

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

Sample Date: **3/23/20**

Dates Test Represents: **3/24/2020**

through **3/30/2020**

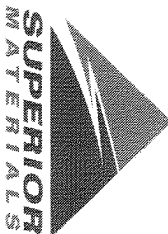
Concrete Grade: **S2M**

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1570	9.60	2.62	51.5
26A	71-47	Presque Isle	200	1.22	2.62	6.6
2NS	63-115	Ray Rd	1280	7.74	2.65	42.0
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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	78.0	100.0	100.0	88.7	11.3	11.3
1/2"	33.0	100.0	100.0	65.5	23.2	34.5
3/8"	16.0	88.4	100.0	56.0	9.5	44.0
#4	4.0	23.9	96.4	44.1	11.9	55.9
#8	3.0	7.2	78.0	34.8	9.3	65.2
#16	2.5	3.7	62.0	27.5	7.2	72.5
#30	2.3	3.1	47.0	21.1	6.4	78.9
#50	2.2	2.8	23.0	11.0	10.1	89.0
#100	2.0	2.6	5.0	3.3	7.7	96.7
LBW	1.5	2.3	0.5	1.1	2.2	98.9

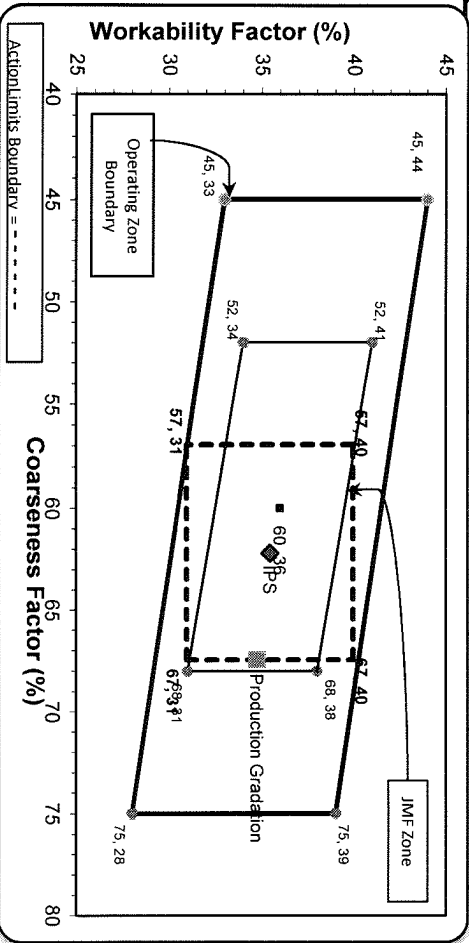


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*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
*Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
*Retained must be at 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: **67** Workability Factor: **35**



Initial Production Sample (IPS)

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: _____

Edw. C. Levy Co.

Basic Quality Statistical Summary Report

Plant 958-JMT
 Product 1054-6AA LS PI
 Specification 6AA LS PI Spec
 Period 03/19/2020 - 03/27/2020

Sieve/Test	Tests	Average	St Dev	Target	Specification
2" (50mm)	1	100.0			
1 1/2" (37.5mm)	1	100.0			100-100
1" (25mm)	1	100.0			95-100
3/4" (19mm)	1	78.1			
1/2" (12.5mm)	1	33.1			30-60
3/8" (9.5mm)	1	15.8			
#4 (4.75mm)	1	3.8			0-8
#8 (2.36mm)	1	2.8			
#16 (1.18mm)	1	2.5			
#30 (0.6mm)	1	2.3			
#50 (0.3mm)	1	2.2			
#100 (0.15mm)	1	2.0			
#200 (75µm)	1	1.6			
Pan	1	0.0			
Wash Loss (#200/75um)	1	1.5			0-2

Edw. C. Levy Co.

Basic Quality Statistical Summary Report

Plant 958-JMT
 Product 1067-26A Mod LS
 Specification 26A Mod LS Spec
 Period 03/19/2020 - 03/27/2020

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			
3/4" (19mm)	1	100.0			100-100
1/2" (12.5mm)	1	100.0			95-100
3/8" (9.5mm)	1	88.4			60-95
#4 (4.75mm)	1	23.9			5-30
#8 (2.36mm)	1	7.2			0-12
#16 (1.18mm)	1	3.7			
#30 (0.6mm)	1	3.1			
#50 (0.3mm)	1	2.8			
#100 (0.15mm)	1	2.6			
#200 (75µm)	1	2.3			
Pan	1	0.0			
Wash Loss (#200/75um)	1	2.3			0-3

Query Query Selections
 Date Created 03/27/2020
 Date Range 03/19/2020 - 03/27/2020
 Plant JMT
 Sample Type Job Site

Edw. C. Levy Co.

Basic Quality Statistical Summary Report

Plant 958-JMT
Product 1022-2NS GR
Specification 2NS GR Spec
Period 03/19/2020 - 03/27/2020

Sieve/Test	Tests	Average	St Dev	Target	Specification
3/8" (9.5mm)	1	100.0			100-100
#4 (4.75mm)	1	96.4			95-100
#8 (2.36mm)	1	77.8			65-95
#16 (1.18mm)	1	61.5			35-75
#30 (0.6mm)	1	46.6			20-55
#50 (0.3mm)	1	23.3		18-28	10-30
#100 (0.15mm)	1	5.0			0-10
#200 (75µm)	1	0.6			
Pan	1	0.0			
Wash Loss (#200/75µm)	1	0.5			0-3

Query Query Selections
Date Created 03/27/2020
Date Range 03/19/2020 - 03/27/2020
Plant JMT

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-36**

Sample Date: **3/23/20**

Dates Test Represents: **3/24/2020** through **3/30/2020**

Concrete Grade: **S2M**

Contractor: _____

MDOT No.: _____

Agg. Class: **6AA**

Pit #: **71-47**

Source: **Presque Isle**

Weight (ssd): **1450**

ft³: **8.87**

Specific Gravity: **2.62**

Contribution %: **47.5**

26A: **71-47**

Source: **Presque Isle**

Weight (ssd): **400**

ft³: **2.45**

Specific Gravity: **2.62**

Contribution %: **13.1**

2NS: **63-92**

Source: **Grange Hall**

Weight (ssd): **1200**

ft³: **7.26**

Specific Gravity: **2.65**

Contribution %: **39.3**

Total Wt: **3050**

Contribution %: **100.0**

Sieve: **6AA**

26A

2NS

Cumulative % Passing

% Retained

Cumulative % Retained

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.

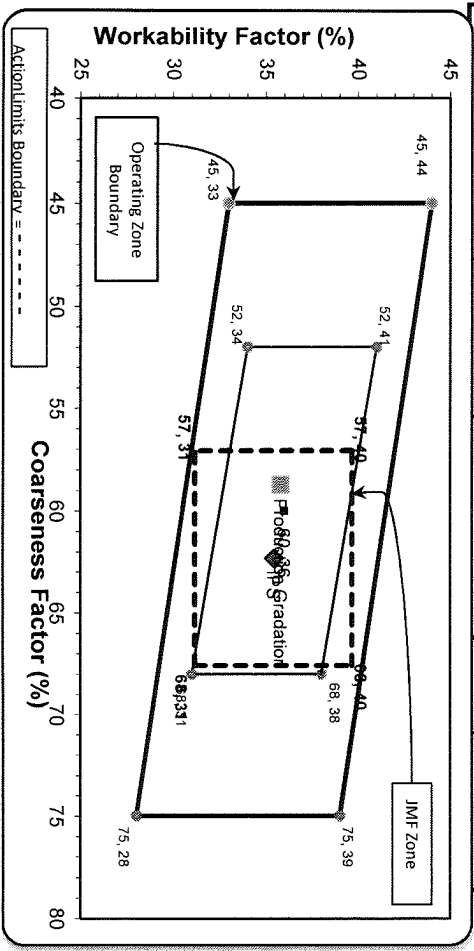
nom. max. #100 and #200 sieves.

* Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. 1.5") aggregate is used.

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"	97.0	100.0	100.0	98.6	1.4	1.4
3/4"	80.0	100.0	100.0	90.5	8.1	9.5
1/2"	43.0	100.0	100.0	72.9	17.6	27.1
3/8"	24.0	88.0	100.0	62.3	10.6	37.7
#4	5.0	24.0	97.0	43.7	18.6	56.3
#8	3.0	7.0	85.0	35.8	7.9	64.2
#16	2.8	4.0	70.0	29.4	6.4	70.6
#30	2.7	3.0	50.0	21.3	8.0	78.7
#50	2.5	2.8	22.0	10.2	11.1	89.8
#100	2.3	2.6	4.0	3.0	7.2	97.0
LBW	1.9	2.3	1.3	1.7	1.3	98.3

Production Gradation: Batch Plant Gradations Aggregate Supplier Gradations

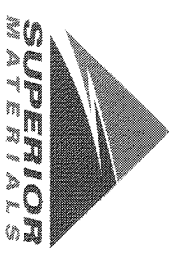
Coarseness Factor: **59** Workability Factor: **36**



Initial Production Sample (IPS)

Coarseness Factor: **62**

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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PREPARED BY:
SM, LLC Technical Service

Approved By: _____



Basic Quality Statistical Summary Report

Plant S36-Superior Auburn Hills
 Product 1051-6AA LS
 Specification 6AA LS
 Period 03/19/2020 - 03/27/2020

Sieve/Test	Tests	Average	St Dev	Target	Specification
2" (50mm)	1	100.0			
1 1/2" (37.5mm)	1	100.0			100-100
1" (25mm)	1	97.0			95-100
3/4" (19mm)	1	79.8			
1/2" (12.5mm)	1	42.9			30-60
3/8" (9.5mm)	1	24.3			
#4 (4.75mm)	1	5.4			0-8
#8 (2.36mm)	1	3.3			
#16 (1.18mm)	1	2.8			
#30 (0.6mm)	1	2.7			
#50 (0.3mm)	1	2.5			
#100 (0.15mm)	1	2.3			
#200 (75µm)	1	2.12			
Pan	1	0.00			
Wash Loss (#200/75µm)	1	1.9			0-2



Basic Quality Statistical Summary Report

Plant S36-Superior Auburn Hills
 Product 1067-26A Mod LS
 Specification 26A LS Spec
 Period 03/19/2020 - 03/27/2020

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			
3/4" (19mm)	1	100.0			100-100
1/2" (12.5mm)	1	100.0			95-100
3/8" (9.5mm)	1	88.4			60-95
#4 (4.75mm)	1	23.9			5-30
#8 (2.36mm)	1	7.2			0-12
#16 (1.18mm)	1	3.7			
#30 (0.6mm)	1	3.1			
#50 (0.3mm)	1	2.8			
#100 (0.15mm)	1	2.6			
#200 (75µm)	1	2.3			
Pan	1	0.0			
Wash Loss (#200/75µm)	1	2.3			0-3

Query Query Selections
 Date Created 03/27/2020
 Date Range 03/19/2020 - 03/27/2020
 Plant Superior Auburn Hills



Basic Quality Statistical Summary Report

Plant S36-Superior Auburn Hills
 Product 1022-2NS GR
 Specification 2NS GR Spec
 Period 03/19/2020 - 03/27/2020

Sieve/Test	Tests	Average	St Dev	Target	Specification
3/8" (9.5mm)	1	100.0			100-100
#4 (4.75mm)	1	97.1			95-100
#8 (2.36mm)	1	84.7			65-95
#16 (1.18mm)	1	70.1			35-75
#30 (0.6mm)	1	50.4		40-50	20-55
#50 (0.3mm)	1	21.7			10-30
#100 (0.15mm)	1	4.1			0-10
#200 (75µm)	1	1.3			
Pan	1	0.0			
Wash Loss (#200/75µm)	1	1.1			0-3