Aggregate Optimization Chart

Production Gradation Report

PLANT #: p11

Contractor: _____

Sample Date: 11/18/24

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 11/19/2024 through 11/25/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1600	9.79	2.62	55.1
26A	71-47	Presque Isle	155	0.95	2.62	5.3
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
		Total Wt	**2905**	**17.69**		100.0

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

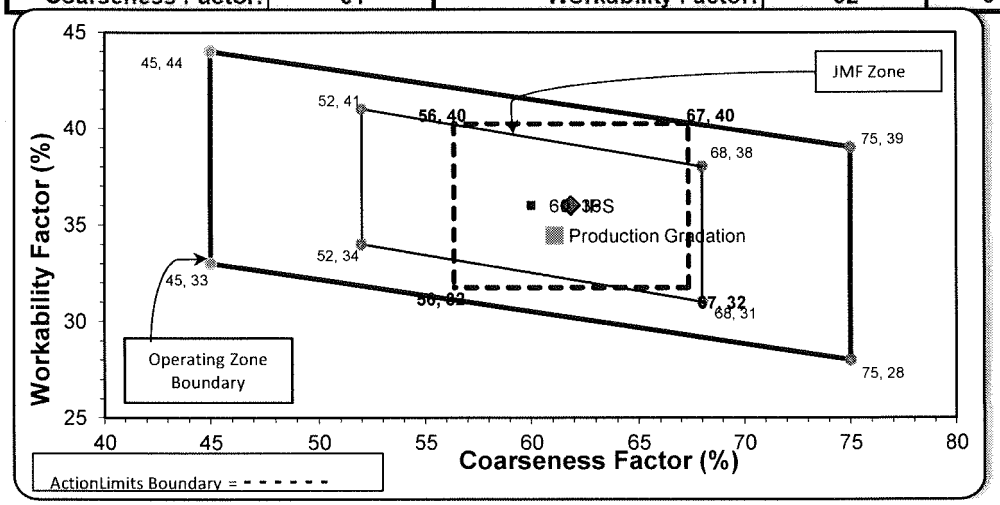
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	96.5	100.0	100.0	98.1	1.9	1.9
3/4"	83.5	100.0	100.0	90.9	7.2	9.1
1/2"	44.1	94.3	100.0	68.9	22.0	31.1
3/8"	26.7	77.8	100.0	58.4	10.5	41.6
#4	4.0	14.8	96.0	41.0	17.4	59.0
#8	1.7	4.9	77.7	32.0	9.0	68.0
#16	1.5	3.6	59.0	24.4	7.6	75.6
#30	1.4	3.2	40.9	17.1	7.2	82.9
#50	1.4	3.1	20.9	9.2	7.9	90.8
#100	1.3	2.9	5.0	2.9	6.4	97.1
LBW	1.1	2.8	0.7	1.0	1.8	99.0

Superior Materials, LLC
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:	61	Workability Factor:	32	Adjusted WF	34.5



Intial Production Sample (IPS)

Coarseness Factor:	62
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"	100.0	0.0	0.0
3/4"	95.0	5.0	5.0
1/2"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	98.7

PREPARED BY:
SM, LLC Technical Service

Approved By:

EDW. C. LEVY CO.
8800 Dix Avenue, Detroit, MI 48209
(313) 843-7200

Daily Summary Report

Date Tuesday, November 19, 2024

Sample Id	-1989649117	- 674929472	-674984850	-1989623826	-719224744
Plant	Onsite Jefferson	Onsite Jefferson	Onsite Jefferson	Onsite Jefferson	Onsite Jefferson
Product	7919 COARSE AGG P1M LS	1051 6AA LS	7920 INTERMED AGG P1M LS	1067 26A Mod LS	1022 2NS GR
Specification	Coarse Agg P1M LS Target		Intermed Agg P1M LS Target	26A Mod LS Spec	2NS GR Spec
Sample Type	QA	QA	QA	QA	QA
Time	11:42	11:43	11:44	11:45	11:46
2" (50mm)	100.0	100.0	100.0	100.0	
1 1/2" (37.5mm)	96.8	100.0	100.0	100.0	
1" (25mm)	34.5	96.5	100.0	100.0	
3/4" (19mm)	8.9	83.5	99.5	100.0	
1/2" (12.5mm)	4.2	44.1	74.9	94.3	
3/8" (9.5mm)	3.7	26.7	40.9	77.8	100.0
#4 (4.75mm)	2.9	4.0	5.5	14.8	96.0
#8 (2.36mm)	2.6	1.7	3.2	4.9	77.7
#16 (1.18mm)	2.5	1.5	2.9	3.6	59.0
#30 (.6mm)	2.4	1.4	2.8	3.2	40.9
#50 (.3mm)	2.3	1.4	2.7	3.1	20.9
#100 (.15mm)	2.1	1.3	2.7	2.9	5.0
#200 (75µm)	1.9	1.22	2.5	2.8	0.8
Pan	0.0	0.00	0.0	0.0	0.0
FM					3.00
Wash Loss (#200/75um)	1.7	1.1	2.4	2.8	0.7
Total Moisture	1.9	3.2	3.1	3.9	5.3

