

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-103**

Sample Date: 5/12/25

Dates Test Represents: 5/13/2025 through 5/19/2025

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

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1520	9.06	2.69	48.7
IA	58-003	Stoneco	400	2.38	2.69	12.8
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"	56.4	100.0	100.0	78.8	21.2	21.2
3/4"	31.4	100.0	100.0	66.6	12.2	33.4
1/2"	19.6	91.8	100.0	59.8	6.8	40.2
3/8"	13.4	69.0	100.0	53.8	5.9	46.2
#4	3.8	11.0	99.1	41.4	12.5	58.6
#8	2.3	3.6	84.3	34.0	7.4	66.0
#16	2.0	2.3	64.9	26.2	7.8	73.8
#30	1.8	1.8	47.4	19.3	6.9	80.7
#50	1.7	1.2	21.7	9.3	10.0	90.7
#100	1.6	1.2	2.9	2.0	7.3	98.0
LBW	1.4	1.0	0.4	1.0	1.1	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

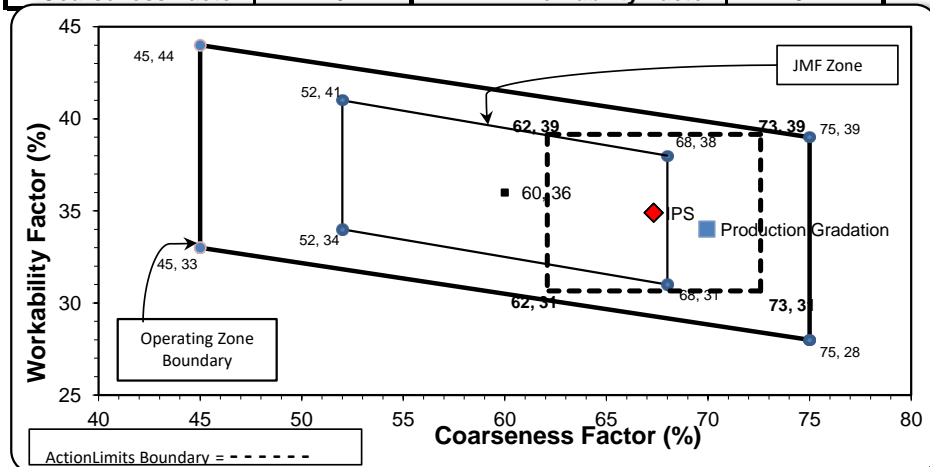
30701 W. 10 Mile Rd.

Suite 500

Farmington Hills, MI 48336

Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

Coarseness Factor:	70	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:

[Signature]

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P11**

Sample Date: 5/12/25

Dates Test Represents: 5/13/2025 through 5/19/2025

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

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	970	5.93	2.62	31.6
IA	71-47	Presque Isle	900	5.50	2.62	29.3
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"	97.8	100.0	100.0	99.3	0.7	0.7
1"	31.1	100.0	100.0	78.2	21.1	21.8
3/4"	4.8	99.2	100.0	69.7	8.5	30.3
1/2"	1.7	79.0	100.0	62.8	6.9	37.2
3/8"	1.4	49.9	100.0	54.2	8.6	45.8
#4	1.4	5.6	97.6	40.2	13.9	59.8
#8	1.3	2.5	79.6	32.3	8.0	67.7
#16	1.3	2.0	62.7	25.5	6.8	74.5
#30	1.2	1.8	47.0	19.3	6.2	80.7
#50	1.1	1.7	25.3	10.7	8.5	89.3
#100	1.1	1.5	5.7	3.0	7.7	97.0
LBW	0.9	1.3	0.9	1.0	2.0	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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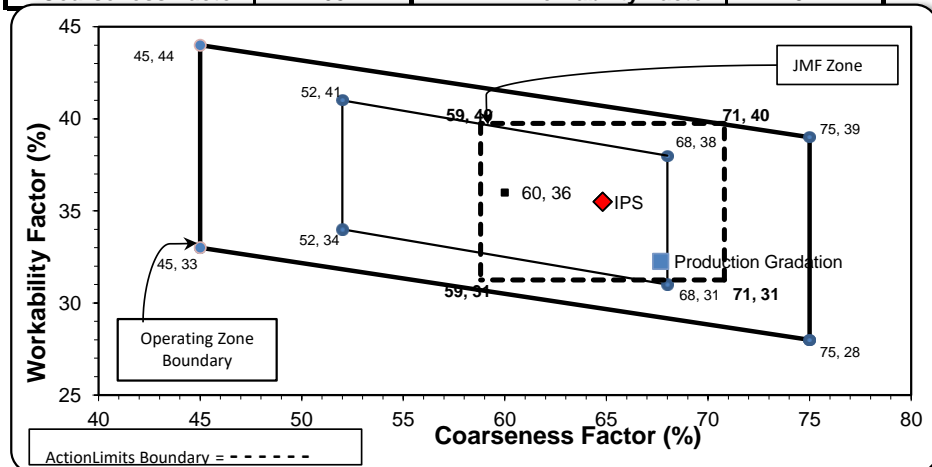
30701 W. 10 Mile Rd.

