

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-32

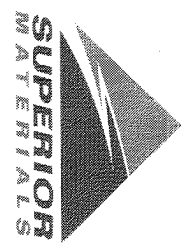
Sample Date: 5/1/23

Dates Test Represents: 5/2/2023 through 5/8/2023

Concrete Grade: S2M, 3500HP

Contractor: _____

MDOT No.: _____



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

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1500	9.17	2.62	49.2
26A	71-47	Presque Isle	320	1.96	2.62	10.5
NNS	95-013	Smelter Bay	1230	7.44	2.65	40.3
		Total Wt	3050	18.57		100.0

Sieve	6AA	26A	NNS	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"	97.4	100.0	100.0	98.7	1.3	1.3
3/4"	82.4	100.0	100.0	91.3	8.7	10.0
1/2"	43.6	97.1	100.0	72.0	19.4	28.0
3/8"	24.3	88.3	100.0	61.5	38.5	38.5
#4	3.2	22.7	96.6	42.9	57.1	57.1
#8	1.7	5.8	84.1	35.4	64.6	64.6
#16	1.1	3.5	68.6	28.6	71.4	71.4
#30	1.0	3.0	48.6	20.4	79.6	79.6
#50	1.0	2.7	22.8	10.0	90.0	90.0
#100	0.9	2.5	6.5	3.3	96.7	96.7
LBW	0.8	2.1	1.5	1.2	98.8	98.8

Verify this number is 100%

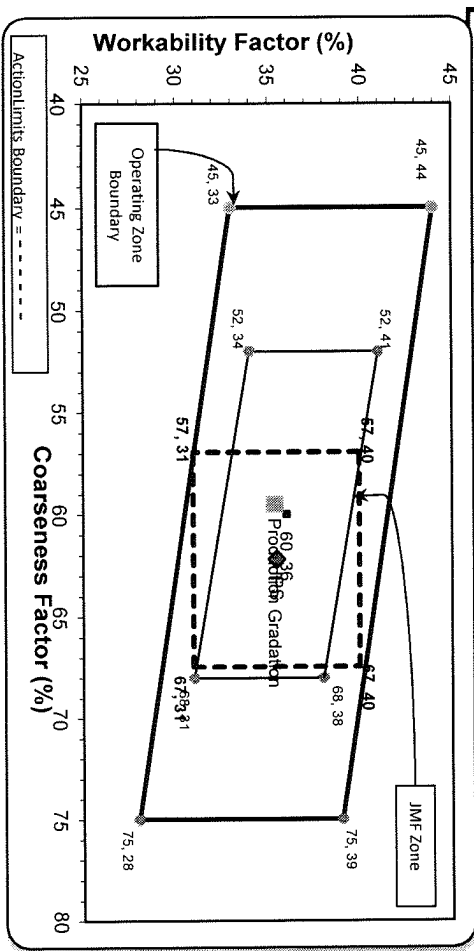
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max.
 nom. max. #100 and #200 sieves.
 **Retained must be at least 4% for each sieve except max.
 nom. max. #100 and #200 sieves.
 ***Retained must be at least 8% for the 1" sieve when a 2" max. size (nom.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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 59 **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:

Plant 958-JMT

Product 1054-6AA LS PI

Period: 04/30/2023 - 05/06/2023

Name/Title Doug Storey / QC Technician

Report Date 05/06/2023

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	97.4	%	95-100
	3/4" (19mm)	82.4	%	
	1/2" (12.5mm)	43.6	%	30-60
	3/8" (9.5mm)	24.3	%	
	#4 (4.75mm)	3.2	%	0-8
	#8 (2.36mm)	1.4	%	
	#16 (1.18mm)	1.1	%	
	#30 (.6mm)	1.0	%	
	#50 (.3mm)	1.0	%	
	#100 (.15mm)	0.9	%	
	#200 (75µm)	0.8	%	
	Wash Loss (#200/75um)	0.8	%	0-2
	Total Moisture	2.2	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 04/30/2023 - 05/06/2023

Report Date 05/06/2023

Procedure	Sieve/Test	Result	Unit	26A Mod LS Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	
	1" (25mm)	100.0	%	
	3/4" (19mm)	100.0	%	100-100
	1/2" (12.5mm)	97.1	%	95-100
	3/8" (9.5mm)	88.3	%	60-95
	#4 (4.75mm)	22.7	%	5-30
	#8 (2.36mm)	5.8	%	0-12
	#16 (1.18mm)	3.5	%	
	#30 (.6mm)	3.0	%	
	#50 (.3mm)	2.7	%	
	#100 (.15mm)	2.5	%	
	#200 (75µm)	2.3	%	
	Wash Loss (#200/75um)	2.1	%	0-3
	Total Moisture	3.4	%	

Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 04/30/2023 - 05/06/2023

Report Date 05/06/2023

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	96.6	%	95-100
	#8 (2.36mm)	84.1	%	65-95
	#16 (1.18mm)	68.6	%	35-75
	#30 (.6mm)	48.6	%	20-55
	#50 (.3mm)	22.8	%	10-30
	#100 (.15mm)	6.5	%	0-10
	#200 (75µm)	1.6	%	
	FM	2.73		2.6-3
	Wash Loss (#200/75um)	1.5	%	0-3
	Total Moisture	4.6	%	