COMPASS
INTERNATIONAL INC.

2018
Worldwide Industrial / Commercial Construction Schedule of Rates Yearbook
9TH EDITION

COMPASS INTERNATIONAL INC.

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Compass International Consultants Inc. was founded in 1992 (C.I.C.I) and is a provider of construction estimating services, international construction cost data, location factors, training seminars, value engineering, estimating support and conceptual construction economic cost data. Compass International is backed by an excellent staff of experienced Cost Engineers, Cost Estimators, Civil / Mechanical / Chemical Engineers and Economists.

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This data source is the result of more than twenty years research and data collection. The information contained in this data source was collected from more than 60 + completed CAPEX projects (Refinery, Chemical and Manufacturing facilities) located in North America, the UK, Mainland Europe, Asia, Africa and South America valued between $0.30 million to over $3 billion. The data is based on Compass International's cost library, augmented with latest cost and labor data from International Development Banks and Agencies, European Union Commission Reports, various Country National Libraries and Bibliotheques from around the world, various Government Information Agencies, Global Quasi-Governance Organizations, an assortment of Government Trade Promotion Departments / Labor Departments, numerous trade magazines, hourly and annual salary rates from US / Overseas labor trade unions, professional society articles, an assortment of newspaper / magazine articles, various international almanacs / directories / tables / reference books, internet data and various cost – construction related publications. The cost models and tables have also been augmented by a number of personal estimating libraries (that in most cases is very recent), this information has been audited, expanded upon, modified and calibrated and refined to today's construction methods and installation applications. We would like to express our sincere thanks to the many engineers, contractors, vendors and other individuals (friends and colleagues) too many to mention who have given freely of their advice, input, time and knowledge so that this data source could be produced for the benefit of individuals that have an interest in this subject matter. We welcome any comments or data that could be used in future updates to make this database more complete and accurate.

Introduction and Calibration factors

This publication, the 2018 Worldwide Industrial / Commercial Construction Schedule of Rates Yearbook is conceivably the most authoritative and up to date estimating tool specific to the topic of Industrial and Commercial unit price (schedule of rates) estimating. The main benefits of this publication are that it is easily understood and it can be used immediately to compile accurate detailed or semi-detailed construction cost estimates. Note the Term: Construction Schedule of Rates is a term widely used in Europe and the rest of the world, in North America this methodology or approach is usually referred to as Unit Price Estimating, both these terms are interchangeable when utilizing this publication.

This publication answers the questions and issues that are needed in order to produce an accurate domestic or international cost estimate.

The following Divisions 1 - 17 contain U.S. unit costs for materials, labor (union application) and construction equipment for construction work associated with industrial and commercial construction work applicable for 2018. This publication answers the questions and issues that are needed in order to produce an accurate domestic or international cost estimate. This reference guide is appropriate for construction professionals who are familiar or who are possibly new to the topic of detailed unit price estimating (schedule of rates estimating). This method can be best described in the following manner - The total construction project (the construction effort or work items) is broken down into smaller distinct work scope items – i.e. a number of single line items (the construction project may consist of 100's or possibly 1,000's of these particular line items). A "unit price cost" (schedule of rates) is determined for each scope item, i.e. line item, the appropriate unit price cost is selected from this publication. The unit price is then multiplied by the "take-off quantity," i.e. the actual number of doors or windows needed in the facility, the cubic yards of concrete or the length of pipe required; these quantities are more often than not depicted on the architectural / engineering drawings. They are "taken-off" the architectural / general arrangement drawings by counting each door or by measuring the footage of pipe depicted on the drawings (think of the take-off list as a shopping list of items that will need to be purchased or fabricated to complete the construction work depicted on the drawings and further described in the specifications), it is many times further described in (the scope of work statement). This action then establishes the construction cost for each work item (line item). All of the line item costs are then summed up to obtain the total installed cost (TIC) for the project being reviewed or estimated. To summarize the above statement - the total cost of a building / facility is the summary / collection of the "taken-off" quantities multiplied by the related unit cost price detailed in this publication.

The unit cost method of estimating (schedule of rates) is a "proven" reasonably uncomplicated method of determining final construction costs; nevertheless it is a time consuming effort (there is software available and computerized tools that can significantly speed up this effort), nonetheless the end result is usually accurate, perhaps considered

#	DESCRIPTION	U OF M	$ LOW	$ HIGH	REMARKS
	CONTINUED				
11	New ramps/ aircraft stands / apron construction 6" deep on 2" deep asphalt / tarmac and 4"deep of reinforced concrete.	SF	15	25	Construction costs include 9" to 12" of excavation, imported engineered fill, 95% compaction of fill and necessary grading, lighting, signs and marking, complete with associated drainage systems. (To determine a square meter value multiply $ value by 10.76).
12	Scarify and resurfacing (2" asphalt / tarmac)	SF	5	10	(To determine a square meter value multiply $ value by 10.76).
13	New concrete hard standings 4" thick reinforced concrete on 6" imported stone / hardcore base.	SF	10	15	Construction costs include 6" to 12" of excavation, imported engineered fill, 95% compaction of fill and necessary grading, lighting, signs and marking, complete with associated drainage systems. (To determine a square meter value multiply $ value by 10.76).
14	Scarify and resurfacing concrete hard standings 4" thick reinforced concrete on 6" imported stone / hardcore base.	SF	5	10	Construction costs include 6" to 12" of excavation, imported engineered fill, 95% compaction of fill and necessary grading, lighting, signs and marking, complete with associated drainage systems. (To determine a square meter value multiply $ value by 10.76).
15	Demolish and remove 4" thick slab on grade reinforced with mesh	SF	2.75	3.75	(To determine a square meter value multiply $ value by 10.76).
16	Demolish & remove 6" thick slab on grade reinforced with mesh	SF	3.15	4.15	(To determine a square meter value multiply $ value by 10.76).
17	Concrete cleaning using sandblasting equipment	SF	2.35	2.85	(To determine a square meter value multiply $ value by 10.76).
18	Tarmac cleaning using sandblasting equipment	SF	2.15	2.65	(To determine a square meter value multiply $ value by 10.76).
19	New Terminal Building (2 story building 70,000 SF to 140,000 SF)	SF	190	240	(To determine a square meter value multiply $ value by 10.76).
20	Revamp Terminal Building Minimal upgrade – New Flooring / Carpet, Painting, Upgrade MEP Systems / New Ceilings & Signage.	SF	25	50	(To determine a square meter value multiply $ value by 10.76).
21	Revamp Terminal Building Medium upgrade – New Flooring / Carpet, Painting, Upgrade MEP Systems / New Ceilings & Signage.	SF	50	100	(To determine a square meter value multiply $ value by 10.76).

	2018 - Division 2 - Site Construction - Union	Unit	Material	Labor	Const Equipt	Total
235	Pressure injected grout (1-1 cement and sand mix) including drilling 20' deep 4" dia casing and subsequent removal)	CY	515.29	308.38	138.25	961.92
236	Underpinning existing foundation (includes excavation, removal of surplus, planking & strutting and hand packing / pumping concrete under existing foundation and generally make good) (Maximum)	CY	556.22	1,269.85	316.28	2,142.35
237	Underpinning existing foundation (includes excavation, removal of surplus, planking & strutting and hand packing / pumping concrete under existing foundation and generally make good) (Minimum)	CY	303.11	544.20	135.54	982.85
238	Pipe thrusting 4" CS dia pipe under road, includes jacking holes and subsequent remediation	LF	29.54	47.93	8.36	85.83
239	Ditto, 6"	LF	36.96	59.95	10.45	107.36
240	Ditto, 8"	LF	50.05	81.03	14.13	145.21
241	Ditto, 10"	LF	72.83	117.89	20.55	211.28
242	Ditto, 12"	LF	90.02	150.37	26.22	266.60
	Pipe, PVC & solid and with drainage holes, includes excavation, removal, of and material, stone bed and any fabric wrap.					
243	4" dia n/e 5' deep	LF	1.64	8.44	2.10	12.18
244	6" dia n/e 5' deep	LF	3.33	9.53	2.37	15.24
245	8" dia n/e 5' deep	LF	5.53	10.63	2.65	18.80
	Pipe, CI, includes excavation, removal, of and material, stone bed.					
246	4" dia, single hub, n/e 5' deep	LF	18.31	19.66	3.43	41.40
247	6" dia, single hub, n/e 5' deep	LF	31.66	26.56	4.63	62.85
248	8" dia, single hub, n/e 5' deep	LF	60.97	30.54	5.32	96.83
249	4" dia, no hub - welded, n/e 5' deep	LF	17.71	21.66	3.78	43.15
250	6" dia, no hub - welded, n/e 5' deep	LF	32.51	29.15	5.08	66.74
251	8" dia, no hub - welded, n/e 5' deep	LF	58.36	33.61	5.86	97.83
	Pipe, Concrete non-reinforced, includes excavation, removal, of and material, stone bed.					
252	4" dia, n/e 5' deep	LF	11.44	21.60	3.77	36.81
253	6" dia, n/e 5' deep	LF	13.14	21.98	3.83	38.95
254	8" dia, n/e 5' deep	LF	14.38	23.03	4.01	41.42
255	10" dia, n/e 5' deep	LF	16.54	23.96	4.18	44.67
256	12" dia, n/e 10 deep	LF	18.46	25.01	4.86	48.33

	2018 Division 5 - Structural Steel / Metals - Union	Unit	Material	Labor	Construction Equipment	Total
120	Miscl, Galv structural steel beams, channels, angels steel ranging from 10 pounds to 50 pounds per LF (Maximum)	TON	6,321	1,019	278	7,618
121	Miscl, Galv structural steel beams, channels, angels steel ranging from 10 pounds to 50 pounds per LF (Minimum)	TON	4,029	482	132	4,642
122	Miscl, Galv structural steel beams, channels, angels steel ranging from 10 pounds to 50 pounds per LF (Maximum)	POUND	3.18	0.54	0.15	3.87
123	Miscl, Galv structural steel beams, channels, angels steel ranging from 10 pounds to 50 pounds per LF (Minimum)	POUND	2.04	0.28	0.08	2.39
124	Primed Steel in mezzanines and platforms (Maximum)	TON	3,392	709.13	386.63	4,488
125	Ditto (Minimum)	TON	2,870	432.13	235.61	3,537
126	Primed Steel in mezzanines and platforms (Maximum)	POUND	-	-	-	2.24
127	Ditto (Minimum)	POUND	-	-	-	1.77
128	Galvanized Steel in mezzanines and platforms (Maximum)	TON	4,646	693	378	5,716
129	Ditto (Minimum)	TON	4,107	438	239	4,783
130	Galvanized Steel in mezzanines and platforms (Maximum)	POUND				2.86
131	Ditto (Minimum)	POUND				2.39
132	Aluminum in mezzanines and platforms (Maximum)	TON	5,542	709	387	6,638
133	Ditto (Minimum)	TON	4,620	438	239	5,296
134	Aluminum in mezzanines and platforms (Maximum)	POUND				3.32
135	Ditto (Minimum)	POUND				2.65
136	Aluminum angles, tubing, channels, platforms (Maximum)	TON	5,736	1,008.30	274.87	7,019
137	Aluminum angles, tubing, channels, platforms (Minimum)	TON	3,479	742.37	167.42	4,389
138	Aluminum angles, tubing, channels, platforms (Maximum)	POUND	2.87	0.52	0.14	3.53
139	Aluminum angles, tubing, channels, platforms (Minimum)	POUND	1.74	0.38	0.07	2.19
140	Stainless Steel in mezzanines and platforms (Maximum)	TON	5,772	753	411	6,936
141	Ditto (Minimum)	TON	4,493	493	269	5,255
142	Stainless Steel in mezzanines and platforms (Maximum)	POUND				3.47
143	Ditto (Minimum)	POUND				2.63

	2018 Division 11 - Equipment - Union	Unit	Material	Labor	Constr Equipt	Total
43	Camera CCTV with recorder / monitor and electrical hook up (Minimum)	EACH	2,019.06	161.96	10.53	2,191.55
44	Chemical resist laboratory bench top 24 wide x 1" thick	LF	161.76	154.71	10.06	326.53
45	Chest freezer 5 CF including electrical hook up	EACH	263.62	246.57	16.03	526.21
46	Chest freezer 9 CF including electrical hook up	EACH	425.38	186.13	12.10	623.61
47	Cold room shelving - 18 metal mesh type	LF	15.34	343.26	22.31	380.91
48	Defibrillator / emergency wall mounted unit including electrical hook up	EACH	2,126.91	246.57	16.03	2,389.50
49	Defibrillator unit - recessed into wall (Maximum)	EACH	4,733.12	169.21	11.00	4,913.33
50	Defibrillator unit - recessed into wall (Minimum)	EACH	3,439.00	183.72	11.94	3,634.66
51	Dental chair / instrument holder unit c/w electrical hook up	EACH	5,679.74	203.05	13.20	5,895.99
52	Dental chair c/w electrical hook up (Maximum)	EACH	10,989.10	239.31	15.56	11,243.97
53	Dental chair c/w electrical hook up (Minimum)	EACH	7,872.55	152.29	9.90	8,034.74
54	Dental drill / compressor with adjustable arm and associated electrical hook up (Maximum)	EACH	6,770.15	215.14	20.44	7,005.73
55	Dental drill / compressor with adjustable arm and associated electrical hook up (Minimum)	EACH	3,534.86	140.20	13.32	3,688.38
56	Dental laboratory bench 72" long x 36 high x 30" deep with 8 drawers made out of steel and coated with enamel paint	EACH	1,743.46	444.79	28.91	2,217.16
57	Dental laboratory cabinet 36" x 30" x 24" combination of metal / wood wall mounted	EACH	1,179.09	321.50	20.90	1,521.49
58	Dental laboratory cabinet 48" x 30" x 24" combination of metal / wood wall mounted	EACH	1,491.83	215.14	13.98	1,720.96
59	Dental light - ceiling mounted including electrical hook up (Maximum)	EACH	2,252.72	178.88	11.63	2,443.23
60	Dental light - ceiling mounted including electrical hook up (Minimum)	EACH	1,821.35	256.24	16.66	2,094.24
61	Dental light - wall mounted including electrical hook up (Maximum)	EACH	1,965.14	256.24	16.66	2,238.03
62	Dental light - wall mounted including electrical hook up (Minimum)	EACH	1,461.87	222.39	14.46	1,698.72
63	Dental x-ray machine - wall or ceiling mounted including (Maximum)	EACH	22,706.98	222.39	14.46	22,943.83
64	Dental x-ray machine - wall or ceiling mounted including (Minimum)	EACH	16,595.87	24.17	1.57	16,621.61

	2018 Division 16 - Electrical Work - Union	Unit	Material	Labor	Construct Equipt	Total
	Demolition					
1	Rule of thumb estimating method for demolition of existing electrical scope work typically falls in the 5% - 15% of the "new" cost of the work being demolished, therefore establish the cost of installing the work shown on the drawings and use a value of 5% - 15%, consider any monies / credits related to selling demolished material for scrap.	%				5% - 15%
2	Remove existing transformers - 2.5 kva	EACH	35.49	67.59	4.06	107.14
3	Ditto 5 kva	EACH	35.48	79.81	4.79	120.07
4	Ditto 10 kva	EACH	56.66	144.84	8.69	210.20
5	Ditto 25 kva	EACH	56.61	217.26	13.04	286.91
6	Ditto 50 kva	EACH	70.76	289.68	17.38	377.83
7	Ditto 75 kva	EACH	94.79	362.10	21.73	478.62
8	Ditto 100 kva	EACH	118.14	482.80	28.97	629.91
9	Ditto 250 kva	EACH	141.77	605.21	36.31	783.28
10	Ditto 500 kva	EACH	191.21	968.33	58.10	1,217.64
11	Remove existing panel board - 100 amp	EACH	23.11	121.04	7.26	151.41
12	Ditto 200 amp	EACH	27.73	363.12	21.79	412.64
13	Ditto 400 amp	EACH	30.04	605.21	36.31	671.56
14	Remove existing MCC - c/w housing & starters 5 HP	EACH	23.71	36.21	2.17	62.10
15	Ditto 10 HP	EACH	23.63	48.28	2.90	74.80
16	Ditto 25 HP	EACH	23.63	57.94	3.48	85.04
17	Ditto 50 HP	EACH	70.88	101.39	6.08	178.36
18	Ditto 75 HP	EACH	70.88	144.84	8.69	224.41
19	Ditto 100 HP	EACH	70.88	169.46	10.17	250.51
20	Ditto 250 HP	EACH	118.14	242.08	14.52	374.74
21	Ditto 500 HP	EACH	120.33	435.75	26.14	582.22
22	Remove existing conduit & cable 1" dia including supports	LF		2.13	0.13	2.25
23	Ditto 2" dia	LF		2.73	0.16	2.90
24	Ditto 3" dia	LF		4.56	0.27	4.83
25	Ditto 4" dia	LF		6.38	0.38	6.76
26	Ditto 6" dia	LF		8.20	0.49	8.70
27	Remove existing EMT conduit & cable 1" dia including supports	LF		1.61	0.10	1.71
28	Ditto 2" dia	LF		2.24	0.13	2.37
29	Ditto 4" dia	LF		3.51	0.21	3.72