Suite 500

Farmington Hills, MI 48336

Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

Coarseness Factor:	68	Workability Factor:	32
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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

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-O2**

Sample Date: 5/12/25

Dates Test Represents: 5/13/2025 through 5/19/2025

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

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	970	5.93	2.62	31.6
IA	71-47	Presque Isle	900	5.50	2.62	29.3
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"	97.8	100.0	100.0	99.3	0.7	0.7
1"	31.1	100.0	100.0	78.2	21.1	21.8
3/4"	4.8	99.2	100.0	69.7	8.5	30.3
1/2"	1.7	79.0	100.0	62.8	6.9	37.2
3/8"	1.4	49.9	100.0	54.2	8.6	45.8
#4	1.4	5.6	97.6	40.2	13.9	59.8
#8	1.3	2.5	79.6	32.3	8.0	67.7
#16	1.3	2.0	62.7	25.5	6.8	74.5
#30	1.2	1.8	47.0	19.3	6.2	80.7
#50	1.1	1.7	25.3	10.7	8.5	89.3
#100	1.1	1.5	5.7	3.0	7.7	97.0
LBW	0.9	1.3	0.9	1.0	2.0	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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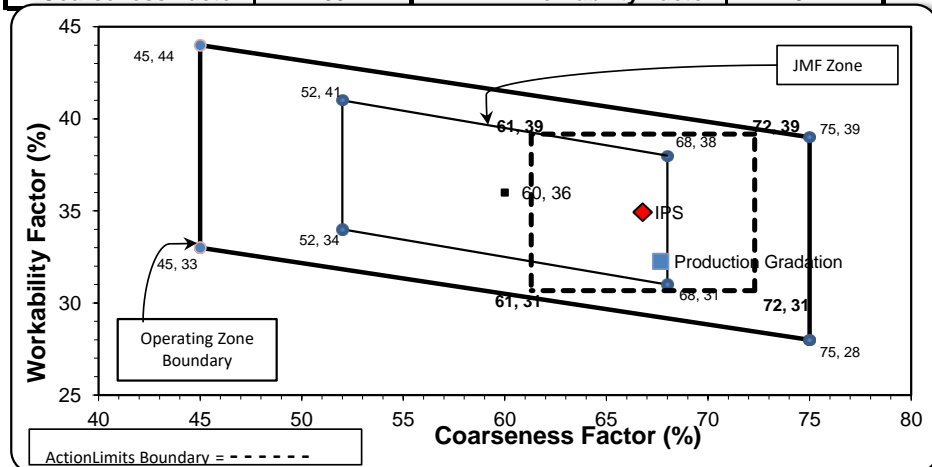
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Coarseness Factor:	68	Workability Factor:	32
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Initial Production Sample (IPS)

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:

[Signature]