Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

Contractor: _____

Sample Date: 11/11/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 11/12/2024 through 11/18/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1470	8.76	2.69	47.1
IA	58-003	Stoneco	450	2.68	2.69	14.4
2NS	63-114	Highland	1200	7.26	2.65	38.5
		Total Wt	**3120**	**18.70**		100.0

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

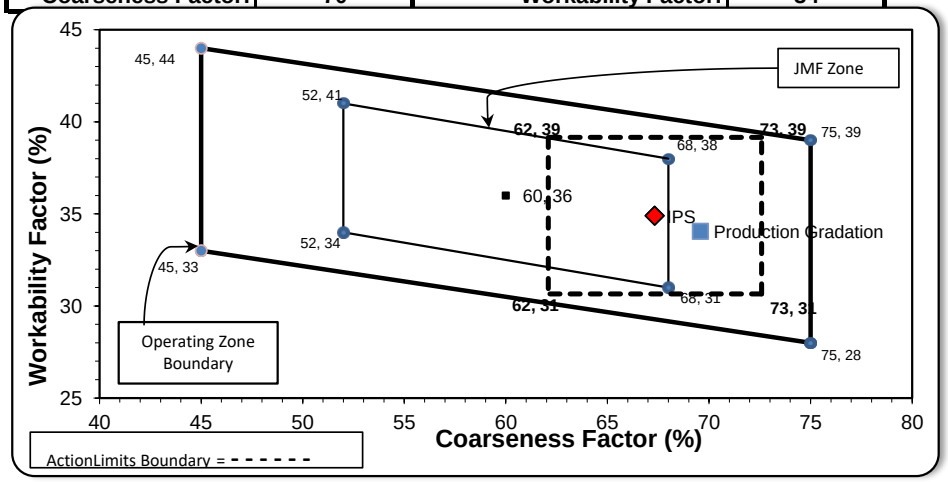
Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	60.8	100.0	100.0	81.5	18.5	18.5
3/4"	31.8	100.0	100.0	67.9	13.7	32.1
1/2"	14.8	95.0	100.0	59.1	8.7	40.9
3/8"	9.8	76.6	100.0	54.1	5.0	45.9
#4	2.2	15.0	98.9	41.2	12.9	58.8
#8	1.5	4.6	85.0	34.1	7.2	65.9
#16	1.2	2.3	66.3	26.4	7.7	73.6
#30	1.2	1.8	45.4	18.3	8.1	81.7
#50	1.2	1.6	21.0	8.9	9.4	91.1
#100	1.0	1.5	4.5	2.4	6.5	97.6
LBW	1.0	1.4	0.3	0.8	1.6	99.2

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

*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:	34



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

Production Gradation Report

PLANT #: **P-103**

Contractor: _____

Sample Date: 11/11/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 11/12/2024 through 11/18/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1470	8.76	2.69	47.1
IA	58-003	Stoneco	450	2.68	2.69	14.4
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"	60.8	100.0	100.0	81.5	18.5	18.5
3/4"	31.8	100.0	100.0	67.9	13.7	32.1
1/2"	14.8	95.0	100.0	59.1	8.7	40.9
3/8"	9.8	76.6	100.0	54.1	5.0	45.9
#4	2.2	15.0	98.9	41.2	12.9	58.8
#8	1.5	4.6	85.0	34.1	7.2	65.9
#16	1.2	2.3	66.3	26.4	7.7	73.6
#30	1.2	1.8	45.4	18.3	8.1	81.7
#50	1.2	1.6	21.0	8.9	9.4	91.1
#100	1.0	1.5	4.5	2.4	6.5	97.6
LBW	1.0	1.4	0.3	0.8	1.6	99.2

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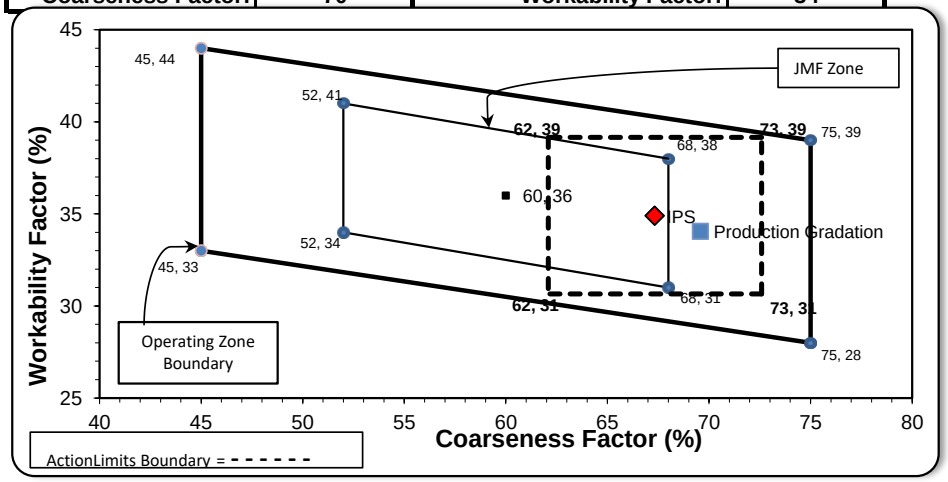
Farmington Hills, MI 48336

