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

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Revision: 08/31/15

Agency Use Only	
Mix ID	HP16-A-051
Mix Design #	051
Approved by	jwild
Approved Date	3/18/2016
Spec Book Year	2011

Concrete class: HPC A
Additional Description
Ready Mix Supplier: CARROLL CONCRETE - BRATTLEBORO, VT
Designed By Scott Jordan
Design strength 4000 PSI
Mix Design Style: Conventional
Agg weight - SSD or Dry: SSD

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.

Cement: 701.02	Source: LAFARGE CANADA - ST CONSTANT, QUEBEC Brand Name:		Specific Gravity	3.110		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	2.980	611	lb/cy	3.29	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: HEADWATERS RESOURCES - BRAYTON POINT, MA Brand Name:		Specific Gravity	2.400		lb/cy	0.00	cf
Silica Fume: 725.03(b)	Source: BASF CONSTRUCTION CHEMICALS - CHICAGO, IL Brand Name: MasterLife SF100		Specific Gravity	2.200		lb/cy	0.00	cf
Slag: 725.03(c)	Source: LAFARGE - NEWCEM SLAG - BALT, MD Brand Name:		Specific Gravity	2.930		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 1.10	Specific Gravity	2.670	1639	lb/cy	9.84	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 1.30	Specific Gravity Fineness Modulus	2.710 2.94	1326	lb/cy	7.84	cf
Air Entrainment Admixture 725.02(b)	Source: MASTER BUILDERS INC - MESQUITE, TX Brand Name: MasterAir AE200		Specific Gravity		2	oz/cy		
Retarder Admixture: 725.02(c)	Source: MASTER BUILDERS INC - MESQUITE, TX Brand Name: MasterSet R100		Specific Gravity		1	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: Water reducing admixture 725.02(f)	Source: MASTER BUILDERS INC - MESQUITE, TX Brand Name: MasterGlenium 7500		Specific Gravity			oz/cwt	0.00	cf
Specific performance admixture 725.02(l)	Source: MASTER BUILDERS INC - MESQUITE, TX Brand Name: MasterSure Z60		Specific Gravity			oz/cwt	0.00	cf
Specific performance admixture #2 725.02(l)2	Source: MASTER BUILDERS INC - MESQUITE, TX Brand Name: MasterLife SRA20		Specific Gravity			oz/cwt	0.00	cf
			TOTAL	53.890	3835	lb	27.00	cf

Approved by James Wilds VAOT Structural Concrete Engineer 3/18/16

Maximum Water/Cementitious Ratio	0.44		
Maximum Water (gal/cy)	32.2		
Slump Min/Max (inch)	4.0 min	8.0	max
Air Content Min/Max (%)	5.5 min	8.5	max
Design Unit Wt. (lb/cf)	142.03		

Notes:

2016 construction season, 3-11-16