

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-103

Sample Date: 4/14/25

Concrete Grade: DM, 4500HP

Contractor: _____

Dates Test Represents: 4/15/2025 through 4/21/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1600	9.53	2.69	54.2
26A	58-003	Stoneco	200	1.19	2.69	6.8
2NS	63-114	Highland	1150	6.95	2.65	39.0
Total Wt			2950	17.68		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"	90.0	100.0	100.0	94.6	5.4	5.4
1/2"	49.4	99.6	100.0	72.5	22.0	27.5
3/8"	28.6	89.5	100.0	60.6	12.0	39.4
#4	3.6	12.3	99.3	41.5	19.1	58.5
#8	1.6	2.0	85.9	34.5	7.0	65.5
#16	1.1	1.6	68.7	27.5	7.0	72.5
#30	1.0	1.4	50.2	20.2	7.3	79.8
#50	0.9	1.3	22.2	9.2	11.0	90.8
#100	0.9	1.2	3.3	1.9	7.4	98.1
LBW	0.9	1.2	0.6	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 4% for the 3/4" sieve when a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

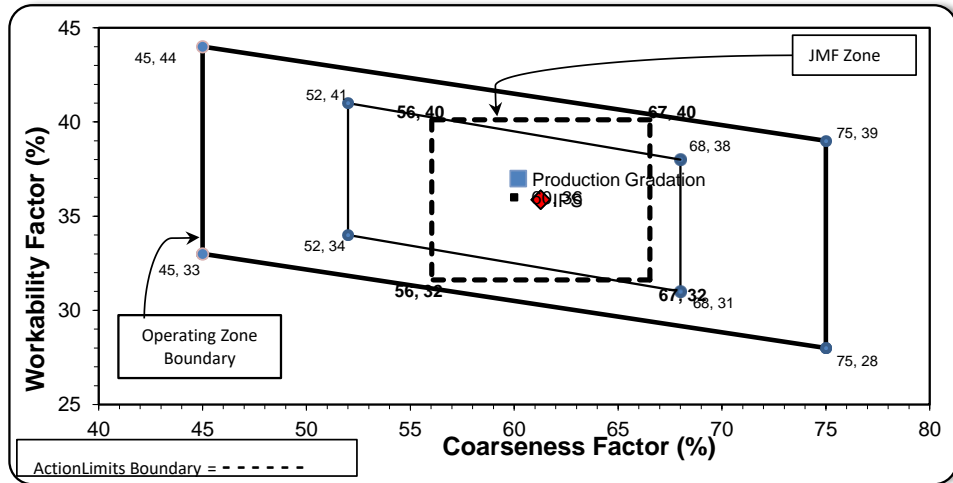
Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	60	Workability Factor:	34	37.0
---------------------------	-----------	----------------------------	-----------	-------------

Coarseness Factor:	61
---------------------------	-----------

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"	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 #: p11

Contractor: _____

Sample Date: 4/14/25

Concrete Grade: DM, 4500HP

Dates Test Represents: 4/15/2025 through 4/21/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1600	9.79	2.62	55.1
26A	71-47	Presque Isle	155	0.95	2.62	5.3
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
Total Wt			2905	17.69		100.0

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



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

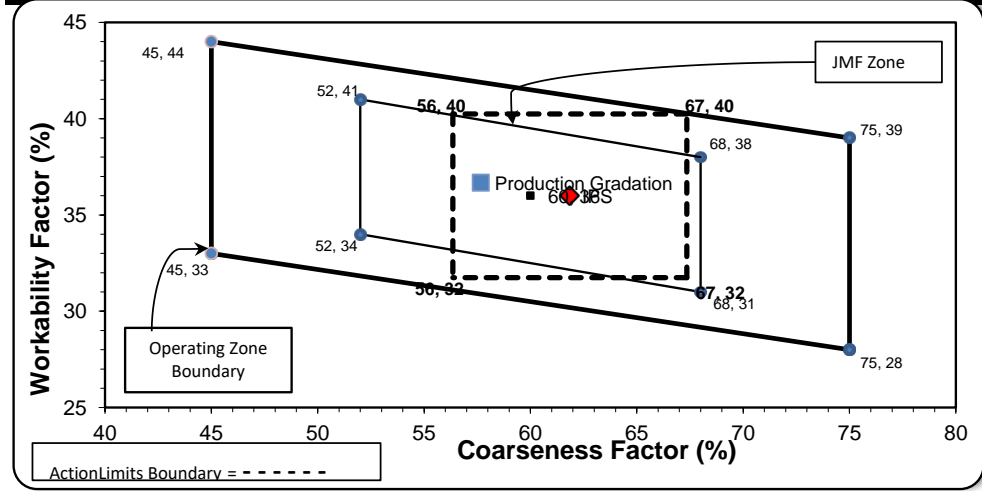
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.5	100.0	100.0	99.7	0.3	0.3
3/4"	86.2	100.0	100.0	92.4	7.3	7.6
1/2"	49.6	95.7	100.0	72.0	20.4	28.0
3/8"	32.7	83.3	100.0	62.0	10.0	38.0
#4	6.4	18.2	98.9	43.6	18.4	56.4
#8	3.0	5.6	81.4	34.2	9.5	65.8
#16	2.7	3.4	66.2	27.9	6.3	72.1
#30	2.6	2.9	50.2	21.5	6.4	78.5
#50	2.5	2.7	25.0	11.4	10.0	88.6
#100	2.4	2.5	4.6	3.3	8.1	96.7
LBW	2.0	2.1	0.8	1.5	1.7	98.5

*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 4% for the 3/4" sieve when a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	58	Workability Factor:	34	Adjusted WF	36.7	Coarseness Factor:	62
---------------------------	-----------	----------------------------	-----------	--------------------	-------------	---------------------------	-----------



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

Production Gradation Report

PLANT #: **P-02**

Sample Date: 4/14/25

Concrete Grade: DM, 4500HP

Contractor: _____

Dates Test Represents: 4/15/2025 through 4/21/2025

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1600	9.79	2.62	55.1
26A	71-47	Presque Isle	155	0.95	2.62	5.3
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
Total Wt			2905	17.69		100.0

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



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

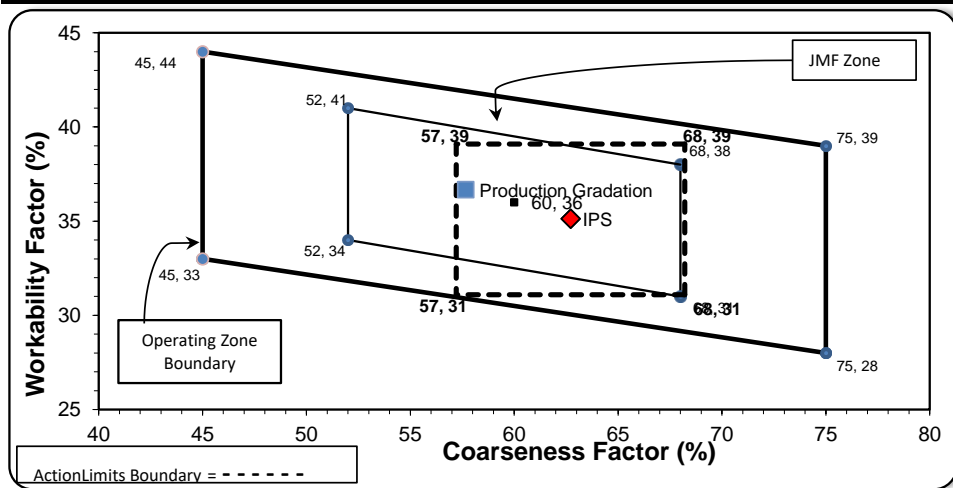
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.5	100.0	100.0	99.7	0.3	0.3
3/4"	86.2	100.0	100.0	92.4	7.3	7.6
1/2"	49.6	95.7	100.0	72.0	20.4	28.0
3/8"	32.7	83.3	100.0	62.0	10.0	38.0
#4	6.4	18.2	98.9	43.6	18.4	56.4
#8	3.0	5.6	81.4	34.2	9.5	65.8
#16	2.7	3.4	66.2	27.9	6.3	72.1
#30	2.6	2.9	50.2	21.5	6.4	78.5
#50	2.5	2.7	25.0	11.4	10.0	88.6
#100	2.4	2.5	4.6	3.3	8.1	96.7
LBW	2.0	2.1	0.8	1.5	1.7	98.5

*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 4% for the 3/4" sieve when a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	58	Workability Factor:	34	Adjusted WF	36.7
---------------------------	-----------	----------------------------	-----------	--------------------	-------------

Coarseness Factor:	63
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"	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: