

HP-35s Calculator Program –

CONCRETE MIX BASICS

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Line	Instruction	Process	User Instruction
B001	LBL B	Establishing the library	
B002	CLVARS	Clear all variables	→ CLEAR 5
B003	CONCRETE MIX	Title: Concrete Mix Basics	Key in using EQN, RCL C, RCL O, et
B004	PSE	Short Pause	
B005	RATIO BY WEIGT	e.g. 1,2,3.1 for cement,sand,coarse aggregates	x
B006	PSE		÷
B007	CEMENT		√x
B008	PSE		R↓
B009	INPUT C	Input the proportion for cement, e.g. 1.0	
B010	SAND		
B011	PSE		
B012	INPUT S	Input the proportion for sand, e.g. 2.0	
B013	COARSE AGGREGS		
B014	PSE		
B015	INPUT A	Input the proportion for coarse aggregates, e.g. 3.1	
B016	WC RATIO		
B017	PSE		
B018	GALONS PER SAC		
B019	PSE		
B020	INPUT R	Input the amount of gallons if this is the chosen process	
B021	X=0?		Nomenclature:
B022	GTO B028		
B023	7.48		A = Aggregate proportion
B024	÷		B = β - Angle beta
B025	STO W		C = Cement proportion
B026	GTO B042		D = Density of Material
B027	RATIO IN DECIMAL		E = Entrainment of Air
B028	PSE		G = gallons of water that will be needed
B029	INPUT R	Input the amount of H2O in decimal proportions, like	
B030	X=0?	cement and aggregates above if this is the chosen	I = Needed lb of cement (ini),
B031	GTO B017	process	needed cubic yards of cement (fin)
B032	62.4		J = Needed lb of sand (ini), needed
B033	÷		cubic yards of sand (fin)
B034	94		K = Needed lb of coarse aggregates
B035	RCL R		(ini), needed cubic yards of c/a (fin)
B036	11.271		J=Cumulative Moment M (Horizontal
B037	x		Components)
B038	STO R		K = Ka – Rankine Active Earth
B039	x		Pressure factor
B040	STO W		L = % Excess moisture in Sand
B041	CLSTK		M = % Excess moisture in Coarse
B042	VOL PER SAC		Aggs
B043	PSE		N = Cubic Feet of Concrete needed
B044	RCL C		P = Used to store density of sand
B045	94		Q = Used to store density of Aggs
B046	x		R = Ratio of H2O or Gallons of H2O
B047	195		S = Proportion of Sand
B048	STO D		V = Volume of Concrete produced
B049	STO O		per sac of cement
B050	R↓		W = Absolute volume of H2O used
B051	CEMENT DENSITY		per sac
B052	PSE		X = Absolute volume of cement used
B053	INPUT D		per sac
B054	STO O		Z = Absolute volume of coarse
B055	÷		aggregates used per sac
B056	STO X		
B057	CEMENT YIELDS		
B058	PSE		
B059	VIEW X	Absolute volume of cement used per sac	
B060	RCL S		

B061	94	
B062	x	
B063	165	
B064	STO D	
B065	STO P	
B066	R↓	
B067	SAND DENSITY	
B068	PSE	
B069	INPUT D	
B070	STO P	
B071	÷	
B072	STO Y	
B073	SAND YIELDS	
B074	PSE	
B075	VIEW Y	Absolute volume of sand used per sac
B076	RCL A	
B077	94	
B078	x	
B079	165	
B080	STO Q	
B081	STO D	
B082	R↓	
B083	AGGS DENSITY	
B084	PSE	
B085	INPUT D	
B086	STO Q	
B087	÷	
B088	STO Z	
B089	AGGS YIELD	
B090	PSE	
B091	VIEW Z	Absolute volume of coarse aggregates used per sac
B092	H2O YIELDS	
B093	PSE	
B094	VIEW W	Absolute volume of H2O used per sac
B095	V FT^3 PER SAC	Solving for total volume produced per sac
B096	PSE	
B097	RCL W	
B098	RCL X	
B099	+	
B100	RCL Y	
B101	+	
B102	RCL Z	
B103	+	
B104	STO V	
B105	VIEW V	Volume produced per sac
B106	% AIR ENTR	% Of Entrained Air
B107	PSE	
B108	INPUT E	
B109	100	
B110	÷	
B111	1	
B112	-	
B113	+/-	
B114	STO E	
B115	CLSTK	
B116	VOL NEEDED	Volume of concrete needed
B117	PSE	
B118	IN CUBIC FT	
B119	PSE	
B120	INPUT N	Input the amount of concrete needed in cubic feet
B121	RCL V	
B122	÷	
B123	RCL E	
B124	x	
B125	SACS OF CEMENT	
B126	PSE	
B127	ROUND INTEGER	
B128	PSE	

B129	STO I		
B130	INPUT I	Round the number of sacs of cement needed	
B131	LB OF SAND	Transforming it to pounds	
B132	PSE		
B133	RCL S		
B134	RCL I		
B135	x		
B136	94		
B137	x		
B138	EXCESS MOIST %	Percentage of excess moisture	
B139	PSE		
B140	INPUT M		
B141	100		
B142	+		
B143	STO L		
B144	1		
B145	+		
B146	x		
B147	STO J		
B148	VIEW J		
B149	RCL L		
B150	1		
B151	+		
B152	1/X		
B153	RCL L		
B154	x		
B155	x		
B156	0.11985		
B157	x		
B158	STO G		
B159	Y^3 OF SAND		
B160	PSE		
B161	CLSTK		
B162	RCL J		
B163	RCL P		
B164	+		
B165	27		
B166	+		
B167	STO J		
B168	VIEW J		
B169	LB OF AGGS		
B170	PSE		
B171	RCL A		
B172	RCL I		
B173	x		
B174	94		
B175	x		
B176	EXCESS MOIST %		
B177	PSE		
B178	INPUT M		
B179	100		
B180	+		
B181	STO M		
B182	1		
B183	+		
B184	x		
B185	STO K		
B186	VIEW K		
B187	RCL M		
B188	1		
B189	+		
B190	1/X		
B191	RCL M		
B192	x		
B193	x		
B194	0.11985		
B195	x		
B196	RCL G		

B197	+		
B198	STO G		
B199	Y^3 OF AGGS		
B200	PSE		
B201	RCL K		
B202	RCL Q		
B203	÷		
B204	27		
B205	÷		
B206	STO K		
B207	VIEW K		
B208	GALNS OF H2O		
B209	PSE		
B210	RCL R		
B211	RCL I		
B212	x		
B213	RCL G		
B214	-		
B215	STO G		