

Aggregate Optimization Chart

PLANT #: **P-32**

Sample Date: 2/8/21 Concrete Grade: **S2M**

Dates Test Represents: 2/9/2021 through 2/15/2021

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1470	8.99	2.62	48.2
26A	71-47	Presque Isle	350	2.14	2.62	11.5
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
Total Wt			3050	18.57		100.0

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



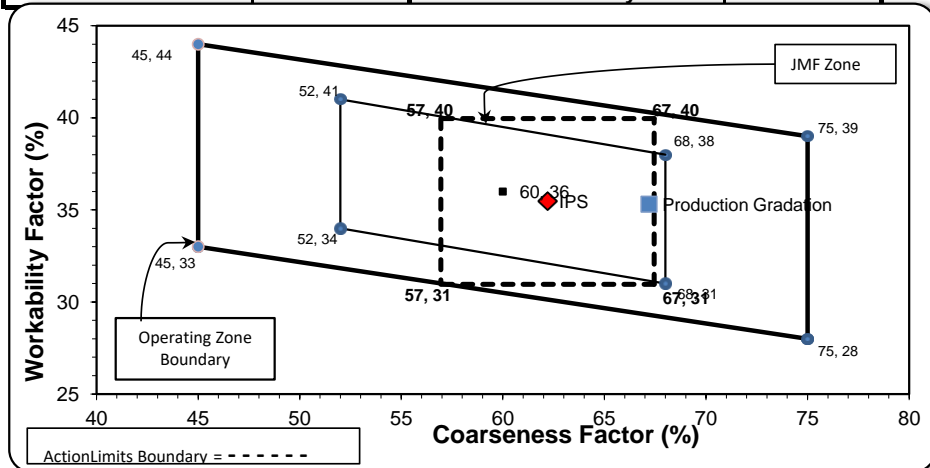
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	98.1	100.0	100.0	99.1	0.9	0.9
3/4"	71.8	100.0	100.0	86.4	12.7	13.6
1/2"	30.9	97.0	100.0	66.4	20.1	33.6
3/8"	15.2	77.4	100.0	56.5	9.8	43.5
#4	2.6	10.5	96.7	41.5	15.1	58.5
#8	1.5	3.8	84.7	35.3	6.1	64.7
#16	1.3	2.6	71.2	29.6	5.7	70.4
#30	1.2	2.2	50.1	21.0	8.6	79.0
#50	1.0	2.1	19.0	8.4	12.6	91.6
#100	0.9	1.9	4.5	2.5	5.9	97.5
LBW	0.6	1.7	1.3	1.0	1.5	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: **67** **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"	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:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-02**

Sample Date: 2/8/21 Concrete Grade: **S2M**
 Dates Test Represents: 2/9/2021 through 2/15/2021

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1450	8.87	2.62	47.5
26A	71-47	Presque Isle	300	1.83	2.62	9.8
2NS	63-115	Ray Rd	1300	7.86	2.65	42.6
Total Wt			3050	18.57		100.0

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



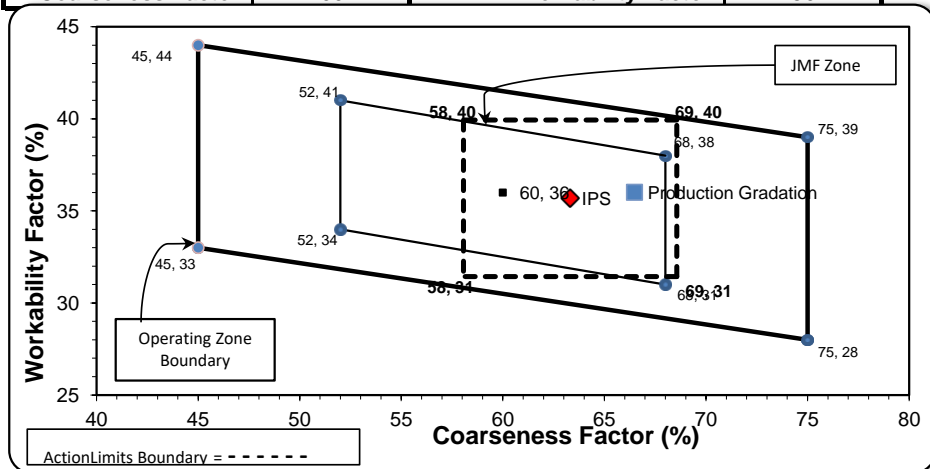
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

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"	99.1	100.0	100.0	99.6	0.4	0.4
3/4"	80.3	100.0	100.0	90.6	8.9	9.4
1/2"	33.8	97.0	100.0	68.2	22.4	31.8
3/8"	15.2	77.4	100.0	57.5	10.8	42.5
#4	2.2	10.5	97.1	43.5	14.0	56.5
#8	1.8	3.8	81.6	36.0	7.5	64.0
#16	1.7	2.6	66.4	29.4	6.6	70.6
#30	1.7	2.2	50.0	22.3	7.0	77.7
#50	1.6	2.1	23.1	10.8	11.5	89.2
#100	1.5	1.9	3.6	2.4	8.4	97.6
LBW	1.3	1.7	0.6	1.0	1.4	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:	66	Workability Factor:	36
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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"	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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 SM, LLC Technical Service

Approved By: