

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

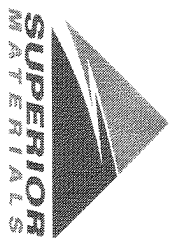
Sample Date: **7/18/22**

Dates Test Represents: **7/19/2022** through **7/25/2022**

Concrete Grade: **DM, 4500HP**

Contractor: _____

MDOT No.: _____



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

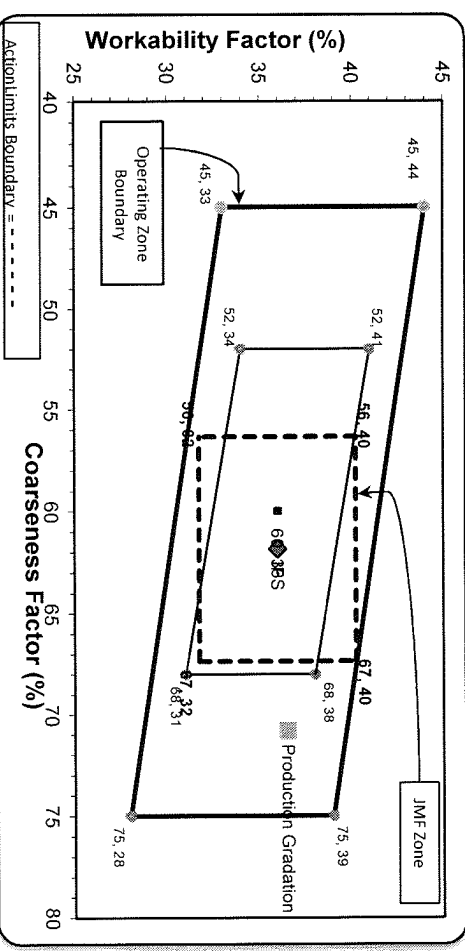
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1755	10.73	2.62	60.4
26A	71-47	Presque Isle	0	0.00	2.62	0.0
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6
		Total Wt	2905	17.69		100.0

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"	97.4	100.0	100.0	98.4	1.6	1.6
3/4"	84.8	100.0	100.0	90.8	7.6	9.2
1/2"	45.5	94.6	100.0	67.1	23.7	32.9
3/8"	22.7	82.5	100.0	53.3	13.8	46.7
#4	3.9	28.7	96.0	40.4	12.9	59.6
#8	2.4	9.6	82.3	34.0	6.3	66.0
#16	2.0	4.3	66.8	27.7	6.4	72.3
#30	1.8	3.2	47.7	20.0	7.7	80.0
#50	1.7	2.9	23.3	10.3	9.7	89.7
#100	1.5	2.6	7.2	3.8	6.5	96.2
LBW	1.1	2.2	1.3	1.2	2.6	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: **71** Workability Factor: **34** Adjusted WF: **36.5**



Sieve	Coarseness Factor:	Workability Factor:	Adjusted WF	Initial Production Sample (IPS)
2"	62	36	36.5	36.5
1.5"	62	36	36.5	36.5
1"	62	36	36.5	36.5
3/4"	62	36	36.5	36.5
1/2"	62	36	36.5	36.5
3/8"	62	36	36.5	36.5
#4	62	36	36.5	36.5
#8	62	36	36.5	36.5
#16	62	36	36.5	36.5
#30	62	36	36.5	36.5
#50	62	36	36.5	36.5
#100	62	36	36.5	36.5
LBW	62	36	36.5	36.5

PREPARED BY:
SM, LLC Technical Service

Approved By: _____

Plant 958-JMT
 Product 1022-2NS GR - Smelter Bay
 Period: 07/17/2022 - 07/23/2022

Name/Title Doug Storey / QC Technician
 Report Date 07/22/2022

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)	82.3	%	65-95
	#16 (1.18mm)	66.8	%	35-75
	#30 (.6mm)	47.7	%	20-55
	#50 (.3mm)	23.3	%	10-30
	#100 (.15mm)	7.2	%	0-10
	#200 (75µm)	1.8	%	
	FM	2.77		2.6-3
	Wash Loss (#200/75um)	1.3	%	0-3
	Total Moisture	3.1	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 07/17/2022 - 07/23/2022

Report Date 07/22/2022

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)	94.6	%	95-100
	3/8" (9.5mm)	82.5	%	60-95
	#4 (4.75mm)	28.7	%	5-30
	#8 (2.36mm)	9.6	%	0-12
	#16 (1.18mm)	4.3	%	
	#30 (.6mm)	3.2	%	
	#50 (.3mm)	2.9	%	
	#100 (.15mm)	2.6	%	
	#200 (75µm)	2.3	%	
	Wash Loss (#200/75um)	2.2	%	0-3
	Total Moisture	1.2	%	

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 07/17/2022 - 07/23/2022

Report Date 07/22/2022

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	97.4	%	95-100
	3/4" (19mm)	84.8	%	
	1/2" (12.5mm)	45.5	%	30-60
	3/8" (9.5mm)	22.7	%	
	#4 (4.75mm)	3.9	%	0-8
	#8 (2.36mm)	2.4	%	
	#16 (1.18mm)	2.0	%	
	#30 (.6mm)	1.8	%	
	#50 (.3mm)	1.7	%	
	#100 (.15mm)	1.5	%	
	#200 (75µm)	1.2	%	
	Wash Loss (#200/75um)	1.1	%	0-2
	Total Moisture	1.1	%	