

Aggregate Optimization Chart

PLANT #: **P-102**

Sample Date: 12/1/25

Concrete Grade: **DM, 4500HP**

Contractor: _____

Dates Test Represents: 12/2/2025 through 12/8/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1400	8.34	2.69	47.5
26A	58-003	Stoneco	400	2.38	2.69	13.6
2NS	63-114	Highland	1150	6.95	2.65	39.0
Total Wt			2950	17.68		100.0

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



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

Sieve	6AA	26A	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"	99.4	100.0	100.0	99.7	0.3	0.3
3/4"	77.3	100.0	100.0	89.2	10.5	10.8
1/2"	30.6	99.3	100.0	67.0	22.3	33.0
3/8"	13.9	86.2	100.0	57.3	9.7	42.7
#4	2.1	11.2	97.7	40.6	16.7	59.4
#8	1.8	2.5	82.7	33.4	7.2	66.6
#16	1.8	1.9	67.7	27.5	5.9	72.5
#30	1.7	1.7	47.9	19.7	7.8	80.3
#50	1.7	1.6	19.1	8.5	11.2	91.5
#100	1.7	1.6	3.2	2.3	6.2	97.7
LBW	1.6	1.5	1.2	1.4	0.8	98.6

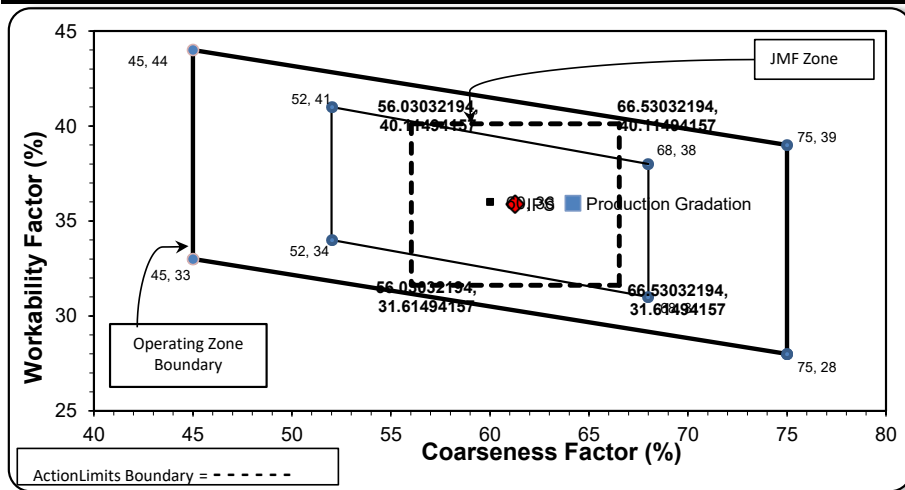
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 **% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 ***% Retained must be at least 4% for the 3/4" sieve when a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	64	Workability Factor:	33	35.9
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Coarseness Factor:	61
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Workability Factor:	36
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Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

PREPARED BY:
 SM, LLC Technical Service

Approved By:
 Nancy Donahue

Aggregate Optimization Chart

PLANT #: **P-103**

Sample Date: 12/1/25

Concrete Grade: **DM, 4500HP**

Contractor: _____

Dates Test Represents: 12/2/2025 through 12/8/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1400	8.34	2.69	47.5
26A	58-003	Stoneco	400	2.38	2.69	13.6
2NS	63-114	Highland	1150	6.95	2.65	39.0
Total Wt			2950	17.68		100.0

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

Sieve	6AA	26A	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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	79.3	100.0	100.0	90.2	9.8	9.8
1/2"	34.4	99.3	100.0	68.8	21.4	31.2
3/8"	18.0	82.6	100.0	58.7	10.0	41.3
#4	2.4	6.7	96.9	39.8	18.9	60.2
#8	1.7	1.8	78.4	31.6	8.2	68.4
#16	1.4	1.5	61.8	25.0	6.7	75.0
#30	1.3	1.4	42.8	17.5	7.5	82.5
#50	1.1	1.3	15.1	6.6	10.9	93.4
#100	1.0	1.3	2.7	1.7	4.9	98.3
LBW	0.9	1.2	1.0	1.0	0.7	99.0



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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 4% for the 3/4" sieve when

a 1.5" max. size (nom. Max. 1.0") aggregate is used.

