

# Aggregate Optimization Chart

# Production Gradation Report

PLANT #: **P-02**

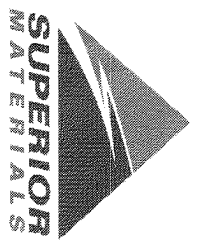
Sample Date: **12/13/21**

Dates Test Represents: **12/14/2021** through **12/20/2021**

Concrete Grade: **P1M**

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

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



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

Agg. Class	Pit #	Source	Weight (ssd)	ft <sup>3</sup>	Specific Gravity	Contribution %
CA	71-47	Presque Isle	970	5.93	2.62	31.6
IA	71-47	Presque Isle	850	5.20	2.62	27.7
2NS	63-115	Ray Rd	1250	7.56	2.65	40.7
			<b>Total Wt</b>	<b>3070</b>	<b>18.69</b>	<b>100.0</b>

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	96.4	100.0	100.0	98.9	1.1	1.1
1"	37.5	100.0	100.0	80.3	18.6	19.7
3/4"	7.7	98.2	100.0	70.3	9.9	29.7
1/2"	2.5	80.5	100.0	63.8	6.5	36.2
3/8"	2.2	56.2	100.0	57.0	6.8	43.0
#4	1.9	15.8	96.7	44.3	12.6	55.7
#8	1.8	6.4	79.4	34.7	9.7	65.3
#16	1.7	4.4	63.0	27.4	7.3	72.6
#30	1.7	3.8	46.2	20.4	7.0	79.6
#50	1.6	3.4	22.4	10.6	9.8	89.4
#100	1.6	3.0	5.1	3.4	7.2	96.6
LBW	1.3	1.9	0.5	1.1	2.3	98.9

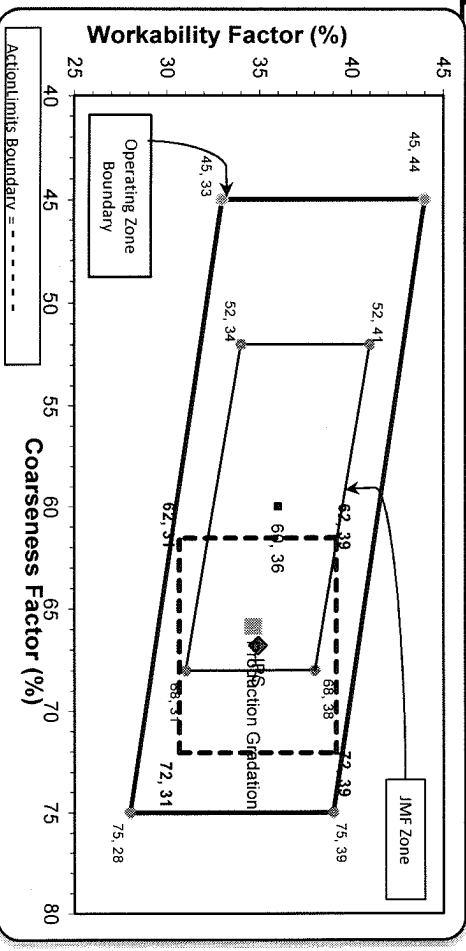
\*Maximum % Retained must be above the 3/8" sieve.  
 \*Any two adjacent sieves must equal 10% except max.  
 nom. max. #100 and #200 sieves.  
 \*% Retained must be at least 4% for each sieve except max.  
 nom. max. #100 and #200 sieves.  
 \*% Retained must be at least 8% for the 1" sieve when  
 a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Initial Production Sample (IPS)

Coarseness Factor: **66** Workability Factor: **35**

Coarseness Factor: **67** Workability Factor: **35**



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	85.0	15.0	15.0
3/4"	72.3	12.7	27.7
1/2"	64.5	7.8	35.5
3/8"	56.5	8.0	43.5
#4	42.7	13.8	57.3
#8	34.9	7.8	65.1
#16	29.0	5.9	71.0
#30	21.0	8.0	79.0
#50	8.2	12.8	91.8
#100	1.6	6.5	98.4
LBW	0.7	0.9	99.3

PREPARED BY:  
 SM, LLC Technical Service

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



## Basic Quality Statistical Summary Report

**Plant**            S02-Superior Hoover  
**Product**        1022-2NS  
**Specification**   2NS GR Spec  
**Period**         12/12/2021 - 12/18/2021

Sieve/Test	Tests	Average	St Dev	Target	Specification
3/8" (9.5mm)	1	100.0			100-100
#4 (4.75mm)	1	96.7			95-100
#8 (2.36mm)	1	79.4			65-95
#16 (1.18mm)	1	63.0			35-75
#30 (.6mm)	1	46.2		40-50	20-55
#50 (.3mm)	1	22.4			10-30
#100 (.15mm)	1	5.1			0-10
#200 (75µm)	1	0.7			
Pan	1	0.0			
FM	1	2.87		2.7-2.9	2.6-3
Wash Loss (#200/75um)	1	0.5			0-3
Total Moisture	1	3.82			



## Basic Quality Statistical Summary Report

**Plant** S02-Superior Hoover  
**Product** 7920-INTERMED AGG P1M LS  
**Specification** Intermed Agg P1M LS Target  
**Period** 12/12/2021 - 12/18/2021

Sieve/Test	Tests	Average	St Dev	Target	Specification
2" (50mm)	1	100.0			
1 1/2" (37.5mm)	1	100.0			
1" (25mm)	1	100.0		100-100	
3/4" (19mm)	1	98.2			
1/2" (12.5mm)	1	80.5			
3/8" (9.5mm)	1	56.2			
#4 (4.75mm)	1	15.8			
#8 (2.36mm)	1	6.4			
#16 (1.18mm)	1	4.4			
#30 (.6mm)	1	3.8			
#50 (.3mm)	1	3.4			
#100 (.15mm)	1	3.0			
#200 (75µm)	1	2.4		0-3	
Pan	1	0.0			
Wash Loss (#200/75um)	1	1.9			0-3
Total Moisture	1	2.55			



# Basic Quality Statistical Summary Report

**Plant** S02-Superior Hoover  
**Product** 7919-COARSE AGG P1M LS  
**Specification** Coarse Agg P1M LS Target  
**Period** 12/12/2021 - 12/18/2021

Sieve/Test	Tests	Average	St Dev	Target	Specification
2" (50mm)	1	100.0		100-100	
1 1/2" (37.5mm)	1	96.4			
1" (25mm)	1	37.5			
3/4" (19mm)	1	7.7			
1/2" (12.5mm)	1	2.5			
3/8" (9.5mm)	1	2.2			
#4 (4.75mm)	1	1.9			
#8 (2.36mm)	1	1.8			
#16 (1.18mm)	1	1.7			
#30 (.6mm)	1	1.7			
#50 (.3mm)	1	1.6			
#100 (.15mm)	1	1.6			
#200 (75µm)	1	1.4		0-2	
Pan	1	0.0			
Wash Loss (#200/75µm)	1	1.3			0-2
Total Moisture	1	1.87			