

Aggregate Optimization Chart

PLANT #: **P-36**

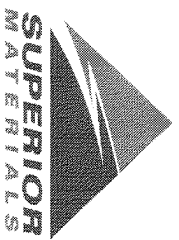
Sample Date: **7/27/20**

Dates Test Represents: **7/28/2020** through **8/3/2020**

Concrete Grade: **DM**

Contractor: _____

MDOT No.: _____



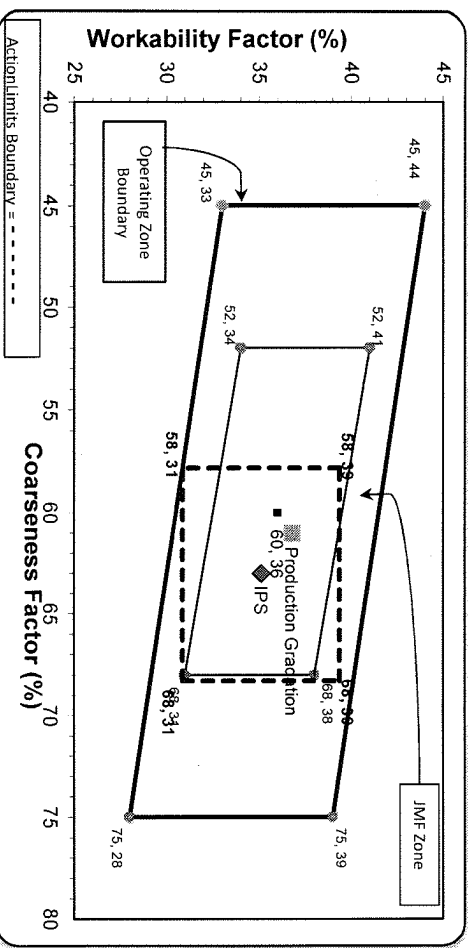
Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

Aggr. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %	
6AA	71-47	Presque Isle	1505	9.21	2.62	51.8	
26A	71-47	Presque Isle	300	1.83	2.62	10.3	
2NS	63-92	Grange Hall	1100	6.65	2.65	37.9	
Total Wt						2905	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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	81.1	100.0	100.0	90.2	9.8	9.8
1/2"	41.7	97.9	100.0	69.6	20.6	30.4
3/8"	24.8	88.9	100.0	59.9	9.7	40.1
#4	5.4	27.3	97.6	42.6	17.3	57.4
#8	2.4	8.5	84.4	34.3	8.3	65.7
#16	2.4	4.3	71.8	28.9	5.4	71.1
#30	2.3	3.5	50.5	20.7	8.2	79.3
#50	2.2	3.2	18.6	8.5	12.2	91.5
#100	2.1	3.0	3.2	2.6	5.9	97.4
LBW	1.8	2.9	1.7	1.9	0.7	98.1

*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	<input checked="" type="radio"/> Batch Plant Gradations	<input type="radio"/> Aggregate Supplier Gradations
Coarseness Factor:	61	Workability Factor: 34
		Adjusted WF: 36.8



Sieve	Initial Production Sample (IPS)	Workability Factor:	Coarseness Factor:
2"	100.0	35	63
1.5"	100.0	35	63
1"	99.1	35	63
3/4"	90.3	35	63
1/2"	69.2	35	63
3/8"	59.1	35	63
#4	41.8	35	63
#8	35.1	35	63
#16	28.5	35	63
#30	21.2	35	63
#50	8.7	35	63
#100	1.8	35	63
LBW	0.7	35	63

PREPARED BY:
SM, LLC Technical Service

Approved By: _____



2470 Auburn Road
Auburn Hills, MI 48432

Plant S36-Superior Auburn Hills

Product 1051-6AA LS

Name/Title Doug Storey / QC Technician

Period: 07/26/2020 - 08/01/2020

Report Date 08/01/2020

Procedure	Sieve/Test	Result	Unit	6AA LS
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	100.0	%	95-100
	3/4" (19mm)	81.1	%	
	1/2" (12.5mm)	41.7	%	30-60
	3/8" (9.5mm)	24.8	%	
	#4 (4.75mm)	5.4	%	0-8
	#8 (2.36mm)	2.8	%	
	#16 (1.18mm)	2.4	%	
	#30 (.6mm)	2.3	%	
	#50 (.3mm)	2.2	%	
	#100 (.15mm)	2.1	%	
	#200 (75µm)	1.8	%	
	Wash Loss (#200/75um)	1.7	%	0-2
	Total Moisture	3.52	%	



2470 Auburn Road
Auburn Hills, MI 48432

Plant S36-Superior Auburn Hills

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 07/26/2020 - 08/01/2020

Report Date 08/01/2020

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)	97.9	%	95-100
	3/8" (9.5mm)	88.9	%	60-95
	#4 (4.75mm)	27.3	%	5-30
	#8 (2.36mm)	8.5	%	0-12
	#16 (1.18mm)	4.3	%	
	#30 (.6mm)	3.5	%	
	#50 (.3mm)	3.2	%	
	#100 (.15mm)	3.0	%	
	#200 (75µm)	2.9	%	
	Wash Loss (#200/75um)	2.8	%	0-3
	Total Moisture	0.19	%	



2470 Auburn Road
Auburn Hills, MI 48432

Plant S36-Superior Auburn Hills

Product 1022-2NS GR

Name/Title Doug Storey / QC Technician

Period: 07/26/2020 - 08/01/2020

Report Date 08/01/2020

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	97.6	%	95-100
	#8 (2.36mm)	84.4	%	65-95
	#16 (1.18mm)	71.8	%	35-75
	#30 (.6mm)	50.5	%	20-55
	#50 (.3mm)	18.6	%	10-30
	#100 (.15mm)	3.2	%	0-10
	#200 (75µm)	1.7	%	
	FM	2.74		2.6-3
	Wash Loss (#200/75um)	1.5	%	0-3
	Total Moisture	3.02	%	



Plant S102-Superior Novi
 Product 1051-6AA LS
 Period: 07/26/2020 - 08/01/2020

Name/Title Doug Storey / QC Technician
 Report Date 08/01/2020

Procedure	Sieve/Test	Result	Unit	6AA LS
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	99.6	%	95-100
	3/4" (19mm)	71.4	%	
	1/2" (12.5mm)	33.9	%	30-60
	3/8" (9.5mm)	16.2	%	
	#4 (4.75mm)	4.0	%	0-8
	#8 (2.36mm)	2.4	%	
	#16 (1.18mm)	1.9	%	
	#30 (.6mm)	1.7	%	
	#50 (.3mm)	1.5	%	
	#100 (.15mm)	1.5	%	
	#200 (75µm)	1.20	%	
	Wash Loss (#200/75um)	1.1	%	0-2
	Total Moisture	3.02	%	



Plant S102-Superior Novi

Product 1067-26A Mod LS

Period: 07/26/2020 - 08/01/2020

Name/Title Doug Storey / QC Technician

Report Date 08/01/2020

Procedure	Sieve/Test	Result	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)	99.8	%	95-100
	3/8" (9.5mm)	85.4	%	60-95
	#4 (4.75mm)	16.9	%	5-30
	#8 (2.36mm)	5.0	%	0-12
	#16 (1.18mm)	2.8	%	
	#30 (.6mm)	2.3	%	
	#50 (.3mm)	2.1	%	
	#100 (.15mm)	2.0	%	
	#200 (75µm)	2.0	%	
	Wash Loss (#200/75um)	1.9	%	0-3
	Total Moisture	2.43	%	



Plant S102-Superior Novi

Product 1022-2NS GR

Period: 07/26/2020 - 08/01/2020

Name/Title Codi Hodnicki / QC Technician

Report Date 08/03/2020

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	98.8	%	95-100
	#8 (2.36mm)	80.4	%	65-95
	#16 (1.18mm)	60.4	%	35-75
	#30 (.6mm)	42.8	%	20-55
	#50 (.3mm)	20.4	%	10-30
	#100 (.15mm)	6.2	%	0-10
	#200 (75µm)	2.2	%	
	FM	2.91		2.6-3
	Wash Loss (#200/75µm)	2.2	%	0-3
	Total Moisture	4.20	%	

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

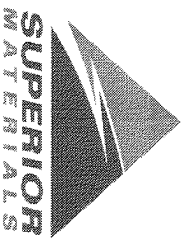
Sample Date: **7/27/20**

Dates Test Represents: **7/28/2020** through **8/3/2020**

Concrete Grade: **DM**

Contractor: _____

MIDOT No.: _____



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

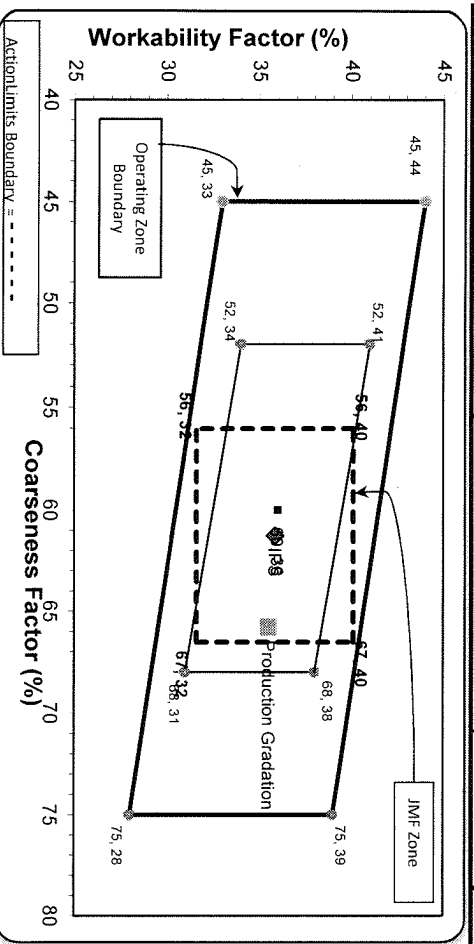
Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	58-003	Stonoco	1500	8.94	2.69	50.8
26A	58-003	Stonoco	305	1.82	2.69	10.3
2NS	63-114	Highland	1150	6.95	2.65	38.9
		Total Wt	2955	17.71		100.0

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"	99.6	100.0	100.0	99.8	0.2	0.2
3/4"	71.4	100.0	100.0	85.5	14.3	14.5
1/2"	33.9	99.8	100.0	66.4	19.1	33.6
3/8"	16.2	85.4	100.0	56.0	10.5	44.0
#4	4.0	16.9	98.8	42.2	13.7	57.8
#8	2.4	5.0	80.4	33.0	9.2	67.0
#16	1.9	2.8	60.4	24.8	8.3	75.2
#30	1.7	2.3	42.8	17.8	7.0	82.2
#50	1.5	2.1	20.4	8.9	8.8	91.1
#100	1.5	2.0	6.2	3.4	5.5	96.6
LBW	1.2	2.0	2.2	1.7	1.7	98.3

*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: **66** Workability Factor: **33** Adjusted WF: **35.5**



Sieve	Initial Production Sample (IPS)	Coarseness Factor:	Workability Factor:	Adjusted WF
2"	100.0	61	36	35.5
1.5"	100.0			
1"	99.3			
3/4"	89.2			
1/2"	70.7			
3/8"	60.7			
#4	44.4			
#8	35.9			
#16	27.3			
#30	19.1			
#50	7.4			
#100	1.9			
LBW	0.7			

PREPARED BY:
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