

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

Sample Date: **11/14/22**

Dates Test Represents: **11/15/2022** through **11/21/2022**

Concrete Grade: **S2M, 3500HP**

Contractor: _____

MDOT No.: _____



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

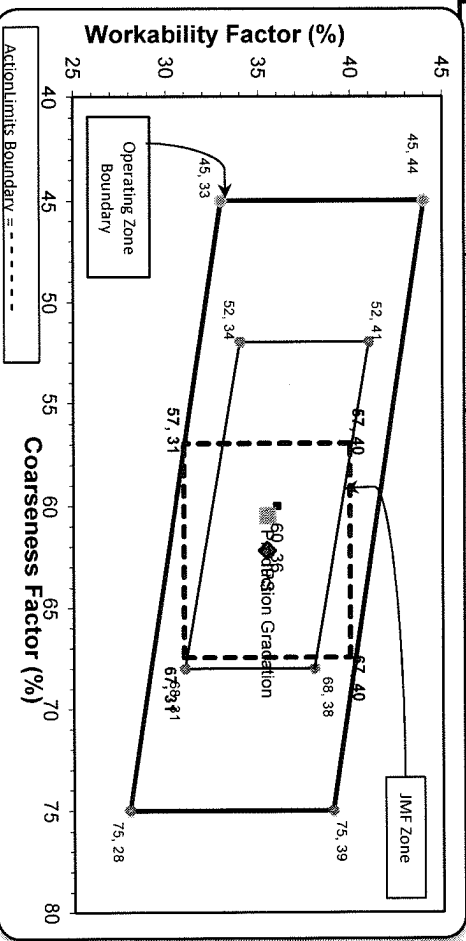
Aggr. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1470	8.99	2.62	48.2
26A	71-47	Presque Isle	350	2.14	2.62	11.5
ZNS	95-013	Smelter Bay	1230	7.44	2.65	40.3
		Total Wt	3050			100.0

Sieve	6AA	26A	ZNS	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"	98.8	100.0	100.0	99.4	0.6	0.6
3/4"	89.9	100.0	100.0	95.1	4.3	4.9
1/2"	44.5	98.8	100.0	73.1	22.0	26.9
3/8"	21.7	88.8	100.0	61.0	12.1	39.0
#4	3.1	23.0	96.4	43.0	18.0	57.0
#8	1.9	5.3	84.2	35.5	7.5	64.5
#16	1.7	2.2	69.0	28.9	6.6	71.1
#30	1.6	1.7	50.4	21.3	7.6	78.7
#50	1.5	1.6	24.6	10.8	10.5	89.2
#100	1.4	1.5	7.1	3.7	7.1	96.3
LBW	1.2	1.2	1.2	1.2	2.5	98.8

*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. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **60** Workability Factor: **35**



Initial Production Sample (IPS)

Sieve	Coarseness Factor:	Workability Factor:	Cumulative % Passing	% Retained	Cumulative % Retained
2"	62	35	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 1022-2NS GR - Smelter Bay
 Period: 11/13/2022 - 11/19/2022

Name/Title Doug Storey / QC Technician
 Report Date 11/18/2022

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)	84.2	%	65-95
	#16 (1.18mm)	69.0	%	35-75
	#30 (.6mm)	50.4	%	20-55
	#50 (.3mm)	24.6	%	10-30
	#100 (.15mm)	7.1	%	0-10
	#200 (75µm)	1.6	%	
	FM	2.68		2.6-3
	Wash Loss (#200/75um)	1.2	%	0-3
	Total Moisture	3.7	%	

Plant 958-JMT
 Product 1067-26A Mod LS
 Period: 11/13/2022 - 11/19/2022

Name/Title Doug Storey / QC Technician
 Report Date 11/18/2022

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)	98.8	%	95-100
	3/8" (9.5mm)	88.8	%	60-95
	#4 (4.75mm)	23.0	%	5-30
	#8 (2.36mm)	5.3	%	0-12
	#16 (1.18mm)	2.2	%	
	#30 (.6mm)	1.7	%	
	#50 (.3mm)	1.6	%	
	#100 (.15mm)	1.5	%	
	#200 (75µm)	1.4	%	
	Wash Loss (#200/75um)	1.2	%	0-3
	Total Moisture	3.6	%	

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 11/13/2022 - 11/19/2022

Report Date 11/18/2022

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	98.8	%	95-100
	3/4" (19mm)	89.9	%	
	1/2" (12.5mm)	44.5	%	30-60
	3/8" (9.5mm)	21.7	%	
	#4 (4.75mm)	3.1	%	0-8
	#8 (2.36mm)	1.9	%	
	#16 (1.18mm)	1.7	%	
	#30 (.6mm)	1.6	%	
	#50 (.3mm)	1.5	%	
	#100 (.15mm)	1.4	%	
	#200 (75µm)	1.3	%	
	Wash Loss (#200/75um)	1.2	%	0-2
	Total Moisture	2.7	%	