

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-101**

Sample Date: 4/24/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 4/24/2017 to 4/30/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1350	8.26	2.62	43.4
26A	71-47	Presque Isle	400	2.45	2.62	12.9
2NS	63-115	Ray Road	1360	8.22	2.65	43.7
Total Wt			3110	18.93		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"	83.8	100.0	100.0	93.0	7.0	7.0
1/2"	36.8	97.8	100.0	72.3	20.7	27.7
3/8"	16.2	85.2	100.0	61.7	10.6	38.3
#4	1.8	11.9	97.0	44.7	17.0	55.3
#8	1.2	3.2	78.9	35.4	9.3	64.6
#16	1.0	1.8	61.0	27.3	8.1	72.7
#30	0.9	1.6	44.6	20.1	7.2	79.9
#50	0.9	1.5	21.3	9.9	10.2	90.1
#100	0.9	1.4	3.6	2.1	7.8	97.9
LBW	0.8	1.2	0.4	0.7	1.5	99.3



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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.

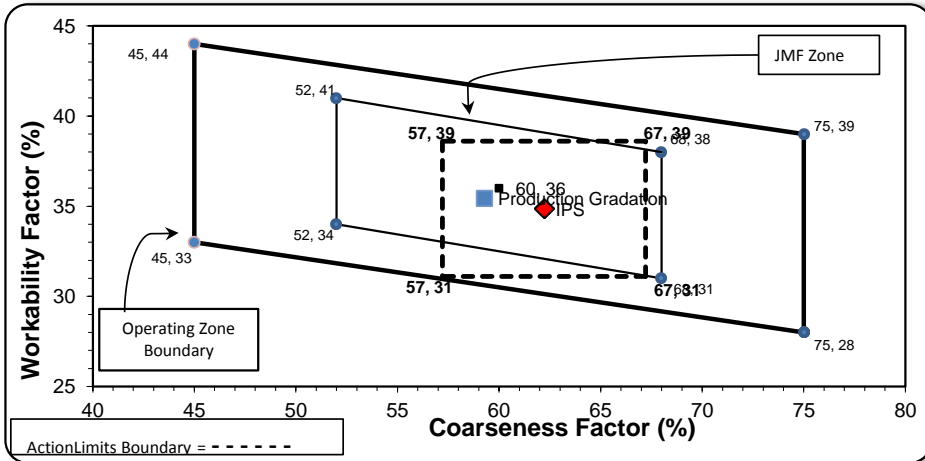
Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **59** **Workability Factor:** **35**

Initial Production Sample (IPS)

Coarseness Factor: **62**
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"	95.0	5.0	5.0
1/2"	71.1	23.9	28.9
3/8"	59.5	11.7	40.5
#4	44.0	15.5	56.0
#8	34.9	9.1	65.1
#16	27.6	7.2	72.4
#30	20.2	7.4	79.8
#50	8.9	11.3	91.1
#100	2.7	6.2	97.3
LBW	1.4	1.2	98.6



PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-103**

Sample Date: 4/24/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 4/24/2017 to 4/30/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1650	9.83	2.69	52.3
26A	58-003	Stoneco	215	1.28	2.69	6.8
2NS	81-93	Burmeister	1290	7.83	2.64	40.9
Total Wt			3155	18.94		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"	99.8	100.0	100.0	99.9	0.1	0.1
3/4"	79.0	100.0	100.0	89.0	10.9	11.0
1/2"	39.9	100.0	100.0	68.6	20.4	31.4
3/8"	19.7	84.9	100.0	57.0	11.6	43.0
#4	2.8	28.7	98.9	43.9	13.1	56.1
#8	0.8	9.3	84.6	35.6	8.2	64.4
#16	0.7	4.0	67.6	28.3	7.4	71.7
#30	0.6	2.5	46.7	19.6	8.7	80.4
#50	0.6	2.1	16.2	7.1	12.5	92.9
#100	0.5	2.0	2.7	1.5	5.6	98.5
LBW	0.4	1.6	0.9	0.7	0.8	99.3

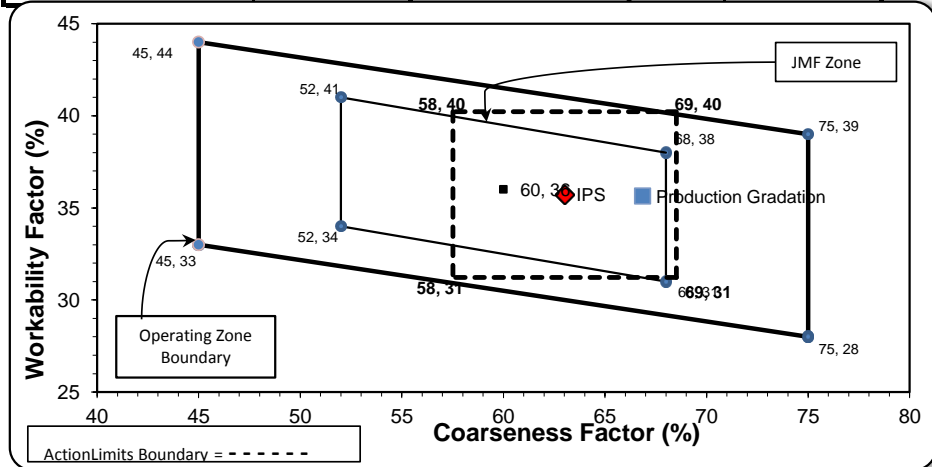


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 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **67** Workability Factor: **36**



Initial Production Sample (IPS)

Coarseness Factor: 63		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"	99.2	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

Approved BY:

Aggregate Optimization Chart

MIX ID'S: WSN175E9

Production Gradation Report

PLANT #: **P-36**

Sample Date: 4/24/17

Dates Test Represents: 4/24/2017 to 4/30/2017

Concrete Grade: **S2M (SPECIAL, 5000 PSI)**

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1530	9.11	2.69	51.2
26A	71-47	Presque Isle	200	1.22	2.62	6.7
2NS	63-92	AA Grange Hall	1260	7.62	2.65	42.1
Total Wt			2990	17.96		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"	99.8	100.0	100.0	99.9	0.1	0.1
3/4"	79.0	100.0	100.0	89.3	10.6	10.7
1/2"	39.9	97.8	100.0	69.1	20.2	30.9
3/8"	19.7	85.2	100.0	57.9	11.2	42.1
#4	2.8	11.9	97.9	43.5	14.4	56.5
#8	0.8	3.2	85.0	36.4	7.0	63.6
#16	0.7	1.8	68.7	29.4	7.0	70.6
#30	0.6	1.6	48.5	20.9	8.6	79.1
#50	0.6	1.5	20.3	9.0	11.9	91.0
#100	0.5	1.4	2.5	1.4	7.6	98.6
LBW	0.4	1.2	0.2	0.4	1.0	99.6

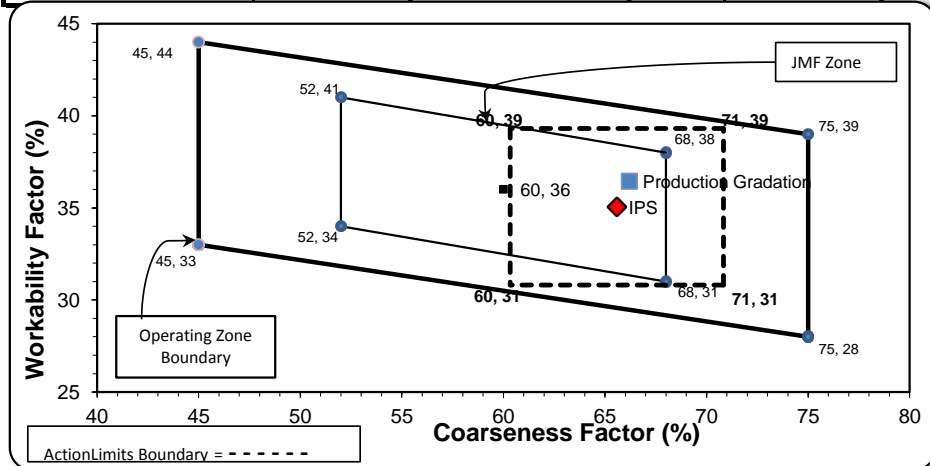
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size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



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Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **66** Workability Factor: **36**



Initial Production Sample (IPS)

Coarseness Factor: 66		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"	91.7	8.3	8.3
1/2"	66.8	24.8	33.2
3/8"	57.4	9.4	42.6
#4	43.0	14.4	57.0
#8	35.1	7.9	64.9
#16	28.0	7.1	72.0
#30	19.5	8.5	80.5
#50	8.1	11.4	91.9
#100	2.0	6.1	98.0
LBW	0.7	1.3	99.3

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Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-38**

Sample Date: 4/24/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 4/24/2017 to 4/30/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1650	9.83	2.69	52.3
26A	58-003	Stoneco	215	1.28	2.69	6.8
2NS	81-93	Burmeister	1290	7.83	2.64	40.9
Total Wt			3155	18.94		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"	99.8	100.0	100.0	99.9	0.1	0.1
3/4"	79.0	100.0	100.0	89.0	10.9	11.0
1/2"	39.9	100.0	100.0	68.6	20.4	31.4
3/8"	19.7	84.9	100.0	57.0	11.6	43.0
#4	2.8	28.7	98.9	43.9	13.1	56.1
#8	0.8	9.3	84.6	35.6	8.2	64.4
#16	0.7	4.0	67.6	28.3	7.4	71.7
#30	0.6	2.5	46.7	19.6	8.7	80.4
#50	0.6	2.1	16.2	7.1	12.5	92.9
#100	0.5	2.0	2.7	1.5	5.6	98.5
LBW	0.4	1.6	0.9	0.7	0.8	99.3

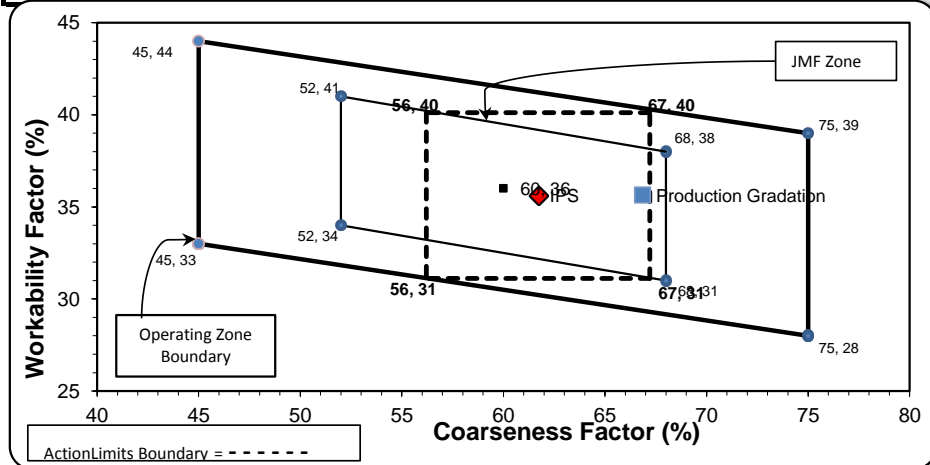


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 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 67 **Workability Factor: 36**



Initial Production Sample (IPS)

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"	99.2	0.8	0.8
3/4"	91.1	8.1	8.9
1/2"	72.0	19.1	28.0
3/8"	60.3	11.7	39.7
#4	43.4	16.9	56.6
#8	35.6	7.8	64.4
#16	28.4	7.2	71.6
#30	21.8	6.7	78.2
#50	9.1	12.6	90.9
#100	1.7	7.4	98.3
LBW	1.1	0.6	98.9

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-39**

Sample Date: 4/24/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 4/24/2017 to 4/30/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1350	8.26	2.62	43.4
26A	71-47	Presque Isle	400	2.45	2.62	12.9
2NS	63-115	Ray Road	1360	8.22	2.65	43.7
Total Wt			3110	18.93		100.0

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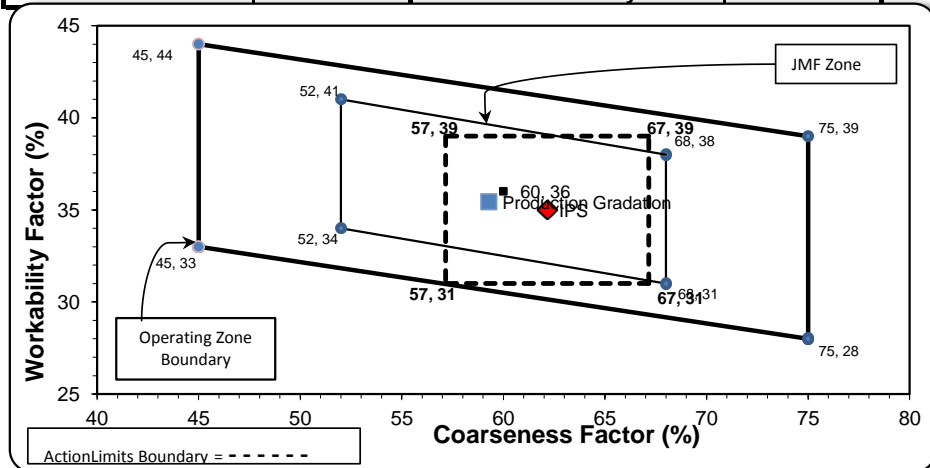
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	83.8	100.0	100.0	93.0	7.0	7.0
1/2"	36.8	97.8	100.0	72.3	20.7	27.7
3/8"	16.2	85.2	100.0	61.7	10.6	38.3
#4	1.8	11.9	97.0	44.7	17.0	55.3
#8	1.2	3.2	78.9	35.4	9.3	64.6
#16	1.0	1.8	61.0	27.3	8.1	72.7
#30	0.9	1.6	44.6	20.1	7.2	79.9
#50	0.9	1.5	21.3	9.9	10.2	90.1
#100	0.9	1.4	3.6	2.1	7.8	97.9
LBW	0.8	1.2	0.4	0.7	1.5	99.3

*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:	59	Workability Factor:	35
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Initial Production Sample (IPS)

Coarseness Factor:	62		
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"	95.0	5.0	5.0
1/2"	71.2	23.8	28.8
3/8"	59.6	11.6	40.4
#4	44.1	15.5	55.9
#8	35.0	9.1	65.0
#16	27.7	7.3	72.3
#30	20.3	7.4	79.7
#50	8.9	11.4	91.1
#100	2.7	6.3	97.3
LBW	1.4	1.2	98.6

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