

# Aggregate Optimization Chart

MIX ID'S: DDD0K7E7 and DDD0K7E9

Production Gradation Report

**PLANT #:** **P-36**

Sample Date: 12/5/16

Concrete Grade: **DM**

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

Dates Test Represents: 12/5/2016 to 12/11/2016

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1480	8.82	2.69	49.6
26A	71-47	Presque Isle	305	1.87	2.62	10.2
2NS	63-92	AA Grange Hall	1200	7.26	2.65	40.2
<b>Total Wt</b>			<b>2985</b>	<b>17.94</b>		<b>100.0</b>

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



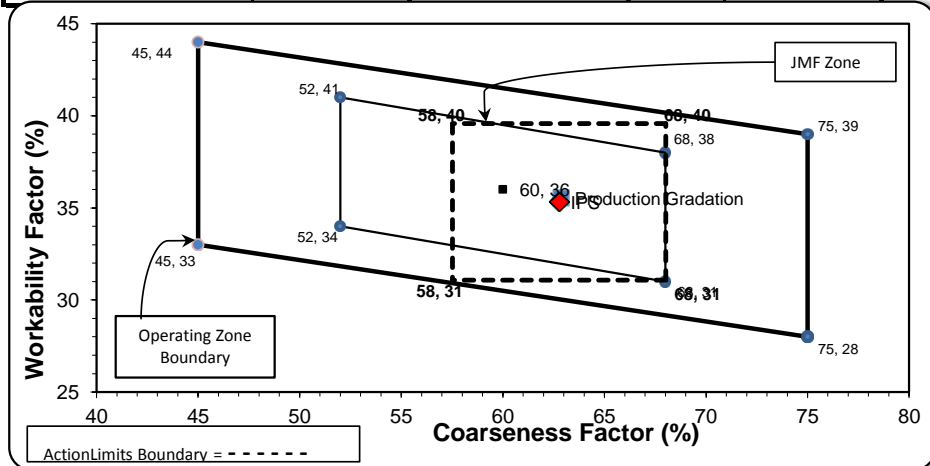
**Superior Materials, LLC**  
 30701 W. 10 Mile Rd.  
 Suite 500  
 Farmington Hills, MI 48336

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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	86.2	100.0	100.0	93.2	6.8	6.8
1/2"	44.2	97.8	100.0	72.1	21.0	27.9
3/8"	20.6	88.6	100.0	59.5	12.6	40.5
#4	2.9	15.8	97.9	42.4	17.1	57.6
#8	1.5	4.9	85.3	35.5	6.9	64.5
#16	0.8	3.2	69.3	28.6	7.0	71.4
#30	0.8	2.8	50.0	20.8	7.8	79.2
#50	0.7	2.5	19.6	8.5	12.3	91.5
#100	0.6	2.3	2.4	1.5	7.0	98.5
LBW	0.7	2.0	0.5	0.8	0.7	99.2

\*Maximum % Retained must be above the 3/8" sieve.  
 \*Any two adjacent sieves must equal 13% except max., nom. max., #100 and #200 sieves.  
 \*% Retained must be at least 5% 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:** **35**

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.9	0.1	0.1
3/4"	89.1	10.8	10.9
1/2"	71.3	17.8	28.7
3/8"	59.4	11.9	40.6
#4	42.6	16.8	57.4
#8	35.3	7.3	64.7
#16	28.5	6.8	71.5
#30	20.9	7.6	79.1
#50	9.0	12.0	91.0
#100	1.7	7.3	98.3
LBW	0.7	1.0	99.3

PREPARED BY:  
 SM, LLC Technical Service

Approved By:

# Aggregate Optimization Chart

MIX ID'S: DDD0K7E7 and DDD0K7E9

Production Gradation Report

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

Sample Date: 12/5/16

Concrete Grade: DM

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

Dates Test Represents: 12/5/2016 to 12/11/2016

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1470	8.76	2.69	49.2
26A	58-003	Stoneco	300	1.79	2.69	10.0
2NS	81-93	Burmeister	1220	7.41	2.64	40.8
<b>Total Wt</b>			<b>2990</b>	<b>17.95</b>		<b>100.0</b>

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



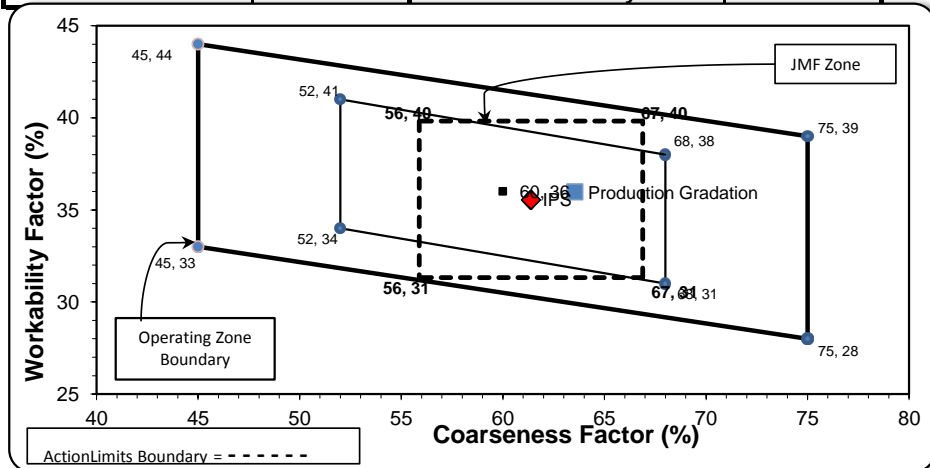
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2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	86.2	100.0	100.0	93.2	6.8	6.8
1/2"	44.2	99.3	100.0	72.5	20.7	27.5
3/8"	20.6	83.6	100.0	59.3	13.2	40.7
#4	2.9	12.0	98.4	42.8	16.5	57.2
#8	1.5	2.7	85.7	36.0	6.8	64.0
#16	0.8	1.4	70.4	29.3	6.7	70.7
#30	0.8	1.0	51.9	21.7	7.6	78.3
#50	0.7	0.9	22.0	9.4	12.3	90.6
#100	0.6	0.9	4.1	2.1	7.4	97.9
LBW	0.7	0.7	1.5	1.0	1.0	99.0

\*Maximum % Retained must be above the 3/8" sieve.  
 \*Any two adjacent sieves must equal 13% except max., nom. max., #100 and #200 sieves.  
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Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

<b>Coarseness Factor:</b>	<b>64</b>	<b>Workability Factor:</b>	<b>36</b>
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Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>61</b>		
<b>Workability Factor:</b>	<b>36</b>		
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
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1/2"	70.5	18.6	29.5
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#30	20.6	7.1	79.4
#50	8.7	11.8	91.3
#100	1.6	7.1	98.4
LBW	1.1	0.6	98.9

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