



GORDIAN[®]

Light Commercial Costs

with RSMMeans data

2022

41st annual edition

Light Commercial Costs with RSMeans data

Matthew Doheny, Senior Editor

GORDIAN®

2022

41st annual edition

Vice President, Data

Chris Gaudreau

**Vice President,
Product**

Ted Kail

Principal Engineer

Bob Mewis

**Engineers:
Architectural Divisions**

1, 3, 4, 5, 6, 7, 8, 9, 10, 11,
12, 13, 41

Matthew Doheny, Manager

Sam Babbitt

Sergeleen Edouard

Richard Goldin

Scott Keller

Thomas Lane

Giles Munyard

**Engineers: Civil
Divisions and Wages**

2, 31, 32, 33, 34, 35,
44, 46

Derrick Hale, PE, Manager

Christopher Babbitt

Stephen Bell

Michael Lynch

Elisa Mello

David Yazbek

**Engineers: Mechanical,
Electrical, Plumbing &
Conveying Divisions**

14, 21, 22, 23, 25, 26, 27,
28, 48

Joseph Kelble, Manager

Brian Adams

Michelle Curran

Antonio D'Aulerio

Thomas Lyons

Jake MacDonald

Contributing Engineers

John Melin, PE, Manager

Paul Cowan

Barry Hutchinson

Gerard Lafond, PE

Matthew Sorrentino

Technical Project Lead

Kevin Souza

Production

Debra Panarelli, Manager

Jonathan Forgit

Edward Green

Sharon Larsen

Sheryl Rose

Janice Thalín

Data Quality

Euricka Thomas, Manager

David Byars

Audrey Considine

Ellen D'Amico

Cover Design

Blaire Collins

Innovation

Chris Gaudreau,

Vice President

Kedar Gaikwad

Todd Glowac

Srini Narla

Joseph Woughter



RSMeans data from Gordian

Construction Publishers & Consultants

30 Patewood Dr., Suite 350

Greenville, SC 29615

United States of America

1.800.448.8182

RSMeans.com

Copyright 2021 by The Gordian Group Inc.

All rights reserved.

Cover photo © iStock.com/shansekala

Printed in the United States of America

ISSN 0896-7601

ISBN 978-1-955341-12-7

Gordian's authors, editors, and engineers apply diligence and judgment in locating and using reliable sources for the information published. However, Gordian makes no express or implied warranty or guarantee in connection with the content of the information contained herein, including the accuracy, correctness, value, sufficiency, or completeness of the data, methods, and other information contained herein. Gordian makes no express or implied warranty of merchantability or fitness for a particular purpose. Gordian shall have no liability to any customer or third party for any loss, expense, or damage, including consequential, incidental, special, or punitive damage, including lost profits or lost revenue, caused directly or indirectly by any error or omission, or arising out of, or in connection with, the information contained herein. For the purposes of this paragraph, "Gordian" shall include The Gordian Group, Inc., and its divisions, subsidiaries, successors, parent companies, and their employees, partners, principals, agents and representatives, and any third-party providers or sources of information or data. Gordian grants the purchaser of this publication limited license to use the cost data

contained herein for purchaser's internal business purposes in connection with construction estimating and related work. The publication, and all cost data contained herein, may not be reproduced, integrated into any software or computer program, developed into a database or other electronic compilation, stored in an information storage or retrieval system, or transmitted or distributed to anyone in any form or by any means, electronic or mechanical, including photocopying or scanning, without prior written permission of Gordian. This publication is subject to protection under copyright law, trade secret law and other intellectual property laws of the United States, Canada and other jurisdictions. Gordian and its affiliates exclusively own and retain all rights, title and interest in and to this publication and the cost data contained herein including, without limitation, all copyright, patent, trademark and trade secret rights. Except for the limited license contained herein, your purchase of this publication does not grant you any intellectual property rights in the publication or the cost data.

0182

\$319.00 per copy (in United States)

Price is subject to change without prior notice.

Table of Contents

Foreword	iv
How the Cost Data Is Built: An Overview	v
Estimating with RSMeans data: Unit Prices	vii
How to Use the Cost Data: The Details	ix
Commercial/Industrial/Institutional Section	1
Green Commercial/Industrial/Institutional Section	109
Assemblies Section	142
RSMeans data: Assemblies—How They Work	146
Unit Price Section	333
RSMeans data: Unit Prices—How They Work	336
Reference Section	809
Construction Equipment Rental Costs	811
Crew Listings	823
Historical Cost Indexes	858
Location Factors	866
Reference Tables	872
Change Orders	924
Project Costs	927
Abbreviations	932
Index	936
Training Class Options	962
Labor Trade Rates including Overhead & Profit	Inside Back Cover

Commercial/Industrial/ Institutional Section

Table of Contents

	<i>Page</i>	<i>Building Types</i>	<i>Page</i>	<i>Building Types</i>	<i>Page</i>
How To Use	4	M.250 Funeral Home.....	38	M.500 Post Office	74
Building Types		M.260 Garage, Auto Sales	40	M.510 Racquetball Court	76
M.010 Apartment, 1–3 Story	8	M.290 Garage, Repair.....	42	M.530 Restaurant	78
M.035 Assisted-Senior Living	10	M.300 Garage, Service Station	44	M.540 Restaurant, Fast Food.....	80
M.050 Bank	12	M.310 Gymnasium	46	M.550 Rink, Hockey/Indoor Soccer	82
M.060 Bowling Alley.....	14	M.380 Laundromat	48	M.560 School, Elementary	84
M.070 Bus Terminal	16	M.390 Library	50	M.580 School, Jr. High, 2–3 Story	86
M.080 Car Wash.....	18	M.400 Medical Office, 1 Story.....	52	M.600 Store, Convenience	88
M.090 Church	20	M.410 Medical Office, 2 Story	54	M.610 Store, Department, 1 Story.....	90
M.100 Club, Country	22	M.420 Motel, 1 Story	56	M.630 Store, Retail	92
M.170 Community Center	24	M.430 Motel, 2–3 Story	58	M.640 Supermarket	94
M.175 Computer Data Center.....	26	M.440 Movie Theatre	60	M.660 Telephone Exchange	96
M.180 Courthouse, 1 Story	28	M.450 Nursing Home	62	M.670 Town Hall, 1 Story	98
M.195 Day Care Center	30	M.455 Office, 1 Story	64	M.680 Town Hall, 2–3 Story	100
M.200 Factory, 1 Story	32	M.460 Office, 2–4 Story	66	M.685 Veterinary Hospital	102
M.220 Fire Station, 1 Story	34	M.485 Outpatient Surgery Center	68	M.690 Warehouse	104
M.240 Fraternity/Sorority House.....	36	M.490 Police Station.....	70	M.700 Warehouse Self Storage	106
		M.495 Post Frame Barn.....	72		

Green Commercial/Industrial/ Institutional Section

Table of Contents

<i>Table No.</i>	<i>Page</i>	<i>Table No.</i>	<i>Page</i>	<i>Table No.</i>	<i>Page</i>
Green Models		G.400 Medical Office, 1 Story	118	G.490 Police Station	130
Building Types		G.410 Medical Office, 2 Story	120	G.530 Restaurant	132
G.050 Bank	110	G.420 Motel, 1 Story	122	G.560 School, Elementary	134
G.220 Fire Station, 1 Story	112	G.430 Motel, 2-3 Story	124	G.580 School, Jr. High, 2-3 Story	136
G.250 Funeral Home	114	G.455 Office, 1 Story	126	G.640 Supermarket	138
G.390 Library	116	G.460 Office, 2-4 Story	128	G.690 Warehouse	140

Assemblies Section

Table of Contents

<i>Table No.</i>	<i>Page</i>	<i>Table No.</i>	<i>Page</i>
A SUBSTRUCTURE			
A1010 Standard Foundations			
A1010 105	Wall Foundations	152	
A1010 110	Strip Footings	153	
A1010 210	Spread Footings	154	
A1010 320	Foundation Dampproofing	154	
A1030 Slab on Grade			
A1030 120	Plain & Reinforced	156	
A2010 Basement Excavation			
A2010 110	Building Excavation & Backfill	157	
A2020 Basement Walls			
A2020 110	Walls, Cast in Place	158	
B SHELL			
B1010 Floor Construction			
B1010 203	C.I.P. Column, Square Tied	160	
B1010 204	C.I.P. Column, Square Tied-Minimum Reinforcing	161	
B1010 206	Tied, Concentric Loaded Precast Concrete Columns	162	
B1010 207	Tied, Eccentric Loaded Precast Concrete Columns	162	
B1010 208	Steel Columns	163	
B1010 210	Wood Columns	166	
B1010 214	"T" Shaped Precast Beams	167	
B1010 215	"L" Shaped Precast Beams	167	
B1010 223	Cast in Place Flat Plate	168	
B1010 226	Cast in Place Multispan Joist Slab	168	
B1010 229	Precast Plank with No Topping	169	
B1010 230	Precast Plank with 2" Concrete Topping	169	
B1010 234	Precast Double "T" Beams with No Topping	170	
B1010 235	Precast Double "T" Beams With 2" Topping	170	
B1010 244	Light Gauge Steel Floor Systems	171	
B1010 246	Deck & Joists on Bearing Walls	172	
B1010 248	Steel Joists on Beam & Wall	173	
B1010 250	Steel Joists, Beams & Slab on Columns	175	
B1010 258	Metal Deck/Concrete Fill	177	
B1010 261	Wood Joist	177	
B1010 264	Wood Beam & Joist	177	
B1010 720	Steel Column Fireproofing	178	
B1020 Roof Construction			
B1020 102	Wood/Flat or Pitched	179	
B1020 108	Steel Joists, Beams & Deck on Columns & Walls	180	
B1020 112	Steel Joists, Beams, & Deck on Columns	181	
B1020 116	Steel Joists & Deck on Bearing Walls	182	
B1020 120	Steel Joists, Joist Girders & Deck on Columns & Walls	183	
B1020 124	Steel Joists & Joist Girders on Columns	184	
B1020 310	Canopies	184	
B2010 Exterior Walls			
B2010 101	Cast In Place Concrete	185	
B2010 102	Flat Precast Concrete	186	
B2010 103	Fluted Window or Mullion Precast Concrete	187	
B2010 104	Ribbed Precast Concrete	188	
B2010 106	Tilt-Up Concrete Panel	189	
B2010 109	Concrete Block Wall - Regular Weight	190	
B2010 110	Concrete Block Wall - Lightweight	190	
B2010 111	Reinforced Concrete Block Wall - Regular Weight	191	
B2010 112	Reinforced Concrete Block Wall - Lightweight	191	
B2010 113	Split Ribbed Block Wall - Regular Weight	193	
B2010 115	Reinforced Split Ribbed Block Wall - Regular Weight	193	
B2010 117	Split Face Block Wall - Regular Weight	194	
B2010 119	Reinforced Split Face Block Wall - Regular Weight	195	
B2010 128	Stone Veneer	196	
B2010 129	Brick Veneer/Wood Stud Backup	198	
B2010 130	Brick Veneer/Metal Stud Backup	198	
B2010 134	Brick Face Cavity Wall	200	
B2010 135	Brick Face Cavity Wall - Insulated Backup	202	
B2010 140	Glass Block	204	
B2010 146	Metal Siding Panel	205	
B2010 148	Panel, Shingle & Lap Siding	206	
B2010 151	Stucco Wall	208	
B2010 152	E.I.F.S.	208	
B2010 154	Metal Siding Support	210	
B2010 160	Pole Barn Exterior Wall	211	
B2020 Exterior Windows			
B2020 102	Wood Windows	212	
B2020 104	Steel Windows	213	
B2020 106	Aluminum Windows	213	
B2020 108	Vinyl Clad Windows	214	
B2020 210	Tubular Aluminum Framing	215	
B2020 220	Curtain Wall Panels	216	
B2030 Exterior Doors			
B2030 110	Glazed Doors, Steel or Aluminum	217	
B2030 210	Wood Doors	218	
B2030 220	Steel Doors	218	
B2030 230	Aluminum Doors	219	
B3010 Roof Coverings			
B3010 105	Built-Up	220	
B3010 120	Single Ply Membrane	221	
B3010 130	Preformed Metal Roofing	221	
B3010 135	Formed Metal	221	
B3010 140	Shingle & Tile	222	
B3010 320	Roof Deck Rigid Insulation	223	
B3010 410	Base Flashing	223	
B3010 420	Roof Edges	224	
B3010 430	Flashing	224	
B3010 610	Gutters	225	
B3010 620	Downspouts	225	
B3010 630	Gravel Stop	225	

Table of Contents

<i>Table No.</i>	<i>Page</i>	<i>Table No.</i>	<i>Page</i>
B3020 Roof Openings			
B3020 110 Skylights	226	D2010 410 Kitchen Sink Systems	254
B3020 210 Hatches	226	D2010 420 Laundry Sink Systems	255
C INTERIORS			
C1010 Partitions			
C1010 102 Concrete Block Partitions - Regular Weight	228	D2010 430 Laboratory Sink Systems	255
C1010 104 Concrete Block Partitions - Lightweight	229	D2010 440 Service Sink Systems	255
C1010 124 Drywall Partitions/Wood Stud Framing	230	D2010 510 Bathtub Systems	256
C1010 126 Drywall Partitions/Metal Stud Framing	231	D2010 610 Group Wash Fountain Systems	256
C1010 128 Drywall Components	233	D2010 710 Shower Systems	257
C1010 144 Plaster Partition Components	234	D2010 810 Drinking Fountain Systems	257
C1010 205 Partitions	235	D2010 820 Water Cooler Systems	258
C1020 Interior Doors			
C1020 102 Special Doors	236	D2010 920 Two Fixture Bathroom, Two Wall Plumbing	259
C1030 Fittings			
C1030 110 Toilet Partitions	237	D2010 922 Two Fixture Bathroom, One Wall Plumbing	259
C1030 310 Storage Specialties, EACH	238	D2010 924 Three Fixture Bathroom, One Wall Plumbing	259
C1030 510 Identifying/Visual Aid Specialties, EACH	238	D2010 926 Three Fixture Bathroom, Two Wall Plumbing	259
C1030 520 Identifying/Visual Aid Specialties, S.F.	238	D2020 Domestic Water Distribution	
C1030 710 Bath and Toilet Accessories, EACH	238	D2020 220 Gas Fired Water Heaters - Residential Systems	260
C1030 730 Bath and Toilet Accessories, L.F.	239	D2020 230 Oil Fired Water Heaters - Residential Systems	260
C1030 830 Fabricated Cabinets, EACH	239	D2020 240 Electric Water Heaters - Commercial Systems	261
Fabricated Counters, L.F.	239	D2020 250 Gas Fired Water Heaters - Commercial Systems	262
C1030 910 Other Fittings, EACH	239	D2020 260 Oil Fired Water Heaters - Commercial Systems	263
C2010 Stair Construction			
C2010 110 Stairs	240	D2040 Rain Water Drainage	
C3010 Wall Finishes			
C3010 230 Paint & Covering	241	D2040 210 Roof Drain Systems	264
C3010 235 Paint Trim	242	D3010 Energy Supply	
C3020 Floor Finishes			
C3020 410 Tile & Covering	243	D3010 510 Apartment Building Heating - Fin Tube Radiation	265
C3020 600 Bases, Curbs & Trim	244	D3010 520 Commercial Building Heating - Fin Tube Radiation	265
C3030 Ceiling Finishes			
C3030 105 Plaster Ceilings	246	D3010 530 Commercial Bldg. Heating - Terminal Unit Heaters	265
C3030 110 Drywall Ceilings	246	D3020 Heat Generating Systems	
C3030 140 Plaster Ceiling Components	247	D3020 102 Small Heating Systems, Hydronic, Electric Boilers	266
C3030 210 Acoustical Ceilings	247	D3020 104 Large Heating Systems, Hydronic, Electric Boilers	266
C3030 240 Acoustical Ceiling Components	248	D3020 106 Boilers, Hot Water & Steam	267
D SERVICES			
D1010 Elevators and Lifts			
D1010 110 Hydraulic	250	D3020 108 Heating Systems, Unit Heaters	268
D2010 Plumbing Fixtures			
D2010 110 Water Closet Systems	252	D3020 110 Heating System, Fin Tube Radiation	269
D2010 120 Water Closets, Group	252	D3030 Cooling Generating Systems	
D2010 210 Urinal Systems	252	D3030 110 Chilled Water, Air Cooled Condenser Systems	270
D2010 310 Lavatory Systems	253	D3030 115 Chilled Water, Cooling Tower Systems	272
D3050 Terminal & Package Units			
D3090 Other HVAC Systems/Equip			
D4010 Sprinklers			
D4020 Standpipes			
D3090 320 Garage Exhaust Systems	282	D3050 150 Rooftop Single Zone Unit Systems	274
D4010 Sprinklers			
D4010 310 Dry Pipe Sprinkler Systems	283	D3050 160 Self-contained, Water Cooled Unit Systems	276
D4010 410 Wet Pipe Sprinkler Systems	287	D3050 165 Self-contained, Air Cooled Unit Systems	278
D4020 Standpipes			
D4020 310 Wet Standpipe Risers, Class I	289	D3050 170 Split Systems With Air Cooled Condensing Units	280
Wet Standpipe Risers, Class II	289		
Wet Standpipe Risers, Class III	289		

Table of Contents

<i>Table No.</i>	<i>Page</i>
D4020 330 Dry Standpipe Risers, Class I	290
Dry Standpipe Risers, Class II	290
Dry Standpipe Risers, Class III	290
D4020 410 Fire Hose Equipment	291
D4090 Other Fire Protection Systems	
D4090 910 Fire Suppression Unit Components	292
D4090 920 FM200 Systems	292
D5010 Electrical Service/Distribution	
D5010 120 Overhead Electric Service, 3 Phase - 4 Wire	293
D5010 130 Underground Electric Service	294
D5010 230 Feeder Installation	295
D5010 240 Switchgear	296
D5010 250 Panelboard	297
D5020 Lighting and Branch Wiring	
D5020 110 Receptacle (by Wattage)	298
D5020 115 Receptacles, Floor	298
D5020 130 Wall Switch by Sq. Ft.	299
D5020 135 Miscellaneous Power	299
D5020 140 Central A. C. Power (by Wattage)	299
D5020 145 Motor Installation	300
D5020 155 Motor Feeder	301
D5020 210 Fluorescent Fixtures (by Wattage)	302
D5020 216 Incandescent Fixture (by Wattage)	302
D5020 226 H.I.D. Fixture, High Bay, 16' (by Wattage)	302
D5020 234 H.I.D. Fixture, High Bay, 30' (by Wattage)	303
D5020 238 H.I.D. Fixture, Low Bay, 8'-10' (by Wattage)	304
D5020 242 H.I.D. Fixture, Low Bay, 16' (by Wattage)	304
D5030 Communications and Security	
D5030 910 Communication & Alarm Systems	305
D5090 Other Electrical Systems	
D5090 210 Generators (by kW)	306
E EQUIPMENT & FURNISHINGS	
E1010 Commercial Equipment	
E1010 110 Security/Vault, EACH	308
E1010 510 Mercantile Equipment, EACH	308
E1010 610 Laundry/Dry Cleaning, EACH	308
E1020 Institutional Equipment	
E1020 110 Ecclesiastical Equipment, EACH	309
E1020 130 Ecclesiastical Equipment, L.F.	309
E1020 210 Library Equipment, EACH	309
E1020 230 Library Equipment, L.F.	309
E1020 310 Theater and Stage Equipment, EACH	309
E1020 320 Theater and Stage Equipment, S.F.	309
E1020 330 Theater and Stage Equipment, L.F.	309
E1020 610 Detention Equipment, EACH	310
E1020 710 Laboratory Equipment, EACH	310
E1020 720 Laboratory Equipment, S.F.	310

<i>Table No.</i>	<i>Page</i>
E1020 730 Laboratory Equipment, L.F.	310
E1020 810 Medical Equipment, EACH	310
E1030 Vehicular Equipment	
E1030 110 Vehicular Service Equipment, EACH	311
E1030 210 Parking Control Equipment, EACH	311
E1030 310 Loading Dock Equipment, EACH	311
E1090 Other Equipment	
E1090 210 Solid Waste Handling Equipment, EACH	312
E1090 350 Food Service Equipment, EACH	312
E1090 360 Food Service Equipment, S.F.	312
E1090 410 Residential Equipment, EACH	312
E1090 610 School Equipment, EACH	312
E1090 620 School Equipment, S.F.	313
E1090 810 Athletic, Recreational, and Therapeutic Equipment, EACH	313
E1090 820 Athletic, Recreational, and Therapeutic Equipment, S.F.	313
E2010 Fixed Furnishings	
E2010 310 Window Treatment, EACH	314
E2010 320 Window Treatment, S.F.	314
E2010 420 Fixed Floor Grilles and Mats, S.F.	314
E2010 510 Fixed Multiple Seating, EACH	314
E2020 Moveable Furnishings	
E2020 210 Furnishings/EACH	315
E2020 220 Furniture and Accessories, L.F.	315
F SPECIAL CONSTRUCTION	
F1010 Special Structures	
F1010 120 Air-Supported Structures, S.F.	318
F1010 210 Pre-Engineered Structures, EACH	318
F1010 320 Other Special Structures, S.F.	318
F1010 330 Special Structures, EACH	318
F1010 340 Special Structures, S.F.	318
F1020 Integrated Construction	
F1020 110 Integrated Construction, EACH	319
F1020 120 Integrated Construction, S.F.	319
F1020 250 Special Purpose Room, EACH	319
F1020 260 Special Purpose Room, S.F.	319
F1020 330 Special Construction, L.F.	319
F1030 Special Construction Systems	
F1030 120 Sound, Vibration, and Seismic Construction, S.F.	320
F1030 210 Radiation Protection, EACH	320
F1030 220 Radiation Protection, S.F.	320
F1030 910 Other Special Construction Systems, EACH	320
F1040 Special Facilities	
F1040 210 Ice Rinks, EACH	321
F1040 510 Liquid & Gas Storage Tanks, EACH	321
F1040 910 Special Construction, EACH	321

Table of Contents

<i>Table No.</i>	<i>Page</i>
G BUILDING SITEWORK	
G1030 Site Earthwork	
G1030 805 Trenching Common Earth	324
G1030 807 Trenching Sand & Gravel	325
G1030 815 Pipe Bedding	326
G2010 Roadways	
G2010 232 Bituminous Roadways Crushed Stone	327
G2020 Parking Lots	
G2020 210 Parking Lots Gravel Base	328

<i>Table No.</i>	<i>Page</i>
G2040 Site Development	
G2040 810 Flagpoles	329
G2040 950 Other Site Development, EACH	329
G3030 Storm Sewer	
G3030 210 Manholes & Catch Basins	330
G4020 Site Lighting	
G4020 210 Light Pole (Installed)	331

Unit Price Section

Table of Contents

<i>Sect. No.</i>	<i>Page</i>	<i>Sect. No.</i>	<i>Page</i>	<i>Sect. No.</i>	<i>Page</i>
General Requirements					
01 11	Summary of Work	342			
01 21	Allowances	342			
01 31	Project Management and Coordination	344			
01 41	Regulatory Requirements	345			
01 45	Quality Control	345			
01 52	Construction Facilities	346			
01 54	Construction Aids	346			
01 56	Temporary Barriers and Enclosures ..	349			
01 66	Product Storage and Handling Requirements	350			
01 71	Examination and Preparation	350			
01 74	Cleaning and Waste Management	350			
01 76	Protecting Installed Construction	351			
Existing Conditions					
02 21	Surveys	354			
02 31	Geophysical Investigations	354			
02 32	Geotechnical Investigations	354			
02 41	Demolition	354			
02 82	Asbestos Remediation	359			
02 83	Lead Remediation	363			
02 87	Biohazard Remediation	364			
Concrete					
03 01	Maintenance of Concrete	370			
03 05	Common Work Results for Concrete	370			
03 11	Concrete Forming	370			
03 15	Concrete Accessories	374			
03 21	Reinforcement Bars	376			
03 22	Fabric and Grid Reinforcing	377			
03 23	Stressed Tendon Reinforcing	377			
03 24	Fibrous Reinforcing	378			
03 30	Cast-In-Place Concrete	379			
03 31	Structural Concrete	379			
03 35	Concrete Finishing	381			
03 39	Concrete Curing	383			
03 41	Precast Structural Concrete	384			
03 48	Precast Concrete Specialties	384			
03 54	Cast Underlayment	384			
03 63	Epoxy Grouting	385			
03 82	Concrete Boring	385			
Masonry					
04 01	Maintenance of Masonry	388			
04 05	Common Work Results for Masonry	388			
04 21	Clay Unit Masonry	391			
04 22	Concrete Unit Masonry	393			
04 23	Glass Unit Masonry	397			
04 24	Adobe Unit Masonry	397			
04 27	Multiple-Wythe Unit Masonry	397			
04 41	Dry-Placed Stone	398			
04 43	Stone Masonry	398			
04 51	Flue Liner Masonry	400			
04 57	Masonry Fireplaces	400			
04 72	Cast Stone Masonry	401			
Metals					
05 01	Maintenance of Metals	404			
05 05	Common Work Results for Metals ...	404			
05 12	Structural Steel Framing	408			
05 15	Wire Rope Assemblies	410			
05 21	Steel Joist Framing	411			
05 31	Steel Decking	411			
05 41	Structural Metal Stud Framing	412			
05 42	Cold-Formed Metal Joist Framing ...	416			
05 44	Cold-Formed Metal Trusses	422			
05 51	Metal Stairs	423			
05 52	Metal Railings	424			
05 55	Metal Stair Treads and Nosings	425			
05 58	Formed Metal Fabrications	426			
05 71	Decorative Metal Stairs	427			
05 73	Decorative Metal Railings	428			
Wood, Plastics & Composites					
06 05	Common Work Results for Wood, Plastics, and Composites	430			
06 11	Wood Framing	437			
06 12	Structural Panels	448			
06 13	Heavy Timber Construction	449			
06 15	Wood Decking	449			
06 16	Sheathing	450			
06 17	Shop-Fabricated Structural Wood	452			
06 18	Glued-Laminated Construction	453			
06 22	Millwork	454			
06 25	Prefinished Paneling	466			
06 26	Board Paneling	468			
06 43	Wood Stairs and Railings	468			
06 44	Ornamental Woodwork	470			
06 48	Wood Frames	471			
06 49	Wood Screens and Exterior Wood Shutters	472			
06 51	Structural Plastic Shapes and Plates .	473			
06 63	Plastic Railings	474			
06 65	Plastic Trim	474			
06 73	Composite Decking	475			
06 81	Composite Railings	476			
Thermal & Moisture Protection					
07 01	Operation and Maint. of Thermal and Moisture Protection	478			
07 05	Common Work Results for Thermal and Moisture Protection ...	478			
07 11	Dampproofing	480			
07 19	Water Repellents	480			
07 21	Thermal Insulation	480			
07 22	Roof and Deck Insulation	484			
07 24	Exterior Insulation and Finish Systems	486			
07 25	Weather Barriers	486			
07 26	Vapor Retarders	486			
07 27	Air Barriers	487			
07 31	Shingles and Shakes	487			
07 32	Roof Tiles	489			
07 41	Roof Panels	490			
07 42	Wall Panels	491			
07 46	Siding	492			
07 51	Built-Up Bituminous Roofing	495			
07 52	Modified Bituminous Membrane Roofing	496			
07 53	Elastomeric Membrane Roofing	497			
07 54	Thermoplastic Membrane Roofing ...	498			
07 57	Coated Foamed Roofing	499			
07 58	Roll Roofing	499			
07 61	Sheet Metal Roofing	499			
07 65	Flexible Flashing	500			
07 71	Roof Specialties	502			
07 72	Roof Accessories	506			
07 76	Roof Pavers	507			
07 81	Applied Fireproofing	507			
07 84	Firestopping	508			
07 91	Preformed Joint Seals	509			
07 92	Joint Sealants	510			
Openings					
08 01	Operation and Maintenance of Openings	514			
08 05	Common Work Results for Openings	515			
08 11	Metal Doors and Frames	516			
08 12	Metal Frames	517			
08 13	Metal Doors	520			
08 14	Wood Doors	523			
08 16	Composite Doors	525			
08 17	Integrated Door Opening Assemblies	526			
08 31	Access Doors and Panels	528			
08 32	Sliding Glass Doors	529			
08 33	Coiling Doors and Grilles	530			
08 34	Special Function Doors	532			
08 36	Panel Doors	533			
08 38	Traffic Doors	533			
08 41	Entrances and Storefronts	534			
08 42	Entrances	535			
08 43	Storefronts	535			
08 45	Translucent Wall and Roof Assemblies	536			
08 51	Metal Windows	536			
08 52	Wood Windows	538			
08 53	Plastic Windows	544			
08 54	Composite Windows	547			
08 61	Roof Windows	547			
08 62	Unit Skylights	548			
08 63	Metal-Framed Skylights	549			
08 71	Door Hardware	550			
08 75	Window Hardware	560			
08 79	Hardware Accessories	561			
08 81	Glass Glazing	562			
08 83	Mirrors	563			
08 84	Plastic Glazing	563			
08 85	Glazing Accessories	564			
08 87	Glazing Surface Films	564			
08 88	Special Function Glazing	566			
08 91	Louvers	568			
08 95	Vents	570			
Finishes					
09 01	Maintenance of Finishes	572			
09 05	Common Work Results for Finishes	574			
09 22	Supports for Plaster and Gypsum Board	576			
09 23	Gypsum Plastering	579			
09 24	Cement Plastering	580			
09 25	Other Plastering	580			
09 26	Veneer Plastering	581			
09 29	Gypsum Board	581			
09 30	Tiling	585			
09 31	Thin-Set Tiling	585			
09 32	Mortar-Bed Tiling	587			
09 34	Waterproofing-Membrane Tiling	588			
09 35	Chemical-Resistant Tiling	588			
09 51	Acoustical Ceilings	589			
09 53	Acoustical Ceiling Suspension Assemblies	590			
09 54	Specialty Ceilings	591			
09 61	Flooring Treatment	591			
09 62	Specialty Flooring	592			
09 63	Masonry Flooring	592			
09 64	Wood Flooring	593			
09 65	Resilient Flooring	594			
09 66	Terrazzo Flooring	596			
09 67	Fluid-Applied Flooring	598			
09 68	Carpeting	598			
09 72	Wall Coverings	599			
09 74	Flexible Wood Sheets	601			
09 77	Special Wall Surfacing	601			
09 81	Acoustic Insulation	602			
09 84	Acoustic Room Components	602			
09 91	Painting	603			
09 93	Staining and Transparent Finishing ..	615			
09 96	High-Performance Coatings	615			
09 97	Special Coatings	617			
Specialties					
10 11	Visual Display Units	620			
10 13	Directories	621			
10 14	Signage	621			
10 17	Telephone Specialties	623			
10 21	Compartments and Cubicles	623			
10 22	Partitions	627			
10 26	Wall and Door Protection	628			
10 28	Toilet, Bath, and Laundry Accessories	629			
10 31	Manufactured Fireplaces	631			
10 43	Emergency Aid Specialties	632			

Table of Contents (cont.)

<i>Sect. No.</i>	<i>Page</i>	<i>Sect. No.</i>	<i>Page</i>	<i>Sect. No.</i>	<i>Page</i>
10 44	Fire Protection Specialties	632	22 33	Electric Domestic Water Heaters	685
10 51	Lockers	633	22 34	Fuel-Fired Domestic Water Heaters ..	686
10 55	Postal Specialties	634	22 41	Residential Plumbing Fixtures	686
10 56	Storage Assemblies	634	22 42	Commercial Plumbing Fixtures	689
10 57	Wardrobe and Closet Specialties	634	22 43	Healthcare Plumbing Fixtures	691
10 73	Protective Covers	635	22 47	Drinking Fountains and Water Coolers	692
10 74	Manufactured Exterior Specialties	636	22 51	Swimming Pool Plumbing Systems ..	692
10 75	Flagpoles	636		Heating Ventilation Air Conditioning	
	Equipment		23 05	Common Work Results for HVAC ...	694
11 13	Loading Dock Equipment	638	23 07	HVAC Insulation	696
11 30	Residential Equipment	638	23 09	Instrumentation and Control for HVAC	696
11 32	Unit Kitchens	640	23 11	Facility Fuel Piping	699
11 41	Foodservice Storage Equipment	641	23 13	Facility Fuel-Storage Tanks	700
11 42	Food Preparation Equipment	642	23 21	Hydronic Piping and Pumps	701
11 43	Food Delivery Carts and Conveyors ..	642	23 23	Refrigerant Piping	703
11 44	Food Cooking Equipment	643	23 31	HVAC Ducts and Casings	704
11 46	Food Dispensing Equipment	643	23 33	Air Duct Accessories	705
11 48	Foodservice Cleaning and Disposal Equipment	644	23 34	HVAC Fans	707
11 52	Audio-Visual Equipment	644	23 37	Air Outlets and Inlets	708
11 81	Facility Maintenance Equipment	644	23 38	Ventilation Hoods	710
	Furnishings		23 41	Particulate Air Filtration	710
12 21	Window Blinds	646	23 42	Gas-Phase Air Filtration	710
12 22	Curtains and Drapes	646	23 43	Electronic Air Cleaners	710
12 23	Interior Shutters	647	23 51	Breechings, Chimneys, and Stacks ...	711
12 24	Window Shades	648	23 52	Heating Boilers	711
12 32	Manufactured Wood Casework	648	23 54	Furnaces	714
12 36	Countertops	650	23 55	Fuel-Fired Heaters	715
12 48	Rugs and Mats	652	23 56	Solar Energy Heating Equipment	716
12 93	Interior Public Space Furnishings	652	23 62	Packaged Compressor and Condenser Units	716
	Special Construction		23 63	Refrigerant Condensers	717
13 11	Swimming Pools	654	23 64	Packaged Water Chillers	717
13 12	Fountains	655	23 65	Cooling Towers	718
13 17	Tubs and Pools	655	23 74	Packaged Outdoor HVAC Equipment	719
13 24	Special Activity Rooms	656	23 81	Decentralized Unitary HVAC Equipment	719
13 34	Fabricated Engineered Structures	656	23 82	Convection Heating and Cooling Units	721
	Conveying Equipment		23 83	Radiant Heating Units	724
14 11	Manual Dumbwaiters	660	23 84	Humidity Control Equipment	724
14 12	Electric Dumbwaiters	660		Electrical	
14 21	Electric Traction Elevators	660	26 01	Operation and Maintenance of Electrical Systems	726
14 42	Wheelchair Lifts	660	26 05	Common Work Results for Electrical	727
	Fire Suppression		26 09	Instrumentation and Control for Electrical Systems	742
21 05	Common Work Results for Fire Suppression	662	26 12	Medium-Voltage Transformers	743
21 11	Facility Fire-Suppression Water-Service Piping	662	26 22	Low-Voltage Transformers	743
21 12	Fire-Suppression Standpipes	663	26 24	Switchboards and Panelboards	744
21 13	Fire-Suppression Sprinkler Systems ..	664	26 27	Low-Voltage Distribution Equipment	746
21 21	Carbon-Dioxide Fire-Extinguishing Systems	665	26 28	Low-Voltage Circuit Protective Devices	749
21 22	Clean-Agent Fire-Extinguishing Systems	665	26 29	Low-Voltage Controllers	749
	Plumbing		26 32	Packaged Generator Assemblies	750
22 01	Operation and Maintenance of Plumbing	668	26 33	Battery Equipment	751
22 05	Common Work Results for Plumbing	669	26 35	Power Filters and Conditioners	752
22 07	Plumbing Insulation	671	26 36	Transfer Switches	753
22 11	Facility Water Distribution	671	26 41	Facility Lightning Protection	754
22 13	Facility Sanitary Sewerage	680	26 51	Interior Lighting	755
22 14	Facility Storm Drainage	684	26 52	Safety Lighting	757
22 31	Domestic Water Softeners	685	26 55	Special Purpose Lighting	757
22 32	Domestic Water Filtration Equipment	685			
26 56	Exterior Lighting	758			
26 61	Lighting Systems and Accessories	760			
	Communications		27 13	Communications Backbone Cabling	762
27 15	Communications Horizontal Cabling	762	27 41	Audio-Video Systems	763
27 51	Distributed Audio-Video Communications Systems	763			
	Electronic Safety & Security		28 15	Access Control Hardware Devices ...	766
28 31	Intrusion Detection	766	28 42	Gas Detection and Alarm	766
28 46	Fire Detection and Alarm	767			
	Earthwork		31 05	Common Work Results for Earthwork	770
31 11	Clearing and Grubbing	770	31 13	Selective Tree and Shrub Removal and Trimming	770
31 22	Grading	770	31 23	Excavation and Fill	771
31 25	Erosion and Sedimentation Controls	782	31 31	Soil Treatment	783
	Exterior Improvements		32 01	Operation and Maintenance of Exterior Improvements	786
32 06	Schedules for Exterior Improvements	786	32 11	Base Courses	787
32 12	Flexible Paving	788	32 13	Rigid Paving	789
32 14	Unit Paving	790	32 16	Curbs, Gutters, Sidewalks, and Driveways	791
32 17	Paving Specialties	792	32 31	Fences and Gates	792
32 32	Retaining Walls	794	32 33	Site Furnishings	795
32 84	Planting Irrigation	796	32 91	Planting Preparation	796
32 92	Turf and Grasses	797	32 93	Plants	798
32 94	Planting Accessories	799	32 96	Transplanting	800
	Utilities		33 05	Common Work Results for Utilities	802
33 11	Groundwater Sources	802	33 14	Water Utility Transmission and Distribution	802
33 31	Sanitary Sewerage Piping	804	33 34	Onsite Wastewater Disposal	804
33 41	Subdrainage	805	33 42	Stormwater Conveyance	805
33 52	Hydrocarbon Transmission and Distribution	806	33 71	Electrical Utility Transmission and Distribution	806
	Electrical Power Generation		48 15	Wind Energy Electrical Power Generation Equipment	808

Reference Section

All the reference information is in one section, making it easy to find what you need to know . . . and easy to use the data set on a daily basis. This section is visually identified by a vertical black bar on the page edges.

In this Reference Section, we've included Equipment Rental Costs, a listing of rental and operating costs; Crew Listings, a full listing of all crews and equipment, and their costs; Historical Cost Indexes for cost comparisons over time; Location Factors for adjusting costs to the region you are in; Reference Tables, where you will find explanations, estimating information and procedures, or technical data; Change Orders, information on pricing changes to contract documents; and an explanation of all the Abbreviations in the data set.

Table of Contents

Construction Equipment Rental Costs

811

Crew Listings

823

Historical Cost Indexes

858

Location Factors

866

Reference Tables

872

R01 General Requirements..... 872

R02 Existing Conditions 885

R03 Concrete..... 887

R04 Masonry 904

R05 Metals 906

R06 Wood, Plastics & Composites 910

R07 Thermal & Moisture Protection 910

R08 Openings..... 912

R09 Finishes 915

R13 Special Construction 918

Reference Tables (cont.)

R22 Plumbing 918

R23 Heating, Ventilating & Air Conditioning..... 919

R26 Electrical..... 919

R31 Earthwork 921

R32 Exterior Improvements..... 923

R33 Utilities..... 923

Change Orders

924

Project Costs

927

Abbreviations

932