

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

Sample Date: 1/11/21

Dates Test Represents: 1/12/2021 through 1/18/2021

Concrete Grade: **DM**

Contractor: _____

MDOT No.: _____



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

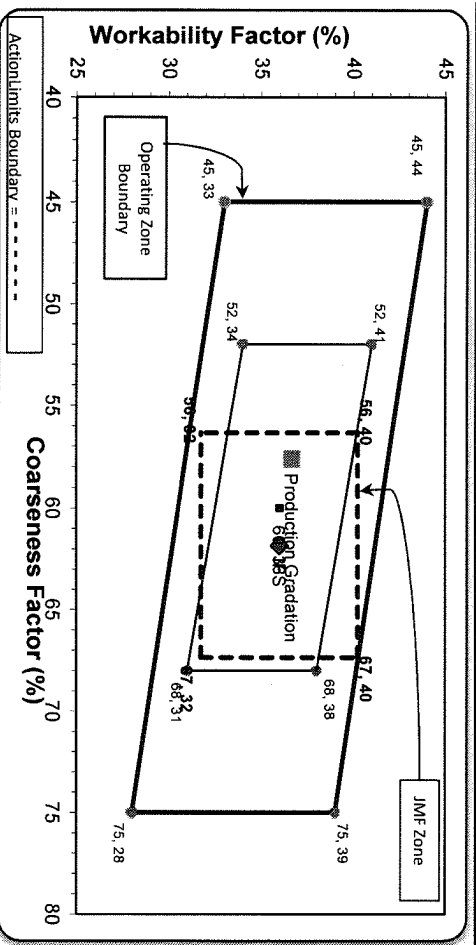
Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1300	7.95	2.62	44.8
26A	71-47	Presque Isle	455	2.78	2.62	15.7
ZNS	95-013	Smeller Bay	1150	6.95	2.65	39.6
Total Wt			2905	17.69		100.0

Sieve	6AA	26A	ZNS	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"	97.8	100.0	100.0	99.0	1.0	1.0
3/4"	76.2	100.0	100.0	89.3	9.7	10.7
1/2"	38.3	98.5	100.0	72.2	17.2	27.8
3/8"	20.5	84.9	100.0	62.1	10.1	37.9
#4	3.0	15.1	96.3	41.8	20.2	58.2
#8	1.9	3.9	82.6	34.2	7.7	65.8
#16	1.7	2.3	66.4	27.4	6.8	72.6
#30	1.6	2.1	43.2	18.1	9.3	81.9
#50	1.5	2.0	18.1	8.1	10.0	91.9
#100	1.4	1.9	4.3	2.6	5.5	97.4
LBW	1.1	1.6	1.5	1.3	1.3	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.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **58** Workability Factor: **34** Adjusted WF: **36.7**



Sieve	Initial Production Sample (IPS)	Coarseness Factor:	Workability Factor:	Adjusted WF:
2"	100.0	62	36	36.7
1.5"	100.0	62	36	36.7
1"	100.0	62	36	36.7
3/4"	95.0	62	36	36.7
1/2"	72.3	62	36	36.7
3/8"	60.4	62	36	36.7
#4	42.6	62	36	36.7
#8	36.0	62	36	36.7
#16	29.5	62	36	36.7
#30	20.3	62	36	36.7
#50	9.5	62	36	36.7
#100	3.4	62	36	36.7
LBW	1.3	62	36	36.7

PREPARED BY:
SM, LLC Technical Service

Approved By: _____

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 01/10/2021 - 01/16/2021

Report Date 01/15/2021

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	97.8	%	95-100
	3/4" (19mm)	76.2	%	
	1/2" (12.5mm)	38.3	%	30-60
	3/8" (9.5mm)	20.5	%	
	#4 (4.75mm)	3.0	%	0-8
	#8 (2.36mm)	1.9	%	
	#16 (1.18mm)	1.7	%	
	#30 (.6mm)	1.6	%	
	#50 (.3mm)	1.5	%	
	#100 (.15mm)	1.4	%	
	#200 (75µm)	1.2	%	
	Wash Loss (#200/75um)	1.1	%	0-2
	Total Moisture	3.1	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 01/10/2021 - 01/16/2021

Report Date 01/15/2021

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)	98.5	%	95-100
	3/8" (9.5mm)	84.9	%	60-95
	#4 (4.75mm)	15.1	%	5-30
	#8 (2.36mm)	3.9	%	0-12
	#16 (1.18mm)	2.3	%	
	#30 (.6mm)	2.1	%	
	#50 (.3mm)	2.0	%	
	#100 (.15mm)	1.9	%	
	#200 (75µm)	1.7	%	
	Wash Loss (#200/75um)	1.6	%	0-3
	Total Moisture	3.4	%	

Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 01/10/2021 - 01/16/2021

Report Date 01/15/2021

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	96.3	%	95-100
	#8 (2.36mm)	82.6	%	65-95
	#16 (1.18mm)	66.4	%	35-75
	#30 (.6mm)	43.2	%	20-55
	#50 (.3mm)	18.1	%	10-30
	#100 (.15mm)	4.3	%	0-10
	#200 (75µm)	1.5	%	
	FM	2.89		2.6-3
	Wash Loss (#200/75um)	1.5	%	0-3
	Total Moisture	4.7	%	