

Aggregate Optimization Chart

PLANT #: **P-102**

Sample Date: 4/1/24

Concrete Grade: **P1M, 3500HP**

Contractor: _____

Dates Test Represents: 4/2/2024 through 4/8/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1370	8.16	2.69	43.9
IA	58-003	Stoneco	550	3.28	2.69	17.6
2NS	63-114	Highland	1200	7.26	2.65	38.5
Total Wt			3120	18.70		100.0

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



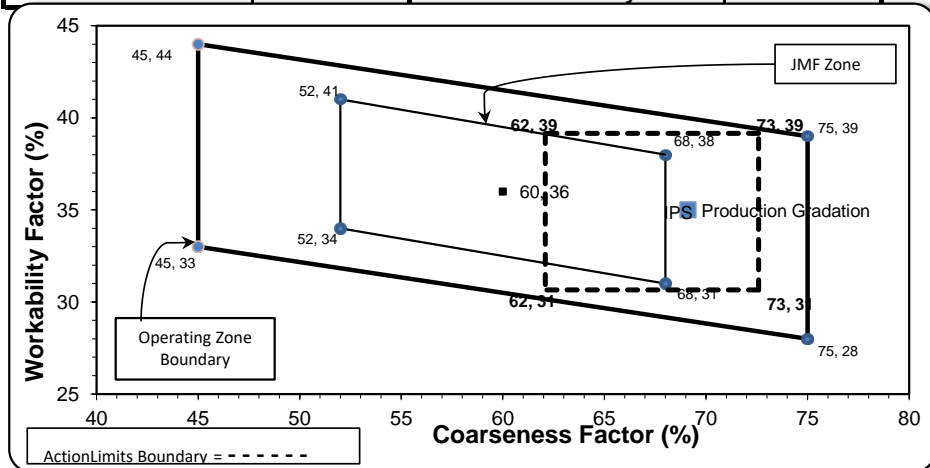
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	63.7	100.0	100.0	84.1	15.9	15.9
3/4"	26.8	100.0	100.0	67.9	16.2	32.1
1/2"	10.2	92.9	100.0	59.3	8.5	40.7
3/8"	7.1	76.6	100.0	55.1	4.2	44.9
#4	3.2	21.9	99.0	43.3	11.7	56.7
#8	2.7	7.5	84.5	35.0	8.3	65.0
#16	2.5	4.2	65.2	26.9	8.1	73.1
#30	2.4	3.1	45.4	19.1	7.9	80.9
#50	2.4	2.6	19.0	8.8	10.2	91.2
#100	2.2	2.4	3.2	2.6	6.2	97.4
LBW	1.9	2.0	0.6	1.4	1.2	98.6

*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:	69	Workability Factor:	35
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Initial Production Sample (IPS)

Coarseness Factor:	67		
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"	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

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: 12

Sample Date: 4/1/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 4/2/2024 through 4/8/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	1070	6.54	2.62	34.9
IA	71-47	Presque Isle	800	4.89	2.62	26.1
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

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



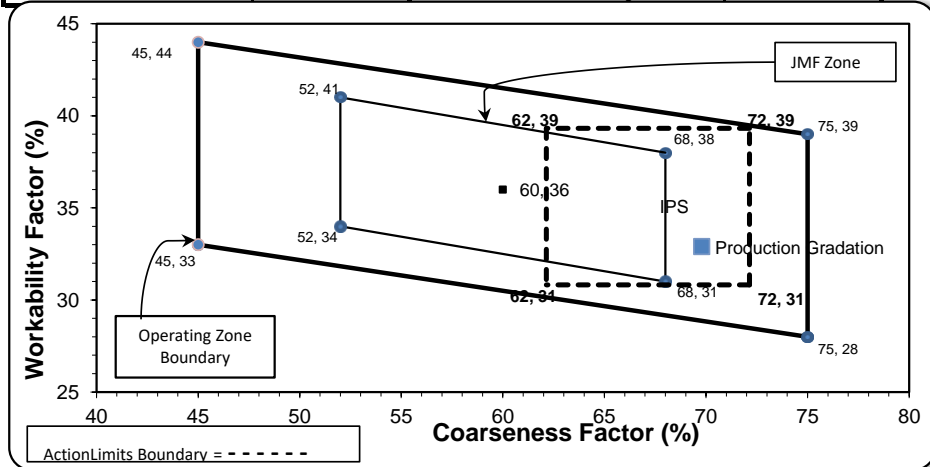
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	99.2	100.0	100.0	99.7	0.3	0.3
1"	42.3	100.0	100.0	79.9	19.8	20.1
3/4"	13.3	97.5	100.0	69.1	10.8	30.9
1/2"	3.1	77.3	100.0	60.3	8.8	39.7
3/8"	2.8	50.3	100.0	53.2	7.1	46.8
#4	2.3	7.0	96.7	40.4	12.7	59.6
#8	2.2	2.1	80.8	32.9	7.5	67.1
#16	2.1	1.5	64.2	26.2	6.7	73.8
#30	2.0	1.3	48.4	20.0	6.3	80.0
#50	1.9	1.2	25.0	10.7	9.2	89.3
#100	1.7	1.1	4.5	2.6	8.1	97.4
LBW	1.5	0.9	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 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:	70	Workability Factor:	33
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Initial Production Sample (IPS)

Coarseness Factor:	67		
Workability Factor:	35		
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.6	0.4	0.4
1"	83.9	15.7	16.1
3/4"	74.0	9.8	26.0
1/2"	63.7	10.3	36.3
3/8"	56.4	7.3	43.6
#4	43.0	13.4	57.0
#8	35.1	7.9	64.9
#16	29.0	6.1	71.0
#30	20.9	8.0	79.1
#50	8.1	12.8	91.9
#100	1.6	6.5	98.4
LBW	0.9	0.8	99.1

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 SM, LLC Technical Service

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