

# Aggregate Optimization Chart

**PLANT #:** **P-32**

Sample Date: 1/4/21 Concrete Grade: **S2M**

Dates Test Represents: 1/5/2021 through 1/11/2021

Contractor: \_\_\_\_\_

MDOT No.: \_\_\_\_\_

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1620	9.91	2.62	53.1
26A	71-47	Presque Isle	200	1.22	2.62	6.6
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
<b>Total Wt</b>			<b>3050</b>	<b>18.57</b>		<b>100.0</b>

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



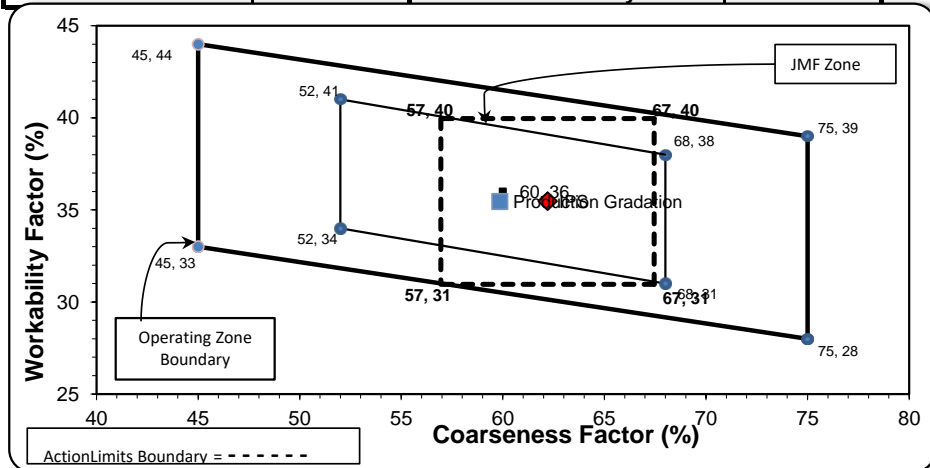
**Superior Materials, LLC**  
 30701 W. 10 Mile Rd.  
 Suite 500  
 Farmington Hills, MI 48336

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"	81.7	100.0	100.0	90.3	9.7	9.7
1/2"	47.5	96.2	100.0	71.9	18.4	28.1
3/8"	29.9	78.7	100.0	61.4	10.5	38.6
#4	7.5	9.9	96.3	43.5	17.9	56.5
#8	3.5	3.2	82.8	35.5	8.0	64.5
#16	2.8	2.3	66.9	28.6	6.8	71.4
#30	2.6	2.0	46.2	20.1	8.5	79.9
#50	2.4	1.9	19.9	9.4	10.7	90.6
#100	2.2	1.7	4.3	3.0	6.4	97.0
LBW	1.7	1.4	1.0	1.4	1.6	98.6

\*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: **60** 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: 1/4/21 Concrete Grade: **S2M**  
 Dates Test Represents: 1/5/2021 through 1/11/2021

Contractor: \_\_\_\_\_

MDOT No.: \_\_\_\_\_

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1350	8.26	2.62	44.3
26A	71-47	Presque Isle	400	2.45	2.62	13.1
2NS	63-115	Ray Rd	1300	7.86	2.65	42.6
<b>Total Wt</b>			<b>3050</b>	<b>18.57</b>		<b>100.0</b>

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



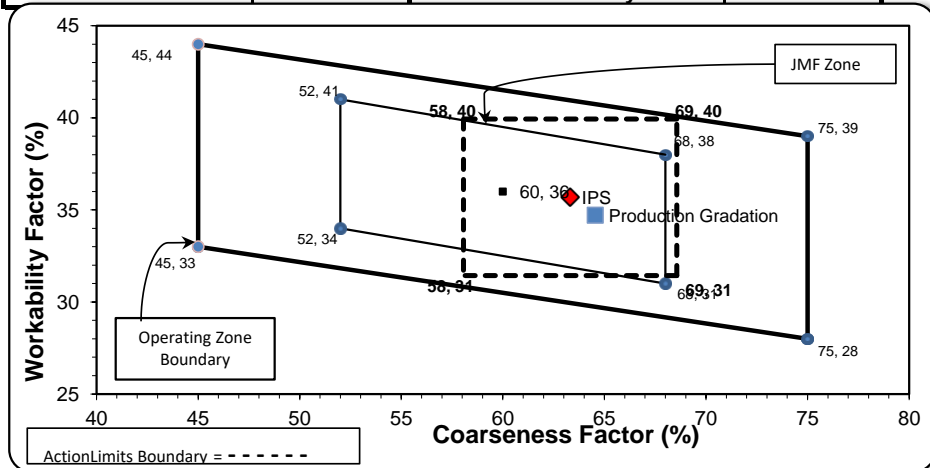
**Superior Materials, LLC**  
 30701 W. 10 Mile Rd.  
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 Farmington Hills, MI 48336

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"	96.9	100.0	100.0	98.6	1.4	1.4
3/4"	68.9	100.0	100.0	86.2	12.4	13.8
1/2"	35.1	96.2	100.0	70.8	15.5	29.2
3/8"	11.1	78.7	100.0	57.9	12.9	42.1
#4	6.0	9.9	95.4	44.6	13.2	55.4
#8	4.3	3.2	76.0	34.7	9.9	65.3
#16	3.4	2.3	58.8	26.9	7.8	73.1
#30	2.8	2.0	43.2	19.9	7.0	80.1
#50	2.4	1.9	19.8	9.8	10.2	90.2
#100	2.0	1.7	4.2	2.9	6.9	97.1
LBW	1.6	1.4	0.4	1.1	1.8	98.9

\*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:** **63**  
**Workability Factor:** **36**

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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