

# Aggregate Optimization Chart

## Production Gradation Report

**PLANT #:** **P-101**

Sample Date: 8/16/21

Concrete Grade: **DM**

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

Dates Test Represents: 8/17/2021 through 8/23/2021

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1560	9.54	2.62	53.6
26A	71-47	Presque Isle	200	1.22	2.62	6.9
2NS	75-051	Mid-Michigan	1150	6.93	2.66	39.5
<b>Total Wt</b>			<b>2910</b>	<b>17.69</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"	99.4	100.0	100.0	99.7	0.3	0.3
3/4"	88.7	100.0	100.0	93.9	5.7	6.1
1/2"	45.6	97.6	100.0	70.7	23.3	29.3
3/8"	25.8	88.2	100.0	59.4	11.3	40.6
#4	3.5	19.5	99.3	42.5	17.0	57.5
#8	1.8	4.8	82.5	33.9	8.6	66.1
#16	1.6	2.5	65.8	27.0	6.9	73.0
#30	1.5	2.2	49.4	20.5	6.6	79.5
#50	1.4	2.0	24.2	10.5	10.0	89.5
#100	1.3	1.8	5.7	3.1	7.4	96.9
LBW	1.2	1.6	0.7	1.0	2.0	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.

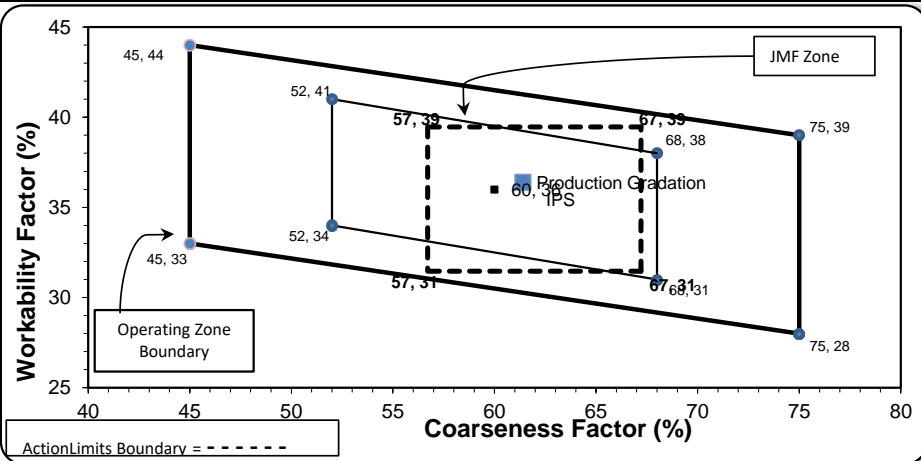
Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>61</b>	<b>Workability Factor:</b>	<b>34</b>	<b>Adjusted WF</b>	<b>36.4</b>
---------------------------	-----------	----------------------------	-----------	--------------------	-------------

<b>Coarseness Factor:</b>	<b>62</b>
<b>Workability Factor:</b>	<b>35</b>

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"	95.0	5.0	5.0
1/2"	70.5	24.5	29.5
3/8"	60.0	10.5	40.0
#4	44.4	15.6	55.6
#8	35.5	9.0	64.5
#16	28.5	7.0	71.5
#30	21.5	7.0	78.5
#50	10.2	11.3	89.8
#100	3.1	7.1	96.9
LBW	1.3	1.8	98.7



PREPARED BY:  
 SM, LLC Technical Service

Approved By:

# Aggregate Optimization Chart

**PLANT #:** **P-102**

Sample Date: 8/16/21

Concrete Grade: **DM**

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

Dates Test Represents: 8/17/2021 through 8/23/2021

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1550	9.23	2.69	52.5
26A	58-003	Stoneco	255	1.52	2.69	8.6
2NS	63-114	Highland	1150	6.95	2.65	38.9
<b>Total Wt</b>			<b>2955</b>	<b>17.71</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"	88.0	100.0	100.0	93.7	6.3	6.3
1/2"	49.2	99.6	100.0	73.3	20.4	26.7
3/8"	26.1	89.2	100.0	60.3	13.0	39.7
#4	4.1	9.5	99.2	41.6	18.7	58.4
#8	1.4	2.3	83.0	33.2	8.3	66.8
#16	1.1	1.5	63.5	25.4	7.8	74.6
#30	1.0	1.2	43.8	17.7	7.7	82.3
#50	0.8	1.2	21.9	9.0	8.6	91.0
#100	0.8	1.1	5.2	2.5	6.5	97.5
LBW	0.6	0.8	0.9	0.7	1.8	99.3

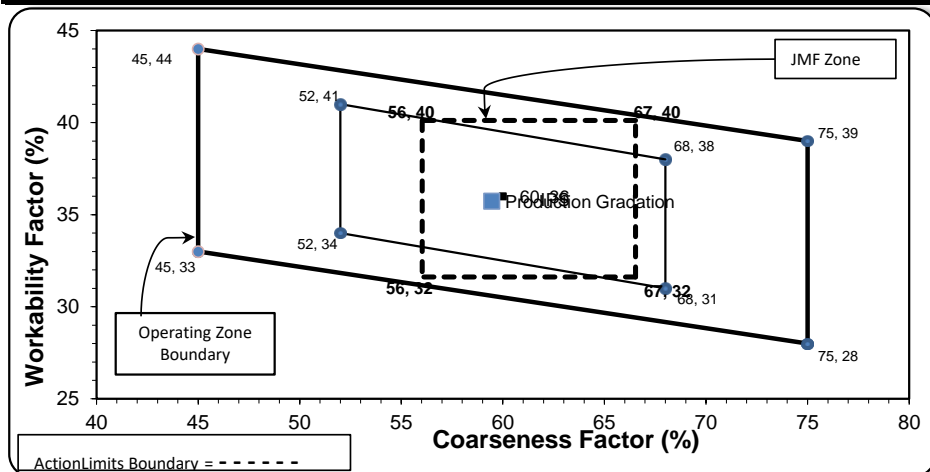
\*Maximum % Retained must be above the 3/8" sieve.  
 \*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.  
 \*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.  
 \*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>59</b>	<b>Workability Factor:</b>	<b>33</b>	<b>35.7</b>	<b>Coarseness Factor:</b>	<b>61</b>
---------------------------	-----------	----------------------------	-----------	-------------	---------------------------	-----------

<b>Workability Factor:</b>	<b>36</b>
----------------------------	-----------



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

PREPARED BY:  
 SM, LLC Technical Service

Approved By:

# Aggregate Optimization Chart

**PLANT #:** **P-20**

Sample Date: 8/16/21 Concrete Grade: DM  
 Dates Test Represents: 8/17/2021 through 8/23/2021

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

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



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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1705	10.43	2.62	58.7
26A	71-47	Presque Isle	100	0.61	2.62	3.4
2NS	63-92	Grange Hall	1100	6.65	2.65	37.9
<b>Total Wt</b>			<b>2905</b>	<b>17.69</b>		<b>100.0</b>

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

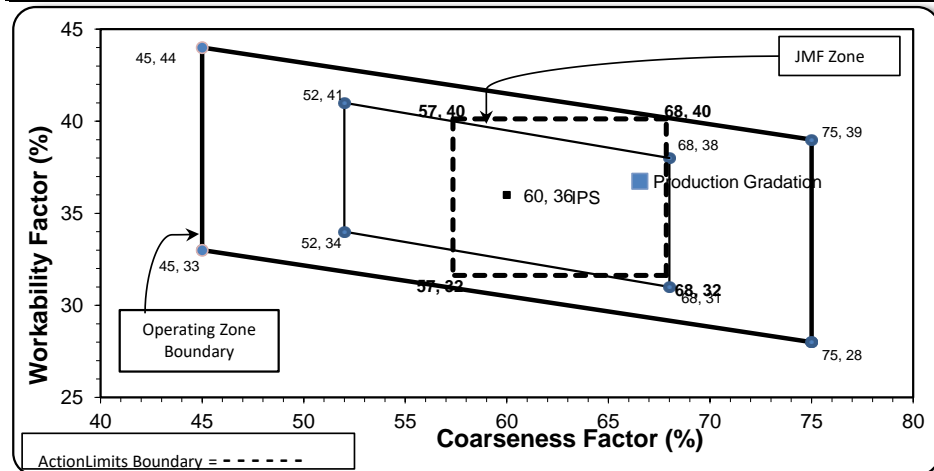
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	96.3	100.0	100.0	97.8	2.2	2.2
3/4"	79.0	100.0	100.0	87.7	10.2	12.3
1/2"	45.4	97.4	100.0	67.9	19.8	32.1
3/8"	26.0	90.7	100.0	56.2	11.6	43.8
#4	4.8	28.7	98.3	41.0	15.2	59.0
#8	2.4	8.1	86.0	34.3	6.8	65.7
#16	2.0	3.3	70.7	28.1	6.2	71.9
#30	1.8	2.3	49.2	19.8	8.3	80.2
#50	1.7	2.0	19.6	8.5	11.3	91.5
#100	1.6	1.8	3.2	2.2	6.3	97.8
LBW	1.5	1.6	0.4	1.1	1.1	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  Adjusted WF Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>67</b>	<b>Workability Factor:</b>	<b>34</b>	<b>Adjusted WF</b>	<b>36.8</b>
---------------------------	-----------	----------------------------	-----------	--------------------	-------------

<b>Coarseness Factor:</b>	<b>63</b>
<b>Workability Factor:</b>	<b>36</b>



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"	89.2	10.8	10.8
1/2"	68.4	20.8	31.6
3/8"	59.9	8.6	40.1
#4	43.0	16.9	57.0
#8	35.9	7.1	64.1
#16	29.0	6.8	71.0
#30	21.3	7.7	78.7
#50	9.9	11.4	90.1
#100	2.4	7.5	97.6
LBW	1.2	1.2	98.8

PREPARED BY:  
 SM, LLC Technical Service

Approved By:

# Aggregate Optimization Chart

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

Sample Date: 8/16/21 Concrete Grade: DM

Dates Test Represents: 8/17/2021 through 8/23/2021

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

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1550	9.48	2.62	53.4
26A	71-47	Presque Isle	205	1.25	2.62	7.1
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6
<b>Total Wt</b>			<b>2905</b>	<b>17.69</b>		<b>100.0</b>

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



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

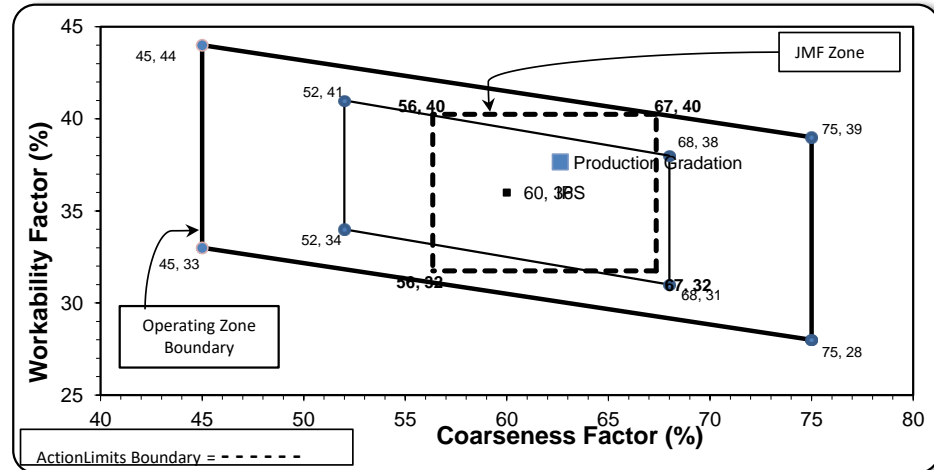
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	96.2	100.0	100.0	98.0	2.0	2.0
3/4"	82.6	100.0	100.0	90.7	7.3	9.3
1/2"	46.2	98.4	100.0	71.2	19.5	28.8
3/8"	25.5	88.0	100.0	59.4	11.8	40.6
#4	4.1	20.1	97.0	42.0	17.4	58.0
#8	1.9	6.1	85.2	35.2	6.8	64.8
#16	1.6	3.2	71.2	29.3	5.9	70.7
#30	1.5	2.5	50.5	21.0	8.3	79.0
#50	1.5	2.3	23.8	10.4	10.6	89.6
#100	1.4	2.1	6.9	3.6	6.8	96.4
LBW	1.0	1.7	0.9	1.0	2.6	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  Adjusted WF Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>63</b>	<b>Workability Factor:</b>	<b>35</b>	<b>Adjusted WF</b>	<b>37.7</b>
---------------------------	-----------	----------------------------	-----------	--------------------	-------------

<b>Coarseness Factor:</b>	<b>62</b>
<b>Workability Factor:</b>	<b>36</b>



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"	95.0	5.0	5.0
1/2"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	98.7

PREPARED BY:  
 SM, LLC Technical Service

Approved By:

# Aggregate Optimization Chart

**PLANT #:** **P-35**

Sample Date: 8/16/21 Concrete Grade: DM  
 Dates Test Represents: 8/17/2021 through 8/23/2021

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

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1555	9.26	2.69	52.6
26A	58-003	Stoneco	300	1.79	2.69	10.2
2NS	81-093	Burmeister	1100	6.65	2.65	37.2
<b>Total Wt</b>			<b>2955</b>	<b>17.70</b>		<b>100.0</b>

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



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

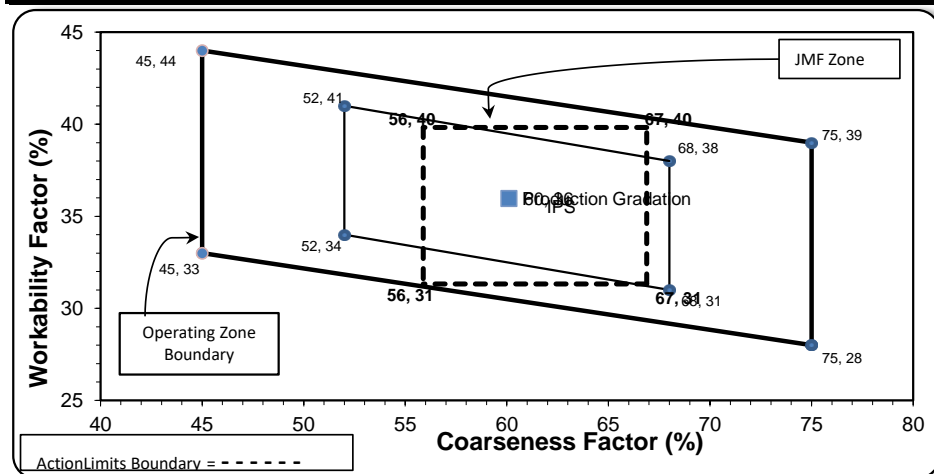
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	88.0	100.0	100.0	93.7	6.3	6.3
1/2"	49.2	99.6	100.0	73.2	20.5	26.8
3/8"	26.1	89.2	100.0	60.0	13.2	40.0
#4	4.1	9.5	99.2	40.0	20.0	60.0
#8	1.4	2.3	87.3	33.5	6.6	66.5
#16	1.1	1.5	71.6	27.4	6.1	72.6
#30	1.0	1.2	51.8	19.9	7.5	80.1
#50	0.8	1.2	19.4	7.8	12.2	92.2
#100	0.8	1.1	3.6	1.9	5.9	98.1
LBW	0.6	0.8	1.1	0.8	1.1	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  Adjusted WF Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>60</b>	<b>Workability Factor:</b>	<b>33</b>	<b>Adjusted WF</b>	<b>36.0</b>
---------------------------	-----------	----------------------------	-----------	--------------------	-------------

