

# Aggregate Optimization Chart

# Production Gradation Report

PLANT #: **P-32**

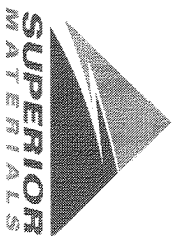
Sample Date: **10/4/21**

Dates Test Represents: **10/5/2021** through **10/11/2021**

Concrete Grade: **S2M**

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	1250	7.65	2.62	41.0
26A	71-47	Presque Isle	570	3.49	2.62	18.7
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
		<b>Total Wt</b>	<b>3050</b>	<b>18.57</b>		<b>100.0</b>

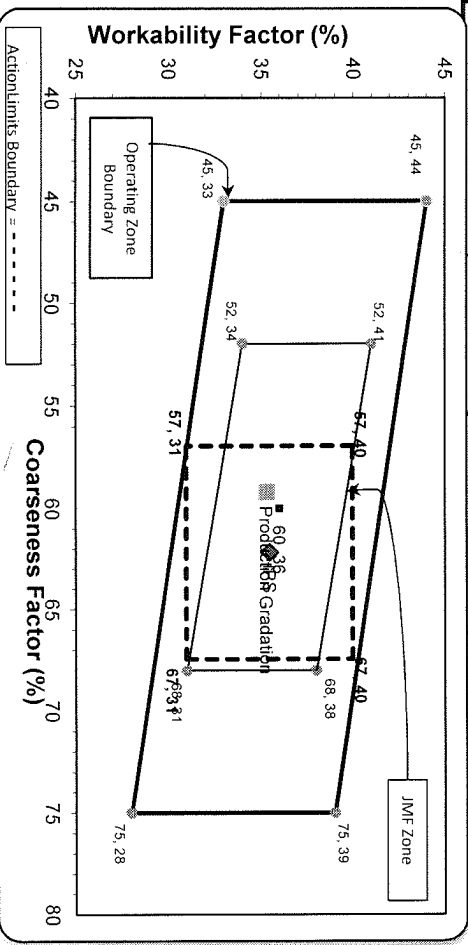
  

Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	97.6	100.0	100.0	99.0	1.0	1.0
3/4"	80.9	100.0	100.0	92.2	6.8	7.8
1/2"	37.0	95.4	100.0	73.3	18.9	26.7
3/8"	15.6	80.1	100.0	61.7	11.6	38.3
#4	3.3	13.8	96.4	42.8	18.9	57.2
#8	1.8	4.7	83.5	35.3	7.5	64.7
#16	1.5	3.5	67.9	28.7	6.6	71.3
#30	1.4	3.2	50.2	21.4	7.2	78.6
#50	1.4	3.0	25.0	11.2	10.2	88.8
#100	1.3	2.9	8.2	4.4	6.8	95.6
LBW	0.9	2.6	1.9	1.6	2.8	98.4

\*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)

Sieve	Coarseness Factor:	Workability Factor:	% Cumulative Retained	% Cumulative Retained
2"	62	35	100.0	0.0
1.5"			100.0	0.0
1"			100.0	0.0
3/4"			94.0	6.0
1/2"			70.2	23.7
3/8"			59.9	10.4
#4			42.7	17.2
#8			35.5	7.2
#16			28.4	7.0
#30			19.2	9.2
#50			8.9	10.3
#100			3.1	5.9
LBW			1.4	1.7

PREPARED BY:  
 SM, LLC Technical Service

Approved By: \_\_\_\_\_

Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 10/03/2021 - 10/09/2021

Report Date 10/10/2021

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	96.4	%	95-100
	#8 (2.36mm)	83.5	%	65-95
	#16 (1.18mm)	67.9	%	35-75
	#30 (.6mm)	50.2	%	20-55
	#50 (.3mm)	25.0	%	10-30
	#100 (.15mm)	8.2	%	0-10
	#200 (75µm)	2.0	%	
	FM	2.69		2.6-3
	Wash Loss (#200/75um)	1.9	%	0-3
	Total Moisture	5.9	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 10/03/2021 - 10/09/2021

Report Date 10/10/2021

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)	95.4	%	95-100
	3/8" (9.5mm)	80.1	%	60-95
	#4 (4.75mm)	13.8	%	5-30
	#8 (2.36mm)	4.7	%	0-12
	#16 (1.18mm)	3.5	%	
	#30 (.6mm)	3.2	%	
	#50 (.3mm)	3.0	%	
	#100 (.15mm)	2.9	%	
	#200 (75µm)	2.7	%	
	Wash Loss (#200/75µm)	2.6	%	0-3
	Total Moisture	5.0	%	

Plant 958-JMT

Product 1054-6AA LS PI

Period: 10/03/2021 - 10/09/2021

Name/Title Doug Storey / QC Technician

Report Date 10/10/2021

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	97.6	%	95-100
	3/4" (19mm)	80.9	%	
	1/2" (12.5mm)	37.0	%	30-60
	3/8" (9.5mm)	15.6	%	
	#4 (4.75mm)	3.3	%	0-8
	#8 (2.36mm)	1.8	%	
	#16 (1.18mm)	1.5	%	
	#30 (.6mm)	1.4	%	
	#50 (.3mm)	1.4	%	
	#100 (.15mm)	1.3	%	
	#200 (75µm)	1.1	%	
	Wash Loss (#200/75µm)	0.9	%	0-2
	Total Moisture	2.7	%	