

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

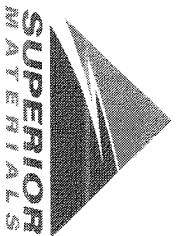
Sample Date: **9/6/21**

Dates Test Represents: **9/7/2021** through **9/13/2021**

Concrete Grade: **S2M**

Contractor: _____

MDOT No.: _____



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

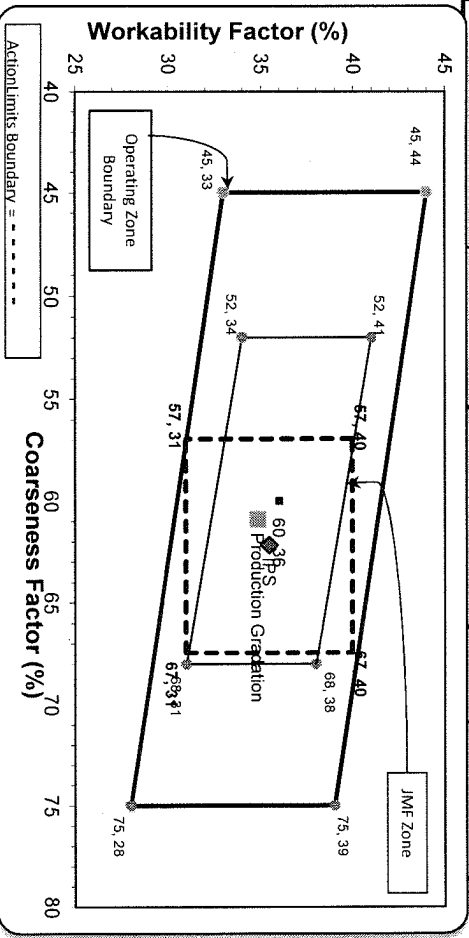
Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1650	10.09	2.62	54.1
26A	71-47	Presque Isle	170	1.04	2.62	5.6
ZNS	95-013	Smeller Bay	1230	7.44	2.65	40.3
		Total Wt	3050			100.0

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"	97.2	100.0	100.0	98.5	1.5	1.5
3/4"	86.3	100.0	100.0	92.6	5.9	7.4
1/2"	49.1	98.3	100.0	72.4	20.2	27.6
3/8"	28.2	84.9	100.0	60.3	39.7	67.7
#4	5.7	15.0	95.2	42.3	57.7	81.6
#8	3.2	3.7	81.6	34.8	65.2	71.9
#16	2.4	2.3	66.1	28.1	71.9	79.2
#30	2.3	2.1	48.2	20.8	79.2	88.9
#50	2.2	2.0	24.2	11.1	88.9	95.7
#100	1.9	1.9	7.8	4.3	95.7	98.6
LBW	1.5	1.7	1.4	1.5	98.5	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 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: **61** 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

Name/Title Doug Storey / QC Technician

Period: 09/05/2021 - 09/11/2021

Report Date 09/11/2021

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	95.2	%	95-100
	#8 (2.36mm)	81.6	%	65-95
	#16 (1.18mm)	66.1	%	35-75
	#30 (.6mm)	48.2	%	20-55
	#50 (.3mm)	24.2	%	10-30
	#100 (.15mm)	7.8	%	0-10
	#200 (75µm)	1.8	%	
	FM	2.77		2.6-3
	Wash Loss (#200/75um)	1.4	%	0-3
	Total Moisture	3.4	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 09/05/2021 - 09/11/2021

Report Date 09/11/2021

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)	98.3	%	95-100
	3/8" (9.5mm)	84.9	%	60-95
	#4 (4.75mm)	15.0	%	5-30
	#8 (2.36mm)	3.7	%	0-12
	#16 (1.18mm)	2.3	%	
	#30 (.6mm)	2.1	%	
	#50 (.3mm)	2.0	%	
	#100 (.15mm)	1.9	%	
	#200 (75µm)	1.8	%	
	Wash Loss (#200/75um)	1.7	%	0-3
	Total Moisture	1.9	%	

Plant 958-JMT
 Product 1054-6AA LS PI
 Period: 09/05/2021 - 09/11/2021

Name/Title Doug Storey / QC Technician
 Report Date 09/11/2021

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	97.2	%	95-100
	3/4" (19mm)	86.3	%	
	1/2" (12.5mm)	49.1	%	30-60
	3/8" (9.5mm)	28.2	%	
	#4 (4.75mm)	5.7	%	0-8
	#8 (2.36mm)	3.2	%	
	#16 (1.18mm)	2.4	%	
	#30 (.6mm)	2.3	%	
	#50 (.3mm)	2.2	%	
	#100 (.15mm)	1.9	%	
	#200 (75µm)	1.6	%	
	Wash Loss (#200/75µm)	1.5	%	0-2
	Total Moisture	2.6	%	