

Concrete Mixture Analysis Worksheet

Project Name: I-696 (I-275 to Lahser)
 Contractor Name: Daytona Redi Mix
 MDOT Project #: 63101-131589
 Maximum Aggregate Size (inches): 1.5

Representative Date: 05/14/24 through 05/21/24
 CT Project #: 230408
 Mix ID #: BW-007 (Slipform)

MATERIALS				
Type	Source	Class	Spec. Grav.	F/T Dialation
Coarse	Stoneco-Ottawa Lake (58-0003CA)	CA	2.69	0.010
Intermediate 1	Stoneco-Ottawa Lake (58-0003CA)	IA	2.68	0.010
			1.00	
Fine	Mid Michigan-Vella (81-0101SG)	Fine	2.64	
Cement	Ash Grove-Missisauaga	Type IL	3.10	
GGBFS	Ash Grove-Detroit	Grade 100	2.91	

ADMIXTURES		
Type	Supplier	Dosage (oz/cwt)
Mapair SA	MAPEI	3.5
Mapetard R	MAPEI	3

PROPORTIONS (SSD)				
Type	Wt. lbs.	Sp. Grav.	Vol. ft ³	% Vol.
Cement	458	3.1	2.37	
GGBFS	153	2.91	0.84	
Coarse	1525	2.69	9.09	49.85
Intermediate 1	300	2.68	1.79	9.84
		1.00	0.00	0.00
Fine	1210	2.64	7.35	40.30
Water	238	1	3.81	
Air, %	6.5		1.76	
				27.00

Total Cementitious:	611 lbs. or 6.5 bag
Water/Cement Ratio:	0.39
Percent Cementitious Replacement:	25%

	GRADATIONS								Gradation Date: <u>5/14/2024</u>			
	Coarse		Intermediate 1		Fine		Fine					
	SSD wt., lbs	1525	300	0	1210					Total % Passing	% Cumm. Retained	Retained Sieve, %
Abs. Volume	9.09	1.79	0.00	7.35								
Aggregate % Vol.	49.9	9.8	0.0	40.3								
Sieves	% Pass	% Mix	% Pass	% Mix	% Pass	% Mix	% Pass	% Mix				
2"	100.0	49.9	100.0	9.8	0.0	100.0	40.3	100.0	0.0	0.0	0.0	
1 1/2"	100.0	49.9	100.0	9.8	0.0	100.0	40.3	100.0	0.0	0.0	0.0	
1"	75.0	37.4	100.0	9.8	0.0	100.0	40.3	87.5	12.5	12.5		
3/4"	45.0	22.4	100.0	9.8	0.0	100.0	40.3	72.6	27.4	15.0		
1/2"	22.0	11.0	93.0	9.2	0.0	100.0	40.3	60.4	39.6	12.2		
3/8"	13.0	6.5	68.0	6.7	0.0	100.0	40.3	53.5	46.5	6.9		
# 4	3.0	1.5	11.0	1.1	0.0	98.0	39.5	42.1	57.9	11.4		
# 8	2.0	1.0	3.0	0.3	0.0	85.0	34.3	35.6	64.4	6.5		
# 16	2.0	1.0	2.0	0.2	0.0	68.0	27.4	28.6	71.4	7.0		
# 30	1.0	0.5	2.0	0.2	0.0	50.0	20.2	20.8	79.2	7.8		
# 50	1.0	0.5	2.0	0.2	0.0	20.0	8.1	8.8	91.2	12.1		
# 100	1.0	0.5	1.0	0.1	0.0	4.0	1.6	2.2	97.8	6.5		
# 200	1.3	0.6	1.4	0.1	0.0	1	0.5	1.3	98.7	0.9		

Fine Aggregate Fineness Modulus: 2.75 FM

Coarseness Factor (x-axis): 72
((cumm. Ret 3/8 / cumm. Ret #8) x 100)

Workability Factor (y-axis): 36
(Pass #8 + Adjustment Factor)

