Factor:	
					Workshility Factor:	



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"	99.3	0.7	0.7
3/4"	89.0	10.3	11.0
1/2"	70.3	18.7	29.7
3/8"	59.9	10.4	40.1
#4	41.9	18.0	58.1
#8	35.9	6.0	64.1
#16	27.8	8.2	72.2
#30	18.9	8.8	81.1
#50	6.3	12.6	93.7
#100	1.7	4.6	98.3
LBW	1.0	0.7	99.0

PREPARED BY: SM, LLC Technical Service

Total Wt

PLANT #:

Agg. Class 6AA 26A 2NS

12

Concrete Grade: DM, 4500HP

100.0

Sample Date: 10/30/23 Dates Test Rep

epresents:	10/31/2023	tnrougn	11/6/2023		
Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
71-47	Presque Isle	1450	8.87	2.62	49.9
71-47	Presque Isle	305	1.87	2.62	10.5
63-115	Ray Rd	1150	6.95	2.65	39.6

MDOT No.:

Contractor:



-- Verify this number is 100%

Sieve	6AA	26A	2NS	% Passing	% Retained	% 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"	98.1	100.0	100.0	99.1	0.9	0.9
3/4"	84.1	100.0	100.0	92.1	7.0	7.9
1/2"	39.5	97.1	100.0	69.5	22.6	30.5
3/8"	21.8	87.6	100.0	59.7	9.8	40.3
#4	3.7	26.0	96.7	42.9	16.8	57.1
#0	2.4	6.0	00 F	22.0	0.1	66.0

17.69

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.

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*% 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.

	45, 44		JMF Zone	711	Sieve	Cumulative	
7 45 —		$\neg \top$	Work	ability Factor:			
Coarsen	ess Factor: 61	Workability Factor:	34	36.3	Coars	eness Factor:	
Production (Gradation O Batch Plant Gra	dations	dations	Adjusted WF	Intial Production	on Sample (IPS	,)
LBW	1.4	1.7	0.6	1.1	2.1	98.9	ı
#100	1.8	2.0	5.2	3.2	8.3	96.8	а
#50	1.9	2.2	25.9	11.4	9.1	88.6	*
#30	2.0	2.4	48.8	20.6	6.3	79.4	nc
#16	2.2	3.2	64.2	26.8	6.9	73.2	*
#8	2.4	6.9	80.5	33.8	9.1	66.2	nc
#4	3.7	26.0	96.7	42.9	16.8	57.1	*
3/8"	21.8	87.6	100.0	59.7	9.8	40.3	*
		_					4

2905

Coarseness Factor:	61	Workability Factor:	34
45 45, 44 45, 44 45, 33 Operating Zone Boundary	52. 41	57, 40 68, 40 68, 38 68, 38 68, 38 68, 38 68, 38	75, 39
25 40 45 ActionLimits Boundary =	50 55	Coarseness Factor (%) ⁷⁰	75 80

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"	99.3	0.7	0.7
3/4"	89.0	10.3	11.0
1/2"	70.3	18.7	29.7
3/8"	59.9	10.4	40.1
#4	41.9	18.0	58.1
#8	35.9	6.0	64.1
#16	27.8	8.2	72.2
#30	18.9	8.8	81.1
#50	6.3	12.6	93.7
#100	1.7	4.6	98.3
LBW	1.0	0.7	99.0

PREPARED BY: SM, LLC Technical Service

10/30/23

PLANT #: p11

Sample Date:

Concrete Grade: DM, 4500HP

Dates Test Represents:		10/31/2023	through	11/6/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1355	8.29	2.62	46.6
26A	71-47	Presque Isle	400	2.45	2.62	13.8
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6
		Total Wt	2905	17.69		100.0

MDOT No.:

Contractor:



