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

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Agency Use Only	
Mix ID	HP14-et-140
Mix Design #	140
Approved by	jwild
Approved Date	3/12/2014
Spec Book Year	2011

Concrete class: HPC Rapid Set
Additional Description
Ready Mix Supplier: CARROLL CONCRETE - W LEBANON, NH - RT 12A
Designed By Scott Jordan
Design strength 5000 PSI
Design by dry weight or saturated surface 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:		Specific Gravity			lb/cy	0.00	cf
	Brand Name:							
Cement Type III: 701.04	Source:		Specific Gravity			lb/cy	0.00	cf
	Brand Name:							
Blended Cement: 701.06	Source:	LAFARGE - TERCEM - MONTREAL, EAST PLANT	Specific Gravity	3.020	720	lb/cy	3.82	cf
	Brand Name:							
Cement with Slag: 701.07	Source:		Specific Gravity			lb/cy	0.00	cf
	Brand Name:							
Pozzolan: 725.03(a)	Source:		Specific Gravity			lb/cy	0.00	cf
	Brand Name:							
Fly Ash: 725.03(a)	Source:		Specific Gravity			lb/cy	0.00	cf
	Brand Name:							
Silica Fume: 725.03(b)	Source:		Specific Gravity			lb/cy	0.00	cf
	Brand Name:							
Slag: 725.03(c)	Source:	LAFARGE - NEWCEM SLAG - BALT, MD	Specific Gravity	2.920	180	lb/cy	0.99	cf
	Brand Name:							
Water				32 gals	267	lb/cy	4.28	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:	LEBANON CRUSHED STONE - W LEBANON, NH Absorption 0.50	Specific Gravity	2.890	1605	lb/cy	8.90	cf
Coarse Aggregate 1 1/2" 704.02C	Source:	Absorption	Specific Gravity			lb/cy	0.00	cf
Fine Aggregate: 704.01	Source:	LEBANON CRUSHED STONE - W LEBANON, Absorption 1.10	Specific Gravity	2.710	1175	lb/cy	6.95	cf
			Fineness Modulus	2.68				
Air Entrainment Admixture 725.02(b)	Source:	MASTER BUILDERS INC - MESQUITE, TX	Specific Gravity		8	oz/cy		
	Brand Name:	MicroAir						
Retarder Admixture: 725.02(c)	Source:		Specific Gravity			oz/cwt		
	Brand Name:							
High Range Water Reducer Admixture: 725.02(h)	Source:	MASTER BUILDERS INC - MESQUITE, TX	Specific Gravity		4	oz/cwt		
	Brand Name:	Glenium 7500						
Other Admixtures:	Source:		Specific Gravity	1.010	1.25	gal/cy	0.17	cf
	Brand Name:	BASF, MasterLIFE SRA20						
	Source:		Specific Gravity		3	oz/cwt	0.00	cf
	Brand Name:	BASF, Rheotec Z60						
	Source:		Specific Gravity				0.00	cf
	Brand Name:							
			TOTAL	51.550	3958	lb	27.00	cf

Approved by James Wild, Composite Materials Engineer 3/12/14 for Bernard ERBRF 0241(39)

Maximum Water/Cementitious Ratio			
Maximum Water (gal/cy)	0.0		
Slump Min/Max (inch)	4.0 min	10.0	max
Air Content Min/Max (%)	5.5 min	8.5	max
Design Unit Wt. (lb/cf)	146.58		

Notes:

2011 specification, 2014 construction season, 2-24-14