

Aggregate Optimization Chart

MIX ID'S: DDP154E7, DDP154E8, DDP164E7 and DDP164E8

Production Gradation Report

PLANT #: **P-101**

Sample Date: 5/14/18

Concrete Grade: **P1M**

Contractor: _____

Dates Test Represents: 5/15/2018 to 5/21/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	950	5.81	2.62	30.9
IA	71-47	Presque Isle	800	4.89	2.62	26.1
2NS	63-115	Ray Road	1320	7.98	2.65	43.0
Total Wt			3070	18.69		100.0

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



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

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	99.0	100.0	100.0	99.7	0.3	0.3
1"	53.0	100.0	100.0	85.5	14.2	14.5
3/4"	19.3	98.9	100.0	74.7	10.7	25.3
1/2"	2.7	81.1	100.0	65.0	9.8	35.0
3/8"	1.5	54.4	100.0	57.6	7.3	42.4
#4	1.2	10.3	96.8	44.7	13.0	55.3
#8	1.2	3.7	78.3	35.0	9.7	65.0
#16	1.2	2.5	59.7	26.7	8.3	73.3
#30	1.1	2.2	43.7	19.7	7.0	80.3
#50	1.1	2.0	22.7	10.6	9.1	89.4
#100	1.1	1.9	5.2	3.1	7.6	96.9
LBW	0.9	1.6	0.6	1.0	2.1	99.0

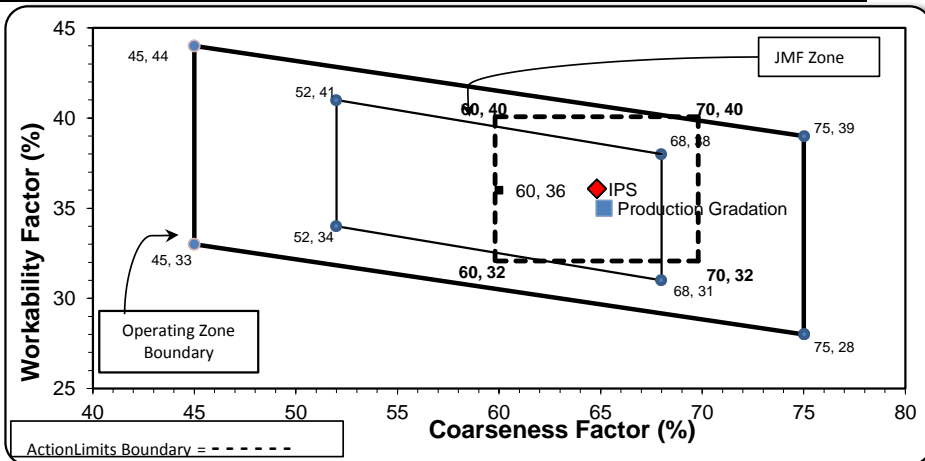
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor:	65	Workability Factor:	35
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Initial Production Sample (IPS)

Coarseness Factor:	65		
Workability Factor:	36		
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.3	0.7	0.7
1"	83.6	15.7	16.4
3/4"	73.0	10.6	27.0
1/2"	65.1	7.9	34.9
3/8"	58.6	6.5	41.4
#4	45.8	12.8	54.2
#8	36.1	9.7	63.9
#16	28.8	7.3	71.2
#30	21.7	7.1	78.3
#50	10.3	11.4	89.7
#100	3.1	7.2	96.9
LBW	1.3	1.8	98.7



PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

MIX ID'S: DDP154E7 and DDP154E8

Production Gradation Report

PLANT #: **P-36**

Sample Date: 5/14/18

Concrete Grade: **P1M**

Contractor: _____

Dates Test Represents: 5/15/2018 to 5/21/2018

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	950	5.81	2.62	30.6
IA	71-47	Presque Isle	950	5.81	2.62	30.6
2NS	63-92	AA Grange Hall	1200	7.26	2.65	38.7
Total Wt			3100	18.88		100.0

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



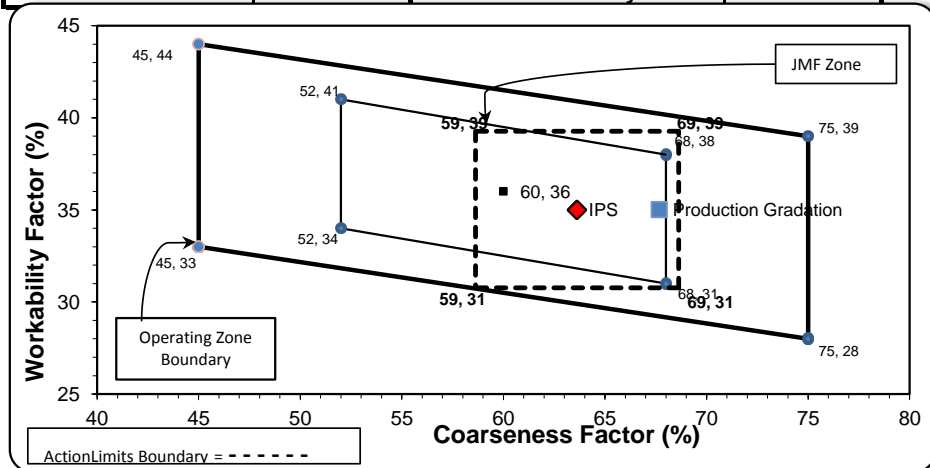
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	93.8	100.0	100.0	98.1	1.9	1.9
1"	38.2	100.0	100.0	81.1	17.0	18.9
3/4"	11.6	97.4	100.0	72.1	8.9	27.9
1/2"	2.8	76.6	100.0	63.0	9.1	37.0
3/8"	2.0	54.5	100.0	56.0	7.0	44.0
#4	1.8	10.6	97.9	41.7	14.3	58.3
#8	1.8	3.2	86.5	35.0	6.7	65.0
#16	1.6	2.4	71.4	28.9	6.2	71.1
#30	1.6	2.2	50.6	20.8	8.1	79.2
#50	1.6	2.0	21.8	9.5	11.2	90.5
#100	1.4	2.0	2.6	2.0	7.5	98.0
LBW	1.2	1.5	0.3	0.9	1.1	99.1

*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:	68	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"	99.4	0.6	0.6
1"	84.6	14.7	15.4
3/4"	74.4	10.3	25.6
1/2"	66.0	8.4	34.0
3/8"	58.7	7.4	41.3
#4	44.6	14.0	55.4
#8	35.0	9.6	65.0
#16	27.6	7.4	72.4
#30	19.5	8.1	80.5
#50	8.6	11.0	91.4
#100	2.0	6.6	98.0
LBW	0.9	1.1	99.1

PREPARED BY:
 SM, LLC Technical Service

Approved By: