

TABLE OF CONTENTS

709 Smoke Barriers 96
 710 Smoke Partitions 96
 711 Horizontal Assemblies 96
 712 Penetrations 97
 713 Fire-resistant Joint Systems 99
 714 Fire-resistance Rating of Structural Members . . . 99
 715 Opening Protectives 100
 716 Ducts and Air Transfer Openings 103
 717 Concealed Spaces 107
 718 Fire-resistance Requirements for Plaster 108
 719 Thermal- and Sound-Insulating Materials 109
 720 Prescriptive Fire Resistance 109
 721 Calculated Fire Resistance 110

CHAPTER 8 INTERIOR FINISHES 157

Section
 801 General 157
 802 Definitions 157
 803 Wall and Ceiling Finishes 157
 804 Interior Floor Finish 160
 805 Decorations and Trim 160

CHAPTER 9 FIRE PROTECTION SYSTEMS . . . 163

Section
 901 General 163
 902 Definitions 163
 903 Automatic Sprinkler Systems 166
 904 Alternative Automatic
 Fire-Extinguishing Systems 170
 905 Standpipe Systems 171
 906 Portable Fire Extinguishers 173
 907 Fire Alarm and Detection Systems 173
 908 Emergency Alarm Systems 180
 909 Smoke Control Systems 181
 910 Smoke and Heat Vents 189
 911 Fire Command Center 191

CHAPTER 10 MEANS OF EGRESS 193

Section
 1001 Administration 193
 1002 Definitions 193
 1003 General Means of Egress 194
 1004 Occupant Load 195
 1005 Egress Width 196
 1006 Means of Egress Illumination 197
 1007 Accessible Means of Egress 197
 1008 Doors, Gates and Turnstiles 199
 1009 Stairways and Handrails 204

1010 Ramps 206
 1011 Exit Signs 207
 1012 Guards 208
 1013 Exit Access 209
 1014 Exit and Exit Access Doorways 210
 1015 Exit Access Travel Distance 211
 1016 Corridors 212
 1017 Exits 213
 1018 Number of Exits and Continuity 213
 1019 Vertical Exit Enclosures 214
 1020 Exit Passageways 216
 1021 Horizontal Exits 216
 1022 Exterior Exit Ramps and Stairways 217
 1023 Exit Discharge 217
 1024 Assembly 219
 1025 Emergency Escape and Rescue 223

CHAPTER 11 ACCESSIBILITY 225

Section
 1101 General 225
 1102 Definitions 225
 1103 Scoping Requirements 225
 1104 Accessible Route 226
 1105 Accessible Entrances 227
 1106 Parking and Passenger Loading Facilities 228
 1107 Dwelling Units and Sleeping Units 228
 1108 Special Occupancies 231
 1109 Other Features and Facilities 233
 1110 Signage 236

CHAPTER 12 INTERIOR ENVIRONMENT 239

Section
 1201 General 239
 1202 Definitions 239
 1203 Ventilation 239
 1204 Temperature Control 240
 1205 Lighting 240
 1206 Yards or Courts 241
 1207 Sound Transmission 241
 1208 Interior Space Dimensions 241
 1209 Access to Unoccupied Spaces 242
 1210 Surrounding Materials 242

CHAPTER 13 ENERGY EFFICIENCY 243

Section
 1301 General 243

CHAPTER 14 EXTERIOR WALLS 245
 Section
 1401 General 245
 1402 Definitions 245
 1403 Performance Requirements 245
 1404 Materials 246
 1405 Installation of Wall Coverings 246
 1406 Combustible Materials on the
 Exterior Side of Exterior Walls 250
 1407 Metal Composite Materials (MCM) 251

**CHAPTER 15 ROOF ASSEMBLIES AND
 ROOFTOP STRUCTURES..... 253**
 Section
 1501 General 253
 1502 Definitions 253
 1503 Weather Protection 253
 1504 Performance Requirements 254
 1505 Fire Classification 254
 1506 Materials 255
 1507 Requirements for Roof Coverings 255
 1508 Roof Insulation 264
 1509 Rooftop Structures 264
 1510 Reroofing 265

CHAPTER 16 STRUCTURAL DESIGN 267
 Section
 1601 General 267
 1602 Definitions 267
 1603 Construction Documents 269
 1604 General Design Requirements 270
 1605 Load Combinations 273
 1606 Dead Loads 274
 1607 Live Loads 274
 1608 Snow Loads 279
 1609 Wind Loads 283
 1610 Soil Lateral Load 298
 1611 Rain Loads 298
 1612 Flood Loads 299
 1613 Earthquake Loads Definitions 301
 1614 Earthquake Loads—General 302
 1615 Earthquake Loads—Site Ground Motion 303
 1616 Earthquake Loads—Criteria Selection 325
 1617 Earthquake Loads—Minimum Design
 Lateral Force and Related Effects 329
 1618 Dynamic Analysis Procedure for the
 Seismic Design of Buildings 338
 1619 Earthquake Loads Soil-Structure
 Interaction Effects 338

1620 Earthquake Loads—Design, Detailing
 Requirements and Structural Component
 Load Effects 338
 1621 Architectural, Mechanical and Electrical
 Component Seismic Design Requirements ... 342
 1622 Nonbuilding Structures Seismic Design
 Requirements 342
 1623 Seismically Isolated Structures 343

**CHAPTER 17 STRUCTURAL TESTS AND
 SPECIAL INSPECTIONS..... 345**
 Section
 1701 General 345
 1702 Definitions 345
 1703 Approvals 345
 1704 Special Inspections 346
 1705 Quality Assurance for Seismic Resistance 353
 1706 Quality Assurance for Wind Requirements ... 354
 1707 Special Inspections for Seismic Resistance ... 355
 1708 Structural Testing for Seismic Resistance 356
 1709 Structural Observations 357
 1710 Design Strengths of Materials 357
 1711 Alternative Test Procedure 357
 1712 Test Safe Load 357
 1713 In-Situ Load Tests 358
 1714 Preconstruction Load Tests 358
 1715 Material and Test Standards 359

CHAPTER 18 SOILS AND FOUNDATIONS 361
 Section
 1801 General 361
 1802 Foundation and Soils Investigations 361
 1803 Excavation, Grading and Fill 362
 1804 Allowable Load-Bearing Values of Soils 363
 1805 Footings and Foundations 364
 1806 Retaining Walls 372
 1807 Dampproofing and Waterproofing 372
 1808 Pier and Pile Foundations 373
 1809 Driven Pile Foundations 378
 1810 Cast-in-Place Concrete Pile Foundations 381
 1811 Composite Piles 384
 1812 Pier Foundations 385

CHAPTER 19 CONCRETE 387
 Section
 1901 General 387
 1902 Definitions 387
 1903 Specifications for Tests and Materials 388
 1904 Durability Requirements 389

TABLE OF CONTENTS

1905	Concrete Quality, Mixing and Placing	392	2211	Cold-Formed Steel Light-Framed Shear Walls	440
1906	Formwork, Embedded Pipes and Construction Joints	394	CHAPTER 23 WOOD	445	
1907	Details of Reinforcement	395	Section		
1908	Modifications to ACI 318	397	2301	General	445
1909	Structural Plain Concrete	398	2302	Definitions	445
1910	Seismic Design Provisions	399	2303	Minimum Standards and Quality	446
1911	Minimum Slab Provisions	400	2304	General Construction Requirements	449
1912	Anchorage to Concrete—Allowable Stress Design	400	2305	General Design Requirements for Lateral-Force-Resisting Systems	457
1913	Anchorage to Concrete—Strength Design	401	2306	Allowable Stress Design	463
1914	Shotcrete	401	2307	Load and Resistance Factor Design	470
1915	Reinforced Gypsum Concrete	402	2308	Conventional Light-Frame Construction	472
1916	Concrete-Filled Pipe Columns	403	CHAPTER 24 GLASS AND GLAZING	515	
CHAPTER 20 ALUMINUM	405		Section		
Section			2401	General	515
2001	General	405	2402	Definitions	515
2002	Materials	405	2403	General Requirements for Glass	515
CHAPTER 21 MASONRY	407		2404	Wind, Snow, Seismic and Dead Loads on Glass	515
Section			2405	Sloped Glazing and Skylights	523
2101	General	407	2406	Safety Glazing	524
2102	Definitions and Notations	407	2407	Glass in Handrails and Guards	526
2103	Masonry Construction Materials	410	2408	Glazing in Athletic Facilities	526
2104	Construction	414	2409	Glass in Floors and Sidewalks	526
2105	Quality Assurance	416	CHAPTER 25 GYPSUM BOARD AND PLASTER	529	
2106	Seismic Design	417	Section		
2107	Working Stress Design	418	2501	General	529
2108	Strength Design of Masonry	419	2502	Definitions	529
2109	Empirical Design of Masonry	419	2503	Inspection	529
2110	Glass Unit Masonry	425	2504	Vertical and Horizontal Assemblies	529
2111	Masonry Fireplaces	427	2505	Shear Wall Construction	529
2112	Masonry Heaters	431	2506	Gypsum Board Materials	530
2113	Masonry Chimneys	431	2507	Lathing and Plastering	530
CHAPTER 22 STEEL	437		2508	Gypsum Construction	530
Section			2509	Gypsum Board in Showers and Water Closets	531
2201	General	437	2510	Lathing and Furring for Cement Plaster (Stucco)	532
2202	Definitions and Nomenclature	437	2511	Interior Plaster	532
2203	Identification and Protection of Steel for Structural Purposes	437	2512	Exterior Plaster	533
2204	Connections	437	2513	Exposed Aggregate Plaster	533
2205	Structural Steel	439	CHAPTER 26 PLASTIC	535	
2206	Steel Joists	439	Section		
2207	Steel Cable Structures	439	2601	General	535
2208	Steel Storage Racks	439	2602	Definitions	535
2209	Cold-Formed Steel	439			
2210	Cold-Formed Steel Light Framed Construction	440			

2603 Foam Plastic Insulation 535

2604 Interior Finish and Trim 538

2605 Plastic Veneer 538

2606 Light-Transmitting Plastics 538

2607 Light-Transmitting Plastic Wall Panels 539

2608 Light-Transmitting Plastic Glazing 540

2609 Light-Transmitting Plastic Roof Panels 540

2610 Light-Transmitting Plastic Skylight Glazing 541

2611 Light-Transmitting Plastic Interior Signs 542

CHAPTER 27 ELECTRICAL 543

Section

2701 General 543

2702 Emergency and Standby Power Systems 543

CHAPTER 28 MECHANICAL SYSTEMS 545

Section

2801 General 545

CHAPTER 29 PLUMBING SYSTEMS 547

Section

2901 General 547

2902 Minimum Plumbing Facilities 547

CHAPTER 30 ELEVATORS AND CONVEYING SYSTEMS 551

Section

3001 General 551

3002 Hoistway Enclosures 551

3003 Emergency Operations 551

3004 Hoistway Venting 552

3005 Conveying Systems 552

3006 Machine Rooms 553

CHAPTER 31 SPECIAL CONSTRUCTION 555

Section

3101 General 555

3102 Membrane Structures 555

3103 Temporary Structures 556

3104 Pedestrian Walkways and Tunnels 556

3105 Awnings and Canopies 557

3106 Marquees 558

3107 Signs 558

3108 Radio and Television Towers 558

3109 Swimming Pool Enclosures and Safety Devices 558

CHAPTER 32 ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY 561

Section

3201 General 561

3202 Encroachments 561

CHAPTER 33 SAFEGUARDS DURING CONSTRUCTION 563

Section

3301 General 563

3302 Construction Safeguards 563

3303 Demolition 563

3304 Site Work 563

3305 Sanitary 563

3306 Protection of Pedestrians 563

3307 Protection of Adjoining Property 565

3308 Temporary Use of Streets, Alleys and Public Property 565

3309 Fire Extinguishers 565

3310 Exits 565

3311 Standpipes 565

3312 Automatic Sprinkler System 566

CHAPTER 34 EXISTING STRUCTURES 567

Section

3401 General 567

3402 Definitions 567

3403 Additions, Alterations or Repairs 567

3404 Fire Escapes 567

3405 Glass Replacement 568

3406 Change of Occupancy 568

3407 Historic Buildings 568

3408 Moved Structures 568

3409 Accessibility for Existing Buildings 568

3410 Compliance Alternatives 570

CHAPTER 35 REFERENCED STANDARDS 579

APPENDIX A EMPLOYEE QUALIFICATIONS 597

Section

A101 Building Official Qualifications 597

A102 Referenced Standards 597

APPENDIX B BOARD OF APPEALS 599

Section

B101 General 599

TABLE OF CONTENTS

APPENDIX C GROUP—AGRICULTURAL BUILDINGS 601

Section
 C101 General 601
 C102 Allowable Height and Area 601
 C103 Mixed Occupancies 601
 C104 Exits 601

APPENDIX D FIRE DISTRICTS 603

Section
 D101 General 603
 D102 Building Restrictions 603
 D103 Changes to Buildings 604
 D104 Buildings Located Partially in the Fire District 604
 D105 Exceptions to Restrictions in Fire District 604
 D106 Referenced Standards 605

APPENDIX E SUPPLEMENTARY ACCESSIBILITY REQUIREMENTS 607

Section
 E101 General 607
 E102 Definitions 607
 E103 Accessible Route 607
 E104 Special Occupancies 607
 E105 Other Features and Facilities 608
 E106 Telephones 608
 E107 Signage 609
 E108 Bus Stops 610
 E109 Transportation Facilities and Stations 610
 E110 Airports 611
 E111 Qualified Historic Buildings and Facilities 611
 E112 Referenced Standards 612

APPENDIX F RODENT PROOFING 613

Section
 F101 General 613

APPENDIX G FLOOD-RESISTANT CONSTRUCTION 615

Section
 G101 Administration 615
 G102 Applicability 615
 G103 Powers and Duties 615
 G104 Permits 616
 G105 Variances 616
 G201 Definitions 617
 G301 Subdivisions 618
 G401 Site Improvement 618

G501 Manufactured Homes 618
 G601 Recreational Vehicles 618
 G701 Tanks 618
 G702 Referenced Standards 619

APPENDIX H SIGNS 621

Section
 H101 General 621
 H102 Definitions 621
 H103 Location 621
 H104 Identification 621
 H105 Design and Construction 621
 H106 Electrical 622
 H107 Combustible Materials 622
 H108 Animated Devices 622
 H109 Ground Signs 622
 H110 Roof Signs 623
 H111 Wall Signs 623
 H112 Projecting Signs 623
 H113 Marquee Signs 624
 H114 Portable Signs 624
 H115 Referenced Standards 624

APPENDIX I PATIO COVERS 625

Section
 I101 General 625
 I102 Definitions 625
 I103 Exterior Openings 625
 I104 Structural Provisions 625

APPENDIX J GRADING 627

J101 General 627
 J102 Definitions 627
 J103 Permits Required 627
 J104 Permit Application and Submittals 627
 J105 Inspections 628
 J106 Excavations 628
 J107 Fills 628
 J108 Setbacks 629
 J109 Drainage and Terracing 629
 J110 Erosion Control 630
 J111 Referenced Standards 630

INDEX 631