

031 | Concrete Formwork

031 100 | Struct C.I.P. Formwork

				CREW	DAILY OUTPUT	LABOR HOURS	UNIT	1996 BARE COSTS			TOTAL INCL O&P	
								MAT.	LABOR	EQUIP.		
138	4500	Sloped sides, 36" high, 1 use	RC31-040	C-2	305	.157	SFCA	2	3.88	.12	6	8.55
	4550	2 use	RC31-040		370	.130		1.24	3.20	.10	4.54	6.55
	4600	3 use	RC31-050		405	.119		1.01	2.92	.09	4.02	5.85
	4650	4 use	RC31-050		425	.113		.88	2.78	.09	3.75	5.50
	5000	Upstanding beams, 36" high, 1 use	RC31-050		225	.213		3.12	5.25	.16	8.53	12
	5050	2 use	RC31-050		255	.188		1.84	4.64	.14	6.62	9.60
	5100	3 use			275	.175		1.55	4.30	.13	5.98	8.70
	5150	4 use			280	.171		1.39	4.22	.13	5.74	8.40
142	0010	FORMS IN PLACE, COLUMNS	RC31-040	C-1	160	.200	L.F.	1.95	4.77	.17	6.89	9.95
	0500	Round fiberglass, 4 use per mo., rent, 12" diameter	RC31-050		150	.213		2.14	5.10	.18	7.42	10.70
	0550	16" diameter	RC31-050		140	.229		2.31	5.45	.20	7.96	11.45
	0600	18" diameter	RC31-050		135	.237		2.98	5.65	.20	8.83	12.55
	0650	24" diameter	RC31-050		130	.246		3.20	5.85	.21	9.26	13.15
	0700	28" diameter			125	.256		3.82	6.10	.22	10.14	14.20
	0800	30" diameter			120	.267		4.37	6.35	.23	10.95	15.20
	0850	36" diameter			155	.206		1.75	4.92	.18	6.85	10
	1500	Round fiber tube, 1 use, 8" diameter			155	.206		2.44	4.92	.18	7.54	10.75
	1550	10" diameter			150	.213		3.75	5.10	.18	9.03	12.50
	1600	12" diameter			145	.221		4.50	5.25	.19	9.94	13.55
	1650	14" diameter			140	.229		6	5.45	.20	11.65	15.50
	1700	16" diameter			135	.237		9	5.65	.20	14.85	19.20
	1750	20" diameter			130	.246		11.25	5.85	.21	17.31	22
	1800	24" diameter			125	.256		16.80	6.10	.22	23.12	28.50
	1850	30" diameter			115	.278		21.50	6.65	.24	28.39	35
	1900	36" diameter			100	.320		40	7.65	.28	47.93	56.50
	1950	42" diameter			85	.376		61	9	.32	70.32	81.50
	2000	48" diameter						15%				
	2200	For seamless type, add										
	3000	Round, steel, 4 use per mo., rent, regular duty, 12" diam.	C-1	145	.221			2.59	5.25	.19	8.03	11.45
	3050	16" diameter		125	.256			2.81	6.10	.22	9.13	13.10
	3100	Heavy duty, 20" diameter		105	.305			3.09	7.25	.26	10.60	15.30
	3150	24" diameter		85	.376			3.20	9	.32	12.52	18.25
	3200	30" diameter		70	.457			3.43	10.90	.39	14.72	21.50
	3250	36" diameter		60	.533			3.94	12.70	.46	17.10	25.50
	3300	48" diameter		50	.640			5.90	15.25	.55	21.70	31.50
	3350	60" diameter		45	.711			7.05	16.95	.61	24.61	35.50
	4000	Column capitals, 4 use per mo., 24" col, 4' cap diameter		12	2.667	Ex.		17.45	63.50	2.29	83.24	124
	4050	5' cap diameter		11	2.909			18.75	69.50	2.50	90.75	134
	4100	6' cap diameter		10	3.200			21.50	76.50	2.75	100.75	149
	4150	7' cap diameter		9	3.556			23.50	85	3.06	111.56	164
	4500	For second and succeeding months, deduct						50%				
	5000	Plywood, 8" x 8" columns, 1 use	C-1	165	.194	SFCA		2.26	4.63	.17	7.06	10.05
	5050	2 use		195	.164			1.25	3.91	.14	5.30	7.80
	5100	3 use		210	.152			.91	3.63	.13	4.67	6.95
	5150	4 use		215	.149			.79	3.55	.13	4.47	6.65
	5500	12" x 12" plywood columns, 1 use		180	.178			2.09	4.24	.15	6.48	9.20
	5550	2 use		210	.152			1.27	3.63	.13	5.03	7.35
	5600	3 use		220	.145			1	3.47	.13	4.60	6.80
	5650	4 use		225	.142			.85	3.39	.12	4.36	6.50
	6000	16" x 16" plywood columns, 1 use		185	.173			1.97	4.13	.15	6.25	8.90
	6050	2 use		215	.149			1.18	3.55	.13	4.86	7.10
	6100	3 use		230	.139			.93	3.32	.12	4.37	6.45
	6150	4 use		235	.136			.80	3.25	.12	4.17	6.20
	6500	24" x 24" plywood columns, 1 use		190	.168			1.98	4.02	.14	6.14	8.75
	6550	2 use		216	.148			1.19	3.53	.13	4.85	7.10
	6600	3 use		230	.139			.94	3.32	.12	4.38	6.45

3 CONCRETE

Important: See the Reference Section for critical supporting data - Reference Nos., Crews, & City Cost Indices

3.1	FORMWORK	CREW	DAILY OUTPUT	UNIT	BARE COSTS			TOTAL INCL. O&P
					MAT.	INST.	TOTAL	
25	FORMS IN PLACE, COLUMNS							
650	24" X 24" plywood columns, 1 use	C-1	190	S.F.C.A	2.60	4.20	6.80	9.50

General work description

Square Foot  
Contact Area

Crew C-1				
Crew No.	Bare Costs		Incl. Subs O&P	
Crew C-1	Hr.	Daily	Hr.	Daily
3 Carpenters	\$ 25.20	\$ 604.80	\$ 40.25	\$ 966.00
1 Laborer	\$ 19.80	\$ 158.40	\$ 31.60	\$ 252.80
Power tools		\$ 35.00		\$ 38.50
32 M.H. Daily Total		\$ 798.20		\$ 1,257.30

Line item determination:

Major UCI subdivision = 3.1

Major classification within subdivision = 25

Line item number = 650

Complete line number: 3.1-25-650

(These figures are printed above)

BARE COSTS are developed as follows:

MAT. is \$2.60

INST.  $\frac{\text{Crew C-1 Daily Bare Cost}}{\text{Daily Output}} = \frac{\$798.20}{190} = \$4.20$

TOTAL = MAT. + INST. = \$2.60 + \$4.20 = \$6.80 per S.F.C.A.

(Only the total of these figures is printed above)

TOTAL COSTS INCL. O&P are developed as follows:

MAT. is BARE MAT. + 10% = \$2.60 + \$0.26 = \$2.86

INST.  $\frac{\text{Crew C-1 Daily Bare Cost}}{\text{Daily Output}} = \frac{\$1,257.30}{190} = \$6.62$

TOTAL = MAT. + INST. = \$2.86 + \$6.62 = \$9.48 say \$9.50

# General Requirements

## R010

## Overhead and Miscellaneous Data

### R010-070 Contractor's Overhead & Profit

Below are the average installing contractor's percentage mark-ups applied to base labor rates to arrive at typical billing rates.

**Column A:** Labor rates are based on union wages averaged for 30 major U.S. cities. Base rates including fringe benefits are listed hourly and daily. These figures are the sum of the wage rate and employer-paid fringe benefits such as vacation pay, employer-paid health and welfare costs, pension costs, plus appropriate training and industry advancement funds costs.

**Column B:** Workers' Compensation rates are the national average of state rates established for each trade.

**Column C:** Column C lists average fixed overhead figures for all trades. Included are Federal and State Unemployment costs set at 7.3%; Social Security Taxes (FICA) set at 7.65%; Builder's Risk Insurance costs set at 0.34%; and Public Liability costs set at 1.55%. All the percentages except those for Social Security Taxes vary from state to state as well as from company to company.

**Columns D and E:** Percentages in Columns D and E are based on the presumption that the installing contractor has annual billing of \$500,000 and up. Overhead percentages may increase with smaller annual billing. The overhead percentages for any given contractor may vary greatly and depend on a number of factors, such as the contractor's annual volume, engineering and logistical support costs, and staff requirements. The figures for overhead and profit will also vary depending on the type of job, the job location, and the prevailing economic conditions. All factors should be examined very carefully for each job.

**Column F:** Column F lists the total of Columns B, C, D, and E.

**Column G:** Column G is Column A (hourly base labor rate) multiplied by the percentage in Column F (O&P percentage).

**Column H:** Column H is the total of Column A (hourly base labor rate) plus Column G (Total O&P).

**Column I:** Column I is Column H multiplied by eight hours.

Abbr.	Trade	A		B	C	D	E	F		G	H		I
		Base Rate Incl. Fringes		Workers' Comp. Ins.	Average Fixed Over- head	Over- head	Profit	Total Overhead & Profit		Rate with O & P	Hourly	Daily	
		Hourly	Daily					%	Amount				
Skwk	Skilled Workers Average (35 trades)	\$25.95	\$207.60	20.2%	16.8%	13.0%	10.0%	60.0%	\$15.55	\$41.50	\$332.00		
	Helpers Average (5 trades)	19.25	154.00	21.4		11.0		59.2	11.40	30.65	245.20		
	Foreman Average, Inside (\$.50 over trade)	26.45	211.60	20.2		13.0		60.0	15.85	42.30	338.40		
	Foreman Average, Outside (\$.20 over trade)	27.95	223.60	20.2		13.0		60.0	16.75	44.70	357.60		
Clab	Common Building Laborers	19.80	158.40	21.9		11.0		59.7	11.80	31.60	252.80		
Asbe	Asbestos Workers	28.55	228.40	19.7		16.0		62.5	17.85	46.40	371.20		
Boil	Boilermakers	30.05	240.40	17.7		16.0		60.5	18.20	48.25	386.00		
Bric	Bricklayers	25.90	207.20	19.4		11.0		57.2	14.80	40.70	325.60		
Brhe	Bricklayer Helpers	20.00	160.00	19.4		11.0		57.2	11.45	31.45	251.60		
Carp	Carpenters	25.20	201.60	21.9		11.0		59.7	15.05	40.25	322.00		
Cefi	Cement Finishers	24.35	194.80	12.8		11.0		50.6	12.30	36.65	293.20		
Elec	Electricians	29.30	234.40	8.0		16.0		50.8	14.90	44.20	353.60		
Elev	Elevator Constructors	30.05	240.40	9.6		16.0		52.4	15.75	45.80	366.40		
Eqhw	Equipment Operators, Crane or Shovel	26.75	214.00	12.9		14.0		53.7	14.35	41.10	328.80		
Eqmd	Equipment Operators, Medium Equipment	25.70	205.60	12.9		14.0		53.7	13.80	39.50	316.00		
Eqit	Equipment Operators, Light Equipment	24.70	197.60	12.9		14.0		53.7	13.25	37.95	303.60		
Eqol	Equipment Operators, Oilers	21.90	175.20	12.9		14.0		53.7	11.75	33.65	269.20		
Eqmm	Equipment Operators, Master Mechanics	27.55	220.40	12.9		14.0		53.7	14.80	42.35	338.80		
Glaz	Glaziers	24.90	199.20	16.0		11.0		53.8	13.40	38.30	306.40		
Lath	Lathers	24.95	199.60	13.5		11.0		51.3	12.80	37.75	302.00		
Marb	Marble Setters	25.65	205.20	19.4		11.0		57.2	14.65	40.30	322.40		
Mill	Millwrights	26.55	212.40	13.2		11.0		51.0	13.55	40.10	320.80		
Mstz	Mosaic and Terrazzo Workers	25.25	202.00	11.0		11.0		48.8	12.30	37.55	300.40		
Pord	Painters, Ordinary	22.95	183.60	16.8		11.0		54.6	12.55	35.50	284.00		
Psst	Painters, Structural Steel	23.95	191.60	62.5		11.0		100.3	24.00	47.95	383.60		
Pape	Paper Hangers	23.30	186.40	16.8		11.0		54.6	12.70	36.00	288.00		
Pile	Pile Drivers	25.35	202.80	33.6		16.0		76.4	19.35	44.70	357.60		
Plas	Plasterers	24.20	193.60	17.4		11.0		55.2	13.35	37.55	300.40		
Plah	Plasterer Helpers	20.15	161.20	17.4		11.0		55.2	11.10	31.25	250.00		
Plum	Plumbers	30.05	240.40	10.2		16.0		53.0	15.95	46.00	368.00		
Rodm	Rodmen (Reinforcing)	27.75	222.00	36.3		14.0		77.1	21.40	49.15	393.20		
Rofc	Roofers, Composition	22.55	180.40	37.4		11.0		75.2	16.95	39.50	316.00		
Rots	Roofers, Tile and Slate	22.60	180.80	37.4		11.0		75.2	17.00	39.60	316.80		
Rohe	Roofers Helpers (Composition)	15.95	127.60	37.4		11.0		75.2	12.00	27.95	223.60		
Shee	Sheet Metal Workers	28.95	231.60	13.8		16.0		56.6	16.40	45.35	362.80		
Spri	Sprinkler Installers	31.30	250.40	10.4		16.0		53.2	16.65	47.95	383.60		
Stpi	Steamfitters or Pipefitters	30.30	242.40	10.2		16.0		53.0	16.05	46.35	370.80		
Ston	Stone Masons	25.90	207.20	19.4		11.0		57.2	14.80	40.70	325.60		
Sswk	Structural Steel Workers	27.85	222.80	46.4		14.0		87.2	24.30	52.15	417.20		
Tilf	Tile Layers	25.05	200.40	11.0		11.0		48.8	12.20	37.25	298.00		
Tilh	Tile Layer Helpers	20.30	162.40	11.0		11.0		48.8	9.90	30.20	241.60		
Trit	Truck Drivers, Light	20.35	162.80	17.0		11.0		54.8	11.15	31.50	252.00		
Trhw	Truck Drivers, Heavy	20.70	165.60	17.0		11.0		54.8	11.35	32.05	256.40		
Sswl	Welders, Structural Steel	27.85	222.80	46.4		14.0		87.2	24.30	52.15	417.20		
Wrck	*Wrecking	19.80	158.40	44.8		11.0		82.6	16.35	36.15	289.20		

\*Not included in Averages.