

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-36**

Contractor: _____

Sample Date: 5/25/20

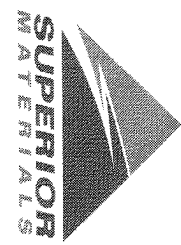
Concrete Grade: **S2M**

Dates Test Represents: 5/26/2020 through 6/1/2020

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1450	8.87	2.62	47.5
26A	71-47	Presque Isle	400	2.45	2.62	13.1
2NS	63-92	Grange Hall	1200	7.26	2.65	39.3
Total Wt						100.0

Sieve	6AA	26A	2NS	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"	97.9	100.0	100.0	99.0	1.0	1.0
3/4"	72.3	100.0	100.0	86.8	13.2	13.2
1/2"	31.5	95.3	100.0	66.8	20.0	33.2
3/8"	15.6	78.2	100.0	57.0	9.8	43.0
#4	4.2	16.3	98.1	42.7	14.3	57.3
#8	3.0	5.8	86.0	36.0	6.7	64.0
#16	2.7	3.5	72.0	30.1	6.0	69.9
#30	2.6	3.1	53.4	22.7	7.4	77.3
#50	2.4	2.8	19.5	9.2	13.5	90.8
#100	2.2	2.3	3.8	2.8	6.3	97.2
LBW	1.7	1.4	1.1	1.4	1.4	98.6



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

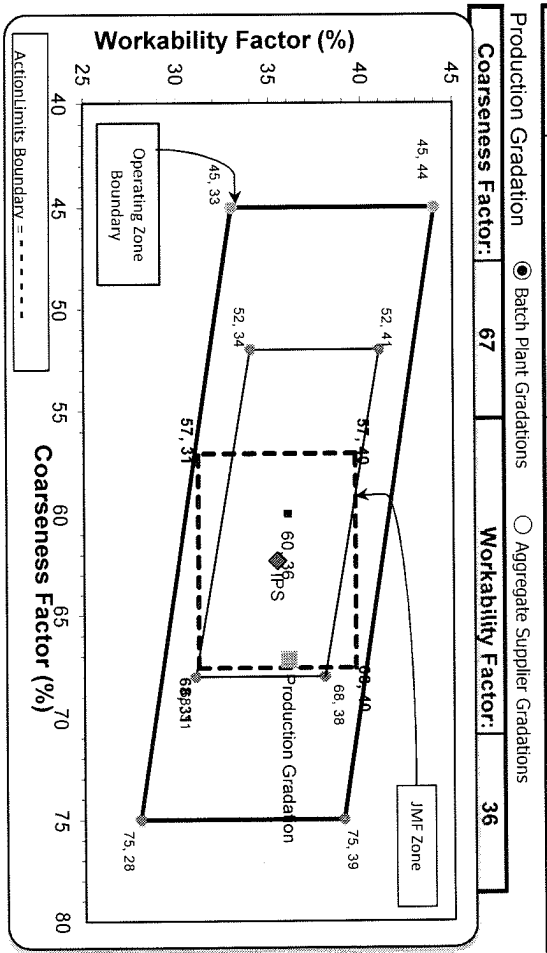
Production Gradation	Batch Plant Gradations	Aggregate Supplier Gradations
<input checked="" type="radio"/> Batch Plant Gradations	<input type="radio"/> Aggregate Supplier Gradations	
Coarseness Factor: 67	Workability Factor: 36	

Initial Production Sample (IPS)

Coarseness Factor:	62
Workability Factor:	35

Verify this number is 100%

*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.



