

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

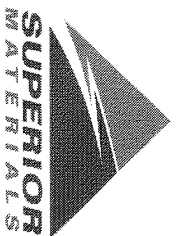
Sample Date: 11/28/22

Dates Test Represents: 11/29/2022 through 12/5/2022

Concrete Grade: **S2M, 3500HP**

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	1520	9.30	2.62	49.8
26A	71-47	Presque Isle	300	1.83	2.62	9.8
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
			Total Wt:	3050		100.0

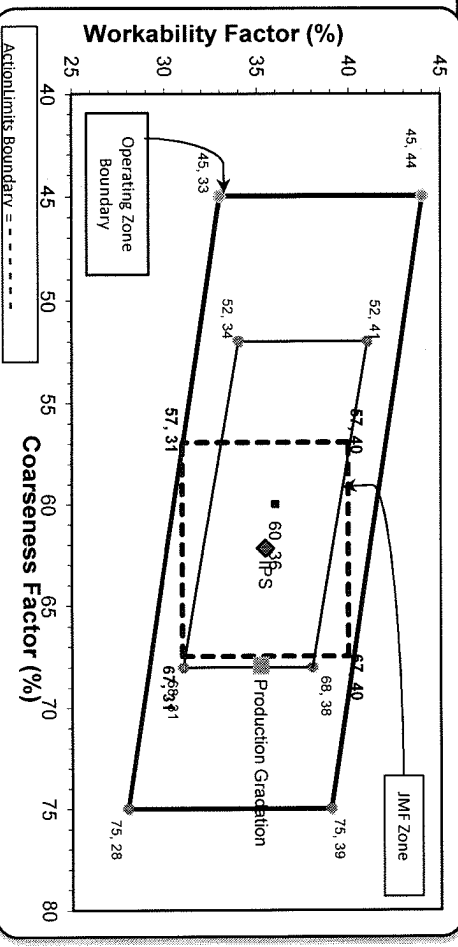
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	96.7	100.0	100.0	98.4	1.6	1.6
3/4"	74.4	100.0	100.0	87.2	11.1	12.8
1/2"	31.9	96.0	100.0	65.7	21.6	34.3
3/8"	14.7	84.8	100.0	56.0	9.7	44.0
#4	2.5	20.6	96.0	42.0	14.0	58.0
#8	1.9	5.4	83.6	35.2	6.8	64.8
#16	1.7	2.8	67.9	28.5	6.7	71.5
#30	1.5	2.3	49.2	20.8	7.7	79.2
#50	1.4	2.1	24.0	10.6	10.2	89.4
#100	1.3	2.0	6.6	3.5	7.1	96.5
LBW	0.9	1.7	1.2	1.1	2.4	98.9

<----- Verify this number is 100%

*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: **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: 11/27/2022 - 12/03/2022

Name/Title Doug Storey / QC Technician
 Report Date 12/02/2022

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	96.0	%	95-100
	#8 (2.36mm)	83.6	%	65-95
	#16 (1.18mm)	67.9	%	35-75
	#30 (.6mm)	49.2	%	20-55
	#50 (.3mm)	24.0	%	10-30
	#100 (.15mm)	6.6	%	0-10
	#200 (75µm)	1.6	%	
	FM	2.73		2.6-3
	Wash Loss (#200/75um)	1.2	%	0-3
	Total Moisture	5.2	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 11/27/2022 - 12/03/2022

Report Date 12/02/2022

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)	96.0	%	95-100
	3/8" (9.5mm)	84.8	%	60-95
	#4 (4.75mm)	20.6	%	5-30
	#8 (2.36mm)	5.4	%	0-12
	#16 (1.18mm)	2.8	%	
	#30 (.6mm)	2.3	%	
	#50 (.3mm)	2.1	%	
	#100 (.15mm)	2.0	%	
	#200 (75µm)	1.8	%	
	Wash Loss (#200/75um)	1.7	%	0-3
	Total Moisture	3.9	%	

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 11/27/2022 - 12/03/2022

Report Date 12/02/2022

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	96.7	%	95-100
	3/4" (19mm)	74.4	%	
	1/2" (12.5mm)	31.9	%	30-60
	3/8" (9.5mm)	14.7	%	
	#4 (4.75mm)	2.5	%	0-8
	#8 (2.36mm)	1.9	%	
	#16 (1.18mm)	1.7	%	
	#30 (.6mm)	1.5	%	
	#50 (.3mm)	1.4	%	
	#100 (.15mm)	1.3	%	
	#200 (75µm)	1.1	%	
	Wash Loss (#200/75um)	0.9	%	0-2
	Total Moisture	3.3	%	