

Aggregate Optimization Chart

PLANT #: **P-36**

Sample Date: 3/2/20

Concrete Grade: **TM**

Contractor: _____

Dates Test Represents: 3/3/2020 through 3/9/2020

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1690	10.34	2.62	58.5
26A	71-47	Presque Isle	100	0.61	2.62	3.5
2NS	63-92	Grange Hall	1100	6.65	2.65	38.1
Total Wt			2890	17.60		100.0

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



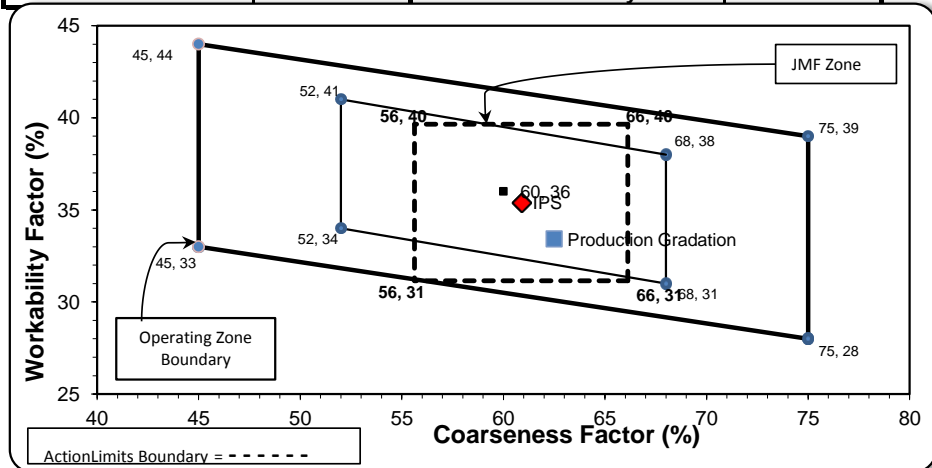
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	99.2	100.0	100.0	99.5	0.5	0.5
3/4"	86.8	100.0	100.0	92.3	7.3	7.7
1/2"	53.0	99.0	100.0	72.5	19.8	27.5
3/8"	30.3	75.4	100.0	58.4	14.1	41.6
#4	5.1	16.4	97.2	40.5	17.8	59.5
#8	2.3	6.4	83.7	33.4	7.1	66.6
#16	1.9	4.2	68.7	27.4	6.0	72.6
#30	1.8	3.6	49.3	19.9	7.5	80.1
#50	1.7	3.3	19.7	8.6	11.3	91.4
#100	1.6	3.1	2.9	2.1	6.5	97.9
LBW	1.3	2.6	0.3	1.0	1.2	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:	63	Workability Factor:	33
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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"	99.1	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: 3/2/20 Concrete Grade: **TM**
 Dates Test Represents: 3/3/2020 through 3/9/2020

Contractor: _____

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%



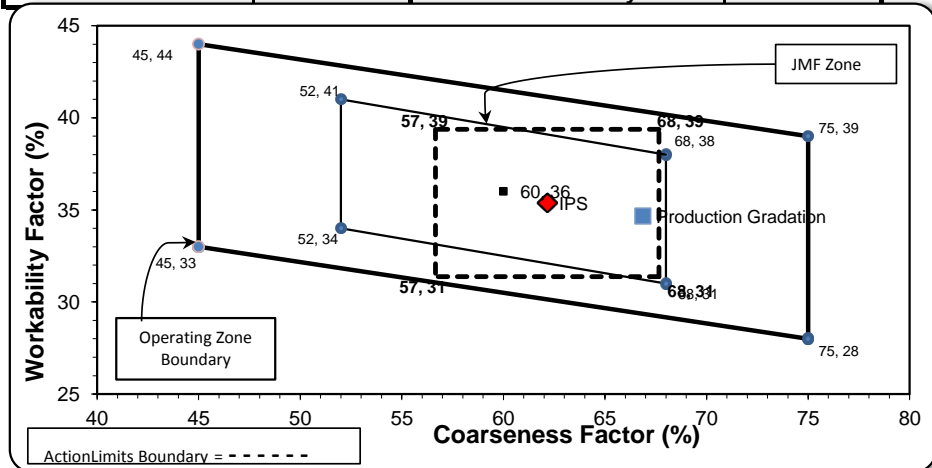
Superior Materials, LLC
 30701 W. 10 Mile Rd.
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Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.3	100.0	100.0	99.6	0.4	0.4
3/4"	87.0	100.0	100.0	93.1	6.6	6.9
1/2"	42.6	99.0	100.0	69.3	23.7	30.7
3/8"	21.2	75.4	100.0	56.3	13.0	43.7
#4	2.7	16.4	97.2	41.3	15.1	58.7
#8	1.7	6.4	83.7	34.7	6.6	65.3
#16	1.5	4.2	68.7	28.4	6.2	71.6
#30	1.5	3.6	49.3	20.7	7.8	79.3
#50	1.4	3.3	19.7	8.8	11.9	91.2
#100	1.4	3.1	2.9	2.1	6.7	97.9
LBW	1.2	2.6	0.3	0.9	1.2	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:	67	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"	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

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 SM, LLC Technical Service

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