Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-O2

Sample Date: 12/21/20

Concrete Grade: DM

Dates Test Represents: 12/22/2020 through 12/28/2020

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1405	8.59	2.62	48.4
26A	71-47	Presque Isle	350	2.14	2.62	12.0
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
		Total Wt	**2905**	**17.69**		100.0

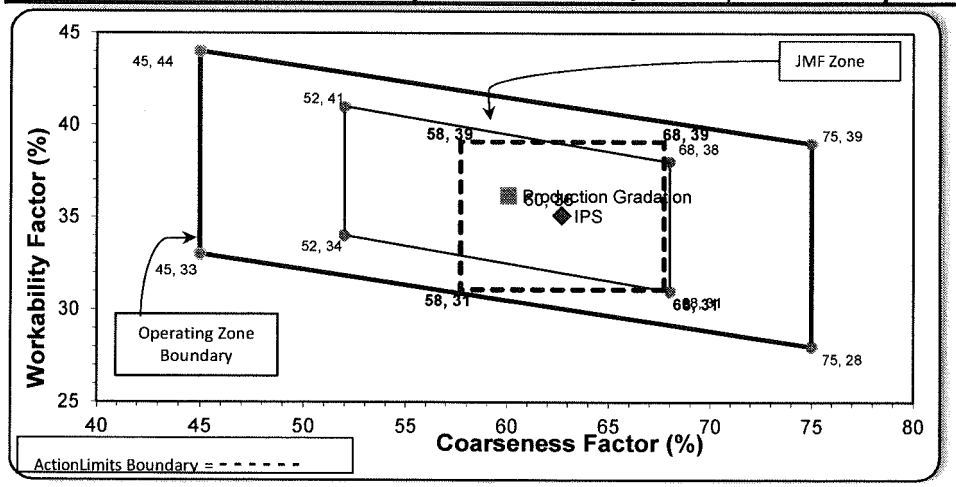
<----- Verify this number is 100%

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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	86.9	100.0	100.0	93.7	6.3	6.3
1/2"	42.1	99.0	100.0	71.9	21.8	28.1
3/8"	20.6	88.0	100.0	60.2	11.7	39.8
#4	4.6	17.9	97.0	42.8	17.4	57.2
#8	2.8	4.4	80.3	33.7	9.1	66.3
#16	2.4	2.4	63.2	26.5	7.2	73.5
#30	2.2	2.1	49.2	20.8	5.7	79.2
#50	2.1	2.0	24.4	10.9	9.9	89.1
#100	2.0	1.8	4.7	3.0	7.9	97.0
LBW	1.6	1.5	0.9	1.3	1.7	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.

Production Gradation ◉ Batch Plant Gradations ○ Aggregate SupplierGradations

Coarseness Factor:	60	Workability Factor:	34	Adjusted WF 36.2



Intial Production Sample (IPS)

Coarseness Factor:	63
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"	100.0	0.0	0.0
3/4"	95.1	4.9	4.9
1/2"	74.6	20.5	25.4
3/8"	59.3	15.3	40.7
#4	42.1	17.2	57.9
#8	35.1	7.1	64.9
#16	29.2	5.9	70.8
#30	21.9	7.3	78.1
#50	9.6	12.4	90.4
#100	2.4	7.2	97.6
LBW	0.9	1.5	99.1

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

PREPARED BY:
SM, LLC Technical Service

Approved By:

Plant S02-Superior Hoover

Product 1051-6AA LS

Period: 12/20/2020 - 12/26/2020

Name/Title Doug Storey / QC Technician

Report Date 12/24/2020

Procedure	Sieve/Test	Result	Unit	6AA LS
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	100.0	%	95-100
	3/4" (19mm)	86.9	%	
	1/2" (12.5mm)	42.1	%	30-60
	3/8" (9.5mm)	20.6	%	
	#4 (4.75mm)	4.6	%	0-8
	#8 (2.36mm)	2.8	%	
	#16 (1.18mm)	2.4	%	
	#30 (.6mm)	2.2	%	
	#50 (.3mm)	2.1	%	
	#100 (.15mm)	2.0	%	
	#200 (75µm)	1.69	%	
	Wash Loss (#200/75um)	1.6	%	0-2
	Total Moisture	3.08	%	

Plant S02-Superior Hoover

Product 1067-26A Mod LS

Period: 12/20/2020 - 12/26/2020

Name/Title Doug Storey / QC Technician

Report Date 12/24/2020

Procedure	Sieve/Test	Result	Unit	26A Mod LS Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	
	1" (25mm)	100.0	%	
	3/4" (19mm)	100.0	%	100-100
	1/2" (12.5mm)	99.0	%	95-100
	3/8" (9.5mm)	88.0	%	60-95
	#4 (4.75mm)	17.9	%	5-30
	#8 (2.36mm)	4.4	%	0-12
	#16 (1.18mm)	2.4	%	
	#30 (.6mm)	2.1	%	
	#50 (.3mm)	2.0	%	
	#100 (.15mm)	1.8	%	
	#200 (75µm)	1.7	%	
	Wash Loss (#200/75um)	1.5	%	0-3
	Total Moisture	3.66	%	

Plant S02-Superior Hoover

Product 1022-2NS GR

Period: 12/20/2020 - 12/26/2020

Name/Title Doug Storey / QC Technician

Report Date 12/24/2020

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	97.0	%	95-100
	#8 (2.36mm)	80.3	%	65-95
	#16 (1.18mm)	63.2	%	35-75
	#30 (.6mm)	49.2	%	20-55
	#50 (.3mm)	24.4	%	10-30
	#100 (.15mm)	4.7	%	0-10
	#200 (75µm)	1.1	%	
	FM	2.81		2.6-3
	Wash Loss (#200/75um)	0.9	%	0-3
	Total Moisture	3.38	%	