*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:	34



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

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Aggregate Optimization Chart

Production Gradation Report

PLANT #: 12

Contractor:

Sample Date: 11/11/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 11/12/2024 through 11/18/2024

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	870	5.32	2.62	28.3
IA	71-47	Presque Isle	1000	6.12	2.62	32.6
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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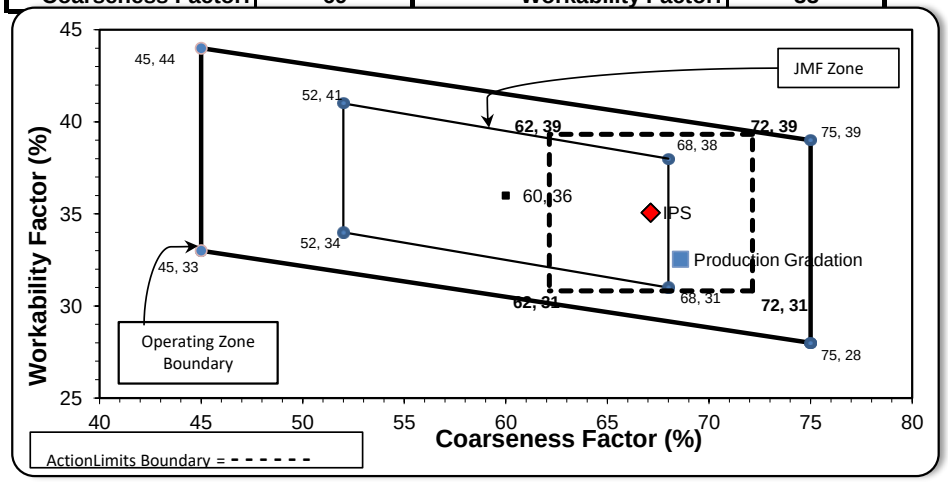
Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	97.4	100.0	100.0	99.3	0.7	0.7
1"	30.7	100.0	100.0	80.4	18.9	19.6
3/4"	5.0	99.0	100.0	72.8	7.6	27.2
1/2"	2.1	69.8	100.0	62.4	10.3	37.6
3/8"	2.1	43.1	100.0	53.7	8.7	46.3
#4	2.0	5.5	97.6	40.5	13.2	59.5
#8	1.9	2.0	80.2	32.5	8.0	67.5
#16	1.8	1.5	64.2	26.1	6.4	73.9
#30	1.8	1.3	48.3	19.8	6.3	80.2
#50	1.7	1.3	25.4	10.8	9.0	89.2
#100	1.7	1.2	5.7	3.1	7.7	96.9
LBW	1.4	0.9	1.1	1.1	2.0	98.9

*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:	69	Workability Factor:	33



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"	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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Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P11**

Contractor: _____

Sample Date: 11/11/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 11/12/2024 through 11/18/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	870	5.32	2.62	28.3
IA	71-47	Presque Isle	1000	6.12	2.62	32.6
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"	97.4	100.0	100.0	99.3	0.7	0.7
1"	30.7	100.0	100.0	80.4	18.9	19.6
3/4"	5.0	99.0	100.0	72.8	7.6	27.2
1/2"	2.1	69.8	100.0	62.4	10.3	37.6
3/8"	2.1	43.1	100.0	53.7	8.7	46.3
#4	2.0	5.5	97.6	40.5	13.2	59.5
#8	1.9	2.0	80.2	32.5	8.0	67.5
#16	1.8	1.5	64.2	26.1	6.4	73.9
#30	1.8	1.3	48.3	19.8	6.3	80.2
#50	1.7	1.3	25.4	10.8	9.0	89.2
#100	1.7	1.2	5.7	3.1	7.7	96.9
LBW	1.4	0.9	1.1	1.1	2.0	98.9

