

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

Contractor: _____

Sample Date: **9/21/20**

Concrete Grade: **S2M**

Dates Test Represents: **9/22/2020** through **9/28/2020**

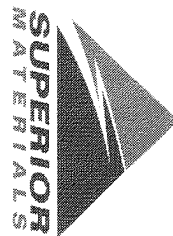
MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1520	9.30	2.62	49.8
26A	71-47	Presque Isle	300	1.83	2.62	9.8
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
Total Wt						3050
						100.0

Verify this number is 100%

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"	96.3	100.0	100.0	98.2	1.8	1.8
3/4"	83.1	100.0	100.0	91.6	6.6	8.4
1/2"	50.8	97.6	100.0	75.2	16.3	24.8
3/8"	31.9	88.9	100.0	65.0	10.3	35.0
#4	6.6	28.8	96.4	45.0	20.0	55.0
#8	2.9	9.6	83.7	36.1	8.9	63.9
#16	2.4	5.2	67.6	29.0	7.2	71.0
#30	2.2	4.3	45.8	20.0	9.0	80.0
#50	2.1	4.0	22.5	10.5	9.5	89.5
#100	2.1	3.7	7.1	4.3	6.2	95.7
LBW	1.6	3.0	1.6	1.7	2.5	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. Max. 1.5") aggregate is used.



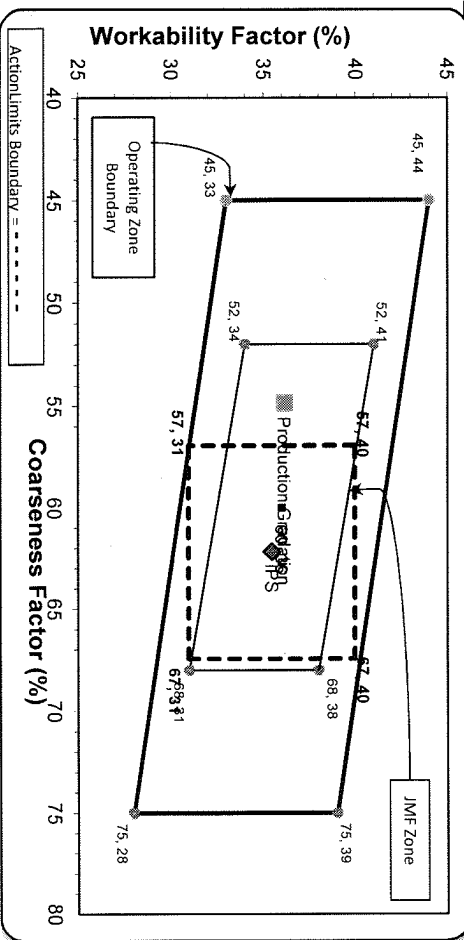
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Initial Production Sample (IPS)

Coarseness Factor: **55** Workability Factor: **36**

Coarseness Factor: **62** 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"	100.0	0.0	0.0
3/4"	94.0	6.0	6.0
1/2"	70.2	23.7	29.8
3/8"	59.9	10.4	40.1
#4	42.7	17.2	57.3
#8	35.5	7.2	64.5
#16	28.4	7.0	71.6
#30	19.2	9.2	80.8
#50	8.9	10.3	91.1
#100	3.1	5.9	96.9
LBW	1.4	1.7	98.6

PREPARED BY:
 SM, LLC Technical Service

Approved By: _____

Plant 958-JMT
 Product 1054-6AA LS PI
 Period: 09/20/2020 - 09/26/2020

Name/Title Doug Storey / QC Technician
 Report Date 09/25/2020

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	96.3	%	95-100
	3/4" (19mm)	83.1	%	
	1/2" (12.5mm)	50.8	%	30-60
	3/8" (9.5mm)	31.9	%	
	#4 (4.75mm)	6.6	%	0-8
	#8 (2.36mm)	2.9	%	
	#16 (1.18mm)	2.4	%	
	#30 (.6mm)	2.2	%	
	#50 (.3mm)	2.1	%	
	#100 (.15mm)	2.1	%	
	#200 (75µm)	1.7	%	
	Wash Loss (#200/75um)	1.6	%	0-2
	Total Moisture	3.1	%	

