

Aggregate Optimization Chart

PLANT #: **P-102**

Sample Date: 12/2/24

Concrete Grade: **S2M, 3500HP**

Contractor: _____

Dates Test Represents: 12/3/2024 through 12/9/2024

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%



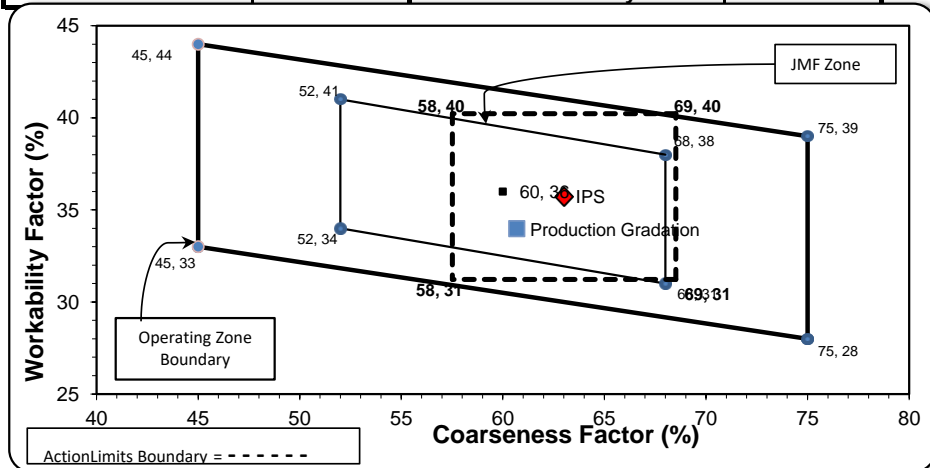
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	87.5	100.0	100.0	93.8	6.3	6.3
1/2"	47.1	96.9	100.0	73.2	20.6	26.8
3/8"	22.2	89.7	100.0	59.9	13.3	40.1
#4	3.1	9.9	99.2	41.1	18.9	58.9
#8	1.3	2.4	85.4	34.0	7.1	66.0
#16	1.1	1.7	66.2	26.4	7.6	73.6
#30	1.0	1.5	44.9	18.1	8.3	82.0
#50	1.0	1.4	21.8	9.1	9.0	90.9
#100	0.9	1.4	4.3	2.3	6.8	97.7
LBW	0.6	1.2	0.5	0.6	1.6	99.4

*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 Gradations Aggregate Supplier Gradations

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



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 #: **P-103**

Sample Date: 12/2/24

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 12/3/2024 through 12/9/2024

Contractor: _____

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%



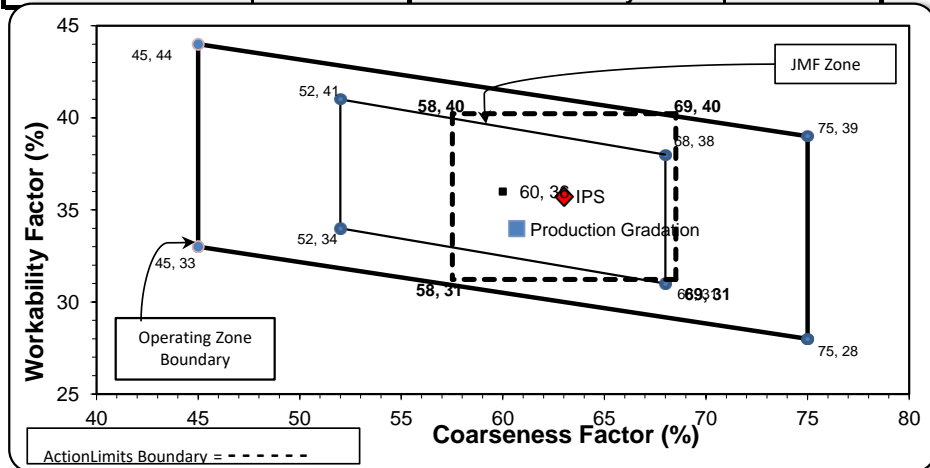
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 Suite 500
 Farmington Hills, MI 48336

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"	87.5	100.0	100.0	93.8	6.3	6.3
1/2"	47.1	96.9	100.0	73.2	20.6	26.8
3/8"	22.2	89.7	100.0	59.9	13.3	40.1
#4	3.1	9.9	99.2	41.1	18.9	58.9
#8	1.3	2.4	85.4	34.0	7.1	66.0
#16	1.1	1.7	66.2	26.4	7.6	73.6
#30	1.0	1.5	44.9	18.1	8.3	82.0
#50	1.0	1.4	21.8	9.1	9.0	90.9
#100	0.9	1.4	4.3	2.3	6.8	97.7
LBW	0.6	1.2	0.5	0.6	1.6	99.4

*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 Gradations Aggregate Supplier Gradations

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



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: 12/2/24

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 12/3/2024 through 12/9/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1620	9.91	2.62	53.1
26A	71-47	Presque Isle	200	1.22	2.62	6.6
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3
Total Wt			3050	18.57		100.0

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



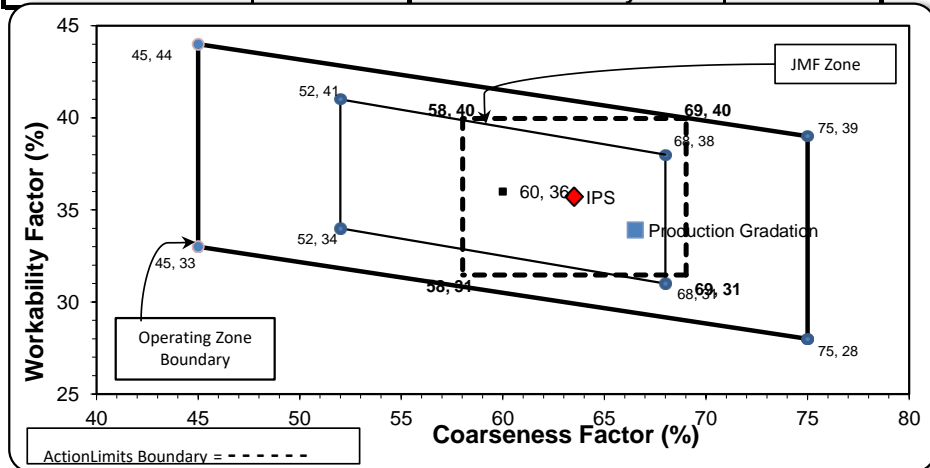
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 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	96.9	100.0	100.0	98.4	1.6	1.6
3/4"	77.8	100.0	100.0	88.2	10.1	11.8
1/2"	35.6	95.5	100.0	65.5	22.7	34.5
3/8"	19.3	83.3	100.0	56.0	9.5	44.0
#4	3.3	19.1	99.0	42.9	13.1	57.1
#8	1.7	5.2	81.0	33.9	9.0	66.1
#16	1.4	3.1	64.6	27.0	6.9	73.0
#30	1.4	2.9	48.4	20.5	6.5	79.5
#50	1.3	2.7	25.1	11.0	9.5	89.0
#100	1.3	2.6	5.1	2.9	8.1	97.1
LBW	1.1	2.4	0.7	1.0	1.9	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.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 67 **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:
 SM, LLC Technical Service

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Aggregate Optimization Chart

PLANT #: p11

Sample Date: 12/2/24

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 12/3/2024 through 12/9/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1620	9.91	2.62	53.1
26A	71-47	Presque Isle	200	1.22	2.62	6.6
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3
Total Wt			3050	18.57		100.0

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



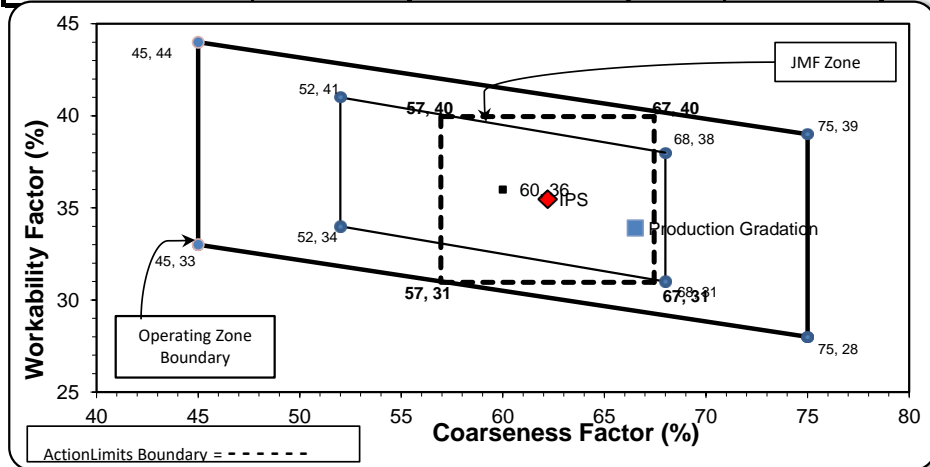
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	96.9	100.0	100.0	98.4	1.6	1.6
3/4"	77.8	100.0	100.0	88.2	10.1	11.8
1/2"	35.6	95.5	100.0	65.5	22.7	34.5
3/8"	19.3	83.3	100.0	56.0	9.5	44.0
#4	3.3	19.1	99.0	42.9	13.1	57.1
#8	1.7	5.2	81.0	33.9	9.0	66.1
#16	1.4	3.1	64.6	27.0	6.9	73.0
#30	1.4	2.9	48.4	20.5	6.5	79.5
#50	1.3	2.7	25.1	11.0	9.5	89.0
#100	1.3	2.6	5.1	2.9	8.1	97.1
LBW	1.1	2.4	0.7	1.0	1.9	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.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 67 **Workability Factor:** 34



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

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-O2**

Sample Date: 12/2/24 Concrete Grade: **S2M, 3500HP**
 Dates Test Represents: 12/3/2024 through 12/9/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1620	9.91	2.62	53.1
26A	71-47	Presque Isle	200	1.22	2.62	6.6
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3
Total Wt			3050	18.57		100.0

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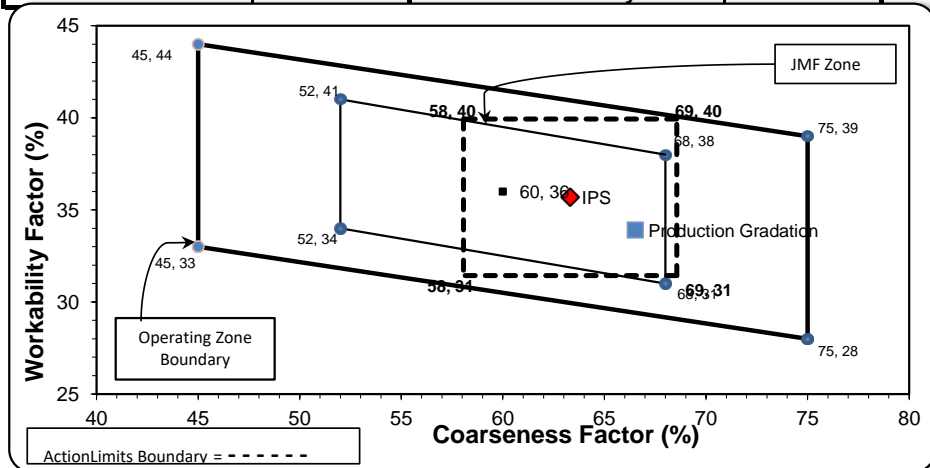
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	96.9	100.0	100.0	98.4	1.6	1.6
3/4"	77.8	100.0	100.0	88.2	10.1	11.8
1/2"	35.6	95.5	100.0	65.5	22.7	34.5
3/8"	19.3	83.3	100.0	56.0	9.5	44.0
#4	3.3	19.1	99.0	42.9	13.1	57.1
#8	1.7	5.2	81.0	33.9	9.0	66.1
#16	1.4	3.1	64.6	27.0	6.9	73.0
#30	1.4	2.9	48.4	20.5	6.5	79.5
#50	1.3	2.7	25.1	11.0	9.5	89.0
#100	1.3	2.6	5.1	2.9	8.1	97.1
LBW	1.1	2.4	0.7	1.0	1.9	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.
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Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **67** **Workability Factor:** **34**



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"	100.0	0.0	0.0
3/4"	95.6	4.4	4.4
1/2"	73.1	22.6	26.9
3/8"	59.3	13.8	40.7
#4	42.8	16.5	57.2
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#16	28.9	6.8	71.1
#30	20.7	8.2	79.3
#50	9.9	10.8	90.1
#100	2.1	7.8	97.9
LBW	0.9	1.2	99.1

PREPARED BY:
 SM, LLC Technical Service

Approved By: