

# Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

**PLANT #:** **P-103**

Sample Date: 6/5/17

Concrete Grade: **S2M**

Contractor: \_\_\_\_\_

Dates Test Represents: 6/5/2017 to 6/11/2017

MDOT No.: \_\_\_\_\_

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1680	10.01	2.69	53.4
26A	58-003	Stoneco	165	0.98	2.69	5.2
2NS	81-93	Burmeister	1300	7.89	2.64	41.3
<b>Total Wt</b>			<b>3145</b>	<b>18.88</b>		<b>100.0</b>

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



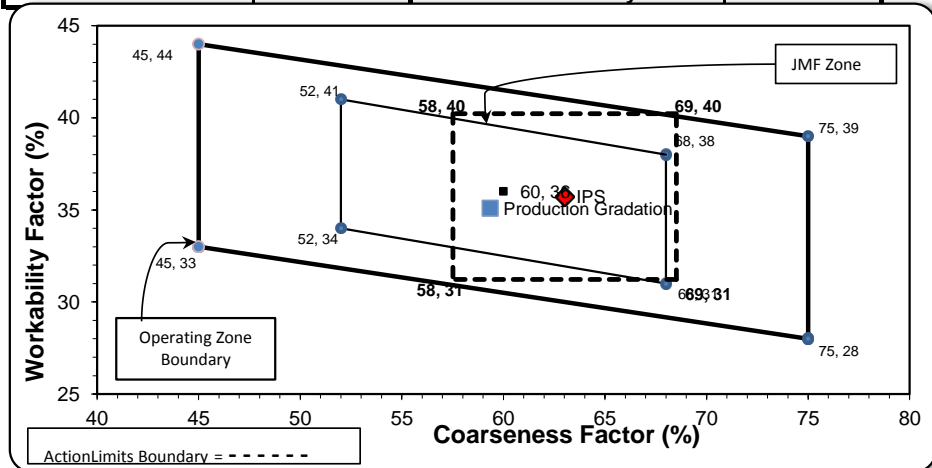
**Superior Materials, LLC**  
 30701 W. 10 Mile Rd.  
 Suite 500  
 Farmington Hills, MI 48336

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"	88.0	100.0	100.0	93.6	6.4	6.4
1/2"	51.9	99.4	100.0	74.3	19.3	25.7
3/8"	29.3	85.5	100.0	61.5	12.8	38.5
#4	4.2	20.5	98.7	44.1	17.4	55.9
#8	1.3	3.9	82.7	35.1	9.0	64.9
#16	0.7	1.8	64.7	27.2	7.9	72.8
#30	0.6	1.5	45.4	19.2	8.0	80.8
#50	0.6	1.4	19.5	8.5	10.7	91.5
#100	0.5	1.3	3.9	1.9	6.5	98.1
LBW	0.6	1.1	0.8	0.7	1.2	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

<b>Coarseness Factor:</b>	<b>59</b>	<b>Workability Factor:</b>	<b>35</b>
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Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>63</b>		
<b>Workability Factor:</b>	<b>36</b>		
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: 6/5/17

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

Contractor: \_\_\_\_\_

Dates Test Represents: 6/5/2017 to 6/11/2017

MDOT No.: \_\_\_\_\_

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1640	9.77	2.69	54.8
26A	71-47	Presque Isle	150	0.92	2.62	5.0
2NS	63-92	AA Grange Hall	1200	7.26	2.65	40.1
<b>Total Wt</b>			<b>2990</b>	<b>17.94</b>		<b>100.0</b>

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



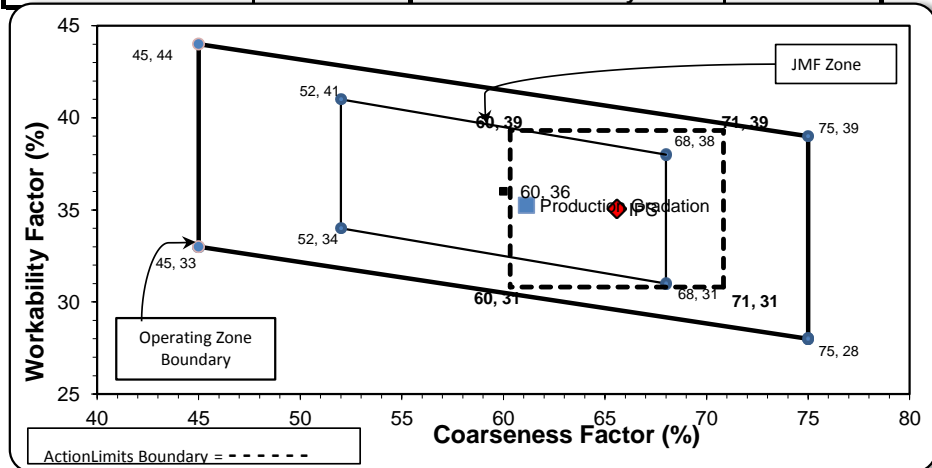
**Superior Materials, LLC**  
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	88.0	100.0	100.0	93.4	6.6	6.6
1/2"	51.9	98.0	100.0	73.5	19.9	26.5
3/8"	29.3	83.8	100.0	60.4	13.1	39.6
#4	4.2	13.9	97.6	42.2	18.2	57.8
#8	1.3	3.5	85.6	35.2	6.9	64.8
#16	0.7	2.3	70.0	28.6	6.7	71.4
#30	0.6	2.1	49.9	20.5	8.1	79.5
#50	0.6	2.0	20.4	8.6	11.8	91.4
#100	0.5	1.9	2.6	1.4	7.2	98.6
LBW	0.6	1.6	0.3	0.5	0.9	99.5

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Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

<b>Coarseness Factor:</b>	<b>61</b>	<b>Workability Factor:</b>	<b>35</b>
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Initial Production Sample (IPS)

<b>Coarseness Factor:</b>		<b>66</b>	
<b>Workability Factor:</b>		<b>35</b>	
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: 6/5/17

Concrete Grade: **S2M**

Contractor: \_\_\_\_\_

Dates Test Represents: 6/5/2017 to 6/11/2017

MDOT No.: \_\_\_\_\_

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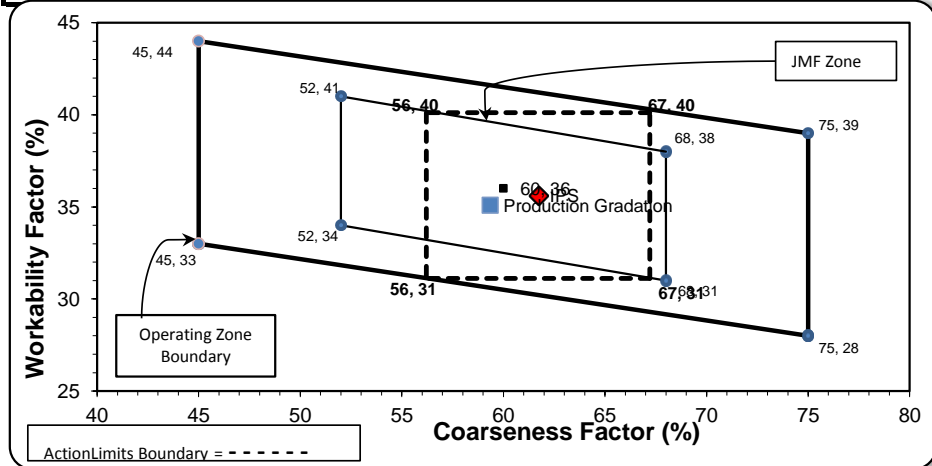


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Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

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



Initial Production Sample (IPS)

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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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 SM, LLC Technical Service

Approved By: