

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-103

Sample Date: 12/19/22

Dates Test Represents: 12/20/2022 through 12/26/2022

Concrete Grade: DM, 4500HP

Contractor:

MDOT No.:



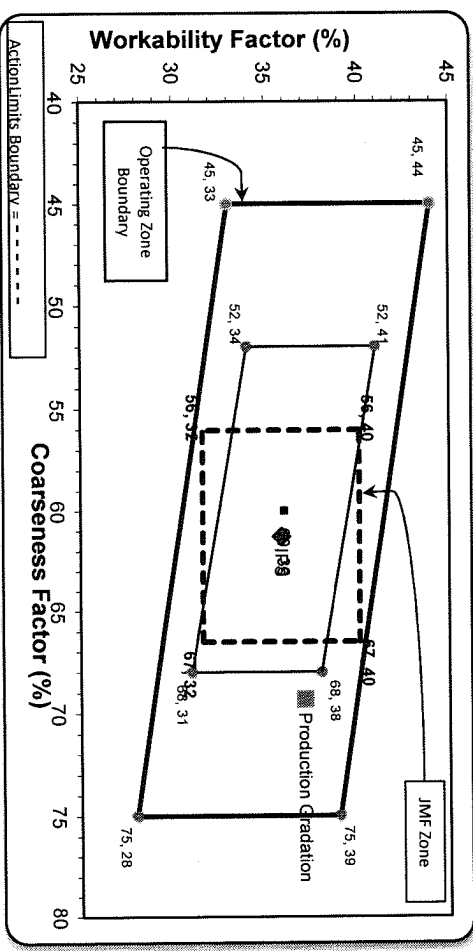
Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	58-003	Stonoco	1500	8.94	2.69	50.8
26A	58-003	Stonoco	300	1.79	2.69	10.2
ZNS	81-019	Pleasant Lake	1150	6.95	2.65	39.0
			Total Wt	2950		100.0

Sieve	6AA	26A	ZNS	Cumulative % Passing
2"	100.0	100.0	100.0	100.0
1.5"	100.0	100.0	100.0	100.0
1"	98.8	100.0	100.0	99.4
3/4"	71.0	100.0	100.0	85.3
1/2"	30.2	99.4	100.0	64.4
3/8"	14.3	82.8	100.0	54.7
#4	4.7	7.2	97.1	41.0
#8	3.1	2.8	84.0	34.6
#16	2.6	2.1	69.4	28.6
#30	2.3	1.9	53.3	22.1
#50	2.1	1.8	28.0	12.2
#100	2.0	1.7	8.2	4.4
LBW	1.8	1.4	1.8	1.8

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 69 **Workability Factor:** 35 **Adjusted WF:** 37.1



Sieve	Initial Production Sample (IPS)	Coarseness Factor:	Workability Factor:	Adjusted WF
2"	0.0	61	36	37.1
1.5"	0.0			
1"	0.7			
3/4"	10.1			
1/2"	18.5			
3/8"	10.0			
#4	16.3			
#8	8.5			
#16	8.6			
#30	8.2			
#50	11.7			
#100	5.6			
LBW	1.2			

*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.

PREPARED BY:
SM, LLC Technical Service

Approved BY:



12/22/2022

1022-2NS GR

Procedure	Sieve/Test	Average	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	97.1	%	95-100
	#8 (2.36mm)	84.0	%	65-95
	#16 (1.18mm)	69.4	%	35-75
	#30 (.6mm)	53.3	%	20-55
	#50 (.3mm)	28.0	%	10-30
	#100 (.15mm)	8.2	%	0-10
	#200 (75µm)	2.0	%	
	FM	2.60		2.60-3.00
	Wash Loss (#200/75um)	1.8	%	0.0-3.0
	Total Moisture	2.63	%	

Name/Title Doug Storey / QC Technician



12/22/2022

1067-26A Mod LS

Procedure	Sieve/Test	Average	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)	99.4	%	95-100
	3/8" (9.5mm)	82.8	%	60-95
	#4 (4.75mm)	7.2	%	5-30
	#8 (2.36mm)	2.8	%	0-12
	#16 (1.18mm)	2.1	%	
	#30 (.6mm)	1.9	%	
	#50 (.3mm)	1.8	%	
	#100 (.15mm)	1.7	%	
	#200 (75µm)	1.6	%	
	Wash Loss (#200/75µm)	1.4	%	0.0-3.0
	Total Moisture	3.25	%	

Name/Title

Doug Storey / QC Technician



12/22/2022

1051-6AA LS

Procedure	Sieve/Test	Average	Unit	6AA LS
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	98.8	%	95-100
	3/4" (19mm)	71.0	%	
	1/2" (12.5mm)	30.2	%	30-60
	3/8" (9.5mm)	14.3	%	
	#4 (4.75mm)	4.7	%	0-8
	#8 (2.36mm)	3.1	%	
	#16 (1.18mm)	2.6	%	
	#30 (.6mm)	2.3	%	
	#50 (.3mm)	2.1	%	
	#100 (.15mm)	2.0	%	
	#200 (75µm)	1.93	%	
	Wash Loss (#200/75um)	1.8	%	0.0-2.0
	Total Moisture	2.53	%	

Name/Title

Doug Storey / QC Technician