

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-102**

Sample Date: 10/22/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 10/23/2018 through 10/29/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1900	11.32	2.69	60.1
26A	58-003	Stoneco	0	0.00	2.69	0.0
2NS	38-046	Chelsea	1260	7.62	2.65	39.9
Total Wt			3160	18.94		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"	88.2	100.0	100.0	92.9	7.1	7.1
1/2"	55.6	99.8	100.0	73.3	19.6	26.7
3/8"	33.8	87.8	100.0	60.2	13.1	39.8
#4	4.8	18.2	100.0	42.8	17.4	57.2
#8	1.3	4.4	89.0	36.3	6.5	63.7
#16	1.3	2.0	63.0	25.9	10.4	74.1
#30	1.1	1.4	40.0	16.6	9.3	83.4
#50	1.1	1.2	20.0	8.6	8.0	91.4
#100	1.0	1.2	5.0	2.6	6.0	97.4
LBW	0.7	1.0	0.9	0.8	1.8	99.2

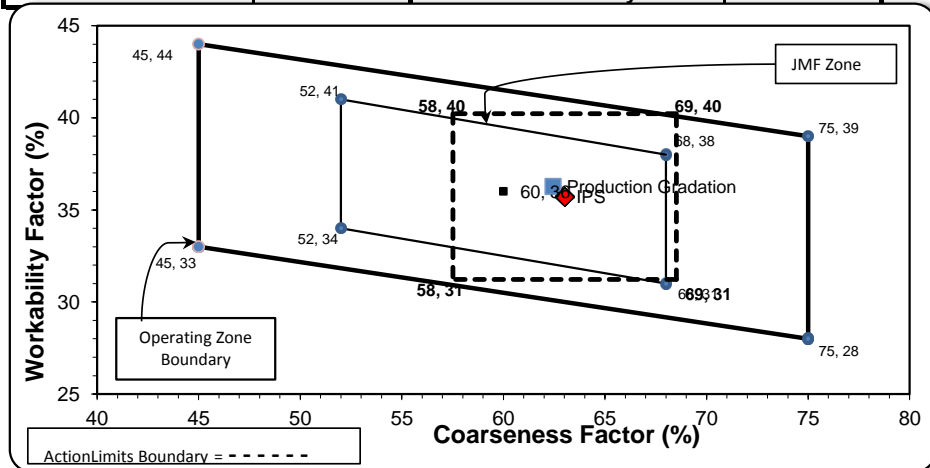
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.



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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

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



Initial Production Sample (IPS)

Coarseness Factor: 63		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"	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: 10/22/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 10/23/2018 through 10/29/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1880	11.50	2.62	60.5
26A	71-47	Presque Isle	0	0.00	2.62	0.0
2NS	95-13	Smelter Bay	1230	7.44	2.65	39.5
Total Wt			3110	18.94		100.0

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



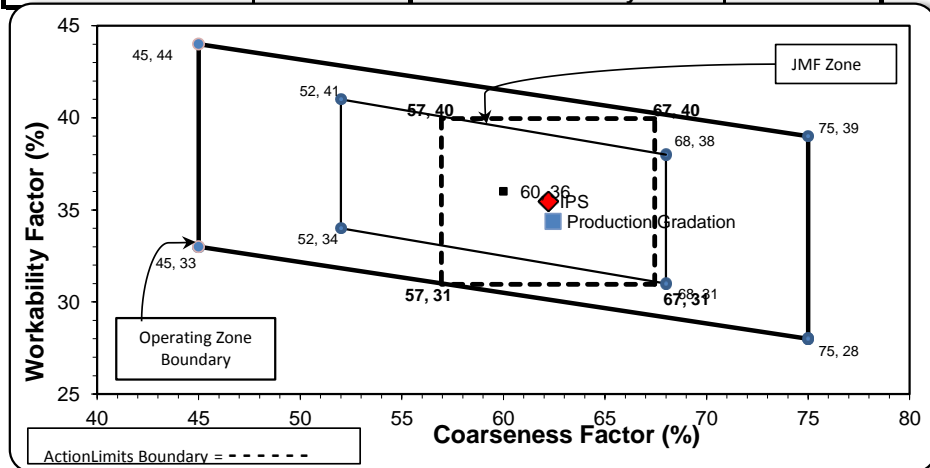
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.3	100.0	100.0	99.6	0.4	0.4
3/4"	88.4	100.0	100.0	93.0	6.6	7.0
1/2"	56.1	96.1	100.0	73.5	19.5	26.5
3/8"	32.2	81.4	100.0	59.0	14.4	41.0
#4	4.6	18.2	96.6	41.0	18.0	59.0
#8	2.1	6.0	83.7	34.4	6.6	65.6
#16	1.7	3.7	66.1	27.2	7.2	72.8
#30	1.6	3.1	44.5	18.6	8.6	81.4
#50	1.5	2.8	17.7	7.9	10.7	92.1
#100	1.4	2.5	3.7	2.3	5.6	97.7
LBW	1.2	1.8	0.9	1.1	1.2	98.9

*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: **62** Workability Factor: **34**



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

PREPARED BY:
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Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-36**

Sample Date: 10/22/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 10/23/2018 through 10/29/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1630	9.97	2.62	52.4
26A	71-47	Presque Isle	200	1.22	2.62	6.4
2NS	63-92	AA Grange Hall	1280	7.74	2.65	41.2
Total Wt			3110	18.93		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"	97.8	100.0	100.0	98.8	1.2	1.2
3/4"	81.6	100.0	100.0	90.4	8.5	9.6
1/2"	40.9	96.1	100.0	68.8	21.6	31.2
3/8"	20.9	81.4	100.0	57.3	11.4	42.7
#4	4.0	18.2	97.2	43.3	14.1	56.7
#8	2.5	6.0	84.1	36.3	7.0	63.7
#16	2.2	3.7	69.0	29.8	6.5	70.2
#30	2.0	3.1	50.8	22.2	7.6	77.8
#50	2.0	2.8	23.3	10.8	11.3	89.2
#100	1.8	2.5	3.4	2.5	8.3	97.5
LBW	1.5	1.8	0.3	1.0	1.5	99.0

