

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

Sample Date: **7/31/23**

Dates Test Represents: **8/1/2023** through **8/7/2023**

Concrete Grade: **S2M, 3500HP**

Contractor: _____

MDOT No.: _____



Superior Materials, LLC
 30701 W. 10 Mile Rd.
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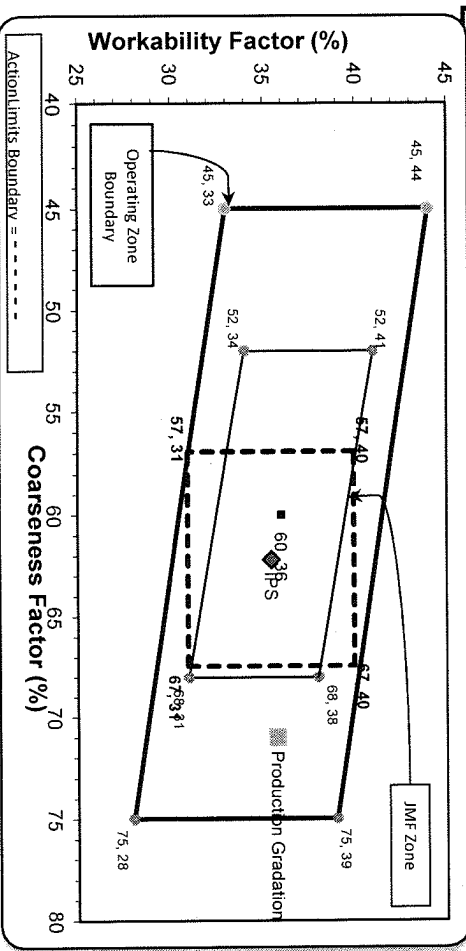
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1670	10.21	2.62	54.8
26A	71-47	Presque Isle	150	0.92	2.62	4.9
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
Total Wt						3050
						18.57

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"	96.4	100.0	100.0	98.0	2.0	2.0
3/4"	75.9	100.0	100.0	86.8	13.2	13.2
1/2"	33.8	97.1	100.0	63.6	23.2	36.4
3/8"	17.5	91.1	100.0	54.4	9.2	45.6
#4	3.0	22.3	97.0	41.9	12.5	58.1
#8	1.4	5.4	86.1	35.8	6.1	64.2
#16	1.2	2.4	71.4	29.6	6.2	70.4
#30	1.1	1.8	51.2	21.3	8.2	78.7
#50	1.0	1.6	23.9	10.3	11.1	89.7
#100	1.0	1.5	6.8	3.4	6.9	96.6
LBW	0.7	1.2	1.0	0.8	2.5	99.2

*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 4% for the 3/4" sieve when a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **71** Workability Factor: **36**



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 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 07/30/2023 - 08/05/2023

Report Date 08/05/2023

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	96.4	%	95-100
	3/4" (19mm)	75.9	%	
	1/2" (12.5mm)	33.8	%	30-60
	3/8" (9.5mm)	17.5	%	
	#4 (4.75mm)	3.0	%	0-8
	#8 (2.36mm)	1.4	%	
	#16 (1.18mm)	1.2	%	
	#30 (.6mm)	1.1	%	
	#50 (.3mm)	1.0	%	
	#100 (.15mm)	1.0	%	
	#200 (75µm)	0.8	%	
	Wash Loss (#200/75um)	0.7	%	0-2
	Total Moisture	2.6	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 07/30/2023 - 08/05/2023

Report Date 08/05/2023

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)	97.1	%	95-100
	3/8" (9.5mm)	91.1	%	60-95
	#4 (4.75mm)	22.3	%	5-30
	#8 (2.36mm)	5.4	%	0-12
	#16 (1.18mm)	2.4	%	
	#30 (.6mm)	1.8	%	
	#50 (.3mm)	1.6	%	
	#100 (.15mm)	1.5	%	
	#200 (75µm)	1.3	%	
	Wash Loss (#200/75µm)	1.2	%	0-3
	Total Moisture	3.3	%	

Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 07/30/2023 - 08/05/2023

Report Date 08/05/2023

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	97.0	%	95-100
	#8 (2.36mm)	86.1	%	65-95
	#16 (1.18mm)	71.4	%	35-75
	#30 (.6mm)	51.2	%	20-55
	#50 (.3mm)	23.9	%	10-30
	#100 (.15mm)	6.8	%	0-10
	#200 (75µm)	1.6	%	
	FM	2.64		2.6-3
	Wash Loss (#200/75um)	1.0	%	0-3
	Total Moisture	3.7	%	