

Aggregate Optimization Chart

PLANT #: P-102

Sample Date: 8/19/19

Concrete Grade: P1M

Contractor: _____

Dates Test Represents: 8/20/2019 through 8/26/2019

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1250	7.45	2.69	40.1
IA	58-003	Stoneco	670	3.99	2.69	21.5
2NS	47-16	Buno Rd	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"	69.1	100.0	100.0	87.6	12.4	12.4
3/4"	45.9	100.0	100.0	78.3	9.3	21.7
1/2"	16.3	89.0	100.0	64.1	14.2	35.9
3/8"	4.8	70.5	100.0	55.5	8.6	44.5
#4	2.7	22.7	96.8	43.2	12.3	56.8
#8	1.6	5.8	87.2	35.4	7.8	64.6
#16	1.3	2.5	73.8	29.4	6.0	70.6
#30	1.1	1.8	53.7	21.5	8.0	78.5
#50	0.9	1.7	18.4	7.8	13.7	92.2
#100	0.7	1.7	2.1	1.5	6.3	98.5
LBW	0.7	1.1	0.3	0.6	0.8	99.4

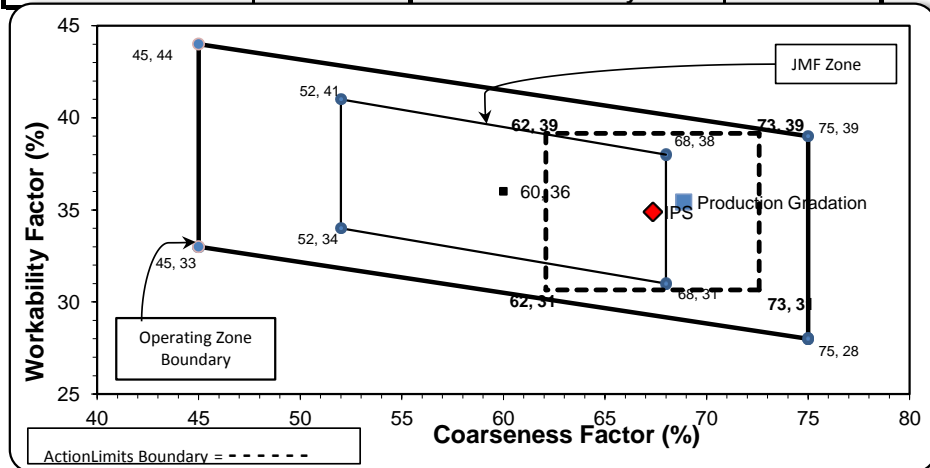


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*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must 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:	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

PLANT #: **P-102**

Sample Date: 8/19/19

Concrete Grade: **DM**

Contractor: _____

Dates Test Represents: 8/20/2019 through 8/26/2019

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1500	8.94	2.69	50.8
26A	58-003	Stoneco	350	2.09	2.69	11.9
2NS	47-16	Buno Rd	1100	6.65	2.65	37.3
Total Wt			2950	17.67		100.0

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



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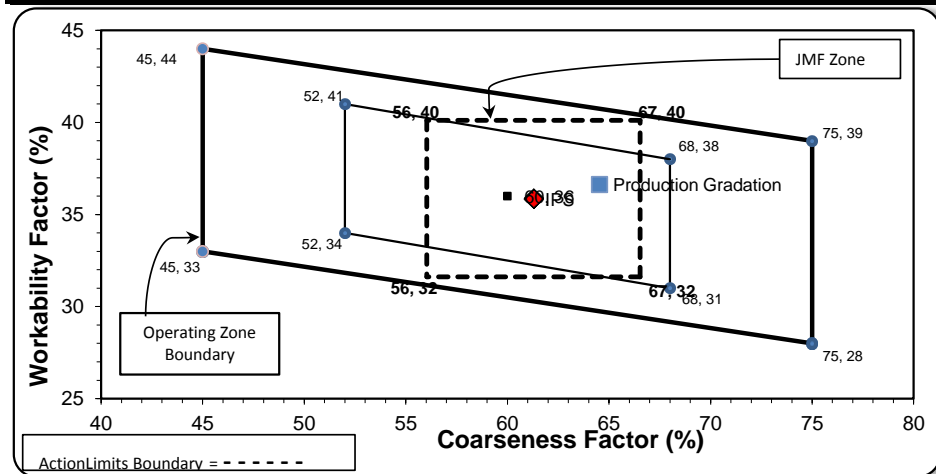
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.4	100.0	100.0	99.7	0.3	0.3
3/4"	77.6	100.0	100.0	88.6	11.1	11.4
1/2"	37.1	99.7	100.0	68.0	20.6	32.0
3/8"	18.8	89.7	100.0	57.5	10.5	42.5
#4	5.6	19.0	96.8	41.2	16.3	58.8
#8	2.2	4.2	87.2	34.1	7.1	65.9
#16	1.6	2.0	73.8	28.6	5.6	71.4
#30	1.2	1.5	53.7	20.8	7.8	79.2
#50	1.0	1.5	18.4	7.5	13.3	92.5
#100	0.9	1.4	2.1	1.4	6.1	98.6
LBW	0.7	1.1	0.3	0.6	0.8	99.4

*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 Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	65	Workability Factor:	34	Adjusted WF	36.6
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Coarseness Factor:	61
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"	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

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Aggregate Optimization Chart

PLANT #: **P-103**

Sample Date: 8/19/19

Concrete Grade: **DM**

Contractor: _____

Dates Test Represents: 8/20/2019 through 8/26/2019

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1500	8.94	2.69	50.8
26A	58-003	Stoneco	350	2.09	2.69	11.9
2NS	47-16	Buno Rd	1100	6.65	2.65	37.3
Total Wt			2950	17.67		100.0

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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"	99.4	100.0	100.0	99.7	0.3	0.3
3/4"	77.6	100.0	100.0	88.6	11.1	11.4
1/2"	37.1	99.7	100.0	68.0	20.6	32.0
3/8"	18.8	89.7	100.0	57.5	10.5	42.5
#4	5.6	19.0	96.8	41.2	16.3	58.8
#8	2.2	4.2	87.2	34.1	7.1	65.9
#16	1.6	2.0	73.8	28.6	5.6	71.4
#30	1.2	1.5	53.7	20.8	7.8	79.2
#50	1.0	1.5	18.4	7.5	13.3	92.5
#100	0.9	1.4	2.1	1.4	6.1	98.6
LBW	0.7	1.1	0.3	0.6	0.8	99.4

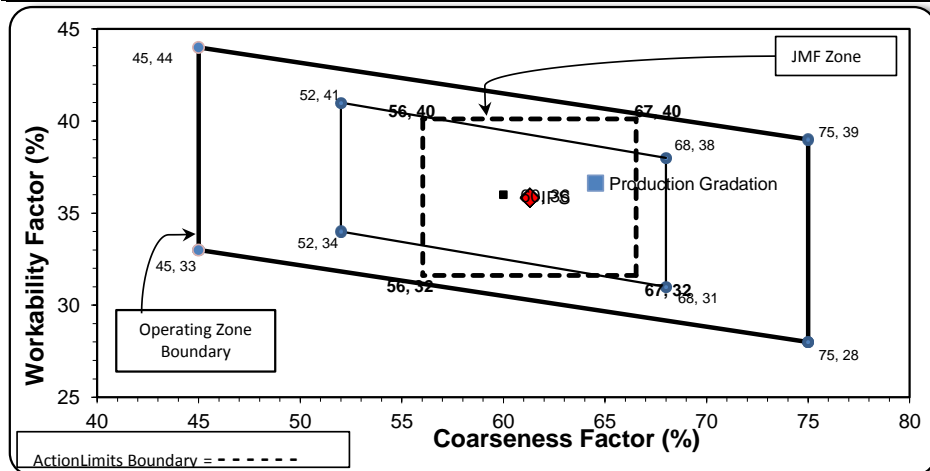
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	65	Workability Factor:	34	36.6
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Coarseness Factor:	61
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"	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

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 SM, LLC Technical Service

Approved BY:

Aggregate Optimization Chart

PLANT #: **P-102**

Sample Date: 8/19/19

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 8/20/2019 through 8/26/2019

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1585	9.44	2.69	51.2
26A	58-003	Stoneco	300	1.79	2.69	9.7
2NS	47-16	Buno Rd	1210	7.32	2.65	39.1
Total Wt			3095	18.55		100.0

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



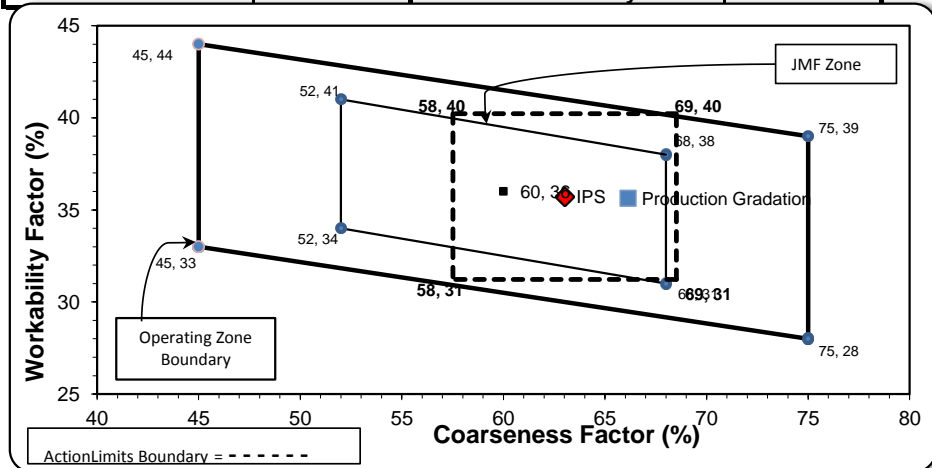
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.4	100.0	100.0	99.7	0.3	0.3
3/4"	77.6	100.0	100.0	88.5	11.2	11.5
1/2"	37.1	99.7	100.0	67.8	20.8	32.2
3/8"	18.8	89.7	100.0	57.4	10.3	42.6
#4	5.6	19.0	96.8	42.6	14.9	57.4
#8	2.2	4.2	87.2	35.6	6.9	64.4
#16	1.6	2.0	73.8	29.9	5.8	70.1
#30	1.2	1.5	53.7	21.8	8.1	78.2
#50	1.0	1.5	18.4	7.9	13.9	92.1
#100	0.9	1.4	2.1	1.4	6.4	98.6
LBW	0.7	1.1	0.3	0.6	0.8	99.4

*Maximum % Retained must be above the 3/8" sieve.
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 *% 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:	66	Workability Factor:	36
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Initial Production Sample (IPS)

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.2	0.8	0.8
3/4"	90.9	8.3	9.1
1/2"	71.3	19.6	28.7
3/8"	59.5	11.8	40.5
#4	43.8	15.7	56.2
#8	35.7	8.1	64.3
#16	27.0	8.7	73.0
#30	18.6	8.4	81.4
#50	6.8	11.8	93.2
#100	1.4	5.4	98.6
LBW	0.6	0.8	99.4

PREPARED BY:
 SM, LLC Technical Service

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