

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-101**

Sample Date: 3/13/23

Concrete Grade: **DM, 4500HP**

Contractor: _____

Dates Test Represents: 3/14/2023 through 3/20/2023

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1510	9.24	2.62	51.9
26A	71-47	Presque Isle	250	1.53	2.62	8.6
2NS	75-051	Mid Michigan	1150	6.93	2.66	39.5
Total Wt			2910	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"	99.3	100.0	100.0	99.6	0.4	0.4
3/4"	86.2	100.0	100.0	92.8	6.8	7.2
1/2"	47.2	96.5	100.0	72.3	20.5	27.7
3/8"	28.1	87.3	100.0	61.6	10.7	38.4
#4	4.4	21.9	97.7	42.8	18.8	57.2
#8	2.2	4.8	81.3	33.7	9.1	66.3
#16	2.0	2.5	65.7	27.2	6.5	72.8
#30	1.9	2.1	49.4	20.7	6.5	79.3
#50	1.9	2.0	26.5	11.6	9.1	88.4
#100	1.8	1.9	8.2	4.3	7.3	95.7
LBW	1.5	1.7	1.5	1.5	2.8	98.5

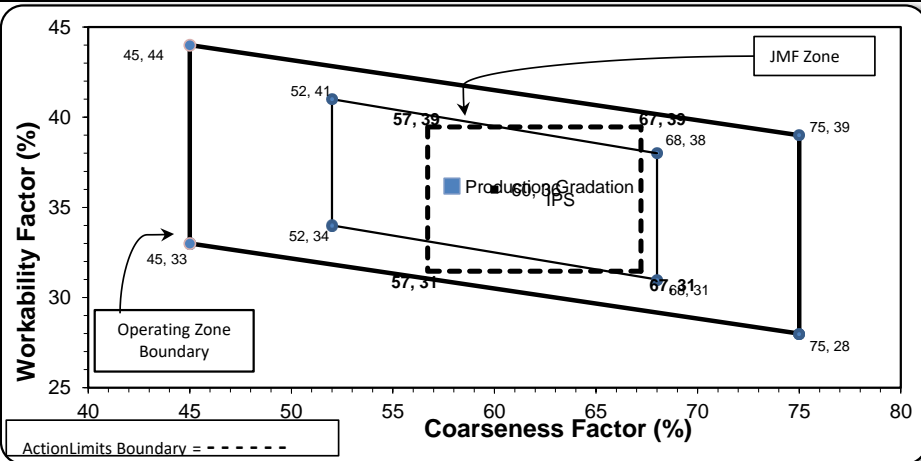
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	58	Workability Factor:	34	36.2
---------------------------	-----------	----------------------------	-----------	-------------

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"	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-32**

Sample Date: **3/13/23**

Concrete Grade: **DM, 4500HP**

Contractor: _____

Dates Test Represents: **3/14/2023** through **3/20/2023**

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1405	8.59	2.62	48.4
26A	71-47	Presque Isle	350	2.14	2.62	12.0
2NS	95-013	Smelter Bay	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"	98.0	100.0	100.0	99.0	1.0	1.0
3/4"	78.6	100.0	100.0	89.6	9.4	10.4
1/2"	37.2	97.2	100.0	69.3	20.4	30.7
3/8"	20.8	87.6	100.0	60.2	9.1	39.8
#4	3.8	22.5	96.9	42.9	17.3	57.1
#8	2.0	5.7	83.9	34.9	8.0	65.1
#16	1.8	2.7	68.1	28.2	6.7	71.8
#30	1.6	2.2	48.8	20.4	7.8	79.6
#50	1.6	2.1	23.4	10.3	10.1	89.7
#100	1.5	2.0	6.7	3.6	6.7	96.4
LBW	1.3	1.8	1.3	1.4	2.3	98.6

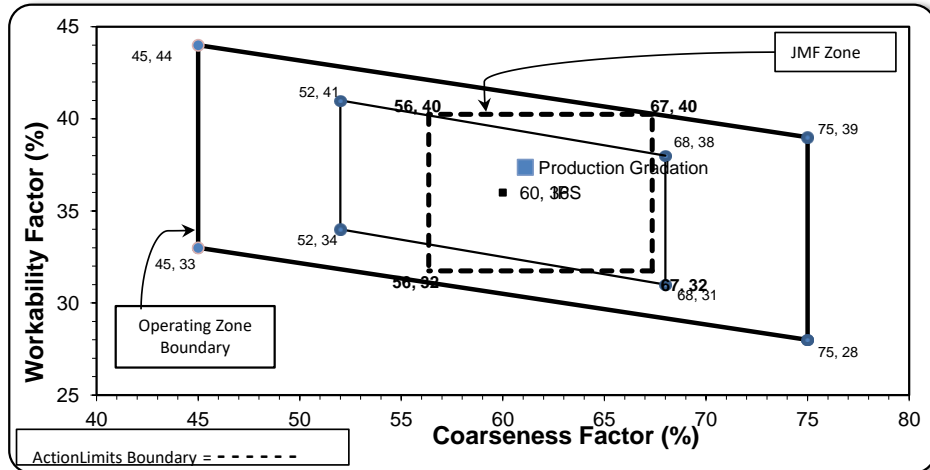
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	61	Workability Factor:	35	37.4	Coarseness Factor:	62
---------------------------	-----------	----------------------------	-----------	-------------	---------------------------	-----------

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"	95.0	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: