

Aggregate Optimization Chart

PLANT #: **P-102**

Sample Date: 4/8/24

Concrete Grade: **P1M, 3500HP**

Contractor: _____

Dates Test Represents: 4/9/2024 through 4/15/2024

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%



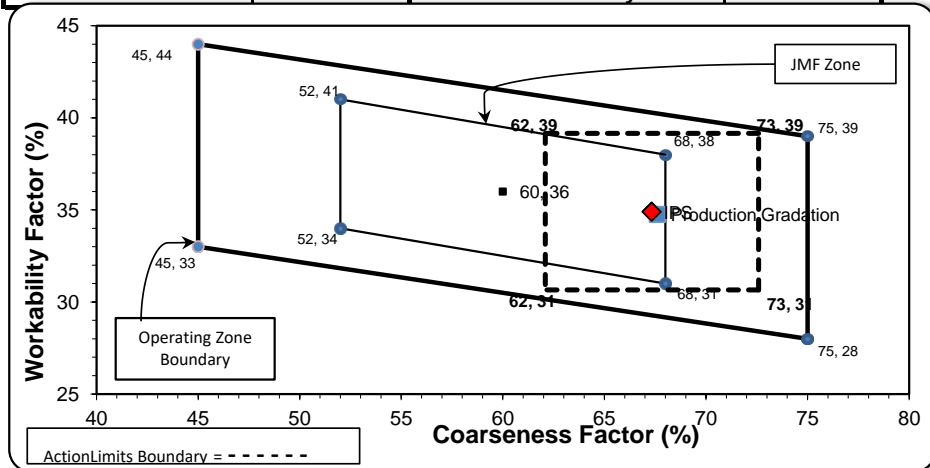
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	61.7	100.0	100.0	83.2	16.8	16.8
3/4"	41.6	100.0	100.0	74.4	8.8	25.6
1/2"	19.2	92.5	100.0	63.2	11.2	36.8
3/8"	9.3	75.7	100.0	55.9	7.3	44.1
#4	5.0	16.2	99.1	43.2	12.7	56.8
#8	2.9	3.4	85.5	34.8	8.4	65.2
#16	2.4	2.0	66.4	26.9	7.8	73.1
#30	2.3	1.6	46.7	19.3	7.7	80.7
#50	2.2	1.4	19.3	8.6	10.6	91.4
#100	2.1	1.3	3.4	2.5	6.2	97.5
LBW	1.8	1.1	0.6	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 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: **68** **Workability Factor:** **35**



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: 4/8/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 4/9/2024 through 4/15/2024

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%



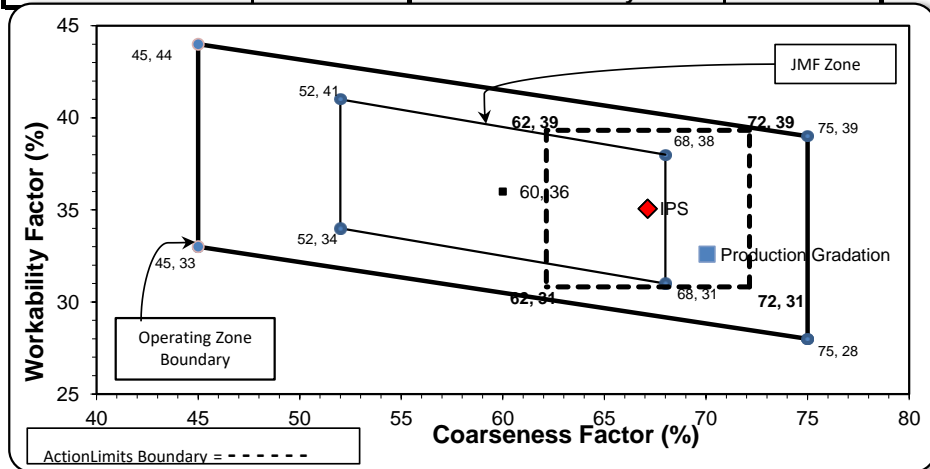
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	99.6	100.0	100.0	99.9	0.1	0.1
1"	39.0	100.0	100.0	78.7	21.1	21.3
3/4"	12.4	97.6	100.0	68.8	9.9	31.2
1/2"	3.5	75.7	100.0	60.0	8.8	40.0
3/8"	2.8	48.8	100.0	52.8	7.3	47.2
#4	2.2	6.0	96.7	40.1	12.7	59.9
#8	2.2	2.0	80.1	32.6	7.5	67.4
#16	2.1	1.4	63.1	25.8	6.8	74.2
#30	2.0	1.3	47.2	19.5	6.3	80.5
#50	2.0	1.2	24.0	10.4	9.1	89.6
#100	1.8	1.2	4.5	2.7	7.7	97.3
LBW	1.5	1.0	0.6	1.0	1.7	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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