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.1	0.9	0.9
3/4"	90.5	8.6	9.5
1/2"	69.8	20.7	30.2
3/8"	59.8	10.0	40.2
#4	42.2	17.6	57.8
#8	35.4	6.7	64.6
#16	28.8	6.7	71.2
#30	21.4	7.4	78.6
#50	8.8	12.6	91.2
#100	1.8	7.0	98.2
LBW	0.7	1.0	99.3

PREPARED BY:
 SM, LLC Technical Service

Approved By: _____



2470 Auburn Road
Auburn Hills, MI 48432

Plant S36-Superior Auburn Hills
Product 1051-6AA LS
Period: 05/24/2020 - 05/30/2020

Name/Title Doug Storey / QC Technician
Report Date 05/28/2020

Procedure	Sieve/Test	Result	Unit	6AA LS
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	97.9	%	95-100
	3/4" (19mm)	72.3	%	
	1/2" (12.5mm)	31.5	%	30-60
	3/8" (9.5mm)	15.6	%	
	#4 (4.75mm)	4.2	%	0-8
	#8 (2.36mm)	3.0	%	
	#16 (1.18mm)	2.7	%	
	#30 (.6mm)	2.6	%	
	#50 (.3mm)	2.4	%	
	#100 (.15mm)	2.2	%	
	#200 (75µm)	1.67	%	
	Wash Loss (#200/75µm)	1.6	%	0-2
	Total Moisture	3.21	%	



Plant S36-Superior Auburn Hills

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 05/24/2020 - 05/30/2020

Report Date 05/29/2020

Procedure	Sieve/Test	Result	Unit	26A 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)	95.3	%	95-100
	3/8" (9.5mm)	78.2	%	60-95
	#4 (4.75mm)	16.3	%	5-30
	#8 (2.36mm)	5.8	%	0-12
	#16 (1.18mm)	3.5	%	
	#30 (.6mm)	3.1	%	
	#50 (.3mm)	2.8	%	
	#100 (.15mm)	2.3	%	
	#200 (75µm)	1.4	%	
	Wash Loss (#200/75µm)	1.3	%	0-3
	Total Moisture	2.24	%	



Plant S36-Superior Auburn Hills
Product 1022-2NS GR
Period: 05/24/2020 - 05/30/2020

Name/Title Doug Storey / QC Technician
Report Date 05/28/2020

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	98.1	%	95-100
	#8 (2.36mm)	86.0	%	65-95
	#16 (1.18mm)	72.1	%	35-75
	#30 (.6mm)	53.4	%	20-55
	#50 (.3mm)	19.5	%	10-30
	#100 (.15mm)	3.8	%	0-10
	#200 (75µm)	1.1	%	
	FM	2.67		2.6-3
	Wash Loss (#200/75um)	0.9	%	0-3
	Total Moisture	3.61	%	

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-39**

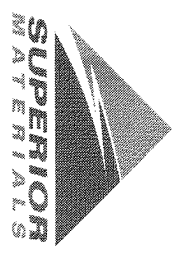
Sample Date: **6/1/20**

Dates Test Represents: **6/2/2020** through **6/8/2020**

Concrete Grade: **S2M**

Contractor: _____

MDOT No.: _____



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

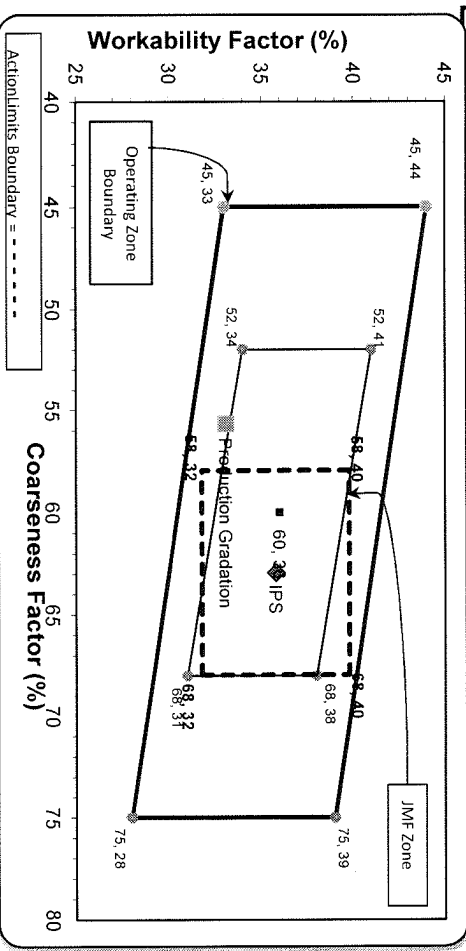
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1700	10.40	2.62	55.7
26A	71-47	Presque Isle	150	0.92	2.62	4.9
2NS	44-051	Krake Willis Rd	1200	7.26	2.65	39.3
Total Wt			3050	18.57		100.0

Sieve	6AA	26A	2NS	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"	97.4	100.0	100.0	98.6	1.4	1.4
3/4"	84.7	100.0	100.0	91.5	7.1	8.5
1/2"	52.5	97.0	100.0	73.4	18.1	26.6
3/8"	34.4	86.0	100.0	62.7	10.6	37.3
#4	7.5	26.6	96.3	43.4	19.4	56.6
#8	3.4	9.7	78.1	33.1	10.3	66.9
#16	2.7	5.2	63.5	26.7	6.4	73.3
#30	2.5	4.1	45.5	19.5	7.2	80.5
#50	2.3	3.7	18.9	8.9	10.6	91.1
#100	2.0	3.3	5.1	3.3	5.6	96.7
LBW	1.6	2.7	0.8	1.3	1.9	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. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **56** Workability Factor: **33**



Initial Production Sample (IPS)

Sieve	Coarseness Factor:	Workability Factor:	% Retained	Cumulative % Retained
2"	63	36	0.0	0.0
1.5"			0.0	0.0
1"			0.0	0.0
3/4"			10.2	10.2
1/2"			19.1	29.3
3/8"			11.1	40.4
#4			16.4	56.8
#8			7.4	64.2
#16			6.6	70.8
#30			7.8	78.6
#50			11.6	90.2
#100			6.1	96.3
LBW			2.5	98.8

PREPARED BY:
SM, LLC Technical Service

Approved By:



Plant S39-Superior Sterling Heights

Product 1051-6AA LS

Name/Title Doug Storey / QC Technician

Period: 05/24/2020 - 05/30/2020

Report Date 05/28/2020

Procedure	Sieve/Test	Result	Unit	6AA LS
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	97.4	%	95-100
	3/4" (19mm)	84.7	%	
	1/2" (12.5mm)	52.5	%	30-60
	3/8" (9.5mm)	34.4	%	
	#4 (4.75mm)	7.5	%	0-8
	#8 (2.36mm)	3.4	%	
	#16 (1.18mm)	2.7	%	
	#30 (.6mm)	2.5	%	
	#50 (.3mm)	2.3	%	
	#100 (.15mm)	2.0	%	
	#200 (75µm)	1.64	%	
	Wash Loss (#200/75um)	1.6	%	0-2
	Total Moisture	3.57	%	



Plant S39-Superior Sterling Heights

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 05/24/2020 - 05/30/2020

Report Date 05/29/2020

Procedure	Sieve/Test	Result	Unit	26A 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)	97.0	%	95-100
	3/8" (9.5mm)	86.0	%	60-95
	#4 (4.75mm)	26.6	%	5-30
	#8 (2.36mm)	9.7	%	0-12
	#16 (1.18mm)	5.2	%	
	#30 (.6mm)	4.1	%	
	#50 (.3mm)	3.7	%	
	#100 (.15mm)	3.3	%	
	#200 (75µm)	2.7	%	
	Wash Loss (#200/75um)	2.5	%	0-3
	Total Moisture	1.88	%	



Plant S39-Superior Sterling Heights

Product 1022-2NS GR

Name/Title Doug Storey / QC Technician

Period: 05/24/2020 - 05/30/2020

Report Date 05/28/2020

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)	78.1	%	65-95
	#16 (1.18mm)	63.5	%	35-75
	#30 (.6mm)	45.5	%	20-55
	#50 (.3mm)	18.9	%	10-30
	#100 (.15mm)	5.1	%	0-10
	#200 (75µm)	0.8	%	
	FM	2.92		2.6-3
	Wash Loss (#200/75um)	0.7	%	0-3
	Total Moisture	3.65	%	