STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIAL AND RESEARCH SECTION - STRUCTURAL CONCRETE UNIT

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Agency Use Only	
Mix ID	HP14-A-050
Mix Design #	050
Approved by	jwild
Approved Date	4/5/2014
Spec Book Year	2011

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

Concrete class: HPC A
Additional Description
Ready Mix Supplier: CARROLL CONCRETE - BRATTLEBORO, VT
Designed By Scott Jordan
Design strength 4000 PSI
Design by dry weight or saturated surface dry: SSD

Cement: 701.02	Source: / Brand Name:		Specific Gravity			lb/cy	0.00	cf
Cement Type III: 701.04	Source: / Brand Name:		Specific Gravity			lb/cy	0.00	cf
Blended Cement: 701.06	Source: LAFARGE - TERCEM - MONTREAL, EAST PLANT / Brand Name:		Specific Gravity	3.020	611	lb/cy	3.24	cf
Cement with Slag: 701.07	Source: / Brand Name:		Specific Gravity			lb/cy	0.00	cf
Pozzolan: 725.03(a)	Source: / Brand Name:		Specific Gravity			lb/cy	0.00	cf
Fly Ash: 725.03(a)	Source: / Brand Name:		Specific Gravity			lb/cy	0.00	cf
Silica Fume: 725.03(b)	Source: / Brand Name:		Specific Gravity			lb/cy	0.00	cf
Slag: 725.03(c)	Source: / Brand Name:		Specific Gravity			lb/cy	0.00	cf
Water				31 gals	258.7	lb/cy	4.14	cf
Air Content Target				7.0 %			1.89	cf
Coarse Aggregate 3/8" 704.02A	Source:	Absorption	Specific Gravity			lb/cy	0.00	cf
Coarse Aggregate 3/4" 704.02B	Source: LANE CONST INC PIT - NORTHFIELD, MA	Absorption 1.30	Specific Gravity	2.690	1635	lb/cy	9.74	cf
Coarse Aggregate 1 1/2" 704.02C	Source:	Absorption	Specific Gravity			lb/cy	0.00	cf
Fine Aggregate: 704.01	Source: LANE CONST INC PIT - NORTHFIELD, MA	Absorption 1.20	Specific Gravity / Fineness Modulus	2.700 / 2.84	1346	lb/cy	7.99	cf
Air Entrainment Admixture 725.02(b)	Source: MASTER BUILDERS INC - MESQUITE, TX / Brand Name: MasterAir AE200/Micro Air		Specific Gravity		1.2	oz/cy		
Retarder Admixture: 725.02(c)	Source: MASTER BUILDERS INC - MESQUITE, TX / Brand Name: MasterSet R100/Pozzolith 100XR		Specific Gravity		2	oz/cwt		
High Range Water Reducer Admixture: 725.02(h)	Source: MASTER BUILDERS INC - MESQUITE, TX / Brand Name: MasterGlenium 7500		Specific Gravity		4	oz/cwt		
Other Admixtures:	Source: / Brand Name:		Specific Gravity			oz/cwt	0.00	cf
	Source: / Brand Name:		Specific Gravity				0.00	cf
	Source: / Brand Name:		Specific Gravity				0.00	cf
			TOTAL	46.410	3851	lb	27.00	cf

Maximum Water/Cementitious Ratio	0.44			
Maximum Water (gal/cy)	32.2			
Slump Min/Max (inch)	4.0	min	7.0	max
Air Content Min/Max (%)	5.5	min	8.5	max
Design Unit Wt. (lb/cf)	142.62			

Notes: Approved by James Wild, VAOT Composite Materials Engineer 4/5/14. Slump requirement has been eliminated for jobs with provisions to eliminate it

2014 construction season 3-15-14