Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-36

Sample Date: 6/8/20

Concrete Grade: DM

Dates Test Represents: 6/9/2020 through 6/15/2020

Contractor: _____

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1455	8.90	2.62	50.1
26A	71-47	Presque Isle	350	2.14	2.62	12.0
2NS	63-92	Grange Hall	1100	6.65	2.65	37.9
		Total Wt	**2905**	**17.69**		100.0

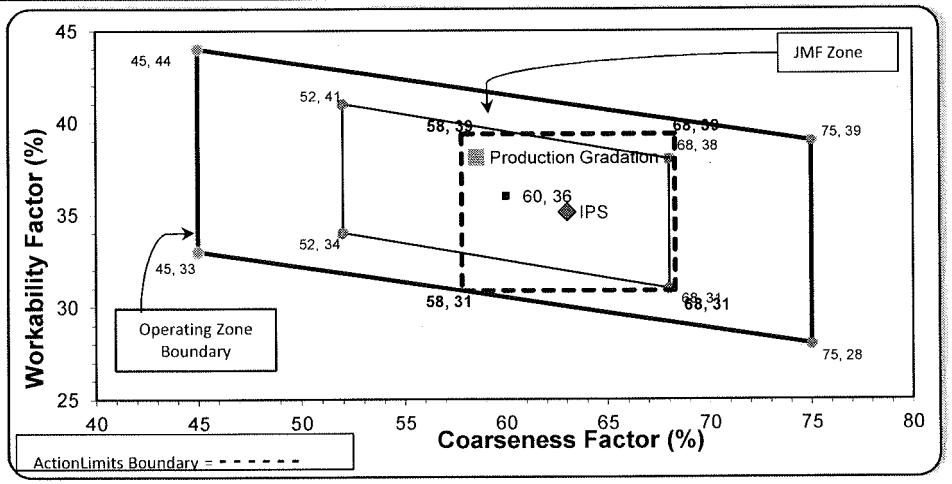
<----- Verify this number is 100%

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"	98.1	100.0	100.0	99.0	1.0	1.0
3/4"	79.6	100.0	100.0	89.8	9.3	10.2
1/2"	47.5	96.0	100.0	73.2	16.6	26.8
3/8"	28.6	83.9	100.0	62.3	10.9	37.7
#4	6.3	27.3	97.8	43.5	18.8	56.5
#8	3.2	9.1	86.9	35.6	7.9	64.4
#16	2.7	4.5	73.0	29.5	6.1	70.5
#30	2.5	3.7	48.4	20.0	9.5	80.0
#50	2.4	3.3	17.4	8.2	11.8	91.8
#100	2.1	3.0	2.5	2.4	5.8	97.6
LBW	1.7	2.5	0.7	1.4	0.9	98.6

*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:	59	Workability Factor:	36	Adjusted WF 38.1



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"	99.1	0.9	0.9
3/4"	90.3	8.8	9.7
1/2"	69.2	21.1	30.8
3/8"	59.1	10.1	40.9
#4	41.8	17.3	58.2
#8	35.1	6.6	64.9
#16	28.5	6.6	71.5
#30	21.2	7.3	78.8
#50	8.7	12.5	91.3
#100	1.8	7.0	98.2
LBW	0.7	1.0	99.3

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PREPARED BY:
SM, LLC Technical Service

Approved By:

2470 Auburn Road
Auburn Hills, MI 48432

Plant S36-Superior Auburn Hills

Product 1051-6AA LS

Period: 06/07/2020 - 06/13/2020

Name/Title Doug Storey / QC Technician

Report Date 06/11/2020

Procedure	Sieve/Test	Result	Unit	6AA LS
	2" (50mm)	100.0	%	
	1 1/2" (37.5mm)	100.0	%	100-100
	1" (25mm)	98.1	%	95-100
	3/4" (19mm)	79.6	%	
	1/2" (12.5mm)	47.5	%	30-60
	3/8" (9.5mm)	28.6	%	
	#4 (4.75mm)	6.3	%	0-8
	#8 (2.36mm)	3.2	%	
	#16 (1.18mm)	2.7	%	
	#30 (.6mm)	2.5	%	
	#50 (.3mm)	2.4	%	
	#100 (.15mm)	2.1	%	
	#200 (75µm)	1.7	%	
	Wash Loss (#200/75um)	1.6	%	0-2
	Total Moisture	3.86	%	
AASHTO T11	-#200 (75um)	1.72	%	

2470 Auburn Road
Auburn Hills, MI 48432

Plant S36-Superior Auburn Hills

Product 1067-26A Mod LS

Period: 06/07/2020 - 06/13/2020

Name/Title Doug Storey / QC Technician

Report Date 06/11/2020

Procedure	Sieve/Test	Result	Unit	26A 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)	96.0	%	95-100
	3/8" (9.5mm)	83.9	%	60-95
	#4 (4.75mm)	27.3	%	5-30
	#8 (2.36mm)	9.1	%	0-12
	#16 (1.18mm)	4.5	%	
	#30 (.6mm)	3.7	%	
	#50 (.3mm)	3.3	%	
	#100 (.15mm)	3.0	%	
	#200 (75µm)	2.5	%	
	Wash Loss (#200/75um)	2.3	%	0-3
	Total Moisture	2.73	%	

2470 Auburn Road
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Plant S36-Superior Auburn Hills

Product 1022-2NS GR

Period: 06/07/2020 - 06/13/2020

Name/Title Doug Storey / QC Technician

Report Date 06/11/2020

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)	86.9	%	65-95
	#16 (1.18mm)	73.0	%	35-75
	#30 (.6mm)	48.4	%	20-55
	#50 (.3mm)	17.4	%	10-30
	#100 (.15mm)	2.5	%	0-10
	#200 (75µm)	0.7	%	
	FM	2.74		2.6-3
	Wash Loss (#200/75um)	0.4	%	0-3
	Total Moisture	3.56	%	