

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: 05/7/24 through 05/14/24
 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-Missisauga	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>5/7/2024</u>			
	Coarse		Intermediate 1		Fine		Fine					
	SSD wt., lbs	1525	300	0	1210							
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	Total % Passing	% Cumm. Retained	Retained Sieve, %	Retained Spec. %
2"	100.0	49.9	100.0	9.8	0.0	100.0	40.3	100.0	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		
1"	73.0	36.4	100.0	9.8	0.0	100.0	40.3	86.5	13.5	13.5		
3/4"	45.0	22.4	100.0	9.8	0.0	100.0	40.3	72.6	27.4	14.0		
1/2"	24.0	12.0	95.0	9.4	0.0	100.0	40.3	61.6	38.4	11.0		
3/8"	15.0	7.5	69.0	6.8	0.0	100.0	40.3	54.6	45.4	7.0		
# 4	3.0	1.5	13.0	1.3	0.0	98.0	39.5	42.3	57.7	12.3		
# 8	2.0	1.0	4.0	0.4	0.0	86.0	34.7	36.1	63.9	6.2		
# 16	2.0	1.0	3.0	0.3	0.0	69.0	27.8	29.1	70.9	7.0		
# 30	2.0	1.0	2.0	0.2	0.0	51.0	20.6	21.7	78.3	7.4		
# 50	2.0	1.0	2.0	0.2	0.0	18.0	7.3	8.4	91.6	13.3		
# 100	2.0	1.0	2.0	0.2	0.0	4.0	1.6	2.8	97.2	5.6		
# 200	1.6	0.8	2.0	0.2	0.0	1	0.6	1.6	98.4	1.2		

Fine Aggregate Fineness Modulus: 2.74 FM

Coarseness Factor (x-axis): 71
((cumm. Ret 3/8 / cumm. Ret #8) x 100)

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

