

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-102**

Sample Date: 6/25/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 6/26/2018 through 7/2/2018

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%



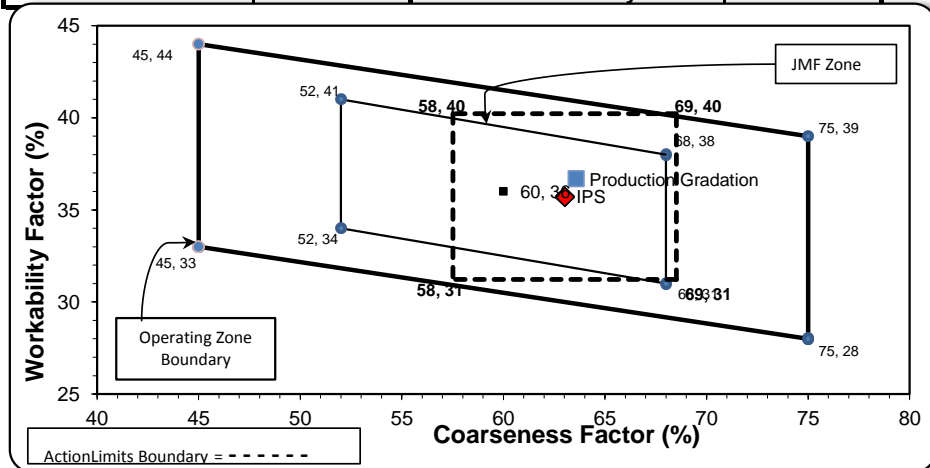
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	79.5	100.0	100.0	90.3	9.6	9.7
1/2"	39.4	99.8	100.0	71.2	19.1	28.8
3/8"	18.3	88.4	100.0	59.8	11.5	40.3
#4	3.0	20.6	100.0	43.9	15.8	56.1
#8	1.0	5.8	89.0	36.7	7.2	63.3
#16	0.7	2.3	62.0	25.3	11.4	74.7
#30	0.6	1.6	41.0	16.8	8.5	83.2
#50	0.5	1.5	18.0	7.6	9.2	92.4
#100	0.5	1.4	4.0	2.0	5.6	98.0
LBW	0.5	1.3	1.1	0.8	1.2	99.2

*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:	64	Workability Factor:	37
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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

Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-103**

Sample Date: 6/25/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 6/26/2018 through 7/2/2018

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%



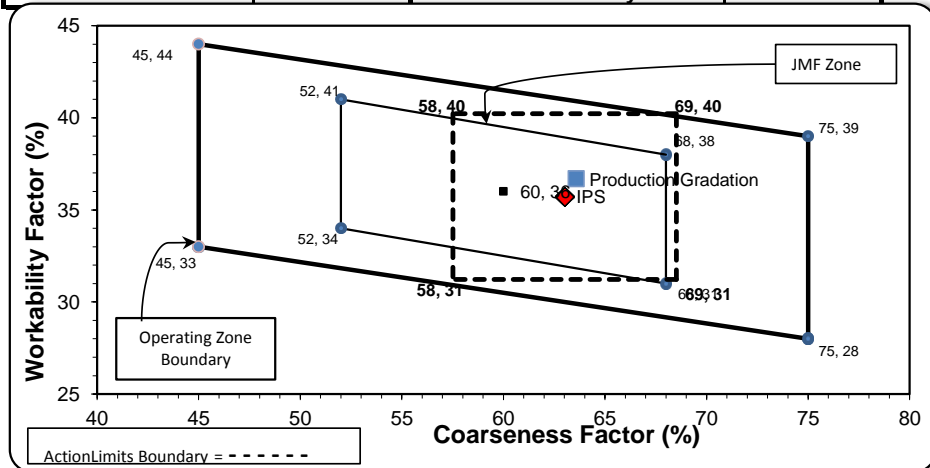
Superior Materials, LLC
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.7	100.0	100.0	99.9	0.1	0.1
3/4"	79.5	100.0	100.0	90.3	9.6	9.7
1/2"	39.4	99.8	100.0	71.2	19.1	28.8
3/8"	18.3	88.4	100.0	59.8	11.5	40.3
#4	3.0	20.6	100.0	43.9	15.8	56.1
#8	1.0	5.8	89.0	36.7	7.2	63.3
#16	0.7	2.3	62.0	25.3	11.4	74.7
#30	0.6	1.6	41.0	16.8	8.5	83.2
#50	0.5	1.5	18.0	7.6	9.2	92.4
#100	0.5	1.4	4.0	2.0	5.6	98.0
LBW	0.5	1.3	1.1	0.8	1.2	99.2

*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:	64	Workability Factor:	37
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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

Approved BY:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-36**

Sample Date: 6/25/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 6/26/2018 through 7/2/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1650	10.09	2.62	53.1
26A	71-47	Presque Isle	180	1.10	2.62	5.8
2NS	63-92	AA Grange Hall	1280	7.74	2.65	41.2
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"	91.7	100.0	100.0	95.6	4.4	4.4
1/2"	52.2	95.5	100.0	74.4	21.2	25.6
3/8"	26.9	83.9	100.0	60.3	14.1	39.7
#4	3.9	22.3	97.4	43.4	16.8	56.6
#8	2.2	6.6	85.2	36.6	6.8	63.4
#16	1.9	3.7	70.3	30.2	6.5	69.8
#30	1.8	3.1	52.0	22.5	7.6	77.5
#50	1.7	2.8	24.3	11.1	11.5	88.9
#100	1.6	2.5	3.5	2.4	8.6	97.6
LBW	1.4	2.2	0.3	1.0	1.4	99.0

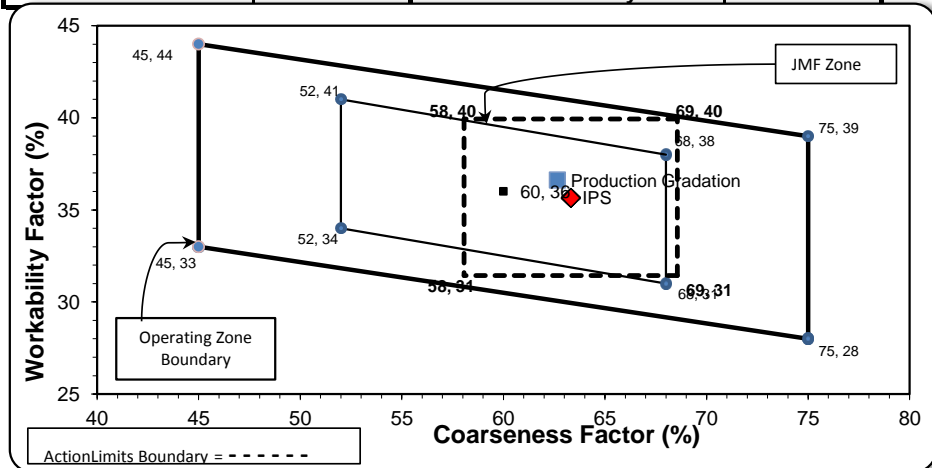


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*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must 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:	63	Workability Factor:	37
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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"	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: 6/25/18

Concrete Grade: S2M

Contractor: _____

Dates Test Represents: 6/26/2018 through 7/2/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1650	10.09	2.62	53.1
26A	71-47	Presque Isle	180	1.10	2.62	5.8
2NS	47-16	Buno Road	1280	7.74	2.65	41.2
Total Wt			3110	18.93		100.0

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



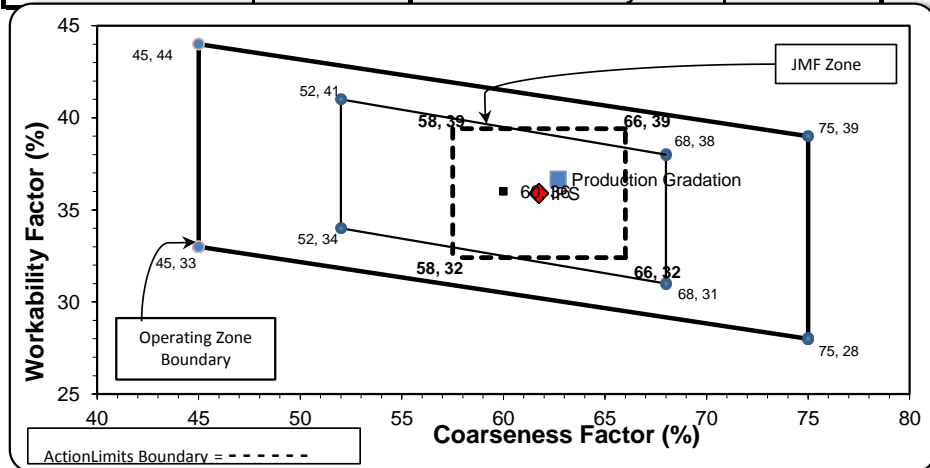
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 30701 W. 10 Mile Rd.
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	91.7	100.0	100.0	95.6	4.4	4.4
1/2"	52.2	95.5	100.0	74.4	21.2	25.6
3/8"	26.9	83.9	100.0	60.3	14.1	39.7
#4	3.9	22.3	95.7	42.7	17.5	57.3
#8	2.2	6.6	85.3	36.7	6.1	63.3
#16	1.9	3.7	72.4	31.0	5.6	69.0
#30	1.8	3.1	53.6	23.2	7.8	76.8
#50	1.7	2.8	20.6	9.5	13.7	90.5
#100	1.6	2.5	2.7	2.1	7.4	97.9
LBW	1.4	2.2	0.4	1.0	1.1	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:	63	Workability Factor:	37
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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

PREPARED BY:
 SM, LLC Technical Service

Approved By: