

# Aggregate Optimization Chart

PLANT #: 12

Sample Date: 7/31/23

Dates Test Represents: 8/1/2023 through 8/7/2023

Concrete Grade: P1M, 3500HP

Contractor: \_\_\_\_\_  
 MDOT No.: \_\_\_\_\_

Agg. Class	Pit #	Source	Weight (ssd)	ft <sup>3</sup>	Specific Gravity	Contribution %
CA	71-47	Presque Isle	1020	6.24	2.62	33.2
IA	71-47	Presque Isle	850	5.20	2.62	27.7
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
Total Wt			3070	18.70		100.0

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	89.7	100.0	100.0	96.6	3.4	3.4
1"	48.6	100.0	100.0	82.9	13.7	17.1
3/4"	11.4	100.0	100.0	70.2	12.7	29.8
1/2"	5.4	77.8	100.0	62.4	7.8	37.6
3/8"	4.4	54.4	100.0	55.6	6.8	44.4
#4	3.2	9.0	95.8	41.0	14.6	59.0
#8	2.8	2.7	81.0	33.3	7.7	66.7
#16	2.6	1.9	67.4	27.7	5.6	72.3
#30	2.4	1.8	51.8	21.5	6.2	78.5
#50	2.2	1.6	25.8	11.3	10.3	88.7
#100	1.8	1.5	6.1	3.4	7.9	96.6
LBW	1.4	1.3	1.7	1.5	1.9	98.5

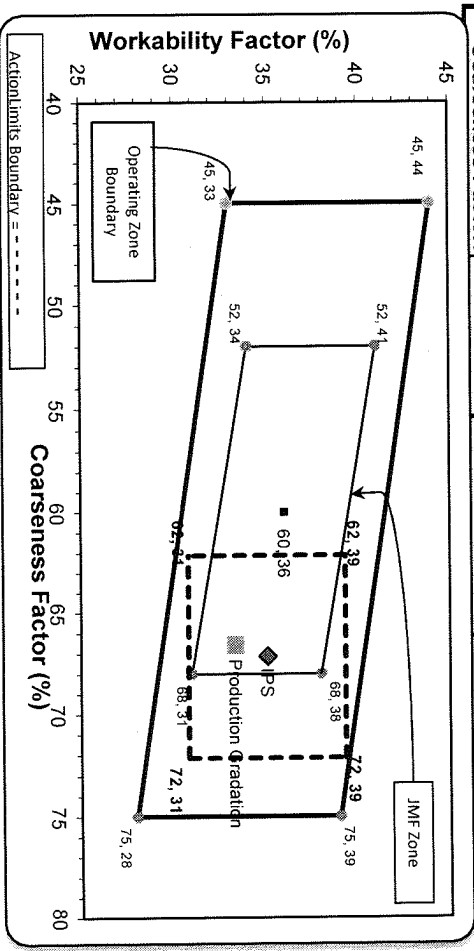


Superior Materials, LLC  
 30701 W. 10 Mile Rd.  
 Suite 500  
 Farmington Hills, MI 48336

\*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: **67** Workability Factor: **33**



Initial Production Sample (IPS)

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.6	0.4	0.4
1"	83.9	15.7	16.1
3/4"	74.0	9.8	26.0
1/2"	63.7	10.3	36.3
3/8"	56.4	7.3	43.6
#4	43.0	13.4	57.0
#8	35.1	7.9	64.9
#16	29.0	6.1	71.0
#30	20.9	8.0	79.1
#50	8.1	12.8	91.9
#100	1.6	6.5	98.4
LBW	0.9	0.8	99.1

PREPARED BY:  
 SM, LLC Technical Service

Approved By: \_\_\_\_\_



Plant S12-Onsite Southfield

Product 7919-COARSE AGG P1M LS

Period: 07/30/2023 - 08/05/2023

Name/Title Doug Storey / QC Technician

Report Date 08/05/2023

Procedure	Sieve/Test	Result	Unit	Coarse Agg P1M LS Target
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	89.7	%	
	1" (25mm)	48.6	%	
	3/4" (19mm)	11.4	%	
	1/2" (12.5mm)	5.4	%	
	3/8" (9.5mm)	4.4	%	
	#4 (4.75mm)	3.2	%	
	#8 (2.36mm)	2.8	%	
	#16 (1.18mm)	2.6	%	
	#30 (.6mm)	2.4	%	
	#50 (.3mm)	2.2	%	
	#100 (.15mm)	1.8	%	
	#200 (75µm)	1.5	%	
	Wash Loss (#200/75um)	1.4	%	0-2
	Total Moisture	0.90	%	



Plant S12-Onsite Southfield

Product 7920-INTERMED AGG P1M LS

Name/Title Doug Storey / QC Technician

Period: 07/30/2023 - 08/05/2023

Report Date 08/05/2023

Procedure	Sieve/Test	Result	Unit	Intermed Agg P1M LS Target
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	
	1" (25mm)	100.0	%	
	3/4" (19mm)	98.8	%	
	1/2" (12.5mm)	77.8	%	
	3/8" (9.5mm)	54.4	%	
	#4 (4.75mm)	9.0	%	
	#8 (2.36mm)	2.7	%	
	#16 (1.18mm)	1.9	%	
	#30 (.6mm)	1.8	%	
	#50 (.3mm)	1.6	%	
	#100 (.15mm)	1.5	%	
	#200 (75µm)	1.4	%	
	Wash Loss (#200/75um)	1.3	%	0-3
	Total Moisture	1.09	%	



Plant S12-Onsite Southfield

Product 1022-2NS GR

Period: 07/30/2023 - 08/05/2023

Name/Title Doug Storey / QC Technician

Report Date 08/05/2023

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	95.8	%	95-100
	#8 (2.36mm)	81.0	%	65-95
	#16 (1.18mm)	67.4	%	35-75
	#30 (.6mm)	51.8	%	20-55
	#50 (.3mm)	25.8	%	10-30
	#100 (.15mm)	6.1	%	0-10
	#200 (75µm)	2.1	%	
	FM	2.72		2.6-3
	Wash Loss (#200/75um)	1.7	%	0-3
	Total Moisture	3.42	%	