

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

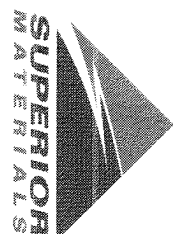
Sample Date: **8/16/21**

Dates Test Represents: **8/17/2021** through **8/23/2021**

Concrete Grade: **DM**

Contractor: _____

MDOT No.: _____



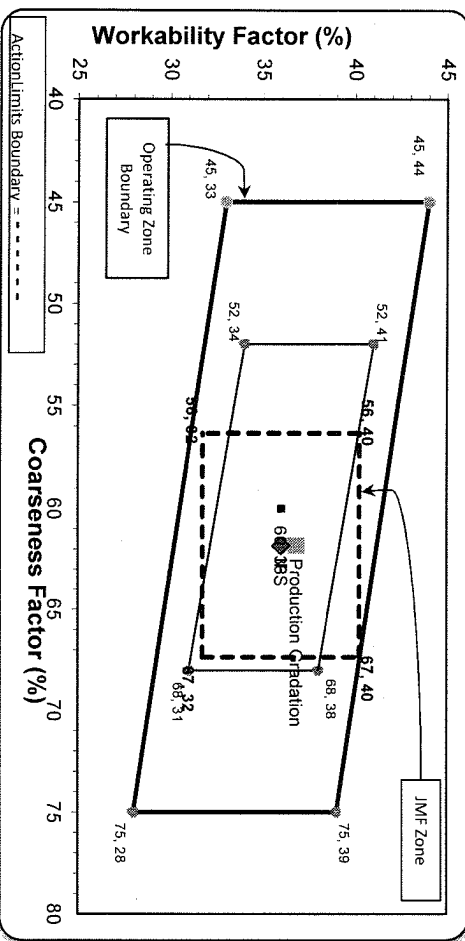
Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1550	9.48	2.62	53.4
26A	71-47	Presque Isle	205	1.25	2.62	7.1
2NS	95-013	Smeller 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"	97.6	100.0	100.0	98.7	1.3	1.3
3/4"	82.1	100.0	100.0	90.4	9.6	9.6
1/2"	45.2	96.2	100.0	70.5	29.5	29.5
3/8"	25.8	85.8	100.0	59.4	40.6	40.6
#4	5.2	15.1	97.2	42.3	57.7	57.7
#8	2.4	6.6	82.3	34.3	65.7	65.7
#16	1.9	3.3	67.0	27.8	72.2	72.2
#30	1.7	2.5	48.4	20.2	79.8	79.8
#50	1.6	2.4	25.2	11.0	89.0	89.0
#100	1.5	2.2	5.2	3.0	97.0	97.0
LBW	1.1	1.6	0.9	1.1	98.9	98.9

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **62** Workability Factor: **34** Adjusted W/F: **36.8**



Sieve	Initial Production Sample (IPS)	Coarseness Factor: 62	Workability Factor: 36
2"	100.0	100.0	0.0
1.5"	100.0	100.0	0.0
1"	100.0	100.0	0.0
3/4"	95.0	5.0	5.0
1/2"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	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.

PREPARED BY:
SM, LLC Technical Service

Approved By: _____

Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 08/15/2021 - 08/21/2021

Report Date 08/21/2021

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	97.2	%	95-100
	#8 (2.36mm)	82.3	%	65-95
	#16 (1.18mm)	67.0	%	35-75
	#30 (.6mm)	48.4	%	20-55
	#50 (.3mm)	25.2	%	10-30
	#100 (.15mm)	5.2	%	0-10
	#200 (75µm)	1.2	%	
	FM	2.75		2.6-3
	Wash Loss (#200/75um)	0.9	%	0-3
	Total Moisture	4.0	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 08/15/2021 - 08/21/2021

Report Date 08/21/2021

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)	96.2	%	95-100
	3/8" (9.5mm)	85.8	%	60-95
	#4 (4.75mm)	15.1	%	5-30
	#8 (2.36mm)	6.6	%	0-12
	#16 (1.18mm)	3.3	%	
	#30 (.6mm)	2.5	%	
	#50 (.3mm)	2.4	%	
	#100 (.15mm)	2.2	%	
	#200 (75µm)	1.9	%	
	Wash Loss (#200/75um)	1.6	%	0-3
	Total Moisture	2.7	%	

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 08/15/2021 - 08/21/2021

Report Date 08/21/2021

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	97.6	%	95-100
	3/4" (19mm)	82.1	%	
	1/2" (12.5mm)	45.2	%	30-60
	3/8" (9.5mm)	25.8	%	
	#4 (4.75mm)	5.2	%	0-8
	#8 (2.36mm)	2.4	%	
	#16 (1.18mm)	1.9	%	
	#30 (.6mm)	1.7	%	
	#50 (.3mm)	1.6	%	
	#100 (.15mm)	1.5	%	
	#200 (75µm)	1.3	%	
	Wash Loss (#200/75um)	1.1	%	0-2
	Total Moisture	1.2	%	