

Aggregate Optimization Chart

MIX ID'S: DDS257E7, DDS257E5 and DDS257E8

Production Gradation Report

PLANT #: **P-103**

Sample Date: 10/23/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 10/23/2017 to 10/29/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1700	10.13	2.69	53.9
26A	58-003	Stoneco	155	0.92	2.69	4.9
2NS	81-93	Burmeister	1300	7.89	2.64	41.2
Total Wt			3155	18.94		100.0

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



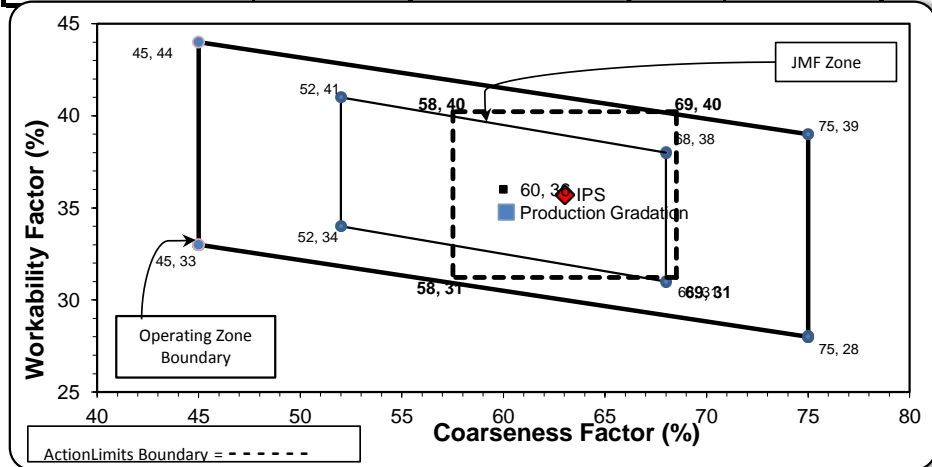
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	88.8	100.0	100.0	94.0	6.0	6.0
1/2"	51.7	99.2	100.0	73.9	20.0	26.1
3/8"	28.5	85.4	100.0	60.8	13.2	39.2
#4	4.9	21.5	95.4	43.0	17.8	57.0
#8	1.4	5.2	81.9	34.8	8.2	65.2
#16	1.1	1.9	67.4	28.5	6.3	71.5
#30	1.0	1.2	48.5	20.6	7.9	79.4
#50	1.0	1.0	20.7	9.1	11.5	90.9
#100	0.9	1.0	3.7	2.1	7.1	97.9
LBW	0.7	0.6	1.0	0.8	1.2	99.2

*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:	60	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"	99.2	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: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: P-32

Sample Date: 10/23/17

Concrete Grade: S2M

Contractor: _____

Dates Test Represents: 10/23/2017 to 10/29/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1700	10.40	2.62	54.7
26A	71-47	Presque Isle	150	0.92	2.62	4.8
2NS	95-13	Smelter Bay	1260	7.62	2.65	40.5
Total Wt			3110	18.94		100.0

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



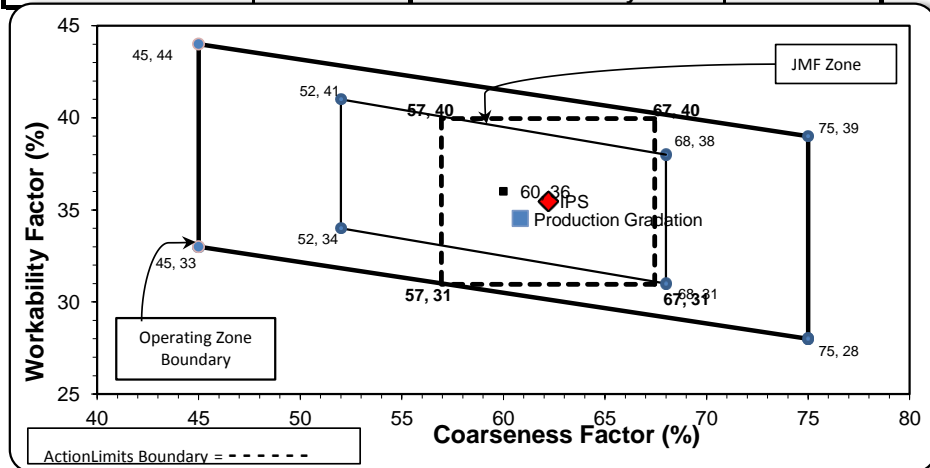
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	92.5	100.0	100.0	95.9	4.1	4.1
1/2"	52.6	97.5	100.0	74.0	21.9	26.0
3/8"	28.2	87.9	100.0	60.2	13.8	39.8
#4	3.9	21.8	96.4	42.2	17.9	57.8
#8	1.8	4.9	82.2	34.5	7.7	65.5
#16	1.5	2.3	65.8	27.6	6.9	72.4
#30	1.4	1.8	45.0	19.1	8.5	80.9
#50	1.4	1.7	20.4	9.1	10.0	90.9
#100	1.3	1.5	6.7	3.5	5.6	96.5
LBW	1.2	1.2	2.4	1.7	1.8	98.3

*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

Coarseness Factor:	61	Workability Factor:	35
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Initial Production Sample (IPS)

Coarseness Factor:	62		
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"	100.0	0.0	0.0
3/4"	94.0	6.0	6.0
1/2"	70.2	23.7	29.8
3/8"	59.9	10.4	40.1
#4	42.7	17.2	57.3
#8	35.5	7.2	64.5
#16	28.4	7.0	71.6
#30	19.2	9.2	80.8
#50	8.9	10.3	91.1
#100	3.1	5.9	96.9
LBW	1.4	1.7	98.6

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 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7, DDS257E5 and DDS257E8

Production Gradation Report

PLANT #: **P-38**

Sample Date: 10/23/17

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 10/23/2017 to 10/29/2017

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1700	10.13	2.69	53.9
26A	58-003	Stoneco	155	0.92	2.69	4.9
2NS	81-93	Burmeister	1300	7.89	2.64	41.2
Total Wt			3155	18.94		100.0

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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"	88.8	100.0	100.0	94.0	6.0	6.0
1/2"	51.7	99.2	100.0	73.9	20.0	26.1
3/8"	28.5	85.4	100.0	60.8	13.2	39.2
#4	4.9	21.5	95.4	43.0	17.8	57.0
#8	1.4	5.2	81.9	34.8	8.2	65.2
#16	1.1	1.9	67.4	28.5	6.3	71.5
#30	1.0	1.2	48.5	20.6	7.9	79.4
#50	1.0	1.0	20.7	9.1	11.5	90.9
#100	0.9	1.0	3.7	2.1	7.1	97.9
LBW	0.7	0.6	1.0	0.8	1.2	99.2

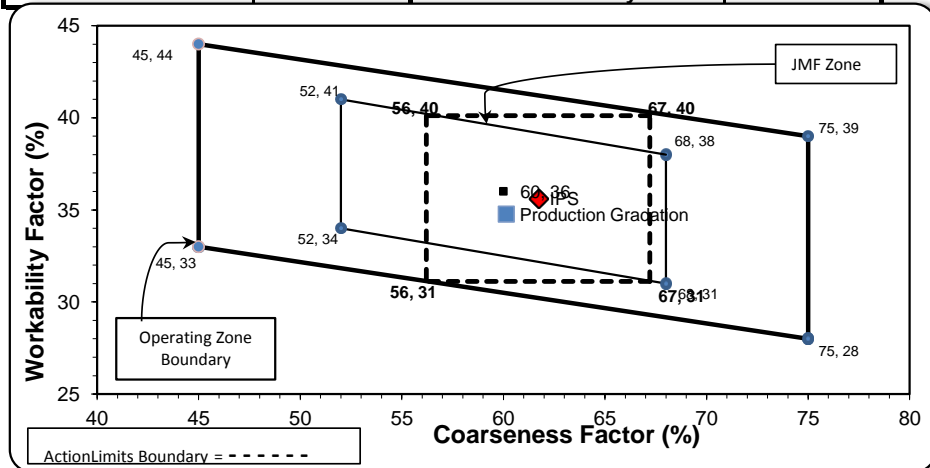


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Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **60** Workability Factor: **35**



Initial Production Sample (IPS)

Coarseness Factor: 62		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"	99.2	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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