Verify this number is 100%

% Retained	Cumulative	
/o Ketaineu	% Retained	

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

Superior Materials, LLC

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"	83.2	100.0	100.0	92.2	7.8	7.8
1/2"	39.6	97.1	100.0	71.4	20.7	28.6
3/8"	24.5	87.6	100.0	63.1	8.4	36.9
#4	5.6	26.0	96.5	44.4	18.7	55.6
#8	3.1	6.9	85.5	36.2	8.2	63.8
#16	2.6	3.2	70.7	29.6	6.6	70.4
#30	2.5	2.4	50.9	21.6	8.0	78.4
#50	2.4	2.2	25.1	11.4	10.3	88.6
#100	2.2	2.0	7.3	4.2	7.2	95.8
LBW	1.8	1.7	1.3	1.6	2.6	98.4

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

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

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

62

*% 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 Grad	dations Aggregate Supplier Gradation	ons	Adjusted WF	Intial Producti	on Sample (IPS)	
Coarseness Factor:	58	Workability Factor:	36	38.7	Coars	eness Factor:	
7 45				$\neg \top$	Work	ability Factor:	
45, 44			JMF Zone	7 I I	Sieve	Cumulative	
	52, 41		31111 20110	-	Sieve	% Passing	F
40	56	40 67, 40		- 11	2"	100.0	
│ ॹ ऀॕऻ ऻ		Production Gradation 68, 38	75, 39	- 11	1.5"	100.0	
		!		- 11	1"	100.0	
Factor (%)		■ 60,3MBS		- 11	3/4"	95.0	
35 -		i il		- 11	1/2"	72.3	
1 7 -	52, 34	<u> </u>		- 11	3/8"	60.4	
45, 33	30	97 32		- 11	#4	42.6	
💆 30 -		67 , 32		- 11	#8	36.0	
Operating Zone			→	- 11	#16	29.5	
Atjiild 30 - Atjii			75, 28	- 11	#30	20.3	
> 25 				_	#50	9.5	
40 45	50 55	60 65 70	75	80	#100	3.4	
		Coarseness Factor (%) ⁷⁰	-		LBW	1.3	
ActionLimits Boundary =							

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"	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

PREPARED BY: SM, LLC Technical Service

PLANT #:

Sample Date:

10/30/23 Concrete Grade: DM, 4500HP

Contractor:

Dates Test Represents:		10/31/2023	through	11/6/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1355	8.29	2.62	46.6
26A	71-47	Presque Isle	400	2.45	2.62	13.8
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6
		Total Wt	2005	17.60		100.0

MDOT No.:



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

	Total Wt	2905	17.69		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
1.5"	100.0	100	0.0	100.0	100.0	0.0	0.0
1"	100.0	100	0.0	100.0	100.0	0.0	0.0
3/4"	83.2	100	0.0	100.0	92.2	7.8	7.8
1/2"	39.6	97	.1	100.0	71.4	20.7	28.6
3/8"	24.5	87	.6	100.0	63.1	8.4	36.9
#4	5.6	26	.0	96.5	44.4	18.7	55.6
#8	3.1	6.	9	85.5	36.2	8.2	63.8
#16	2.6	3.	2	70.7	29.6	6.6	70.4
#30	2.5	2.	4	50.9	21.6	8.0	78.4
#50	2.4	2.	2	25.1	11.4	10.3	88.6
#100	2.2	2.	0	7.3	4.2	7.2	95.8
LBW	1.8	1.	7	1.3	1.6	2.6	98.4

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

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

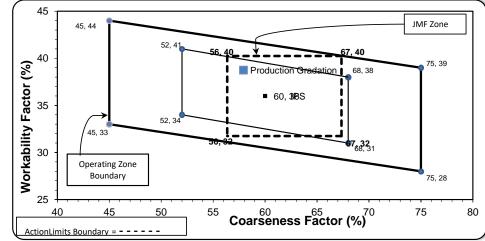
nom. max., #100 and #200 sieves.

*% 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 Gra	adations	 Aggregate Supplier Grad 	dations	Adjusted WF	Intial Production Sample (IPS)
Coarseness Factor:	: 58		Workability Factor:	36	38.7	Coarseness Factor:	62
45						Workability Factor:	36
45						Olative	0/



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"	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

PREPARED BY: SM, LLC Technical Service

PLANT #:

Sample Date:

Dates Test Represents:

Production Gradation

25

10/30/23 10/31/2023 Contractor:

Concrete Grade: DM, 4500HP 11/6/2023

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1375	8.19	2.69	46.6
26A	58-003	Stoneco	425	2.53	2.69	14.4
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0
		Total Wt	2950	17.68		100.0

through

MDOT No.:

Verify this number is 100%

Adjusted WF Intial Production Sample (IPS)

Coarseness Factor:

Workability Factor:

SUPERIOR MATERIALS

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

	Total Wt	2550 17.00		100.0	< verily tris in	ullibel 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"	76.1	100.0	100.0	88.9	11.1	11.1
1/2"	36.6	99.3	100.0	70.3	18.5	29.7
3/8"	10.3	87.1	100.0	56.3	14.0	43.7
#4	2.5	9.9	98.0	40.8	15.5	59.2
#8	1.7	3.2	84.1	34.0	6.8	66.0
#16	1.1	2.6	66.0	26.6	7.4	73.4
#30	1.1	2.3	45.1	18.4	8.2	81.6
#50	1.0	2.2	19.9	8.5	9.9	91.5
#100	0.9	2.1	3.3	2.0	6.5	98.0
LBW	1.0	2.0	0.4	0.9	1.1	99.1

Aggregate Supplier Gradations

Coarseness Factor (%) 70

75

80

*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	: 66	Workability Factor:	34	36.5
45 45, 44 45, 33 Operating Zon Boundary	52, 41 56 52, 34 56 ,	68, 38 ■ Production	75, 39 75, 28	

Batch Plant Gradations

WOIK	ability I actor.	3	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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"	89.1	10.2	10.9
1/2"	70.5	18.6	29.5
3/8"	60.5	10.0	39.5
#4	44.1	16.4	55.9
#8	35.6	8.5	64.4
#16	27.7	7.9	72.3
#30	20.6	7.1	79.4
#50	8.7	11.8	91.3
#100	1.6	7.1	98.4
LBW	1.1	0.6	98.9

61

PREPARED BY: SM, LLC Technical Service

50

45

ActionLimits Boundary = - - - - -

PLANT #:

Sample Date: 10/30/23

Concrete Grade: DM, 4500HP

Dates Test Represents:		10/31/2023	through	11/6/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1450	8.87	2.62	49.9
26A	71-47	Presque Isle	305	1.87	2.62	10.5
2NS	63-92	Grange Hall	1150	6.95	2.65	39.6
		Total Wt	2005	17.60		100.0

MDOT No.:

Contractor:

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

	Total Wt	2905	17.69		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
1.5"	100.0	100	0.0	100.0	100.0	0.0	0.0
1"	98.1	100	0.0	100.0	99.1	0.9	0.9
3/4"	84.1	100	0.0	100.0	92.1	7.0	7.9
1/2"	39.5	97	7.1	100.0	69.5	22.6	30.5
3/8"	21.8	87	.6	100.0	59.7	9.8	40.3
#4	3.7	26	.0	97.3	43.1	16.6	56.9
#8	2.4	6.	9	84.3	35.3	7.8	64.7
#16	2.2	3.	2	69.2	28.8	6.5	71.2
#30	2.0	2.	4	49.1	20.7	8.1	79.3
#50	1.9	2.	2	19.9	9.1	11.6	90.9
#100	1.8	2.	0	3.7	2.6	6.5	97.4
LBW	1.4	1.	7	1.1	1.3	1.3	98.7

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

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

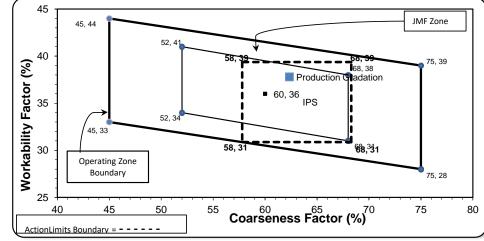
nom. max., #100 and #200 sieves.

*% 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.

Production Gradation	Batch Plant Gradations		 Aggregate Supplier Grad 	dations	Adjusted WF	Intial Production Sample (IPS))
Coarseness Factor:	62		Workability Factor: 35		37.8	Coarseness Factor:	6
						Workshility Factor:	3/



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"	90.3	8.8	9.7
1/2"	69.2	21.1	30.8
3/8"	59.1	10.1	40.9
#4	41.8	17.3	58.2
#8	35.1	6.6	64.9
#16	28.5	6.6	71.5
#30	21.2	7.3	78.8
#50	8.7	12.5	91.3
#100	1.8	7.0	98.2
LBW	0.7	1.0	99.3

PREPARED BY: SM, LLC Technical Service

Pleasant Lake

1.0

PLANT #:

81-019

LBW

Concrete Grade: DM, 4500HP 10/30/23 Sample Date: 10/31/2023 11/6/2023

1150

2.65

0.4

ales rest itepresents.		10/31/2023	unougn	11/0/2023		
\gg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1375	8.19	2.69	46.6
26A	58-003	Stoneco	425	2.53	2.69	14.4

39.0

0.9

Contractor:

MDOT No.:

Superior Materials, LLC 30701 W. 10 Mile Rd.

> Suite 500 Farmington Hills, MI 48336

_	Total Wt	2950	17.68		100.0	< Verify this n	umber is 100%
Sieve	6AA	26	26A		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"	76.1	10	0.0	100.0	88.9	11.1	11.1
1/2"	36.6	99	9.3	100.0	70.3	18.5	29.7
3/8"	10.3	87	7.1	100.0	56.3	14.0	43.7
#4	2.5	9	.9	98.0	40.8	15.5	59.2
#8	1.7	3	.2	84.1	34.0	6.8	66.0
#16	1.1	2	2.6		26.6	7.4	73.4
#30	1.1	2	2.3		18.4	8.2	81.6
#50	1.0	2	.2	19.9	8.5	9.9	91.5
#100	0.9	2	1	3.3	2.0	6.5	98.0

6.95

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

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

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

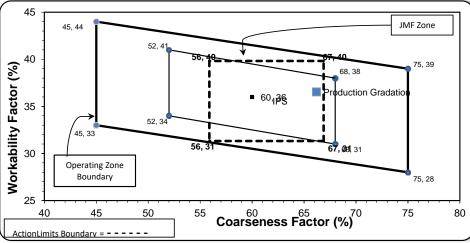
*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.

*% 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	O Batch Plant Gra	dations Aggregate Supplier Gra	adations	Adjusted WF	Intial Production Sample (IPS)	
Coarseness Factor: 66		Workability Factor:	Workability Factor: 34		Coarseness Factor:	6	
						Workability Factor:	3

2.0



Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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"	89.1	10.2	10.9
1/2"	70.5	18.6	29.5
3/8"	60.5	10.0	39.5
#4	44.1	16.4	55.9
#8	35.6	8.5	64.4
#16	27.7	7.9	72.3
#30	20.6	7.1	79.4
#50	8.7	11.8	91.3
#100	1.6	7.1	98.4
LBW	1.1	0.6	98.9

99.1

PREPARED BY: SM, LLC Technical Service

PLANT #:

10/30/23 Sample Date:

Concrete Grade: DM, 4500HP

Dates Test F	Represents:	10/31/2023	through	11/6/2023		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1505	9.21	2.62	51.8
26A	71-47	Presque Isle	300	1.83	2.62	10.3
2NS	44-051	Krake Willis Rd	1100	6.65	2.65	37.9

MDOT No.:

