

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

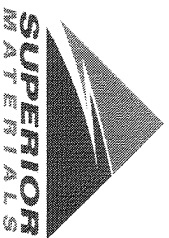
Sample Date: 11/22/21

Dates Test Represents: 11/23/2021 through 11/29/2021

Concrete Grade: **DM**

Contractor: _____

MDOT No.: _____



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

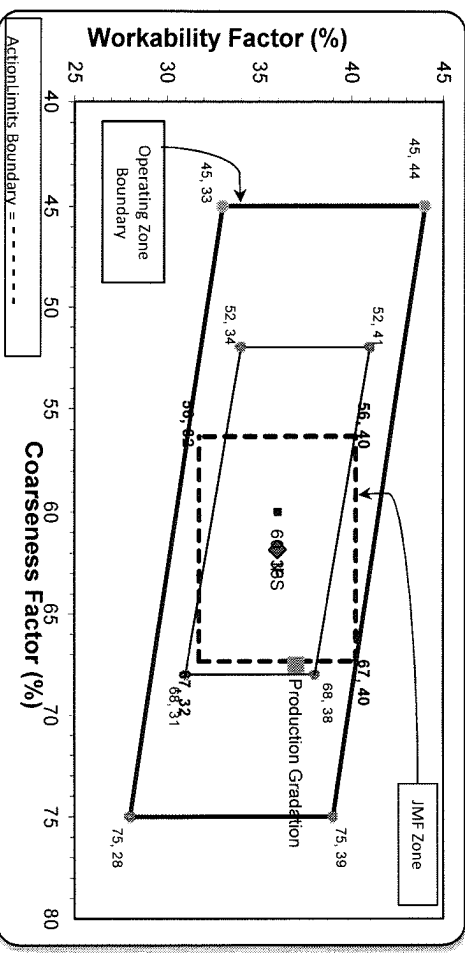
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1455	8.90	2.62	50.1
26A	71-47	Presque Isle	300	1.83	2.62	10.3
ZNS	95-013	Smelter Bay	1150	6.95	2.65	39.6
		Total Wt	2905			100.0

Sieve	6AA	26A	ZNS	Cumulative % Passing
2"	100.0	100.0	100.0	100.0
1.5"	100.0	100.0	100.0	100.0
1"	97.4	100.0	100.0	98.7
3/4"	73.9	100.0	100.0	86.9
1/2"	33.9	97.2	100.0	66.6
3/8"	16.7	75.6	100.0	55.8
#4	3.4	16.3	95.7	41.3
#8	2.4	6.5	82.4	34.5
#16	2.2	4.6	67.1	28.1
#30	2.1	4.1	48.1	20.5
#50	2.0	3.8	24.4	11.1
#100	1.9	3.5	7.0	4.1
LBW	1.4	2.8	1.4	1.5

*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

Coarseness Factor: **68** Workability Factor: **34** Adjusted WF: **37.0**



Sieve	% 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: _____

Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 11/21/2021 - 11/27/2021

Report Date 11/24/2021

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	95.7	%	95-100
	#8 (2.36mm)	82.4	%	65-95
	#16 (1.18mm)	67.1	%	35-75
	#30 (.6mm)	48.1	%	20-55
	#50 (.3mm)	24.4	%	10-30
	#100 (.15mm)	7.0	%	0-10
	#200 (75µm)	1.7	%	
	FM	2.75		2.6-3
	Wash Loss (#200/75um)	1.4	%	0-3
	Total Moisture	2.0	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 11/21/2021 - 11/27/2021

Report Date 11/24/2021

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)	97.2	%	95-100
	3/8" (9.5mm)	75.6	%	60-95
	#4 (4.75mm)	16.3	%	5-30
	#8 (2.36mm)	6.5	%	0-12
	#16 (1.18mm)	4.6	%	
	#30 (.6mm)	4.1	%	
	#50 (.3mm)	3.8	%	
	#100 (.15mm)	3.5	%	
	#200 (75µm)	3.1	%	
	Wash Loss (#200/75um)	2.8	%	0-3
	Total Moisture	3.9	%	

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 11/21/2021 - 11/27/2021

Report Date 11/24/2021

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	97.4	%	95-100
	3/4" (19mm)	73.9	%	
	1/2" (12.5mm)	33.9	%	30-60
	3/8" (9.5mm)	16.7	%	
	#4 (4.75mm)	3.4	%	0-8
	#8 (2.36mm)	2.4	%	
	#16 (1.18mm)	2.2	%	
	#30 (.6mm)	2.1	%	
	#50 (.3mm)	2.0	%	
	#100 (.15mm)	1.9	%	
	#200 (75µm)	1.7	%	
	Wash Loss (#200/75um)	1.4	%	0-2
	Total Moisture	3.3	%	