

# Aggregate Optimization Chart

## Production Gradation Report

**PLANT #:** P-39

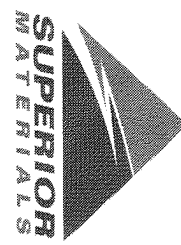
Sample Date: 3/30/20

Dates Test Represents: 3/31/2020 through 4/6/2020

Concrete Grade: P1M

Contractor: \_\_\_\_\_

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



**Superior Materials, LLC**  
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Farmington Hills, MI 48336

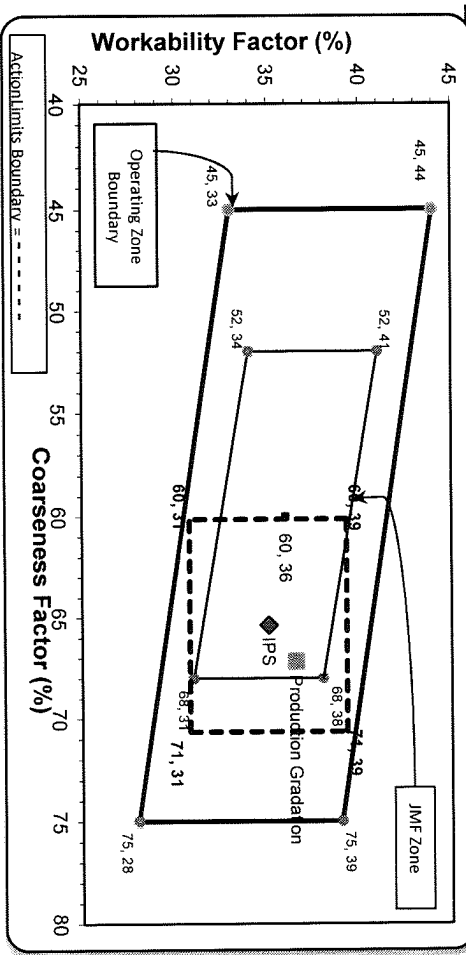
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	Contribution %
CA	71-47	Presque Isle	1000	6.12	2.62	32.6
IA	71-47	Presque Isle	850	5.20	2.62	27.7
N2S	63-92	Grange Hall	1220	7.38	2.65	39.7
		<b>Total Wt</b>	<b>3070</b>			<b>100.0</b>

Sieve	CA	IA	N2S	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"	44.3	100.0	100.0	81.9	18.1	18.1
3/4"	16.5	98.9	100.0	72.5	9.4	27.5
1/2"	7.1	81.0	100.0	64.5	8.0	35.5
3/8"	4.9	57.9	100.0	57.4	7.1	42.6
#4	3.3	18.3	97.4	44.8	12.5	55.2
#8	2.8	7.5	84.4	36.5	8.3	63.5
#16	2.7	5.0	69.9	30.0	6.5	70.0
#30	2.6	4.3	51.7	22.6	7.5	77.4
#50	2.5	3.8	24.0	11.4	11.2	88.6
#100	2.3	3.4	4.0	3.3	8.1	96.7
LBW	1.9	2.8	0.6	1.6	1.6	98.4

\*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: 37



Initial Production Sample (IPS)

Sieve	Coarseness Factor:	Workability Factor:	% Retained	Cumulative % Retained
2"	65	35	0.0	0.0
1.5"			0.4	0.4
1"			15.7	16.1
3/4"			9.8	25.9
1/2"			9.7	35.7
3/8"			6.8	42.5
#4			13.1	55.5
#8			9.4	64.9
#16			7.2	72.1
#30			6.2	78.3
#50			9.1	87.4
#100			9.1	96.5
LBW			2.4	98.8

PREPARED BY:  
SM, LLC Technical Service

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



Plant S39-Superior Sterling Heights  
 Product 7919-COARSE AGG P1M LS  
 Period: 03/29/2020 - 04/04/2020

Name/Title Doug Storey / QC Technician  
 Report Date 04/04/2020

Procedure	Sieve/Test	Result	Unit	Coarse Agg P1M LS Target
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	
	1" (25mm)	44.3	%	
	3/4" (19mm)	16.5	%	
	1/2" (12.5mm)	7.1	%	
	3/8" (9.5mm)	4.9	%	
	#4 (4.75mm)	3.3	%	
	#8 (2.36mm)	2.8	%	
	#16 (1.18mm)	2.7	%	
	#30 (.6mm)	2.6	%	
	#50 (.3mm)	2.5	%	
	#100 (.15mm)	2.3	%	
	#200 (75µm)	2.0	%	
	Wash Loss (#200/75µm)	1.9	%	0-2
	Total Moisture	1.79	%	



Plant S39-Superior Sterling Heights  
 Product 7920-INTERMED AGG P1M LS  
 Period: 03/29/2020 - 04/04/2020

Name/Title Doug Storey / QC Technician  
 Report Date 04/04/2020

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)	98.9	%	
	1/2" (12.5mm)	81.0	%	
	3/8" (9.5mm)	57.9	%	
	#4 (4.75mm)	18.3	%	
	#8 (2.36mm)	7.5	%	
	#16 (1.18mm)	5.0	%	
	#30 (.6mm)	4.3	%	
	#50 (.3mm)	3.8	%	
	#100 (.15mm)	3.4	%	
	#200 (75µm)	3.0	%	
	Wash Loss (#200/75um)	2.8	%	0-3
	Total Moisture	2.36	%	



Plant S39-Superior Sterling Heights

Product 1022-2NS GR

Name/Title Doug Storey / QC Technician

Period: 03/29/2020 - 04/04/2020

Report Date 04/04/2020

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	97.4	%	95-100
	#8 (2.36mm)	84.4	%	65-95
	#16 (1.18mm)	69.9	%	35-75
	#30 (.6mm)	51.7	%	20-55
	#50 (.3mm)	24.0	%	10-30
	#100 (.15mm)	4.0	%	0-10
	#200 (75µm)	0.8	%	
	FM	2.69		2.6-3
	Wash Loss (#200/75um)	0.6	%	0-3
	Total Moisture	3.54	%	