

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-103**

Sample Date: 4/3/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 4/3/2017 to 4/9/2017

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%



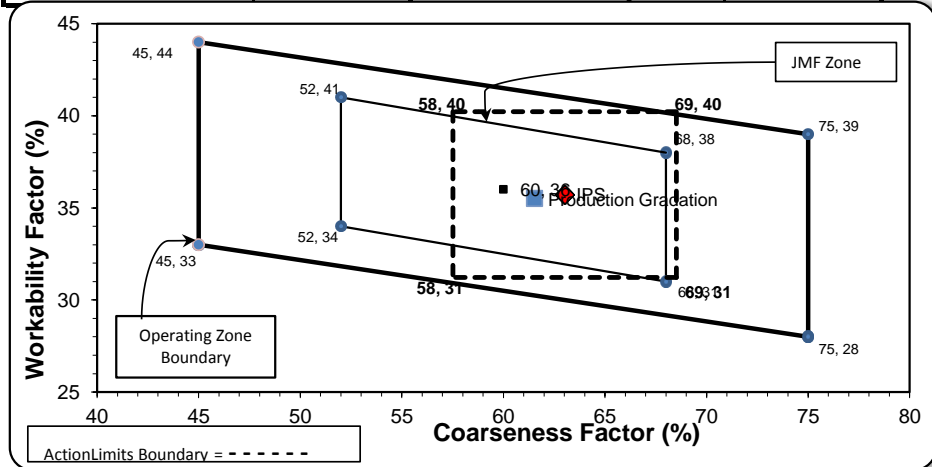
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	99.7	100.0	100.0	99.8	0.2	0.2
3/4"	80.2	100.0	100.0	89.6	10.2	10.4
1/2"	44.8	99.8	100.0	71.1	18.5	28.9
3/8"	25.5	89.3	100.0	60.3	10.8	39.7
#4	2.2	27.3	99.1	43.5	16.8	56.5
#8	1.0	5.1	84.7	35.5	8.0	64.5
#16	0.8	1.8	67.9	28.3	7.2	71.7
#30	0.8	1.3	46.9	19.7	8.6	80.3
#50	0.6	1.1	16.2	7.0	12.7	93.0
#100	0.6	1.0	2.3	1.3	5.7	98.7
LBW	0.6	0.8	0.9	0.7	0.6	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:	62	Workability Factor:	36
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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"	99.2	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 : WSN175E9

Production Gradation Report

PLANT #: **P-36**

Sample Date: 4/3/17

Contractor: _____

Dates Test Represents: 4/3/2017 to 4/9/2017

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

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"	99.7	100.0	100.0	99.8	0.2	0.2
3/4"	80.2	100.0	100.0	89.9	10.0	10.1
1/2"	44.8	95.3	100.0	71.4	18.4	28.6
3/8"	25.5	80.1	100.0	60.5	10.9	39.5
#4	2.2	14.2	96.7	42.8	17.7	57.2
#8	1.0	3.6	80.3	34.6	8.2	65.4
#16	0.8	1.8	62.0	26.7	7.9	73.3
#30	0.8	1.4	45.2	19.6	7.1	80.4
#50	0.6	1.3	21.6	9.5	10.1	90.5
#100	0.6	1.2	3.9	2.0	7.5	98.0
LBW	0.6	1.0	1.3	0.9	1.1	99.1

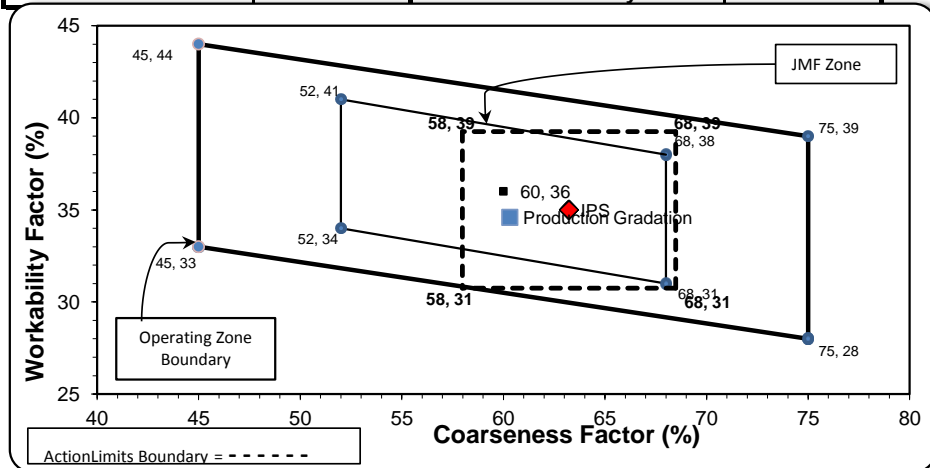


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 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **60** Workability Factor: **35**



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

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-38**

Sample Date: 4/3/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 4/3/2017 to 4/9/2017

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"	99.7	100.0	100.0	99.8	0.2	0.2
3/4"	80.2	100.0	100.0	89.6	10.2	10.4
1/2"	44.8	99.8	100.0	71.1	18.5	28.9
3/8"	25.5	89.3	100.0	60.3	10.8	39.7
#4	2.2	27.3	99.1	43.5	16.8	56.5
#8	1.0	5.1	84.7	35.5	8.0	64.5
#16	0.8	1.8	67.9	28.3	7.2	71.7
#30	0.8	1.3	46.9	19.7	8.6	80.3
#50	0.6	1.1	16.2	7.0	12.7	93.0
#100	0.6	1.0	2.3	1.3	5.7	98.7
LBW	0.6	0.8	0.9	0.7	0.6	99.3

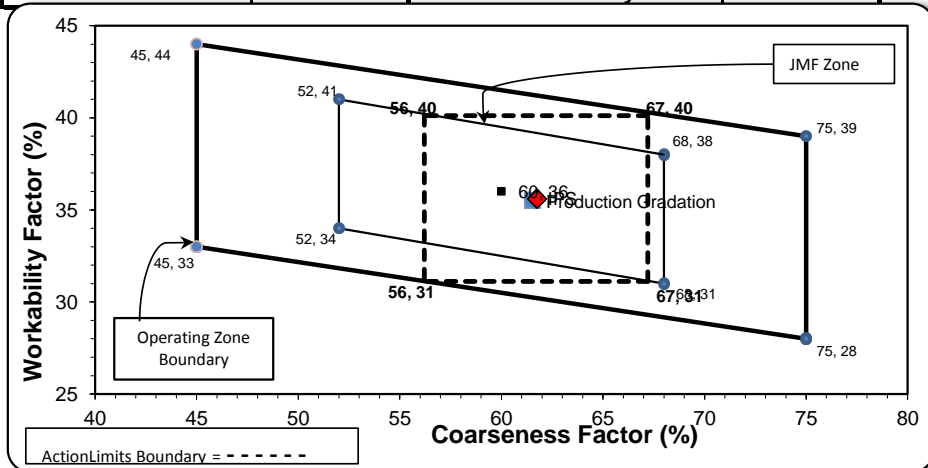


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Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor:	62	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"	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:
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Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-39**

Sample Date: 4/3/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 4/3/2017 to 4/9/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1680	10.28	2.62	53.9
26A	71-47	Presque Isle	150	0.92	2.62	4.8
2NS	63-115	Ray Road	1285	7.77	2.65	41.3
Total Wt			3115	18.96		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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	88.5	100.0	100.0	93.8	6.2	6.2
1/2"	49.9	95.3	100.0	72.8	21.0	27.2
3/8"	28.9	80.1	100.0	60.7	12.1	39.3
#4	5.7	14.2	96.7	43.6	17.0	56.4
#8	2.4	3.6	80.3	34.6	9.1	65.4
#16	2.0	1.8	62.0	26.7	7.9	73.3
#30	1.9	1.4	45.2	19.7	7.0	80.3
#50	1.9	1.3	21.6	10.0	9.7	90.0
#100	1.9	1.2	3.9	2.7	7.3	97.3
LBW	1.7	1.0	1.3	1.5	1.2	98.5

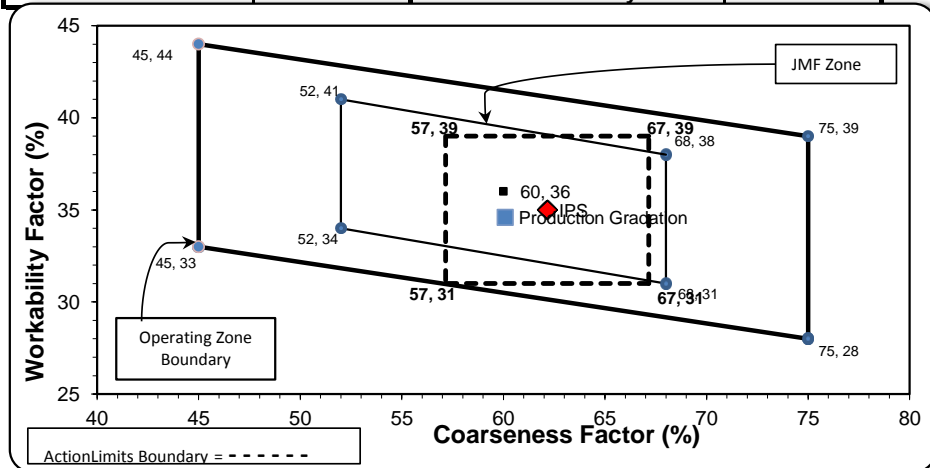


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 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 60 **Workability Factor: 35**



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"	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

PREPARED BY:
 SM, LLC Technical Service

Approved By: