

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

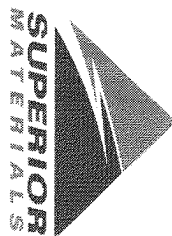
Sample Date: 10/16/23

Dates Test Represents: 10/17/2023 through 10/23/2023

Concrete Grade: **S2M, 3500HP**

Contractor: _____

MDOT No.: _____



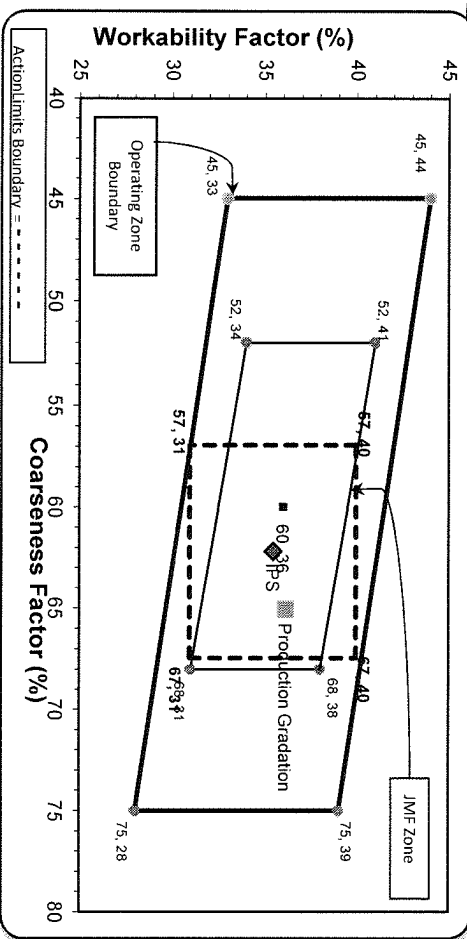
Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1400	8.56	2.62	45.9
26A	71-47	Presque Isle	420	2.57	2.62	13.8
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
Total Wt			3050	18.57		100.0

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"	96.7	100.0	100.0	98.5	1.5	1.5
3/4"	74.9	100.0	100.0	88.4	10.1	11.6
1/2"	32.0	94.6	100.0	68.0	20.4	32.0
3/8"	14.4	83.6	100.0	58.4	9.6	41.6
#4	2.5	24.1	96.7	43.5	15.0	56.5
#8	1.7	6.7	85.4	36.1	7.3	63.9
#16	1.7	3.4	70.6	29.7	6.4	70.3
#30	1.6	2.5	52.2	22.1	7.6	77.9
#50	1.4	2.2	24.8	10.9	11.2	89.1
#100	1.3	2.1	7.6	4.0	7.0	96.0
LBW	1.0	1.8	1.7	1.4	2.6	98.6

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **65** Workability Factor: **36**



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

*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
 at 1.5" max. size (nom. Max. 1.0") aggregate is used.

PREPARED BY:
SM, LLC Technical Service

Approved By: _____

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 10/15/2023 - 10/21/2023

Report Date 10/21/2023

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	96.7	%	95-100
	3/4" (19mm)	74.9	%	
	1/2" (12.5mm)	32.0	%	30-60
	3/8" (9.5mm)	14.4	%	
	#4 (4.75mm)	2.5	%	0-8
	#8 (2.36mm)	1.7	%	
	#16 (1.18mm)	1.7	%	
	#30 (.6mm)	1.6	%	
	#50 (.3mm)	1.4	%	
	#100 (.15mm)	1.3	%	
	#200 (75µm)	1.2	%	
	Wash Loss (#200/75um)	1.0	%	0-2
	Total Moisture	4.0	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 10/15/2023 - 10/21/2023

Report Date 10/21/2023

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)	99.5	%	100-100
	1/2" (12.5mm)	94.6	%	95-100
	3/8" (9.5mm)	83.6	%	60-95
	#4 (4.75mm)	24.1	%	5-30
	#8 (2.36mm)	6.7	%	0-12
	#16 (1.18mm)	3.4	%	
	#30 (.6mm)	2.5	%	
	#50 (.3mm)	2.2	%	
	#100 (.15mm)	2.1	%	
	#200 (75µm)	2.0	%	
	Wash Loss (#200/75um)	1.8	%	0-3
	Total Moisture	3.8	%	

Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 10/15/2023 - 10/21/2023

Report Date 10/21/2023

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	96.7	%	95-100
	#8 (2.36mm)	85.4	%	65-95
	#16 (1.18mm)	70.6	%	35-75
	#30 (.6mm)	52.2	%	20-55
	#50 (.3mm)	24.8	%	10-30
	#100 (.15mm)	7.6	%	0-10
	#200 (75µm)	2.0	%	
	FM	2.63		2.6-3
	Wash Loss (#200/75um)	1.7	%	0-3
	Total Moisture	4.6	%	