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-102

Contractor: _____

Sample Date: 11/18/24

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 11/19/2024 through 11/25/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft^3	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1425	8.49	2.69	48.3
26A	58-003	Stoneco	375	2.23	2.69	12.7
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"	75.0	100.0	100.0	87.9	12.1	12.1
1/2"	30.8	99.1	100.0	66.5	21.5	33.5
3/8"	13.3	86.5	100.0	56.4	10.1	43.6
#4	1.8	7.4	98.8	40.3	16.1	59.7
#8	1.3	2.5	82.5	33.1	7.2	66.9
#16	1.1	1.9	64.5	25.9	7.2	74.1
#30	1.0	1.7	44.2	17.9	8.0	82.1
#50	0.9	1.5	22.0	9.2	8.7	90.8
#100	0.9	1.4	4.8	2.5	6.7	97.5
LBW	0.7	1.3	0.9	0.9	1.6	99.1

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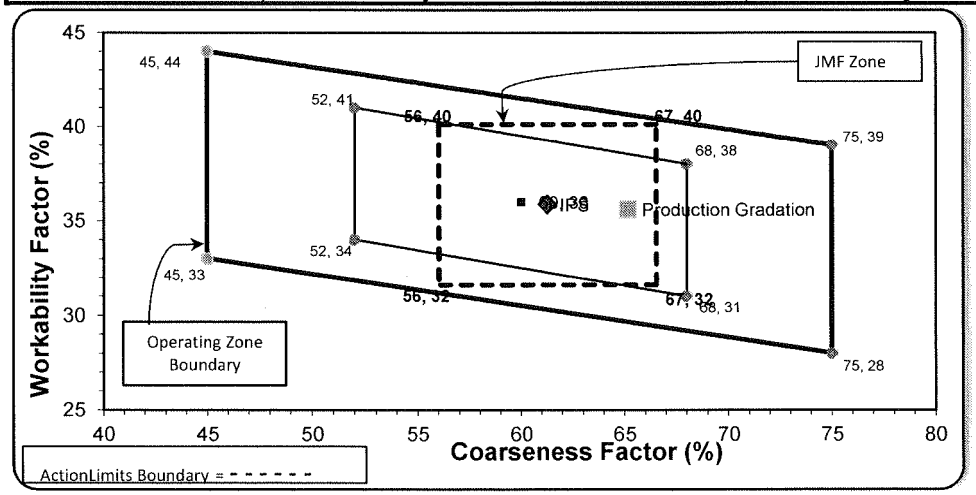
Farmington Hills, MI 48336

*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:	65	Workability Factor:	33	Adjusted WF 35.6



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 19, 2024

Sample Id	-1989644009	-1178925848	-674968172	-667668048	-674972506
Plant	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi
Product	7919 COARSE AGG P1M LS	1051 6AA LS	7920 INTERMED AGG P1M LS	1067 26A Mod LS	1022 2NS GR
Specification	Coarse Agg P1M LS Target	6AA LS	Intermed Agg P1M LS Target	26A Mod LS Spec	2NS GR Spec
Sample Type	QA	QA	QA	QA	QA
Time	09:14	09:15	09:16	09:17	16:04
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)	57.5	100.0	100.0	100.0	
3/4" (19mm)	32.2	75.0	100.0	100.0	
1/2" (12.5mm)	15.3	30.8	90.5	99.1	
3/8" (9.5mm)	7.8	13.3	65.5	86.5	100.0
#4 (4.75mm)	2.7	1.8	8.7	7.4	98.8
#8 (2.36mm)	2.6	1.3	3.5	2.5	82.5
#16 (1.18mm)	2.5	1.1	2.2	1.9	64.5
#30 (.6mm)	2.4	1.0	1.8	1.7	44.2
#50 (.3mm)	2.2	0.9	1.6	1.5	22.0
#100 (.15mm)	2.0	0.9	1.5	1.4	4.8
#200 (75µm)	1.8	0.82	1.4	1.4	1.1
Pan	0.0	0.00	0.0	0.0	0.0
FM					2.83
Wash Loss (#200/75um)	1.6	0.7	1.3	1.3	0.9
Total Moisture	3.41	6.43	4.25	5.51	5.00