

TABLE OF CONTENTS

CHAPTER 1 ADMINISTRATION	1	403 Public Assemblages and Events	33
Section		404 Fire Safety and Evacuation Plans	33
101 General	1	405 Emergency Evacuation Drills	34
102 Applicability	1	406 Employee Training and Response Procedures . . .	35
103 Department of Fire Prevention	2	407 Hazard Communication	35
104 General Authority and Responsibilities	2	408 Use and Occupancy-Related Requirements	35
105 Permits	3		
106 Inspections	10	CHAPTER 5 FIRE SERVICE FEATURES	39
107 Maintenance	10	Section	
108 Board of Appeals	11	501 General	39
109 Violations	11	502 Definitions	39
110 Unsafe Buildings	12	503 Fire Apparatus Access Roads	39
111 Stop Work Order	12	504 Access to Building Openings and Roofs	40
		505 Premises Identification	40
CHAPTER 2 DEFINITIONS	13	506 Key Boxes	40
Section		507 Hazards to Fire Fighters	41
201 General	13	508 Fire Protection Water Supplies	41
202 General Definitions	13	509 Fire Command Center	41
		510 Fire Department Access to Equipment	42
CHAPTER 3 GENERAL PRECAUTIONS AGAINST FIRE	25		
Section		CHAPTER 6 BUILDING SERVICES AND SYSTEMS	43
301 General	25	Section	
302 Definitions	25	601 General	43
303 Asphalt Kettles	25	602 Definitions	43
304 Combustible Waste Material	25	603 Fuel-Fired Appliances	43
305 Ignition Sources	26	604 Emergency and Standby Power Systems	45
306 Motion Picture Film and Screens	26	605 Electrical Equipment, Wiring and Hazards	47
307 Open Burning	26	606 Mechanical Refrigeration	48
308 Open Flames	27	607 Elevator Recall and Maintenance	49
309 Powered Industrial Trucks	28	608 Stationary Lead-Acid Battery Systems	50
310 Smoking	28	609 Commercial Kitchen Hoods	50
311 Vacant Premises	29		
312 Vehicle Impact Protection	29	CHAPTER 7 FIRE-RESISTANCE-RATED CONSTRUCTION	53
313 Fueled Equipment	30	Section	
314 Indoor Displays	30	701 General	53
315 Miscellaneous Combustible Materials Storage . . .	30	702 Definitions	53
		703 Fire-Resistance-Rated Construction	53
CHAPTER 4 EMERGENCY PLANNING AND PREPAREDNESS	33	704 Floor Openings and Shafts	53
Section			
401 General	33		
402 Definitions	33		

TABLE OF CONTENTS

CHAPTER 8 INTERIOR FINISH, DECORATIVE MATERIALS AND FURNISHINGS 55

Section

801 General 55
802 Definitions 55
803 Furnishings 55
804 Decorative Vegetation 57
805 Decorations and Trim 57
806 Interior Finish and Decorative Materials 58

CHAPTER 9 FIRE PROTECTION SYSTEMS 61

Section

901 General 61
902 Definitions 62
903 Automatic Sprinkler Systems 64
904 Alternative Automatic Fire-Extinguishing Systems 69
905 Standpipe Systems 72
906 Portable Fire Extinguishers 74
907 Fire Alarm and Detection Systems 75
908 Emergency Alarm Systems 84
909 Smoke Control Systems 84
910 Smoke and Heat Vents 91
911 Explosion Control 93
912 Fire Department Connections 94
913 Fire Pumps 95

CHAPTER 10 MEANS OF EGRESS 97

Section

1001 General 97
1002 Definitions 97
1003 General Means of Egress 98
1004 Exit Access 113
1005 Exits 117
1006 Exit Discharge 121
1007 Miscellaneous Means of Egress Requirements 122
1008 Assembly 123
1009 Emergency Escape and Rescue 127
1010 Means of Egress for Existing Buildings 128
1011 Maintenance of the Means of Egress 132

CHAPTER 11 AVIATION FACILITIES 133

Section

1101 General 133
1102 Definitions 133
1103 General Precautions 133
1104 Aircraft Maintenance 133
1105 Portable Fire Extinguishers 134
1106 Aircraft Fueling 134
1107 Helistops and Heliports 139

CHAPTER 12 DRY CLEANING 141

Section

1201 General 141
1202 Definitions 141
1203 Classifications 141
1204 General Requirements 141
1205 Operating Requirements 142
1206 Spotting and Pretreating 142
1207 Dry Cleaning Systems 143
1208 Fire Protection 143

CHAPTER 13 COMBUSTIBLE DUST-PRODUCING OPERATIONS 145

Section

1301 General 145
1302 Definitions 145
1303 Precautions 145
1304 Explosion Protection 145

CHAPTER 14 FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION 147

Section

1401 General 147
1402 Definitions 147
1403 Temporary Heating Equipment 147
1404 Precautions Against Fire 147
1405 Flammable and Combustible Liquids 147
1406 Flammable Gases 148
1407 Explosive Materials 148
1408 Owner's Responsibility for Fire Protection 148
1409 Fire Alarm Reporting 148
1410 Access for Fire Fighting 148
1411 Means of Egress 148
1412 Standpipes 148
1413 Automatic Sprinkler System 149

1414 Portable Fire Extinguishers 149
 1415 Motorized Equipment 149
 1416 Safeguarding Roofing Operations 149

CHAPTER 15 FLAMMABLE FINISHES 151

Section
 1501 General 151
 1502 Definitions 151
 1503 Protection of Operations 151
 1504 Spray Finishing 153
 1505 Dipping Operations 156
 1506 Electrostatic Apparatus 157
 1507 Powder Coating 158
 1508 Automobile Undercoating 159
 1509 Organic Peroxides and Dual-Component
 Coatings 159
 1510 Floor Surfacing and Finishing Operations 159
 1511 Manufacturing of Glass-Fiber-Reinforced
 Plastics 159

CHAPTER 16 FRUIT AND CROP RIPENING 161

Section
 1601 General 161
 1602 Definitions 161
 1603 Ethylene Gas 161
 1604 Sources of Ignition 161
 1605 Combustible Waste 161
 1606 Ethylene Generators 161
 1607 Warning Signs 161

**CHAPTER 17 FUMIGATION AND THERMAL
 INSECTICIDAL FOGGING 163**

Section
 1701 General 163
 1702 Definitions 163
 1703 Fire Safety Requirements 163

**CHAPTER 18 SEMICONDUCTOR FABRICATION
 FACILITIES 165**

Section
 1801 General 165
 1802 Definitions 165
 1803 General Safety Provisions 165
 1804 Storage 169
 1805 Use and Handling 169

**CHAPTER 19 LUMBER YARDS AND
 WOODWORKING FACILITIES . . . 173**

Section
 1901 General 173
 1902 Definitions 173
 1903 General Requirements 173
 1904 Fire Protection 173
 1905 Plywood, Veneer and Composite Board
 Mills 174
 1906 Log Storage Areas 174
 1907 Storage of Wood Chips and Hogged Material in
 Association With Timber and Lumber
 Production Facilities 174
 1908 Storage and Processing of Wood Chips, Hogged
 Material, Fines, Compost and Raw Product in
 Association With Yard Waste and Recycling
 Facilities 174
 1909 Exterior Storage of Finished Lumber
 Products 175

**CHAPTER 20 MANUFACTURE OF ORGANIC
 COATINGS 177**

Section
 2001 General 177
 2002 Definitions 177
 2003 General Precautions 177
 2004 Electrical Equipment and Protection 177
 2005 Process Structures 178
 2006 Process Mills and Kettles 178
 2007 Process Piping 178
 2008 Raw Materials in Process Areas 179
 2009 Raw Materials and Finished Products 179

CHAPTER 21 INDUSTRIAL OVENS 181

Section
 2101 General 181
 2102 Definitions 181
 2103 Location 181
 2104 Fuel Piping 181
 2105 Interlocks 181
 2106 Fire Protection 182
 2107 Operation and Maintenance 182

**CHAPTER 22 SERVICE STATIONS AND REPAIR
 GARAGES 183**

Section
 2201 General 183
 2202 Definitions 183

TABLE OF CONTENTS

2203 Location of Dispensing Devices 183
2204 Dispensing Operations 184
2205 Operational Requirements 184
2206 Flammable and Combustible Liquids 185
2207 Liquefied Petroleum Gas Motor-Vehicle
Fuel-Dispensing Stations 189
2208 Compressed Natural Gas Motor-Vehicle
Fuel-Dispensing Stations 190
2209 Marine Service Stations 191
2210 Repair Garages 192

**CHAPTER 23 HIGH-PILED COMBUSTIBLE
STORAGE 195**

Section

2301 General 195
2302 Definitions 195
2303 Commodity Classification 196
2304 Designation of High-Piled Storage Areas 199
2305 Housekeeping and Maintenance 199
2306 General Fire Protection and Life Safety
Features 199
2307 Solid-Piled and Shelf Storage 201
2308 Rack Storage 201
2309 Automated Storage 202
2310 Specialty Storage 203

**CHAPTER 24 TENTS AND OTHER MEMBRANE
STRUCTURES 205**

Section

2401 General 205
2402 Definitions 205
2403 Access, Location and Parking 205
2404 Structural Stability 206
2405 Air-Supported and Air-Inflated Structures 206
2406 Fire Safety Requirements 206
2407 Fire Extinguisher and Other Fire Protection
Equipment 207
2408 Occupant Load 207
2409 Seating 207
2410 Means of Egress 207
2411 Heating and Cooking Equipment 208
2412 LP-Gas 208
2413 Flammable and Combustible Liquids 208
2414 Liquid- and Gas-Fueled Vehicles 209
2415 Generators 209
2416 Standby Personnel 209
2417 Housekeeping 209

**CHAPTER 25 TIRE REBUILDING AND TIRE
STORAGE 211**

Section

2501 General 211
2502 Definitions 211
2503 Tire Rebuilding 211
2504 Precautions Against Fire 211
2505 Outdoor Storage 211
2506 Fire Department Access 212
2507 Fencing 212
2508 Fire Protection 212
2509 Indoor Storage Arrangement 212

**CHAPTER 26 WELDING AND OTHER HOT
WORK 213**

Section

2601 General 213
2602 Definitions 213
2603 General Requirements 213
2604 Fire Safety Requirements 213
2605 Gas Welding and Cutting 214
2606 Electric Arc Hot Work 215
2607 Calcium Carbide Systems 215
2608 Acetylene Generators 215
2609 Piping Manifolds and Hose Systems for
Fuel Gases and Oxygen 215

**CHAPTER 27 HAZARDOUS
MATERIALS—GENERAL
PROVISIONS 217**

Section

2701 General 217
2702 Definitions 218
2703 General Requirements 220
2704 Storage 232
2705 Use, Dispensing and Handling 235

CHAPTER 28 AEROSOLS 239

Section

2801 General 239
2802 Definitions 239
2803 Classification of Aerosol Products 239
2804 Inside Storage of Aerosol Products 239
2805 Outside Storage 241
2806 Retail Display 242
2807 Manufacturing Facilities 242

CHAPTER 29 COMBUSTIBLE FIBERS 243

Section

2901 General 243

2902 Definitions 243

2903 General Precautions 243

2904 Loose Fiber Storage 243

2905 Baled Storage 243

CHAPTER 30 COMPRESSED GASES 245

Section

3001 General 245

3002 Definitions 245

3003 General Requirements 245

3004 Storage of Compressed Gases 247

3005 Use and Handling of Compressed Gases 247

3006 Medical Gas Systems 248

CHAPTER 31 CORROSIVE MATERIALS 249

Section

3101 General 249

3102 Definitions 249

3103 General Requirements 249

3104 Storage 249

3105 Use 249

CHAPTER 32 CRYOGENIC FLUIDS 251

Section

3201 General 251

3202 Definitions 251

3203 General Requirements 251

3204 Storage 253

3205 Use and Handling 254

CHAPTER 33 EXPLOSIVES AND FIREWORKS 257

Section

3301 General 257

3302 Definitions 258

3303 Record Keeping and Reporting 260

3304 Explosive Materials Storage and Handling 261

3305 Manufacture, Assembly and Testing of Explosives, Explosive Materials and Fireworks 267

3306 Small Arms Ammunition 269

3307 Blasting 270

3308 Fireworks Display 271

CHAPTER 34 FLAMMABLE AND COMBUSTIBLE LIQUIDS 273

Section

3401 General 273

3402 Definitions 273

3403 General Requirements 274

3404 Storage 278

3405 Dispensing, Use, Mixing and Handling 298

3406 Special Operations 302

CHAPTER 35 FLAMMABLE GASES 311

Section

3501 General 311

3502 Definitions 311

3503 General Requirements 311

3504 Storage 312

3505 Use 312

CHAPTER 36 FLAMMABLE SOLIDS 313

Section

3601 General 313

3602 Definitions 313

3603 General Requirements 313

3604 Storage 313

3605 Use 313

3606 Magnesium 313

CHAPTER 37 HIGHLY TOXIC AND TOXIC MATERIALS 315

Section

3701 General 315

3702 Definitions 315

3703 Highly Toxic and Toxic Solids and Liquids 316

3704 Highly Toxic and Toxic Compressed Gases 317

3705 Ozone Gas Generators 321

CHAPTER 38 LIQUEFIED PETROLEUM GASES 323

Section

3801 General 323

3802 Definitions 323

3803 Installation of Equipment 323

3804 Location of Containers 324

3805 Prohibited Use of LP-Gas 325

3806 Dispensing and Overfilling 325

3807 Safety Precautions and Devices 325

TABLE OF CONTENTS

3808 Fire Protection 325
3809 Storage of Portable LP-Gas Containers Awaiting
Use or Resale 325
3810 Containers Not in Service 326
3811 Parking and Garaging 327

CHAPTER 39 ORGANIC PEROXIDES 329

Section

3901 General 329
3902 Definitions 329
3903 General Requirements 329
3904 Storage 329
3905 Use 331

CHAPTER 40 OXIDIZERS 333

Section

4001 General 333
4002 Definitions 333
4003 General Requirements 333
4004 Storage 334
4005 Use 335

CHAPTER 41 PYROPHORIC MATERIALS 337

Section

4101 General 337
4102 Definitions 337
4103 General Requirements 337
4104 Storage 337
4105 Use 337
4106 Silane Gas 338

**CHAPTER 42 PYROXYLIN (CELLULOSE
NITRATE) PLASTICS 341**

4201 General 341
4202 Definitions 341
4203 General Requirements 341
4204 Storage and Handling 341

**CHAPTER 43 UNSTABLE (REACTIVE)
MATERIALS 343**

Section

4301 General 343
4302 Definitions 343
4303 General Requirements 343
4304 Storage 344
4305 Use 344

**CHAPTER 44 WATER-REACTIVE SOLIDS AND
LIQUIDS 345**

Section

4401 General 345
4402 Definitions 345
4403 General Requirements 345
4404 Storage 345
4405 Use 346

CHAPTER 45 REFERENCED STANDARDS 347

APPENDIX A BOARD OF APPEALS 355

Section

A101 General 355

**APPENDIX B FIRE-FLOW REQUIREMENTS FOR
BUILDINGS 357**

Section

B101 General 357
B102 Definitions 357
B103 Modifications 357
B104 Fire Area 357
B105 Fire-Flow Requirements for Buildings 357

**APPENDIX C FIRE HYDRANT LOCATIONS AND
DISTRIBUTION 359**

Section

C101 General 359
C102 Location 359
C103 Number of Fire Hydrants 359
C104 Consideration of Existing Fire Hydrants 359
C105 Distribution of Fire Hydrants 359

**APPENDIX D FIRE APPARATUS ACCESS
ROADS 361**

Section

D101 General 361
D102 Required Access 361
D103 Minimum Specifications 361
D104 Commercial and Industrial Developments 362
D105 Aerial Fire Apparatus Access Roads 362
D106 Multiple-Family Residential Developments ... 362
D107 One- or Two-Family Residential
Developments 363

APPENDIX E HAZARD CATEGORIES 365
Section
E101 General 365
E102 Hazard Categories 365
E103 Evaluation of Hazards 368

APPENDIX F HAZARD RANKING 371
Section
F101 General 371

**APPENDIX G CRYOGENIC FLUIDS—WEIGHT
AND VOLUME EQUIVALENTS ... 373**
Section
G101 General 373

INDEX 375