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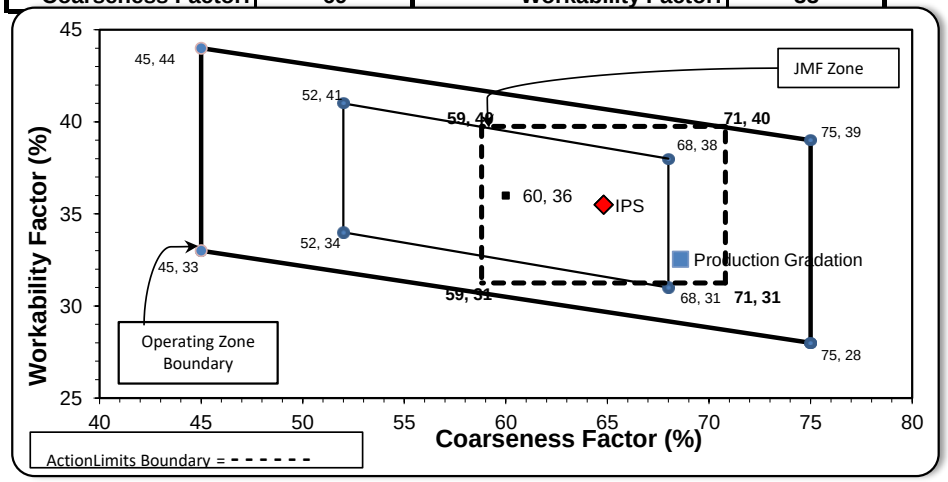
*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation ○ Batch Plant Gradations ◉ Aggregate Supplier Gradations

Coarseness Factor:	69	Workability Factor:	33



Intial 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

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-O2**

Contractor: _____

Sample Date: 11/11/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 11/12/2024 through 11/18/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	870	5.32	2.62	28.3
IA	71-47	Presque Isle	1000	6.12	2.62	32.6
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
		Total Wt	**3070**	**18.70**		100.0

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

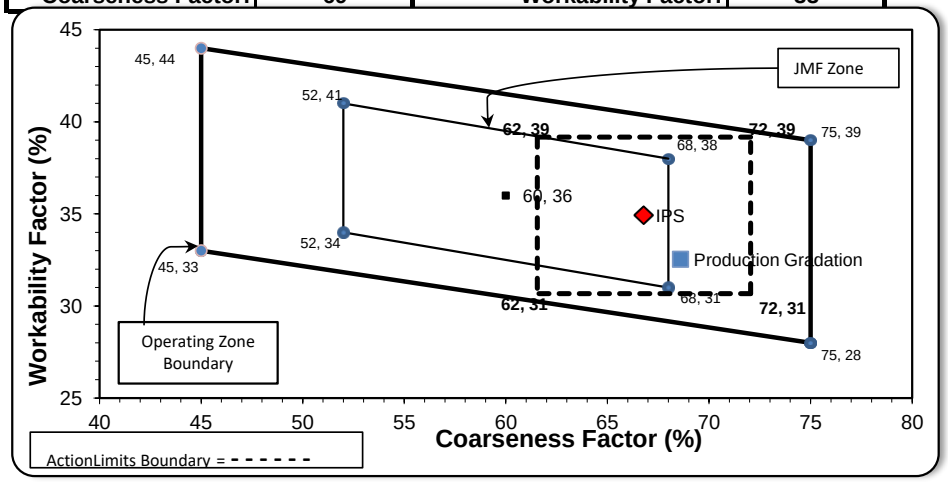
Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	97.4	100.0	100.0	99.3	0.7	0.7
1"	30.7	100.0	100.0	80.4	18.9	19.6
3/4"	5.0	99.0	100.0	72.8	7.6	27.2
1/2"	2.1	69.8	100.0	62.4	10.3	37.6
3/8"	2.1	43.1	100.0	53.7	8.7	46.3
#4	2.0	5.5	97.6	40.5	13.2	59.5
#8	1.9	2.0	80.2	32.5	8.0	67.5
#16	1.8	1.5	64.2	26.1	6.4	73.9
#30	1.8	1.3	48.3	19.8	6.3	80.2
#50	1.7	1.3	25.4	10.8	9.0	89.2
#100	1.7	1.2	5.7	3.1	7.7	96.9
LBW	1.4	0.9	1.1	1.1	2.0	98.9

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

*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 SupplierGradations

Coarseness Factor:	69	Workability Factor:	33



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"	85.0	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: