Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-102

Contractor: _____

Sample Date: 8/28/23

Concrete Grade: **P1M, 3500HP**

Dates Test Represents: 8/29/2023 through 9/4/2023

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	81-019	Pleasant Lake	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"	70.6	100.0	100.0	87.1	12.9	12.9
3/4"	38.4	100.0	100.0	73.0	14.1	27.0
1/2"	21.4	88.7	100.0	63.5	9.5	36.5
3/8"	13.9	63.0	100.0	55.7	7.8	44.3
#4	3.7	12.7	97.8	41.5	14.2	58.5
#8	2.2	4.8	82.4	33.5	8.0	66.5
#16	1.8	2.9	64.2	26.0	7.5	74.0
#30	1.6	2.4	45.9	18.8	7.2	81.2
#50	1.6	2.2	22.5	9.7	9.0	90.3
#100	1.5	2.0	4.2	2.6	7.1	97.4
LBW	1.2	1.8	0.2	0.9	1.7	99.1

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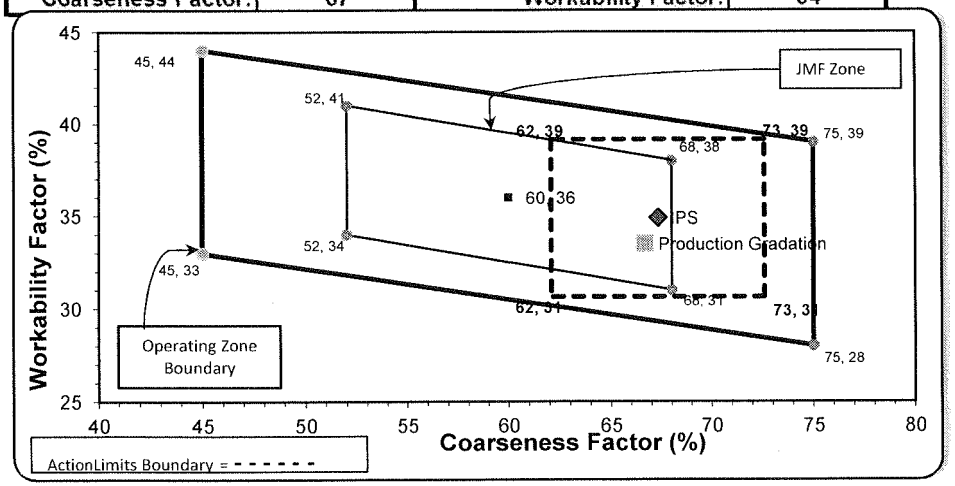
*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom.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

Production Gradation (●) Batch Plant Gradations ( ) Aggregate Supplier Gradations

Coarseness Factor:	67	Workability Factor:	34



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: 08/27/2023 - 09/02/2023

Name/Title Doug Storey / QC Technician

Report Date 09/02/2023

Procedure	Sieve/Test	Result	Unit	Coarse Agg P1M LS Target
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	
	1" (25mm)	70.6	%	
	3/4" (19mm)	38.4	%	
	1/2" (12.5mm)	21.4	%	
	3/8" (9.5mm)	13.9	%	
	#4 (4.75mm)	3.7	%	
	#8 (2.36mm)	2.2	%	
	#16 (1.18mm)	1.8	%	
	#30 (.6mm)	1.6	%	
	#50 (.3mm)	1.6	%	
	#100 (.15mm)	1.5	%	
	#200 (75µm)	1.3	%	
	Wash Loss (#200/75um)	1.2	%	0-2
	Total Moisture	2.46	%	

Plant S102-Superior Novi

Product 7920-INTERMED AGG P1M LS

Period: 08/27/2023 - 09/02/2023

Name/Title Doug Storey / QC Technician

Report Date 09/02/2023

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)	88.7	%	
	3/8" (9.5mm)	63.0	%	
	#4 (4.75mm)	12.7	%	
	#8 (2.36mm)	4.8	%	
	#16 (1.18mm)	2.9	%	
	#30 (.6mm)	2.4	%	
	#50 (.3mm)	2.2	%	
	#100 (.15mm)	2.0	%	
	#200 (75µm)	1.9	%	
	Wash Loss (#200/75um)	1.8	%	0-3
	Total Moisture	3.51	%	

SUPERIOR MATERIALS

Plant S102-Superior Novi

Product 1022-2NS GR

Period: 08/27/2023 - 09/02/2023

Name/Title Doug Storey / QC Technician

Report Date 09/02/2023

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	97.8	%	95-100
	#8 (2.36mm)	82.4	%	65-95
	#16 (1.18mm)	64.2	%	35-75
	#30 (.6mm)	45.9	%	20-55
	#50 (.3mm)	22.5	%	10-30
	#100 (.15mm)	4.2	%	0-10
	#200 (75µm)	0.4	%	
	FM	2.83		2.6-3
	Wash Loss (#200/75um)	0.2	%	0-3
	Total Moisture	3.45	%	