

Aggregate Optimization Chart

PLANT #: **P-102**

Contractor: _____

Sample Date: 8/11/25

Concrete Grade: **P1M, 3500HP, 4000HP**

Dates Test Represents: 8/12/2025 through 8/18/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1350	8.04	2.69	43.3
IA	58-003	Stoneco	570	3.40	2.69	18.3
2NS	63-114	Highland	1200	7.26	2.65	38.5
Total Wt			3120	18.70		100.0

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



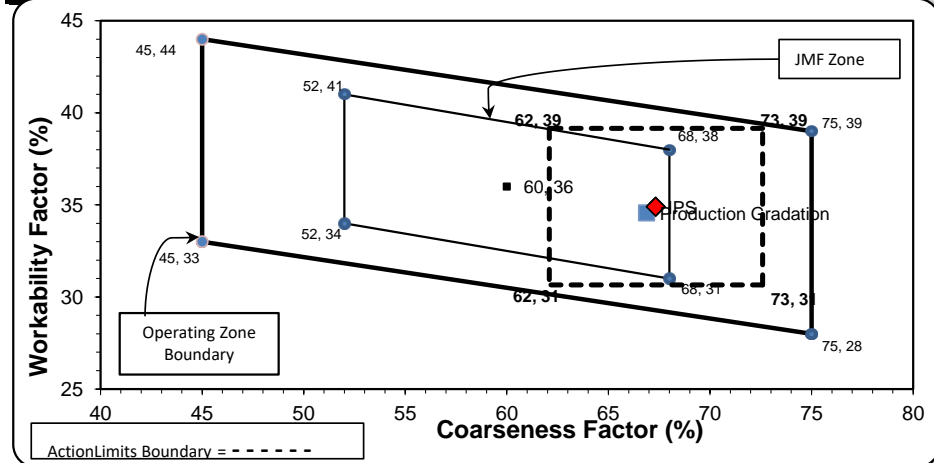
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	62.1	100.0	100.0	83.6	16.4	16.4
3/4"	33.2	100.0	100.0	71.1	12.5	28.9
1/2"	16.7	88.5	100.0	61.9	9.2	38.1
3/8"	11.7	69.6	100.0	56.2	5.6	43.8
#4	2.6	16.1	99.1	42.2	14.1	57.8
#8	1.6	5.4	85.5	34.6	7.6	65.4
#16	1.4	2.6	68.2	27.3	7.3	72.7
#30	1.3	1.8	49.7	20.0	7.3	80.0
#50	1.2	1.5	22.2	9.3	10.7	90.7
#100	1.1	1.3	4.0	2.3	7.1	97.7
LBW	0.9	1.0	0.7	0.8	1.4	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 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:	67	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 #: **P-103**

Contractor: _____

Sample Date: 8/11/25

Concrete Grade: **P1M, 3500HP, 4000HP**

Dates Test Represents: 8/12/2025 through 8/18/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1350	8.04	2.69	43.3
IA	58-003	Stoneco	570	3.40	2.69	18.3
2NS	63-114	Highland	1200	7.26	2.65	38.5
Total Wt			3120	18.70		100.0

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



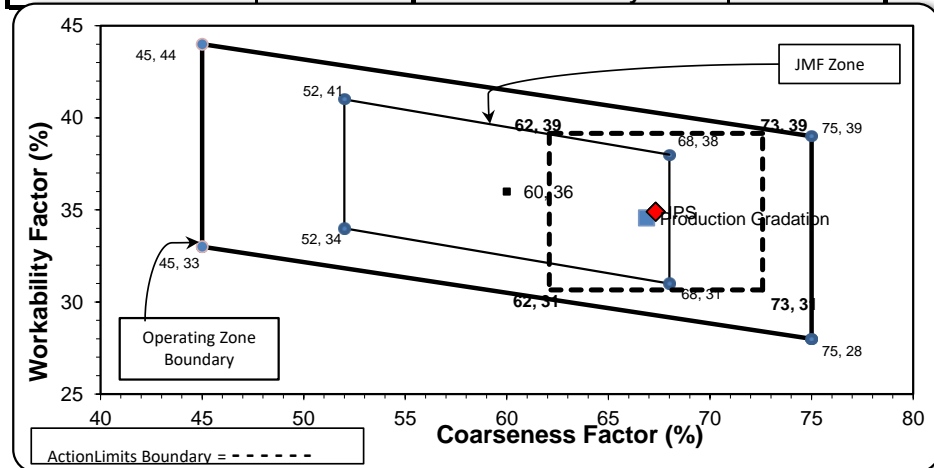
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 Suite 500
 Farmington Hills, MI 48336

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"	62.1	100.0	100.0	83.6	16.4	16.4
3/4"	33.2	100.0	100.0	71.1	12.5	28.9
1/2"	16.7	88.5	100.0	61.9	9.2	38.1
3/8"	11.7	69.6	100.0	56.2	5.6	43.8
#4	2.6	16.1	99.1	42.2	14.1	57.8
#8	1.6	5.4	85.5	34.6	7.6	65.4
#16	1.4	2.6	68.2	27.3	7.3	72.7
#30	1.3	1.8	49.7	20.0	7.3	80.0
#50	1.2	1.5	22.2	9.3	10.7	90.7
#100	1.1	1.3	4.0	2.3	7.1	97.7
LBW	0.9	1.0	0.7	0.8	1.4	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 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:	67	Workability Factor:	35
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Intial 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 #: P11

Contractor: _____

Sample Date: 8/11/25

Concrete Grade: **P1M, 3500HP, 4000HP**

Dates Test Represents: 8/12/2025 through 8/18/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	900	5.50	2.62	29.3
IA	71-47	Presque Isle	970	5.93	2.62	31.6
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

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



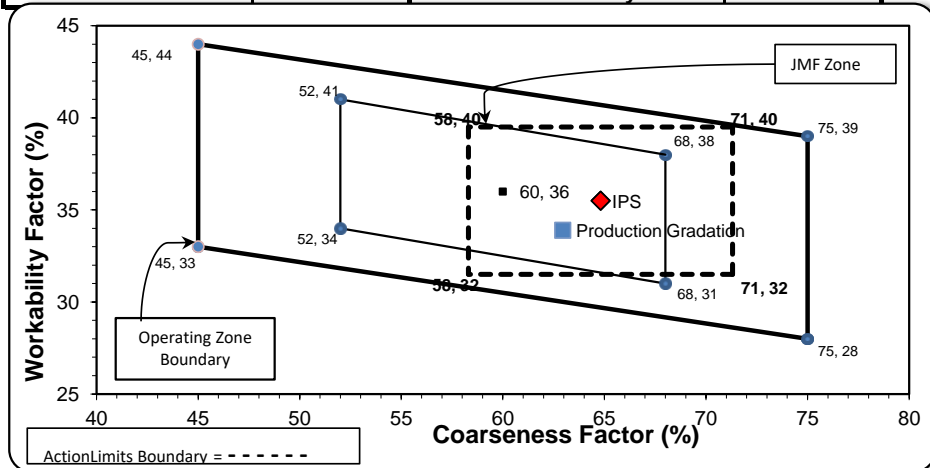
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Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	96.7	100.0	100.0	99.0	1.0	1.0
1"	37.5	100.0	100.0	81.7	17.4	18.3
3/4"	9.6	98.3	100.0	73.0	8.7	27.0
1/2"	3.9	81.0	100.0	65.8	7.1	34.2
3/8"	3.2	58.1	100.0	58.4	7.4	41.6
#4	2.5	14.5	97.2	43.3	15.1	56.7
#8	2.4	5.2	80.7	33.9	9.4	66.1
#16	2.3	3.5	62.1	26.1	7.8	73.9
#30	2.2	3.2	45.2	19.3	6.7	80.7
#50	2.1	3.1	23.6	10.8	8.5	89.2
#100	1.9	2.9	5.9	3.8	7.0	96.2
LBW	1.6	2.6	1.1	1.7	2.1	98.3

*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: 63 **Workability Factor:** 34



Initial Production Sample (IPS)

Coarseness Factor: 65
Workability Factor: 36

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.0	0.6	0.6
1"	84.0	15.3	16.0
3/4"	73.5	10.5	26.5
1/2"	65.2	8.2	34.8
3/8"	58.2	7.1	41.8
#4	44.1	14.1	55.9
#8	35.5	8.6	64.5
#16	29.1	6.4	70.9
#30	21.9	7.3	78.1
#50	9.6	12.2	90.4
#100	2.6	7.1	97.4
LBW	1.0	1.6	99.0

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Aggregate Optimization Chart

PLANT #: **P-36**

Contractor: _____

Sample Date: 8/11/25

Concrete Grade: **P1M, 3500HP, 4000HP**

Dates Test Represents: 8/12/2025 through 8/18/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	900	5.50	2.62	29.3
IA	71-47	Presque Isle	970	5.93	2.62	31.6
2NS	63-92	Grange Hall	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

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



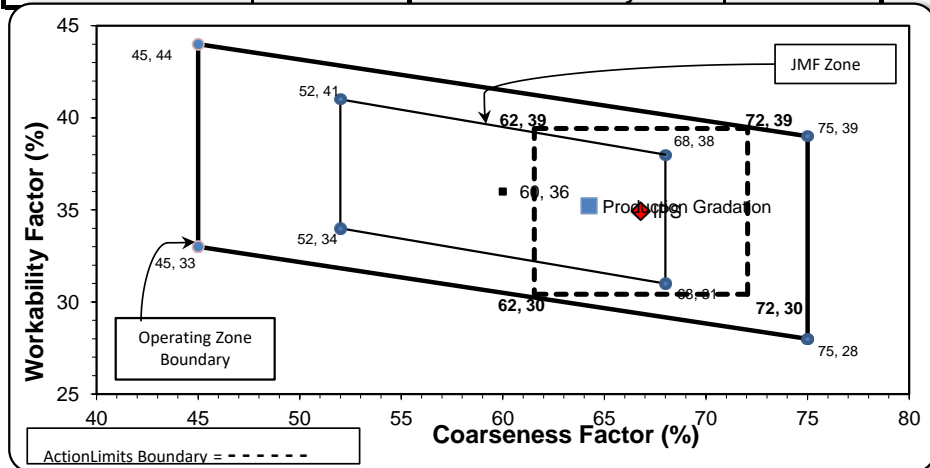
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Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	96.7	100.0	100.0	99.0	1.0	1.0
1"	37.5	100.0	100.0	81.7	17.4	18.3
3/4"	9.6	98.3	100.0	73.0	8.7	27.0
1/2"	3.9	81.0	100.0	65.8	7.1	34.2
3/8"	3.2	58.1	100.0	58.4	7.4	41.6
#4	2.5	14.5	97.8	43.5	14.8	56.5
#8	2.4	5.2	84.1	35.2	8.3	64.8
#16	2.3	3.5	69.5	28.9	6.3	71.1
#30	2.2	3.2	51.9	21.9	7.0	78.1
#50	2.1	3.1	22.9	10.5	11.4	89.5
#100	1.9	2.9	3.4	2.8	7.7	97.2
LBW	1.6	2.6	0.4	1.4	1.4	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:	64	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"	85.0	15.0	15.0
3/4"	72.1	12.9	27.9
1/2"	64.5	7.6	35.5
3/8"	56.5	8.0	43.5
#4	42.7	13.8	57.3
#8	34.9	7.8	65.1
#16	29.0	5.9	71.0
#30	21.0	8.0	79.0
#50	8.2	12.8	91.8
#100	1.6	6.5	98.4
LBW	0.7	0.9	99.3

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-02**

Contractor: _____

Sample Date: 8/11/25

Concrete Grade: **P1M, 3500HP, 4000HP**

Dates Test Represents: 8/12/2025 through 8/18/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	900	5.50	2.62	29.3
IA	71-47	Presque Isle	970	5.93	2.62	31.6
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

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



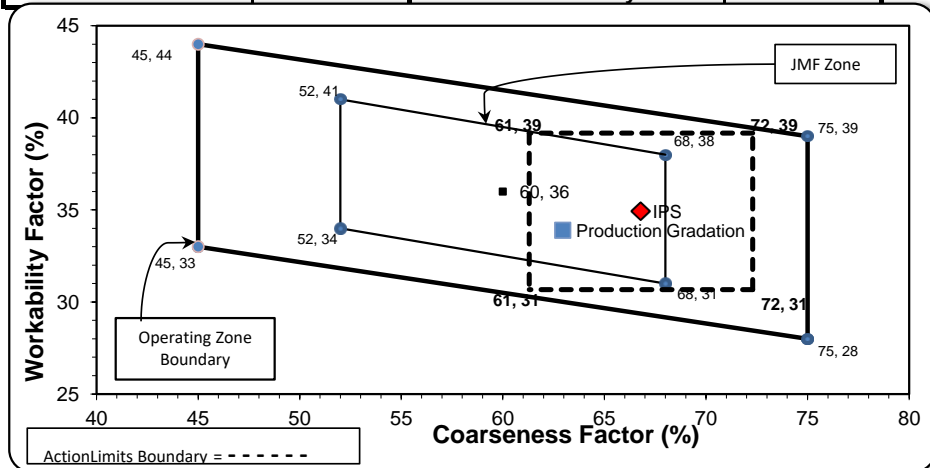
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 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	96.7	100.0	100.0	99.0	1.0	1.0
1"	37.5	100.0	100.0	81.7	17.4	18.3
3/4"	9.6	98.3	100.0	73.0	8.7	27.0
1/2"	3.9	81.0	100.0	65.8	7.1	34.2
3/8"	3.2	58.1	100.0	58.4	7.4	41.6
#4	2.5	14.5	97.2	43.3	15.1	56.7
#8	2.4	5.2	80.7	33.9	9.4	66.1
#16	2.3	3.5	62.1	26.1	7.8	73.9
#30	2.2	3.2	45.2	19.3	6.7	80.7
#50	2.1	3.1	23.6	10.8	8.5	89.2
#100	1.9	2.9	5.9	3.8	7.0	96.2
LBW	1.6	2.6	1.1	1.7	2.1	98.3

*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:	63	Workability Factor:	34
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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"	85.0	15.0	15.0
3/4"	72.3	12.7	27.7
1/2"	64.5	7.8	35.5
3/8"	56.5	8.0	43.5
#4	42.7	13.8	57.3
#8	34.9	7.8	65.1
#16	29.0	5.9	71.0
#30	21.0	8.0	79.0
#50	8.2	12.8	91.8
#100	1.6	6.5	98.4
LBW	0.7	0.9	99.3

PREPARED BY:
 SM, LLC Technical Service

Approved By: