

2015 EDITION

BUILDING CONSTRUCTION AND SAFETY CODE® NFPA 5000®



Documents

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NFPA 5000®

Building Construction and Safety Code

2015 Edition

This edition of *NFPA 5000, Building Construction and Safety Code*, was prepared by the Technical Committees on the Building Code, released by the Correlating Committee on Building Code, and acted on by NFPA at its June Association Technical Meeting held June 9–12, 2014, in Las Vegas, NV. It was issued by the Standards Council on August 14, 2014, with an effective date of September 3, 2014, and supersedes all previous editions.

Several Tentative Interim Amendments (TIAs), indicated by boxed notices at the appropriate areas within the document, were issued on August 14, 2014. These TIAs implement Standards Council Decision D#14-1 to temporarily withdraw NFPA 1124 and end all NFPA standards development activities relating to the storage and retail sales of consumer fireworks. For further information, see Decision D#14-1 at <http://www.nfpa.org/sc2014>.

Subsequent TIAs have been issued and they are similarly indicated by a boxed notice at the appropriate area within the document.

For further information on Tentative Interim Amendments, see Section 5 of the *Regulations Governing the Development of NFPA Standards*, available at <http://www.nfpa.org/regs>.

This edition of *NFPA 5000* was approved as an American National Standard on September 3, 2014.

Origin and Development of NFPA 5000

The inaugural 2003 edition of *NFPA 5000®*, *Building Construction and Safety Code®*, was issued in 2002 and was (and still is) the first model building code developed using the full open consensus-based procedures accredited by the American National Standards Institute. The first edition marked the culmination of NFPA's more than 100 years of experience in developing voluntary consensus-based codes and standards related to the built environment. From the *Life Safety Code®* to the *Fire Code* to the *National Electrical Code®*, sprinkler installation, fuel gas, and myriad other occupancy-specific and installation standards, NFPA codes and standards, as well as the codes and standards of other consensus-based standards development organizations, have addressed almost every aspect of the built environment. The significant gap in the code regime for the built environment, however, had been the lack of a model building code developed using the ANSI procedures.

NFPA 5000 endeavors to be responsive to the needs of the enforcement, user, and design communities and to be consistent with the other principles of code development to which NFPA adheres. In addition, the *Code* is updated in response to, and, in some cases, in anticipation of, emerging technologies or as society looks to code developers to address new hazards. Changes to the 2015 edition are consistent with the established goals and objectives that work to deliver a safe, usable, and functional building at the end of the design process.

In addition to fire, a design hazard that always has been, and always will be, a major component of any building code, *NFPA 5000* provides requirements for other design provisions, including natural hazards, accessibility, and building interior environmental issues.

Consistent with NFPA's performance-based code initiative, *NFPA 5000* establishes a clear set of goals and objectives for specifying the expected outcome for occupant safety, building use, and building performance based on the *Code* requirements. The goals and objectives also extend to the expected outcome for a building, its contents, and its mission, when applicable. The goals and objectives are critical in allowing those affected by codes to exercise the performance-based design approach. In addition, they can be used as a tool for evaluating equivalency provisions on project-specific jobs or designs.



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Much of the criteria in *NFPA 5000* is derived from, and is coordinated with, numerous sources, including the American Society of Civil Engineers (ASCE), the Federal Emergency Management Agency (FEMA), and the U.S. Access Board, among others. The all-hazard design provisions for *NFPA 5000* are rounded out with the use of criteria that include elements for a range of hazard and design scenarios, design loads, and natural hazard mitigation.

Changes to the 2012 edition of *NFPA 5000* included the typical updating required for other referenced codes and standards, including those from other standard-developing organizations. Changes to defined terms in Chapter 3 were made to allow conformance with NFPA's Glossary of Terms project, whereby NFPA documents utilize consistent terminology when appropriate. Criteria dealing with elevators for occupant evacuation was relocated from Annex E to the main body of the Code in Chapter 11. Work on this concept has continued with the ASME A17/CSA B44 *Safety Code for Elevators and Escalators* Task Groups on Use of Elevators by Firefighters and Occupant Egress. These elevator provisions have matured enough to introduce this concept as a set of mainstream requirements. Related changes derived from the same ASME initiative resulted in further modifications to the Chapter 54 requirements for fire service access elevators. The 2012 Code also recognized use of thermal pins in fire-rated doors; offered further rules and revisions applicable to locking arrangements for some egress doors; added a fundamental set of rules for installation of carbon monoxide alarms; and applied a global revision to recognize newly updated provisions of the 2010 edition of ASCE/SEI 7, *Minimum Design Loads for Buildings and Other Structures*.

The 2015 edition marks the first time that the various committees involved with *NFPA 5000* utilized the tools, enhancements, and procedures (*Regulations Governing the Development of NFPA Standards*) associated with the new code development process. The technical committees and the correlating committee benefitted from the availability of a complete draft to see the changes in context and to more readily respond to areas needing future revision or changes.

This edition has incorporated many changes that have application across the board or only to certain occupancies and conditions. Numerous changes worked to align *NFPA 5000* with the accessibility definitions and scoping provisions that are contained in the Department of Justice ABA/ADA criteria (2010 edition). Related accessibility changes now provide scoping for one- and two-family dwellings, as well as deferring to the technical provisions of ICC/ANSI 2009, *Standard on Accessible and Usable Buildings and Facilities*. Several provisions relating to building construction techniques and materials have been updated, including the detailed requirements for plenum space construction in Chapter 7, which have been removed as those provisions are now contained in NFPA 90A; recognition of new wood structural composites (cross laminated timber-CLT), which has been added to Chapter 7 as an option for heavy timber construction of walls, floors, and roof decks; new requirements have been added for steel used in pile foundations; a series of changes have been made to Chapter 44 to coordinate updates to ASCE/SEI 7, ASCE/SEI 19, and ACI 318; and the requirements for fire retardant treated wood (FRTW) have been reformatted and repositioned from Chapter 3 to Chapter 45. These provisions are largely extracted from NFPA 703, *Standard for Fire Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials*.

A series of changes that have a broad impact on the various occupancy rules of the *Code* have been accepted. These include the allowance to use an atrium wall to serve as part of the separation for creating separated occupancies where permitted by an occupancy chapter, a change that is permitted for use by almost all occupancy chapters; the addition of explicit rules for security access turnstiles; the revision of occupant load factors for business use and ambulatory health care use, based on a review of how these spaces are actually utilized; the increase of options for the protection of vertical openings involving escalators; the addition of provisions for expanded use and placement of alcohol-based hand-rub (ABHR) dispensers in various occupancies; the addition of provisions to address smoke alarm and smoke detector installation in the vicinity of cooking equipment; the mandated installation of carbon monoxide detectors and alarms found in the educational and day-care chapters; and the expansion of the Life Safety Evaluation provisions (including further changes that were accepted with a TIA that was issued concurrently with the *Code*) to address facility management duties.

The day-care and residential board and care occupancies provisions have been revised to permit additional floor levels to be considered part of the level of exit discharge, and the board and care occupancy provisions have been revised to permit door locking for the clinical needs of the residents. The health care occupancy provisions have been further revised, as was begun in 2012, to permit the health care setting to be made more homelike; nursing home minimum corridor width has been reduced within small smoke compartments under certain conditions; provisions have been added to permit exit doors to be disguised with murals for certain settings like memory care units; additional termination point options have been added for the travel distance measurement in suites; options have been added for increasing the size of non-sleeping suites; and the allowable size for smoke compartments in hospitals has been increased. The ambulatory health care chapters have been reformatted into stand-alone chapters so as not to require the use of the business occupancy chapters.

Finally, numerous revisions have been made in Chapter 34 to start to ensure that *NFPA 5000* is aligned with and extracts the appropriate information from NFPA 400, *Hazardous Materials Code*. An interrelated change (made by way of a TIA) impacting Chapter 34 (and other portions of the *Code*) involved removal of all information that relates to consumer fireworks and NFPA 1124, *Code for the Manufacturing, Transportation, Storage, and Retail Sale of Fireworks and Pyrotechnic Articles*.



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Committee Scope: This committee shall have primary responsibility for documents or portions of documents on the design and construction of every building or structure, including structural design methods and techniques, as well as the design of integrated building systems for health, safety, comfort, and convenience.



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Committee Scope: This Committee shall have primary responsibility for documents on protection of human life and property from fire and other circumstances capable of producing similar consequences, and on the nonemergency and emergency movement of people in assembly occupancies, tents, and membrane structures.

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on protection of human life and property from fire and other circumstances capable of producing similar consequences, and on the emergency movement of people in residential board and care facilities.

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 (Alt. to R. R. Molina)
William E. Koffel, Koffel Associates, Inc., MD [U]
 (Alt. to D. Litton)
Edward R. LaPine, Aon Fire Protection Engineering Corporation, AZ [I]
 (Alt. to R. J. Battalora)
Dennis L. Pitts, American Wood Council, TX [M]
 (Alt. to S. W. Francis)
Robert B. Treiber, National Fire Sprinkler Association, Inc.
 (Alt. to J. M. Hugo)

Tracy L. Vecchiarelli, NFPA Staff Liaison

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This committee shall have primary responsibility for documents on the selection and design of types of building construction, exterior walls, building height and area, fire walls, and fire barrier walls, as they relate to the protection of life and property from fire. For the processing of NFPA 5000, Chapter 7, and Sections 8.3 and 8.4, this committee reports directly to the NFPA 5000 TCC; whereas, for the processing of NFPA 220 and NFPA 221, this committee does not report to the NFPA 5000 TCC.

Technical Committee on Building Service and Fire Protection Equipment [BLD-BSF]

Joseph M. Jardin, *Chair*
 Fire Department City of New York, NY [C]
 Rep. NFPA Fire Service Section

Gregory E. Harrington, *Administrative Secretary*
 National Fire Protection Association, MA

Brian D. Black, BDBlack Codes, Inc., NY [M]
 Rep. National Elevator Industry Inc.
Harry L. Bradley, Maryland State Fire Marshals Office, MD [E]
 Rep. International Fire Marshals Association
Pat D. Brock, Oklahoma State University, OK [SE]
Scott Caron, Rhode Island State Fire Marshal's Office, RI [E]
Flora F. Chen, Hayward, California Fire Department, CA [E]
Stephen E. Dale, Cincinnati Insurance Company, OH [I]
Paul M. Donga, Boston Fire Department, MA [E]
Raymond A. Grill, Arup, DC [SE]
Thomas P. Hammerberg, Automatic Fire Alarm Association, Inc., GA [M]
 Rep. Automatic Fire Alarm Association, Inc.
Claude O. Hutton, Virginia State Fire Marshal's Office, VA [E]
Kenneth E. Isman, National Fire Sprinkler Association, Inc., NY [M]

Michael Kellett, State of Connecticut, CT [E]
 Rep. Connecticut State Fire Marshal/Connecticut Fire Marshals Association
David A. Killian, Walt Disney Parks & Resorts, CA [U]
David L. Klepitch, Whitman, Requaardt & Associates, LLP, MD [SE]
Richard L. Klinker, Klinker & Associates, Inc., MD [SE]
Peter A. Larrimer, U.S. Department of Veterans Affairs, PA [U]
Daniel J. Lazarz, EYP Architecture & Engineering, MA [SE]
James Noveh, Jefferson Parish Fire Department, LA [E]
Scott E. Panowitz, BFPE International, MD [IM]
 Rep. Fire Suppression Systems Association
Martin H. Reiss, The RJA Group, Inc., MA [SE]
Rodger Reiswig, Tyco/SimplexGrinnell, FL [M]
Richard Jay Roberts, Honeywell Life Safety, IL [M]
 Rep. National Electrical Manufacturers Association
Kurt A. Ruchala, FIREPRO Incorporated, MA [SE]
Eric Ruppert, Combustion Science & Engineering, Inc., MD [SE]

Lawrence J. Shudak, UL LLC, IL [RT]
Michael R. Szmanda, Certification & Training Corporation, MN [IM]
Todd W. Warner, Brooks Equipment Company, Inc., NC [M]

Rep. Fire Equipment Manufacturers' Association
Carl D. Wren, Austin Fire Department, TX [E]
David M. Wyatt, Battelle/Pacific Northwest National Laboratory, WA [U]

Alternates

J. Robert Boyer, UTC/Edwards Company, NJ [M]
 (Alt. to Thomas P. Hammerberg)
Michael Derr, The RJA Group, Inc., MD [SE]
 (Alt. to Martin H. Reiss)
Daniel P. Finnegan, Siemens Industry, Inc., NJ [M]
 (Alt. to Richard Jay Roberts)
Greg Gottlieb, Hauppauge Fire District, NY [C]
 (Alt. to Joseph M. Jardin)
Claudia Hagood, Klinker and Associates, Inc., MD [SE]
 (Alt. to Richard L. Klinker)
Bryan Lawrence Hoskins, Oklahoma State University, OK [SE]
 (Alt. to Pat D. Brock)
Jeffrey M. Hugo, National Fire Sprinkler Association, Inc., MI [M]
 (Alt. to Kenneth E. Isman)

Ignatius Kapalczynski, Simsbury Fire District, CT [E]
 (Alt. to Michael Kellett)
Roy C. Kimball, Brooks Equipment Company, Inc., NC [M]
 (Alt. to Todd W. Warner)
Peter Leszczak, U.S. Department of Veterans Affairs, CT [U]
 (Alt. to Peter A. Larrimer)
John E. Mahoney, Arup, DC [SE]
 (Alt. to Raymond A. Grill)
Gary L. Nuschler, Otis Elevator Company, CT [M]
 (Alt. to Brian D. Black)
Kelly Thompson, EYP Architecture & Engineering, NY [SE]
 (Alt. to Daniel J. Lazarz)
Paul J. Vautour, Tyco/SimplexGrinnell, MA [M]
 (Alt. to Rodger Reiswig)

Nonvoting

Steven Orlowski, National Association of Home Builders, DC [U]

Gregory E. Harrington, NFPA Staff Liaison

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on the application of fire protection systems including detection, alarm, and suppression, and the life safety impact of various building systems.

Technical Committee on Building Systems [BLD-BSY]

Joshua D. Greene, *Chair*
 The RJA Group, Inc., IL [SE]

Allan Fraser, *Administrative Secretary*
 National Fire Protection Association, MA

William Ambreffe, City of Beverly, MA [E]
Mark Berg, City of Rancho Cucamonga, CA [E]
Brian D. Black, BDBlack Codes, Inc., NY [M]
 Rep. National Elevator Industry Inc.
Phil Forner, Allendale Heating Company Inc., MI [IM]
 Rep. Air Conditioning Contractors of America
Raymond N. Hansen, US Department of the Air Force, FL [U]
Michael J. Reeser, Santa Rosa Fire Equipment Service Inc., CA [IM]

Rep. California Automatic Fire Alarm Association Inc.
John A. Rickard, P3 Consulting, TX [SE]
Charles G. Riforgiate, Lombard Fire Department, IL [E]
Frank Shingleton, Viega LLC, KS [M]
Shelley Siegel, Universal Design & Education Network, FL [SE]
 Rep. American Society of Interior Designers
Peter J. Willse, XL Global Asset Protection Services, CT [I]

Alternates

Shane M. Clary, Bay Alarm Company, CA [IM]
 (Alt. to Michael J. Reeser)
Luis Romeo Escobar, Air Conditioning Contractors of America, VA [IM]
 (Alt. to Phil Forner)

Gary L. Nuschler, Otis Elevator Company, CT [M]
 (Alt. to Brian D. Black)
Steven J. Whitman, The RJA Group, Inc., MD [SE]
 (Alt. to Joshua D. Greene)



Allan Fraser, NFPA Staff Liaison

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on the application of various building systems and features that relate to convenience, health, comfort, and access to a building.

Technical Committee on Detention and Correctional Occupancies [BLD-DET]

Michael DiMascio, *Chair*
Arup, MA [SE]

Ron Coté, *Administrative Secretary*
National Fire Protection Association, MA

Clay P. Aler, Koffel Associates, Inc., MD [SE]
David L. Bondor, Texas Association of Counties, TX [I]
Peter J. Collins, U.S. Department of Justice, DC [U]
Randy Gaw, Correctional Service of Canada, Canada [E]
A. Larry Iseminger, Jr., Maryland State Fire Marshals Office, MD [E]
Rep. International Fire Marshals Association
Kenneth E. Isman, National Fire Sprinkler Association, Inc., NY [M]
John Kelly, Washington DC Fire & EMS Department, MD [E]
Troy Lumley, South McCreary Fire & Rescue, KY [E]

Jack McNamara, Bosch Security Systems, NY [M]
Rep. National Electrical Manufacturers Association
Robert R. Perry, Robert Perry Associates Inc., IL [M]
Rep. Door and Hardware Institute
Terry Schultz, Code Consultants, Inc., MO [SE]
James A. Stapleton, Jr., Habersham Metal Products Company, GA [M]
Rep. National Assn. of Architectural Metal Manufacturers
Jeffrey D. Zwirn, IDS Research & Development, Inc., NJ [M]
Rep. Automatic Fire Alarm Association, Inc.

Alternates

Chris Gaut, National Fire Sprinkler Association, Inc., MO [M]
(Alt. to Kenneth E. Isman)
William E. Koffel, Koffel Associates, Inc., MD [SE]
(Alt. to Clay P. Aler)

Joseph Plati, Code Consultants, Inc., NY [SE]
(Alt. to Terry Schultz)

Ron Coté, NFPA Staff Liaison

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on protection of human life and property from fire and other circumstances capable of producing similar consequences, and on the emergency movement of people in detention and correctional occupancies.

Technical Committee on Educational and Day-Care Occupancies [BLD-END]

Aleksy L. Szachnowicz, *Chair*
Anne Arundel County Public Schools, MD [U]

Ron Coté, *Administrative Secretary*
National Fire Protection Association, MA

Steven D. Admire, Communication Concepts, TX [IM]
Judy Biddle, AFCESA, FL [U]
Samuel S. Dannaway, S. S. Dannaway Associates, Inc., HI [SE]
Victor L. Dubrowski, Code Consultants, Inc., MO [SE]

Keith S. Frangiamore, Fire Safety Consultants, Inc., IL [SE]
Dominick G. Kasmauskas, National Fire Sprinkler Association, Inc., NY [M]
Alfred J. Longhitano, Alfred J. Longhitano, P.E., LLC, NY [SE]

Maria B. Marks, Siemens Industry, Inc., MD [M]
Rep. National Electrical Manufacturers Association
Vern L. Martindale, Church of Jesus Christ of Latter-day
Saints, UT [U]
Richard E. Merck, Montgomery County Fire & Rescue
Service, MD [E]
Matthew J. Mertens, North Shore Fire Department,
WI [E]
Rep. International Fire Marshals Association
Kurt A. Roeper, ASSAABLOY, CT [M]
Rep. Steel Door Institute
Michael L. Savage, Sr., Middle Department Inspection
Agency, Inc., MD [E]

Jeffrey Shirey, Maryland State Fire Marshal's Office,
MD [E]
Michael L. Sinsigalli, West Hartford Fire Department,
CT [E]
Catherine L. Stashak, Office of the Illinois State Fire
Marshal, IL [E]
Rep. Office of the Illinois State Fire Marshal
Billy E. Upton, Ballou Justice Upton Architects, VA [SE]
Ann Marie A. Wolf, Sonora Environmental Research
Institute, Inc., AZ [C]

Alternates

Richard M. DiMisa, Code Consultants, Inc., MO [SE]
(Alt. to Victor L. Dubrowski)
Max L. Gandy, Church of Jesus Christ of Latter-day
Saints, UT [U]
(Alt. to Vern L. Martindale)
Carmen A. Rao, Wallingford Fire Prevention Bureau,
CT [E]
(Alt. to Michael L. Sinsigalli)

Richard Jay Roberts, Honeywell Life Safety, IL [M]
(Alt. to Maria B. Marks)
Daniel W. Uthe, Sonora Environmental Research
Institute, Inc., AZ [C]
(Alt. to Ann Marie A. Wolf)
Kenneth Wood, Office of the Illinois State Fire Marshal,
IL [E]
(Alt. to Catherine L. Stashak)

Ron Coté, NFPA Staff Liaison

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Committee Scope: This Committee shall have primary responsibility for documents on protection of human life and property from fire and other circumstances capable of producing similar consequences, and on the emergency movement of people in educational occupancies and day-care occupancies.

Technical Committee on Fire Protection Features [BLD-FIR]

John F. Devlin, *Chair*
Aon Fire Protection Engineering Corporation, MD [I]

Kristin Bigda, *Administrative Secretary*
National Fire Protection Association, MA

Gregory J. Cahanin, Cahanin Fire & Code Consulting,
FL [U]
Rep. Louisiana State Firemen's Association
Joseph A. Castellano, The RJA Group, Inc., GA [SE]
Nicholas A. Dawe, Cobb County Fire Marshal's Office,
GA [E]
Jeffrey T. Dudley, National Aeronautics & Space
Administration, FL [U]
Sam W. Francis, American Wood Council, PA [M]
Michael O. Gencarelli, U.S. Department of the Navy,
DC [E]
Ralph D. Gerdes, Ralph Gerdes Consultants, LLC,
IN [SE]
Jack A. Gump, Babcock & Wilcox Y-12, LLC, TN [U]
Wayne D. Holmes, HSB Professional Loss Control,
NC [I]
Gene L. Hartz, The Dow Chemical Company, PA [M]
Jeffrey M. Hugo, National Fire Sprinkler Association,
Inc., MI [M]
Rep. National Fire Sprinkler Association
Jonathan Humble, American Iron and Steel Institute,
CT [M]

Waymon Jackson, University of Texas at Austin, TX [U]
Adam C. Jones, Buechel Fire Protection District, KY [E]
Marshall A. Klein, Marshall A. Klein & Associates, Inc.,
MD [SE]
William E. Koffel, Koffel Associates, Inc., MD [M]
Rep. Glazing Industry Code Committee
Vickie J. Lovell, InterCode Incorporated, FL [M]
Rep. Air Movement & Control Association
William J. McHugh, Jr., Firestop Contractors
International Association, IL [IM]
Rep. Firestop Contractors International Association
Kevin D. Morin, Code Consultants, Inc., NY [SE]
Jon W. Pasqualone, Martin County Board of County
Commissioners, FL [E]
Rep. Florida Fire Marshals & Inspectors Association
Brian T. Rhodes, Hughes Associates, Inc., MD [SE]
Kurt A. Roeper, ASSAABLOY, CT [M]
Rep. Steel Door Institute
Andrew F. Weisfield, Michael Baker Corporation, PA [SE]
Kenneth Wood, Office of the Illinois State Fire Marshal,
IL [E]



Alternates

Farid Alfawakhiri, American Iron and Steel Institute, IL [M]
(Alt. to Jonathan Humble)
Eric J. Apolenis, The RJA Group, Inc., GA [SE]
(Alt. to Joseph A. Castellano)
Richard C. Butcher, Tarpon Springs Fire Rescue, FL [E]
(Alt. to Jon W. Pasqualone)
David Cook, Ralph Gerdes Consultants, LLC, IN [SE]
(Alt. to Ralph D. Gerdes)
Erin N. Crowley, Code Consultants, Inc., MO [SE]
(Alt. to Kevin D. Morin)
Timmy Dee, Babcock & Wilcox Y-12, LLC, TN [U]
(Alt. to Jack A. Gump)
Rick Glenn, Aon Fire Protection Engineering Corporation, IL [I]
(Alt. to John F. Devlin)
David M. Hammerman, Marshall A. Klein and Associates, Inc., MD [SE]
(Alt. to Marshall A. Klein)

Joseph Patrick Higgins, US Department of the Navy, AE [E]
(Alt. to Michael O. Gencarelli)
Howard Hopper, UL LLC, CA [RT]
(Voting Alt. to UL rep.)
Thomas R. Janicak, Ceco Door Products, IL [M]
(Alt. to Kurt A. Roeper)
Josh Lambert, University of Texas at Austin, TX [U]
(Alt. to Waymon Jackson)
Timothy J. Orris, AMCA International, Inc., IL [M]
(Alt. to Vickie J. Lovell)
Eric R. Rosenbaum, Hughes Associates, Inc., MD [SE]
(Alt. to Brian T. Rhodes)
Robert A. Speed, North Carolina Office of the State Fire Marshal, NC [E]
(Voting Alt. for Office of NC State Fire Marshal)
Catherine L. Stashak, Office of the Illinois State Fire Marshal, IL [E]
(Alt. to Kenneth Wood)
Andrew M. Wahl, Michael Baker Corporation, PA [SE]
(Alt. to Andrew F. Weisfield)

Nonvoting

Michael Earl Dillon, Dillon Consulting Engineers, Inc., CA [SE]
Rep. TC on Air Conditioning

Steven Orlowski, National Association of Home Builders, DC [U]

Kristin Bigda, NFPA Staff Liaison

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Committee Scope: This Committee shall have primary responsibility for documents on construction compartmentation, including the performance of assemblies, openings, and penetrations, as related to the protection of life and property from fire and other circumstances capable of producing similar consequences.

Technical Committee on Fundamentals [BLD-FUN]

Wayne G. Carson, *Chair*
Carson Associates, Inc., VA [SE]

Ron Coté, *Administrative Secretary*
National Fire Protection Association, MA

Farid Alfawakhiri, American Iron and Steel Institute, IL [M]
Andrew Blum, Exponent, Inc., GA [SE]
Amy Y. Cheng, Clark County Department of Development Services, NV [E]
Salvatore DiCristina, Rutgers, The State University of New Jersey, NJ [E]
Tod Doebler, Menomonee Falls Fire Department, WI [E]
Rep. International Fire Marshals Association
Robert J. Eugene, UL LLC, WA [RT]
David W. Frable, US General Services Administration, IL [U]
Marshall J. Gaubert, Jefferson Parish Fire Department, LA [E]
Michael O. Gencarelli, U.S. Department of the Navy, DC [E]
Ralph D. Gerdes, Ralph Gerdes Consultants, LLC, IN [SE]
Rep. American Institute of Architects

Norman E. Groner, John Jay College of Criminal Justice, NY [SE]
Morgan J. Hurley, Society of Fire Protection Engineers, MD [U]
David J. Jacoby, Simpson Gumpertz & Heger, NY [SE]
David P. Klein, U.S. Department of Veterans Affairs, DC [U]
Scott T. Laramée, Aon Fire Protection Engineering Corporation, CA [I]
James K. Lathrop, Koffel Associates, Inc., CT [SE]
Vickie J. Lovell, InterCode Incorporated, FL [M]
Rep. Alliance for Fire & Smoke Containment & Control, Inc.
Jack McNamara, Bosch Security Systems, NY [M]
Rep. National Electrical Manufacturers Association
Ricardo Murga, US Department of Health & Human Services, AZ [E]
Jake Pauls, Jake Pauls Consulting Services in Building Use & Safety, MD [C]
Rep. American Public Health Association

Dennis L. Pitts, American Wood Council, TX [M]
Milosh T. Puchovsky, Worcester Polytechnic Institute, MA [SE]
Rodger Reiswig, Tyco/SimplexGrinnell, FL [M]
 Rep. Automatic Fire Alarm Association, Inc.

Patrick S. Saba, Hewlett Packard Company, MD [U]
Victoria B. Valentine, National Fire Sprinkler Association, Inc., NY [M]
Steven F. Wydeveld, Wydeveld Construction & Consulting, Inc., FL [SE]

Alternates

William P. Adams, Apollo America, GA [M]
 (Alt. to Jack McNamara)
Sharon S. Gilyeat, Koffel Associates, Inc., MD [SE]
 (Alt. to James K. Lathrop)
Thomas P. Hammerberg, Automatic Fire Alarm Association, Inc., GA [M]
 (Alt. to Rodger Reiswig)
Jeffrey M. Hugo, National Fire Sprinkler Association, Inc., MI [M]
 (Alt. to Victoria B. Valentine)
Jonathan Humble, American Iron and Steel Institute, CT [M]
 (Alt. to Farid Alfawakhiri)

Moriel E. Kaplan, Aon Fire Protection Engineering, MD [I]
 (Alt. to Scott T. Laramée)
Richard T. Long, Jr., Exponent, Inc., MD [SE]
 (Alt. to Andrew Blum)
Rodney A. McPhee, Canadian Wood Council, Canada [M]
 (Alt. to Dennis L. Pitts)
Robert A. Speed, North Carolina Office of the State Fire Marshal, NC [E]
 (Voting Alt. to NC State Fire Marshal rep.)

Nonvoting

Pichaya Chantranuwat, Fusion Consultants Co. Ltd./Thailand, Thailand [SE]

Steven Orłowski, National Association of Home Builders, DC [U]

Ron Coté, NFPA Staff Liaison

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on the basic goals, objectives, performance requirements, and definitions for protection of human life and property from fire, earthquake, flood, wind, and other circumstances capable of producing similar consequences, on the non-emergency and emergency movement of people, and on high-rise buildings.

Technical Committee on Health Care Occupancies [BLD-HEA]

David P. Klein, *Chair*
 U.S. Department of Veterans Affairs, DC [U]

Ron Coté, *Administrative Secretary*
 National Fire Protection Association, MA

Kenneth E. Bush, Maryland State Fire Marshals Office, MD [E]

Rep. International Fire Marshals Association

Wayne G. Carson, Carson Associates, Inc., VA [SE]

Michael A. Crowley, The RJA Group, Inc., TX [SE]

Samuel S. Dannaway, S. S. Dannaway Associates, Inc., HI [SE]

Rep.

Buddy Dewar, National Fire Sprinkler Association, Inc., FL [M]

Alice L. Epstein, CNA Insurance, CO [I]

Martin J. Farraher, Siemens Industry, Inc., IL [M]

John E. Fishbeck, The Joint Commission, IL [E]

Gary Furdell, State of Florida, FL [E]

Michael O. Gencarelli, U.S. Department of the Navy, DC [E]

Robert J. Harmeyer, MSKTD & Associates, IN [SE]
 Rep. American Institute of Architects

Donald W. Harris, California Office of Health Planning & Development, CA [E]

David R. Hood, Russell Phillips & Associates, LLC, NY [U]

Rep. NFPA Health Care Section

Richard M. Horeis, HDR Architecture, Inc., NE [SE]

Henry Kowalenko, Illinois Department of Public Health, IL [E]

James Merrill II, U.S. Department of Health & Human Services, MD [E]

Rep. US Dept. of Health & Human Services/CMS

Daniel J. O'Connor, Aon Fire Protection Engineering, IL [I]

Ben Pethe, Health Care Consultant, FL [SE]

G. Brian Prediger, U.S. Army Medical Command Headquarters, TX [U]

John A. Rickard, Katus, LLC, TX [SE]

Richard Jay Roberts, Honeywell Life Safety, IL [M]
 Rep. Automatic Fire Alarm Association, Inc.

Eric R. Rosenbaum, Hughes Associates, Inc., MD [U]
 Rep. American Health Care Association

Terry Schultz, Code Consultants, Inc., MO [SE]

Saundra J. Stevens, Adams County Regional Medical Center, OH [U]

Geza Szakats, Arup North America Ltd., CA [SE]



Michael D. Widdekind, Zurich Services Corporation,
MD [I]

Fred Worley, Texas Department of Aging & Disability
Services, TX [E]

Alternates

Doug Beardsley, Care Providers of Minnesota, MN [U]
(Alt. to Eric R. Rosenbaum)

Chad E. Beebe, ASHE - AHA, WA [U]

William M. Dorfler, The RJA Group, Inc., IL [SE]
(Alt. to Michael A. Crowley)

Joshua W. Elvove, Aurora, CO [SE]
(Alt. to Samuel S. Dannaway)

A. Richard Fasano, Russell Phillips & Associates Inc.,
CA [U]
(Alt. to David R. Hood)

Charles J. Giblin III, Maryland State Fire Marshal's
Office, MD [E]
(Alt. to Kenneth E. Bush)

Philip J. Hoge, US Army Corps of Engineers,
VA [U]
(Alt. to G. Brian Prediger)

Robert G. Kleinheinz, National Fire Sprinkler
Association, Inc., IL [M]
(Alt. to Buddy Dewar)

William E. Koffel, Koffel Associates, Inc., MD [SE]
(Alt. to Wayne G. Carson)

Peter A. Larrimer, US Department of Veterans Affairs,
PA [U]
(Alt. to David P. Klein)

John E. Mahoney, Arup, DC [SE]
(Alt. to Geza Szakats)

Kenneth Sun, US Public Health Service, CO [E]
(Alt. to James Merrill II)

Peter W. Tately, Siemens Building Technologies, PA [M]
(Alt. to Martin J. Farraher)

Dale D. Wilson, Aon Fire Protection Engineering, IL [I]
(Alt. to Daniel J. O'Connor)

Michael Zakowski, Code Consultants, Inc., MO [SE]
(Alt. to Terry Schultz)

Nonvoting

Pichaya Chantranuwat, Fusion Consultants Co.
Ltd/Thailand, Thailand [SE]

David M. Sine, National Center for Patient Safety, MI [U]
Rep. National Association of Psychiatric Health
Systems

Ron Coté, NFPA Staff Liaison

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Committee Scope: This Committee shall have primary responsibility for documents on protection of human life and property from fire and other circumstances capable of producing similar consequences, and on the emergency movement of people in health care occupancies.

Technical Committee on Industrial, Storage, and Miscellaneous Occupancies [BLD-IND]

Carl D. Wren, *Chair*
Austin Fire Department, TX [E]

Kristin Bigda, *Administrative Secretary*
National Fire Protection Association, MA

Thomas L. Allison, Savannah River Nuclear Solutions,
SC [U]

Raymond E. Arntson, Rayden Research, LLC, WI [SE]

Justin B. Biller, AECOM Building Engineering, VA [SE]

Donald C. Birchler, FP&C Consultants, Inc., MO [SE]

Ryan Cummings, U.S. Department of Transportation,
DC [E]

Stephen E. Dale, Cincinnati Insurance Company, OH [I]

Nicholas A. Dawe, Cobb County Fire Marshal's Office,
GA [E]

Jeffrey T. Dudley, National Aeronautics & Space
Administration, FL [U]

John F. Farney, Jr., Sargent & Lundy Engineers, IL [SE]

James E. Golinveaux, Tyco Fire Suppression & Building
Products, RI [IM]

Rep. American Fire Sprinkler Association

Wayne D. Holmes, HSB Professional Loss Control,
NC [I]

Jonathan Humble, American Iron and Steel Institute,
CT [M]

Adam C. Jones, Buechel Fire Protection District, KY [E]

Marshall A. Klein, Marshall A. Klein & Associates, Inc.,
MD [U]

Rep. Automotive Aftermarket Industry Association

Richard J. Kobelski, Hanford Fire Department, WA [U]

Neal W. Krantz, Sr., Krantz Systems & Associates, LLC,
MI [M]

Rep. Automatic Fire Alarm Association, Inc.

Richard S. Kraus, API/Petroleum Safety Consultants,
VA [U]

Rep. American Petroleum Institute

Raymond W. Lonabaugh, National Fire Sprinkler
Association, Inc., PA [M]

Patrick A. McLaughlin, McLaughlin & Associates, ID [U]
Rep. Semiconductor Industry Association
Jerald Pierrottie, Lonza Group Ltd., GA [M]
Scot Pruett, Black & Veatch Corporation, KS [SE]
Roberto Lozano Rosales, Delphi Corporation, TX [U]
Rep. NFPA Industrial Fire Protection Section
Jerrold Sameth, Compressed Gas Association, Inc.,
VA [M]

Rep. Compressed Gas Association
Steven A. Sheldon, Fisher Engineering, Inc., AZ [SE]
Cleveland B. Skinker, Bechtel Power Corporation,
MD [SE]
Bruce J. Swiecicki, National Propane Gas Association,
IL [IM]
Rep. National Propane Gas Association
David C. Tabar, The Sherwin-Williams Company, OH [U]

Alternates

Farid Alfawakhiri, American Iron and Steel Institute,
IL [M]
(Alt. to Jonathan Humble)
Kathryn M. Cifa, Bechtel National, Inc., MD [SE]
(Alt. to Cleveland B. Skinker)
Richard A. Craig, Compressed Gas Association, VA [M]
(Alt. to Jerrold Sameth)
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OH [U]
(Alt. to David C. Tabar)
Jeffrey A. Scott, FP&C Consultants, Inc., MO [SE]
(Alt. to Donald C. Birchler)
Bobbie L. Smith, Micron Technology, Inc., ID [U]
(Alt. to Patrick A. McLaughlin)
John R. Stauder, AECOM, CA [SE]
(Alt. to Justin B. Biller)

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Matthew I. Chibbaro, U.S. Department of Labor, DC [E]
Rep. Occupational Safety & Health Administration

Kristin Bigda, NFPA Staff Liaison

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on protection of human life and property from fire and other circumstances capable of producing similar consequences, and on the emergency movement of people in industrial and storage occupancies, special structures, and windowless and underground buildings.

Technical Committee on Interior Finish and Contents [BLD-INT]

Henry Paszczuk, *Chair*
Connecticut Department of Public Safety, CT [E]

Kristin Bigda, *Administrative Secretary*
National Fire Protection Association, MA

Vytenis Babrauskas, Fire Science and Technology Inc.,
WA [SE]
Patrick Boyer, State Farm Insurance Company,
IL [I]
Matthew Carrigan, Montgomery County Fire Rescue
Service, MD [L]
Rep. International Association of Fire Fighters
Nicholas A. Dawe, Cobb County Fire Marshal's Office,
GA [E]
William E. Fitch, Phyrefish.com, FL [SE]
Marcelo M. Hirschler, GBH International,
CA [SE]

James K. Lathrop, Koffel Associates, Inc.,
CT [M]
Rep. Bobrick Washroom Equipment, Inc.
Richard T. Long, Jr., Exponent, Inc., MD [M]
Rep. Upholstered Furniture Action Council
C. Anthony Penaloza, Intertek Testing Services, TX [RT]
Milosh T. Puchovsky, Worcester Polytechnic Institute,
MA [SE]
Shelley Siegel, Universal Design & Education Network,
FL [U]
Rep. American Society of Interior Designers
Dwayne E. Sloan, UL LLC, NC [RT]



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Timothy Earl, GBH International, MI [SE]
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Marshal, CT [E]
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Kristin Bigda, NFPA Staff Liaison

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on limiting the impact of interior finish, furnishings and building contents on protection of human life and property from fire and other circumstances capable of producing similar consequences, and on the emergency movement of people.

Technical Committee on Means of Egress [BLD-MEA]

James K. Lathrop, *Chair*
Koffel Associates, Inc., CT [SE]

Ron Coté, *Administrative Secretary*
National Fire Protection Association, MA

Ryan Alles, High Rise Escape Systems, Inc., FL [M]
Rep. The Safe Evacuation Coalition
Jason D. Averill, National Institute of Standards
& Technology, MD [RT]
Charles V. Barlow, EverGlow NA, Inc., NC [M]
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Rep. International Fire Marshals Association
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Rep. American Institute of Architects
Richard L. Day, Michigan State Fire Marshal's Office,
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David A. de Vries, Firetech Engineering Inc., IL [SE]
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NJ [I]
Paul L. Dove, City of Coldwater Fire Department,
MI [E]
Rep. Michigan Fire Inspectors Society
David W. Frable, U.S. General Services Administration,
IL [U]
Rita C. Guest, Carson Guest, Inc., GA [U]
Rep. American Society of Interior Designers

Waymon Jackson, University of Texas at Austin, TX [U]
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Rep. National Elevator Industry Inc.
Steven Orlowski, National Association of Home Builders,
DC [U]
Denise L. Pappas, Valcom, Inc., VA [M]
Rep. National Electrical Manufacturers Association
Jake Pauls, Jake Pauls Consulting Services in Building
Use & Safety, MD [C]
Rep. American Public Health Association
Robert R. Perry, Robert Perry Associates Inc., IL [M]
Rep. Door and Hardware Institute
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Rep. Builders Hardware Manufacturers Association
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(Alt. to Warren D. Bonisch)
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(Alt. to Leslie Strull)
Greg Drake, Door and Hardware Institute, VA [M]
(Alt. to Robert R. Perry)
Joshua W. Elvove, Aurora, CO [SE]
(Alt. to David A. de Vries)
William E. Koffel, Koffel Associates, Inc., MD [SE]
(Alt. to James K. Lathrop)

Josh Lambert, University of Texas at Austin, TX [U]
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Ron Coté, NFPA Staff Liaison

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This committee shall have primary responsibility for documents on the general requirements for safe egress for protection of human life from fire and other circumstances capable of producing similar consequences, and on the nonemergency and emergency movement of people.

Technical Committee on Mercantile and Business Occupancies [BLD-MER]

Kenneth E. Bush, *Chair*
Maryland State Fire Marshals Office, MD [E]
Rep. International Fire Marshals Association

Kristin Bigda, *Administrative Secretary*
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Corporation, TX [I]
Anthony W. Cole, Wal-Mart Stores, Inc., CA [U]
Nicholas A. Dawe, Cobb County Fire Marshal's Office,
GA [E]
Kevin L. Derr, US Architect of the Capitol, DC [U]
David A. Dodge, Safety and Forensic Consulting,
ME [SE]
David W. Frable, U.S. General Services Administration,
IL [U]
Sam W. Francis, American Wood Council, PA [M]
Douglas R. Freels, Oak Ridge National Laboratory,
TN [U]
Joseph R. Garzone, Siemens Industries, Inc., MI [M]
Rep. National Electrical Manufacturers Association
Daniel J. Gauvin, Tyco/SimplexGrinnell, MA [M]

Anthony C. Gumkowski, Travelers Insurance Company,
CT [I]
Wayne D. Holmes, HSB Professional Loss Control,
NC [I]
Jonathan Humble, American Iron and Steel Institute,
CT [M]
Scott Jacobs, ISC Electronic Systems, Inc., CA [IM]
Raymond W. Lonabaugh, National Fire Sprinkler
Association, Inc., PA [M]
Rep. National Fire Sprinkler Association
Jeff Martin, Elite Fire Protection, Canada [IM]
Rep. National Association of Fire Equipment
Distributors
Amy J. Murdock, Code Consultants, Inc., MO [SE]
Sarah A. Rice, The Preview Group, Inc., OH [SE]
Warren G. Stocker, Safeway Inc., CA [U]
David C. Tabar, The Sherwin-Williams Company, OH [U]
J. L. (Jim) Tidwell, Tidwell Code Consulting, TX [M]
Rep. Fire Equipment Manufacturers' Association
Ernest D. Yonkers, Harrison French and Associates,
AR [SE]

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Ronald W. Brown, National Fire Sprinkler Association,
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Dwayne Griffith, Wal-Mart Security Services, AR [U]
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(Alt. to Tracey D. Bellamy)
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Paul J. Vautour, Tyco/SimplexGrinnell, MA [M]
(Alt. to Daniel J. Gauvin)
Jim Widmer, Potter Roemer FIRE PRO, AL [M]
(Alt. to J. L. Tidwell)



Kristin Bigda, NFPA Staff Liaison

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Committee Scope: This committee shall have primary responsibility for documents on protection of human life and property from fire and other circumstances capable of producing similar consequences, and for the emergency movement of people in mercantile and business occupancies.

Technical Committee on Residential Occupancies [BLD-RES]

Warren D. Bonisch, *Chair*

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Gregory E. Harrington, *Administrative Secretary*

National Fire Protection Association, MA

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Patrick Boyer, State Farm Insurance Company, IL [I]

Harry L. Bradley, Maryland State Fire Marshals Office, MD [E]

Rep. International Fire Marshals Association

Phillip A. Brown, American Fire Sprinkler Association, Inc., TX [IM]

Bradford T. Cronin, Newport Fire Department, RI [E]

Rep. Rhode Island Association of Fire Marshals

Daniel P. Finnegan, Siemens Industry, Inc., NJ [M]

Rep. Automatic Fire Alarm Association, Inc.

Sam W. Francis, American Wood Council, PA [M]

Ralph D. Gerdes, Ralph Gerdes Consultants, LLC, IN [SE]

Stanley C. Harbuck, School of Building Inspection, UT [C]

Rep. American Public Health Association

Kenneth E. Isman, National Fire Sprinkler Association, Inc., NY [M]

Marshall A. Klein, Marshall A. Klein & Associates, Inc., MD [SE]

Josh Lambert, University of Texas at Austin, TX [U]

Richard T. Long, Jr., Exponent, Inc., MD [M]

Rep. Upholstered Furniture Action Council

Alfred J. Longhitano, Alfred J. Longhitano, P.E., LLC, NY [SE]

Eric N. Mayl, Core Engineers Consulting Group, LLC, DC [SE]

Ronald G. Nickson, National Multi Housing Council, DC [U]

Steven Orlowski, National Association of Home Builders, DC [U]

Henry Paszczuk, Connecticut Department of Public Safety, CT [E]

Peter Puhlick, University of Connecticut, CT [U]

Richard Jay Roberts, Honeywell Life Safety, IL [M]

Rep. National Electrical Manufacturers Association

Andrew M. Schneider, Koffel Associates, Inc., MD [SE]

John A. Sharry, Beakmann Properties, CA [U]

Joseph H. Versteeg, Versteeg Associates, CT [SE]

Andrew F. Weisfield, Michael Baker Corporation, PA [SE]

Bartholomew T. Wright, Maitland Fire Rescue Department, FL [E]

Jeffrey D. Zwirn, IDS Research & Development, Inc., NJ [SE]

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(Alt. to Bartholomew T. Wright)

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(Alt. to Marshall A. Klein)

Diana E. Hugue, Koffel Associates, Inc., MD [SE]

(Alt. to Andrew M. Schneider)

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(Alt. to Josh Lambert)

Joseph Kingston, Connecticut Office of State Fire Marshal, CT [E]

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Michael F. Meehan, VSC Fire & Security, VA [IM]

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(Alt. to Richard Jay Roberts)

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(Alt. to Sam W. Francis)

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(Alt. to Andrew F. Weisfield)

David P. Wilmot, Aon Fire Protection Engineering, MD [I]

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Gregory E. Harrington, NFPA Staff Liaison

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Committee Scope: This committee shall have primary responsibility for documents on protection of human life and property from fire and other circumstances capable of producing similar consequences, and on the emergency movement of people in hotels, dormitories, apartments, lodging and rooming houses, and one- and two-family dwellings.

Technical Committee on Structures, Construction, and Materials [BLD-SCM]

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XL Global Asset Protection Services, CT [I]

Jesse J. Beitel, Hughes Associates Inc., MD [SE]
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David S. Collins, The Preview Group, Inc., OH [SE]
 Rep. American Institute of Architects
Ralph Dorio, Insurance Services Office, Inc., NJ [I]
Jeffrey Feid, State Farm Insurance Company, IL [I]
William E. Fitch, Phyrefish.com, FL [SE]
Michael A. Gardner, Gypsum Association, MD [M]
Mark S. Graham, National Roofing Contractors Association, IL [IM]
J. C. Harrington, FM Global, MA [I]
Joseph T. Holland, Hoover Treated Wood Products, FL [M]
Karl D. Houser, EBL Engineers, LLC, MD [IM]
 Rep. Association of the Wall and Ceiling Industries International

Moriel E. Kaplan, Aon Fire Protection Engineering, MD [I]
Bonnie E. Manley, American Iron and Steel Institute, MA [M]
Eugene M. Novak, Jr., Commonwealth of Massachusetts, MA [E]
Kristen L. Owen, Lonza Wood Protection, IN [M]
Robert A. Speed, North Carolina Office of the State Fire Marshal, NC [E]
Joseph H. Versteeg, Versteeg Associates, CT [E]
 Rep. International Fire Marshals Association

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David G. Bueche, Hoover Treated Wood Products, CO [M]
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Richard J. Davis, FM Global, MA [I]
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 (Alt. to P. D. Coats)
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Robert A. Wessel, Gypsum Association, MD [M]
 (Alt. to M. A. Gardner)

Tracy L. Vecchiarelli, NFPA Staff Liaison

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Committee Scope: This committee shall have primary responsibility for documents on the protection of human life and property from fire and environmental loads through the selection and design of structural elements and assemblies; construction techniques and methodologies; and on the application of building materials used in the construction of buildings, structures, and related facilities.



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NFPA 5000

Building Construction and Safety Code

2015 Edition

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Information on referenced publications can be found in Chapter 2 and Annex H.

Chapter 1 Administration

1.1* Scope.

1.1.1 General. The *Code* addresses those construction, protection, and occupancy features necessary to minimize danger to life and property.

1.1.2 Code Title. The provisions of this document shall constitute and be known as *NFPA 5000, Building Construction and Safety Code*, hereinafter referred to as “this *Code*” or “the *Code*.”

1.2* Purpose. The purpose of the *Code* is to provide minimum design regulations to safeguard life, health, property, and public welfare and to minimize injuries by regulating and controlling the permitting, design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures within the jurisdiction and certain equipment specifically regulated herein.

1.3 Application.

1.3.1 Buildings and Structures. The provisions of the *Code* shall apply to the construction, alteration, repair, equipment, use and occupancy, maintenance, relocation, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures within the jurisdiction.

1.3.2 References to Requirements of Other Codes or Standards. Where the requirements of a referenced code or standard differ from the requirements of this *Code*, the requirements of this *Code* shall govern.

1.3.3 Moved Buildings and Structures. The provisions of the *Code* shall apply to buildings and structures moved into or within the jurisdiction.

1.3.4 Existing Buildings and Structures. The provisions of this *Code* shall apply to existing buildings where any one of the following conditions applies:

- (1) A change of use or occupancy classification occurs.
- (2) A repair, renovation, modification, reconstruction, or an addition is made.
- (3) The building or structure is relocated.
- (4) The building is considered damaged, unsafe, or a fire hazard.
- (5) A property line that affects compliance with any provision of this *Code* is created or relocated.

1.4 Retroactivity. (Reserved)

1.5 Equivalency.

1.5.1 General. Nothing in this *Code* shall prohibit methods of construction, materials, and designs not specifically prescribed in this *Code* where equivalent alternatives are approved by the authority having jurisdiction (AHJ).

1.5.2 Approval of Alternatives. Alternative systems, methods, or devices approved as equivalent by the authority having jurisdiction shall be recognized as being in compliance with this *Code*.

1.5.3 Tests.

1.5.3.1 Whenever the authority having jurisdiction determines that there is insufficient evidence of proof of equivalency with the prescribed requirements of this *Code*, the authority having jurisdiction shall be authorized to require tests showing proof of equivalency.

1.5.3.2 Tests required by the authority having jurisdiction shall be provided by the owner at no expense to the jurisdiction.

1.5.3.3 Tests shall be conducted as specified in this *Code* or, where test methods are not specified in this *Code*, they shall be conducted as required by the authority having jurisdiction.

1.5.4 Approval. The authority having jurisdiction shall determine whether the proposed alternate methods of construction, materials, and designs are at least equivalent to the prescribed requirements of this *Code*.

1.6 Units.

1.6.1 SI Units. Metric units in this *Code* are in accordance with the modernized metric system known as the International System of Units (SI).

1.6.2 Primary Values. The inch-pound value for a measurement, and the SI value given in parentheses, shall each be acceptable for use as primary units for satisfying the requirements of this *Code*.

1.7 Enforcement.

1.7.1 Organization.

1.7.1.1 Creation of Department of Building and Safety. There is hereby created in the jurisdiction a department of building and safety that shall be under the control of the director of building and safety, who shall be the authority having jurisdiction.

1.7.1.2 Delegation of Authority. The authority having jurisdiction is hereby empowered to delegate authority and assignments to subordinate employees. Such employees shall have the authority to carry out duties and assignments, as delegated by the authority having jurisdiction.

1.7.1.3 Right of Entry. Whenever it is necessary to make an inspection to enforce any of the provisions of this *Code*, or

whenever the authority having jurisdiction has reason to believe that there exists in any building, or upon any premises, a condition that makes such building or premises unsafe, as specified by 1.7.5.3.1.1, the authority having jurisdiction shall be authorized to enter such building or premises at reasonable times to inspect the same, or to perform any duty imposed on the authority having jurisdiction by this *Code*, under the following conditions:

- (1) The authority having jurisdiction shall first present proper credentials and request entry.
- (2) In the event that entry is refused, or the person authorized to grant entry is unavailable, the authority having jurisdiction shall have recourse to remedy provided by law to secure entry.

1.7.1.4 Concealed Work. The authority having jurisdiction is hereby authorized to order parts of any building or structure to be exposed for inspection when the building or part thereof is in an unsafe or a dangerous condition, when there is willful or negligent concealment of a violation of this *Code*, or when work subject to a required inspection has been covered prior to the required inspection. All costs incurred in making concealed work available for inspection shall be borne by the owner of the building or structure.

1.7.2 Approvals by Other Regulatory Agencies. The authority having jurisdiction shall have the authority to require that the laws, rules, and regulations of other regulatory agencies having jurisdiction are met before a building permit is issued to an applicant.

1.7.2.1 The authority having jurisdiction shall have the authority to require evidence in writing to show that other regulatory agencies having jurisdiction over the design, construction, alteration, repair, equipment, maintenance, demolition, and relocation of buildings and structures in the jurisdiction have approved the proposed construction.

1.7.2.2 The authority having jurisdiction shall not be held responsible for enforcement of the regulations of the regulatory agencies specified in 1.7.2.1, unless authorized to enforce the regulations of such an agency.

1.7.3 Board of Appeals.

1.7.3.1 Creation of Board of Appeals.

1.7.3.1.1 There is hereby established a board of appeals, consisting of at least five members, qualified by training and experience to rule on matters relating to building, who shall be appointed by the jurisdiction. The board shall select one of its members to serve as chair, and the authority having jurisdiction shall be an ex officio member without vote and shall act as secretary to the board.

1.7.3.1.2 Whenever the authority having jurisdiction rejects or refuses to approve the manner of proposed construction or the suitability of alternative materials and methods of construction, the owner of such building or structure or a duly authorized agent shall be permitted to request an appeal from the decision of the authority having jurisdiction by means of the board of appeals.

1.7.3.2 Term of Office. The jurisdiction shall appoint one member of the board of appeals for a term of 1 year, two members for a term of 2 years, and two members for a term of 3 years, and, thereafter, they shall be appointed for a term of 3 years. The authority shall fill vacancies for an unexpired term.

1.7.3.3 Quorum. Two-thirds, but not less than four members, of the board of appeals shall constitute a quorum. In varying the application of any provision of this *Code*, or in modifying an order of the authority having jurisdiction, a majority vote of the members present shall be required.

1.7.3.4 Meetings and Records. Meetings of the board shall be held at the call of the chair and at such other times as the board determines. All hearings before the board shall be open to the public. The board shall keep minutes of its proceedings showing the vote of each member on every question, or if the member is absent or fails to vote, indicating such actions. The board shall also keep records of its examinations and other official actions. Minutes and records of the board shall be public records.

1.7.3.5 Procedures. The board shall establish rules and regulations for its own procedures consistent with the provisions of this *Code* and applicable laws and statutes.

1.7.3.6 Appeals. An appeal of a decision shall be filed within 30 days from the date of the decision being appealed by filing with the authority having jurisdiction and the board of appeals a notice of appeal, specifying the grounds thereof. In the case of a building or structure that, in the opinion of the authority having jurisdiction, is unsafe or dangerous, the authority having jurisdiction shall be permitted to limit the time for such appeal to a shorter period. The authority having jurisdiction shall transmit to the board all the papers relating to the appeal and shall schedule a public hearing thereon.

1.7.3.7 Authority of the Board.

1.7.3.7.1 The board of appeals shall provide for reasonable interpretation of the provisions of this *Code* and rule on appeals from decisions of the authority having jurisdiction. The ruling of the appeals board shall ensure that the intent of the *Code* is complied with and public safety is secured.

1.7.3.7.2 The board shall be permitted to grant modifications through the procedures outlined for equivalency in Section 1.5.

1.7.3.7.3 A decision of the board to modify an order of the authority having jurisdiction shall be in writing and shall specify the manner in which such modification is made, the conditions upon which it is made, and the reasons therefor.

1.7.3.8 Decisions.

1.7.3.8.1 Every decision of the board shall be entered in the minutes of the board meeting. Every decision shall be promptly filed in the office of the authority having jurisdiction and shall be open for public inspection. A certified copy shall be sent by mail or messenger to the appellant, and a copy shall be publicly posted in the office of the authority having jurisdiction for 2 weeks after filing. The decision of the board shall be final, subject to such remedy as any aggrieved party might have through legal, equity, or other avenues of appeal or petition.

1.7.3.8.2 If a decision of the board reverses or modifies a refusal, order, or disallowance of the authority having jurisdiction, or varies the application of any provision of this *Code*, the authority having jurisdiction shall take action immediately in accordance with such decision.

1.7.4 Liability.

1.7.4.1 Any officer, employee, or member of the board of appeals charged with the enforcement or interpretation of this *Code*, acting for the applicable governing body in the discharge of his/her duties, shall not thereby render

himself/herself personally liable. Further, all such persons shall be relieved from all personal liability for any damage they accrue to persons or property as a result of any act required or permitted in the discharge of their duties. Any suit brought against any officer or employee because of such act performed in the course of enforcement of any provision of this *Code* shall be defended by the legal counsel of the jurisdiction until the termination of the proceedings.

1.7.4.2 This *Code* shall not be construed to relieve the responsibility of or to lessen the responsibility of, any person owning, operating, or controlling any building or structure for any damages to persons or property caused by defects. Further, the *Code* enforcement agency or its parent jurisdiction shall not be held as assuming any such liability by reason of the inspections authorized by this *Code* or any permits or certificates issued under this *Code*.

1.7.5 Compliance of Buildings and Structures.

1.7.5.1 Alterations or Change of Occupancy Classification. Alterations or change of occupancy classification shall be in accordance with Chapter 15.

1.7.5.2 Maintenance of Buildings and Property.

1.7.5.2.1 Buildings. The requirements contained in this *Code* for maintenance of buildings shall apply to all buildings and structures in existence on the date of enactment of this *Code* and those hereafter erected. All buildings and structures, and all parts thereof, shall be maintained in a safe condition, and all devices and safeguards required by this *Code* shall be maintained in operating condition. The requirements of this paragraph shall not be construed as permitting the removal or nonmaintenance of existing devices or safeguards, unless authorized by the authority having jurisdiction.

1.7.5.2.2 Existing Installations. Buildings in existence at the time of the adoption of this *Code* shall be permitted to have their existing use or occupancy continued if such use or occupancy was legal at the time of the adoption of this *Code*, provided that such continued use is not dangerous to life.

1.7.5.3 Unsafe Buildings and Fire Hazards.

1.7.5.3.1 Descriptions.

1.7.5.3.1.1 Description of Unsafe Building. All buildings that are, or that hereafter become, characterized by the following shall be considered unsafe buildings:

- (1) Existence of unsanitary conditions
- (2) Deficiency in means of egress
- (3) Hazard from fire or natural or man-made threats
- (4) Dangers to human life or public welfare by reason of illegal or improper use, occupancy, or maintenance
- (5) Noncompliance with the provisions of codes applicable at time of construction
- (6) Significant damage by fire or explosion or other natural or man-made cause
- (7) Incomplete buildings for which building permits have expired or been revoked, excluding partially completed buildings with valid certificates of occupancy
- (8) Falling away, hanging loose, or loosening of any siding, block, or other building material, appurtenance, or part thereof of a building
- (9) Existence of unsanitary conditions by reason of inadequate or malfunctioning sanitary facilities or waste disposal systems
- (10)*Existence of structurally unsafe conditions

1.7.5.3.1.2 Description of Building as a Fire Hazard. A building shall be deemed to be a fire hazard and unsafe under the following conditions:

- (1) When vacant and unguarded and open to unauthorized entry at door or window
- (2) When there is an accumulation of combustible dust, debris, or materials therein deemed to be a hazard by the authority having jurisdiction
- (3) When the building does not provide the exits or fire protection required herein for the most recent occupancy
- (4) When electrical or mechanical installations or systems create a hazardous condition

1.7.5.3.2 Authority of the Authority Having Jurisdiction Regarding Unsafe Buildings or Buildings That Are a Fire Hazard. All buildings deemed to be unsafe or to be a fire hazard by the authority having jurisdiction, based on 1.7.5.3.1, are hereby declared to be public nuisances and shall be demolished and removed from the premises concerned or shall be made safe and sanitary in accordance with Chapter 15 of this *Code*.

1.7.5.3.3 Inspection of Unsafe Buildings. The authority having jurisdiction, on his/her own initiative, or as a result of reports filed with the department of building and safety, shall examine or cause to be examined every building appearing to be or reported to be unsafe, and, if such is found to be an unsafe building as defined in 1.7.5.3.1.1, the authority having jurisdiction shall post on the property on which the building is located and shall furnish the owner of such building with a written notice of violation. The manner of posting and furnishing written notice shall be as provided in 1.7.5.3.4 and 1.7.5.3.5, inclusive.

1.7.5.3.4 Notice of Violation. At least 14 days prior to posting a noncomplying building, the authority having jurisdiction shall give the owner of the premises written notice by certified mail, addressed to the owner's last known address. If proof of service by certified mail is not completed by signed return receipt, a copy of the written notice shall be affixed to the structure concerned, and such procedure shall be considered proper service, and the time for compliance stipulated in the notice shall commence with the date on which such notice is so affixed. This written notice shall state the defects that constitute a violation of this *Code* and prescribe the action to be taken by the owner of the building to comply with the *Code* and the time within which compliance must be accomplished. Such time shall be reasonable under the circumstances of the case and shall be subject to reasonable extension, when requested in writing, for reasons that the authority having jurisdiction considers as justifying an extension of time. All extensions of time shall be by written approval of the authority having jurisdiction. In addition, this written notice shall explain the right of appeal of the decision of the authority having jurisdiction to the board of appeals and shall state that, unless there is compliance with the instructions in the notice of violation or an appeal is filed, a public hearing before the board of appeals will be initiated by the authority having jurisdiction after the time period for compliance has expired.

1.7.5.3.5 Recording of Notice of Violation.

1.7.5.3.5.1 If the owner of the property has not complied with the requirements as stated in the notice of violation within the time specified, the authority having jurisdiction shall file an appropriate instrument in the office of the clerk of the circuit court, to be recorded in the public records of the jurisdiction in which the violation occurred, indicating that

violations of this *Code*, and of 1.7.5.3.4 thereof, exist upon the property involved.

1.7.5.3.5.2 The recording of the notice of violation shall constitute legal notice to all concerned, as well as to any subsequent purchasers, transferees, grantees, mortgagees, lessees, and all persons claiming or acquiring interest in the property.

1.7.5.3.5.3 When the violation specified in the notice of violation has been corrected and the filing fees incurred have been paid, the authority having jurisdiction shall file a certificate attesting that the violation has been corrected.

1.7.5.3.6 Posting Notice of Violation. The authority having jurisdiction shall post a signed notice in a conspicuous location on the building that has been determined to be unsafe, but not before 14 days after the notice of violation provided in 1.7.5.3.4 has been served. The posted notice shall be dated and shall read as follows:

WARNING: UNSAFE BUILDING

This building is unsafe based on the provisions of 1.7.5.3 of
NFPA 5000, Building Construction and Safety Code.

This building shall be vacated and shall not be occupied. Action to repair or remove this building shall be taken by the owner as prescribed by written notice previously served. **THIS NOTICE SHALL NOT BE REMOVED EXCEPT BY THE AUTHORITY HAVING JURISDICTION.**

1.7.5.3.7 Emergency Action.

1.7.5.3.7.1 When, in the opinion of the authority having jurisdiction, an imminent danger exists, the authority having jurisdiction shall be authorized to order the occupants to vacate, or temporarily close for use or occupancy, the rights-of-way, sidewalks, streets, or adjacent buildings or nearby areas. The authority having jurisdiction shall have the authority to institute such other temporary safeguards as deemed necessary. The authority having jurisdiction shall be authorized to employ the necessary labor and materials to perform the required work. The authority having jurisdiction shall promptly notify the local emergency services of buildings posted as unsafe and ordered to be vacated. The authority having jurisdiction shall also notify the emergency services when unsafe conditions have been remedied and the building is safe for occupancy and use.

1.7.5.3.7.2 Costs incurred in the performance of emergency work shall be paid by the governmental authority having jurisdiction. Upon recording in the public records of the county in which such emergency work was completed, a certificate, executed by the authority having jurisdiction, certifying the amount expended and the reasons therefor shall be issued, and the cost shall become a lien against the property on which such emergency work was required.

1.7.5.3.8 Appeal and Review. The owner of, or anyone having an interest in, a building that has been determined to be unsafe, concerning which a notice of violation has been served by the authority having jurisdiction as stated in the notice of violation, shall be permitted to appeal to the board of appeals, and such appeal shall be filed in accordance with the provisions of 1.7.3.6 and 1.7.3.7 prior to the expiration of the time allowed for compliance specified in such notice. In no case shall the appeal period be less than 15 days.

1.7.6 Building Permits, Construction Documents, and Inspections.

1.7.6.1 Permits.

1.7.6.1.1 Permits Required.

1.7.6.1.1.1 No person, firm, or corporation shall move a property line that affects an existing structure or erect, construct, enlarge, alter, repair, relocate, improve, convert, or demolish any building, structure, or part thereof in the jurisdiction, or cause the same to be done, without first obtaining from the authority having jurisdiction a separate building permit for the work to be accomplished for each such building, structure, or temporary structure. Permits shall not be required for the following:

- (1) Painting, papering, tiling, and carpeting, and cabinets, countertops, and similar finish work
- (2) Temporary motion picture, television, and theater stage sets and scenery
- (3) Window awnings supported by an exterior wall for one- and two-family residential use
- (4) One-story detached accessory structures used as tool and storage sheds or playhouses or for other similar uses, provided that the floor area does not exceed 120 ft² (11.1 m²)
- (5) Fences not over 6 ft (1830 mm) high
- (6) Movable cases, counters, and partitions not over 6 ft (1830 mm) high

1.7.6.1.1.2 Permits shall be required for plumbing, air-conditioning, heating, and ventilating systems; elevators, escalators, and transporting assemblies; and gas, sprinkler, roofing, electrical, and show/ride installations.

1.7.6.1.1.3 Special building permits for temporary structures placed in flood hazard areas shall comply with Section 39.15.

1.7.6.1.1.4 A previously issued lawful permit shall be valid on the terms of the *Code* under which it was issued, provided that no such permit shall be subject to the limitations specified in 1.7.6.1.

1.7.6.1.1.5 A special building permit that remains in effect for a limited time shall be obtained before the erection of temporary structures such as construction sheds, seats, canopies, tents, and fences used in construction work or for temporary purposes such as reviewing stands. Temporary structures shall be completely removed upon the expiration of the time limit stated in the permit.

1.7.6.1.2 Other Jurisdictions. Permits required for work to be accomplished under the jurisdiction of other departments shall be issued only on presentation of written proof of compliance with 1.7.2 of this *Code*.

1.7.6.2 Applications.

1.7.6.2.1 Application Requirements. To obtain a permit, the applicant shall first file an application therefor in writing on a form supplied for that purpose by the department of building and safety. Such application shall include the following:

- (1) Identification and description of the work to be covered by the permit for which application is made
- (2) Description of the land on which the proposed work is to be done by lot, block, tract, and street address, or similar description that specifically identifies the location of the proposed building or work
- (3) Indication of the use or occupancy of all parts of the building



- (4) Construction documents as required in 1.7.6.3
- (5) Valuation of the proposed work
- (6) Signature of the permittee or his/her authorized agent
- (7) Provision of other information as required by the authority having jurisdiction

1.7.6.2.2 Surveyor's Certificate Requirements. Application for permit for new construction and additions shall be accompanied by a registered land surveyor's certificate and plan in duplicate on which shall be indicated clearly the following:

- (1) Property corner stakes
- (2) Property line dimensions
- (3) Existing structures and their locations
- (4) Existing rights-of-way
- (5) Sidewalks
- (6) Easements
- (7) Street zoning and property zoning of record
- (8) Critical elevations and building setbacks required by law
- (9) General block plan
- (10) Other pertinent survey data

1.7.6.2.3 Waiver of Surveyor's Certificate Requirement. The authority having jurisdiction shall be granted authority to waive the requirements for the surveyor's certificate when property line stakes are known to be in place and when the work contemplated is minor and is clearly within building lines.

1.7.6.2.4 Requirements for Relocation of Buildings. Application for permit for relocating a building within the jurisdiction shall be submitted in the form that the authority having jurisdiction requests. The application shall be accompanied by plans or other data that, in the opinion of the authority having jurisdiction, are necessary to show compliance with this *Code* and the zoning and other regulations of the jurisdiction. A physical examination of the structure shall be made by the authority having jurisdiction before it issues a permit for relocation. (See also 1.7.6.6.)

1.7.6.2.5 Requirements for Demolition of Buildings and Structures. Application for permits for the work of demolition of buildings or structures shall be accepted only from persons or firms qualified to do the work. The qualifications of persons or firms permitted to demolish a building or structure shall be in accordance with the requirements of the jurisdiction providing for qualification and certification of construction tradespeople.

1.7.6.3 Construction Documents.

1.7.6.3.1 Requirements for Construction Documents.

1.7.6.3.1.1 Each application for a permit shall be accompanied by a minimum of two sets of construction documents and calculations when required by the authority having jurisdiction.

1.7.6.3.1.2 When compliance with this *Code* can be determined without the submittal or review of plans, specifications, and calculations, the authority having jurisdiction shall be permitted to issue a permit without construction documents and calculations being submitted for review.

1.7.6.3.1.3 The construction documents shall be prepared by a registered design professional where required by statutes of the jurisdiction in which the construction site is located.

1.7.6.3.1.4 Unless otherwise provided in 1.7.6.3.1.5, plans shall be drawn to scale, shall be identified by name of designer and owner on every sheet, and shall be mechanically reproduced prints on substantial paper or cloth. A plot plan shall

show all occupied and unoccupied parts of the lot or lots and shall delineate the accessible route(s) between structures and features that are required to be accessible in accordance with Chapter 12 of this *Code*. The use, name, and occupancy of all parts of the building shall be shown, including all foundations, wall sections, floor plans, elevations, and structural details. Mechanical, plumbing, electrical, fire sprinkler, and fire alarm details shall be shown on the plans and represent the designs for those disciplines, along with such other information to show clearly the nature, character, and location of the proposed work.

1.7.6.3.1.5 For tenant improvements or building repairs, renovations, modifications, or reconstruction in accordance with Chapter 15, plans shall be drawn to scale, shall be identified by name of designer and owner on every sheet, and shall be mechanically reproduced prints on substantial paper or cloth. The use, name, and occupancy of the work area shall be shown. Construction documents shall indicate the location, nature, and extent of the proposed work and shall show in detail that the proposed work will conform to the provisions of this *Code*.

1.7.6.3.1.6 Construction documents for all buildings shall indicate required smoke-resistant-rated and fire resistance-rated construction and how the required structural integrity, fire resistance ratings, and smoke resistance will be maintained where a joint or penetration of a required fire- or smoke-resistant wall, floor, or partition will be made for electrical, gas, or mechanical work; plumbing and communications conduits; pipes; and systems. Construction documents shall also indicate in sufficient detail how the fire integrity will be maintained where required fire-resistant floors intersect the exterior walls.

1.7.6.3.1.7 The classification of fire resistance-rated floor and roof construction shall be identified on the plans as restrained or unrestrained. Only where a registered design professional (RDP) has furnished documentation satisfactory to the authority having jurisdiction verifying that the construction is restrained as specified in 8.2.1.3 shall the construction be considered restrained.

1.7.6.3.1.8 The construction documents and shop drawings submitted to the authority having jurisdiction shall contain sufficient detail for evaluation of the protected hazards and the effectiveness of the system. The shop drawings for the installation of fire protection systems shall be submitted for review and approval prior to the installation of a fire protection system.

1.7.6.3.1.9 For high-rise buildings, mall buildings, and buildings containing atriums, the construction documents shall include a description of the fire protection systems in the building. This description shall include the basic concepts used for suppression, alarm, notification, egress, compartmentation, smoke control, and other related systems, as well as the coordination of these systems. Upon completion of the project, a copy of the approved documentation shall be maintained at the site.

1.7.6.3.2 Examination of Construction Documents.

1.7.6.3.2.1 The authority having jurisdiction shall examine all construction documents and applications for permits and amendments thereto for their compliance with this *Code*. If the applications or the construction documents do not conform to the requirements of this *Code*, the authority having jurisdiction shall reject such application for a building permit in writing, stating the reasons therefor. Construction documents that are rejected shall be returned for corrections. If,

upon examination, the application and construction documents are found to comply with the requirements of this *Code*, the construction documents shall be signed by the authority having jurisdiction or its deputy and shall be stamped “approved.”

1.7.6.3.2.2 When practical difficulties are involved in carrying out the requirements of this *Code*, the authority having jurisdiction shall be permitted to grant modifications for individual cases. Such permission shall require, first, a finding that a special individual reason makes strict compliance impractical and, second, that the modification is in conformance with the intent and purpose of the *Code*. Fire protection and structural integrity shall not be lessened.

1.7.6.3.3 Partial Approval.

1.7.6.3.3.1 Pending the completion of checking of construction documents, and on payment of the fee required, the authority having jurisdiction, at its discretion, shall be permitted to authorize the issuance of a partial permit for site preparation, excavation, and construction; foundation, structural, or show/ride installations; or any combination thereof. The holder of such partial permit shall proceed at his/her own risk and without assurance that a completion permit will be granted.

1.7.6.3.3.2 Whenever there is a delay in approval of construction documents under special circumstances, the authority having jurisdiction shall be permitted to allow the builder to place tool sheds, materials, batterboards, and construction equipment on the site prior to actual construction, or to permit exploratory uncovering of concealed structural elements of existing buildings for design information, pending completion of construction documents for proposed alterations.

1.7.6.3.3.3 The construction documents for each phase shall be complete in themselves, so that review and inspection can properly be made. Preliminary plans of the total building shall be submitted with the construction documents, and with sufficient detail, so that proper evaluation can be made. Areas and items not included in the phase to be permitted shall be shown as not included.

1.7.6.3.3.4 Deferred submittal of construction documents shall be approved by the authority having jurisdiction prior to the issuance of a building permit. The RDP for design shall identify all deferred submittals in writing with the application for permit. Construction documents for deferred submittal items shall be reviewed by the RDP for design for general conformance to the RDP's design and then submitted to the authority having jurisdiction. Deferred submittal items shall not be installed until their performance requirements and construction documents have been approved by the authority having jurisdiction.

1.7.6.3.4 Approved Construction Documents.

1.7.6.3.4.1 The authority having jurisdiction shall retain one set of the approved construction documents and calculations. The other set shall be kept at the building site, open to inspection at all times when the offices of the jurisdiction are open.

1.7.6.3.4.2 After permit issuance, all changes and deviations from the approved construction documents shall be submitted and approved by the authority having jurisdiction prior to implementing the changes on site.

1.7.6.3.4.3 Approved construction documents and amendments thereto that are retained by the authority having jurisdiction shall become public record, provided that they shall

be considered as confidential records of their author, that they shall be open to the public only for inspection, and that the authority having jurisdiction shall permit bona fide owners or designers employed by such owners to inspect the construction documents when not available from their author. Upon written application, the authority having jurisdiction shall permit the construction documents to be copied by the owner in the event of the author's death or the inability of the author to supply copies of the construction documents.

1.7.6.3.4.4 At the time a certificate of occupancy is issued, an updated set of construction documents shall be submitted, and a permit fee shall be paid to reflect increased costs.

1.7.6.3.5 Multitenant Buildings.

1.7.6.3.5.1 Buildings that are to be completed in phases due to occupancy by tenants shall be permitted to be completed by the owner to a “rough-in” status. The individual tenant area shall then have a permit issued, and, upon completion of all work, a certificate of occupancy shall be issued for that area only. The authority having jurisdiction shall approve the certificate of occupancy by stages before starting construction and shall be permitted to require special conditions to provide safety during the completion.

1.7.6.3.5.2 Buildings that will later be occupied by multiple tenants (lessees) shall be permitted to have certain areas constructed to an unfinished rough-in condition without affecting the certificate of occupancy issued for the finished portions of the buildings. Future construction to accommodate individual tenants shall be approved upon submittals of acceptable construction documents for permit purposes. Certificates of occupancy shall be granted on a case-by-case basis when *Code* compliance has been achieved.

1.7.6.4 Permit Fees.

1.7.6.4.1 Fee Requirements. Any person requiring a building permit, in addition to filing an application therefor and before such permit is issued, shall pay such permit fee and plan check fee as required by the jurisdiction.

1.7.6.4.2 Basis of Permit Fee. The jurisdiction shall establish a fee schedule listing all applicable fees and the method of their calculation. The authority having jurisdiction shall be permitted to require an estimate of cost and other descriptive data as a basis for determining the permit fee.

1.7.6.5 Conditions of Permit.

1.7.6.5.1 Permit. When construction documents and application for permit have been approved and the required fee has been paid, the authority having jurisdiction shall issue a permit for the work. With each permit, the authority having jurisdiction shall issue a permit bearing the legal description of the property, the nature of the work being done, the names of the owner and builder or contractor, and other pertinent information. The permit shall be posted and maintained in legible condition in a conspicuous place within the construction area during the entire time period the work authorized by the permit is in progress.

1.7.6.5.2 Compliance with the Code.

1.7.6.5.2.1 Issuing or granting of a permit or approval of construction documents by the authority having jurisdiction shall not be construed to be a permit for, or an approval of, any violations of any of the provisions of this *Code*. No permit presuming to give authority to violate or cancel any of the provisions of this



Codes shall be valid, except insofar as the performance of the work that it authorizes is lawful.

1.7.6.5.2.2 When construction documents have been approved, the issuance of a permit shall not prevent the authority having jurisdiction from thereafter requiring correction of errors in such construction documents, or from preventing building operations being carried on thereunder in violation of this *Code* or of any other regulations of the jurisdiction applicable thereto. Compliance with this *Code* is the responsibility of the owner or his/her authorized agent.

1.7.6.5.3 Time Limitation.

1.7.6.5.3.1 Permits shall expire if the work authorized by such permit is not commenced within 6 months from the date of the permit, or, if after commencing, the work is suspended or abandoned for a period of 6 months at any time during construction operations. The authority having jurisdiction shall be permitted to extend such permit for a period of 90 days from the date of expiration if the work has not commenced, or for a period of 90 days from the date of the last recorded inspection if written application for such extension is received and approved by the authority having jurisdiction prior to the date of expiration of the initial permit, and provided that the proposed work complies with all requirements of the *Code* in effect at the time of such renewal.

1.7.6.5.3.2 A previously issued lawful permit shall be valid under the terms of the *Code* under which it was issued, provided that such permit shall be subject to the limitations specified in 1.7.6.5.3.

1.7.6.5.3.3 Before the work for which a building permit that has become void can be recommended, a new permit shall be required. The work for which the new permit is issued shall conform to the provisions of this *Code* at the time of reissuance of the permit. The fee shall be based on the amount of work remaining to be done.

1.7.6.6 Inspection.

1.7.6.6.1 Inspection Requirements.

1.7.6.6.1.1 Before issuing a permit, the authority having jurisdiction shall be permitted to inspect any building or structure for which an application has been received for a permit to enlarge, alter, repair, relocate, demolish, or change the occupancy thereof. The authority having jurisdiction shall inspect all buildings and structures from time to time during the work for which a permit was issued and on completion of the work. The authority having jurisdiction shall cause to be kept a record of every inspection and of all violations of this *Code* and of the correction and disposition of such violations.

1.7.6.6.1.2 Before a permit for moving a building or structure within or into the jurisdiction is issued, the authority having jurisdiction shall be authorized to inspect such building or structure for the purpose of ascertaining that the building being relocated complies with the requirements of this *Code* and all other applicable laws or regulations of the jurisdiction.

1.7.6.6.1.3 All construction or work for which a permit is required shall be subject to mandatory inspections by the authority having jurisdiction, as prescribed in 1.7.6.6.3, and certain types of construction shall have quality assurance, as specified in Chapter 40. Prior to issuance of a certificate of occupancy, a final inspection shall be made by the authority having jurisdiction of all construction or work for which a permit has been issued.

1.7.6.6.1.4 When required by the authority having jurisdiction, it shall make an inspection of materials or assemblies at the place of manufacture or fabrication. A record shall be maintained of every such inspection and of all violations of this *Code* noted during the inspection.

1.7.6.6.1.5 The authority having jurisdiction shall make or cause to be made the inspections required in 1.7.6.6.1. Written reports of inspectors employed by approved inspection services shall be permitted, provided that, after investigation, the authority having jurisdiction is satisfied as to the qualifications and reliability of the inspection service. Costs of such inspections shall be borne by the owner. No certificate called for by any of these requirements shall be based on such reports, unless the reports are in writing and are certified by the officer of the agency who made the inspection. Reports issued by inspection services engaged by the owner or the registered design professional of a building shall be promptly forwarded to the authority having jurisdiction for its information and records.

1.7.6.6.1.6 Work requiring a building permit shall not be commenced until the permit holder or the holder's agent shall have posted the building permit in accordance with the requirements of 1.7.6.5.1. This permit shall be maintained in such position by the permit holder until the certificate of occupancy has been issued by the authority having jurisdiction.

1.7.6.6.2 Inspection of Structural Units. Where a building or part thereof is a structural unit, the integral parts of which have been built or assembled prior to incorporation into the building, such building or part thereof shall conform to the requirements of this *Code*. Inspections shall be made by the authority having jurisdiction as required in this *Code* for the materials and types of construction used in the prefabricated assemblies. The inspection shall be permitted to be waived during prefabrication if the approved agency certifies to the compliance of the construction with this *Code* and supplies evidence of such compliance in writing by an RDP or an approved agency or laboratory.

1.7.6.6.3 Mandatory Inspections.

1.7.6.6.3.1 Work requiring mandatory inspections shall not be covered or concealed in any manner without first obtaining the approval of the authority having jurisdiction.

1.7.6.6.3.2 Work shall not be done on any part of a building or structure beyond the stage of work indicated in each of the successive mandatory inspections until inspection has been completed and written approval has been given by the authority having jurisdiction or its deputy.

1.7.6.6.3.3 The permit holder or permit holder's agent shall notify the authority having jurisdiction of the time when a given stage of construction will be ready for inspection. The authority having jurisdiction shall then make such called inspection and other inspection as necessary, and it either shall approve in writing that stage of the construction as completed or shall notify the permit holder or permit holder's agent specifically wherein the work fails to comply with the provisions of this *Code*.

1.7.6.6.3.4 Inspections shall be conducted for each building element as described in 1.7.6.6.3.4(A) through 1.7.6.6.3.4(P).

(A) Foundations. Inspections for foundations shall be conducted when the excavation for footings is complete, and when footing forms and when required anchorage and reinforcing steel are in place, but before concrete is placed.

(B) Reinforcing Steel. Inspections of reinforcing steel shall be conducted after all reinforcing steel is in place and supported, and when forms are braced, but before the concrete is placed. Reinforcing steel in walls shall be inspected after the steel is in place, with one side of wall forms in place and braced, but before the concrete is placed.

(C)* Lowest Floor. Inspections for the lowest floor for buildings and structures located wholly or partly within the flood hazard area established by 39.4.2 shall be made after the lowest floor level is set. No further vertical construction shall take place until the lowest floor inspection has been completed and the lowest floor elevation has been approved by the authority having jurisdiction. An elevation certificate identifying the lowest floor elevation, as required by 39.12.3.1.3 or 39.12.3.2.3, shall be submitted to the authority having jurisdiction immediately after the floor level is set. The lowest floor inspection shall be in addition to other flood-related special inspections in 1.7.6.6.3.4(N) (5).

(D) Framing. Inspections for framing shall be made at each floor level after all floor, wall, roof framing, and fire blocking are complete, after welds and clip connections are made, and after all pipes, chimneys, vents, ductwork, rough plumbing, and rough electrical work are in place.

(E) Insulation. Inspections for insulation shall be made before lathing, wallboard, or other finishes are applied.

(F) Lathing and Wallboard. Inspections for lathing and wallboard shall be conducted when supports, backing, lath, or wallboard, or any combination thereof, are in place and ready for plaster and other finish work, and all plastering materials are delivered on the job, but before any finish is applied and before wallboard joints and fasteners are taped and finished.

(G) Roofing. Inspections for roofing shall be conducted after the anchor sheet(s) is on and secured and before the installation of capsheet or other finish course.

(H) Masonry. Inspections for masonry shall be conducted after units are set and reinforcing steel is placed and prior to grouting.

(I) Structural Steel. Inspections for structural steel shall be conducted when structural steel members and required connections are complete, but before concealing any members or connections.

(J) Electrical Systems. Inspections for electrical systems shall be made in accordance with the requirements of Chapter 52.

