

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-103**

Sample Date: 5/19/25

Dates Test Represents: 5/20/2025 through 5/26/2025

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"	63.6	100.0	100.0	82.3	17.7	17.7
3/4"	33.4	100.0	100.0	67.6	14.7	32.4
1/2"	17.4	90.8	100.0	58.6	9.0	41.4
3/8"	11.8	74.4	100.0	53.7	4.8	46.3
#4	3.6	18.0	99.2	42.2	11.5	57.8
#8	2.2	5.6	85.6	34.7	7.5	65.3
#16	1.7	3.1	67.6	27.2	7.5	72.8
#30	1.5	2.4	49.5	20.1	7.1	79.9
#50	1.3	2.0	22.3	9.5	10.6	90.5
#100	1.3	1.8	3.0	2.0	7.4	98.0
LBW	1.1	1.5	0.4	0.9	1.1	99.1

*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

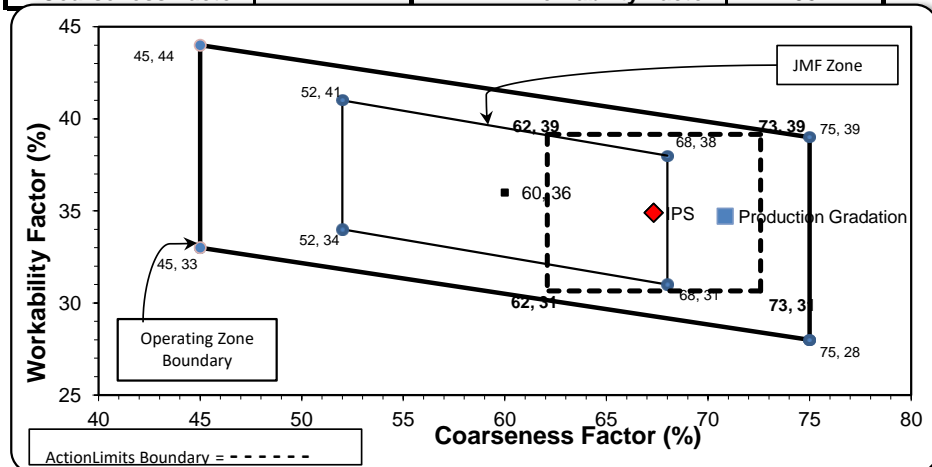
30701 W. 10 Mile Rd.

Suite 500

Farmington Hills, MI 48336

Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

Coarseness Factor:	71	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

Production Gradation Report

PLANT #: **P11**

Sample Date: 5/19/25

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

Contractor: _____

Dates Test Represents: 5/20/2025 through 5/26/2025

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"	98.6	100.0	100.0	99.6	0.4	0.4
1"	37.9	100.0	100.0	80.4	19.2	19.6
3/4"	8.3	98.7	100.0	70.6	9.7	29.4
1/2"	3.3	73.2	100.0	61.6	9.1	38.4
3/8"	2.8	42.9	100.0	52.5	9.0	47.5
#4	2.2	6.2	97.8	40.7	11.8	59.3
#8	2.0	2.8	79.3	32.4	8.3	67.6
#16	1.9	2.2	62.5	25.7	6.8	74.3
#30	1.8	2.0	46.1	19.2	6.5	80.8
#50	1.8	1.9	24.2	10.6	8.6	89.4
#100	1.6	1.7	5.0	3.0	7.6	97.0
LBW	1.4	1.5	0.8	1.2	1.8	98.8

*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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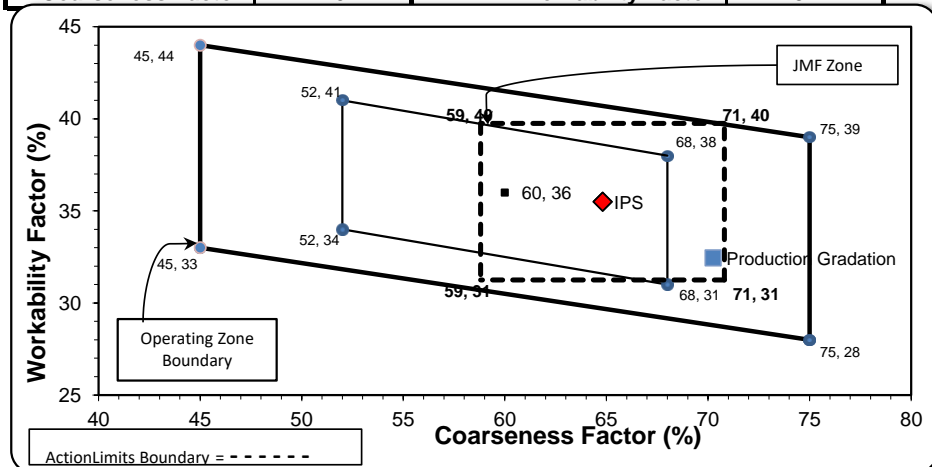
30701 W. 10 Mile Rd.

Suite 500

Farmington Hills, MI 48336

Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

Coarseness Factor:	70	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:

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Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-36**

Contractor: _____

Sample Date: **5/19/25**

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

Dates Test Represents: **5/20/2025** through **5/26/2025**

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	63-92	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"	98.6	100.0	100.0	99.6	0.4	0.4
1"	37.9	100.0	100.0	80.4	19.2	19.6
3/4"	8.3	98.7	100.0	70.6	9.7	29.4
1/2"	3.3	73.2	100.0	61.6	9.1	38.4
3/8"	2.8	42.9	100.0	52.5	9.0	47.5
#4	2.2	6.2	97.6	40.7	11.9	59.3
#8	2.0	2.8	82.6	33.7	6.9	66.3
#16	1.9	2.2	67.4	27.6	6.1	72.4
#30	1.8	2.0	50.0	20.7	6.9	79.3
#50	1.8	1.9	21.7	9.6	11.1	90.4
#100	1.6	1.7	4.4	2.7	6.9	97.3
LBW	1.4	1.5	0.5	1.1	1.6	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.



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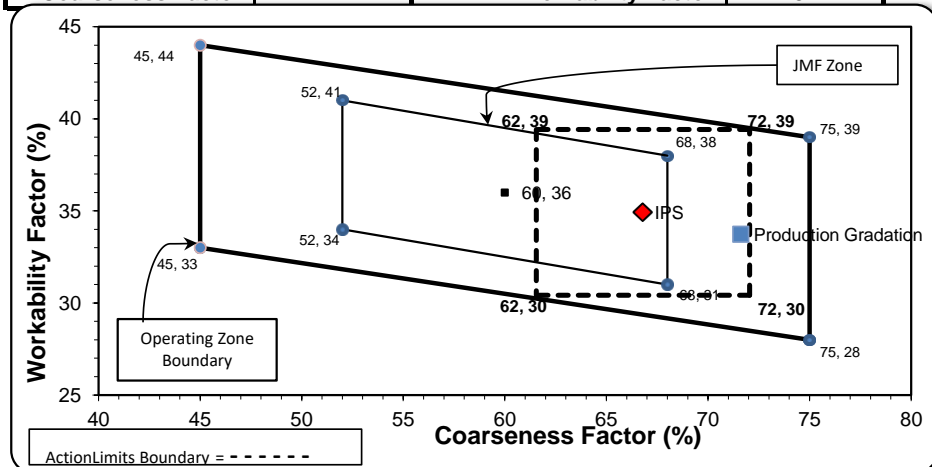
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Farmington Hills, MI 48336

Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

Coarseness Factor:	72	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"	72.1	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:

[Signature]