Plant 958-JMT
 Product 1067-26A Mod LS
 Period: 09/20/2020 - 09/26/2020

Name/Title Doug Storey / QC Technician
 Report Date 09/25/2020

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)	97.6	%	95-100
	3/8" (9.5mm)	88.9	%	60-95
	#4 (4.75mm)	28.8	%	5-30
	#8 (2.36mm)	9.6	%	0-12
	#16 (1.18mm)	5.2	%	
	#30 (.6mm)	4.3	%	
	#50 (.3mm)	4.0	%	
	#100 (.15mm)	3.7	%	
	#200 (75µm)	3.3	%	
	Wash Loss (#200/75um)	3.0	%	0-3
	Total Moisture	3.1	%	

Edw. C. Levy Co.

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Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 09/20/2020 - 09/26/2020

Report Date 09/25/2020

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	96.4	%	95-100
	#8 (2.36mm)	83.7	%	65-95
	#16 (1.18mm)	67.6	%	35-75
	#30 (.6mm)	45.8	%	20-55
	#50 (.3mm)	22.5	%	10-30
	#100 (.15mm)	7.1	%	0-10
	#200 (75µm)	2.1	%	
	FM	2.77		2.6-3
	Wash Loss (#200/75um)	1.6	%	0-3
	Total Moisture	4.9	%	

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-36**

Contractor: _____

Sample Date: **9/21/20**

MDOT No.: _____

Dates Test Represents: **9/22/2020** through **9/28/2020**

Concrete Grade: **S2M**

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
6AA	71-47	Presque Isle	1500	9.17	2.62	49.2
26A	71-47	Presque Isle	350	2.14	2.62	1.5
2NS	63-92	Grange Hall	1200	7.26	2.65	39.3
Total Wt			3050	18.57		100.0

Verify this number is 100%

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"	99.2	100.0	100.0	99.6	0.4	0.4
3/4"	73.0	100.0	100.0	86.7	12.9	13.3
1/2"	41.7	100.0	100.0	70.9	15.8	29.1
3/8"	25.7	83.9	100.0	61.6	9.3	38.4
#4	5.3	21.0	97.3	43.3	18.3	56.7
#8	2.8	6.0	84.8	35.4	7.9	64.6
#16	2.3	3.2	69.8	29.0	6.5	71.0
#30	2.1	2.8	48.8	20.6	8.4	79.4
#50	2.0	2.7	19.3	8.9	11.7	91.1
#100	1.8	2.5	3.7	2.6	6.3	97.4
LBW	1.7	2.2	1.8	1.8	0.8	98.2

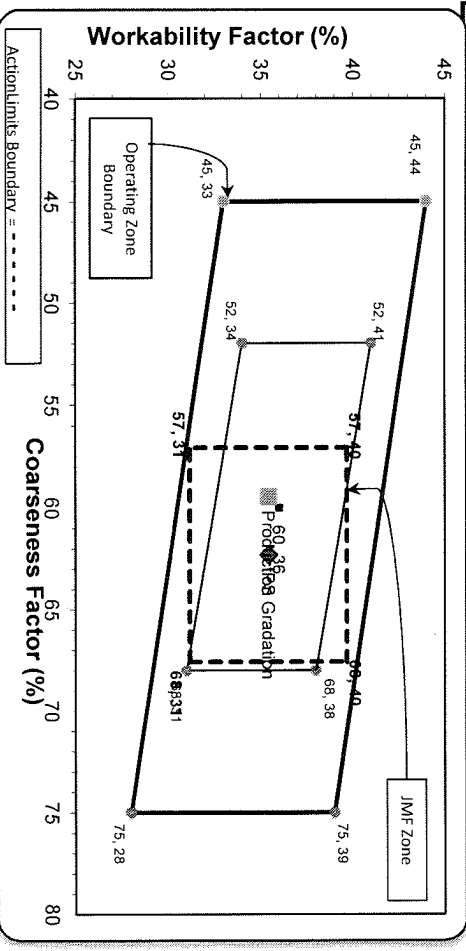
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max.
 nom. max. #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max.
 nom. max. #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when
 a 2" max size (nom.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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Initial Production Sample (IPS)

Coarseness Factor: **59** Workability Factor: **35**

Coarseness Factor: **62** 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"	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



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 Farmington Hills, MI 48336

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: 09/20/2020 - 09/26/2020

Report Date 09/25/2020

Procedure	Sieve/Test	Result	Unit	6AA LS
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	99.2	%	95-100
	3/4" (19mm)	73.0	%	
	1/2" (12.5mm)	41.7	%	30-60
	3/8" (9.5mm)	25.7	%	
	#4 (4.75mm)	5.3	%	0-8
	#8 (2.36mm)	2.8	%	
	#16 (1.18mm)	2.3	%	
	#30 (.6mm)	2.1	%	
	#50 (.3mm)	2.0	%	
	#100 (.15mm)	1.8	%	
	#200 (75µm)	1.7	%	
	Wash Loss (#200/75um)	1.7	%	0-2
	Total Moisture	2.99	%	



2470 Auburn Road
Auburn Hills, MI 48432

Plant S36-Superior Auburn Hills

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 09/20/2020 - 09/26/2020

Report Date 09/25/2020

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)	96.3	%	95-100
	3/8" (9.5mm)	83.9	%	60-95
	#4 (4.75mm)	21.0	%	5-30
	#8 (2.36mm)	6.0	%	0-12
	#16 (1.18mm)	3.2	%	
	#30 (.6mm)	2.8	%	
	#50 (.3mm)	2.7	%	
	#100 (.15mm)	2.5	%	
	#200 (75µm)	2.3	%	
	Wash Loss (#200/75um)	2.2	%	0-3
	Total Moisture	3.50	%	



2470 Auburn Road
Auburn Hills, MI 48432

Plant S36-Superior Auburn Hills

Product 1022-2NS GR

Name/Title Doug Storey / QC Technician

Period: 09/20/2020 - 09/26/2020

Report Date 09/25/2020

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	97.3	%	95-100
	#8 (2.36mm)	84.8	%	65-95
	#16 (1.18mm)	69.8	%	35-75
	#30 (.6mm)	48.8	%	20-55
	#50 (.3mm)	19.3	%	10-30
	#100 (.15mm)	3.7	%	0-10
	#200 (75µm)	1.8	%	
	FM	2.76		2.6-3
	Wash Loss (#200/75µm)	1.8	%	0-3
	Total Moisture	3.39	%	

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-103**

Contractor: _____

Sample Date: **9/21/20**

MDOT No.: _____

Dates Test Represents: **9/22/2020** through **9/28/2020**

Concrete Grade: **S2M**

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1640	9.77	2.69	52.9
26A	58-003	Stoneco	250	1.49	2.69	8.1
2NS	63-114	Highland	1210	7.32	2.65	39.0
Total Wt.			3100	18.58		100.0

Verify this number is 100%

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"	84.0	100.0	100.0	91.5	8.5	8.5
1/2"	46.6	100.0	100.0	99.8	19.8	28.3
3/8"	25.4	82.3	100.0	59.1	12.6	40.9
#4	6.4	15.5	99.4	43.4	15.7	56.6
#8	3.3	5.1	84.0	34.9	8.5	65.1
#16	2.6	3.1	66.9	27.7	7.2	72.3
#30	2.3	2.6	48.9	20.5	7.2	79.5
#50	2.2	2.2	24.1	10.7	9.8	89.3
#100	2.1	1.9	5.8	3.5	7.2	96.5
LBW	1.6	1.7	0.6	1.2	2.3	98.8

*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.



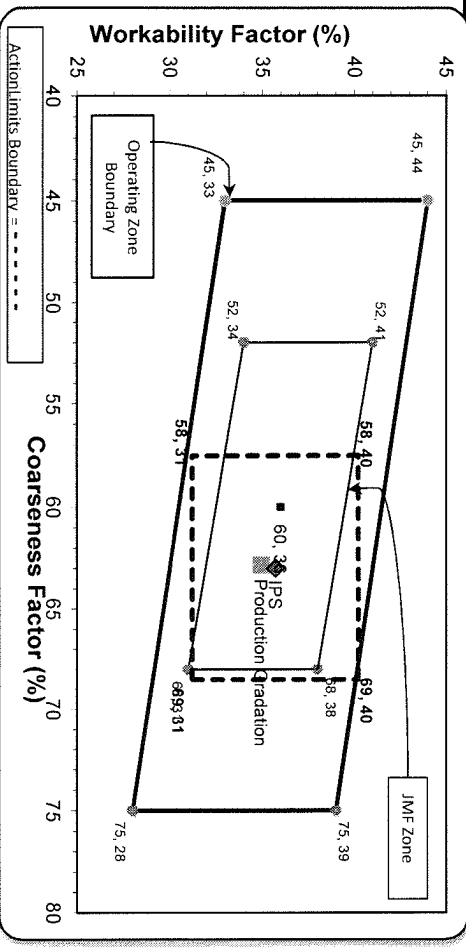
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **63** Workability Factor: **35**

Initial Production Sample (IPS)

Coarseness Factor: **63** Workability Factor: **36**



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.2	0.8	0.8
3/4"	90.9	8.3	9.1
1/2"	71.3	19.6	28.7
3/8"	59.5	11.8	40.5
#4	43.8	15.7	56.2
#8	35.7	8.1	64.3
#16	27.0	8.7	73.0
#30	18.6	8.4	81.4
#50	6.8	11.8	93.2
#100	1.4	5.4	98.6
LBW	0.6	0.8	99.4

PREPARED BY:
 SM, LLC Technical Service

Approved BY:



Plant S103-Superior Brighton

Product 1051-6AA LS

Name/Title Doug Storey / QC Technician

Period: 09/20/2020 - 09/26/2020

Report Date 09/25/2020

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)	84.0	%	
	1/2" (12.5mm)	46.6	%	30-60
	3/8" (9.5mm)	25.4	%	
	#4 (4.75mm)	6.4	%	0-8
	#8 (2.36mm)	3.3	%	
	#16 (1.18mm)	2.6	%	
	#30 (.6mm)	2.3	%	
	#50 (.3mm)	2.2	%	
	#100 (.15mm)	2.1	%	
	#200 (75µm)	1.86	%	
	Wash Loss (#200/75um)	1.6	%	0-2
	Total Moisture	0.70	%	



Plant S103-Superior Brighton

Product 1067-26A Mod LS

Period: 09/20/2020 - 09/26/2020

Name/Title Doug Storey / QC Technician

Report Date 09/25/2020

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)	82.3	%	60-95
	#4 (4.75mm)	15.5	%	5-30
	#8 (2.36mm)	5.1	%	0-12
	#16 (1.18mm)	3.1	%	
	#30 (.6mm)	2.6	%	
	#50 (.3mm)	2.2	%	
	#100 (.15mm)	1.9	%	
	#200 (75µm)	1.8	%	
	Wash Loss (#200/75um)	1.7	%	0-3
	Total Moisture	3.00	%	



Plant S103-Superior Brighton

Product 1022-2NS GR

Period: 09/20/2020 - 09/26/2020

Name/Title Doug Storey / QC Technician

Report Date 09/25/2020

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	99.4	%	95-100
	#8 (2.36mm)	84.0	%	65-95
	#16 (1.18mm)	66.9	%	35-75
	#30 (.6mm)	48.9	%	20-55
	#50 (.3mm)	24.1	%	10-30
	#100 (.15mm)	5.8	%	0-10
	#200 (75µm)	1.2	%	
	FM	2.71		2.6-3
	Wash Loss (#200/75um)	0.6	%	0-3
	Total Moisture	3.71	%	