(K) Mechanical Systems. Inspections for mechanical systems shall be made in accordance with the requirements of Chapter 50.

(L) Plumbing Systems. Inspections for plumbing systems shall be made in accordance with the requirements of Chapter 53.

(M) Fire Protection Systems. Inspections for fire protection systems shall be in accordance with applicable standards.

(N) Special Inspections. Special inspections shall be made immediately after completion and at such intervals during the progress of the work as required by the authority having jurisdiction and as follows:

- (1) Inspections for elevators and conveying systems shall be made in accordance with the requirements of ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*;

ASME A18.1, *Safety Standard for Platform Lifts and Stairway Chairlifts*; and ASME B20.1, *Safety Standard for Conveyors and Related Equipment*.

- (2) Inspections for swimming pools shall be made in accordance with the requirements of this *Code*.
- (3) Inspections for signs shall be made in accordance with the requirements of this *Code*.
- (4) Inspections shall be made to confirm that stairways, except those used in the means of escape, comply with 11.2.2.3.5 and 11.2.2.3.6 of this *Code* before the installation of carpeting and after the installation of carpeting, provided that measurements made after the installation of carpeting are made to the uncompressed walking surface of the carpet.
- (5) For buildings and structures located wholly or partly within the flood hazard area established by 39.4.2, the following criteria shall be met:
 - (a) Inspections shall be made to determine the lowest elevation of machinery and equipment servicing the building, adjacent grade elevations, and flood-opening information.
 - (b) An elevation certificate identifying the information specified in 1.7.6.6.3.4(N) (5) (a), as required by 39.12.3.1.3 or 39.12.3.2.3, shall be submitted to the authority having jurisdiction before a certificate of occupancy is issued.

(O) Other Inspections. Other inspections shall be permitted. Prefabricated assemblies shall be permitted to be inspected at the place of manufacture.

(P) Final Inspection. A final inspection shall be made when the building or structure is completed and is ready for use or occupancy.

1.7.6.6.3.5 Requests for final inspections shall be made to the office of the authority having jurisdiction, and a reasonable time shall be allowed for such inspection to be made. Rejection or refusal to approve the work for reasons of incompleteness, violation of the provisions of this *Code*, or inadequacy of the construction shall nullify the request for final inspection. The work shall be made to comply with the *Code*, and the request for inspection shall be repeated as required herein.

1.7.6.6.4 Inspection Reports. The authority having jurisdiction shall keep a record of all inspections made, results, plans filed, surveys made, and certificates of occupancy issued.

1.7.6.7 Certificate of Occupancy.

1.7.6.7.1 Certificate Requirements.

1.7.6.7.1.1 No building hereafter erected, altered, enlarged, or relocated, or for which a change of occupancy has been made, shall be used in whole or in part until a certificate of occupancy has been issued by the authority having jurisdiction certifying that the building and occupancy are in accordance with the provisions of this *Code* and all other laws and regulations applying thereto. When the building or part thereof complies with the provisions of all pertinent laws and regulations, the authority having jurisdiction shall issue the certificate of occupancy for the building or part thereof. A certificate of occupancy for places of assembly shall indicate thereon, and make record of, the number of persons for whom such certificate is issued. In all manufacturing, commercial, storage, or warehouse occupancies, the design live loads shall be plainly posted.



1.7.6.7.1.2 When, in the opinion of the authority having jurisdiction, any building rehabilitated, altered, or enlarged, or any combination thereof, is in compliance with this *Code*, the owner shall be issued a certificate of compliance affirming substantial compliance with the requirements of this *Code* in lieu of a certificate of occupancy.

1.7.6.7.2 Existing Occupancy. The authorized occupancy of any structure existing on the date of adoption of this *Code* shall be permitted to continue without change, except as is specifically covered in this *Code* or as is deemed necessary by the authority having jurisdiction for the general safety and welfare of the occupants and public.

1.7.6.7.3 Temporary Certificate of Occupancy. A temporary certificate of occupancy shall be permitted to be issued by the authority having jurisdiction for the use of parts of a building prior to completion of the entire building.

1.7.6.7.4 Connection of Services. It shall be unlawful for a public service corporation or agency to begin utility service to a building or structure, including temporary service for use during building construction or testing operations, until such connection of service has been approved by the authority having jurisdiction.

1.7.6.7.5 Conditions of Certificate of Occupancy. A certificate of occupancy shall be conditioned upon the following:

- (1) The completed project meets the conditions of the construction permit; the approved construction documents, including all amendments; and all prior approvals.
- (2) All required fees have been paid.
- (3) All necessary inspections have been completed, and the completed project meets the requirements of this *Code*.
- (4) All violations have been corrected, and any assessed penalties have been paid.
- (5) All protective devices and equipment required to be installed by this *Code* continue to be operational, as required by this *Code*.
- (6) All quality assurance programs required by Chapter 40 have been completed.

1.7.7 Stop-Work Orders and Revocation of Permit or Certificate.

1.7.7.1 Stop-Work Orders. Whenever any work is being done contrary to the provisions of this *Code*, the authority having jurisdiction shall be authorized to order such work stopped. Such work shall immediately stop until authorized by the authority having jurisdiction to proceed.

1.7.7.1.1 Written notice of violations leading to the stop-work order shall be mailed or given to the permit holder or permit holder's agent. Upon issuance of a stop-work order, the work cited shall immediately cease according to the time limitation specified on the order.

1.7.7.1.2 When the violation(s) has been corrected, the authority having jurisdiction shall provide the permit holder or permit holder's agent written notice that the violation(s) has been corrected and that the stop-work order has been lifted.

1.7.7.1.3 Any person continuing work after being served a stop-work order, except work to correct the cited violation(s) or work not included within the scope of the stop-work order, shall be subject to the provisions of 1.7.7.2 and other penalties as prescribed by law.

1.7.7.2 Revocation of Permit. The authority having jurisdiction shall be hereby granted authority to revoke a permit or approval issued under the provisions of this *Code* when any false statement or misrepresentation of fact is made in the application, or on the plans on which the permit or approval was based, or for failure to honor any stop-work order issued under 1.7.7.1 of this *Code*.

1.7.7.2.1 The authority having jurisdiction shall notify the contractor or owner or owner's agent in writing that the permit is revoked. Work performed by a person or persons in or about the building or structure, except work required for the correction of violations, shall be prohibited. Any person continuing work after having a permit suspended, except work to correct the cited violation(s), shall be subject to the provisions of 1.7.5.3.4 and 1.7.5.3.5 and any other penalties prescribed by law. If, in the judgment of the authority having jurisdiction, there is imminent danger that requires immediate action, the permit shall be permitted to be revoked verbally, and written notice shall be served later.

1.7.7.2.2 When a permit has been revoked, it shall not be reinstated until all violations leading to the revocation of the permit have been corrected. Written notice of reinstatement shall be given to the permit holder when requested.

1.7.7.3 Revocation of Certificate. When any building or part thereof is being used contrary to the provisions of this *Code*, or any other laws or regulations of the jurisdiction, the authority having jurisdiction shall be authorized to revoke a certificate of occupancy and order such use or occupancy discontinued and the building or part thereof vacated. The authority having jurisdiction shall provide written notice of the revocation of the certificate to the person(s) using or causing to be used such buildings or parts thereof. Continued use of the building or part thereof after the certificate of occupancy has been revoked shall be in violation of this *Code* and subject to the penalties prescribed by law.

Chapter 2 Referenced Publications

Sections 2.2 and 2.4 were revised by a tentative interim amendment (TIA). See page 1.

2.1 General. The documents referenced in this chapter, or portions of such documents, are referenced within this *Code* and shall be considered part of the requirements of this *Code*, and the following shall also apply:

- (1)*Documents referenced in this chapter, or portion of such documents, shall only be applicable to the extent called for within other chapters of this *Code*.
- (2) Where the requirements of a referenced code or standard differ from the requirements of this *Code*, the requirements of this *Code* shall govern.
- (3)*Existing buildings or installations that do not comply with the provisions of the codes or standards referenced in this chapter shall be permitted to be continued in service, provided that the lack of conformity with these documents does not present a serious hazard to the occupants as determined by the authority having jurisdiction.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 1, *Fire Code*, 2015 edition.

NFPA 10, *Standard for Portable Fire Extinguishers*, 2013 edition.

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*, 2010 edition.

NFPA 12, *Standard on Carbon Dioxide Extinguishing Systems*, 2011 edition.

NFPA 12A, *Standard on Halon 1301 Fire Extinguishing Systems*, 2009 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2013 edition.

NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, 2013 edition.

NFPA 13R, *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*, 2013 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 2013 edition.

NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*, 2012 edition.

NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems*, 2011 edition.

NFPA 17, *Standard for Dry Chemical Extinguishing Systems*, 2013 edition.

NFPA 17A, *Standard for Wet Chemical Extinguishing Systems*, 2013 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, 2013 edition.

NFPA 30, *Flammable and Combustible Liquids Code*, 2015 edition.

NFPA 30A, *Code for Motor Fuel Dispensing Facilities and Repair Garages*, 2015 edition.

NFPA 30B, *Code for the Manufacture and Storage of Aerosol Products*, 2015 edition.

NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, 2011 edition.

NFPA 32, *Standard for Drycleaning Plants*, 2011 edition.

NFPA 33, *Standard for Spray Application Using Flammable or Combustible Materials*, 2011 edition.

NFPA 34, *Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids*, 2011 edition.

NFPA 35, *Standard for the Manufacture of Organic Coatings*, 2011 edition.

NFPA 36, *Standard for Solvent Extraction Plants*, 2013 edition.

NFPA 37, *Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines*, 2015 edition.

NFPA 40, *Standard for the Storage and Handling of Cellulose Nitrate Film*, 2011 edition.

NFPA 45, *Standard on Fire Protection for Laboratories Using Chemicals*, 2011 edition.

NFPA 51, *Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes*, 2013 edition.

NFPA 51A, *Standard for Acetylene Cylinder Charging Plants*, 2012 edition.

NFPA 52, *Vehicular Gaseous Fuel Systems Code*, 2013 edition.

NFPA 54, *National Fuel Gas Code*, 2015 edition.

NFPA 55, *Compressed Gases and Cryogenic Fluids Code*, 2013 edition.

NFPA 58, *Liquefied Petroleum Gas Code*, 2014 edition.

NFPA 59A, *Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG)*, 2013 edition.

NFPA 61, *Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities*, 2013 edition.

NFPA 69, *Standard on Explosion Prevention Systems*, 2014 edition.

NFPA 70®, *National Electrical Code®*, 2014 edition.

NFPA 72®, *National Fire Alarm and Signaling Code*, 2013 edition.

NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, 2013 edition.

NFPA 80, *Standard for Fire Doors and Other Opening Protectives*, 2013 edition.

NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment*, 2014 edition.

NFPA 85, *Boiler and Combustion Systems Hazards Code*, 2011 edition.

NFPA 88A, *Standard for Parking Structures*, 2015 edition.

NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, 2015 edition.

NFPA 90B, *Standard for the Installation of Warm Air Heating and Air-Conditioning Systems*, 2015 edition.

NFPA 91, *Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids*, 2010 edition.

NFPA 92, *Standard for Smoke Control Systems*, 2012 edition.

NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*, 2014 edition.

NFPA 99, *Health Care Facilities Code*, 2015 edition.

NFPA 99B, *Standard for Hypobaric Facilities*, 2015 edition.

NFPA 101®, *Life Safety Code®*, 2015 edition.

NFPA 105, *Standard for Smoke Door Assemblies and Other Opening Protectives*, 2013 edition.

NFPA 110, *Standard for Emergency and Standby Power Systems*, 2013 edition.

NFPA 111, *Standard on Stored Electrical Energy Emergency and Standby Power Systems*, 2013 edition.

NFPA 120, *Standard for Fire Prevention and Control in Coal Mines*, 2010 edition.

NFPA 140, *Standard on Motion Picture and Television Production Studio Soundstages, Approved Production Facilities, and Production Locations*, 2013 edition.

NFPA 150, *Standard on Fire and Life Safety in Animal Housing Facilities*, 2013 edition.

NFPA 170, *Standard for Fire Safety and Emergency Symbols*, 2012 edition.

NFPA 204, *Standard for Smoke and Heat Venting*, 2012 edition.

NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*, 2013 edition.

NFPA 214, *Standard on Water-Cooling Towers*, 2011 edition.

NFPA 220, *Standard on Types of Building Construction*, 2015 edition.

NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, 2013 edition.

NFPA 252, *Standard Methods of Fire Tests of Door Assemblies*, 2012 edition.

NFPA 253, *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*, 2011 edition.

NFPA 257, *Standard on Fire Test for Window and Glass Block Assemblies*, 2012 edition.

NFPA 259, *Standard Test Method for Potential Heat of Building Materials*, 2013 edition.

NFPA 262, *Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces*, 2011 edition.

NFPA 265, *Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls*, 2011 edition.

NFPA 268, *Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source*, 2012 edition.



NFPA 275, *Standard Method of Fire Tests for the Evaluation of Thermal Barriers*, 2013 edition.

NFPA 285, *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components*, 2012 edition.

NFPA 286, *Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*, 2011 edition.

NFPA 288, *Standard Methods of Fire Tests of Horizontal Fire Door Assemblies Installed in Horizontal Fire Resistance-Rated Assemblies*, 2012 edition.

NFPA 289, *Standard Method of Fire Test for Individual Fuel Packages*, 2013 edition.

NFPA 303, *Fire Protection Standard for Marinas and Boatyards*, 2011 edition.

NFPA 307, *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves*, 2011 edition.

NFPA 318, *Standard for the Protection of Semiconductor Fabrication Facilities*, 2015 edition.

NFPA 400, *Hazardous Materials Code*, 2013 edition.

NFPA 407, *Standard for Aircraft Fuel Servicing*, 2012 edition.

NFPA 409, *Standard on Aircraft Hangars*, 2011 edition.

NFPA 415, *Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways*, 2013 edition.

NFPA 418, *Standard for Heliports*, 2011 edition.

NFPA 423, *Standard for Construction and Protection of Aircraft Engine Test Facilities*, 2016 edition.

NFPA 484, *Standard for Combustible Metals*, 2015 edition.

NFPA 495, *Explosive Materials Code*, 2013 edition.

NFPA 501, *Standard on Manufactured Housing*, 2013 edition.

NFPA 502, *Standard for Road Tunnels, Bridges, and Other Limited Access Highways*, 2014 edition.

NFPA 560, *Standard for the Storage, Handling, and Use of Ethylene Oxide for Sterilization and Fumigation*, 2007 edition.

NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids*, 2013 edition.

NFPA 655, *Standard for Prevention of Sulfur Fires and Explosions*, 2012 edition.

NFPA 664, *Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities*, 2012 edition.

NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*, 2010 edition.

NFPA 703, *Standard for Fire Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials*, 2015 edition.

NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, 2012 edition.

NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, 2015 edition.

NFPA 731, *Standard for the Installation of Electronic Premises Security Systems*, 2015 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems*, 2015 edition.

NFPA 801, *Standard for Fire Protection for Facilities Handling Radioactive Materials*, 2014 edition.

NFPA 804, *Standard for Fire Protection for Advanced Light Water Reactor Electric Generating Plants*, 2010 edition.

NFPA 805, *Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants*, 2010 edition.

NFPA 820, *Standard for Fire Protection in Wastewater Treatment and Collection Facilities*, 2012 edition.

NFPA 853, *Standard for the Installation of Stationary Fuel Cell Power Systems*, 2015 edition.

NFPA 900, *Building Energy Code*, 2013 edition.

NFPA 909, *Code for the Protection of Cultural Resource Properties — Museums, Libraries, and Places of Worship*, 2013 edition.

NFPA 914, *Code for Fire Protection of Historic Structures*, 2010 edition.

NFPA 1125, *Code for the Manufacture of Model Rocket and High Power Rocket Motors*, 2012 edition.

NFPA 1144, *Standard for Reducing Structure Ignition Hazards from Wildland Fire*, 2013 edition.

NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, 2013 edition.

NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems*, 2012 edition.

2.3 Other Publications.

2.3.1 AA Publications. Aluminum Association, Inc., 1525 Wilson Blvd., Suite 600, Arlington, VA 22209.

Aluminum Design Manual: Part 1A, *Aluminum Structures, Allowable Stress Design*, and Part 1-B, *Aluminum Structures, Load and Resistance Factor Design of Buildings and Similar Type Structures*, 2000.

2.3.2 ACI Publications. American Concrete Institute, P.O. Box 9094, Farmington Hills, MI 48333-9094.

ACI 216.1/TMS 0216.1, *Code Requirements for Determining Fire Resistance of Concrete and Masonry Construction Assemblies*, 2008.

ACI 318, *Building Code Requirements for Structural Concrete*, (ACI 318, 2005) and *Commentary* (ACI 318R, 2005), 2011.

ACI 506.2, *Specification for Materials, Proportioning, and Application of Shotcrete*, 1995.

ACI 530/ASCE 5/TMS 402, *Building Code Requirements for Masonry Structures*, 2005.

ACI 530.1/ASCE 6/TMS 602, *Specification for Masonry Structures*, 2005.

2.3.3 AISC Publications. American Institute of Steel Construction, One East Wacker Drive, Suite 3100, Chicago, IL 60601-2001.

ANSI/AISC 341, *Seismic Provisions for Structural Steel Buildings*, 2010.

ANSI/AISC 360, *Specification for Structural Steel Buildings*, 2010.

2.3.4 AISI Publications. American Iron and Steel Institute, 25 Massachusetts Avenue N.W., Suite 800, Washington, DC 20001-1431.

AISI-S100, *North American Specification for the Design of Cold-Formed Steel Structural Members*, 2012.

AISI-S110, *Standard for Seismic Design of Cold-Formed Steel Structural Systems—Special Bolted Moment Frames*, 2007, including Supplement 1, dated 2009, (Reaffirmed 2012).

AISI-S200, *North American Standard for Cold-Formed Steel Framing — General Provisions*, 2012.

AISI-S210, *North American Standard for Cold-Formed Steel Framing — Floor and Roof System Design*, 2007, (Reaffirmed 2012)..

AISI-S211, *North American Standard for Cold-Formed Steel Framing — Wall Stud Design*, 2007, including Supplement 1, dated 2012, (Reaffirmed 2012).

AISI-S212, *North American Standard for Cold-Formed Steel Framing — Header Design*, 2007, (Reaffirmed 2012).

AISI-S213, *North American Standard for Cold-Formed Steel Framing — Lateral Design*, 2007, including Supplement 1, dated 2009, (Reaffirmed 2012).

AISI-S214, *North American Standard for Cold-Formed Steel Framing — Truss Design*, 2012.

AISI-S220, *North American Standard for Cold-Formed Steel Framing — Nonstructural Members*, 2011.

AISI-S230, *Standard for Cold-Formed Steel Framing — Prescriptive Method for One- and Two-Family Dwellings*, 2007, including Supplement 3, dated 2012, (Reaffirmed 2012).

2.3.5 AITC Publications. American Institute of Timber Construction, 7012 S. Revere Parkway, Suite 140, Centennial, CO 80112.

ANSI/AITC A190.1, *American National Standard, Structural Glued Laminated Timber*, 2002.

2.3.6 ANSI Publications. American National Standards Institute, Inc., 25 West 43rd Street, 4th floor, New York, NY 10036.

ANSIA14.3, *Safety Requirements for Fixed Ladders*, 2002.

ANSIA208.1, *Standard for Particleboard*, 1999.

ANSIA1264.1, *Safety Requirements for Workplace Floor and Wall Openings, Stairs and Railing Systems*, 2007.

ANSI Z 97.1, *Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test*, 2004.

2.3.7 ASCE Publications. American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191-4400.

ASCE/SEI 7, *Minimum Design Loads for Buildings and Other Structures*, 2010, including Supplement 2, 2012.

ASCE/SEI 8, *Standard Specification for the Design of Cold-Formed Stainless Steel Structural Members*, 2003.

ASCE/SEI 17, *Air Supported Structures*, 1996.

ASCE/SEI 19, *Structural Applications of Steel Cables for Buildings*, 2010.

ASCE/SEI 24, *Flood Resistant Design and Construction*, 2005.

ASCE/SFPE 29, *Standard Calculation Methods for Structural Fire Protection*, 2005.

ASCE/SEI 31, *Seismic Evaluation of Existing Buildings*, 2003.

2.3.8 ASHRAE Publications. American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., 1791 Tullie Circle, NE, Atlanta, GA 30329-2305.

ASHRAE, *Handbook of Fundamentals*, 2009.

ASHRAE 55, *Thermal Environmental Conditions for Human Occupancy*, 2010.

ASHRAE 62.1, *Ventilation for Acceptable Indoor Air Quality*, 2010 with addenda a, c, d, and e.

ANSI/IES/ASHRAE 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, 2010.

ANSI/ASHRAE 90.2, *Energy-Efficient Design of Low-Rise Residential Buildings*, 2007, including approved addendum b.

ANSI/ASHRAE 15, *Safety Standard for Refrigeration Systems*, 2010.

2.3.9 ASME Publications. American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990.

ASME A17.1/CSA B 44, *Safety Code for Elevators and Escalators*, 2007.

ASME A17.7/CSA B 44.7, *Performance-Based Safety Code for Elevators and Escalators*, 2007.

ASME A18.1, *Safety Standard for Platform Lifts and Stairway Chairlifts*, 2008.

ASME B20.1, *Safety Standard for Conveyors and Related Equipment*, 2009.

ASME B31.3, *Process Piping*, 2008.

2.3.10 ASSE Publications. American Society of Safety Engineers, 1800 East Oakton Street, Des Plaines, IL 60018.

ANSI/ASSE A1264.1, *Safety Requirements for Workplace Walking/Working Surfaces and Their Access; Workplace Floor; Wall and Roof Openings; Stairs and Guardrails Systems*, 2007.

2.3.11 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. www.astm.org

ASTM A6/A6M, *Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling*, 2011.

ASTM A 36/A 36M, *Standard Specification for Carbon Structural Steel*, 2008.

ASTM A 153/A 153M, *Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware*, 2009.

ASTM A 252, *Standard Specification for Welded and Seamless Steel Pipe Piles*, 2010.

ASTM A 283/A 283M, *Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates*, 2003 (2007).

ASTM A 463/A 463 M, *Standard Specification for Steel Sheet, Aluminum-Coated, by the Hot-Dip Process*, 2009a.

ASTM A 572/A 572M, *Standard Specification for High-strength Low-alloy Columbium-vanadium Structural Steel*, 2007.

ASTM A 588/A 588M, *Standard Specification for High-strength Low-alloy Structural Steel up to 50 ksi (345 MPa) Minimum Yield Point, with Atmospheric Corrosion Resistance*, 2010.

ASTM A 653/A 653M, *Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process*, 2009a.

ASTM A 690/A 690M, *Standard Specification for High-strength Low-alloy Nickel, Copper, Phosphorus Steel H-piles and Sheet Piling with Atmospheric Corrosion Resistance for Use in Marine Environments*, 2007.

ASTM A 706/A 706M, *Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement*, 2009b.

ASTM A 755/A 755M, *Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products*, 2003 (2008).

ASTM A 792/A 792M, *Standard Specification for Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated by the Hot-Dip Process*, 2009a.

ASTM A 875/A 875M, *Standard Specification for Steel Sheet, Zinc-5 % Aluminum Alloy-Coated by the Hot-Dip Process*, 2009a.

ASTM A 924/A 924M, *Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process*, 2010.



- ASTM B 101, *Standard Specification for Lead-Coated Copper Sheet and Strip for Building Construction*, 2007.
- ASTM B 209, *Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate*, 2007.
- ASTM C 28/C 28M, *Standard Specification for Gypsum Plasters*, 2000 (2005).
- ASTM C 35, *Standard Specification for Inorganic Aggregates for Use in Gypsum Plaster*, 2001 (2005).
- ASTM C 59/C 59M, *Standard Specification for Gypsum Casting Plaster and Gypsum Molding Plaster*, 2000 (2006).
- ASTM C 61/C 61M, *Standard Specification for Gypsum Keenes Cement*, 2000 (2006).
- ASTM C 90, *Standard Specification for Loadbearing Concrete Masonry Units*, 2009.
- ASTM C 91, *Standard Specification for Masonry Cement*, 2005.
- ASTM C 150, *Standard Specification for Portland Cement*, 2009.
- ASTM C 206, *Standard Specification for Finishing Hydrated Lime*, 2003 (2009).
- ASTM C 208, *Standard Specification for Cellulosic Fiber Insulating Board*, 2008a.
- ASTM C 317/C 317M, *Standard Specification for Gypsum Concrete*, 2000 (2005).
- ASTM C 406, *Standard Specification for Roofing Slate*, 2006 e1.
- ASTM C 472, *Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete*, 1999 (2009).
- ASTM C 475/C 475M, *Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board*, 2002 (2007).
- ASTM C 476, *Standard Specification for Grout for Masonry*, 2010.
- ASTM C 514, *Standard Specification for Nails for the Application of Gypsum Board*, 2004 (2009)e1.
- ASTM C 552, *Standard Specification for Cellular Glass Thermal Insulation*, 2007.
- ASTM C 557, *Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing*, 2003-(2009) e1.
- ASTM C 578, *Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation*, 2010.
- ASTM C 587, *Standard Specification for Gypsum Veneer Plaster*, 2004 (2009).
- ASTM C 588/C 588M, *Standard Specification for Gypsum Base for Veneer Plasters*, 2003 e1 (Withdrawn Standard).
- ASTM C 591, *Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation*, 2009.
- ASTM C 595, *Standard Specification for Blended Hydraulic Cements*, 2010.
- ASTM C 631, *Standard Specification for Bonding Compounds for Interior Gypsum Plastering*, 2009.
- ASTM C 645, *Standard Specification for Nonstructural Steel Framing Members*, 2009a.
- ASTM C 726, *Standard Specification for Mineral Fiber Roof Insulation Board*, 2005e1.
- ASTM C 728, *Standard Specification for Perlite Thermal Insulation Board*, 2005 (2010).
- ASTM C 836/C 836M, *Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course*, 2010.
- ASTM C 840, *Standard Specification for Application and Finishing of Gypsum Board*, 2008.
- ASTM C 841, *Standard Specification for Installation of Interior Lathing and Furring*, 2003 (2008)e1.
- ASTM C 842, *Standard Specification for Application of Interior Gypsum Plaster*, 2005.
- ASTM C 843, *Standard Specification for Application of Gypsum Veneer Plaster*, 1999 (2006).
- ASTM C 844, *Standard Specification for Application of Gypsum Base to Receive Gypsum Veneer Plaster*, 2004.
- ASTM C 847, *Standard Specification for Metal Lath*, 2010.
- ASTM C 887, *Standard Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar*, 2005 (2010).
- ASTM C 897, *Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters*, 2005 (2009).
- ASTM C 920, *Standard Specification for Elastomeric Joint Sealants*, 2010.
- ASTM C 926, *Standard Specification for Application of Portland Cement-Based Plaster*, 2006.
- ASTM C 932, *Standard Specification for Surface-Applied Bonding Compounds for Exterior Plastering*, 2006.
- ASTM C 933, *Standard Specification for Welded Wire Lath*, 2009.
- ASTM C 946, *Standard Practice for Construction of Dry-Stacked, Surface-Bonded Walls*, 2010.
- ASTM C 954, *Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness*, 2010.
- ASTM C 955, *Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases*, 2009a.
- ASTM C 956, *Standard Specification for Installation of Cast-in-Place Reinforced Gypsum Concrete*, 2004.
- ASTM C 957, *Standard Specification for High-Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Integral Wearing Surface*, 2010.
- ASTM C 1002, *Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs*, 2007.
- ASTM C 1029, *Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation*, 2010.
- ASTM C 1032, *Standard Specification for Woven Wire Plaster Base*, 2006.
- ASTM C 1047, *Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base*, 2010.
- ASTM C 1063, *Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster*, 2008.

ASTM C 1167, *Standard Specification for Clay Roof Tiles*, 2003 (2009).

ASTM C 1177/C 1177M, *Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing*, 2008.

ASTM C 1178/C 1178M, *Standard Specification for Glass Mat Water-Resistant Gypsum Backing Panel*, 2008.

ASTM C 1278/C 1278M, *Standard Specification for Fiber-Reinforced Gypsum Panel*, 2007a.

ASTM C 1280, *Standard Specification for Application of Gypsum Sheathing*, 2009.

ASTM C 1289, *Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board*, 2010.

ASTM C 1328, *Standard Specification for Plastic (Stucco) Cement*, 2005.

ASTM C 1396/C 1396M, *Standard Specification for Gypsum Board*, 2011.

ASTM C 1491, *Standard Specification for Concrete Roof Pavers*, 2003 (2009).

ASTM C 1492, *Standard Specification for Concrete Roof Tile*, 2003 (2009).

ASTM C 1629/C 1629 M, *Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*, 2006 (2011).

ASTM D 25, *Standard Specification for Round Timber Piles*, 1999 (2005).

ASTM D 41, *Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing*, 2005.

ASTM D 43, *Standard Specification for Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing*, 2000 (2006).

ASTM D 86, *Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure*, 2010.

ASTM D 225, *Standard Specification for Asphalt Shingles (Organic Felt) Surfaced with Mineral Granules*, 2007.

ASTM D 226/D 226 M, *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing*, 2009.

ASTM D 227, *Standard Specification for Coal-Tar-Saturated Organic Felt Used in Roofing and Waterproofing*, 2003.

ASTM D 312, *Standard Specification for Asphalt Used in Roofing*, 2000 (2006).

ASTM D 450, *Standard Specification for Coal-Tar Pitch Used in Roofing, Dampproofing, and Waterproofing*, 2007.

ASTM D 635, *Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position*, 2010.

ASTM D 1079, *Standard Terminology Relating to Roofing, Waterproofing, and Bituminous Materials*, 2009.

ASTM D 1143/D 1143M, *Standard Test Methods for Deep Foundations Under Static Axial Compressive Load*, 2007e1.

ASTM D 1227, *Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing*, 1995 (2007).

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Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this *Code*. Where terms are not de-

defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3* Code. A standard that is an extensive compilation of provisions covering broad subject matter or that is suitable for adoption into law independently of other codes and standards.

3.2.4 Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

3.2.5* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.6 Shall. Indicates a mandatory requirement.

3.2.7 Should. Indicates a recommendation or that which is advised but not required.

3.3 General Definitions.

Multiple definitions in Section 3.3 were revised or deleted by a tentative interim amendment (TIA). See page 1.

3.3.1 Accessible.

3.3.1.1 Accessible (Accessibility). A site, building, facility, or portion thereof that complies with this *Code*. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.2 Amusement Attraction (Accessibility). Any facility, or portion of a facility, located within an amusement park or theme park that provides amusement without the use of an amusement device. Amusement attractions include, but are not limited to, fun houses, barrels, and other attractions without seats. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.3 Amusement Ride (Accessibility). A system that moves persons through a fixed course within a defined area for the purpose of amusement. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.4 Amusement Ride Seat (Accessibility). A seat that is built-in or mechanically fastened to an amusement ride intended to be occupied by one or more passengers. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.5 Area of Sport Activity (Accessibility). That portion of a room or space where the play or practice of a sport occurs. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.6 Boat Launch Ramp (Accessibility). A sloped surface designed for launching and retrieving trailered boats and other water craft to and from a body of water. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.7 Characters (Accessibility). Letters, numbers, punctuation marks, and typographic symbols. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.8 Curb Ramp (Accessibility). A short ramp cutting through a curb or built up to it. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.9 Detectable Warning (Accessibility). A standardized surface feature built in or applied to walking surfaces or other elements to warn of hazards on a circulation path. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.10 Elevated Play Component (Accessibility). A play component that is approached above or below grade and that is part of a composite play structure consisting of two or more play components attached or functionally linked to create an integrated unit providing more than one play activity. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.11 Gangway (Accessibility). A variable-sloped pedestrian walkway that links a fixed structure or land with a floating structure. Gangways that connect to vessels are not addressed by this document. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.12 Golf Cart Passage (Accessibility). A continuous passage on which a motorized golf cart can operate. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.13 Ground-Level Play Component (Accessibility). A play component that is approached and exited at the ground level. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.14 Key Station (Accessibility). Rapid and light rail stations, and commuter rail stations, as defined under criteria established by the Department of Transportation in 49 CFR 37.47 and 49 CFR 37.51, respectively. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.15 Marked Crossing (Accessibility). A crosswalk or other identified path intended for pedestrian use in crossing a vehicular way. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.16 Play Area (Accessibility). A portion of a site containing play components designed and constructed for children. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.17 Play Component (Accessibility). An element intended to generate specific opportunities for play, socialization, or learning. Play components are manufactured or natural; and are stand-alone or part of a composite play structure. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.18 Running Slope (Accessibility). The slope that is parallel to the direction of travel (see cross slope). [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.19 Soft Contained Play Structure (Accessibility). A play structure made up of one or more play components where the user enters a fully enclosed play environment that utilizes

pliable materials, such as plastic, netting, or fabric. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.20 Teeing Ground (Accessibility). In golf, the starting place for the hole to be played. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.21 Transfer Device (Accessibility). Equipment designed to facilitate the transfer of a person from a wheelchair or other mobility aid to and from an amusement ride seat. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.22 Use Zone (Accessibility). The ground-level area beneath and immediately adjacent to a play structure or play equipment that is designated by ASTM F 1487 (incorporated by reference, see "Referenced Standards" in Chapter 1) for unrestricted circulation around the play equipment and where it is predicted that a user would land when falling from or exiting the play equipment. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.1.23 Walk (Accessibility). An exterior prepared surface for pedestrian use, including pedestrian areas such as plazas and courts. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.2 Accessible Area of Refuge. See 3.3.35.1.

3.3.3 Accessible Means of Egress. See 3.3.409.1.

3.3.4 Accessory Building. See 3.3.67.1.

3.3.5 Accreditation Body. An approved, third-party organization that is independent of the grading and inspection agencies, and the lumber mills, and that initially accredits and subsequently monitors, on a continuing basis, the competency and performance of a grading or inspection agency related to carrying out specific tasks. (BLD-FUN)

3.3.6 Active Sub-Slab Depressurization System. See 3.3.636.4.1.

3.3.7 Actual Start of Construction (Flood Resistance). See 3.3.121.1.1.

3.3.8* Actuating Member or Bar. The activating mechanism of a panic hardware or fire exit hardware device located on the egress side of a door. (BLD-MEA)

3.3.9 Addition. An increase in the building area, aggregate floor area, building height, or number of stories of a structure. (BLD-FUN)

3.3.10 Aerosol. A product that is dispensed from an aerosol container by a propellant. [30B, 2011] (BLD-IND)

3.3.11 Aerosol Container. See 3.3.124.1.

3.3.12 Agricultural Building. See 3.3.67.2.

3.3.13 Agricultural Dust. See 3.3.177.1.

3.3.14 Air Traffic Control Tower. See 3.3.650.1.

3.3.15 Aircraft Engine Test Facility. See 3.3.213.2.

3.3.16 Air-Inflated Structure. See 3.3.628.2.

3.3.17 Air-Right Structure. See 3.3.628.3.

3.3.18 Air-Supported Structure. See 3.3.628.4.

3.3.19* Aisle. An unenclosed path of travel that forms part of the exit access and provides an open and unobstructed path of egress travel to another aisle, a corridor, a vomitory, or an exit. (BLD-AXM)



3.3.20* Aisle Accessway. The initial portion of an exit access that leads to an aisle. (BLD-AXM)

3.3.21 Aisle Ramp. See 3.3.528.1.

3.3.22 Aisle Stair. See 3.3.608.1.

3.3.23 Alarm.

3.3.23.1 Single Station Alarm. A detector comprising an assembly that incorporates a sensor, control components, and an alarm notification appliance in one unit operated from a power source either located in the unit or obtained at the point of installation. [72,2013] (BLD-BSF)

3.3.23.2 Smoke Alarm. A single or multiple station alarm responsive to smoke. [72,2013] (BLD-BSF)

3.3.24 Alley. Public space or thoroughfare less than 20 ft (6096 mm) wide, but not less than 10 ft (3050 mm) wide, that has been deeded or dedicated to the public for permanent public use. (BLD-FUN)

3.3.25 Allowable Stress Design. See 3.3.153.1.

3.3.26 Alter/Alteration. See 3.3.27.1.

3.3.27 Alteration.

3.3.27.1 Alter/Alteration. A modification, replacement, or other physical change to an existing facility. (BLD-FUN)

3.3.27.2* Alteration (Accessibility). A change to a building or facility that affects or could affect the usability of the building or facility or portion thereof. Alterations include, but are not limited to, remodeling, renovation, rehabilitation, reconstruction, historic restoration, resurfacing of circulation paths or vehicular ways, changes or rearrangement of the structural parts or elements, and changes or rearrangement in the plan configuration of walls and full-height partitions. Normal maintenance, reroofing, painting or wallpapering, or changes to mechanical and electrical systems are not alterations unless they affect the usability of the building or facility. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.28 Alternative Calculation Procedure. A calculation procedure that differs from the procedure originally employed by the design team but that provides predictions for the same variables of interest. (BLD-FUN)

3.3.29 Aluminum Composite Material (ACM). See 3.3.405.10, Metal Composite Material (MCM).

3.3.30 Ambulatory Health Care Occupancy. See 3.3.443.1.

3.3.31 Analysis.

3.3.31.1 Sensitivity Analysis. An analysis performed to determine the degree to which a predicted output will vary given a specified change in an input parameter, usually in relation to models. (BLD-FUN)

3.3.31.2 Uncertainty Analysis. An analysis performed to determine the degree to which a predicted value will vary. (BLD-FUN)

3.3.32 Anchor Building. See 3.3.67.3.

3.3.33 Apartment Building. See 3.3.67.4.

3.3.34 Area.

3.3.34.1 Assembly Area (Accessibility). For the purposes of this code, a building or facility, or portion thereof, used for

the purpose of entertainment, educational or civic gatherings, or similar purposes. For the purposes of these requirements, assembly areas include, but are not limited to, classrooms, lecture halls, courtrooms, public meeting rooms, public hearing rooms, legislative chambers, motion picture houses, auditoria, theaters, playhouses, dinner theaters, concert halls, centers for the performing arts, amphitheaters, arenas, stadiums, grandstands, or convention centers. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.34.2 Building Area. The area included within surrounding exterior walls (or exterior walls and fire walls) exclusive of vent shafts and courts. Areas of the building not provided with surrounding walls shall be included in the building areas if such areas are included within the horizontal projection of the roof or floor above. (BLD-FUN)

3.3.34.3 Control Area. A building or portion of a building within which hazardous materials are allowed to be stored, dispensed, used, or handled in quantities not exceeding the maximum allowable quantities (MAQ). (BLD-IND)

3.3.34.3.1 Maximum Allowable Quantity per Control Area. A threshold quantity of hazardous material in a specific hazard class that once exceeded requires the application of additional administrative procedures, construction features or engineering controls. [55,2013] (BLD-IND)

3.3.34.4 Detention and Correctional Residential Housing Area. Sleeping areas and any contiguous day room, group activity space, or other common space for customary access of residents. (BLD-DET)

3.3.34.5* Fabrication Area (Fab Area). An area within a semiconductor fabrication facility and related research and development areas in which there are processes using hazardous production materials. (BLD-IND)

3.3.34.6 Fire Area. An aggregate gross floor area separated from the remainder of a building by fire walls, fire barriers, or a combination thereof. (BLD-FUN)

3.3.34.7 Flood Hazard Area. The greater of either (1) the special flood hazard area shown on the flood insurance rate map or (2) the area subject to flooding during the design flood and shown on a jurisdiction's flood hazard map, or otherwise legally designated. (BLD-SCM)

3.3.34.7.1 Special Flood Hazard Area. The land area subject to flooding by the base flood, and depicted on the flood insurance rate map or other flood hazard map as Zone A, Zone AE, Zone A1-30, Zone A99, Zone AO, Zone AR, Zone AH, Zone V, Zone VE, Zone V1-30, or Zone VO. (See also 3.3.1.4, Coastal A Zone.) (BLD-SCM)

3.3.34.8 Floor Area.

3.3.34.8.1* Gross Floor Area. The floor area within the inside perimeter of the outside walls of the building under consideration with no deductions for hallways, stairs, closets, thickness of interior walls, columns, elevator and building services shafts, or other features, but excluding floor openings associated with atriums and communicating spaces. (BLD-MEA)

3.3.34.8.2 Net Floor Area. The floor area within the inside perimeter of the outside walls, or the outside walls and fire walls of a building, or outside and/or inside walls that bound an occupancy or incidental use area requiring the

occupant load to be calculated using net floor area under consideration with deductions for hallways, stairs, closets, thickness of interior walls, columns, or other features. (BLD-MEA)

3.3.34.9 Gross Leasable Area. Fifty percent of all major tenant areas and 100 percent of all other floor areas designated for tenant occupancy and exclusive use, including storage areas. The area of tenant occupancy is measured from the centerline of joint partitions to the outside of the tenant walls. (BLD-MER)

3.3.34.10* Hazardous Area. An area of a structure or building that poses a degree of hazard greater than that normal to the general occupancy of the building or structure. (BLD-FIR)

3.3.34.11 Living Area. Any normally occupiable space in a residential occupancy, other than sleeping rooms or rooms that are intended for combination sleeping/living, bathrooms, toilet compartments, kitchens, closets, halls, storage or utility spaces, and similar areas. (BLD-RES)

3.3.34.12 Normally Unoccupied Building Service Equipment Support Area. A building service equipment support area in which people are not expected to be present on a regular basis. (BLD-MEA)

3.3.34.13 Work Area.

3.3.34.13.1* Employee Work Area (Accessibility). All or any portion of a space used only by employees and used only for work. Corridors, toilet rooms, kitchenettes and break rooms are not employee work areas. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.34.13.2 Rehabilitation Work Area. That portion of a building affected by any renovation, modification, or reconstruction work as initially intended by the owner and indicated as such in the permit, but excluding other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by this *Code*. (BLD-FUN)

3.3.35* Area of Refuge. An area that is either (1) a story in a building where the building is protected throughout by an approved, supervised automatic sprinkler system and has not less than two accessible rooms or spaces separated from each other by smoke-resisting partitions; or (2) a space located in a path of travel leading to a public way that is protected from the effects of fire, either by means of separation from other spaces in the same building or by virtue of location, thereby permitting a delay in egress travel from any level. (BLD-MEA)

3.3.35.1 Accessible Area of Refuge. An area of refuge that complies with the accessible route requirements of ICC/ANSI A117.1, *American National Standard for Accessible and Usable Buildings and Facilities*. (BLD-MEA)

3.3.36 Area of Sport Activity (Accessibility). That portion of a room or space where the play or practice of a sport takes place. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.37 Assembly.

3.3.37.1 Door Assembly. Any combination of a door, frame, hardware, and other accessories that is placed in an opening in a wall that is intended primarily for access or for human entrance or exit. [252,2012] (BLD-MEA)

3.3.37.1.1 Fire Door Assembly. Any combination of a fire door, a frame, hardware, and other accessories that together provide a specific degree of fire protection to the opening. [80,2013] (BLD-FIR)

3.3.37.1.2 Floor Fire Door Assembly. A combination of a fire door, a frame, hardware, and other accessories installed in a horizontal plane, which together provide a specific degree of fire protection to a through-opening in a fire resistance-rated floor. [288,2012] (BLD-FIR)

3.3.37.2 Fire Window Assembly. A window or glass block assembly having a fire protection rating. [80,2013] (BLD-FIR)

3.3.37.3 Roof Assembly. The component(s) above the roof structural framing including the roof deck, vapor barrier, insulation, roof cover, coatings, toppings, or any combination thereof. (BLD-SCM)

3.3.38 Assembly Area (Accessibility). See 3.3.34.1.

3.3.39 Assembly Occupancy. See 3.3.443.2.

3.3.40 Assisted Mechanical Type Parking Structure. See 3.3.628.11.1.

3.3.41 Assistive Listening Systems (ALS) (Accessibility). See 3.3.636.1.

3.3.42 Atmosphere.

3.3.42.1 Common Atmosphere. The atmosphere that exists between rooms, spaces, or areas within a building that are not separated by an approved smoke barrier. (BLD-END)

3.3.42.2 Separate Atmosphere. The atmosphere that exists between rooms, spaces, or areas that are separated by an approved smoke barrier. (BLD-END)

3.3.43* Atrium. A large-volume space created by a floor opening or series of floor openings connecting two or more stories that is covered at the top of the series of openings and is used for purposes other than an enclosed stairway; an elevator hoistway; an escalator opening; or as a utility shaft used for plumbing, electrical, air-conditioning, or communications facilities. (BLD-FIR)

3.3.44* Attic. The space located between the ceiling of a story and the roof directly above the habitable story. (BLD-FUN)

3.3.45 Automatic. Capable of performing a function without the necessity of human intervention. (BLD-FUN)

3.3.46 Automated Type Parking Structure. See 3.3.628.11.2.

3.3.47 Automatic-Closing Door. See 3.3.170.1.

3.3.48 Balcony (Exterior). An exterior floor projecting from, and supported by, a structure without additional independent supports. (BLD-BLC)

3.3.49 Barrier.

3.3.49.1* Fire Barrier. A continuous membrane or a membrane with discontinuities created by protected openings with a specified fire protection rating, where such membrane is designed and constructed with a specified fire resistance rating to limit the spread of fire. (BLD-FIR)

3.3.49.2* Smoke Barrier. A continuous membrane, or a membrane with discontinuities created by protected openings, where such membrane is designed and constructed to restrict the movement of smoke. (BLD-FIR)



3.3.49.3* Thermal Barrier. A material, product, or assembly that prevents or delays ignition of an unexposed surface by limiting the temperature rise and by acting as a flame exposure barrier. (BLD-BCF)

3.3.50 Base Flood. See 3.3.253.1.

3.3.51 Base Flood Elevation (BFE). See 3.3.256.1.

3.3.52 Basement. Any story of a building wholly or partly below grade plane that is not considered the first story above grade plane. (See also 3.3.288.1, *First Story Above Grade Plane*.) (BLD-FUN)

3.3.52.1 Basement (Flood Resistance). For all matters related to flood-resistant design and construction, the portion of a building having its floor below the finished ground level on all sides. (BLD-SCM)

3.3.53 Basic Wind Speed (*V*). Three-second gust speed at 33 ft (10 m) above the ground in Exposure C (see ASCE/SEI 7, *Section 26.7.3*) as determined in accordance with ASCE/SEI 7, Section 26.5.1. [ASCE/SEI 7:26.2] (BLD-SCM)

3.3.54 Bay Window. See 3.3.682.1.

3.3.55 Bearing Wall. See 3.3.670.1.

3.3.56 Bearing Wall System. See 3.3.636.2.

3.3.57* Birth Center. A facility in which low-risk births are expected following normal, uncomplicated pregnancies, and in which professional midwifery care is provided to women during pregnancy, birth, and postpartum. (BLD-MER)

3.3.58 Bleachers. A grandstand in which the seats are not provided with backrests. (BLD-AXM)

3.3.59 Board and Care. See 3.3.443.12, Residential Board and Care Occupancy.

3.3.60 Boarding Pier (Accessibility). A portion of a pier where a boat is temporarily secured for the purpose of embarking or disembarking. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.61 Boat Slip (Accessibility). That portion of a pier, main pier, finger pier, or float where a boat is moored for the purpose of berthing, embarking, or disembarking. [2010 ADA Standards (DOJ): 106.5] (BLD-BSY)

3.3.62 Boiler. A closed vessel in which water is heated, steam is generated, steam is superheated, or any combination thereof by the application of heat from combustible fuels, in a self-contained or attached furnace. [85, 2011] (BLD-FUN)

3.3.63 Boiler Room. See 3.3.558.1.

3.3.64 Boiling Point. See 3.3.498.1.

3.3.65 Building Area. See 3.3.34.2.

3.3.66 Building Height. See 3.3.319.1.

3.3.67* Buildings. Structures, usually enclosed by walls and a roof, constructed to provide support or shelter for an intended occupancy. [ASCE/SEI 7:1.2.1] (BLD-SCM)

3.3.67.1 Accessory Building. Any building or structure used incidentally to another building or structure. (BLD-FUN)

3.3.67.2 Agricultural Building. A building located on agricultural property used for sheltering farm implements, hay, grain, livestock, or other farm produce or equipment in which there is no human habitation and that is not used by the public. (BLD-BLC)

3.3.67.3 Anchor Building. A building housing any occupancies having low or ordinary hazard contents and having direct access to a mall building, but having all required means of egress independent of the mall. (BLD-MER)

3.3.67.4* Apartment Building. A building or portion thereof containing three or more dwelling units with independent cooking and bathroom facilities. (BLD-RES)

3.3.67.5 Bulk Merchandising Retail Building. A building in which the sales area includes the storage of combustible materials on pallets, in solid piles, or in racks in excess of 12 ft (3660 mm) in storage height. (BLD-MER)

3.3.67.6 Detached Building. A separate building that is separated from other structures or uses as required by this *Code* for a freestanding structure. (BLD-BLC)

3.3.67.7* Existing Building. A building erected or officially authorized prior to the effective date of the adoption of this edition of the *Code* by the agency or jurisdiction. (BLD-FUN)

3.3.67.7.1 Existing Building (Flood Resistance). For all matters related to flood-resistant design and construction, a building for which the start of construction commenced before the effective date of the jurisdiction's first floodplain management ordinance, code, or standard. (BLD-SCM)

3.3.67.8* Flexible Plan and Open Plan Educational or Day-Care Building. A building or portion of a building designed for multiple teaching stations. (BLD-END)

3.3.67.9 Frangible Building. A detached building containing high hazard contents that is not anticipated to survive a fire, deflagration, or explosion and located to limit damage to surrounding structures. (BLD-IND)

3.3.67.10* High-Rise Building. A building where the floor of an occupiable story is greater than 75 ft (23 m) above the lowest level of fire department vehicle access. (BLD-FUN)

3.3.67.11 Historic Building (Flood Resistance). A building or structure that is (1) listed or preliminarily determined to be eligible for listing in the National Register of Historic Places, or (2) determined by the secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district, or (3) designated as historic under a state or local historic preservation program approved by the U.S. Department of Interior. (BLD-SCM)

3.3.67.12* Mall Building. A single building enclosing a number of tenants and occupancies wherein two or more tenants have a main entrance into one or more malls. For the purpose of this *Code*, anchor buildings shall not be considered as a part of the mall building. (BLD-MER)

3.3.67.13* Mini-Storage Building. A storage occupancy partitioned into individual storage units that are rented or leased for the purposes of storing personal or business items where a majority of the individual storage units are not greater than 750² (70 m²). (BLD-IND)

3.3.67.14 Private Building. Any building or that portion of a building that is normally not frequented by, and not open to, the public. (BLD-BSY)

3.3.67.15 Public Building. A building or part of a building that is not a private building. (BLD-BSY)