

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

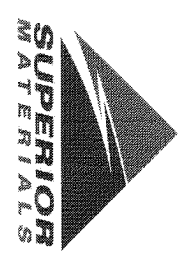
Sample Date: **2/17/22**

Dates Test Represents: **2/8/2022** through **2/14/2022**

Concrete Grade: **DM**

Contractor: _____

MDOT No.: _____



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

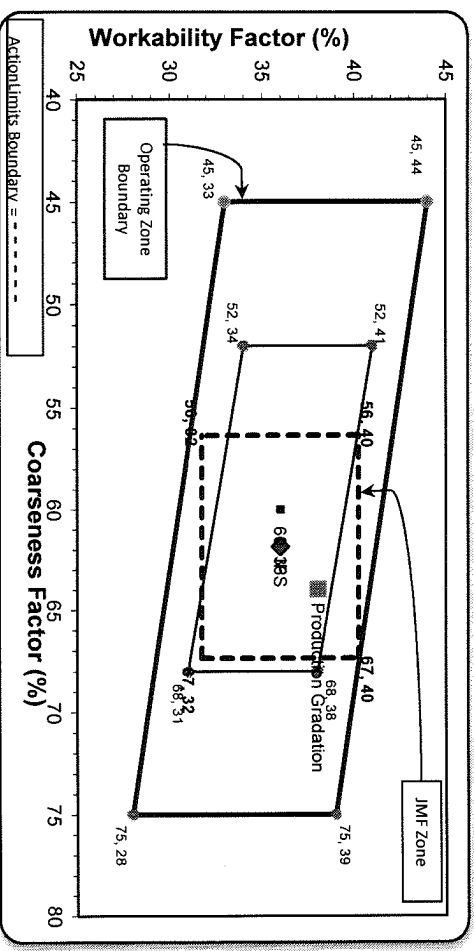
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1455	8.90	2.62	50.1
26A	71-47	Presque Isle	300	1.83	2.62	10.3
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6
Total Wt:			2905			100.0

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	98.8	1.2	1.2
3/4"	82.6	100.0	100.0	91.3	7.5	8.7
1/2"	38.4	98.8	100.0	69.0	22.3	31.0
3/8"	19.6	90.6	100.0	58.8	10.3	41.2
#4	4.1	28.8	98.1	43.9	14.9	56.1
#8	2.8	11.5	83.2	35.5	8.3	64.5
#16	2.6	5.3	67.0	28.4	7.2	71.6
#30	2.5	3.7	47.7	20.5	7.9	79.5
#50	2.4	3.1	23.9	11.0	9.5	89.0
#100	2.3	2.7	7.9	4.6	6.4	95.4
LBW	1.9	2.0	1.5	1.8	2.8	98.2

*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 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: **64** Workability Factor: **36** Adjusted WF: **38.0**



Sieve	Initial Production Sample (IPS)	Coarseness Factor:	Workability Factor:	Adjusted WF
2"	100.0	62	36	38.0
1.5"	100.0			
1"	100.0			
3/4"	95.0			
1/2"	72.3			
3/8"	60.4			
#4	42.6			
#8	36.0			
#16	29.5			
#30	20.3			
#50	9.5			
#100	3.4			
LBW	1.3			

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"	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

PREPARED BY:
SM, LLC Technical Service

Approved By: _____

Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 02/06/2022 - 02/12/2022

Report Date 02/12/2022

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	98.1	%	95-100
	#8 (2.36mm)	83.2	%	65-95
	#16 (1.18mm)	67.0	%	35-75
	#30 (.6mm)	47.7	%	20-55
	#50 (.3mm)	23.9	%	10-30
	#100 (.15mm)	7.9	%	0-10
	#200 (75µm)	1.9	%	
	FM	2.72		2.6-3
	Wash Loss (#200/75um)	1.5	%	0-3
	Total Moisture	4.7	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 02/06/2022 - 02/12/2022

Report Date 02/12/2022

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)	98.8	%	95-100
	3/8" (9.5mm)	90.6	%	60-95
	#4 (4.75mm)	28.8	%	5-30
	#8 (2.36mm)	11.5	%	0-12
	#16 (1.18mm)	5.3	%	
	#30 (.6mm)	3.7	%	
	#50 (.3mm)	3.1	%	
	#100 (.15mm)	2.7	%	
	#200 (75µm)	2.4	%	
	Wash Loss (#200/75um)	2.0	%	0-3
	Total Moisture	4.8	%	

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 02/06/2022 - 02/12/2022

Report Date 02/12/2022

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	97.6	%	95-100
	3/4" (19mm)	82.6	%	
	1/2" (12.5mm)	38.4	%	30-60
	3/8" (9.5mm)	19.6	%	
	#4 (4.75mm)	4.1	%	0-8
	#8 (2.36mm)	2.8	%	
	#16 (1.18mm)	2.6	%	
	#30 (.6mm)	2.5	%	
	#50 (.3mm)	2.4	%	
	#100 (.15mm)	2.3	%	
	#200 (75µm)	2.2	%	
	Wash Loss (#200/75um)	1.9	%	0-2
	Total Moisture	2.9	%	