

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

Contractor: _____

Sample Date: 8/18/25

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

Dates Test Represents: 8/19/2025 through 8/25/2025

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%

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"	63.9	100.0	100.0	84.4	15.6	15.6
3/4"	30.3	100.0	100.0	69.8	14.5	30.2
1/2"	14.7	90.5	100.0	61.4	8.5	38.6
3/8"	9.7	71.2	100.0	55.7	5.7	44.3
#4	2.8	15.7	98.9	42.1	13.5	57.9
#8	1.8	4.2	85.1	34.3	7.8	65.7
#16	1.5	2.3	67.6	27.1	7.2	72.9
#30	1.4	1.7	48.8	19.7	7.4	80.3
#50	1.3	1.5	21.7	9.2	10.5	90.8
#100	1.2	1.4	3.8	2.2	6.9	97.8
LBW	1.0	1.2	0.8	1.0	1.3	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.

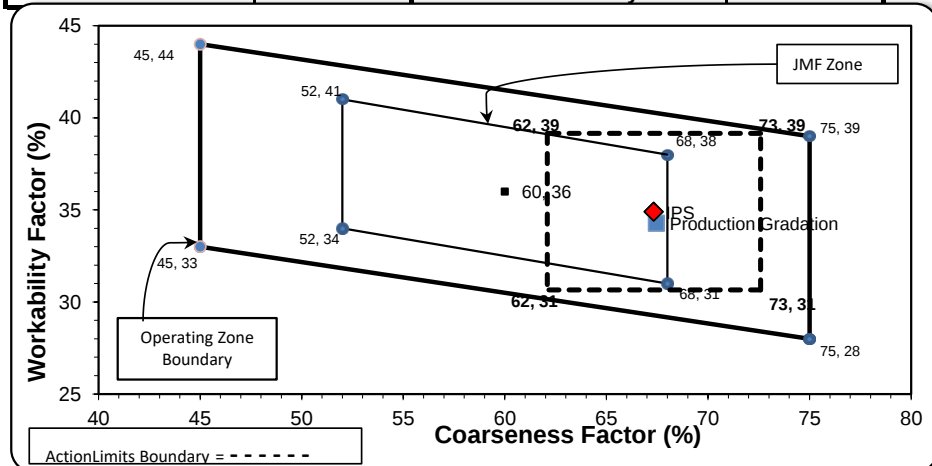
*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.



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

Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

Coarseness Factor:	67	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"	85.5	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

Production Gradation Report

PLANT #: **P-103**

Contractor: _____

Sample Date: 8/18/25

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

Dates Test Represents: 8/19/2025 through 8/25/2025

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%

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"	63.9	100.0	100.0	84.4	15.6	15.6
3/4"	30.3	100.0	100.0	69.8	14.5	30.2
1/2"	14.7	90.5	100.0	61.4	8.5	38.6
3/8"	9.7	71.2	100.0	55.7	5.7	44.3
#4	2.8	15.7	98.9	42.1	13.5	57.9
#8	1.8	4.2	85.1	34.3	7.8	65.7
#16	1.5	2.3	67.6	27.1	7.2	72.9
#30	1.4	1.7	48.8	19.7	7.4	80.3
#50	1.3	1.5	21.7	9.2	10.5	90.8
#100	1.2	1.4	3.8	2.2	6.9	97.8
LBW	1.0	1.2	0.8	1.0	1.3	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.

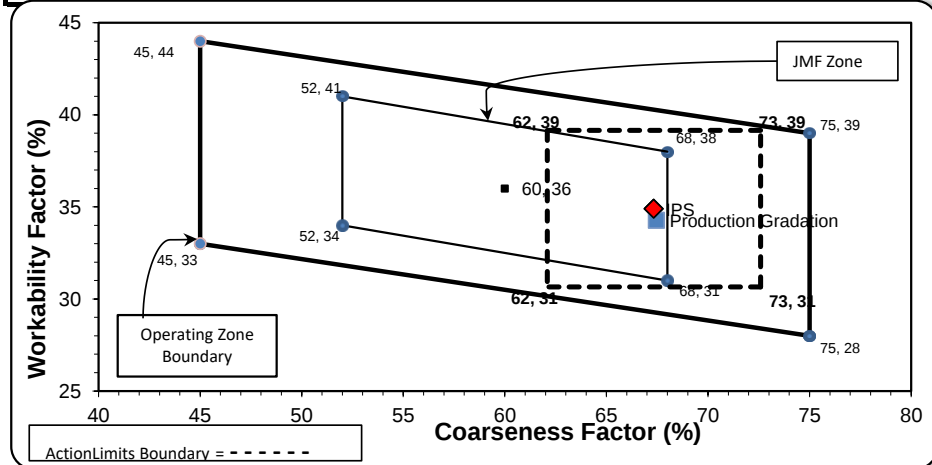
*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.



