PLANT #: P-102

Sample Date: 10/28/24 Concrete Grade: DM, 4500HP Dates Test Represents: 10/29/2024 11/4/2024

through

Dates 100t1	toprodento.	10/20/2021	unougn	11/4/2024		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1450	8.64	2.69	49.2
26A	58-003	Stoneco	350	2.09	2.69	11.9
2NS	63-114	Highland	1150	6.95	2.65	39.0
		T - (- 1 W/4	200	47.00		4000

MDOT No.:

Contractor:

Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 4833

				100.0		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"	85.0	100.0	100.0	92.6	7.4	7.4
1/2"	38.7	99.7	100.0	69.8	22.8	30.2
3/8"	15.0	89.5	100.0	57.0	12.9	43.0
#4	2.3	7.0	99.1	40.6	16.4	59.4
#8	1.4	1.9	84.5	33.9	6.7	66.1
#16	0.8	1.6	65.4	26.1	7.8	73.9
#30	0.7	1.5	43.8	17.6	8.5	82.4
#50	0.7	1.4	18.0	7.5	10.1	92.5
#100	0.6	1.3	3.8	1.9	5.6	98.1
LBW	0.9	1.2	0.6	0.8	1.1	99.2

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

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

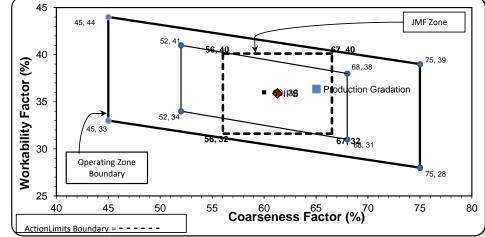
nom. max., #100 and #200 sieves.

*% 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 Grad	dations	Aggregate Supplier GradationsAdjusted WF		Intial Production Sample (IPS)		
Coarseness Factor:	65		Workability Factor:	34	36.4	Coarseness Factor:	61
45 -						Workability Factor:	36
"					-, I I	Commendation	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"	89.2	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 Approved By:

PLANT #: P-103

Concrete Grade: DM, 4500HP 10/28/24 Sample Date: 10/20/2024 44/4/2024

Jates Test F	represents:	10/29/2024	through	11/4/2024		
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific	%
ngg. Olass	1 10 //	000100	Weight (33b)	11	Gravity	Contribution
6AA	58-003	Stoneco	1450	8.64	2.69	49.2
26A	58-003	Stoneco	350	2.09	2.69	11.9
2NS	63-114	Highland	1150	6.95	2.65	39.0

MDOT No.:

Contractor:



SUPERIOR MATERIALS

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	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"	85.0	10	0.0	100.0	92.6	7.4	7.4
1/2"	38.7	99	9.7	100.0	69.8	22.8	30.2
3/8"	15.0	89	9.5	100.0	57.0	12.9	43.0
#4	2.3	7	.0	99.1	40.6	16.4	59.4
#8	1.4	1	.9	84.5	33.9	6.7	66.1
#16	0.8	1	.6	65.4	26.1	7.8	73.9
#30	0.7	1	.5	43.8	17.6	8.5	82.4
#50	0.7	1	.4	18.0	7.5	10.1	92.5
#100	0.6	1	.3	3.8	1.9	5.6	98.1
LBW	0.9	1	.2	0.6	0.8	1.1	99.2

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

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

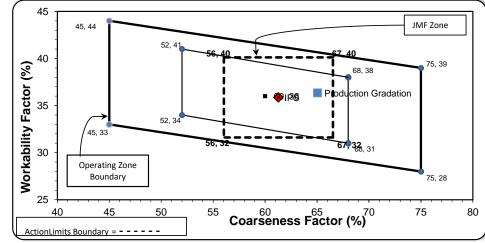
nom. max., #100 and #200 sieves.

*% 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 Gra	regate Supplier Gradations Adjusted WF Intial Product			5)
	Coarseness Factor:	65		Workability Factor:	34	36.4	Coarseness Factor:	61
•	45						Workability Factor:	36



•	ability i actor.	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"	89.2	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 Approved BY:

Aggregate Optimization Chart

10/28/24

PLANT #: 12

Sample Date:

Concrete Grade: DM, 4500HP

Contractor:

Dates Test Represents: 10/29/2024

9/2024 through 11/4/2024

M	D	O	т	Ν	lo	•

Agg. 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

----- Verify this number is 100%

Coarseness Factor

SUPERI	OR

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

	i otai wt	2905	17.69		100.0	< Verity 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"	81.0	100	0.0	100.0	90.2	9.8	9.8
1/2"	44.8	95	.3	100.0	71.1	19.1	28.9
3/8"	26.9	83	.7	100.0	60.8	10.3	39.2
#4	4.8	18	.6	96.9	42.5	18.4	57.5
#8	2.1	4.	5	80.2	33.2	9.2	66.8
#16	1.8	2.	5	64.1	26.5	6.7	73.5
#30	1.6	2.	1	49.1	20.4	6.1	79.6
#50	1.6	1.	9	26.1	11.3	9.1	88.7
#100	1.5	1.	8	6.6	3.5	7.8	96.5
LBW	1.3	1.	7	1.0	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.

*% 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 Graduation				
Coarseness Factor:	59	Workability Factor:	33	35.7
45 45, 44 45, 44 45, 33 45, 33 Operating Zone Boundary	52, 34	57, 40 68, 40 68, 38 68, 38 Fooding 68, 37	75, 39	
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

63

PREPARED BY: SM, LLC Technical Service Approved By:

Mall Ball

Aggregate Optimization Chart

10/28/24

PLANT #: p11

Sample Date:

Concrete Grade: DM, 4500HP

Dates Test F	Represents:	10/29/2024	through	11/4/2024		
Agg. 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

MDOT No.:

Contractor:

-- Verify this number is 100%

SUPERIOR MATERIALS	

Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 4833

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"	81.0	100.0	100.0	90.2	9.8	9.8
1/2"	44.8	95.3	100.0	71.1	19.1	28.9
3/8"	26.9	83.7	100.0	60.8	10.3	39.2
#4	4.8	18.6	96.9	42.5	18.4	57.5
#8	2.1	4.5	80.2	33.2	9.2	66.8
#16	1.8	2.5	64.1	26.5	6.7	73.5
#30	1.6	2.1	49.1	20.4	6.1	79.6
#50	1.6	1.9	26.1	11.3	9.1	88.7
#100	1.5	1.8	6.6	3.5	7.8	96.5
LBW	1.3	1.7	1.0	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.

*% 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	ons	Adjusted WF	Intial Product	ion Sample (IPS)
Coarseness Factor:	59	Workability Factor:	33	35.7	Coars	seness Factor:
45				$\neg T$	Worl	kability Factor:
45, 44			JMF Zone	7 I I	Sieve	Cumulative
	52, 41		31111 20110	-	Sieve	% Passing
40 1	56	67, 40			2"	100.0
% 40 -		68, 38	75, 39		1.5"	100.0
		!		- 11	1"	100.0
25 35 E		Profession			3/4"	95.0
35 -				- 11	1/2"	72.3
	52, 34	! i		- 11	3/8"	60.4
A5, 33 Operating Zone Boundary	30	22 22 22			#4	42.6
30 -	•	67 , 32 , 68, 31		- 11	#8	36.0
Operating Zone	\Box				#16	29.5
Boundary	·		75, 28		#30	20.3
>					#50	9.5
40 45	50 55	60 65 70	75	80	#100	3.4
		Coarseness Factor (%)	. 5	°°	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

62

PREPARED BY: SM, LLC Technical Service Approved By:

PLANT #: **P-02**

Sample Date: 10/28/24 Dates Test Represents: 10/29/2024 Concrete Grade: DM, 4500HP

Agg. 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

through

MDOT No.:

Contractor:

Verify this number is 100%

•	SU	PF	R	10	R
N	IA	E	RI	AL	s

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

	TOLAT WIL	2903	17.09		100.0	< venly this h	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"	81.0	100	0.0	100.0	90.2	9.8	9.8
1/2"	44.8	95	.3	100.0	71.1	19.1	28.9
3/8"	26.9	83	.7	100.0	60.8	10.3	39.2
#4	4.8	18	.6	96.9	42.5	18.4	57.5
#8	2.1	4.	5	80.2	33.2	9.2	66.8
#16	1.8	2.	5	64.1	26.5	6.7	73.5
#30	1.6	2.	1	49.1	20.4	6.1	79.6
#50	1.6	1.	9	26.1	11.3	9.1	88.7
#100	1.5	1.	8	6.6	3.5	7.8	96.5
LBW	1.3	1.	7	1.0	1.2	2.3	98.8

11/4/2024

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

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

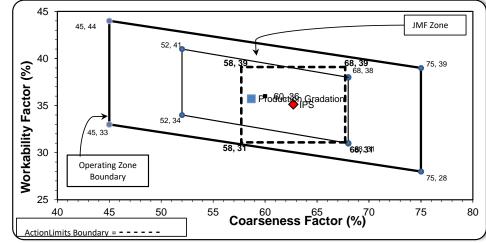
nom. max., #100 and #200 sieves.

*% 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 SupplierGradations		Adjusted WF	Intial Production Sample (IPS)	
	Coarseness Factor:	59		Workability Factor:	33	35.7	Coarseness Factor:	63
							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"	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 Approved By: