

Aggregate Optimization Chart

MIX ID'S: DDD0K7E7 and DDD0K7E9

Production Gradation Report

PLANT #: **P-103**

Sample Date: 11/6/17

Concrete Grade: **DM**

Contractor: _____

Dates Test Represents: 11/6/2017 to 11/12/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1450	8.64	2.69	48.5
26A	58-003	Stoneco	300	1.79	2.69	10.0
2NS	81-93	Burmeister	1240	7.53	2.64	41.5
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"	99.8	100.0	100.0	99.9	0.1	0.1
3/4"	80.8	100.0	100.0	90.7	9.2	9.3
1/2"	39.6	99.6	100.0	70.7	20.0	29.3
3/8"	15.7	80.6	100.0	57.2	13.5	42.8
#4	1.9	8.4	95.9	41.5	15.6	58.5
#8	0.8	2.5	82.8	35.0	6.6	65.0
#16	0.6	0.8	68.0	28.6	6.4	71.4
#30	0.6	0.6	49.8	21.0	7.6	79.0
#50	0.6	0.5	20.6	8.9	12.1	91.1
#100	0.6	0.5	4.3	2.1	6.8	97.9
LBW	0.5	0.4	1.0	0.7	1.4	99.3

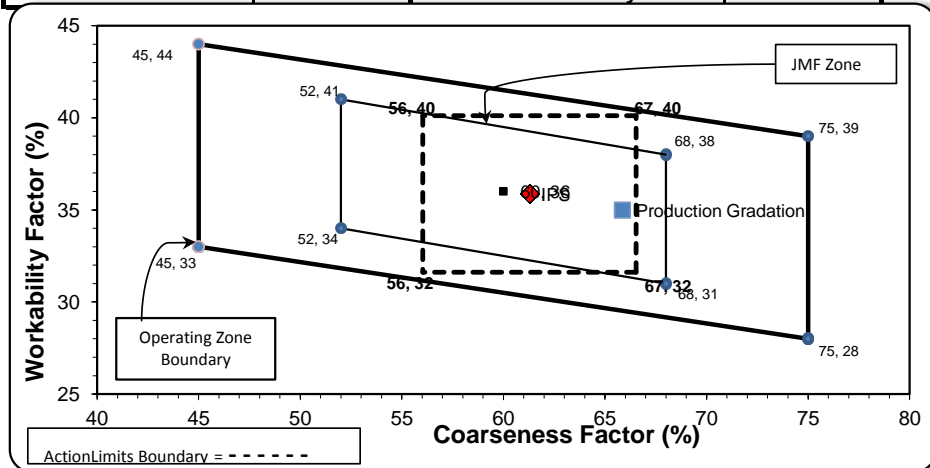


Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

*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: **66** Workability Factor: **35**



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-32**

Sample Date: 11/6/17

Concrete Grade: **DM**

Contractor: _____

Dates Test Represents: 11/6/2017 to 11/12/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1525	9.33	2.62	51.7
26A	71-47	Presque Isle	200	1.22	2.62	6.8
2NS	95-13	Smelter Bay	1225	7.41	2.65	41.5
Total Wt			2950	17.96		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"	91.2	100.0	100.0	95.5	4.5	4.5
1/2"	49.2	97.3	100.0	73.6	21.9	26.4
3/8"	24.9	84.8	100.0	60.1	13.4	39.9
#4	2.9	19.6	96.6	42.9	17.2	57.1
#8	1.7	4.4	82.7	35.5	7.4	64.5
#16	1.5	2.2	66.5	28.5	7.0	71.5
#30	1.4	1.7	46.3	20.1	8.5	79.9
#50	1.4	1.6	20.5	9.3	10.7	90.7
#100	1.3	1.5	6.6	3.5	5.8	96.5
LBW	1.1	1.3	1.6	1.3	2.2	98.7

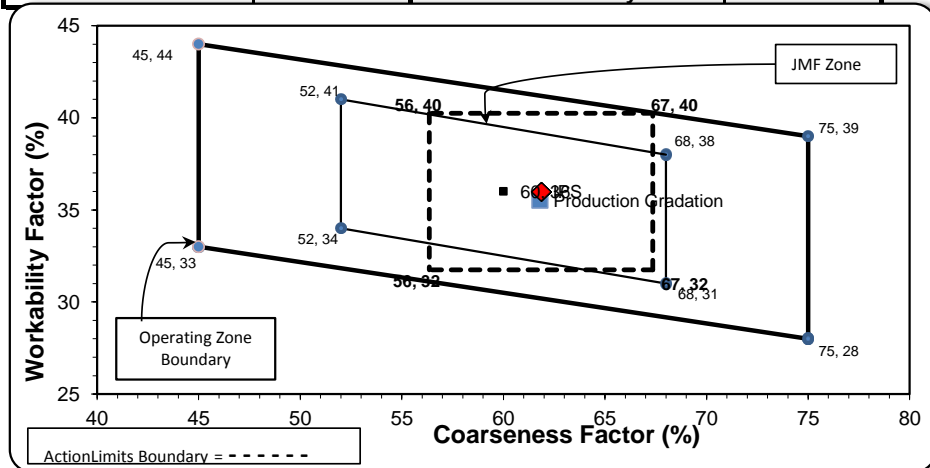


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Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 62 **Workability Factor: 36**



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"	100.0	0.0	0.0
3/4"	95.0	5.0	5.0
1/2"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	98.7

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Aggregate Optimization Chart

MIX ID'S: DDD0K7E7 and DDD0K7E9

Production Gradation Report

PLANT #: **P-38**

Sample Date: 11/6/17

Concrete Grade: **DM**

Contractor: _____

Dates Test Represents: 11/6/2017 to 11/12/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
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1"	99.8	100.0	100.0	99.9	0.1	0.1
3/4"	80.8	100.0	100.0	90.7	9.2	9.3
1/2"	39.6	99.6	100.0	70.7	20.0	29.3
3/8"	15.7	80.6	100.0	57.2	13.5	42.8
#4	1.9	8.4	95.9	41.5	15.6	58.5
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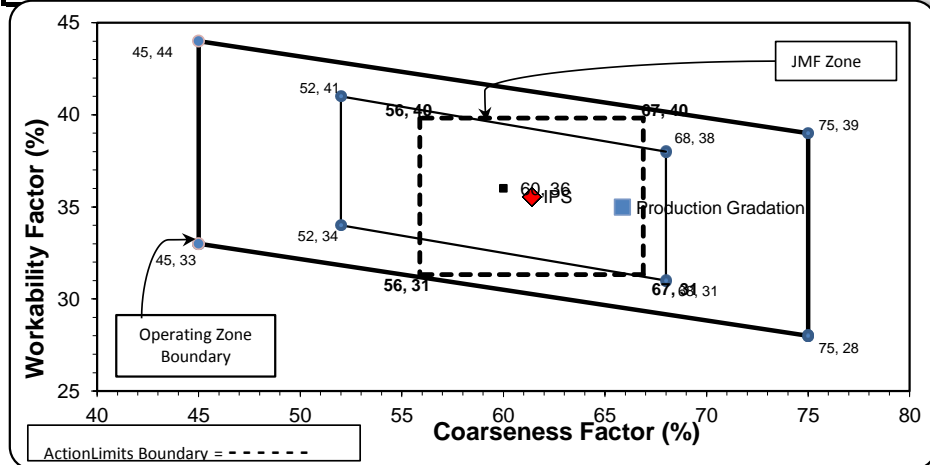


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1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.1	10.2	10.9
1/2"	70.5	18.6	29.5
3/8"	60.5	10.0	39.5
#4	44.1	16.4	55.9
#8	35.6	8.5	64.4
#16	27.7	7.9	72.3
#30	20.6	7.1	79.4
#50	8.7	11.8	91.3
#100	1.6	7.1	98.4
LBW	1.1	0.6	98.9

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