

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-102**

Sample Date: 7/9/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 7/10/2018 through 7/16/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1500	8.94	2.69	47.5
26A	58-003	Stoneco	400	2.38	2.69	12.7
2NS	38-046	Chelsea	1260	7.62	2.65	39.9
Total Wt			3160	18.94		100.0

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



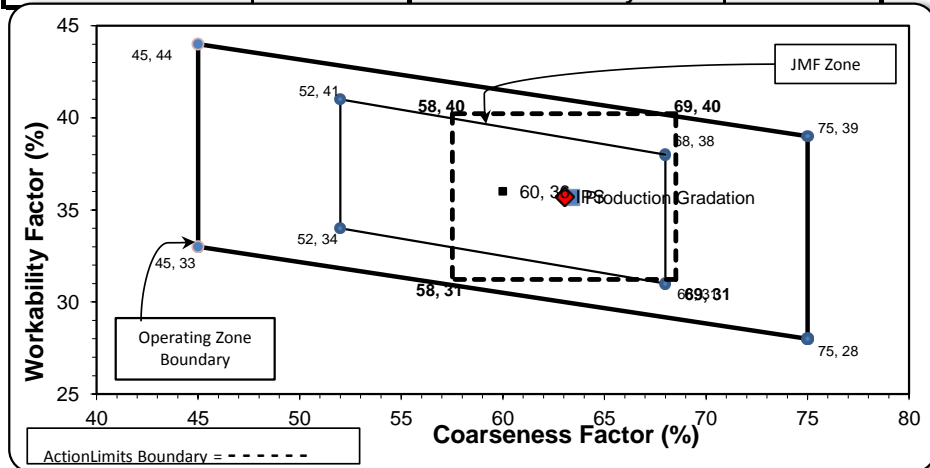
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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	99.9	0.1	0.1
3/4"	84.0	100.0	100.0	92.4	7.5	7.6
1/2"	36.8	99.8	100.0	70.0	22.4	30.0
3/8"	16.8	89.8	100.0	59.2	10.8	40.8
#4	3.4	15.2	100.0	43.4	15.8	56.6
#8	1.4	5.6	86.0	35.7	7.7	64.3
#16	1.3	2.5	60.0	24.9	10.8	75.1
#30	1.1	1.6	40.0	16.7	8.2	83.3
#50	1.0	1.5	18.0	7.8	8.8	92.2
#100	0.9	1.2	4.0	2.2	5.7	97.8
LBW	0.6	1.0	0.8	0.7	1.4	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: **63** Workability Factor: **36**



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

Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-103**

Sample Date: 7/9/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 7/10/2018 through 7/16/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1500	8.94	2.69	47.5
26A	58-003	Stoneco	400	2.38	2.69	12.7
2NS	38-046	Chelsea	1260	7.62	2.65	39.9
Total Wt			3160	18.94		100.0

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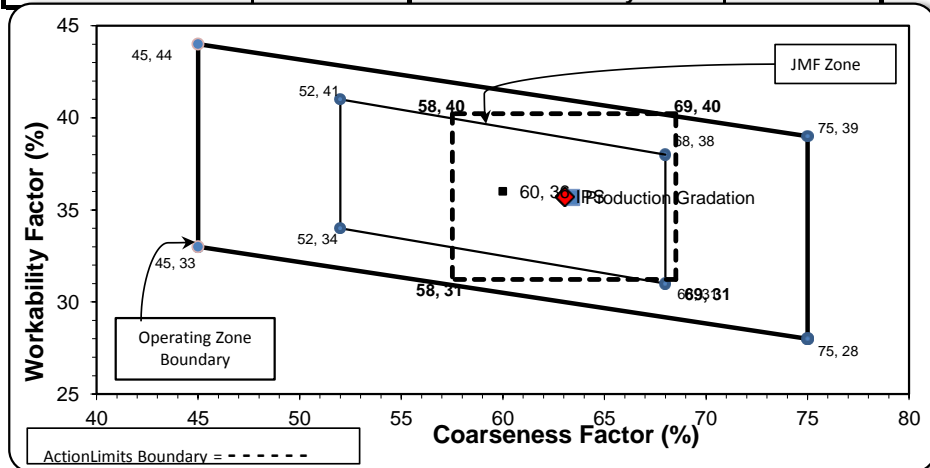
Superior Materials, LLC
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.7	100.0	100.0	99.9	0.1	0.1
3/4"	84.0	100.0	100.0	92.4	7.5	7.6
1/2"	36.8	99.8	100.0	70.0	22.4	30.0
3/8"	16.8	89.8	100.0	59.2	10.8	40.8
#4	3.4	15.2	100.0	43.4	15.8	56.6
#8	1.4	5.6	86.0	35.7	7.7	64.3
#16	1.3	2.5	60.0	24.9	10.8	75.1
#30	1.1	1.6	40.0	16.7	8.2	83.3
#50	1.0	1.5	18.0	7.8	8.8	92.2
#100	0.9	1.2	4.0	2.2	5.7	97.8
LBW	0.6	1.0	0.8	0.7	1.4	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: **63** **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

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 SM, LLC Technical Service

Approved BY:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-36**

Sample Date: 7/9/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 7/10/2018 through 7/16/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1450	8.87	2.62	46.6
26A	71-47	Presque Isle	410	2.51	2.62	13.2
2NS	63-92	AA Grange Hall	1250	7.56	2.65	40.2
Total Wt			3110	18.94		100.0

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



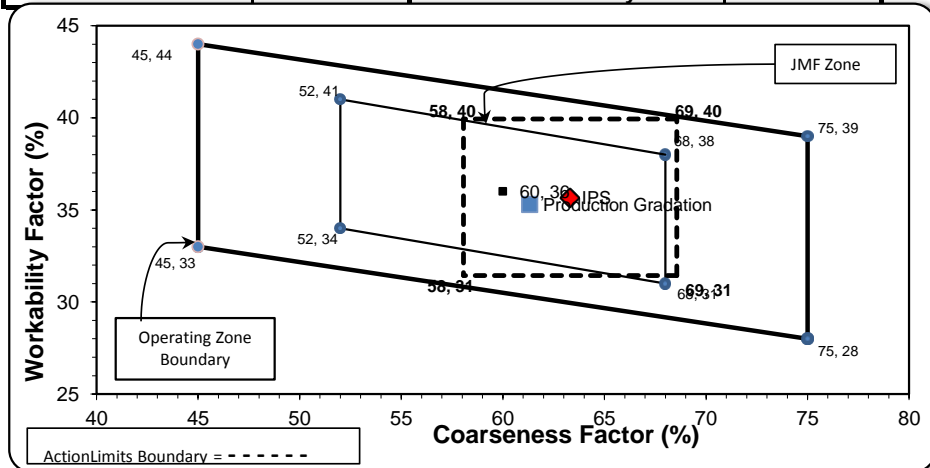
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	89.0	93.5	100.0	94.0	6.0	6.0
1/2"	42.3	80.5	100.0	70.5	23.5	29.5
3/8"	20.4	80.5	100.0	60.3	10.2	39.7
#4	3.0	19.8	97.0	43.0	17.3	57.0
#8	2.1	6.3	83.3	35.3	7.7	64.7
#16	1.9	3.5	67.7	28.6	6.7	71.4
#30	1.8	2.9	49.4	21.1	7.5	78.9
#50	1.7	2.6	21.5	9.8	11.3	90.2
#100	1.6	2.4	2.8	2.2	7.6	97.8
LBW	1.3	1.8	0.2	0.9	1.3	99.1

*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: **61** **Workability Factor:** **35**



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"	100.0	0.0	0.0
3/4"	95.6	4.4	4.4
1/2"	73.1	22.6	26.9
3/8"	59.3	13.8	40.7
#4	42.8	16.5	57.2
#8	35.7	7.1	64.3
#16	28.9	6.8	71.1
#30	20.7	8.2	79.3
#50	9.9	10.8	90.1
#100	2.1	7.8	97.9
LBW	0.9	1.2	99.1

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-02**

Sample Date: 7/9/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 7/10/2018 through 7/16/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1450	8.87	2.62	46.6
26A	71-47	Presque Isle	410	2.51	2.62	13.2
2NS	47-16	Buno Road	1250	7.56	2.65	40.2
Total Wt			3110	18.94		100.0

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



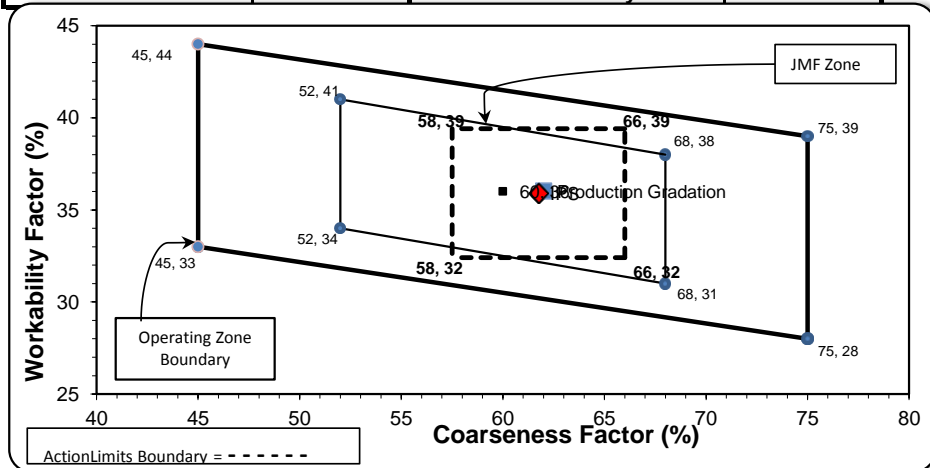
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	89.0	93.5	100.0	94.0	6.0	6.0
1/2"	42.3	80.5	100.0	70.5	23.5	29.5
3/8"	20.4	80.5	100.0	60.3	10.2	39.7
#4	3.0	19.8	95.6	42.4	17.9	57.6
#8	2.1	6.3	85.1	36.0	6.4	64.0
#16	1.9	3.5	72.0	30.3	5.7	69.7
#30	1.8	2.9	52.3	22.2	8.0	77.8
#50	1.7	2.6	18.0	8.4	13.9	91.6
#100	1.6	2.4	2.4	2.0	6.3	98.0
LBW	1.3	1.8	0.5	1.0	1.0	99.0

*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**



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"	100.0	0.0	0.0
3/4"	95.8	4.2	4.2
1/2"	74.1	21.7	25.9
3/8"	60.4	13.7	39.6
#4	41.7	18.8	58.3
#8	35.9	5.8	64.1
#16	30.6	5.3	69.4
#30	23.0	7.6	77.0
#50	9.5	13.5	90.5
#100	2.2	7.3	97.8
LBW	0.9	1.2	99.1

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 SM, LLC Technical Service

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