Concrete Mixture Analysis Worksheet

Project Name:	I-696 (I-275 to Lahser)	Representative Date:	04/30/24 through 05/07/24
Contractor Name:	Daytona Redi Mix	CT Project #:	230408
MDOT Project #:	63101-131589	Mix ID #:	BW-007 (Slipform)
Maximum Aggregate Size (inches):	1.5		

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)
Mapeair 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

	Coarse		Intermediate 1				Fine		Gradation Date: 4/30/2024			
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"	69.0	34.4	100.0	9.8		0.0	100.0	40.3	84.5	15.5	15.5	
3/4"	43.0	21.4	100.0	9.8		0.0	100.0	40.3	71.6	28.4	13.0	
1/2"	23.0	11.5	97.0	9.5		0.0	100.0	40.3	61.3	38.7	10.3	
3/8"	14.0	7.0	72.0	7.1		0.0	100.0	40.3	54.4	45.6	6.9	
# 4	3.0	1.5	12.0	1.2		0.0	98.0	39.5	42.2	57.8	12.2	
# 8	2.0	1.0	4.0	0.4		0.0	84.0	33.9	35.2	64.8	6.9	
# 16	1.0	0.5	2.0	0.2		0.0	69.0	27.8	28.5	71.5	6.7	
# 30	1.0	0.5	2.0	0.2		0.0	52.0	21.0	21.7	78.3	6.9	
# 50	1.0	0.5	1.0	0.1		0.0	19.0	7.7	8.3	91.7	13.4	
# 100	1.0	0.5	1.0	0.1		0.0	3.0	1.2	1.8	98.2	6.4	
# 200	1.1	0.5	1.2	0.1		0.0	1	0.4	1.1	98.9	0.7	

Fine Aggregate Fineness Modulus: 2.75 FM

Coarseness Factor (x-axis): 70
((cumm. Ret 3/8 / cumm. Ret #8) x 100)

Workability Factor (y-axis): 35
(Pass #8 + Adjustment Factor)