Aggregate Optimization Chart

Production Gradation Report

PLANT #: P11

Contractor: _____

Sample Date: 5/27/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 5/28/2024 through 6/3/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	900	5.50	2.62	29.3
IA	71-47	Presque Isle	970	5.93	2.62	31.6
2NS	95-013	Smelter Bay	1200	7.26	2.65	39.1
		Total Wt	**3070**	**18.70**		100.0

<----- Verify this number is 100%

Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	92.6	100.0	100.0	97.8	2.2	2.2
1"	23.6	100.0	100.0	77.6	20.2	22.4
3/4"	3.2	95.9	100.0	70.3	7.3	29.7
1/2"	1.8	66.6	100.0	60.7	9.7	39.3
3/8"	1.7	42.1	100.0	52.9	7.8	47.1
#4	1.6	8.3	95.9	40.6	12.3	59.4
#8	1.6	3.2	84.4	34.5	6.1	65.5
#16	1.5	2.4	69.4	28.3	6.1	71.7
#30	1.5	2.2	49.5	20.5	7.8	79.5
#50	1.5	2.1	22.9	10.1	10.4	89.9
#100	1.4	1.9	6.6	3.6	6.5	96.4
LBW	1.1	1.7	1.1	1.3	2.3	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. Max. 1.5") aggregate is used.

Superior Materials, LLC
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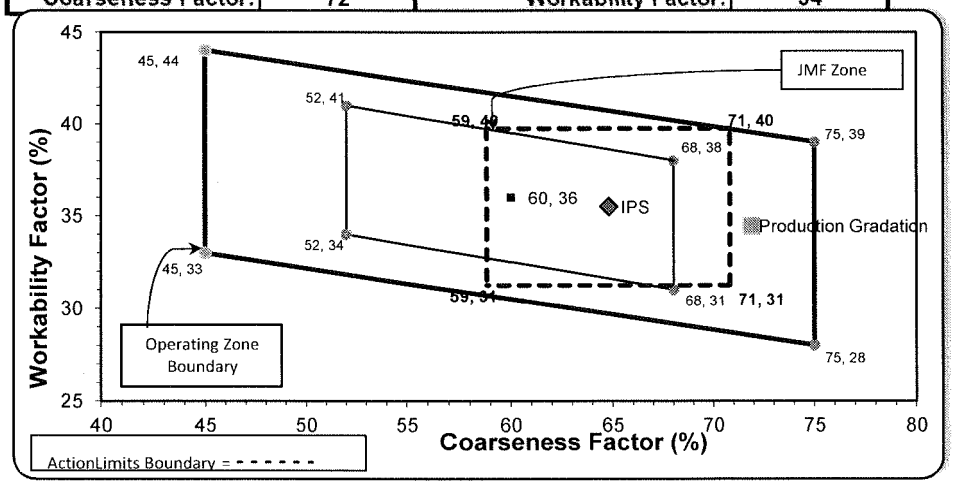
Production Gradation ◉ Batch Plant Gradations ○ Aggregate Supplier Gradations

Coarseness Factor:	72	Workability Factor:	34



Intial Production Sample (IPS)

Coarseness Factor:	65
Workability Factor:	36

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	99.0	0.6	0.6
1"	84.0	15.3	16.0
3/4"	73.5	10.5	26.5
1/2"	65.2	8.2	34.8
3/8"	58.2	7.1	41.8
#4	44.1	14.1	55.9
#8	35.5	8.6	64.5
#16	29.1	6.4	70.9
#30	21.9	7.3	78.1
#50	9.6	12.2	90.4
#100	2.6	7.1	97.4
LBW	1.0	1.6	99.0

PREPARED BY:
SM, LLC Technical Service

Approved By:

Daily Summary Report

Date	Wednesday, May 29, 2024				
Sample Id	- 674911351	-674970944	-1989622873	-674940198	-1989640948
Plant	S11	S11	S11	S11	S11
Product	7919 COARSE AGG P1M LS	7920 INTERMED AGG P1M LS	1067 26A Mod LS	1051 6AA LS	1022 2NS GR
Specification	Coarse Agg P1M LS Target	Intermed Agg P1M LS Target	26A Mod LS Spec	6AA LS	2NS GR Spec
Sample Type	QA	QA	QA	QA	QA
Time	08:15	08:20	08:25	08:30	08:35
2" (50mm)	100.0	100.0	100.0	100.0	
1 1/2" (37.5mm)	92.6	100.0	100.0	100.0	
1" (25mm)	23.6	100.0	100.0	96.9	
3/4" (19mm)	3.2	95.9	100.0	71.5	
1/2" (12.5mm)	1.8	66.6	88.8	34.5	
3/8" (9.5mm)	1.7	42.1	69.2	20.4	100.0
#4 (4.75mm)	1.6	8.3	9.5	4.6	95.9
#8 (2.36mm)	1.6	3.2	3.1	2.9	84.4
#16 (1.18mm)	1.5	2.4	2.2	2.4	69.4
#30 (.6mm)	1.5	2.2	1.9	2.3	49.5
#50 (.3mm)	1.5	2.1	1.6	2.2	22.9
#100 (.15mm)	1.4	1.9	1.4	2.0	6.6
#200 (75µm)	1.2	1.8	1.3	1.85	1.4
Pan	0.0	0.0	0.0	0.00	0.0
FM					2.71
Wash Loss (#200/75um)	1.1	1.7	1.2	1.7	1.1
Total Moisture	1.44	3.22	2.60	2.13	4.52

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-102

Contractor: _____

Sample Date: 5/27/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 5/28/2024 through 6/3/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1470	8.76	2.69	47.1
IA	58-003	Stoneco	450	2.68	2.69	14.4
2NS	63-114	Highland	1200	7.26	2.65	38.5
		Total Wt	**3120**	**18.70**		100.0

<----- Verify this number is 100%

Sieve	CA	IA	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"	54.3	100.0	100.0	78.5	21.5	21.5
3/4"	22.1	100.0	100.0	63.3	15.2	36.7
1/2"	12.1	93.2	100.0	57.6	5.7	42.4
3/8"	7.4	77.4	100.0	53.1	4.5	46.9
#4	3.4	18.5	99.1	42.4	10.7	57.6
#8	2.9	5.7	86.5	35.5	6.9	64.5
#16	2.6	3.4	71.1	29.1	6.4	70.9
#30	2.5	2.8	52.6	21.8	7.2	78.2
#50	2.3	2.6	21.4	9.7	12.1	90.3
#100	2.2	2.5	4.2	3.0	6.7	97.0
LBW	1.9	2.3	0.7	1.5	1.5	98.5

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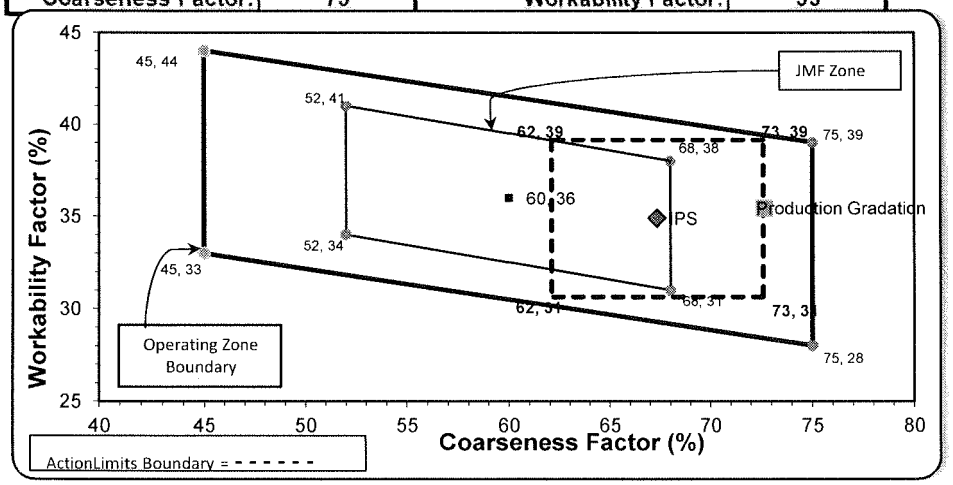
*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom.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

Production Gradation ◉ Batch Plant Gradations ○ Aggregate Supplier Gradations

Coarseness Factor:	73	Workability Factor:	35



Intial Production Sample (IPS)

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"	85.5	14.5	14.5
3/4"	73.4	12.1	26.6
1/2"	61.0	12.4	39.0
3/8"	56.2	4.8	43.8
#4	43.1	13.1	56.9
#8	34.9	8.2	65.1
#16	29.4	5.5	70.6
#30	21.6	7.8	78.4
#50	8.1	13.4	91.9
#100	2.2	5.9	97.8
LBW	1.4	0.8	98.6

PREPARED BY:
SM, LLC Technical Service

Approved By:

Daily Summary Report

Date	Tuesday, May 28, 2024				
Sample Id	-1989616402	-674892962	-674961410	-674934835	-674937356
Plant	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi
Product	1022 2NS GR	1067 26A Mod LS	7920 INTERMED AGG P1M LS	1051 6AA LS	7919 COARSE AGG P1M LS
Specification	2NS GR Spec	26A Mod LS Spec	Intermed Agg P1M LS Target	6AA LS	Coarse Agg P1M LS Target
Sample Type	QA	QA	QA	QA	QA
Time	09:00	09:01	09:02	09:03	18:00
2" (50mm)		100.0	100.0	100.0	100.0
1 1/2" (37.5mm)		100.0	100.0	100.0	100.0
1" (25mm)		100.0	100.0	100.0	54.3
3/4" (19mm)		100.0	100.0	81.9	22.1
1/2" (12.5mm)		98.7	93.2	40.1	12.1
3/8" (9.5mm)	100.0	85.2	77.4	17.3	7.4
#4 (4.75mm)	99.1	7.2	18.5	3.1	3.4
#8 (2.36mm)	86.5	2.8	5.7	1.3	2.9
#16 (1.18mm)	71.1	2.1	3.4	1.1	2.6
#30 (.6mm)	52.6	1.8	2.8	1.0	2.5
#50 (.3mm)	21.4	1.7	2.6	1.0	2.3
#100 (.15mm)	4.2	1.6	2.5	0.9	2.2
#200 (75µm)	0.9	1.6	2.4	0.88	2.0
Pan	0.0	0.0	0.0	0.00	0.0
FM	2.65				
Wash Loss (#200/75um)	0.7	1.5	2.3	0.7	1.9
Total Moisture	3.51	2.32	2.73	2.80	1.34