

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-008 (Handwork)

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 1L	3.10	
GGBFS	Ash Grove-Detroit	Grade 100	2.91	
ADMIXTURES				
Type	Supplier	Dosage (oz/cwt)		
Mapair SA	MAPEI	3.5		
DynamonSX	MAPEI	5		

PROPORTIONS (SSD)				
Type	Wt. lbs.	Sp. Grav.	Vol. ft ³	% Vol.
Cement	458	3.1	2.37	
GGBFS	153	2.91	0.84	
Coarse	1475	2.69	8.79	49.02
Intermediate 1	300	2.68	1.79	10.01
		1.00	0.00	0.00
Fine	1210	2.64	7.35	40.97
27.01				
Water	257	1	4.12	
Air, %	6.5		1.76	
Total Cementitious:		611	lbs. or	6.5 bag
Water/Cement Ratio:		0.42		
Percent Cementitious Replacement:		25%		

	GRADATIONS								Gradation Date: <u>5/7/2024</u>			
	Coarse		Intermediate 1		Fine		Fine					
	SSD wt., lbs	1475	300	0	1210	Total % Passing	% Cumm. Retained	Retained Sieve, %	Retained Spec. %			
Abs. Volume	8.79	1.79	0.00	7.35								
Aggregate % Vol.	49.0	10.0	0.0	41.0								
Sieves	% Pass	% Mix	% Pass	% Mix	% Pass	% Mix	% Pass	% Mix	Total % Passing	% Cumm. Retained	Retained Sieve, %	Retained Spec. %
2"	100.0	49.0	100.0	10.0	0.0	0.0	100.0	41.0	100.0	0.0	0.0	
1 1/2"	100.0	49.0	100.0	10.0	0.0	0.0	100.0	41.0	100.0	0.0	0.0	
1"	73.0	35.8	100.0	10.0	0.0	0.0	100.0	41.0	86.8	13.2	13.2	
3/4"	45.0	22.1	100.0	10.0	0.0	0.0	100.0	41.0	73.0	27.0	13.7	
1/2"	24.0	11.8	95.0	9.5	0.0	0.0	100.0	41.0	62.2	37.8	10.8	
3/8"	15.0	7.4	69.0	6.9	0.0	0.0	100.0	41.0	55.2	44.8	7.0	
# 4	3.0	1.5	13.0	1.3	0.0	0.0	98.0	40.2	42.9	57.1	12.3	
# 8	2.0	1.0	4.0	0.4	0.0	0.0	86.0	35.2	36.6	63.4	6.3	
# 16	2.0	1.0	3.0	0.3	0.0	0.0	69.0	28.3	29.6	70.4	7.1	
# 30	2.0	1.0	2.0	0.2	0.0	0.0	51.0	20.9	22.1	77.9	7.5	
# 50	2.0	1.0	2.0	0.2	0.0	0.0	18.0	7.4	8.6	91.4	13.5	
# 100	2.0	1.0	2.0	0.2	0.0	0.0	4.0	1.6	2.8	97.2	5.7	
# 200	1.6	0.8	2.0	0.2	0.0	0.0	1	0.6	1.6	98.4	1.3	

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): 37
 (Pass #8 + Adjustment Factor)

