TABLE OF CONTENTS

Part I—Administrative 1

CHAPTER 1 SCOPE AND ADMINISTRATION 1

PART 1—GENERAL PROVISIONS 1

Section

101 Scope and General Requirements. 1

102 Applicability 2

PART 2—ADMINISTRATIVE PROVISIONS 3

Section

103 Department of Fire Prevention 3

104 General Authority and Responsibilities 3

105 Permits and Certificates 6

106 Fees. 19

107 Inspections 19

108 Maintenance 20

109 Appeals. 20

110 Violations 21

111 Unsafe Buildings, Premises, Vehicles, and Vessels. 25

112 Stop Work or Use Order. 26

113 Service Utilities 26

CHAPTER 2 DEFINITIONS 27

Section

201 General 27

202 General Definitions 27

Part II—General Safety Provisions 71

CHAPTER 3 GENERAL REQUIREMENTS 71

Section

301 General 71

302 Definitions 71

303 Asphalt Kettles 71

304 Combustible Waste Material 72

305 Ignition Sources 73

306 Motion Picture Projection Rooms and Film. 73

307 Open Burning, Recreational Fires and Portable Outdoor Fireplaces 73

308 Open Flames. 74

309 Powered Industrial Trucks and Equipment 77

310 Smoking 77

311 Vacant Premises 78

312 Vehicle Impact Protection 79

313 Fueled Equipment. . . . 79
314 Indoor Displays 80
315 General Storage 80
316 Hazards to Fire Fighters 83
317 Rooftop Gardens and Landscaped Roofs 83
318 Laundry Carts 84
319 Mobile Food Preparation Vehicles. . . . 84

CHAPTER 4 EMERGENCY PLANNING AND PREPAREDNESS 87

Section
401 General 87
402 Definitions 88
403 Emergency Preparedness Requirements 88
404 Fire Safety and Evacuation Plans. . . . 94
405 Emergency Drills 96
406 Employee Training and Response Procedures 98
407 Hazard Communication 98

***Part III—Building and Equipment Design Features.* 101**

CHAPTER 5 FIRE SERVICE FEATURES 101

Section
501 General 101
502 Definitions 101
503 Fire Apparatus Access Roads. . . . 101
504 Access to Building Openings and Roofs 103
505 Premises Identification. . . . 103
506 Key Boxes 104
507 Fire Protection Water Supplies. . . . 105
508 Fire Command Center 106
509 Fire Protection and Utility Equipment Identification and Access 107
510 Emergency Responder Radio Coverage. . . . 107

CHAPTER 6 BUILDING SERVICES AND SYSTEMS 115

Section
601 General 115
602 Definitions 115
603 Fuel-Fired Appliances 115
604 Electrical Equipment, Wiring and Hazards 118
605 Mechanical Refrigeration. . . . 120
606 Elevator Operation, Maintenance and Fire Service Keys 123
607 Commercial Kitchen Hoods. . . . 124
608 Commercial Kitchen Cooking Oil Storage 126
609 Hyperbaric Facilities 126

CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES 127

Section

701 General 127
702 Definitions 128
703 Penetrations 128
704 Joints and Voids 128
705 Door and Window Openings 128
706 Duct and Air Transfer Openings 129
707 Concealed Spaces 129

CHAPTER 8 INTERIOR FINISH, DECORATIVE MATERIALS AND FURNISHINGS 131

Section

801 General 131
802 Definitions 131
803 Interior Wall and Ceiling Finish in Existing Buildings 131
804 Interior Wall and Ceiling Trim and Interior Floor Finish in New and Existing Buildings 134
805 Upholstered Furniture and Mattresses in New and Existing Buildings 135
806 Natural Decorative Vegetation in New and Existing Buildings 137
807 Decorative Materials and Artificial Decorative Vegetation in New and Existing Buildings 138
808 Furnishings Other Than Upholstered Furniture and Mattresses or Decorative Materials in New and Existing Buildings 140

CHAPTER 9 FIRE PROTECTION AND LIFE SAFETY SYSTEMS 143

Section

901 General 143
902 Definitions 147
903 Automatic Sprinkler Systems 148
904 Alternative Automatic Fire-Extinguishing Systems 158
905 Standpipe Systems 162
906 Portable Fire Extinguishers 165
907 Fire Alarm and Detection Systems 168
908 Emergency Alarm Systems 183
909 Smoke Control Systems 183
910 Smoke and Heat Removal 192
911 Explosion Control 194
912 Fire Department Connections 196
913 Fire Pumps 197
914 Fire Protection Based on Special Detailed Requirements of Use and Occupancy 197
915 Carbon Monoxide Detection 201
916 Gas Detection Systems 203
917 Mass Notification Systems 204
918 Alerting Systems 204

CHAPTER 10 MEANS OF EGRESS 205

Section

1001 Administration 205
1002 Definitions 205
1003 General Means of Egress 206
1004 Occupant Load 207
1005 Means of Egress Sizing 210
1006 Numbers of Exits and Exit Access Doorways 212
1007 Exit and Exit Access Doorway Configuration 215
1008 Means of Egress Illumination. 216
1009 Accessible Means of Egress. 217
1010 Doors, Gates and Turnstiles 221
1011 Stairways 231
1012 Ramps. 235
1013 Exit Signs 236
1014 Handrails 237
1015 Guards 239
1016 Exit Access. 240
1017 Exit Access Travel Distance. 241
1018 Aisles 243
1019 Exit Access Stairways and Ramps 243
1020 Corridors. 244
1021 Egress Balconies. 246
1022 Exits 246
1023 Interior Exit Stairways and Ramps. 246
1024 Exit Passageways 249
1025 Luminous Egress Path Markings 251
1026 Horizontal Exits 252
1027 Exterior Exit Stairways and Ramps 253
1028 Exit Discharge 254
1029 Assembly 255
1030 Emergency Escape and Rescue 263
1031 Maintenance of the Means of Egress 264

CHAPTER 11 REQUIREMENTS FOR EXISTING BUILDINGS 267

Section

1101 General 267
1102 Definitions 267
1103 Fire Safety Requirements for Existing Buildings. 267
1104 Means of Egress for Existing Buildings. 275
1105 Requirements for Existing Group I-2. 280
1106 Requirements for Outdoor Operations 285

CHAPTER 12 ENERGY SYSTEMS 287
Section
1201 General 287
1202 Definitions 287
1203 Emergency and Legally Required Standby Power Systems 287
1204 Solar Photovoltaic Power Systems 290
1205 Stationary Fuel Cell Power Systems 292
1206 Electrical Energy Storage Systems 294

CHAPTERS 13 through 19 RESERVED 303

***Part IV—Special Occupancies and Operations* 305**

CHAPTER 20 AVIATION FACILITIES 305
Section
2001 General 305
2002 Definitions 305
2003 General Precautions 305
2004 Aircraft Maintenance 306
2005 Portable Fire Extinguishers 306
2006 Aircraft Fueling 307
2007 Helistops and Heliports 312

CHAPTER 21 DRY CLEANING 313
Section
2101 General 313
2102 Definitions 313
2103 Classifications 313
2104 General Requirements 314
2105 Operating Requirements 314
2106 Spotting and Pretreating 315
2107 Dry Cleaning Systems 315
2108 Fire Protection 316

CHAPTER 22 COMBUSTIBLE DUST-PRODUCING OPERATIONS 317
Section
2201 General 317
2202 Definition 317
2203 Precautions 317
2204 Additional Requirements 317

CHAPTER 23 MOTOR FUEL-DISPENSING FACILITIES AND REPAIR GARAGES 319
Section
2301 General 319
2302 Definitions 319

2303 Location of Dispensing Devices. . . . 320
2304 Dispensing Operations . . . 320
2305 Operational Requirements . . . 321
2306 Flammable and Combustible Liquid Motor Fuel-Dispensing Facilities . . . 322
2307 Liquefied Petroleum Gas Motor Fuel-Dispensing Facilities . . . 327
2308 Compressed Natural Gas Motor Fuel-Dispensing Facilities . . . 328
2309 Hydrogen Motor Fuel-Dispensing and Generation Facilities . . . 330
2310 Marine Motor Fuel-Dispensing Facilities . . . 332
2311 Repair Garages . . . 334

CHAPTER 24 FLAMMABLE FINISHES . . . 339
Section
2401 General . . . 339
2402 Definitions . . . 339
2403 Protection of Operations. . . . 340
2404 Spray Finishing. . . . 341
2405 Dipping Operations . . . 346
2406 Powder Coating . . . 347
2407 Electrostatic Apparatus. . . . 348
2408 Organic Peroxides and Dual-Component Coatings . . . 349
2409 Indoor Manufacturing of Reinforced Plastics . . . 349
2410 Floor Surfacing and Finishing Operations . . . 350

CHAPTER 25 FRUIT AND CROP RIPENING . . . 351
Section
2501 General . . . 351
2502 Definitions . . . 351
2503 Ethylene Gas. . . . 351
2504 Sources of Ignition . . . 351
2505 Combustible Waste. . . . 351
2506 Ethylene Generators . . . 352
2507 Warning Signs . . . 352

CHAPTER 26 FUMIGATION AND INSECTICIDAL FOGGING . . . 353
Section
2601 General . . . 353
2602 Definitions . . . 353
2603 Fire Safety Requirements . . . 353

CHAPTER 27 SEMICONDUCTOR FABRICATION FACILITIES . . . 355
Section
2701 General . . . 355
2702 Definitions . . . 355
2703 General Safety Provisions . . . 355
2704 Storage . . . 360

2705 Use and Handling 362

CHAPTER 28 LUMBER YARDS AND AGRO-INDUSTRIAL, SOLID BIOMASS AND WOODWORKING FACILITIES 367

Section

2801 General 367
2802 Definitions 367
2803 General Requirements 367
2804 Fire Protection 368
2805 Plywood, Veneer and Composite Board Mills 368
2806 Log Storage Areas 368
2807 Storage of Wood Chips and Hogged Material Associated With Timber and Lumber Production Facilities 369
2808 Storage and Processing of Wood Chips, Hogged Material, Fines, Compost, Solid Biomass Feedstock and Raw Product Associated With Yard Waste, Agro-Industrial and Recycling Facilities 369
2809 Exterior Storage of Finished Lumber and Solid Biofuel Products. 370
2810 Outdoor Storage of Pallets At Pallet Manufacturing and Recycling Facilities 370

CHAPTER 29 MANUFACTURE OF ORGANIC COATINGS. 373

Section

2901 General 373
2902 Definition 373
2903 General Precautions 373
2904 Electrical Equipment and Protection 374
2905 Process Structures. 374
2906 Process Mills and Kettles 374
2907 Process Piping 375
2908 Raw Materials in Process Areas 375
2909 Raw Materials and Finished Products 375

CHAPTER 30 INDUSTRIAL OVENS 377

Section

3001 General 377
3002 Definitions 377
3003 Location 377
3004 Fuel Piping 377
3005 Interlocks 378
3006 Fire Protection 378
3007 Operation and Maintenance 378

CHAPTER 31 TENTS, TEMPORARY SPECIAL EVENT STRUCTURES AND OTHER MEMBRANE STRUCTURES 379

Section

3101 General 379
3102 Definitions 379
3103 Temporary Tents and Membrane Structures 379
3104 Temporary and Permanent Tents and Membrane Structures 382

3105 Temporary Special Event Structures 383
3106 Outdoor Assembly Events 383
3107 Operational Requirements 385

CHAPTER 32 HIGH-PILED COMBUSTIBLE STORAGE 387
Section
3201 General 387
3202 Definitions 388
3203 Commodity Classification 388
3204 Designation of High-Piled Storage Areas 400
3205 Housekeeping and Maintenance. 401
3206 General Fire Protection and Life Safety Features 401
3207 Solid-Piled and Shelf Storage. 404
3208 Rack Storage. 405
3209 Automated Storage 406
3210 Specialty Storage 406

CHAPTER 33 FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION. 407
Section
3301 General 407
3302 Definitions 407
3303 Temporary Heating Equipment 407
3304 Precautions Against Fire 409
3305 Flammable and Combustible Liquids. 411
3306 Flammable Gases 413
3307 Explosive Materials 413
3308 Owner’s Responsibility for Fire Protection 413
3309 Fire Reporting. 414
3310 Access for Fire Fighting. 415
3311 Means of Egress 415
3312 Water Supply for Fire Protection 415
3313 Standpipes 416
3314 Automatic Sprinkler System 416
3315 Portable Fire Extinguishers 416
3316 Motorized Construction Equipment 417
3317 Safeguarding Roofing Operations 417
3318 Demolition 417

CHAPTER 34 TIRE REBUILDING AND TIRE STORAGE 419
Section
3401 General 419
3402 Definitions 419
3403 Tire Rebuilding. 419
3404 Precautions Against Fire 419
3405 Outdoor Storage 420

3406 Fire Department Access 420
3407 Fencing 420
3408 Fire Protection 420
3409 Indoor Storage Arrangement 421

CHAPTER 35 WELDING AND OTHER HOT WORK 423
Section
3501 General 423
3502 Definitions 423
3503 General Requirements 423
3504 Fire Safety Requirements 424
3505 Gas Welding and Cutting 425
3506 Electric Arc Hot Work 426
3507 Calcium Carbide Systems 426
3508 Acetylene Generators 426
3509 Piping Manifolds and Hose Systems for Fuel Gases and Oxygen 426
3510 Hot Work on Flammable and Combustible Liquid Storage Tanks 427
3511 Thermit Welding 427

CHAPTER 36 MARINAS AND BOATYARDS 429
Section
3601 Scope 429
3602 Definitions 429
3603 General Precautions 430
3604 Fire Protection Equipment 430
3605 Marine Motor Fuel-Dispensing Facilities 432

CHAPTER 37 COMBUSTIBLE FIBERS 433
Section
3701 General 433
3702 Definitions 433
3703 General Precautions 433
3704 Loose Fiber Storage 434
3705 Baled Storage 434

CHAPTER 38 HIGHER EDUCATION LABORATORIES 435
Section
3801 General 435
3802 Definitions 435
3803 General Safety Provisions 435
3804 Laboratory Suite Construction 436
3805 Nonsprinklered Laboratories 437
3806 Existing Sprinklered Laboratories 438

CHAPTER 39 PROCESSING AND EXTRACTION FACILITIES 441
Section
3901 General 441
3902 Definitions 441
3903 Processing and Extraction 441
3904 Systems and Equipment 442
3905 Safety Systems 443

CHAPTER 40 FIXED GUIDEWAY TRANSIT AND PASSENGER RAIL SYSTEMS 445
Section
4001 Fixed Guideway Transit and Passenger Rail System 445

CHAPTER 41 ROAD TUNNELS, BRIDGES AND OTHER LIMITED ACCESS HIGHWAYS 455
Section
4101 Scope 455

CHAPTERS 42 through 49 RESERVED 465

***Part V—Hazardous Materials* 467**

CHAPTER 50 HAZARDOUS MATERIALS—GENERAL PROVISIONS 467
Section
5001 General 467
5002 Definitions 470
5003 General Requirements 471
5004 Storage 486
5005 Use, Dispensing and Handling 489

CHAPTER 51 AEROSOLS 495
Section
5101 General 495
5102 Definitions 495
5103 Classification of Aerosol Products 495
5104 Inside Storage of Aerosol Products 496
5105 Outside Storage 499
5106 Retail Display 499
5107 Manufacturing Facilities 501

CHAPTER 52 RESERVED 503

CHAPTER 53 COMPRESSED GASES 505
Section
5301 General 505
5302 Definitions 505
5303 General Requirements 505
5304 Storage of Compressed Gases 509

5305 Use and Handling of Compressed Gases . . . 509
5306 Medical Gases . . . 510
5307 Compressed Gases Not Otherwise Regulated . . . 511

CHAPTER 54 CORROSIVE MATERIALS . . . 515
Section
5401 General . . . 515
5402 Definition . . . 515
5403 General Requirements . . . 515
5404 Storage . . . 515
5405 Use . . . 516

CHAPTER 55 CRYOGENIC FLUIDS . . . 517
Section
5501 General . . . 517
5502 Definitions . . . 517
5503 General Requirements . . . 517
5504 Storage . . . 519
5505 Use and Handling . . . 521

CHAPTER 56 EXPLOSIVES AND FIREWORKS . . . 523
Section
5601 General . . . 523
5602 Definitions . . . 526
5603 Record Keeping and Reporting . . . 527
5604 Explosive Materials Storage and Handling . . . 528
5605 Manufacture, Assembly and Testing of Explosives, Explosive Materials and Fireworks . . . 534
5606 Small Arms Ammunition and Small Arms Ammunition Components . . . 538
5607 Blasting . . . 539
5608 Fireworks Display . . . 540
5609 Temporary Storage of Consumer Fireworks . . . 542

CHAPTER 57 FLAMMABLE AND COMBUSTIBLE LIQUIDS . . . 543
Section
5701 General . . . 543
5702 Definitions . . . 544
5703 General Requirements . . . 544
5704 Storage . . . 548
5705 Dispensing, Use, Mixing and Handling . . . 571
5706 Special Operations . . . 576
5707 On-Demand Mobile Fueling Operations . . . 586

CHAPTER 58 FLAMMABLE GASES AND FLAMMABLE CRYOGENIC FLUIDS . . . 589
Section
5801 General . . . 589

5802 Definitions . . . 589
5803 General Requirements . . . 589
5804 Storage . . . 590
5805 Use . . . 591
5806 Flammable Cryogenic Fluids . . . 591
5807 Metal Hydride Storage Systems . . . 592
5808 Hydrogen Fuel Gas Rooms . . . 593

CHAPTER 59 FLAMMABLE SOLIDS . . . 595
Section
5901 General . . . 595
5902 Definitions . . . 595
5903 General Requirements . . . 595
5904 Storage . . . 595
5905 Use . . . 596
5906 Magnesium . . . 596

CHAPTER 60 HIGHLY TOXIC AND TOXIC MATERIALS . . . 599
Section
6001 General . . . 599
6002 Definitions . . . 599
6003 Highly Toxic and Toxic Solids and Liquids . . . 599
6004 Highly Toxic and Toxic Compressed Gases . . . 600
6005 Ozone Gas Generators . . . 605

CHAPTER 61 LIQUEFIED PETROLEUM GASES . . . 607
Section
6101 General . . . 607
6102 Definitions . . . 607
6103 Installation of Equipment . . . 607
6104 Location of LP-Gas Containers . . . 608
6105 Prohibited Use of LP-Gas. . . . 610
6106 Dispensing and Overfilling . . . 610
6107 Safety Precautions and Devices . . . 610
6108 Fire Protection . . . 610
6109 Storage of Portable LP-Gas Containers Awaiting Use or Resale . . . 610
6110 LP-Gas Containers Not in Service . . . 612
6111 Parking and Garaging of LP-Gas Tank Vehicles . . . 613

CHAPTER 62 ORGANIC PEROXIDES . . . 615
Section
6201 General . . . 615
6202 Definition . . . 615
6203 General Requirements . . . 615
6204 Storage . . . 616

6205 Use 617

CHAPTER 63 OXIDIZERS, OXIDIZING GASES AND OXIDIZING CRYOGENIC FLUIDS 619

Section

6301 General 619
6302 Definitions 619
6303 General Requirements 619
6304 Storage 620
6305 Use 622
6306 Liquid Oxygen in Home Health Care. 623

CHAPTER 64 PYROPHORIC MATERIALS 625

Section

6401 General 625
6402 Definition 625
6403 General Requirements 625
6404 Storage 625
6405 Use 626

CHAPTER 65 PYROXYLIN (CELLULOSE NITRATE) PLASTICS 627

Section

6501 General 627
6502 Definitions 627
6503 General Requirements 627
6504 Storage and Handling 627

CHAPTER 66 UNSTABLE (REACTIVE) MATERIALS 629

Section

6601 General 629
6602 Definition 629
6603 General Requirements 629
6604 Storage 630
6605 Use 630

CHAPTER 67 WATER-REACTIVE SOLIDS AND LIQUIDS 631

Section

6701 General 631
6702 Definition 631
6703 General Requirements 631
6704 Storage 631
6705 Use 632

CHAPTERS 68 through 79 RESERVED 633

Part VI—Referenced Standards **635**

CHAPTER 80 REFERENCED STANDARDS. **635**

CHAPTER 90 RESIDENTIAL OCCUPANCIES FOUR STORIES AND OVER. **651**

Section

9001 General 651

9002 Conflicts With Later Adopted Codes 651

CHAPTER 91 AUTOMATIC SPRINKLER SYSTEMS IN NURSING HOMES **653**

Section

9101 Scope 653

9102 Installation of Equipment 653

9103 Conflicts With Later Adopted Codes 653

CHAPTER 92 AUTOMATIC SPRINKLER SYSTEMS IN SCHOOLS. **655**

Section

9201 General 655

9202 Installation of Equipment 655

9203 Conflicts With Later Adopted Codes 655

CHAPTER 93 MINIMUM STANDARDS FOR HIGH-RISE BUILDINGS. **657**

Section

9301 General 657

9302 Exits 658

9303 Dead-End Corridors 659

9304 Fire Resistive Construction 659

9305 Heating, Ventilation and Air Conditioning System (HVAC) Shutdown 660

9306 Fire Alarm and Detection Systems. 660

9307 Emergency Power. 661

9308 Sign Requirements 661

9309 Emergency Preparedness 661

CHAPTER 94 FIRE PROTECTION FOR COVERED BOAT MOORAGE. **663**

Section

9401 General 663

9402 Definitions 663

9403 Plans and Approvals. 664

9404 Access and Water Supply. 664

9405 Fire Protection Equipment 664

9406 Emergency Plans and Training. 666

9407 Operational Hazards. 666

9408 Compliance. 667

Part VII—Appendices **669**

APPENDIX A BOARD OF APPEALS **669**
Section
A101 General 669

APPENDIX B FIRE-FLOW REQUIREMENTS FOR BUILDINGS **673**
Section
B101 General 673
B102 Definitions 673
B103 Modifications 673
B104 Fire-Flow Calculation Area 673
B105 Fire-Flow Requirements for Buildings. 674
B106 Referenced Standards 676

APPENDIX C FIRE HYDRANT LOCATIONS AND DISTRIBUTION
Not adopted in Seattle

APPENDIX D FIRE APPARATUS ACCESS ROADS **677**
Section
D101 General 677
D102 Required Access 677
D103 Minimum Specifications 677
D104 Commercial and Industrial Developments 681
D105 Aerial Fire Apparatus Access Roads 681
D106 Multiple-Family Residential Developments 682
D107 One- or Two-Family Residential Developments 682
D108 Referenced Standards 682

APPENDIX E HAZARD CATEGORIES **683**
Section
E101 General 683
E102 Hazard Categories 683
E103 Evaluation of Hazards 687
E104 Referenced Standards 688

APPENDIX F HAZARD RANKING **689**
Section
F101 General 689
F102 Referenced Standard. 690

APPENDIX G CRYOGENIC FLUIDS—WEIGHT AND VOLUME EQUIVALENTS **691**
Section
G101 General 691

APPENDIX H HAZARDOUS MATERIALS MANAGEMENT PLAN (HMMP) AND HAZARDOUS MATERIALS INVENTORY STATEMENT (HMIS) INSTRUCTIONS 693

Section

H101 HMMP 693

H102 HMIS 693

H103 Emergency Plan 694

H104 Referenced Standard. 694

APPENDIX I FIRE PROTECTION SYSTEMS—NONCOMPLIANT CONDITIONS 701

Section

I101 Noncompliant Conditions. 701

I102 Referenced Standards 702

APPENDIX J BUILDING INFORMATION SIGN
Not adopted in Seattle

APPENDIX K CONSTRUCTION REQUIREMENTS FOR EXISTING AMBULATORY CARE FACILITIES
Not adopted in Seattle

APPENDIX L REQUIREMENTS FOR FIRE FIGHTER AIR REPLENISHMENT SYSTEMS
Not adopted in Seattle

APPENDIX M HIGH-RISE BUILDINGS—RETROACTIVE AUTOMATIC SPRINKLER REQUIREMENT
Not adopted in Seattle

APPENDIX N INDOOR TRADE SHOWS AND EXHIBITIONS
Not adopted in Seattle

INDEX 703