

# Aggregate Optimization Chart

MIX ID'S: DDS257E7, DDS257E5 and DDS257E8

Production Gradation Report

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

Sample Date: 7/24/17

Concrete Grade: **S2M**

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

Dates Test Represents: 7/24/2017 to 7/30/2017

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1655	9.86	2.69	52.5
26A	58-003	Stoneco	200	1.19	2.69	6.3
2NS	81-93	Burmeister	1300	7.89	2.64	41.2
<b>Total Wt</b>			<b>3155</b>	<b>18.94</b>		<b>100.0</b>

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



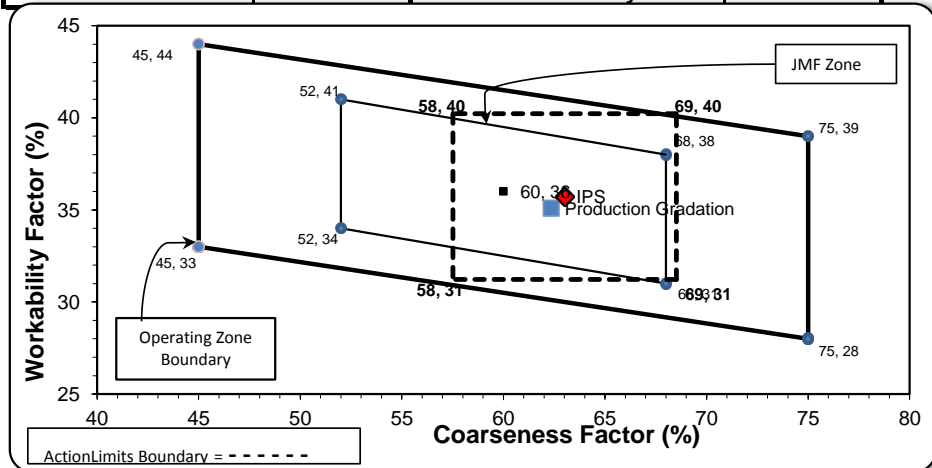
**Superior Materials, LLC**  
 30701 W. 10 Mile Rd.  
 Suite 500  
 Farmington Hills, MI 48336

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"	99.5	100.0	100.0	99.7	0.3	0.3
3/4"	82.3	100.0	100.0	90.7	9.0	9.3
1/2"	44.4	99.2	100.0	70.8	19.9	29.2
3/8"	24.7	84.6	100.0	59.5	11.3	40.5
#4	2.3	25.5	97.7	43.1	16.4	56.9
#8	1.1	4.9	83.0	35.1	8.0	64.9
#16	0.5	2.1	67.0	28.0	7.1	72.0
#30	0.4	1.7	48.8	20.4	7.6	79.6
#50	0.3	1.5	24.5	10.3	10.1	89.7
#100	0.2	1.4	5.5	2.5	7.9	97.5
LBW	0.5	1.3	1.7	1.0	1.4	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

<b>Coarseness Factor:</b>	<b>62</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: 7/24/17

Dates Test Represents: 7/24/2017 to 7/30/2017

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

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

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1580	9.41	2.69	52.8
26A	71-47	Presque Isle	200	1.22	2.62	6.7
2NS	63-92	AA Grange Hall	1210	7.32	2.65	40.5
<b>Total Wt</b>			<b>2990</b>	<b>17.95</b>		<b>100.0</b>

<----- 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"	99.5	100.0	100.0	99.7	0.3	0.3
3/4"	82.3	100.0	100.0	90.6	9.1	9.4
1/2"	44.4	98.6	100.0	70.5	20.1	29.5
3/8"	24.7	87.1	100.0	59.3	11.2	40.7
#4	2.3	13.5	98.5	42.0	17.4	58.0
#8	1.1	2.7	87.9	36.3	5.6	63.7
#16	0.5	1.8	71.2	29.2	7.1	70.8
#30	0.4	1.6	49.7	20.4	8.8	79.6
#50	0.3	1.5	18.4	7.7	12.7	92.3
#100	0.2	1.5	2.6	1.3	6.4	98.7
LBW	0.5	1.3	0.3	0.5	0.8	99.5

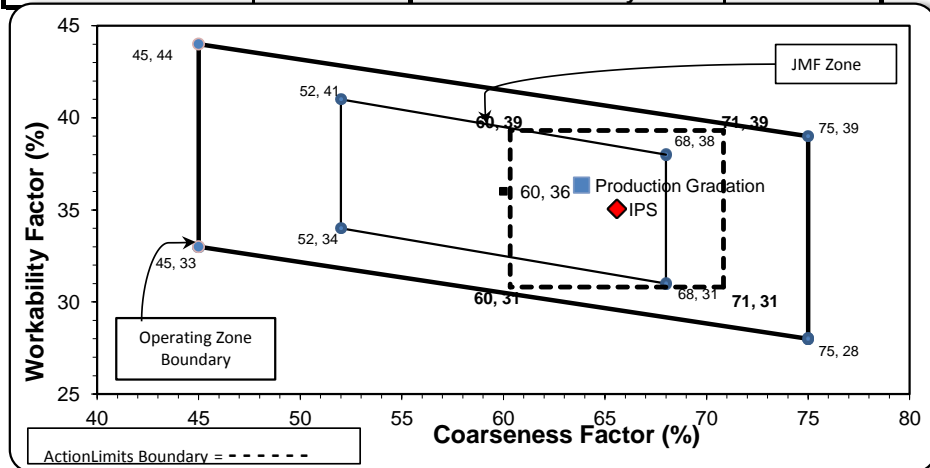
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Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Coarseness Factor: **64**      Workability Factor: **36**



Initial Production Sample (IPS)

Coarseness Factor: <b>66</b>		Workability Factor: <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

PREPARED BY:  
 SM, LLC Technical Service

Approved By:

# Aggregate Optimization Chart

MIX ID'S: DDS257E7, DDS257E5 and DDS257E8

Production Gradation Report

**PLANT #:** **P-38**

Sample Date: 7/24/17

Concrete Grade: **S2M**

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

Dates Test Represents: 7/24/2017 to 7/30/2017

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

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LBW	0.5	1.3	1.7	1.0	1.4	99.0

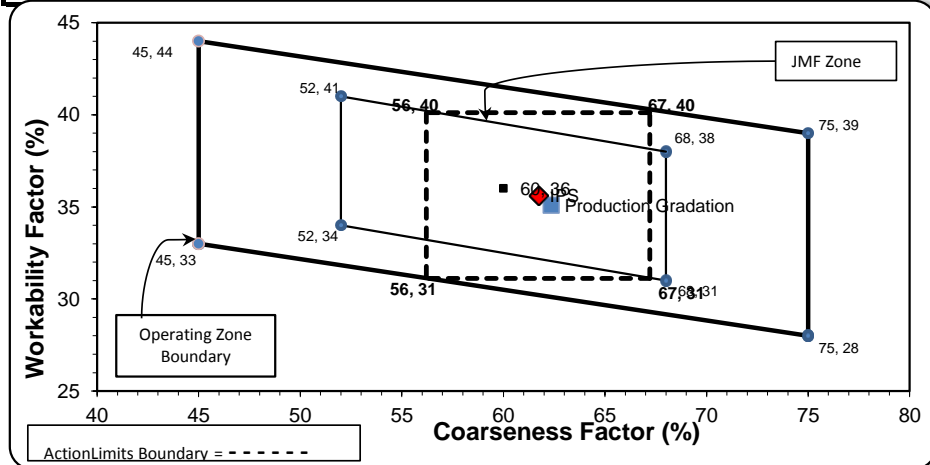


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Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

**Coarseness Factor: 62**      **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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