

Aggregate Optimization Chart

MIX ID'S: DDD0K7E7 and DDD0K7E9

Production Gradation Report

PLANT #: **P-103**

Sample Date: 3/27/17

Concrete Grade: **DM**

Contractor: _____

Dates Test Represents: 3/27/2017 to 4/2/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	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
Total Wt			2990	17.95		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"	85.5	100.0	100.0	92.9	7.1	7.1
1/2"	43.1	99.6	100.0	72.0	20.9	28.0
3/8"	19.8	85.6	100.0	59.1	12.9	40.9
#4	4.8	15.0	98.8	44.2	14.9	55.8
#8	3.1	4.3	84.3	36.4	7.8	63.6
#16	2.1	2.6	66.6	28.5	7.9	71.5
#30	2.1	2.3	44.8	19.5	8.9	80.5
#50	1.9	2.2	16.0	7.7	11.9	92.3
#100	1.9	2.1	2.8	2.3	5.4	97.7
LBW	2.0	1.8	1.0	1.6	0.7	98.4

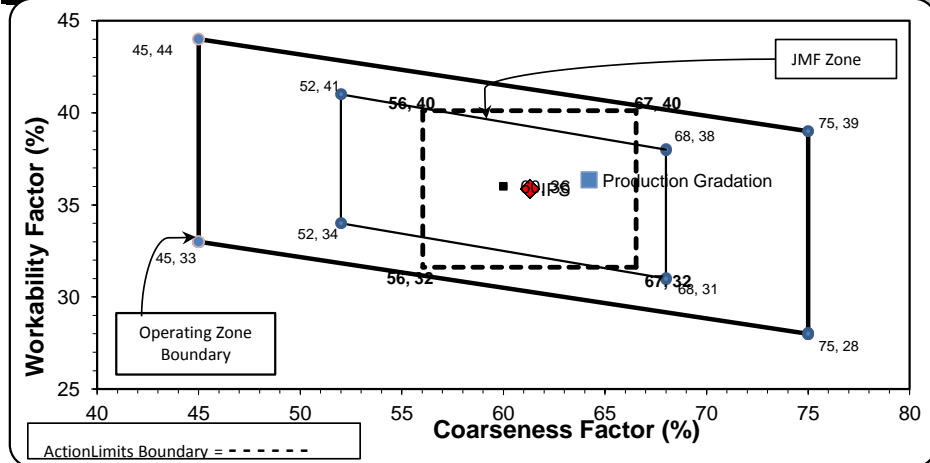


Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

*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: 36**



Initial Production Sample (IPS)

Coarseness Factor: 61		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"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

PREPARED BY:
 SM, LLC Technical Service

Approved BY:

Aggregate Optimization Chart

MIX ID'S: DDD0K7E7 and DDD0K7E9

Production Gradation Report

PLANT #: **P-36**

Sample Date: 3/27/17

Concrete Grade: DM

Contractor: _____

Dates Test Represents: 3/27/2017 to 4/2/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1450	8.64	2.69	48.6
26A	71-47	Presque Isle	285	1.74	2.62	9.5
2NS	63-115	Ray Road	1250	7.56	2.65	41.9
Total Wt			2985	17.94		100.0

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



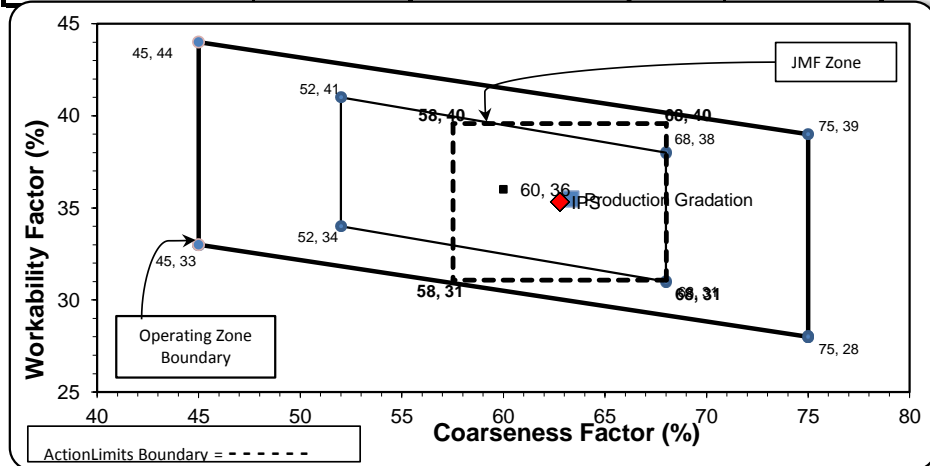
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	85.5	100.0	100.0	93.0	7.0	7.0
1/2"	43.1	95.3	100.0	71.9	21.0	28.1
3/8"	19.8	80.1	100.0	59.1	12.8	40.9
#4	4.8	14.2	96.7	44.2	15.0	55.8
#8	3.1	3.6	80.3	35.5	8.7	64.5
#16	2.1	1.8	62.0	27.2	8.3	72.8
#30	2.1	1.4	45.2	20.1	7.1	79.9
#50	1.9	1.3	21.6	10.1	10.0	89.9
#100	1.9	1.2	3.9	2.7	7.4	97.3
LBW	2.0	1.0	0.5	1.3	1.4	98.7

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 *% 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:	35
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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"	99.9	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

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Approved By:

Aggregate Optimization Chart

MIX ID'S: DDD0K7E7 and DDD0K7E9

Production Gradation Report

PLANT #: **P-38**

Sample Date: 3/27/17

Concrete Grade: **DM**

Contractor: _____

Dates Test Represents: 3/27/2017 to 4/2/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	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
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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"	85.5	100.0	100.0	92.9	7.1	7.1
1/2"	43.1	99.6	100.0	72.0	20.9	28.0
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#100	1.9	2.1	2.8	2.3	5.4	97.7
LBW	2.0	1.8	1.0	1.6	0.7	98.4

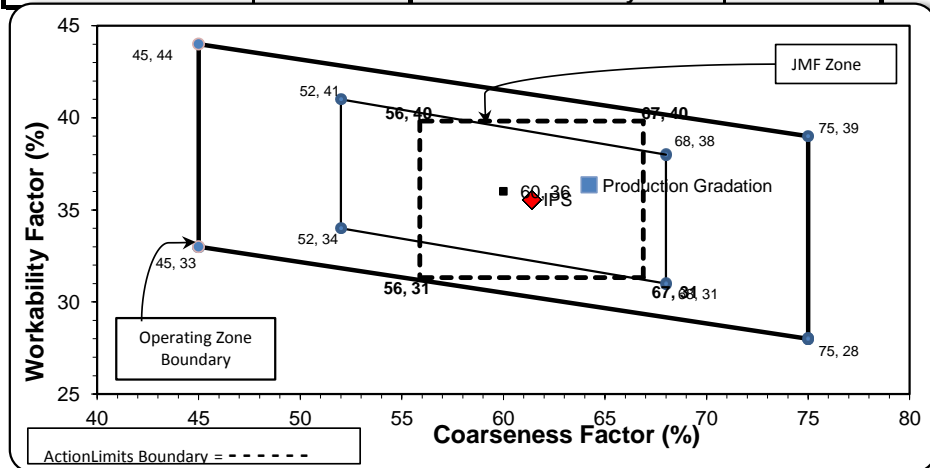


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1"	99.3	0.7	0.7
3/4"	89.1	10.2	10.9
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3/8"	60.5	10.0	39.5
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#16	27.7	7.9	72.3
#30	20.6	7.1	79.4
#50	8.7	11.8	91.3
#100	1.6	7.1	98.4
LBW	1.1	0.6	98.9

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 SM, LLC Technical Service

Approved By: