

# Aggregate Optimization Chart

# Production Gradation Report

PLANT #: **P-32**

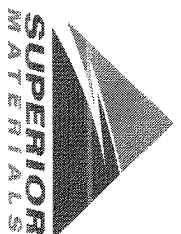
Contractor: \_\_\_\_\_

Sample Date: **7/26/21**

Concrete Grade: **S2M**

Dates Test Represents: **7/27/2021** through **8/2/2021**

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	1500	9.17	2.62	49.2
26A	71-47	Presque Isle	320	1.96	2.62	10.5
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
Total Wt			<b>3050</b>	<b>18.57</b>		<b>100.0</b>

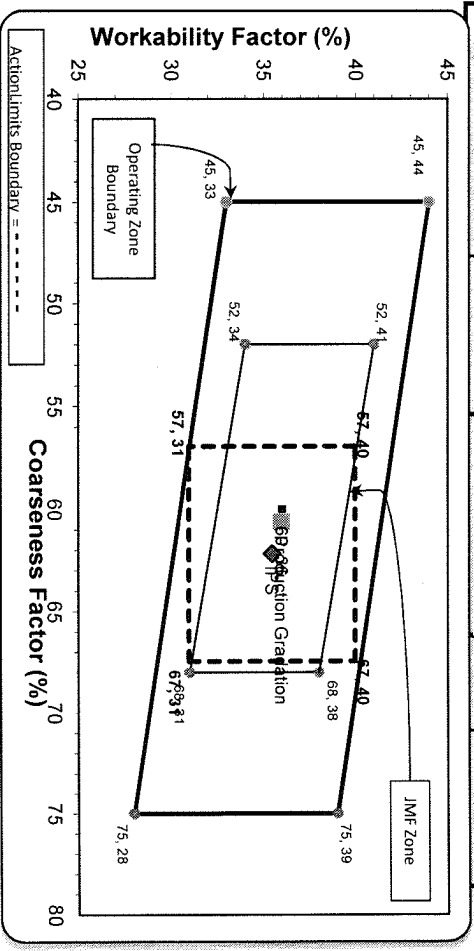
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	95.3	100.0	100.0	97.7	2.3	2.3
3/4"	77.3	100.0	100.0	88.8	8.9	11.2
1/2"	41.9	97.3	100.0	71.1	17.7	28.9
3/8"	23.9	86.7	100.0	61.2	10.0	38.8
#4	4.0	25.5	96.6	43.6	17.6	56.4
#8	2.3	7.2	84.5	36.0	7.6	64.0
#16	2.0	3.4	70.2	29.7	6.3	70.3
#30	2.0	2.5	49.7	21.3	8.4	78.7
#50	1.8	2.2	23.0	10.4	10.9	89.6
#100	1.8	2.0	6.6	3.8	6.6	96.2
LBW	1.2	1.4	0.8	1.1	2.7	98.9

\*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

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 1022-ZNS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 07/25/2021 - 07/31/2021

Report Date 07/31/2021

Procedure	Sieve/Test	Result	Unit	Procedure
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	96.6	%	95-100
	#8 (2.36mm)	84.5	%	65-95
	#16 (1.18mm)	70.2	%	35-75
	#30 (.6mm)	49.7	%	20-55
	#50 (.3mm)	23.0	%	10-30
	#100 (.15mm)	6.6	%	0-10
	#200 (75µm)	1.6	%	
	FM	2.70		2-6-3
	Wash Loss (#200/75µm)	0.8	%	0-3
	Total Moisture	4.7	%	

ZNS GR Spec



Plant 958-JMT	Product 1054-6AA LS PI	Name/Title Doug Storey / QC Technician
Period: 07/25/2021 - 07/31/2021	Report Date 07/31/2021	
Procedure	Sieve/Test	Result Unit

2" (50mm)	100.0	%	
1 1/2" (37.5mm)	100.0	%	100-100
1" (25mm)	95.3	%	95-100
3/4" (19mm)	77.3	%	30-60
1/2" (12.5mm)	41.9	%	
3/8" (9.5mm)	23.9	%	
#4 (4.75mm)	4.0	%	0-8
#8 (2.36mm)	2.3	%	
#16 (1.18mm)	2.0	%	
#30 (.6mm)	2.0	%	
#50 (.3mm)	1.8	%	
#100 (.15mm)	1.8	%	
#200 (75um)	1.4	%	
Wash Loss (#200/75um)	1.2	%	0-2
Total Moisture	2.6	%	