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Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

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



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

Production Gradation Report

PLANT #: **P11**

Contractor: _____

Sample Date: 8/18/25

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

Dates Test Represents: 8/19/2025 through 8/25/2025

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%

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	99.8	0.2	0.2
1"	36.2	100.0	100.0	81.3	18.5	18.7
3/4"	6.1	99.4	100.0	72.3	9.0	27.7
1/2"	2.0	82.0	100.0	65.6	6.7	34.4
3/8"	1.8	55.9	100.0	57.3	8.3	42.7
#4	1.8	14.5	97.3	43.1	14.1	56.9
#8	1.8	5.2	82.4	34.4	8.8	65.6
#16	1.6	3.4	64.1	26.6	7.8	73.4
#30	1.6	3.1	47.2	19.9	6.7	80.1
#50	1.5	2.9	25.2	11.2	8.7	88.8
#100	1.4	2.8	6.7	3.9	7.3	96.1
LBW	1.2	2.4	1.1	1.5	2.4	98.5

*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.

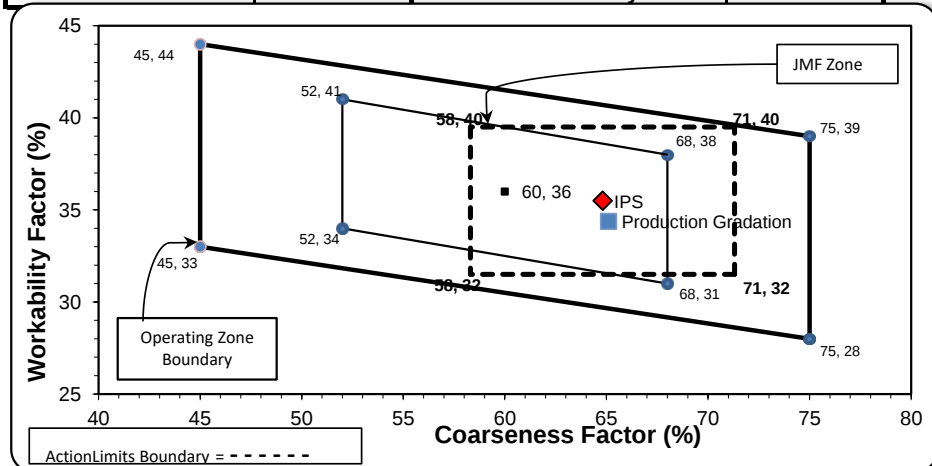


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Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

Coarseness Factor:	65	Workability Factor:	34
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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

Production Gradation Report

PLANT #: **P-36**

Sample Date: 8/18/25

Dates Test Represents: 8/19/2025 through 8/25/2025

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

Contractor: _____

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%

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	99.8	0.2	0.2
1"	36.2	100.0	100.0	81.3	18.5	18.7
3/4"	6.1	99.4	100.0	72.3	9.0	27.7
1/2"	2.0	82.0	100.0	65.6	6.7	34.4
3/8"	1.8	55.9	100.0	57.3	8.3	42.7
#4	1.8	14.5	97.6	43.3	14.0	56.7
#8	1.8	5.2	83.4	34.8	8.5	65.2
#16	1.6	3.4	68.7	28.4	6.4	71.6
#30	1.6	3.1	51.1	21.4	7.0	78.6
#50	1.5	2.9	21.9	9.9	11.5	90.1
#100	1.4	2.8	3.2	2.5	7.4	97.5
LBW	1.2	2.4	0.4	1.3	1.3	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.

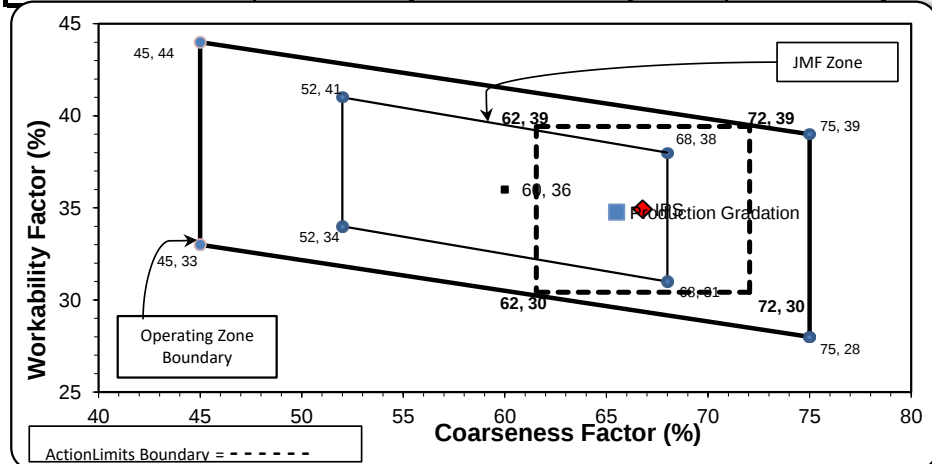
*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.



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Coarseness Factor:	65	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

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Approved By:

[Signature]

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-O2**

Contractor: _____

Sample Date: 8/18/25

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

Dates Test Represents: 8/19/2025 through 8/25/2025

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

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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"	99.2	100.0	100.0	99.8	0.2	0.2
1"	36.2	100.0	100.0	81.3	18.5	18.7
3/4"	6.1	99.4	100.0	72.3	9.0	27.7
1/2"	2.0	82.0	100.0	65.6	6.7	34.4
3/8"	1.8	55.9	100.0	57.3	8.3	42.7
#4	1.8	14.5	97.3	43.1	14.1	56.9
#8	1.8	5.2	82.4	34.4	8.8	65.6
#16	1.6	3.4	64.1	26.6	7.8	73.4
#30	1.6	3.1	47.2	19.9	6.7	80.1
#50	1.5	2.9	25.2	11.2	8.7	88.8
#100	1.4	2.8	6.7	3.9	7.3	96.1
LBW	1.2	2.4	1.1	1.5	2.4	98.5

*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.



Superior Materials, LLC

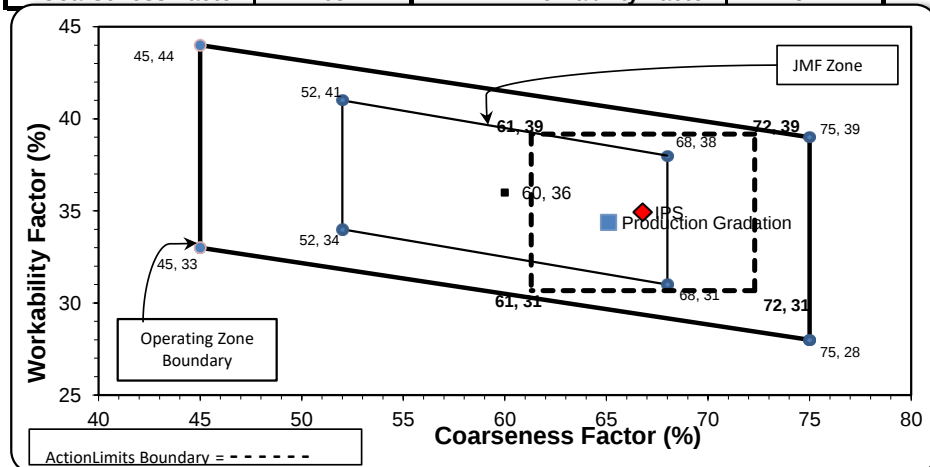
30701 W. 10 Mile Rd.

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Coarseness Factor:	65	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: