

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-103**

Sample Date: 4/10/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 4/10/2017 to 4/16/2017

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%



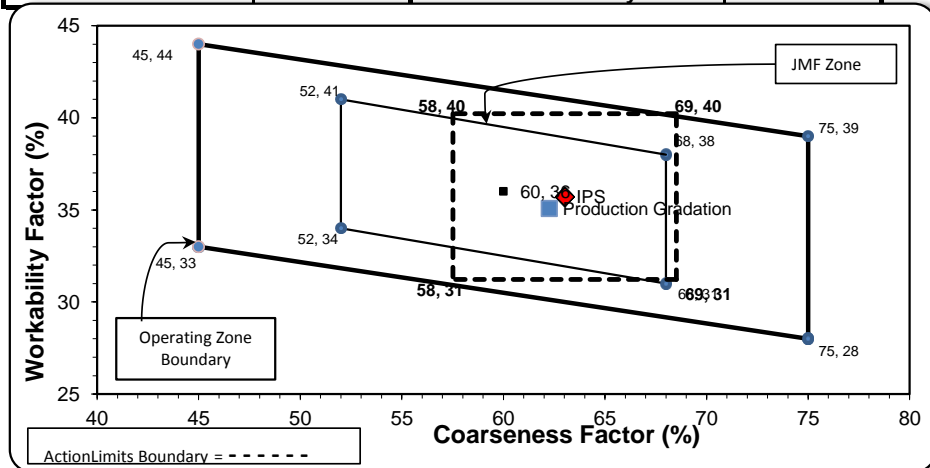
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	99.9	100.0	100.0	99.9	0.1	0.1
3/4"	82.2	100.0	100.0	90.7	9.3	9.3
1/2"	44.9	99.5	100.0	71.1	19.5	28.9
3/8"	24.3	87.7	100.0	59.6	11.6	40.4
#4	3.3	19.1	99.7	43.8	15.8	56.2
#8	1.1	2.2	84.0	35.1	8.7	64.9
#16	1.2	1.3	64.5	27.1	8.0	72.9
#30	1.0	1.1	44.7	18.9	8.2	81.1
#50	1.0	1.1	16.9	7.5	11.4	92.5
#100	1.0	1.0	2.9	1.8	5.7	98.2
LBW	0.7	0.8	0.3	0.5	1.2	99.5

*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:	62	Workability Factor:	35
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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"	99.9	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 : WSN175E9

Production Gradation Report

PLANT #: **P-36**

Sample Date: 4/10/17

Dates Test Represents: 4/10/2017 to 4/16/2017

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	63-115	Ray Road	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"	99.9	100.0	100.0	99.9	0.1	0.1
3/4"	82.2	100.0	100.0	90.9	9.1	9.1
1/2"	44.9	95.3	100.0	71.5	19.4	28.5
3/8"	24.3	80.1	100.0	59.9	11.6	40.1
#4	3.3	14.2	96.6	43.3	16.6	56.7
#8	1.1	3.6	78.4	33.8	9.5	66.2
#16	1.2	1.8	60.2	26.1	7.7	73.9
#30	1.0	1.4	43.5	18.9	7.2	81.1
#50	1.0	1.3	20.0	9.0	9.9	91.0
#100	1.0	1.2	3.6	2.1	6.9	97.9
LBW	0.7	1.0	0.4	0.6	1.5	99.4

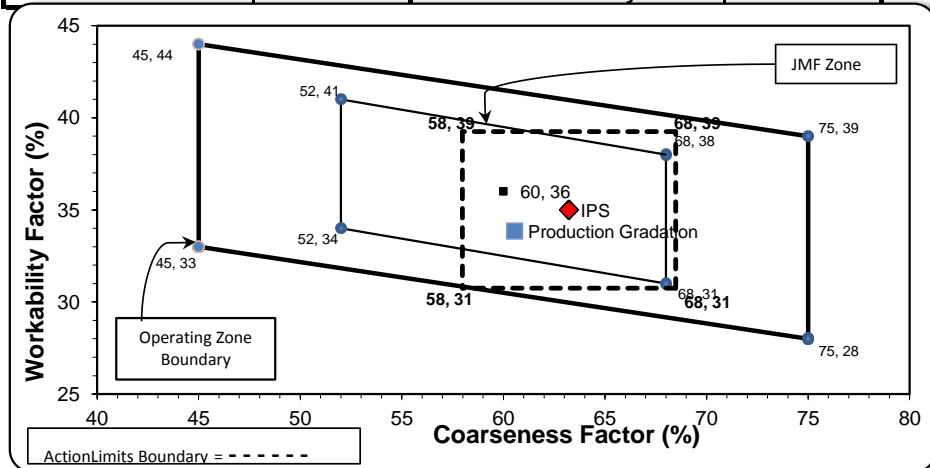


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Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **61** Workability Factor: **34**



Initial Production Sample (IPS)

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"	92.9	7.1	7.1
1/2"	71.8	21.1	28.2
3/8"	58.9	12.9	41.1
#4	43.6	15.3	56.4
#8	35.0	8.7	65.0
#16	26.8	8.2	73.2
#30	19.8	7.0	80.2
#50	10.0	9.8	90.0
#100	2.7	7.3	97.3
LBW	1.3	1.4	98.7

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 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-38**

Sample Date: 4/10/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 4/10/2017 to 4/16/2017

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

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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"	99.9	100.0	100.0	99.9	0.1	0.1
3/4"	82.2	100.0	100.0	90.7	9.3	9.3
1/2"	44.9	99.5	100.0	71.1	19.5	28.9
3/8"	24.3	87.7	100.0	59.6	11.6	40.4
#4	3.3	19.1	99.1	43.5	16.0	56.5
#8	1.1	2.2	85.3	35.6	7.9	64.4
#16	1.2	1.3	68.7	28.8	6.8	71.2
#30	1.0	1.1	48.6	20.5	8.3	79.5
#50	1.0	1.1	17.5	7.8	12.7	92.2
#100	1.0	1.0	2.3	1.5	6.2	98.5
LBW	0.7	0.8	0.6	0.7	0.9	99.3

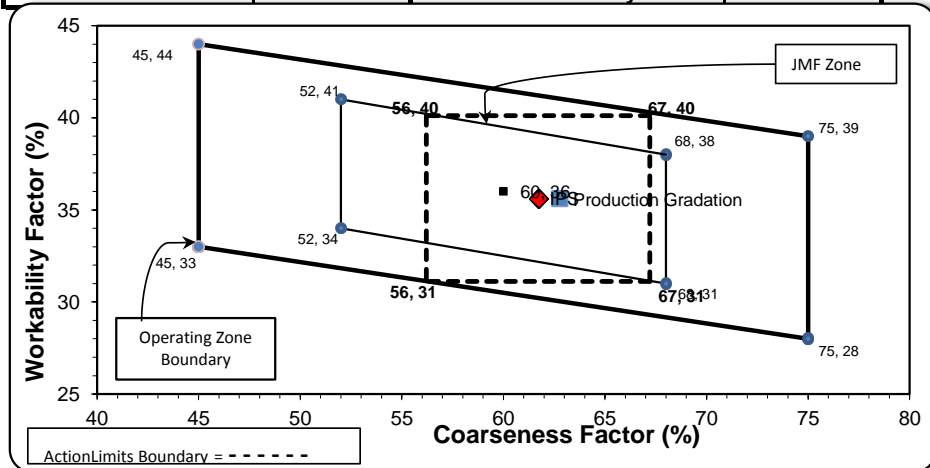


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Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **63** 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

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Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-39**

Sample Date: 4/10/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 4/10/2017 to 4/16/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1380	8.44	2.62	44.4
26A	71-47	Presque Isle	400	2.45	2.62	12.9
2NS	63-115	Ray Road	1330	8.04	2.65	42.8
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"	84.3	100.0	100.0	93.0	7.0	7.0
1/2"	33.9	95.3	100.0	70.1	23.0	29.9
3/8"	15.4	80.1	100.0	59.9	10.2	40.1
#4	1.9	14.2	96.6	44.0	15.9	56.0
#8	1.2	3.6	78.4	34.5	9.5	65.5
#16	1.1	1.8	60.2	26.5	8.1	73.5
#30	1.1	1.4	43.5	19.3	7.2	80.7
#50	1.1	1.3	20.0	9.2	10.1	90.8
#100	1.0	1.2	3.6	2.1	7.1	97.9
LBW	0.8	1.0	0.4	0.7	1.5	99.3

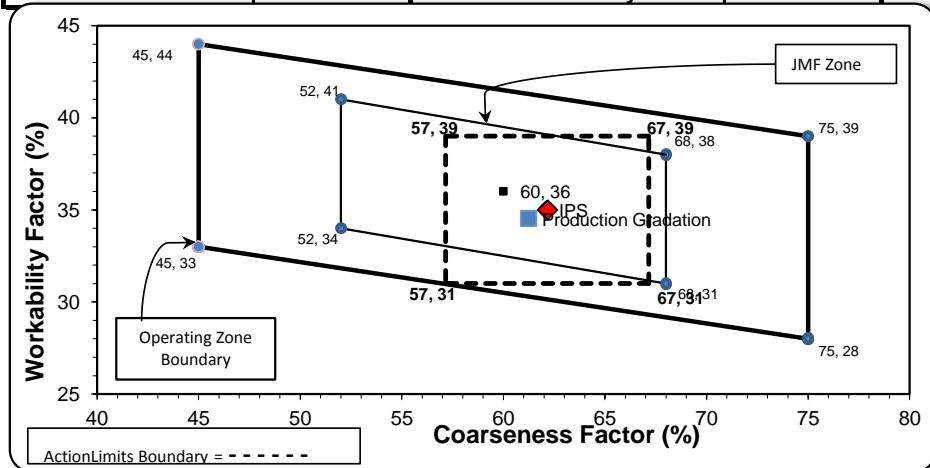


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Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 61 **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"	71.2	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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