<b>Coarseness Factor:</b>	<b>61</b>
<b>Workability Factor:</b>	<b>36</b>



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.1	10.2	10.9
1/2"	70.5	18.6	29.5
3/8"	60.5	10.0	39.5
#4	44.1	16.4	55.9
#8	35.6	8.5	64.4
#16	27.7	7.9	72.3
#30	20.6	7.1	79.4
#50	8.7	11.8	91.3
#100	1.6	7.1	98.4
LBW	1.1	0.6	98.9

PREPARED BY:  
 SM, LLC Technical Service

Approved By:

# Aggregate Optimization Chart

**PLANT #:** **P-36**

Sample Date: 8/16/21

Concrete Grade: **DM**

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

Dates Test Represents: 8/17/2021 through 8/23/2021

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1605	9.82	2.62	55.2
26A	71-47	Presque Isle	200	1.22	2.62	6.9
2NS	63-92	Grange Hall	1100	6.65	2.65	37.9
<b>Total Wt</b>			<b>2905</b>	<b>17.69</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"	96.4	100.0	100.0	98.0	2.0	2.0
3/4"	75.2	100.0	100.0	86.3	11.7	13.7
1/2"	40.3	98.4	100.0	66.9	19.4	33.1
3/8"	24.0	88.0	100.0	57.2	9.7	42.8
#4	4.6	20.1	98.3	41.1	16.0	58.9
#8	2.0	6.1	86.0	34.1	7.1	65.9
#16	1.7	3.2	70.7	27.9	6.2	72.1
#30	1.6	2.5	49.2	19.7	8.2	80.3
#50	1.5	2.3	19.6	8.4	11.3	91.6
#100	1.5	2.1	3.2	2.2	6.2	97.8
LBW	1.0	1.7	0.4	0.8	1.4	99.2

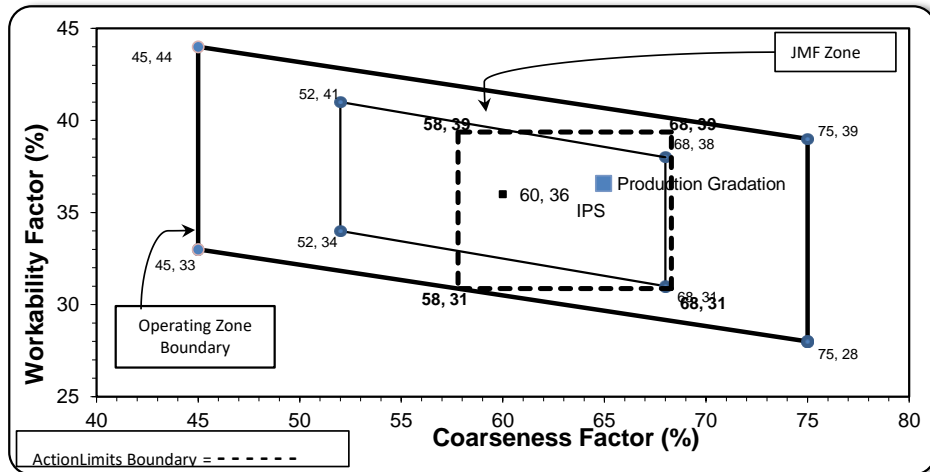
\*Maximum % Retained must be above the 3/8" sieve.  
 \*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.  
 \*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.  
 \*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>65</b>	<b>Workability Factor:</b>	<b>34</b>	<b>Adjusted WF</b>	<b>36.6</b>
---------------------------	-----------	----------------------------	-----------	--------------------	-------------

<b>Coarseness Factor:</b>	<b>63</b>
<b>Workability Factor:</b>	<b>35</b>



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"	90.3	8.8	9.7
1/2"	69.2	21.1	30.8
3/8"	59.1	10.1	40.9
#4	41.8	17.3	58.2
#8	35.1	6.6	64.9
#16	28.5	6.6	71.5
#30	21.2	7.3	78.8
#50	8.7	12.5	91.3
#100	1.8	7.0	98.2
LBW	0.7	1.0	99.3

PREPARED BY:  
 SM, LLC Technical Service

Approved By:

# Aggregate Optimization Chart

**PLANT #:** **P-39**

Sample Date: 8/16/21 Concrete Grade: DM  
 Dates Test Represents: 8/17/2021 through 8/23/2021

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

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1605	9.82	2.62	55.2
26A	71-47	Presque Isle	200	1.22	2.62	6.9
2NS	44-051	Krake Willis Rd	1100	6.65	2.65	37.9
<b>Total Wt</b>			<b>2905</b>	<b>17.69</b>		<b>100.0</b>

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

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"	99.4	100.0	100.0	99.7	0.3	0.3
3/4"	88.7	100.0	100.0	93.8	5.9	6.2
1/2"	45.6	97.6	100.0	69.8	24.0	30.2
3/8"	25.8	88.2	100.0	58.2	11.6	41.8
#4	3.5	19.5	97.2	40.1	18.1	59.9
#8	1.8	4.8	77.2	30.6	9.5	69.4
#16	1.6	2.5	59.0	23.4	7.2	76.6
#30	1.5	2.2	43.0	17.3	6.1	82.7
#50	1.4	2.0	21.4	9.0	8.2	91.0
#100	1.3	1.8	7.8	3.8	5.2	96.2
LBW	1.2	1.6	1.2	1.2	2.6	98.8

\*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.



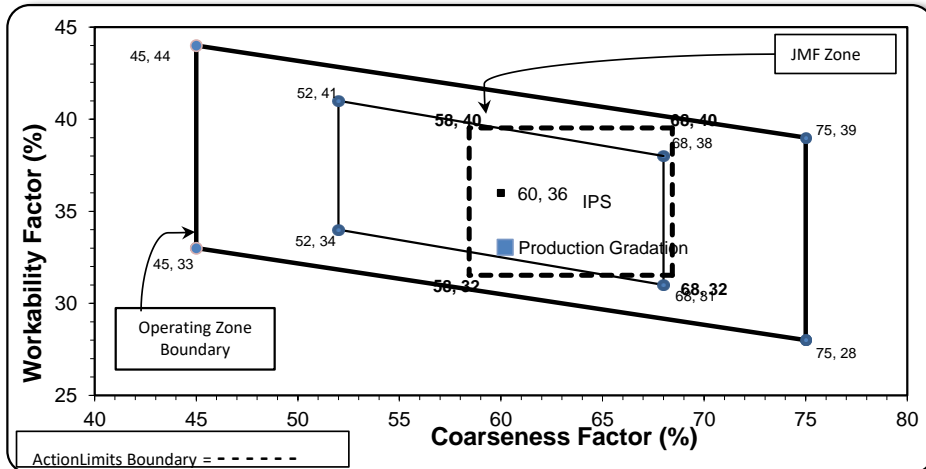
**Superior Materials, LLC**  
 30701 W. 10 Mile Rd.  
 Suite 500  
 Farmington Hills, MI 48336

Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>60</b>	<b>Workability Factor:</b>	<b>31</b>	<b>Adjusted WF</b>	<b>33.1</b>
---------------------------	-----------	----------------------------	-----------	--------------------	-------------

<b>Coarseness Factor:</b>	<b>63</b>
<b>Workability Factor:</b>	<b>36</b>



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"	89.7	10.3	10.3
1/2"	70.3	19.4	29.7
3/8"	59.1	11.2	40.9
#4	42.8	16.3	57.2
#8	35.5	7.3	64.5
#16	29.0	6.5	71.0
#30	21.2	7.7	78.8
#50	9.8	11.5	90.2
#100	3.7	6.1	96.3
LBW	1.2	2.5	98.8

PREPARED BY:  
 SM, LLC Technical Service

Approved By:

# Aggregate Optimization Chart

**PLANT #:** **P-02**

Sample Date: 8/16/21 Concrete Grade: DM  
 Dates Test Represents: 8/17/2021 through 8/23/2021

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

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1605	9.82	2.62	55.2
26A	71-47	Presque Isle	200	1.22	2.62	6.9
2NS	63-115	Ray Rd	1100	6.65	2.65	37.9
<b>Total Wt</b>			<b>2905</b>	<b>17.69</b>		<b>100.0</b>

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



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

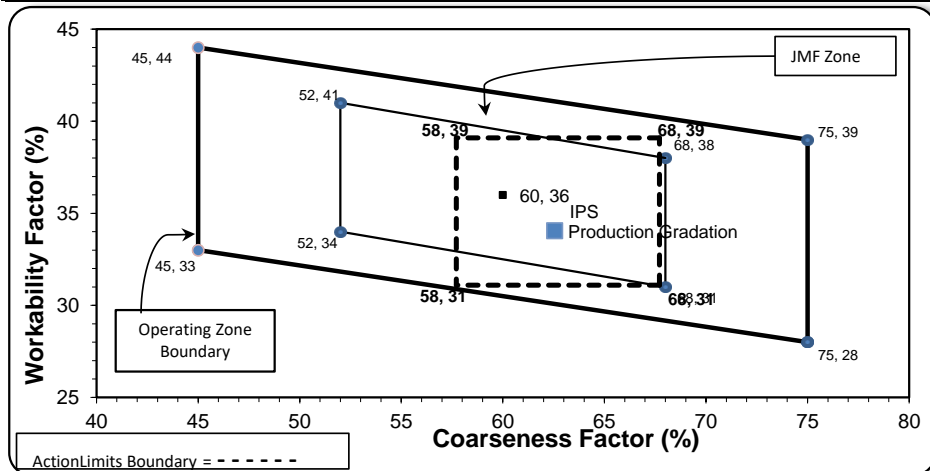
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	96.4	100.0	100.0	98.0	2.0	2.0
3/4"	75.2	100.0	100.0	86.3	11.7	13.7
1/2"	40.3	98.4	100.0	66.9	19.4	33.1
3/8"	24.0	88.0	100.0	57.2	9.7	42.8
#4	4.6	20.1	95.6	40.1	17.1	59.9
#8	2.0	6.1	79.3	31.6	8.6	68.4
#16	1.7	3.2	63.9	25.4	6.2	74.6
#30	1.6	2.5	48.5	19.4	5.9	80.6
#50	1.5	2.3	26.6	11.1	8.4	88.9
#100	1.5	2.1	6.4	3.4	7.7	96.6
LBW	1.0	1.7	1.0	1.0	2.3	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  Adjusted WF Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>63</b>	<b>Workability Factor:</b>	<b>32</b>	<b>Adjusted WF</b>	<b>34.1</b>
---------------------------	-----------	----------------------------	-----------	--------------------	-------------

<b>Coarseness Factor:</b>	<b>63</b>
<b>Workability Factor:</b>	<b>35</b>



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"	95.1	4.9	4.9
1/2"	74.6	20.5	25.4
3/8"	59.3	15.3	40.7
#4	42.1	17.2	57.9
#8	35.1	7.1	64.9
#16	29.2	5.9	70.8
#30	21.9	7.3	78.1
#50	9.6	12.4	90.4
#100	2.4	7.2	97.6
LBW	0.9	1.5	99.1

PREPARED BY:  
 SM, LLC Technical Service

Approved By: