



# Assemblies Costs

with RSMeans™ Data

**2025**

50<sup>th</sup> annual edition

# Assemblies Costs with RSMeans™ Data

Matt Doheny, Senior Editor

**GORDIAN®**

**2025**

50<sup>th</sup> annual edition

**Chief Product Officer**

Chris Gaudreau

**Chief Technology Officer**

Seth Gregorie

**Director, Data Operations**

Sam Giffin

**Engineering and Research**

Matthew Doheny,  
Sr. Manager

**Engineers:**

**Architectural Divisions**

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

Sam Babbitt

Richard Goldin

Scott Keller

Chris Pedersen

Melissa Stewart

**Engineers: Civil Divisions**

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

Derrick Hale, PE

Michael Lynch

Giles Munyard

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

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

Brian Adams

Michelle Curran

Antonio D'Aulerio

Chris Clough

**Contributing Engineers**

John Melin, PE, Manager

Paul Cowan

Thomas Lyons

Matthew Sorrentino

**Production**

Debra Panarelli, Manager

Sheryl Rose

Janice Thalin

**Data Analysis**

Yonique McNeil

Ellen D'Amico

**Cover Design**

Blaire Collins

**Data Engineering**

Monique Law

Kedar Gaikwad

Mike Bruesch

Jonathan Forgit

**City Cost Index**

Adam Raimond

**Labor Research**

Elisa Mello

David Yazbek



**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 2024 by The Gordian Group Inc.

All rights reserved.

Cover photo © iStock.com/Juanmonino

Printed in the United States of America

ISSN 1524-2153

ISBN 978-1-961006-50-8

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.

0625 \$715.00 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
How to Use the Cost Data: The Details	vii
Assemblies Section	xi
RSMeans™ Data: Assemblies—How They Work	xvi
Reference Section	451
Reference Tables	452
Project Costs	553
Reference Aids	556
Estimating Forms	582
Abbreviations	588
Index	592
Training Class Options	602
Labor Trade Rates including Overhead & Profit	Inside Back Cover

# Assemblies Section

## Table of Contents

<b>Table No.</b>	<b>Page</b>
<b>A SUBSTRUCTURE</b>	
<b>A1010 Standard Foundations</b>	
A1010 105 Wall Foundations .....	2
A1010 110 Strip Footings .....	3
A1010 210 Spread Footings .....	4
A1010 250 Pile Caps .....	6
A1010 310 Foundation Underdrain .....	8
A1010 320 Foundation Dampproofing .....	9
<b>A1020 Special Foundations</b>	
A1020 110 C.I.P. Concrete Piles .....	10
A1020 120 Precast Concrete Piles .....	12
A1020 130 Steel Pipe Piles .....	14
A1020 140 Steel H Piles .....	16
A1020 150 Step-Tapered Steel Piles .....	18
A1020 160 Treated Wood Piles .....	19
A1020 210 Grade Beams .....	21
A1020 310 Caissons .....	23
A1020 710 Pressure Injected Footings .....	24
<b>A1030 Slab on Grade</b>	
A1030 120 Plain & Reinforced .....	25
<b>A2010 Basement Excavation</b>	
A2010 110 Building Excavation & Backfill .....	27
<b>A2020 Basement Walls</b>	
A2020 110 Walls, Cast in Place .....	29
A2020 220 Subdrainage Piping .....	31
<b>B SHELL</b>	
<b>B1010 Floor Construction</b>	
B1010 201 C.I.P. Column - Round Tied .....	34
B1010 202 C.I.P. Columns, Round Tied - Minimum Reinforcing .....	36
B1010 203 C.I.P. Column, Square Tied .....	37
B1010 204 C.I.P. Column, Square Tied-Minimum Reinforcing .....	39
B1010 206 Tied, Concentric Loaded Precast Concrete Columns .....	40
B1010 207 Tied, Eccentric Loaded Precast Concrete Columns .....	41
B1010 208 Steel Columns .....	42
B1010 210 Wood Columns .....	47
B1010 213 Rectangular Precast Beams .....	49
B1010 214 "T" Shaped Precast Beams .....	51
B1010 215 "L" Shaped Precast Beams .....	53
B1010 216 Wood Beams .....	55
B1010 217 Cast in Place Slabs, One Way .....	56
B1010 219 Cast in Place Beam & Slab, One Way .....	58
B1010 220 Cast in Place Beam & Slab, Two Way .....	60
B1010 222 Cast in Place Flat Slab with Drop Panels .....	62
B1010 223 Cast in Place Flat Plate .....	64
B1010 226 Cast in Place Multispan Joist Slab .....	65
B1010 227 Cast in Place Waffle Slab .....	67
B1010 229 Precast Plank with No Topping .....	69
B1010 230 Precast Plank with 2" Concrete Topping .....	70
B1010 234 Precast Double "T" Beams with No Topping .....	71

<b>Table No.</b>	<b>Page</b>
B1010 235 Precast Double "T" Beams With 2" Topping .....	72
B1010 236 Precast Beam & Plank with No Topping .....	74
B1010 238 Precast Beam & Plank with 2" Topping .....	75
B1010 239 Precast Double "T" & 2" Topping on Precast Beams .....	76
B1010 241 W Shape Beams & Girders .....	78
B1010 244 Light Gauge Steel Floor Systems .....	82
B1010 246 Deck & Joists on Bearing Walls .....	83
B1010 248 Steel Joists on Beam & Wall .....	84
B1010 250 Steel Joists, Beams & Slab on Columns .....	87
B1010 252 Composite Beam & Cast in Place Slab .....	90
B1010 254 W Shape, Composite Deck, & Slab .....	92
B1010 256 Composite Beams, Deck & Slab .....	94
B1010 258 Metal Deck/Concrete Fill .....	96
B1010 260 Cellular Composite Deck .....	97
B1010 261 Wood Joist .....	98
B1010 264 Wood Beam & Joist .....	99
B1010 265 Laminated Wood Floor Beams .....	100
B1010 266 Wood Deck .....	101
B1010 710 Steel Beam Fireproofing .....	102
B1010 720 Steel Column Fireproofing .....	104
<b>B1020 Roof Construction</b>	
B1020 102 Wood/Flat or Pitched .....	106
B1020 108 Steel Joists, Beams & Deck on Columns & Walls .....	107
B1020 112 Steel Joists, Beams, & Deck on Columns .....	109
B1020 116 Steel Joists & Deck on Bearing Walls .....	111
B1020 120 Steel Joists, Joist Girders & Deck on Columns & Walls .....	113
B1020 124 Steel Joists & Joist Girders on Columns .....	116
B1020 125 Narrow Rib, Single Span Steel Deck .....	119
B1020 126 Narrow Rib, Multi Span Steel Deck .....	119
B1020 127 Intermediate Rib, Single Span Steel Deck .....	119
B1020 128 Intermediate Rib, Multi Span Steel Deck .....	120
B1020 129 Wide Rib, Single Span Steel Deck .....	120
B1020 130 Wide Rib, Multi Span Steel Deck .....	120
B1020 131 Single Span, Steel Deck .....	121
B1020 132 Double Span, Steel Deck .....	121
B1020 134 Cellular Steel Deck, Single Span .....	122
B1020 135 Cellular Steel Deck, Double Span .....	122
B1020 136 Cellular Steel Deck, Triple Span .....	123
B1020 310 Canopies .....	123
<b>B2010 Exterior Walls</b>	
B2010 101 Cast In Place Concrete .....	124
B2010 102 Flat Precast Concrete .....	126
B2010 103 Fluted Window or Mullion Precast Concrete .....	127
B2010 104 Ribbed Precast Concrete .....	127
B2010 105 Precast Concrete Specialties .....	128
B2010 106 Tilt-Up Concrete Panel .....	129
B2010 109 Concrete Block Wall - Regular Weight .....	131
B2010 110 Concrete Block Wall - Lightweight .....	132
B2010 111 Reinforced Concrete Block Wall - Regular Weight .....	133
B2010 112 Reinforced Concrete Block Wall - Lightweight .....	134
B2010 113 Split Ribbed Block Wall - Regular Weight .....	137
B2010 114 Split Ribbed Block Wall - Lightweight .....	138

## Table of Contents

<b>Table No.</b>	<b>Page</b>	<b>Table No.</b>	<b>Page</b>
B2010 115 Reinforced Split Ribbed Block Wall - Regular Weight .....	139	B3010 410 Base Flashing .....	219
B2010 116 Reinforced Split Ribbed Block Wall - Lightweight .....	140	B3010 420 Roof Edges .....	220
B2010 117 Split Face Block Wall - Regular Weight .....	142	B3010 430 Flashing .....	221
B2010 118 Split Face Block Wall - Lightweight .....	143	B3010 610 Gutters .....	222
B2010 119 Reinforced Split Face Block Wall - Regular Weight .....	145	B3010 620 Downspouts .....	222
B2010 120 Reinforced Split Face Block Wall - Lightweight .....	146	B3010 630 Gravel Stop .....	223
B2010 121 Ground Face Block Wall .....	149		
B2010 122 Reinforced Ground Face Block Wall .....	150		
B2010 123 Miscellaneous Block Wall .....	153		
B2010 124 Reinforced Misc. Block Walls .....	155		
B2010 125 Solid Brick Walls - Single Wythe .....	157		
B2010 126 Solid Brick Walls - Double Wythe .....	158		
B2010 127 Solid Brick Walls, Reinforced .....	159		
B2010 128 Stone Veneer .....	161		
B2010 129 Brick Veneer/Wood Stud Backup .....	163		
B2010 130 Brick Veneer/Metal Stud Backup .....	165		
B2010 132 Brick Face Composite Wall - Double Wythe .....	169		
B2010 133 Brick Face Composite Wall - Triple Wythe .....	172		
B2010 134 Brick Face Cavity Wall .....	174		
B2010 135 Brick Face Cavity Wall - Insulated Backup .....	177		
B2010 137 Block Face Cavity Wall .....	180		
B2010 138 Block Face Cavity Wall - Insulated Backup .....	182		
B2010 139 Block Face Composite Wall .....	185		
B2010 140 Glass Block .....	189		
B2010 144 Concrete Block Lintel .....	190		
B2010 145 Concrete Block Specialties .....	191		
B2010 146 Metal Siding Panel .....	192		
B2010 148 Panel, Shingle & Lap Siding .....	194		
B2010 151 Stucco Wall .....	197		
B2010 152 E.I.F.S. .....	198		
B2010 153 Oversized Brick Curtain Wall .....	198		
B2010 154 Metal Siding Support .....	199		
<b>B2020 Exterior Windows</b>			
B2020 102 Wood Windows .....	201		
B2020 104 Steel Windows .....	202		
B2020 106 Aluminum Windows .....	202		
B2020 108 Vinyl Clad Windows .....	203		
B2020 210 Tubular Aluminum Framing .....	205		
B2020 220 Curtain Wall Panels .....	206		
<b>B2030 Exterior Doors</b>			
B2030 110 Glazed Doors, Steel or Aluminum .....	207		
B2030 210 Wood Doors .....	209		
B2030 220 Steel Doors .....	210		
B2030 230 Aluminum Doors .....	211		
<b>B3010 Roof Coverings</b>			
B3010 105 Built-Up .....	212		
B3010 120 Single Ply Membrane .....	214		
B3010 130 Preformed Metal Roofing .....	215		
B3010 135 Formed Metal .....	216		
B3010 140 Shingle & Tile .....	217		
B3010 320 Roof Deck Rigid Insulation .....	218		
<b>C INTERIORS</b>			
<b>C1010 Partitions</b>			
C1010 102 Concrete Block Partitions - Regular Weight .....	226		
C1010 104 Concrete Block Partitions - Lightweight .....	227		
C1010 120 Tile Partitions .....	229		
C1010 124 Drywall Partitions/Wood Stud Framing .....	230		
C1010 126 Drywall Partitions/Metal Stud Framing .....	231		
C1010 128 Drywall Components .....	234		
C1010 140 Plaster Partitions/Metal Stud Framing .....	235		
C1010 142 Plaster Partitions/Wood Stud Framing .....	236		
C1010 144 Plaster Partition Components .....	238		
C1010 205 Partitions .....	239		
C1010 210 Partitions .....	240		
C1010 230 Demountable Partitions, L.F. .....	240		
C1010 710 Interior Glazed Opening .....	241		
<b>C1020 Interior Doors</b>			
C1020 102 Special Doors .....	244		
C1020 114 Metal Door/Metal Frame .....	245		
C1020 116 Labeled Metal Door/Metal Frames .....	246		
C1020 120 Wood Door/Wood Frame .....	246		
C1020 122 Wood Door/Metal Frame .....	247		
C1020 124 Wood Fire Doors/Metal Frames .....	248		
C1020 310 Hardware .....	250		
<b>C1030 Fittings</b>			
C1030 110 Toilet Partitions .....	251		
C1030 210 Fabricated Compact Units and Cubicles, EACH .....	252		
C1030 310 Storage Specialties, EACH .....	252		
C1030 510 Identifying/Visual Aid Specialties, EACH .....	252		
C1030 520 Identifying/Visual Aid Specialties, S.F. .....	252		
C1030 710 Bath and Toilet Accessories, EACH .....	253		
C1030 730 Bath and Toilet Accessories, L.F. .....	253		
C1030 830 Fabricated Cabinets, EACH .....	253		
C1030 910 Other Fittings, EACH .....	253		
<b>C2010 Stair Construction</b>			
C2010 110 Stairs .....	255		
<b>C3010 Wall Finishes</b>			
C3010 230 Paint & Covering .....	257		
C3010 235 Paint Trim .....	258		
<b>C3020 Floor Finishes</b>			
C3020 410 Tile & Covering .....	259		

## Table of Contents

<b>Table No.</b>		<b>Page</b>	<b>Table No.</b>		<b>Page</b>																																																																																																																																																																																																																																																																																																																																										
C3020	600 Bases, Curbs & Trim .....	260	D2040	Rain Water Drainage	300																																																																																																																																																																																																																																																																																																																																										
<b>C3030 Ceiling Finishes</b>																																																																																																																																																																																																																																																																																																																																															
C3030	105 Plaster Ceilings .....	261	D2040	210 Roof Drain Systems .....	300																																																																																																																																																																																																																																																																																																																																										
C3030	110 Drywall Ceilings .....	262	<b>D2090 Other Plumbing Systems</b>																																																																																																																																																																																																																																																																																																																																												
C3030	140 Plaster Ceiling Components .....	263	D2090	810 Piping - Installed - Unit Costs .....	302	C3030	210 Acoustical Ceilings .....	263	D2090	820 Standard Pipe Fittings - Installed - Unit Costs .....	304	C3030	240 Acoustical Ceiling Components .....	264	<b>D3010 Energy Supply</b>						<b>D SERVICES</b>						<b>D1010 Elevators and Lifts</b>						D1010	110 Hydraulic .....	266	D1010	510 Apartment Building Heating - Fin Tube Radiation .....	309	D1010	140 Traction Geared Elevators .....	267	D1010	520 Commercial Building Heating - Fin Tube Radiation .....	310	D1010	150 Traction Gearless Elevators .....	268	D1010	530 Commercial Bldg. Heating - Terminal Unit Heaters .....	311	<b>D1020 Escalators and Moving Walks</b>						D1020	110 Moving Stairs .....	269	D1020	660 Solar Swimming Pool Heater Systems .....	313	D1020	210 Moving Walks .....	269	D1020	682 Solar Direct Gain Glazing, Door Panels .....	314	<b>D1090 Other Conveying Systems</b>						D1090	410 Miscellaneous Types .....	270	D1090	684 Solar Direct Gain Glazing-Window Panels .....	315	<b>D2010 Plumbing Fixtures</b>						D2010	110 Water Closet Systems .....	271	D2010	686 Passive Solar Indirect Gain Wall .....	316	D2010	120 Water Closets, Group .....	272	D2010	688 Passive Solar Indirect Gain Panel .....	317	D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355
D2090	810 Piping - Installed - Unit Costs .....	302																																																																																																																																																																																																																																																																																																																																													
C3030	210 Acoustical Ceilings .....	263	D2090	820 Standard Pipe Fittings - Installed - Unit Costs .....	304	C3030	240 Acoustical Ceiling Components .....	264	<b>D3010 Energy Supply</b>						<b>D SERVICES</b>						<b>D1010 Elevators and Lifts</b>						D1010	110 Hydraulic .....	266	D1010	510 Apartment Building Heating - Fin Tube Radiation .....	309	D1010	140 Traction Geared Elevators .....	267	D1010	520 Commercial Building Heating - Fin Tube Radiation .....	310	D1010	150 Traction Gearless Elevators .....	268	D1010	530 Commercial Bldg. Heating - Terminal Unit Heaters .....	311	<b>D1020 Escalators and Moving Walks</b>						D1020	110 Moving Stairs .....	269	D1020	660 Solar Swimming Pool Heater Systems .....	313	D1020	210 Moving Walks .....	269	D1020	682 Solar Direct Gain Glazing, Door Panels .....	314	<b>D1090 Other Conveying Systems</b>						D1090	410 Miscellaneous Types .....	270	D1090	684 Solar Direct Gain Glazing-Window Panels .....	315	<b>D2010 Plumbing Fixtures</b>						D2010	110 Water Closet Systems .....	271	D2010	686 Passive Solar Indirect Gain Wall .....	316	D2010	120 Water Closets, Group .....	272	D2010	688 Passive Solar Indirect Gain Panel .....	317	D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355						
D2090	820 Standard Pipe Fittings - Installed - Unit Costs .....	304																																																																																																																																																																																																																																																																																																																																													
C3030	240 Acoustical Ceiling Components .....	264	<b>D3010 Energy Supply</b>																																																																																																																																																																																																																																																																																																																																												
<b>D SERVICES</b>																																																																																																																																																																																																																																																																																																																																															
<b>D1010 Elevators and Lifts</b>																																																																																																																																																																																																																																																																																																																																															
D1010	110 Hydraulic .....	266	D1010	510 Apartment Building Heating - Fin Tube Radiation .....	309	D1010	140 Traction Geared Elevators .....	267	D1010	520 Commercial Building Heating - Fin Tube Radiation .....	310	D1010	150 Traction Gearless Elevators .....	268	D1010	530 Commercial Bldg. Heating - Terminal Unit Heaters .....	311	<b>D1020 Escalators and Moving Walks</b>						D1020	110 Moving Stairs .....	269	D1020	660 Solar Swimming Pool Heater Systems .....	313	D1020	210 Moving Walks .....	269	D1020	682 Solar Direct Gain Glazing, Door Panels .....	314	<b>D1090 Other Conveying Systems</b>						D1090	410 Miscellaneous Types .....	270	D1090	684 Solar Direct Gain Glazing-Window Panels .....	315	<b>D2010 Plumbing Fixtures</b>						D2010	110 Water Closet Systems .....	271	D2010	686 Passive Solar Indirect Gain Wall .....	316	D2010	120 Water Closets, Group .....	272	D2010	688 Passive Solar Indirect Gain Panel .....	317	D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																	
D1010	510 Apartment Building Heating - Fin Tube Radiation .....	309																																																																																																																																																																																																																																																																																																																																													
D1010	140 Traction Geared Elevators .....	267	D1010	520 Commercial Building Heating - Fin Tube Radiation .....	310	D1010	150 Traction Gearless Elevators .....	268	D1010	530 Commercial Bldg. Heating - Terminal Unit Heaters .....	311	<b>D1020 Escalators and Moving Walks</b>						D1020	110 Moving Stairs .....	269	D1020	660 Solar Swimming Pool Heater Systems .....	313	D1020	210 Moving Walks .....	269	D1020	682 Solar Direct Gain Glazing, Door Panels .....	314	<b>D1090 Other Conveying Systems</b>						D1090	410 Miscellaneous Types .....	270	D1090	684 Solar Direct Gain Glazing-Window Panels .....	315	<b>D2010 Plumbing Fixtures</b>						D2010	110 Water Closet Systems .....	271	D2010	686 Passive Solar Indirect Gain Wall .....	316	D2010	120 Water Closets, Group .....	272	D2010	688 Passive Solar Indirect Gain Panel .....	317	D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																							
D1010	520 Commercial Building Heating - Fin Tube Radiation .....	310																																																																																																																																																																																																																																																																																																																																													
D1010	150 Traction Gearless Elevators .....	268	D1010	530 Commercial Bldg. Heating - Terminal Unit Heaters .....	311	<b>D1020 Escalators and Moving Walks</b>						D1020	110 Moving Stairs .....	269	D1020	660 Solar Swimming Pool Heater Systems .....	313	D1020	210 Moving Walks .....	269	D1020	682 Solar Direct Gain Glazing, Door Panels .....	314	<b>D1090 Other Conveying Systems</b>						D1090	410 Miscellaneous Types .....	270	D1090	684 Solar Direct Gain Glazing-Window Panels .....	315	<b>D2010 Plumbing Fixtures</b>						D2010	110 Water Closet Systems .....	271	D2010	686 Passive Solar Indirect Gain Wall .....	316	D2010	120 Water Closets, Group .....	272	D2010	688 Passive Solar Indirect Gain Panel .....	317	D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																													
D1010	530 Commercial Bldg. Heating - Terminal Unit Heaters .....	311																																																																																																																																																																																																																																																																																																																																													
<b>D1020 Escalators and Moving Walks</b>																																																																																																																																																																																																																																																																																																																																															
D1020	110 Moving Stairs .....	269	D1020	660 Solar Swimming Pool Heater Systems .....	313	D1020	210 Moving Walks .....	269	D1020	682 Solar Direct Gain Glazing, Door Panels .....	314	<b>D1090 Other Conveying Systems</b>						D1090	410 Miscellaneous Types .....	270	D1090	684 Solar Direct Gain Glazing-Window Panels .....	315	<b>D2010 Plumbing Fixtures</b>						D2010	110 Water Closet Systems .....	271	D2010	686 Passive Solar Indirect Gain Wall .....	316	D2010	120 Water Closets, Group .....	272	D2010	688 Passive Solar Indirect Gain Panel .....	317	D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																									
D1020	660 Solar Swimming Pool Heater Systems .....	313																																																																																																																																																																																																																																																																																																																																													
D1020	210 Moving Walks .....	269	D1020	682 Solar Direct Gain Glazing, Door Panels .....	314	<b>D1090 Other Conveying Systems</b>						D1090	410 Miscellaneous Types .....	270	D1090	684 Solar Direct Gain Glazing-Window Panels .....	315	<b>D2010 Plumbing Fixtures</b>						D2010	110 Water Closet Systems .....	271	D2010	686 Passive Solar Indirect Gain Wall .....	316	D2010	120 Water Closets, Group .....	272	D2010	688 Passive Solar Indirect Gain Panel .....	317	D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																															
D1020	682 Solar Direct Gain Glazing, Door Panels .....	314																																																																																																																																																																																																																																																																																																																																													
<b>D1090 Other Conveying Systems</b>																																																																																																																																																																																																																																																																																																																																															
D1090	410 Miscellaneous Types .....	270	D1090	684 Solar Direct Gain Glazing-Window Panels .....	315	<b>D2010 Plumbing Fixtures</b>						D2010	110 Water Closet Systems .....	271	D2010	686 Passive Solar Indirect Gain Wall .....	316	D2010	120 Water Closets, Group .....	272	D2010	688 Passive Solar Indirect Gain Panel .....	317	D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																																											
D1090	684 Solar Direct Gain Glazing-Window Panels .....	315																																																																																																																																																																																																																																																																																																																																													
<b>D2010 Plumbing Fixtures</b>																																																																																																																																																																																																																																																																																																																																															
D2010	110 Water Closet Systems .....	271	D2010	686 Passive Solar Indirect Gain Wall .....	316	D2010	120 Water Closets, Group .....	272	D2010	688 Passive Solar Indirect Gain Panel .....	317	D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																																																							
D2010	686 Passive Solar Indirect Gain Wall .....	316																																																																																																																																																																																																																																																																																																																																													
D2010	120 Water Closets, Group .....	272	D2010	688 Passive Solar Indirect Gain Panel .....	317	D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																																																													
D2010	688 Passive Solar Indirect Gain Panel .....	317																																																																																																																																																																																																																																																																																																																																													
D2010	210 Urinal Systems .....	273	D2010	690 Passive Solar Sunspace .....	318	D2010	310 Lavatory Systems .....	274	<b>D2030 Heat Generating Systems</b>						D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																																																																			
D2010	690 Passive Solar Sunspace .....	318																																																																																																																																																																																																																																																																																																																																													
D2010	310 Lavatory Systems .....	274																																																																																																																																																																																																																																																																																																																																													
<b>D2030 Heat Generating Systems</b>																																																																																																																																																																																																																																																																																																																																															
D2010	410 Kitchen Sink Systems .....	275	D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																																																																																		
D2010	510 Bathtub Systems .....	279	D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																																																																																					
D2010	420 Laundry Sink Systems .....	276	D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																																																																																								
D2010	310 Gas Vent, Galvanized Steel, Double Wall .....	324																																																																																																																																																																																																																																																																																																																																													
D2010	430 Laboratory Sink Systems .....	277	D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																																																																																														
D2010	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324																																																																																																																																																																																																																																																																																																																																													
D2010	440 Service Sink Systems .....	278	D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	D2010	510 Bathtub Systems .....	279	D2010	610 Group Wash Fountain Systems .....	280	D2010	710 Shower Systems .....	281	D2010	810 Drinking Fountain Systems .....	282	D2010	820 Water Cooler Systems .....	283	D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284	D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284	D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285	D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285	D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286	D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286	D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287	D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287	D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287	D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288	<b>D2020 Domestic Water Distribution</b>						D2020	240 Electric Water Heaters - Commercial Systems .....	289	D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290	D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291	D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293	D2020	270 Solar, Drainback, Hot Water Systems .....	295	D2020	275 Solar, Draindown, Hot Water Systems .....	297	D2020	295 Solar, Closed Loop, Hot Water Systems .....	299	<b>D3020 Heat Generating Systems</b>						D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319	D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320	D3020	106 Boilers, Hot Water & Steam .....	321	D3020	108 Heating Systems, Unit Heaters .....	322	D3020	110 Heating System, Fin Tube Radiation .....	323	D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324	D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324	D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325	<b>D3030 Cooling Generating Systems</b>						D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326	D3030	115 Chilled Water, Cooling Tower Systems .....	327	D3030	214 Heating/Cooling System .....	328	<b>D3050 Terminal &amp; Package Units</b>						D3050	150 Rooftop Single Zone Unit Systems .....	329	D3050	155 Rooftop Multizone Unit Systems .....	330	D3050	160 Self-contained, Water Cooled Unit Systems .....	331	D3050	165 Self-contained, Air Cooled Unit Systems .....	332	D3050	170 Split Systems With Air Cooled Condensing Units .....	333	D3050	185 Computer Room Cooling Units .....	334	<b>D4010 Sprinklers</b>						D4010	310 Dry Pipe Sprinkler Systems .....	335	D4010	350 Preaction Sprinkler Systems .....	338	D4010	370 Deluge Sprinkler Systems .....	341	D4010	390 On-off multicycle Sprinkler Systems .....	345	D4010	410 Wet Pipe Sprinkler Systems .....	347	<b>D4020 Standpipes</b>						D4020	310 Wet Standpipe Risers, Class I .....	350	D4020	Wet Standpipe Risers, Class II .....	350	D4020	Wet Standpipe Risers, Class III .....	351	D4020	330 Dry Standpipe Risers, Class I .....	352	D4020	Dry Standpipe Risers, Class II .....	352	D4020	Dry Standpipe Risers, Class III .....	353	D4020	410 Fire Hose Equipment .....	354	<b>D4090 Other Fire Protection Systems</b>						D4090	910 Fire Suppression Unit Components .....	355																																																																																																																																				
D2010	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325																																																																																																																																																																																																																																																																																																																																													
D2010	510 Bathtub Systems .....	279																																																																																																																																																																																																																																																																																																																																													
D2010	610 Group Wash Fountain Systems .....	280																																																																																																																																																																																																																																																																																																																																													
D2010	710 Shower Systems .....	281																																																																																																																																																																																																																																																																																																																																													
D2010	810 Drinking Fountain Systems .....	282																																																																																																																																																																																																																																																																																																																																													
D2010	820 Water Cooler Systems .....	283																																																																																																																																																																																																																																																																																																																																													
D2010	920 Two Fixture Bathroom, Two Wall Plumbing .....	284																																																																																																																																																																																																																																																																																																																																													
D2010	922 Two Fixture Bathroom, One Wall Plumbing .....	284																																																																																																																																																																																																																																																																																																																																													
D2010	924 Three Fixture Bathroom, One Wall Plumbing .....	285																																																																																																																																																																																																																																																																																																																																													
D2010	926 Three Fixture Bathroom, Two Wall Plumbing .....	285																																																																																																																																																																																																																																																																																																																																													
D2010	928 Four Fixture Bathroom, Two Wall Plumbing .....	286																																																																																																																																																																																																																																																																																																																																													
D2010	930 Four Fixture Bathroom, Three Wall Plumbing .....	286																																																																																																																																																																																																																																																																																																																																													
D2010	932 Five Fixture Bathroom, Two Wall Plumbing .....	287																																																																																																																																																																																																																																																																																																																																													
D2010	934 Five Fixture Bathroom, Three Wall Plumbing .....	287																																																																																																																																																																																																																																																																																																																																													
D2010	936 Five Fixture Bathroom, One Wall Plumbing .....	287																																																																																																																																																																																																																																																																																																																																													
D2010	951 Plumbing Systems 20 Unit, 2 Story Apartment Building ....	288																																																																																																																																																																																																																																																																																																																																													
<b>D2020 Domestic Water Distribution</b>																																																																																																																																																																																																																																																																																																																																															
D2020	240 Electric Water Heaters - Commercial Systems .....	289																																																																																																																																																																																																																																																																																																																																													
D2020	250 Gas Fired Water Heaters - Commercial Systems .....	290																																																																																																																																																																																																																																																																																																																																													
D2020	260 Oil Fired Water Heaters - Commercial Systems .....	291																																																																																																																																																																																																																																																																																																																																													
D2020	265 Solar, Closed Loop, Add-On Hot Water Systems .....	293																																																																																																																																																																																																																																																																																																																																													
D2020	270 Solar, Drainback, Hot Water Systems .....	295																																																																																																																																																																																																																																																																																																																																													
D2020	275 Solar, Draindown, Hot Water Systems .....	297																																																																																																																																																																																																																																																																																																																																													
D2020	295 Solar, Closed Loop, Hot Water Systems .....	299																																																																																																																																																																																																																																																																																																																																													
<b>D3020 Heat Generating Systems</b>																																																																																																																																																																																																																																																																																																																																															
D3020	102 Small Heating Systems, Hydronic, Electric Boilers .....	319																																																																																																																																																																																																																																																																																																																																													
D3020	104 Large Heating Systems, Hydronic, Electric Boilers .....	320																																																																																																																																																																																																																																																																																																																																													
D3020	106 Boilers, Hot Water & Steam .....	321																																																																																																																																																																																																																																																																																																																																													
D3020	108 Heating Systems, Unit Heaters .....	322																																																																																																																																																																																																																																																																																																																																													
D3020	110 Heating System, Fin Tube Radiation .....	323																																																																																																																																																																																																																																																																																																																																													
D3020	310 Gas Vent, Galvanized Steel, Double Wall .....	324																																																																																																																																																																																																																																																																																																																																													
D3020	Gas Vent Fittings, Galvanized Steel, Double Wall .....	324																																																																																																																																																																																																																																																																																																																																													
D3020	315 Chimney, Stainless Steel, Insulated, Wood & Oil .....	325																																																																																																																																																																																																																																																																																																																																													
<b>D3030 Cooling Generating Systems</b>																																																																																																																																																																																																																																																																																																																																															
D3030	110 Chilled Water, Air Cooled Condenser Systems .....	326																																																																																																																																																																																																																																																																																																																																													
D3030	115 Chilled Water, Cooling Tower Systems .....	327																																																																																																																																																																																																																																																																																																																																													
D3030	214 Heating/Cooling System .....	328																																																																																																																																																																																																																																																																																																																																													
<b>D3050 Terminal &amp; Package Units</b>																																																																																																																																																																																																																																																																																																																																															
D3050	150 Rooftop Single Zone Unit Systems .....	329																																																																																																																																																																																																																																																																																																																																													
D3050	155 Rooftop Multizone Unit Systems .....	330																																																																																																																																																																																																																																																																																																																																													
D3050	160 Self-contained, Water Cooled Unit Systems .....	331																																																																																																																																																																																																																																																																																																																																													
D3050	165 Self-contained, Air Cooled Unit Systems .....	332																																																																																																																																																																																																																																																																																																																																													
D3050	170 Split Systems With Air Cooled Condensing Units .....	333																																																																																																																																																																																																																																																																																																																																													
D3050	185 Computer Room Cooling Units .....	334																																																																																																																																																																																																																																																																																																																																													
<b>D4010 Sprinklers</b>																																																																																																																																																																																																																																																																																																																																															
D4010	310 Dry Pipe Sprinkler Systems .....	335																																																																																																																																																																																																																																																																																																																																													
D4010	350 Preaction Sprinkler Systems .....	338																																																																																																																																																																																																																																																																																																																																													
D4010	370 Deluge Sprinkler Systems .....	341																																																																																																																																																																																																																																																																																																																																													
D4010	390 On-off multicycle Sprinkler Systems .....	345																																																																																																																																																																																																																																																																																																																																													
D4010	410 Wet Pipe Sprinkler Systems .....	347																																																																																																																																																																																																																																																																																																																																													
<b>D4020 Standpipes</b>																																																																																																																																																																																																																																																																																																																																															
D4020	310 Wet Standpipe Risers, Class I .....	350																																																																																																																																																																																																																																																																																																																																													
D4020	Wet Standpipe Risers, Class II .....	350																																																																																																																																																																																																																																																																																																																																													
D4020	Wet Standpipe Risers, Class III .....	351																																																																																																																																																																																																																																																																																																																																													
D4020	330 Dry Standpipe Risers, Class I .....	352																																																																																																																																																																																																																																																																																																																																													
D4020	Dry Standpipe Risers, Class II .....	352																																																																																																																																																																																																																																																																																																																																													
D4020	Dry Standpipe Risers, Class III .....	353																																																																																																																																																																																																																																																																																																																																													
D4020	410 Fire Hose Equipment .....	354																																																																																																																																																																																																																																																																																																																																													
<b>D4090 Other Fire Protection Systems</b>																																																																																																																																																																																																																																																																																																																																															
D4090	910 Fire Suppression Unit Components .....	355																																																																																																																																																																																																																																																																																																																																													

## Table of Contents

<b>Table No.</b>		<b>Page</b>
D4090 920 FM200 Systems .....	355	
<b>D5010 Electrical Service/Distribution</b>		
D5010 110 High Voltage Shielded Conductors .....	356	
D5010 120 Overhead Electric Service, 3 Phase - 4 Wire .....	357	
D5010 130 Underground Electric Service .....	359	
D5010 230 Feeder Installation .....	361	
D5010 240 Switchgear .....	362	
D5010 250 Panelboard .....	363	
<b>D5020 Lighting and Branch Wiring</b>		
D5020 110 Receptacle (by Wattage) .....	365	
D5020 115 Receptacles, Floor .....	366	
D5020 125 Receptacles & Switches by Each .....	367	
D5020 130 Wall Switch by Sq. Ft. ....	368	
D5020 135 Miscellaneous Power .....	369	
D5020 140 Central A. C. Power (by Wattage) .....	370	
D5020 145 Motor Installation .....	371	
D5020 155 Motor Feeder .....	373	
D5020 160 Magnetic Starter .....	374	
D5020 165 Safety Switches .....	375	
D5020 170 Motor Connections .....	376	
D5020 175 Motor & Starter .....	377	
D5020 208 Fluorescent Fixtures (by Type) .....	380	
D5020 210 Fluorescent Fixtures (by Wattage) .....	381	
D5020 214 Incandescent Fixture (by Type) .....	382	
D5020 216 Incandescent Fixture (by Wattage) .....	383	
D5020 218 Fluorescent Fixture, High Bay, 8'-10' (by Wattage) .....	384	
D5020 220 H.I.D. Fixture, High Bay, 8'-10' (by Type) .....	385	
D5020 222 H.I.D. Fixture, High Bay, 8'-10' (by Wattage) .....	386	
D5020 224 H.I.D. Fixture, High Bay, 16' (by Type) .....	387	
D5020 226 H.I.D. Fixture, High Bay, 16' (by Wattage) .....	388	
D5020 228 H.I.D. Fixture, High Bay, 20' (by Type) .....	389	
D5020 230 H.I.D. Fixture, High Bay, 20' (by Wattage) .....	390	
D5020 232 H.I.D. Fixture, High Bay, 30' (by Type) .....	391	
D5020 234 H.I.D. Fixture, High Bay, 30' (by Wattage) .....	392	
D5020 236 H.I.D. Fixture, Low Bay, 8'-10' (by Type) .....	393	
D5020 238 H.I.D. Fixture, Low Bay, 8'-10' (by Wattage) .....	394	
D5020 240 H.I.D. Fixture, Low Bay, 16' (by Type) .....	395	
D5020 242 H.I.D. Fixture, Low Bay, 16' (by Wattage) .....	396	
D5020 290 Daylight Dimming System .....	397	
D5020 295 Lighting On/Off Control System .....	398	
<b>D5030 Communications and Security</b>		
D5030 310 Telephone Systems .....	399	
D5030 910 Communication & Alarm Systems .....	400	
D5030 920 Data Communication .....	401	
<b>D5090 Other Electrical Systems</b>		
D5090 210 Generators (by kW) .....	402	
D5090 420 Photovoltaic Power System, Stand Alone .....	404	
D5090 430 Photovoltaic Power System, Grid Connected .....	405	
D5090 480 Energy Monitoring Systems .....	406	
D5090 510 Electric Baseboard Radiation (Low Density) .....	407	
D5090 520 Electric Baseboard Radiation (Medium Density) .....	408	

<b>Table No.</b>		<b>Page</b>
<b>E EQUIPMENT &amp; FURNISHINGS</b>		
<b>E1010 Commercial Equipment</b>		
E1010 110 Security/Vault, EACH .....	410	
E1010 510 Mercantile Equipment, EACH .....	410	
E1010 610 Laundry/Dry Cleaning, EACH .....	410	
<b>E1020 Institutional Equipment</b>		
E1020 110 Ecclesiastical Equipment, EACH .....	411	
E1020 130 Ecclesiastical Equipment, L.F. ....	411	
E1020 210 Library Equipment, EACH .....	411	
E1020 230 Library Equipment, L.F. ....	411	
E1020 310 Theater and Stage Equipment, EACH .....	411	
E1020 320 Theater and Stage Equipment, S.F. ....	411	
E1020 330 Theater and Stage Equipment, L.F. ....	411	
E1020 610 Detention Equipment, EACH .....	412	
E1020 710 Laboratory Equipment, EACH .....	412	
E1020 720 Laboratory Equipment, S.F. ....	412	
E1020 730 Laboratory Equipment, L.F. ....	412	
E1020 810 Medical Equipment, EACH .....	412	
<b>E1030 Vehicular Equipment</b>		
E1030 110 Vehicular Service Equipment, EACH .....	413	
E1030 210 Parking Control Equipment, EACH .....	413	
E1030 310 Loading Dock Equipment, EACH .....	413	
<b>E1090 Other Equipment</b>		
E1090 110 Maintenance Equipment, EACH .....	414	
E1090 210 Solid Waste Handling Equipment, EACH .....	414	
E1090 350 Food Service Equipment, EACH .....	414	
E1090 360 Food Service Equipment, S.F. ....	414	
E1090 410 Residential Equipment, EACH .....	414	
E1090 550 Darkroom Equipment, EACH .....	414	
E1090 610 School Equipment, EACH .....	415	
E1090 620 School Equipment, S.F. ....	415	
E1090 810 Athletic, Recreational, and Therapeutic Equipment, EACH .....	415	
E1090 820 Athletic, Recreational, and Therapeutic Equipment, S.F. ....	415	
E1090 910 Other Equipment, EACH .....	416	
<b>E2010 Fixed Furnishings</b>		
E2010 310 Window Treatment, EACH .....	417	
E2010 320 Window Treatment, S.F. ....	417	
E2010 420 Fixed Floor Grilles and Mats, S.F. ....	417	
E2010 510 Fixed Multiple Seating, EACH .....	417	
<b>E2020 Moveable Furnishings</b>		
E2020 210 Furnishings/EACH .....	418	
E2020 220 Furniture and Accessories, L.F. ....	418	
<b>F SPECIAL CONSTRUCTION</b>		
<b>F1010 Special Structures</b>		
F1010 120 Air-Supported Structures, S.F. ....	420	
F1010 210 Pre-Engineered Structures, EACH .....	420	
F1010 320 Other Special Structures, S.F. ....	420	
F1010 330 Special Structures, EACH .....	420	
F1010 340 Special Structures, S.F. ....	420	

## **Table of Contents**

<b>Table No.</b>	<b>Page</b>	<b>Table No.</b>	<b>Page</b>
<b>F1020 Integrated Construction</b>			
F1020 110 Integrated Construction, EACH .....	421	G2020 210 Parking Lots Gravel Base .....	437
F1020 120 Integrated Construction, S.F. ....	421	<b>G2030 Pedestrian Paving</b>	
F1020 250 Special Purpose Room, EACH .....	421	G2030 110 Bituminous Sidewalks .....	438
F1020 260 Special Purpose Room, S.F. ....	421	G2030 120 Concrete Sidewalks .....	438
F1020 330 Special Construction, L.F. ....	421	G2030 150 Brick & Tile Plazas .....	438
<b>F1030 Special Construction Systems</b>			
F1030 120 Sound, Vibration, and Seismic Construction, S.F. ....	422	<b>G2040 Site Development</b>	
F1030 210 Radiation Protection, EACH .....	422	G2040 105 Fence & Guardrails .....	439
F1030 220 Radiation Protection, S.F. ....	422	G2040 810 Flagpoles .....	439
F1030 910 Other Special Construction Systems, EACH .....	422	G2040 950 Other Site Development, EACH .....	439
<b>F1040 Special Facilities</b>			
F1040 210 Ice Rinks, EACH .....	423	G2040 990 Site Development Components for Buildings .....	440
F1040 510 Liquid & Gas Storage Tanks, EACH .....	423	<b>G3010 Water Supply</b>	
F1040 910 Special Construction, EACH .....	423	G3010 110 Water Distribution Piping .....	442
F1040 920 Special Construction, EACH .....	423	<b>G3020 Sanitary Sewer</b>	
<b>G BUILDING SITEWORK</b>			
<b>G1030 Site Earthwork</b>			
G1030 805 Trenching Common Earth .....	426	G3020 110 Drainage & Sewage Piping .....	443
G1030 806 Trenching Loam & Sandy Clay .....	428	<b>G3030 Storm Sewer</b>	
G1030 807 Trenching Sand & Gravel .....	430	G3030 210 Manholes & Catch Basins .....	445
G1030 815 Pipe Bedding .....	432	<b>G3060 Fuel Distribution</b>	
<b>G2010 Roadways</b>			
G2010 232 Bituminous Roadways Crushed Stone .....	434	G3060 110 Gas Service Piping .....	447
G2010 305 Curbs & Berms .....	436	<b>G4020 Site Lighting</b>	
		G4020 110 Site Lighting .....	448
		G4020 210 Light Pole [Installed] .....	449

# 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 section, you'll see the background that relates to the reference numbers that appeared in the Assembly Cost Sections. You'll find reference tables, explanations, and estimating information that support how we derive the systems data. Also included are alternate pricing methods, technical data, and estimating procedures, along with information on design and economy in construction.

Also in this Reference Section, we've included Historical Cost Indexes for cost comparison over time; City Cost Indexes and Location Factors for adjusting costs to the region you are in; Reference Aids; Estimating Forms; and an explanation of all Abbreviations used in the data set.

## Table of Contents

### Reference Tables

#### A10 Foundations

RA1010 Standard Foundations .....	452
RA1020 Special Foundations .....	459
RA1030 Slab on Grade .....	462

#### A20 Basement Construction

RA2020 Basement Walls .....	463
-----------------------------	-----

#### B10 Superstructure

RB1010 Floor Construction .....	465
RB1020 Roof Construction .....	472

#### B20 Exterior Enclosure

RB2010 Exterior Walls .....	474
-----------------------------	-----

#### B30 Roofing

RB3010 Roof Coverings .....	480
-----------------------------	-----

#### C20 Stairs

RC2010 Stair Construction .....	482
---------------------------------	-----

#### D10 Conveying

RD1010 Elevators & Lifts .....	483
--------------------------------	-----

#### D20 Plumbing

RD2010 Plumbing Fixtures .....	485
RD2020 Domestic Water Distribution .....	487

#### D30 HVAC

RD3010 Energy Supply .....	489
RD3020 Heat Generating Systems .....	490
RD3030 Cooling Generating Systems .....	491

#### D40 Fire Protection

RD4010 Sprinklers .....	494
RD4020 Standpipes .....	495

#### D50 Electrical

RD5010 Electrical Service & Distribution .....	497
RD5020 Lighting & Branch Wiring .....	517

#### G10 Site Preparation

RG1010 Site Clearing .....	521
RG1030 Site Earthwork .....	521

#### G20 Site Improvements

RG2020 Parking Lots .....	522
---------------------------	-----

### Reference Tables (cont.)

#### H General Conditions

RH1010 Overhead, Design & Engineering, Worker's Compensation .....	524
RH1020 Overhead & Miscellaneous Data & Overtime .....	528
RH1030 Sales Tax .....	528
RH1040 Temporary Supports .....	529

#### City Adjustments

RJ1010 Component Indexes .....	530
RJ1020 Historical Cost Indexes .....	531
RJ1030 City Cost Indexes .....	532
RJ1040 Location Factors .....	545

#### Square Foot Costs

RK1010 Square Foot Costs .....	551
--------------------------------	-----

#### Project Costs

RK1010 Project Costs .....	553
----------------------------	-----

#### Reference Aids

RL1010 Live Loads, Dead Loads, Wind Loads, & Snow Loads .....	556
RL1020 Area Requirements & Building Code Requirements .....	564
RL1030 "U" & "R" Values & Thermal Properties .....	568
RL1040 Construction Classification .....	576
RL1090 Conversion Factors .....	579

#### Estimating Forms

.....	582
-------	-----

#### Abbreviations

.....	588
-------	-----