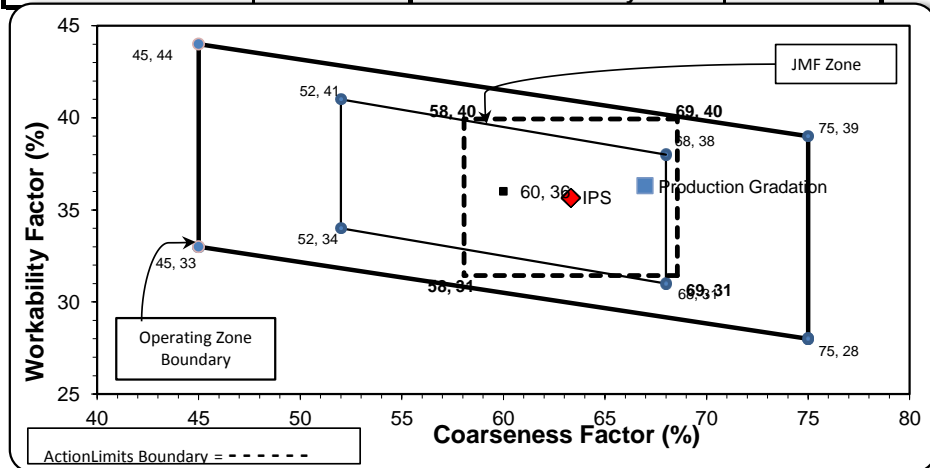


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*Maximum % Retained must be above the 3/8" sieve.
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 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 67 **Workability Factor: 36**



Initial Production Sample (IPS)

Coarseness Factor: 63		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"	100.0	0.0	0.0
3/4"	95.6	4.4	4.4
1/2"	73.1	22.6	26.9
3/8"	59.3	13.8	40.7
#4	42.8	16.5	57.2
#8	35.7	7.1	64.3
#16	28.9	6.8	71.1
#30	20.7	8.2	79.3
#50	9.9	10.8	90.1
#100	2.1	7.8	97.9
LBW	0.9	1.2	99.1

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

MIX ID'S: DDS257E7 and DDS257E8

Production Gradation Report

PLANT #: **P-O2**

Sample Date: 10/22/18

Concrete Grade: **S2M**

Contractor: _____

Dates Test Represents: 10/23/2018 through 10/29/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1630	9.97	2.62	52.4
26A	71-47	Presque Isle	200	1.22	2.62	6.4
2NS	63-92	AA Grange Hall	1280	7.74	2.65	41.2
Total Wt			3110	18.93		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"	97.8	100.0	100.0	98.8	1.2	1.2
3/4"	81.6	100.0	100.0	90.4	8.5	9.6
1/2"	40.9	96.1	100.0	68.8	21.6	31.2
3/8"	20.9	81.4	100.0	57.3	11.4	42.7
#4	4.0	18.2	97.2	43.3	14.1	56.7
#8	2.5	6.0	84.1	36.3	7.0	63.7
#16	2.2	3.7	69.0	29.8	6.5	70.2
#30	2.0	3.1	50.8	22.2	7.6	77.8
#50	2.0	2.8	23.3	10.8	11.3	89.2
#100	1.8	2.5	3.4	2.5	8.3	97.5
LBW	1.5	1.8	0.3	1.0	1.5	99.0

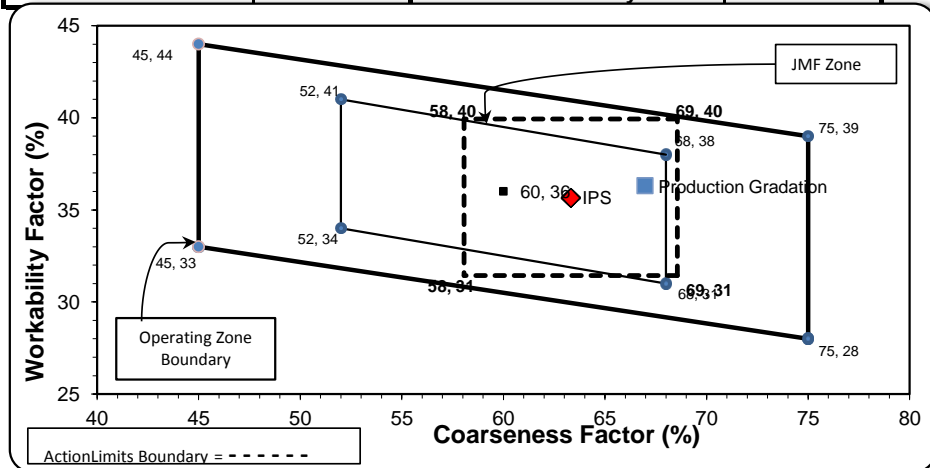


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Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 67 **Workability Factor: 36**



Initial Production Sample (IPS)

Coarseness Factor: 63		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"	100.0	0.0	0.0
3/4"	95.6	4.4	4.4
1/2"	73.1	22.6	26.9
3/8"	59.3	13.8	40.7
#4	42.8	16.5	57.2
#8	35.7	7.1	64.3
#16	28.9	6.8	71.1
#30	20.7	8.2	79.3
#50	9.9	10.8	90.1
#100	2.1	7.8	97.9
LBW	0.9	1.2	99.1

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