

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-32

Sample Date: 1/11/2020

Dates Test Represents: 1/11/2020 through 1/12/2020

Concrete Grade: S2M

Contractor:

MIDOT No.:

Aggr. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1670	10.21	2.62	54.8
26A	71-47	Presque Isle	150	0.92	2.62	4.9
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
Total Wt			3050	18.57		100.0

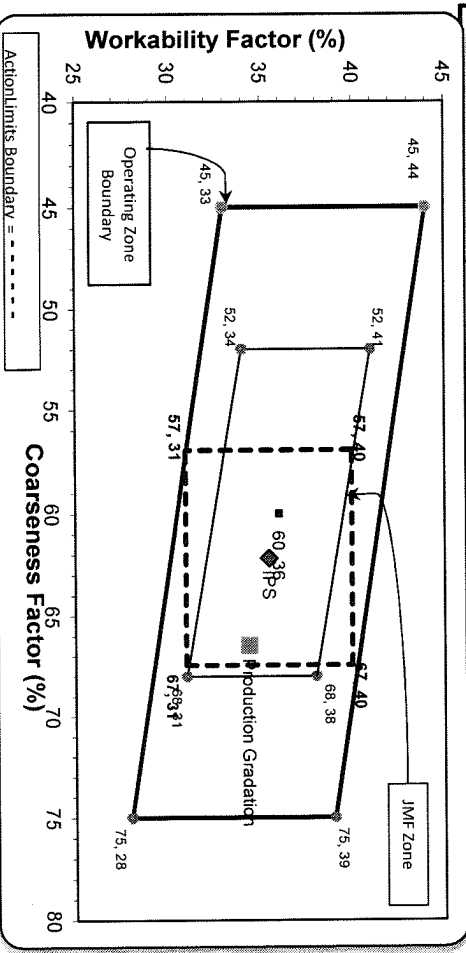
<--- Verify this number is 100%

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"	96.3	100.0	100.0	98.0	2.0	2.0
3/4"	49.6	100.0	100.0	72.4	25.6	27.6
1/2"	33.7	97.6	100.0	63.6	8.8	36.4
3/8"	21.3	89.0	100.0	56.4	7.2	43.6
#4	5.2	23.5	95.2	42.4	14.0	57.6
#8	2.4	6.0	81.2	34.4	8.0	65.6
#16	1.4	3.0	64.8	27.0	7.3	73.0
#30	1.3	2.5	42.8	18.1	9.0	81.9
#50	1.2	2.5	22.8	10.0	8.1	90.0
#100	1.1	2.5	9.7	4.6	5.3	95.4
LBW	1.0	1.6	1.2	1.1	3.5	98.9

*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: 66 **Workability Factor:** 34

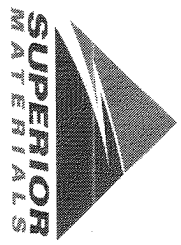


Initial Production Sample (IPS)

Sieve	Coarseness Factor:	Workability Factor:	Cumulative % Passing	% Retained	Cumulative % Retained
2"	62	35	100.0	0.0	0.0
1.5"			100.0	0.0	0.0
1"			100.0	0.0	0.0
3/4"			94.0	6.0	6.0
1/2"			70.2	23.7	29.8
3/8"			59.9	10.4	40.1
#4			42.7	17.2	57.3
#8			35.5	7.2	64.5
#16			28.4	7.0	71.6
#30			19.2	9.2	80.8
#50			8.9	10.3	91.1
#100			3.1	5.9	96.9
LBW			1.4	1.7	98.6

PREPARED BY:
SM, LLC Technical Service

Approved By:



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

Plant 958-JMT

Product 1054-6AA LS PI

Period: 11/15/2020 - 11/21/2020

Name/Title Doug Storey / QC Technician

Report Date 11/20/2020

Procedure	Sieve/Test	Result	Unit	6AA LS PI Spec
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	96.3	%	95-100
	3/4" (19mm)	49.6	%	
	1/2" (12.5mm)	33.7	%	30-60
	3/8" (9.5mm)	21.3	%	
	#4 (4.75mm)	5.2	%	0-8
	#8 (2.36mm)	2.4	%	
	#16 (1.18mm)	1.4	%	
	#30 (.6mm)	1.3	%	
	#50 (.3mm)	1.2	%	
	#100 (.15mm)	1.1	%	
	#200 (75µm)	1.1	%	
	Wash Loss (#200/75µm)	1.0	%	0-2
	Total Moisture	2.5	%	

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 11/15/2020 - 11/21/2020

Report Date 11/20/2020

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)	97.6	%	95-100
	3/8" (9.5mm)	89.0	%	60-95
	#4 (4.75mm)	23.5	%	5-30
	#8 (2.36mm)	6.0	%	0-12
	#16 (1.18mm)	3.0	%	
	#30 (.6mm)	2.5	%	
	#50 (.3mm)	2.5	%	
	#100 (.15mm)	2.5	%	
	#200 (75µm)	1.8	%	
	Wash Loss (#200/75µm)	1.6	%	0-3
	Total Moisture	4.0	%	

Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 11/15/2020 - 11/21/2020

Report Date 11/20/2020

Procedure	Sieve/Test	Result	Unit	2NS GR Spec
	3/8" (9.5mm)	100.0	%	100-100
	#4 (4.75mm)	95.2	%	95-100
	#8 (2.36mm)	81.2	%	65-95
	#16 (1.18mm)	64.8	%	35-75
	#30 (.6mm)	42.8	%	20-55
	#50 (.3mm)	22.8	%	10-30
	#100 (.15mm)	9.7	%	0-10
	#200 (75µm)	1.6	%	
	FM	2.84		2.6-3
	Wash Loss (#200/75um)	1.2	%	0-3
	Total Moisture	5.0	%	