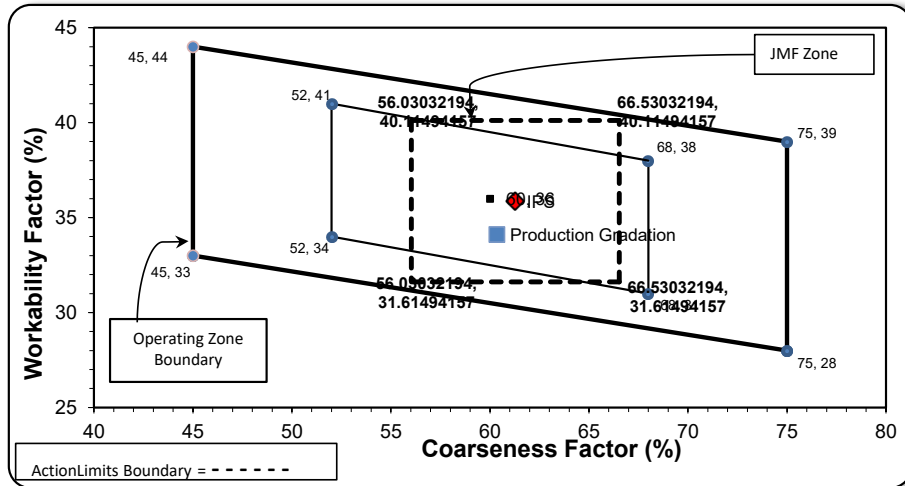
Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	60	Workability Factor:	32	34.1
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Coarseness Factor:	61
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Workability Factor:	36
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Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

PREPARED BY:
SM, LLC Technical Service

Approved BY:
Nancy Donahue

Aggregate Optimization Chart

PLANT #: **P-O2**

Sample Date: 12/5/25

Concrete Grade: **DM, 4500HP**

Contractor: _____

Dates Test Represents: 12/8/2025 through 12/15/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1455	8.90	2.62	50.1
26A	71-47	Presque Isle	300	1.83	2.62	10.3
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
Total Wt			2905	17.69		100.0

← Verify this number is 100%

Sieve	6AA	26A	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"	97.8	100.0	100.0	98.9	1.1	1.1
3/4"	80.0	100.0	100.0	90.0	8.9	10.0
1/2"	37.8	97.2	100.0	68.6	21.4	31.4
3/8"	20.3	83.7	100.0	58.4	10.2	41.6
#4	3.5	17.0	96.4	41.7	16.7	58.3
#8	2.0	4.6	83.2	34.4	7.3	65.6
#16	1.8	2.4	66.6	27.5	6.9	72.5
#30	1.7	2.0	50.3	21.0	6.5	79.0
#50	1.6	1.8	24.4	10.6	10.3	89.4
#100	1.5	1.8	3.8	2.4	8.2	97.6
LBW	1.3	1.6	0.6	1.1	1.4	98.9



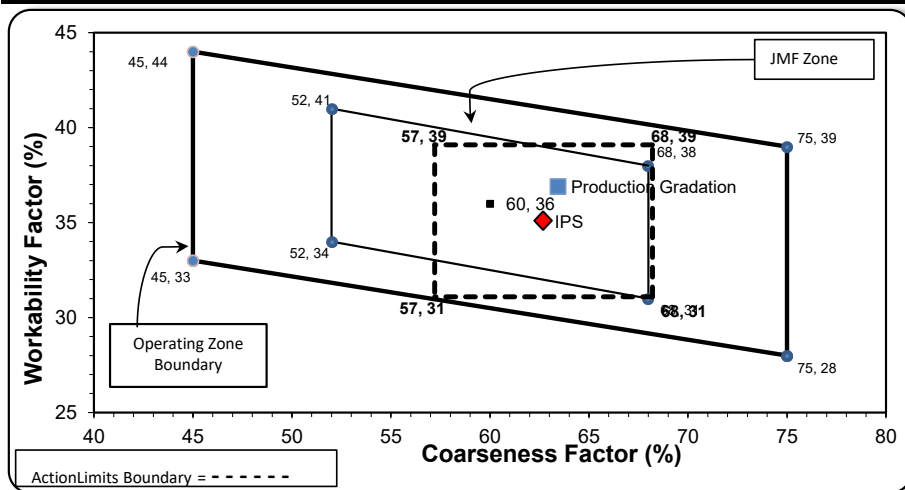
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*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 **% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 ***% Retained must be at least 4% for the 3/4" sieve when a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	63	Workability Factor:	34	Adjusted WF	36.9
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Coarseness Factor:	63		
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"	100.0	0.0	0.0
3/4"	95.1	4.9	4.9
1/2"	74.6	20.5	25.4
3/8"	59.3	15.3	40.7
#4	42.1	17.2	57.9
#8	35.1	7.1	64.9
#16	29.2	5.9	70.8
#30	21.9	7.3	78.1
#50	9.6	12.4	90.4
#100	2.4	7.2	97.6
LBW	0.9	1.5	99.1



PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: p11

Sample Date: 12/5/25

Concrete Grade: DM, 4500HP

Contractor: _____

Dates Test Represents: 12/8/2025 through 12/15/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1455	8.90	2.62	50.1
26A	71-47	Presque Isle	300	1.83	2.62	10.3
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
Total Wt			2905	17.69		100.0

----- Verify this number is 100%



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Sieve	6AA	26A	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"	97.8	100.0	100.0	98.9	1.1	1.1
3/4"	80.0	100.0	100.0	90.0	8.9	10.0
1/2"	37.8	97.2	100.0	68.6	21.4	31.4
3/8"	20.3	83.7	100.0	58.4	10.2	41.6
#4	3.5	17.0	96.4	41.7	16.7	58.3
#8	2.0	4.6	83.2	34.4	7.3	65.6
#16	1.8	2.4	66.6	27.5	6.9	72.5
#30	1.7	2.0	50.3	21.0	6.5	79.0
#50	1.6	1.8	24.4	10.6	10.3	89.4
#100	1.5	1.8	3.8	2.4	8.2	97.6
LBW	1.3	1.6	0.6	1.1	1.4	98.9

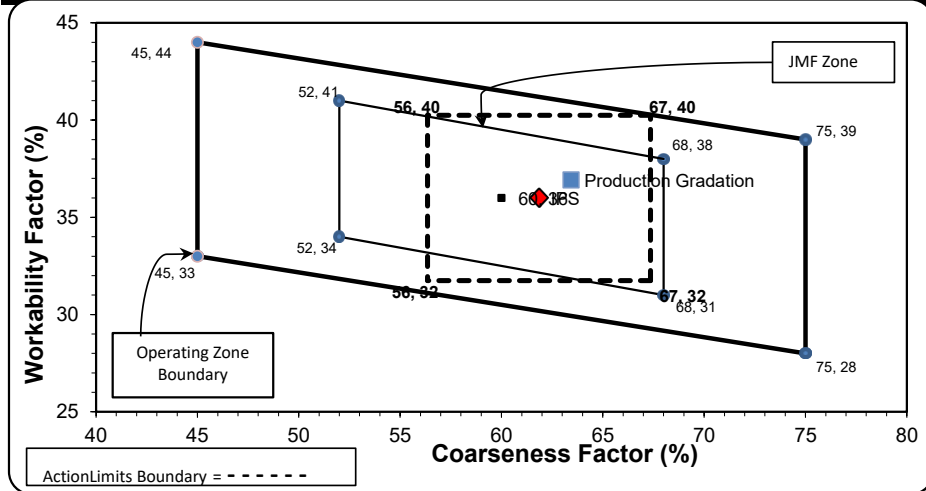
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for the 3/4" sieve when a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	63	Workability Factor:	34
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Coarseness Factor:	62
Workability Factor:	36



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	100.0	0.0	0.0
3/4"	95.0	5.0	5.0
1/2"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	98.7

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 Nancy Doanhue