

Aggregate Optimization Chart

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

Production Gradation Report

PLANT #: **P-101**

Sample Date: 5/15/17

Concrete Grade: **P1M**

Contractor: _____

Dates Test Represents: 5/15/2017 to 5/21/2017

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	820	5.02	2.62	26.7
2NS	63-115	Ray Road	1300	7.86	2.65	42.3
Total Wt			3070	18.69		100.0

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

Sieve	CA	IA	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"	54.5	100.0	100.0	85.9	14.1	14.1
3/4"	14.7	97.9	100.0	73.0	12.9	27.0
1/2"	3.9	79.8	100.0	64.9	8.2	35.1
3/8"	3.1	54.6	100.0	57.9	7.0	42.1
#4	2.4	9.1	97.7	44.5	13.3	55.5
#8	2.2	3.4	79.2	35.1	9.4	64.9
#16	2.1	2.7	59.4	26.5	8.6	73.5
#30	2.1	2.6	42.9	19.5	7.0	80.5
#50	2.0	2.4	21.4	10.3	9.2	89.7
#100	1.9	2.3	4.3	3.0	7.3	97.0
LBW	1.5	2.1	0.5	1.2	1.8	98.8

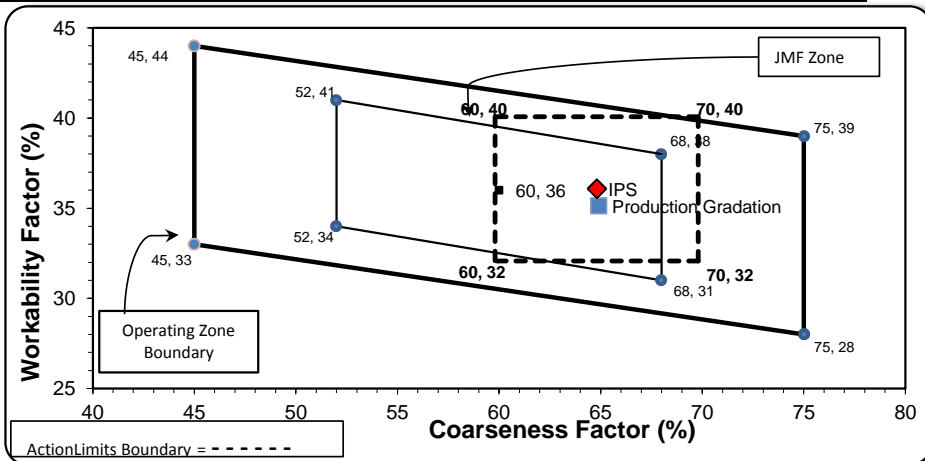


Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

*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:	65	Workability Factor:	35
---------------------------	-----------	----------------------------	-----------



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, DDP154E8, DDP164E7 and DDP164E8

Production Gradation Report

PLANT #: **P-39**

Sample Date: 5/15/17

Concrete Grade: **P1M**

Contractor: _____

Dates Test Represents: 5/15/2017 to 5/21/2017

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	820	5.02	2.62	26.7
2NS	63-115	Ray Road	1300	7.86	2.65	42.3
Total Wt			3070	18.69		100.0

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

Sieve	CA	IA	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"	54.5	100.0	100.0	85.9	14.1	14.1
3/4"	14.7	97.9	100.0	73.0	12.9	27.0
1/2"	3.9	79.8	100.0	64.9	8.2	35.1
3/8"	3.1	54.6	100.0	57.9	7.0	42.1
#4	2.4	9.1	97.7	44.5	13.3	55.5
#8	2.2	3.4	79.2	35.1	9.4	64.9
#16	2.1	2.7	59.4	26.5	8.6	73.5
#30	2.1	2.6	42.9	19.5	7.0	80.5
#50	2.0	2.4	21.4	10.3	9.2	89.7
#100	1.9	2.3	4.3	3.0	7.3	97.0
LBW	1.5	2.1	0.5	1.2	1.8	98.8

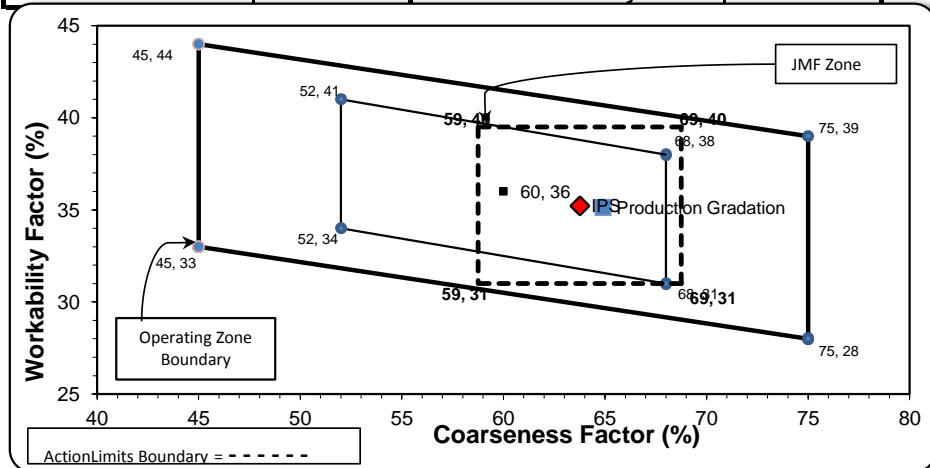


Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

*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:	65	Workability Factor:	35
---------------------------	-----------	----------------------------	-----------



Initial Production Sample (IPS)

Coarseness Factor:		64	
Workability Factor:		35	
Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.4	0.6	0.6
1"	84.3	15.1	15.7
3/4"	73.9	10.4	26.1
1/2"	65.7	8.2	34.3
3/8"	58.7	7.0	41.3
#4	45.1	13.6	54.9
#8	35.3	9.8	64.7
#16	28.1	7.2	71.9
#30	21.2	6.9	78.8
#50	10.1	11.1	89.9
#100	3.1	7.0	96.9
LBW	1.4	1.7	98.6

PREPARED BY:
 SM, LLC Technical Service

Approved By: