

Aggregate Optimization Chart

PLANT #: **P-102**

Sample Date: 3/25/24

Concrete Grade: **S2M, 3500HP**

Contractor: _____

Dates Test Represents: 3/26/2024 through 4/1/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1550	9.23	2.69	50.0
26A	58-003	Stoneco	350	2.09	2.69	11.3
2NS	63-114	Highland	1200	7.26	2.65	38.7
Total Wt			3100	18.58		100.0

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



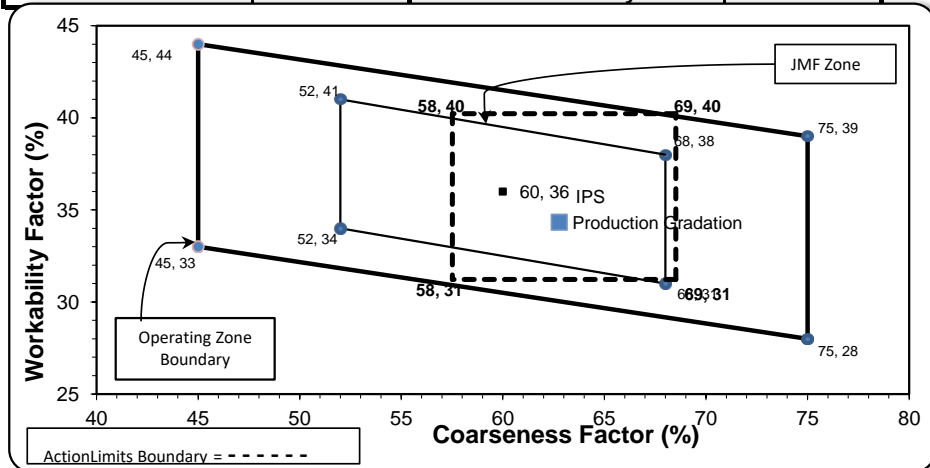
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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	92.5	7.5	7.5
1/2"	45.6	100.0	100.0	72.8	19.7	27.2
3/8"	20.4	87.4	100.0	58.8	14.0	41.2
#4	3.5	6.6	99.0	40.8	18.0	59.2
#8	1.9	1.8	85.7	34.3	6.5	65.7
#16	1.6	1.4	66.8	26.8	7.5	73.2
#30	1.5	1.2	47.3	19.2	7.6	80.8
#50	1.4	1.1	19.8	8.5	10.7	91.5
#100	1.3	1.0	3.4	2.1	6.4	97.9
LBW	1.1	1.0	0.4	0.8	1.3	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 Gradations Aggregate Supplier Gradations

Coarseness Factor:	63	Workability Factor:	34
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Initial Production Sample (IPS)

Coarseness Factor:	63		
Workability Factor:	36		
Sieve	Cumulative % Passing	% Retained	Cumulative % 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:

Aggregate Optimization Chart

PLANT #: 12

Sample Date: 3/25/24

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 3/26/2024 through 4/1/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1550	9.48	2.62	50.8
26A	71-47	Presque Isle	270	1.65	2.62	8.9
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3
Total Wt			3050	18.57		100.0

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



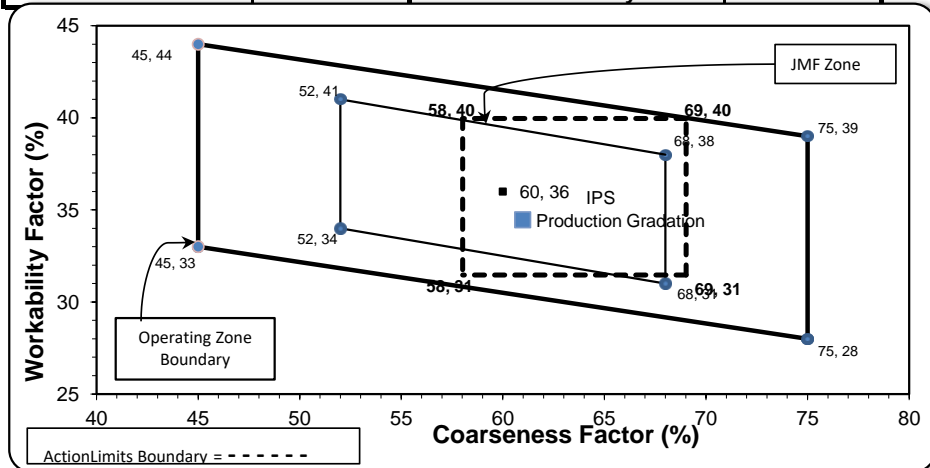
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	86.3	100.0	100.0	93.0	7.0	7.0
1/2"	39.7	94.1	100.0	68.8	24.2	31.2
3/8"	24.9	79.7	100.0	60.0	8.8	40.0
#4	6.1	14.0	97.0	43.5	16.6	56.5
#8	2.8	2.4	81.4	34.5	9.0	65.5
#16	2.4	1.3	65.0	27.5	6.9	72.5
#30	2.3	1.1	49.2	21.1	6.4	78.9
#50	2.2	1.1	26.1	11.7	9.4	88.3
#100	2.1	1.0	4.8	3.1	8.6	96.9
LBW	1.8	0.9	0.8	1.3	1.8	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 Gradations

Coarseness Factor: 61 **Workability Factor:** 34



Initial Production Sample (IPS)

Coarseness Factor: 64
Workability Factor: 36

Sieve	Cumulative % Passing	% Retained	Cumulative % 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

PREPARED BY:
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Approved By:

Aggregate Optimization Chart

PLANT #: p11

Sample Date: 3/25/24

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 3/26/2024 through 4/1/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1670	10.21	2.62	54.8
26A	71-47	Presque Isle	150	0.92	2.62	4.9
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
Total Wt			3050	18.57		100.0

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



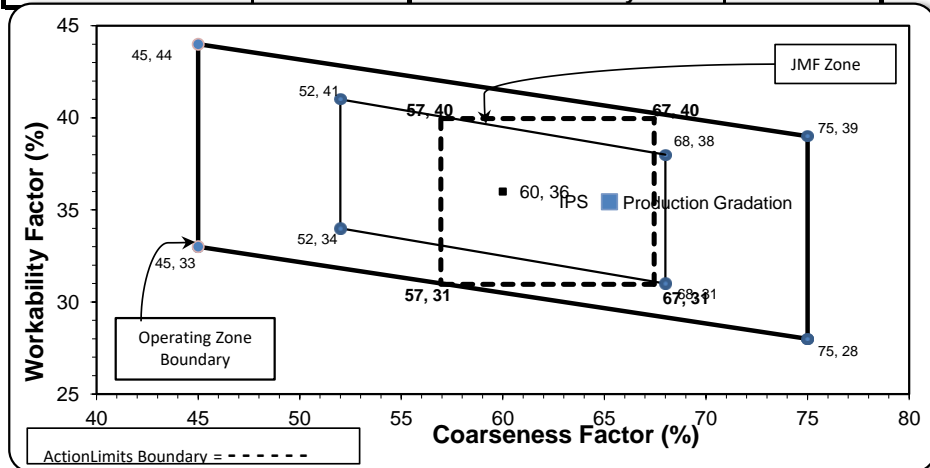
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2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	86.3	100.0	100.0	92.5	7.5	7.5
1/2"	39.7	94.1	100.0	66.7	25.8	33.3
3/8"	24.9	79.7	100.0	57.9	8.8	42.1
#4	6.1	14.0	97.0	43.1	14.7	56.9
#8	2.8	2.4	83.8	35.4	7.7	64.6
#16	2.4	1.3	68.7	29.1	6.4	70.9
#30	2.3	1.1	51.3	22.0	7.1	78.0
#50	2.2	1.1	25.5	11.5	10.5	88.5
#100	2.1	1.0	5.5	3.4	8.1	96.6
LBW	1.8	0.9	1.3	1.6	1.9	98.4

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

Coarseness Factor: 65 **Workability Factor:** 35



Initial Production Sample (IPS)

Coarseness Factor: 62
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"	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

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