Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-102

Sample Date: 11/4/24

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 11/5/2024 through 11/11/2024

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1450	8.64	2.69	49.2
26A	58-003	Stoneco	350	2.09	2.69	11.9
2NS	63-114	Highland	1150	6.95	2.65	39.0
		Total Wt	**2950**	**17.68**		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"	98.9	100.0	100.0	99.5	0.5	0.5
3/4"	77.8	100.0	100.0	89.1	10.4	10.9
1/2"	40.7	99.0	100.0	70.7	18.4	29.3
3/8"	20.5	88.8	100.0	59.6	11.1	40.4
#4	2.1	7.3	98.6	40.3	19.3	59.7
#8	1.2	2.4	82.3	33.0	7.4	67.0
#16	1.0	1.8	63.8	25.6	7.4	74.4
#30	0.9	1.6	43.7	17.7	7.9	82.3
#50	0.8	1.5	20.7	8.6	9.0	91.4
#100	0.8	1.4	4.4	2.3	6.4	97.7
LBW	0.7	1.3	0.9	0.8	1.4	99.2

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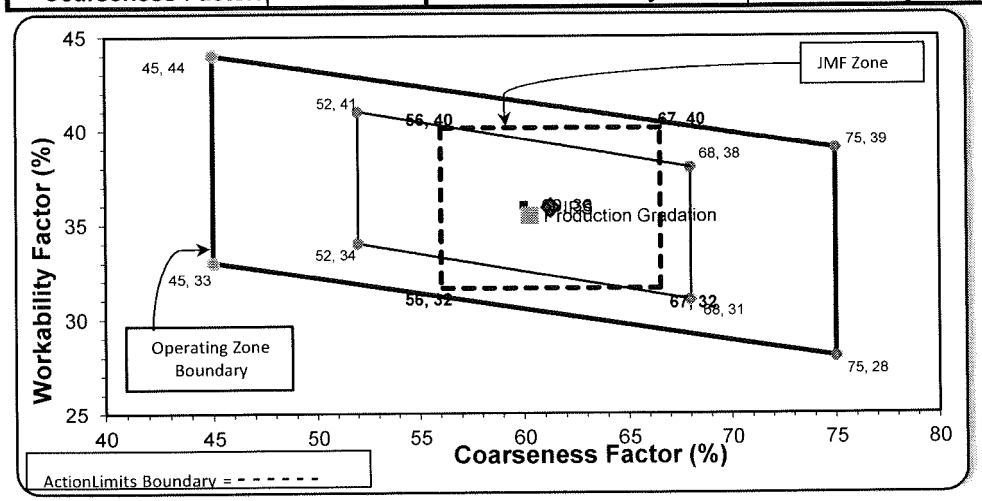
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

*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 4% for the 3/4" sieve when a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation ◉ Batch Plant Gradations ○ Aggregate Supplier Gradations

Coarseness Factor:	60	Workability Factor:	33	Adjusted WF	35.5



Intial Production Sample (IPS)

Coarseness Factor:	61
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"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

PREPARED BY:
SM, LLC Technical Service

Approved By:

Daily Summary Report

Date	Tuesday, November 5, 2024		
Sample Id	-1989644756	-674960081	-199040833
Plant	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi
Product	1051 6AA LS	1067 26A Mod LS	1022 2NS GR
Specification	6AA LS	26A Mod LS Spec	2NS GR Spec
Sample Type	QA	QA	QA
Time	09:55	10:05	10:06
2" (50mm)	100.0	100.0	
1 1/2" (37.5mm)	100.0	100.0	
1" (25mm)	98.9	100.0	
3/4" (19mm)	77.8	100.0	
1/2" (12.5mm)	40.7	99.0	
3/8" (9.5mm)	20.5	88.8	100.0
#4 (4.75mm)	2.1	7.3	98.6
#8 (2.36mm)	1.2	2.4	82.3
#16 (1.18mm)	1.0	1.8	63.8
#30 (.6mm)	0.9	1.6	43.7
#50 (.3mm)	0.8	1.5	20.7
#100 (.15mm)	0.8	1.4	4.4
#200 (75µm)	0.74	1.3	1.0
Pan	0.00	0.0	0.0
FM			2.86
Wash Loss (#200/75um)	0.7	1.3	0.9
Total Moisture	3.34	3.36	4.76

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-103

Contractor: _____

Sample Date: 11/4/24

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 11/5/2024 through 11/11/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1450	8.64	2.69	49.2
26A	58-003	Stoneco	350	2.09	2.69	11.9
2NS	63-114	Highland	1150	6.95	2.65	39.0
		Total Wt	**2950**	**17.68**		100.0

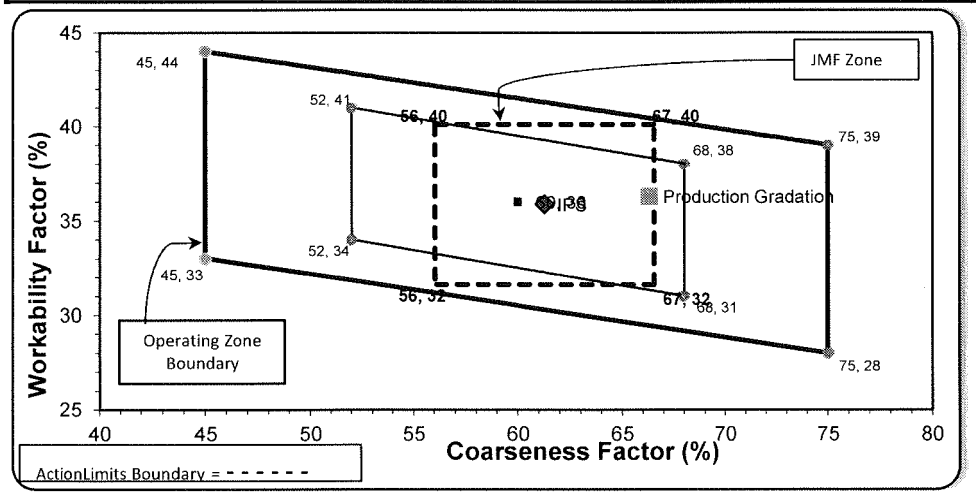
<----- Verify this number is 100%

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"	74.7	100.0	100.0	87.6	12.4	12.4
1/2"	26.8	99.7	100.0	64.0	23.6	36.0
3/8"	12.8	91.3	100.0	56.1	7.9	43.9
#4	1.9	11.4	98.7	40.8	15.3	59.2
#8	1.0	3.7	84.3	33.8	7.0	66.2
#16	0.8	2.7	66.0	26.4	7.4	73.6
#30	0.8	2.3	45.5	18.4	8.0	81.6
#50	0.7	2.1	21.7	9.1	9.4	90.9
#100	0.7	2.0	5.0	2.5	6.5	97.5
LBW	0.5	1.9	1.1	0.9	1.6	99.1

*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 4% for the 3/4" sieve when a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation ◉ Batch Plant Gradations ○ Aggregate Supplier Gradations

Coarseness Factor:	66	Workability Factor:	34	Adjusted WF: 36.3



Intial Production Sample (IPS)

Coarseness Factor:	61
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"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

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PREPARED BY:
SM, LLC Technical Service

Approved BY:

Daily Summary Report

Date	Friday, November 8, 2024		
Sample Id	-674949861	-1989634291	-674981159
Plant	S103 Superior Brighton	S103 Superior Brighton	S103 Superior Brighton
Product	1051 6AA LS	1067 26A Mod LS	1022 2NS GR
Specification	6AA LS	26A Mod LS Spec	2NS GR Spec
Sample Type	QA	QA	QA
Time	09:00	09:01	09:02
2" (50mm)	100.0	100.0	
1 1/2" (37.5mm)	100.0	100.0	
1" (25mm)	100.0	100.0	
3/4" (19mm)	74.7	100.0	
1/2" (12.5mm)	26.8	99.7	
3/8" (9.5mm)	12.8	91.3	100.0
#4 (4.75mm)	1.9	11.4	98.7
#8 (2.36mm)	1.0	3.7	84.3
#16 (1.18mm)	0.8	2.7	66.0
#30 (.6mm)	0.8	2.3	45.5
#50 (.3mm)	0.7	2.1	21.7
#100 (.15mm)	0.7	2.0	5.0
#200 (75µm)	0.60	2.0	1.3
Pan	0.00	0.0	0.0
FM			2.79
Wash Loss (#200/75um)	0.5	1.9	1.1
Total Moisture	2.42	4.14	4.69