

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

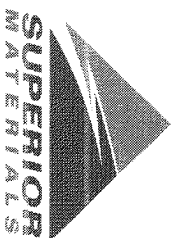
Sample Date: **9/13/21**

Dates Test Represents: **9/14/2021** through **9/20/2021**

Concrete Grade: **S2M**

Contractor: _____

MDOT No.: _____



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

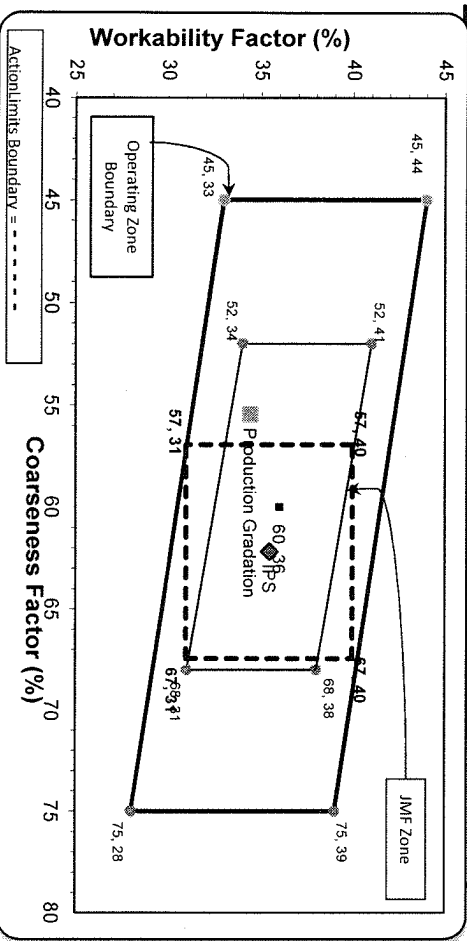
Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	% Contribution
GAA	71-47	Presque Isle	1650	10.09	2.62	54.1
26A	71-47	Presque Isle	170	1.04	2.62	5.6
NNS	95-013	Smelter Bay	1230	7.44	2.65	40.3
Total Wt			3050	18.57		100.0

Sieve	% Retained	Cumulative % Retained
2"	0.0	0.0
1.5"	0.0	0.0
1"	1.0	1.0
3/4"	3.4	4.4
1/2"	18.6	23.0
3/8"	13.4	36.4
#4	21.1	57.5
#8	8.1	65.6
#16	6.4	72.0
#30	7.3	79.3
#50	9.8	89.1
#100	6.9	95.9
LBW	2.8	98.7

*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: **55** Workability Factor: **34**



Initial Production Sample (IPS)

Coarseness Factor:	Workability Factor:
62	35
35	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 1022-2NS GR - Smelter Bay
 Period: 09/12/2021 - 09/18/2021

Name/Title Doug Storey / QC Technician
 Report Date 09/17/2021

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	95.0	%	95-100
	#8 (2.36mm)	82.3	%	65-95
	#16 (1.18mm)	67.3	%	35-75
	#30 (.6mm)	49.4	%	20-55
	#50 (.3mm)	25.2	%	10-30
	#100 (.15mm)	8.2	%	0-10
	#200 (75µm)	2.1	%	
	FM	2.72		2.6-3
	Wash Loss (#200/75um)	1.6	%	0-3
	Total Moisture	4.0	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 09/12/2021 - 09/18/2021

Report Date 09/17/2021

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)	94.9	%	95-100
	3/8" (9.5mm)	81.3	%	60-95
	#4 (4.75mm)	14.8	%	5-30
	#8 (2.36mm)	4.5	%	0-12
	#16 (1.18mm)	2.6	%	
	#30 (.6mm)	2.2	%	
	#50 (.3mm)	2.1	%	
	#100 (.15mm)	1.9	%	
	#200 (75µm)	1.7	%	
	Wash Loss (#200/75um)	1.6	%	0-3
	Total Moisture	2.5	%	

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 09/12/2021 - 09/18/2021

Report Date 09/17/2021

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	98.1	%	95-100
	3/4" (19mm)	91.9	%	
	1/2" (12.5mm)	58.0	%	30-60
	3/8" (9.5mm)	34.7	%	
	#4 (4.75mm)	6.3	%	0-8
	#8 (2.36mm)	1.8	%	
	#16 (1.18mm)	1.4	%	
	#30 (.6mm)	1.3	%	
	#50 (.3mm)	1.2	%	
	#100 (.15mm)	1.2	%	
	#200 (75µm)	1.1	%	
	Wash Loss (#200/75um)	1.0	%	0-2
	Total Moisture	2.9	%	