Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-102

Contractor: _____

Sample Date: 4/1/24

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 4/2/2024 through 4/8/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
CA	58-003	Stoneco	1370	8.16	2.69	43.9
IA	58-003	Stoneco	550	3.28	2.69	17.6
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"	71.3	100.0	100.0	87.4	12.6	12.6
3/4"	32.1	100.0	100.0	70.2	17.2	29.8
1/2"	19.7	90.2	100.0	63.0	7.2	37.0
3/8"	12.7	67.0	100.0	55.8	7.2	44.2
#4	4.1	11.3	98.7	41.8	14.1	58.2
#8	3.1	5.0	83.9	34.5	7.2	65.5
#16	2.9	4.1	65.6	27.2	7.3	72.8
#30	2.7	3.7	46.8	19.8	7.4	80.2
#50	2.7	3.4	19.6	9.3	10.5	90.7
#100	2.6	3.2	4.1	3.3	6.0	96.7
LBW	2.3	3.0	0.7	1.8	1.5	98.2

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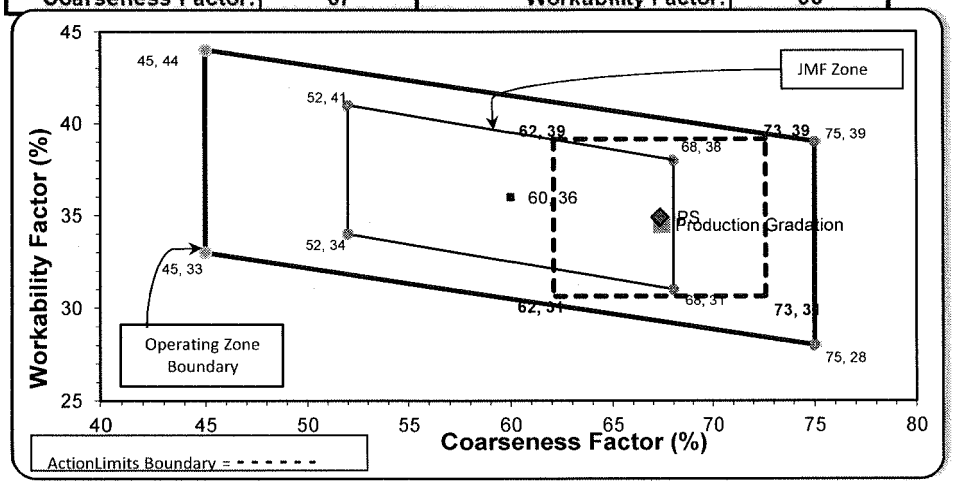
Farmington Hills, MI 48336

*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 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:	67	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:

Plant S102-Superior Novi

Product 7919-COARSE AGG P1M LS

Period: 03/31/2024 - 04/06/2024

Name/Title Doug Storey / QC Technician

Report Date 04/05/2024

Procedure	Sieve/Test	Result	Unit	Coarse Agg P1M LS Target
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	
	1" (25mm)	71.3	%	
	3/4" (19mm)	32.1	%	
	1/2" (12.5mm)	19.7	%	
	3/8" (9.5mm)	12.7	%	
	#4 (4.75mm)	4.1	%	
	#8 (2.36mm)	3.1	%	
	#16 (1.18mm)	2.9	%	
	#30 (.6mm)	2.7	%	
	#50 (.3mm)	2.7	%	
	#100 (.15mm)	2.6	%	
	#200 (75µm)	2.5	%	
	Wash Loss (#200/75um)	2.3	%	0-2
	Total Moisture	2.42	%	

Plant S102-Superior Novi

Product 7920-INTERMED AGG P1M LS

Period: 03/31/2024 - 04/06/2024

Name/Title Doug Storey / QC Technician

Report Date 04/05/2024

Procedure	Sieve/Test	Result	Unit	Intermed Agg P1M LS Target
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	
	1" (25mm)	100.0	%	
	3/4" (19mm)	100.0	%	
	1/2" (12.5mm)	90.2	%	
	3/8" (9.5mm)	67.0	%	
	#4 (4.75mm)	11.3	%	
	#8 (2.36mm)	5.0	%	
	#16 (1.18mm)	4.1	%	
	#30 (.6mm)	3.7	%	
	#50 (.3mm)	3.4	%	
	#100 (.15mm)	3.2	%	
	#200 (75µm)	3.0	%	
	Wash Loss (#200/75um)	3.0	%	0-3
	Total Moisture	3.04	%	

Plant S102-Superior Novi

Product 1022-2NS GR

Period: 03/31/2024 - 04/06/2024

Name/Title Doug Storey / QC Technician

Report Date 04/05/2024

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	98.7	%	95-100
	#8 (2.36mm)	83.9	%	65-95
	#16 (1.18mm)	65.6	%	35-75
	#30 (.6mm)	46.8	%	20-55
	#50 (.3mm)	19.6	%	10-30
	#100 (.15mm)	4.1	%	0-10
	#200 (75µm)	0.9	%	
	FM	2.81		2.6-3
	Wash Loss (#200/75um)	0.7	%	0-3
	Total Moisture	2.03	%	