Adjusted WF Intial Production Sample (IPS)

Coarseness Factor:

Contractor:

SUPE	RIOR

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

	Total Wt	2905	17.69		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"	98.4	10	0.0	100.0	99.2	0.8	0.8
3/4"	82.9	10	0.0	100.0	91.1	8.0	8.9
1/2"	34.7	96	6.9	100.0	65.8	25.3	34.2
3/8"	17.1	87	7.3	100.0	55.7	10.1	44.3
#4	2.6	20).6	98.8	40.9	14.9	59.1
#8	1.6	4	.1	84.6	33.3	7.6	66.7
#16	1.5	2	.1	68.9	27.1	6.2	72.9
#30	1.4	1	.7	50.2	19.9	7.2	80.1
#50	1.4	1	.5	21.6	9.1	10.9	90.9
#100	1.4	1	.4	4.5	2.6	6.5	97.4
LBW	1.1	1	.3	0.7	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 4% for the 3/4" sieve when

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

Coarseness Factor:	66	Workability Factor:	33	35.8
45 45 46, 44 45, 44 45, 33 45, 33 Operating Zone Boundary	52, 41	58, 40 68, 38 68, 38 Production G	75, 39 radation 75, 28	
40 45	50 55	Coarseness Factor (%)	75	80

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"	100.0	0.0	0.0
3/4"	89.7	10.3	10.3
1/2"	70.3	19.4	29.7
3/8"	59.1	11.2	40.9
#4	42.8	16.3	57.2
#8	35.5	7.3	64.5
#16	29.0	6.5	71.0
#30	21.2	7.7	78.8
#50	9.8	11.5	90.2
#100	3.7	6.1	96.3
LBW	1.2	2.5	98.8

63

PREPARED BY: SM, LLC Technical Service

ActionLimits Boundary = - - - - -

10/31/2023

PLANT #: **P-02**

Dates Test Represents:

Sample Date: 10/30/23 Concrete Grade: DM, 4500HP Contractor:

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1450	8.87	2.62	49.9
26A	71-47	Presque Isle	305	1.87	2.62	10.5
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
		Total \A/4	2005	47.00		100.0

through

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1450	8.87	2.62	49.9
26A	71-47	Presque Isle	305	1.87	2.62	10.5
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
•		Total Wt	2905	17.69		100.0

ERIOR	
ERIO	

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

	Total Wt	2905 17.69		100.0	< Verify this n	umber 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"	98.1	100.0	100.0	99.1	0.9	0.9
3/4"	84.1	100.0	100.0	92.1	7.0	7.9
1/2"	39.5	97.1	100.0	69.5	22.6	30.5
3/8"	21.8	87.6	100.0	59.7	9.8	40.3
#4	3.7	26.0	96.7	42.9	16.8	57.1
#8	2.4	6.9	80.5	33.8	9.1	66.2
#16	2.2	3.2	64.2	26.8	6.9	73.2
#30	2.0	2.4	48.8	20.6	6.3	79.4
#50	1.9	2.2	25.9	11.4	9.1	88.6
#100	1.8	2.0	5.2	3.2	8.3	96.8
LBW	1.4	1.7	0.6	1.1	2.1	98.9

11/6/2023

*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 💿 A	 Aggregate SupplierGradations Adjusted WF Intial Production Sample (IPS) 		5)				
Coarseness Factor:	61	Wo	orkability Factor:	34	36.3	Coars	eness Factor:	63	
45 -						Work	ability Factor:	35	
45, 44				JMF Zone	711	Sieve	Cumulative	%	П

45 -	45, 44	JMF Zone
Factor (%)	58, 39 68, 39 68, 38 68, 38 FS2, 34	75, 39
Workability Factor (%)	45, 33 58, 31 Operating Zone Boundary	75, 28
25 - 4	0 45 50 55 60 65 70 Coarseness Factor (%)	75 80

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"	95.1	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

PREPARED BY: SM, LLC Technical Service