

Aggregate Optimization Chart

PLANT #: **P-36**

Sample Date: 1/20/20

Concrete Grade: **TM**

Contractor: _____

Dates Test Represents: 1/21/2020 through 1/27/2020

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1390	8.50	2.62	48.1
26A	71-47	Presque Isle	400	2.45	2.62	13.8
2NS	63-92	Grange Hall	1100	6.65	2.65	38.1
Total Wt			2890	17.60		100.0

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



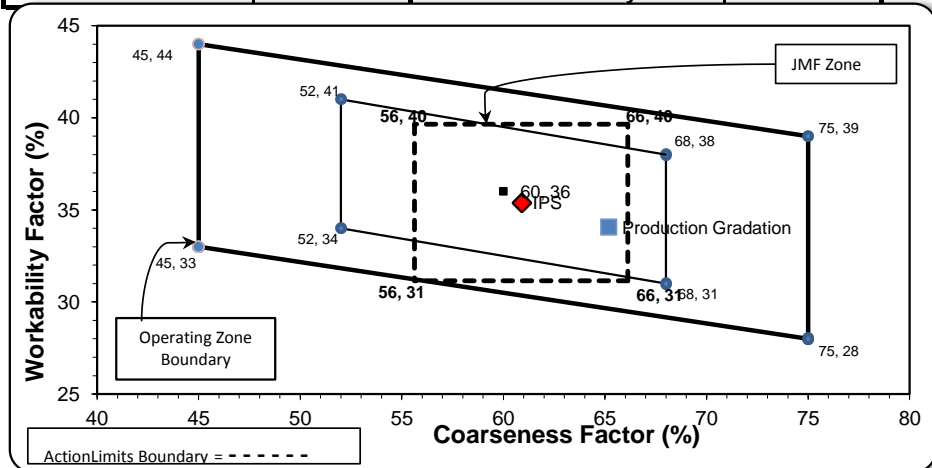
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	98.9	100.0	100.0	99.5	0.5	0.5
3/4"	78.4	100.0	100.0	89.6	9.9	10.4
1/2"	35.7	96.3	100.0	68.6	21.0	31.4
3/8"	16.9	78.2	100.0	57.0	11.5	43.0
#4	2.5	20.4	97.5	41.1	15.9	58.9
#8	2.0	5.9	84.8	34.1	7.1	65.9
#16	1.6	3.2	69.9	27.8	6.2	72.2
#30	1.5	2.6	51.7	20.8	7.1	79.2
#50	1.5	2.4	23.2	9.9	10.9	90.1
#100	1.4	2.1	4.3	2.6	7.3	97.4
LBW	0.8	1.4	0.3	0.7	1.9	99.3

*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:	65	Workability Factor:	34
---------------------------	-----------	----------------------------	-----------



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"	99.1	0.9	0.9
3/4"	90.8	8.3	9.2
1/2"	70.6	20.2	29.4
3/8"	60.7	9.9	39.3
#4	42.3	18.4	57.7
#8	35.4	6.9	64.6
#16	28.7	6.7	71.3
#30	21.3	7.4	78.7
#50	8.8	12.5	91.2
#100	1.8	7.0	98.2
LBW	0.8	1.0	99.2

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-39**

Sample Date: 1/20/20

Concrete Grade: **TM**

Contractor: _____

Dates Test Represents: 1/21/2020 through 1/27/2020

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1540	9.42	2.62	53.3
26A	71-47	Presque Isle	200	1.22	2.62	6.9
2NS	63-92	Grange Hall	1150	6.95	2.65	39.8
Total Wt			2890	17.60		100.0

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



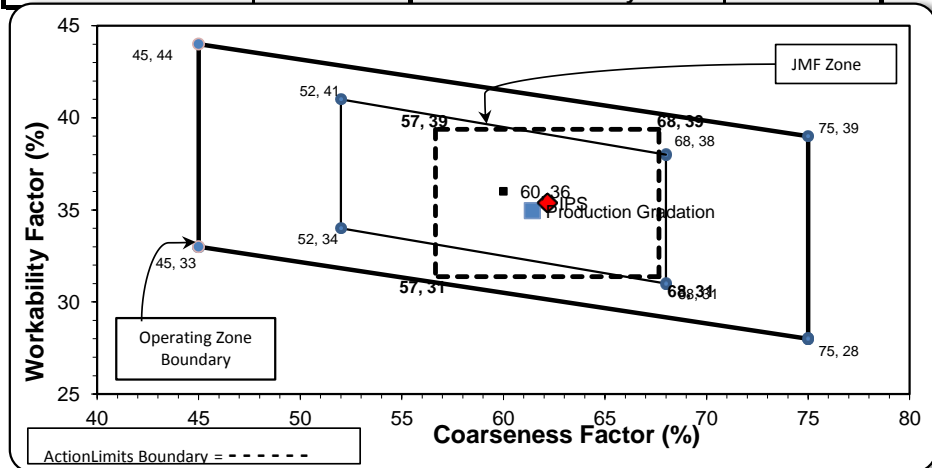
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	89.4	100.0	100.0	94.4	5.6	5.6
1/2"	46.5	96.7	100.0	71.3	23.1	28.7
3/8"	26.6	87.8	100.0	60.0	11.2	40.0
#4	2.9	18.8	97.5	41.6	18.4	58.4
#8	1.5	6.0	84.8	35.0	6.7	65.0
#16	1.3	3.0	69.9	28.7	6.2	71.3
#30	1.3	2.3	51.7	21.4	7.3	78.6
#50	1.2	2.1	23.2	10.0	11.4	90.0
#100	1.2	2.0	4.3	2.5	7.5	97.5
LBW	1.1	1.8	0.3	0.8	1.7	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:	61	Workability Factor:	35
---------------------------	-----------	----------------------------	-----------



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"	89.9	10.1	10.1
1/2"	70.9	19.0	29.1
3/8"	59.8	11.1	40.2
#4	42.8	17.0	57.2
#8	35.4	7.4	64.6
#16	28.8	6.5	71.2
#30	21.1	7.7	78.9
#50	9.7	11.4	90.3
#100	3.7	6.1	96.3
LBW	1.2	2.4	98.8

PREPARED BY:
 SM, LLC Technical Service

Approved By: