

2015
EDITION

NFPA 101[®]

LIFE SAFETY CODE[®]



Documents
Document Sharing Hub

IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA® STANDARDS

NOTICE AND DISCLAIMER OF LIABILITY CONCERNING THE USE OF NFPA STANDARDS

NFPA® codes, standards, recommended practices, and guides (“NFPA Standards”), of which the document contained herein is one, are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together volunteers representing varied viewpoints and interests to achieve consensus on fire and other safety issues. While the NFPA administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in NFPA Standards.

The NFPA disclaims liability for any personal injury, property or other damages of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on NFPA Standards. The NFPA also makes no guaranty or warranty as to the accuracy or completeness of any information published herein.

In issuing and making NFPA Standards available, the NFPA is not undertaking to render professional or other services for or on behalf of any person or entity. Nor is the NFPA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.

The NFPA has no power, nor does it undertake, to police or enforce compliance with the contents of NFPA Standards. Nor does the NFPA list, certify, test, or inspect products, designs, or installations for compliance with this document. Any certification or other statement of compliance with the requirements of this document shall not be attributable to the NFPA and is solely the responsibility of the certifier or maker of the statement.



ALERT: THIS STANDARD HAS BEEN MODIFIED BY A TIA OR ERRATA

Users of NFPA codes, standards, recommended practices, and guides (“NFPA Standards”) should be aware that NFPA Standards may be amended from time to time through the issuance of Tentative Interim Amendments or corrected by Errata. An official NFPA Standard at any point in time consists of the current edition of the document together with any Tentative Interim Amendment and any Errata then in effect.

In order to determine whether an NFPA Standard has been amended through the issuance of Tentative Interim Amendments or corrected by Errata, visit the “Codes & Standards” section on NFPA’s website. There, the document information pages located at the “List of NFPA Codes & Standards” provide up-to-date, document-specific information including any issued Tentative Interim Amendments and Errata.

To view the document information page for a specific NFPA Standard, go to <http://www.nfpa.org/docinfo> to choose from the list of NFPA Standards or use the search feature to select the NFPA Standard number (e.g., NFPA 101). The document information page includes postings of all existing Tentative Interim Amendments and Errata. It also includes the option to register for an “Alert” feature to receive an automatic email notification when new updates and other information are posted regarding the document.

IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA® STANDARDS

ADDITIONAL NOTICES AND DISCLAIMERS

Updating of NFPA Standards

Users of NFPA codes, standards, recommended practices, and guides (“NFPA Standards”) should be aware that these documents may be superseded at any time by the issuance of new editions or may be amended from time to time through the issuance of Tentative Interim Amendments or corrected by Errata. An official NFPA Standard at any point in time consists of the current edition of the document together with any Tentative Interim Amendments and any Errata then in effect. In order to determine whether a given document is the current edition and whether it has been amended through the issuance of Tentative Interim Amendments or corrected through the issuance of Errata, consult appropriate NFPA publications such as the National Fire Codes® Subscription Service, visit the NFPA website at www.nfpa.org, or contact the NFPA at the address listed below.

Interpretations of NFPA Standards

A statement, written or oral, that is not processed in accordance with Section 6 of the Regulations Governing the Development of NFPA Standards shall not be considered the official position of NFPA or any of its Committees and shall not be considered to be, nor be relied upon as, a Formal Interpretation.

Patents

The NFPA does not take any position with respect to the validity of any patent rights referenced in, related to, or asserted in connection with an NFPA Standard. The users of NFPA Standards bear the sole responsibility for determining the validity of any such patent rights, as well as the risk of infringement of such rights, and the NFPA disclaims liability for the infringement of any patent resulting from the use of or reliance on NFPA Standards.

NFPA adheres to the policy of the American National Standards Institute (ANSI) regarding the inclusion of patents in American National Standards (“the ANSI Patent Policy”), and hereby gives the following notice pursuant to that policy:

NOTICE: The user’s attention is called to the possibility that compliance with an NFPA Standard may require use of an invention covered by patent rights. NFPA takes no position as to the validity of any such patent rights or as to whether such patent rights constitute or include essential patent claims under the ANSI Patent Policy. If, in connection with the ANSI Patent Policy, a patent holder has filed a statement of willingness to grant licenses under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, copies of such filed statements can be obtained, on request, from NFPA. For further information, contact the NFPA at the address listed below.

Law and Regulations

Users of NFPA Standards should consult applicable federal, state, and local laws and regulations. NFPA does not, by the publication of its codes, standards, recommended practices, and guides, intend to urge action that is not in compliance with applicable laws, and these documents may not be construed as doing so.

Copyrights

NFPA Standards are copyrighted. They are made available for a wide variety of both public and private uses. These include both use, by reference, in laws and regulations, and use in private self-regulation, standardization, and the promotion of safe practices and methods. By making these documents available for use and adoption by public authorities and private users, the NFPA does not waive any rights in copyright to these documents.

Use of NFPA Standards for regulatory purposes should be accomplished through adoption by reference. The term “adoption by reference” means the citing of title, edition, and publishing information only. Any deletions, additions, and changes desired by the adopting authority should be noted separately in the adopting instrument. In order to assist NFPA in following the uses made of its documents, adopting authorities are requested to notify the NFPA (Attention: Secretary, Standards Council) in writing of such use. For technical assistance and questions concerning adoption of NFPA Standards, contact NFPA at the address below.

For Further Information

All questions or other communications relating to NFPA Standards and all requests for information on NFPA procedures governing its codes and standards development process, including information on the procedures for requesting Formal Interpretations, for proposing Tentative Interim Amendments, and for proposing revisions to NFPA standards during regular revision cycles, should be sent to NFPA headquarters, addressed to the attention of the Secretary, Standards Council, NFPA, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101; email: stds_admin@nfpa.org

For more information about NFPA, visit the NFPA website at www.nfpa.org. All NFPA codes and standards can be viewed at no cost at www.nfpa.org/freeaccess.

Copyright © 2014 National Fire Protection Association®. All Rights Reserved.

NFPA 101®

Life Safety Code

2015 Edition

This edition of NFPA 101®, *Life Safety Code*®, was prepared by the Technical Committees on Alternative Approaches to Life Safety, Assembly Occupancies, Board and Care Facilities, Building Service and Fire Protection Equipment, Detention and Correctional Occupancies, Educational and Day-Care Occupancies, Fire Protection Features, Fundamentals, Health Care Occupancies, Industrial, Storage, and Miscellaneous Occupancies, Interior Finish and Contents, Means of Egress, Mercantile and Business Occupancies, and Residential Occupancies, released by the Correlating Committee on Safety to Life, 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>.

Additional TIAs and Errata have been issued for NFPA 101 addressing topics other than consumer fireworks and similarly indicated by boxed notices at the appropriate areas 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 101 was approved as an American National Standard on September 3, 2014.

Origin and Development of NFPA 101

The *Life Safety Code* had its origin in the work of the Committee on Safety to Life of the National Fire Protection Association, which was appointed in 1913. In 1912, a pamphlet titled *Exit Drills in Factories, Schools, Department Stores and Theaters* was published following its presentation by the late Committee member R. H. Newbern at the 1911 Annual Meeting of the Association. Although the pamphlet's publication antedated the organization of the Committee, it was considered a Committee publication.

For the first few years of its existence, the Committee on Safety to Life devoted its attention to a study of the notable fires involving loss of life and to analyzing the causes of this loss of life. This work led to the preparation of standards for the construction of stairways, fire escapes, and other egress routes for fire drills in various occupancies, and for the construction and arrangement of exit facilities for factories, schools, and other occupancies. These reports were adopted by the National Fire Protection Association and published in pamphlet form as *Outside Stairs for Fire Exits* (1916) and *Safeguarding Factory Workers from Fire* (1918). These pamphlets served as a groundwork for the present *Code*. These pamphlets were widely circulated and put into general use.

In 1921, the Committee on Safety to Life was enlarged to include representatives of certain interested groups not previously participating in the standard's development. The Committee then began to further develop and integrate previous Committee publications to provide a comprehensive guide to exits and related features of life safety from fire in all classes of occupancy. Known as the *Building Exits Code*, various drafts were published, circulated, and discussed over a period of years, and the first edition of the *Building Exits Code* was published by the National Fire Protection Association in 1927. Thereafter, the Committee continued its deliberations, adding new material on features not originally covered and revising various details in the light of fire experience and practical experience in the use of the *Code*. New editions were published in 1929, 1934, 1936, 1938, 1939, 1942, and 1946 to incorporate the amendments adopted by the National Fire Protection Association.

National attention was focused on the importance of adequate exits and related fire safety features after the Cocoanut Grove Night Club fire in Boston in 1942 in which 492 lives were lost. Public attention to exit matters was further stimulated by the series of hotel fires in 1946 (LaSalle, Chicago — 61 dead; Canfield, Dubuque — 19 dead; and Winecoff, Atlanta — 119 dead). The *Building Exits Code*, thereafter, was used to an increasing extent for regulatory purposes. However, the *Code* was not written in language suitable for adoption into law, because it had been drafted as a reference document and contained advisory provisions that were useful to building designers but inappropriate for legal use. This led to a decision by the Committee to re-edit the entire *Code*, limiting the body of the text to requirements suitable for mandatory application and placing advisory and explanatory material in notes. The re-editing expanded *Code* provisions to cover additional occupancies and building features to produce a complete document. The *Code* expansion was carried on concurrently with development of the 1948, 1949, 1951, and 1952 editions. The results were incorporated into the 1956 edition and further refined in subsequent editions dated 1957, 1958, 1959, 1960, 1961, and 1963.

In 1955, NFPA 101B, on nursing homes, and NFPA 101C, on interior finish, were published. NFPA 101C was revised in 1956. These publications have since been withdrawn.

In 1963, the Committee on Safety to Life was restructured to represent all interested factions and to include only those members with broad knowledge of fire matters. The Committee served as a review and correlating committee for seven sectional committees whose personnel included members having a special knowledge and interest in various portions of the *Code*.

Under the revised structure, the sectional committees, through the Committee on Safety to Life, prepared the 1966 edition of the *Code*, which was a complete revision of the 1963 edition. The *Code* title was changed from *Building Exits Code* to *Code for Safety to Life from Fire in Buildings and Structures*. The *Code* text was written in enforceable “code language,” and all explanatory notes were placed in an appendix.

The *Code* was placed on a 3-year revision schedule, with new editions adopted in 1967, 1970, 1973, and 1976.

In 1977, the Committee on Safety to Life was reorganized as a technical committee, with an executive committee and standing subcommittees responsible for various chapters and sections. The 1981 edition contained major editorial changes, including reorganization within the occupancy chapters, to make them parallel to each other, and the splitting of requirements for new and existing buildings into separate chapters. Chapters on detention and correctional facilities were added, as well as new sections for ambulatory health care centers.

The 1985 edition contained a new Chapter 21 on residential board and care occupancies with related Appendix F and Appendix G, a new Appendix D on alternative calculations for stair width, and Appendix E, a fire safety evaluation system (FSSES) for detention and correctional facilities.

The 1988 edition contained a major change in the method of determining egress capacity with the deletion of the traditional units of exit width and the substitution of a straight linear approach to calculating egress capacity. Appendix C through Appendix G were moved from NFPA 101 into a new document, NFPA 101M.

The 1991 edition contained numerous new requirements for mandatory sprinklers in new health care facilities, hotels, apartment buildings, lodging and room houses, and board and care facilities, as well as mandatory sprinkler requirements for existing high-rise hotels and apartment buildings. The requirements for board and care facilities were split into two chapters, Chapter 22 for new construction and Chapter 23 for existing buildings.

The 1994 edition contained new requirements for accessible means of egress, areas of refuge, and ramps, putting the *Code* in substantial agreement with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

The 1997 edition relocated the material on day-care occupancies from Chapters 10 and 11 for new and existing educational occupancies to new Chapters 30 and 31. The operating features requirements, previously contained in Chapter 31, were interspersed throughout the *Code*, as applicable.

The 2000 edition introduced a performance-based option via Section 4.4 and new Chapter 5. That edition also reformatted the *Code* for substantial compliance with the NFPA *Manual of Style*: (1) former Chapter 1, General, was split into Chapter 1, Administration, and Chapter 4, General; (2) the mandatory references list was moved from Chapter 33 to Chapter 2; (3) all definitions were moved into Chapter 3, and each defined term was numbered; (4) the paragraph numbering style that separated the chapter number from the section number using a hyphen was changed to the use of a decimal point as the separator; and (5) the appendixes were renamed annexes. Former Chapter 32 on special structures and high-rise buildings was moved to Chapter 11 to join the core chapters (i.e., the chapters that are not occupancy specific). The subject of interior finish, contents, and furnishings was moved from Section 6.5 into a separate new chapter, Chapter 10. The occupancy chapters, formerly Chapters 8 through 32, became Chapters 12 through 42, with some repositioning of chapters. For example, the day-care occupancies chapters were renumbered from Chapters 30/31 to Chapters 16/17, so as to be positioned immediately after the chapters for educational occupancies.

The 2003 edition reformatted all exceptions into numbered or lettered paragraphs. Some reformatting of paragraphs with multiple requirements was done for additional compliance with the NFPA *Manual of Style*.

The 2006 edition repositioned the inch-pound (U.S. Customary) units to appear first, followed by the metric equivalent (SI) units in parentheses. New Chapter 43, Building Rehabilitation, was added to promote the adaptive reuse of existing buildings without sacrificing needed life safety.



The 2009 edition added provisions to Chapter 7 for electrically controlled egress doors, horizontal-sliding doors serving an area with an occupant load of fewer than 10, elevator lobby access door locking, and door inspection and maintenance. The remoteness criteria of Chapter 7 were expanded to have applicability to all three portions of the means of egress — exit access, exit, and exit discharge. Extensive revisions were made throughout the *Code* to standardize the use of the terms *stories in height*, *finished ground level*, *grade plane*, *basement*, and *level of exit discharge*. Section 9.6 and the applicable occupancy chapters were revised to limit the use of public address systems for occupant alarm notification to large venue assembly occupancies and mercantile mall buildings, where the physical configuration, function, and human behavior present challenges with respect to effective occupant notification by standard means in accordance with NFPA 72®, *National Fire Alarm Code*®. A subsection was added to Chapter 11 for special provisions applicable to air traffic control towers. The criteria for assembly stage proscenium opening fire curtains were deleted from Chapter 12 and replaced by a reference to the new fire curtain provisions of NFPA 80, *Standard for Fire Doors and Other Opening Protectives*. Provisions were added to Chapters 14 through 17 for the placement and use of alcohol-based hand-rub dispensers in educational and day-care occupancies. The provisions of Chapters 18 and 19 were expanded to address door locking where the needs of patients or clients require specialized protective measures for their safety and security in hospitals, nursing homes, and limited care facilities. Also, a limitation on common path of travel was added to Chapter 18 for new health care occupancies; the requirement for patient sleeping room windows was deleted for new and existing health care occupancies; and all existing high-rise health care occupancy buildings must be sprinklered within 12 years of the adoption of this edition of the *Code*. Numerous occupancy chapters were revised to require emergency plans in accordance with Section 4.8. Chapter 43 on building rehabilitation was revised to address issues not identified when the chapter was written for the 2003 edition and to delete redundancies. An adoptable annex was added for elevators for occupant evacuation prior to Phase I Emergency Recall Operations. Another adoptable annex was added for supplemental escape devices and systems.

The 2012 edition expanded what had been the definitions of *noncombustible material* and *limited-combustible material* and moved the material to new subsections in Chapter 4. The material addressing elevators for occupant controlled evacuation which had comprised Annex B was moved to Chapter 7. A new section was added to Chapter 7 to address normally unoccupied building service equipment support areas. The Chapter 8 table addressing minimum fire protection ratings for opening protectives was expanded. Provisions for carbon monoxide detection were added to Chapter 9. Requirements for carbon monoxide detection were added to some of the occupancy chapters. The health care occupancies provisions were modified to permit the health care setting to be made more homelike.

The 2015 edition includes new provisions in Chapter 4 detailing the code requirements hierarchy to be applied where a provision in one chapter conflicts with a provision in another chapter. Means of egress provisions were revised or added relative to rooms opening directly onto an exit enclosure, door opening threshold height for spaces not normally occupied, door encroachment on egress width, existing door frames without labels, security access turnstiles, handrail orientation on flaring-width stairs, horizontal exit stacking, horizontal exit exterior wall extensions, elevators in towers, occupant evacuation elevators, and occupant load factors for ambulatory health care and concentrated business use. Atrium walls are permitted to serve as part of the separation for creating separated occupancies on a story-by-story basis. The provisions for the inspection of door assemblies were revised so that fire-rated doors are addressed in Chapter 8 and non-rated, egress doors in Chapter 7. The Chapter 8 table addressing minimum fire protection rating for opening protectives was again expanded. Provisions for alcohol-based hand-rub dispensers were added to Chapter 8 so they can be referenced by the occupancy chapters. The high-rise building provisions of Chapter 11 were expanded to include remote video monitoring of exit stair enclosures. The assembly occupancy life safety evaluation provisions were expanded. The day-care and residential board and care occupancy provisions were revised to permit more than one floor level to be considered the level of exit discharge. The health care occupancy provisions were further revised to permit facilities to be made more home-like, including a reduction in nursing home minimum corridor width and the clarification of permitted smoke alarm placement for kitchens that are open to the corridor. Health care occupancy doors subject to locking are permitted to be disguised with murals. Smoke barriers are permitted to be omitted on a non-health care floor below a health care floor. The ambulatory health care occupancy chapters were rewritten to be self-contained, removing the need to reference the business occupancy chapters.

To the User

The following comments are offered to assist in the use of the *Life Safety Code*. Additional help on using the *Life Safety Code* can be obtained by attending one of the seminars NFPA conducts on the *Life Safety Code* or by using the *Life Safety Code Handbook* available from NFPA. Further information on these seminars is available through the NFPA Division of Continuing Education.

Essentially, the *Code* is comprised of four major parts. The first part consists of Chapters 1 through 4, Chapters 6 through 11, and Chapter 43; these are often referred to as the base chapters or fundamental chapters. The second part is Chapter 5, which details the performance-based option. The next part consists of Chapters 12 through 42, which are the occupancy chapters. The fourth and last part consists of Annex A and Annex B, which contain useful additional information.

A thorough understanding of Chapters 1 through 4, Chapters 6 through 11, and Chapter 43 is necessary to use the *Code* effectively, because these chapters provide the building blocks on which the requirements of the occupancy chapters are based. Note that many of the provisions of Chapters 1 through 4 and Chapters 6 through 11 are mandatory for all occupancies. Some provisions are mandated only when referenced by a specific occupancy, while others are exempted for specific occupancies. Often, in one of the base chapters, especially in Chapter 7, the phrase “where

permitted by Chapters 11 through 43” appears. In this case, that provision can be used only where specifically permitted by an occupancy chapter. For example, the provisions of 7.2.1.6.1 on delayed-egress locks are permitted only when permitted by Chapters 11 through 43. Permission to use the delayed-egress lock is normally found in the “____.2.2” subsection of each occupancy chapter. For example, 12.2.2.2.5 specifically permits the use of delayed-egress locks in new assembly occupancies. If this permission is not found in an occupancy chapter, the delayed-egress lock cannot be used. Similar types of restricted permission are found for such items as security grilles, double-cylinder locks, revolving doors, and so forth. In other locations in the base chapters, the wording “unless prohibited by Chapters 11 through 43” is used. In this case, the provision is permitted in all occupancies, unless specifically prohibited by an occupancy chapter.

Metric units of measurement in this *Code* are in accordance with the modernized metric system known as the International System of Units (SI). The unit liter, which is outside of but recognized by SI, is commonly used and is therefore used in this *Code*. In this *Code*, inch-pound units for measurements are followed by an equivalent in SI units, as noted in 1.5.2. The inch-pound value and the SI value are each acceptable for use as primary units for satisfying the requirements of this *Code*.



Correlating Committee on Safety to Life

William E. Koffel, *Chair*
Koffel Associates, Inc., MD [SE]

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

David S. Collins, The Preview Group, Inc., OH [SE]
Rep. American Institute of Architects

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

Howard Hopper, UL LLC, CA [RT]

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

J. Edmund Kalie, Jr., Prince George's County
Government, MD [E]

George H. McCall, Wade Hampton Fire Department,
SC [U]

Rep. International Association of Fire Chiefs

Isaac I. Papier, Honeywell, Inc., IL [M]

Rep. National Electrical Manufacturers Association

Jake Pauls, Jake Pauls Consulting Services in Building
Use & Safety, MD [C]

Rep. American Public Health Association

James R. Quiter, Arup, CA [SE]

Ronald C. Reynolds, Virginia State Fire Marshal's Office,
VA [E]

Rep. International Fire Marshals Association

Eric R. Rosenbaum, Hughes Associates, Inc., MD [U]

Rep. American Health Care Association

Alternates

Sharon S. Gilyeat, Koffel Associates, Inc., MD [SE]
(Alt. to W. E. Koffel)

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

(Alt. to J. Pauls)

Jeffrey M. Hugo, National Fire Sprinkler Association,
Inc., MI [M]

(Alt. to K. E. Isman)

Robert J. James, UL LLC, FL [RT]

(Alt. to H. Hopper)

Michael O'Brian, Brighton Area Fire Authority, MI [U]
(Alt. to G. H. McCall)

Martin H. Reiss, The RJA Group, Inc., MA [SE]
(Alt. to J. R. Quiter)

Rodger Reiswig, Tyco/SimplexGrinnell, FL [M]
(Alt. to I. I. Papier)

Nonvoting

Chad E. Beebe, ASHE - AHA, WA [E]
Rep. TC on Board & Care Facilities

Warren D. Bonisch, Aon Fire Protection Engineering
Corporation, TX [I]

Rep. TC on Residential Occupancies

John L. Bryan, Frederick, MD [SE]
(Member Emeritus)

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

Rep. TC on Mercantile & Business Occupancies

Wayne G. Carson, Carson Associates, Inc., VA [SE]
Rep. TC on Fundamentals

Shane M. Clary, Bay Alarm Company, CA [IM]
(Alt. to Nonvoting Member)

Rep. Signaling Systems Correlating Committee

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

Rep. TC on Fire Protection Features

Michael DiMascio, Arup, MA [SE]

Rep. TC on Detention & Correctional Occupancies

Joseph M. Jardin, Fire Department City of New York,
NY [C]

Rep. TC on Building Service & Fire Protection
Equipment

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

Rep. TC on Health Care Occupancies

James K. Lathrop, Koffel Associates, Inc., CT [SE]
Rep. TC on Means of Egress

Wayne D. Moore, Hughes Associates, Inc., RI [SE]
Rep. Signaling Systems Correlating Committee

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

Rep. TC on Interior Finish & Contents

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

Rep. TC on Educational & Day-Care Occupancies

Jeffrey S. Tubbs, Arup, MA [SE]

Rep. TC on Assembly Occupancies

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

Rep. TC on Alternative Approaches to Life Safety

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

Rep. TC on Industrial, Storage, & Miscellaneous
Occupancies

Ron Coté, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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 protection of human life from fire and other circumstances capable of producing similar consequences and for the non-emergency and emergency movement of people.

Technical Committee on Assembly Occupancies

Jeffrey S. Tubbs, *Chair*
Arup, MA [SE]

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

Scott W. Adams, Park City Fire Service District, UT [E]
Rep. International Fire Marshals Association
Raymond J. Battalora, Aon Fire Protection Engineering,
TX [I]
George D. Bushey, Rosser International, GA [SE]
William Conner, Bill Conner Associates LLC, IL [SE]
Rep. American Society of Theater Consultants
Bhola Dhume, City of New Orleans, LA [E]
Robert D. Fiedler, City of Lincoln, NE [E]
Daniel P. Finnegan, Siemens Industry, Inc., NJ [M]
Rep. National Electrical Manufacturers Association
Ralph D. Gerdes, Ralph Gerdes Consultants, LLC,
IN [SE]
Harold C. Hansen, International Association of Venue
Managers, IL [U]
Wesley W. Hayes, Polk County Fire Services Division,
FL [E]
Rep. International Fire Marshals Association
Jonathan Humble, American Iron and Steel Institute,
CT [M]
Kenneth F. Keberle, Arena Americas, AZ [U]
John Lake, City of Gainesville, FL [E]

Josh Lambert, University of Texas at Austin, TX [U]
Vern L. Martindale, Church of Jesus Christ of Latter-day
Saints, UT [U]
Gregory R. Miller, Code Consultants, Inc., MO [U]
Rep. National Association of Theatre Owners
Jake Pauls, Jake Pauls Consulting Services in Building
Use & Safety, MD [SE]
Steven W. Peavey, Altamonte Springs Building Fire Safety
Division, FL [E]
Rep. Florida Fire Marshals & Inspectors Association
Vincent Quintero, Rhode Island State Fire Marshal's
Office, RI [E]
Ed Roether, Ed Roether Consulting LLC, KS [SE]
Karl G. Ruling, Entertainment Services & Technology
Assn., NY [U]
Rep. U.S. Institute for Theatre Technology, Inc.
Steven J. Scandaliato, SDG, LLC, AZ [IM]
Rep. American Fire Sprinkler Association
Philip R. Sherman, Philip R. Sherman, PE, NH [SE]
Robert B. Treiber, National Fire Sprinkler Association,
Inc., OH [M]
Rep. National Fire Sprinkler Association

Alternates

Farid Alfawakhiri, American Iron and Steel Institute,
IL [M]
(Alt. to J. Humble)
Gene Boecker, Code Consultants, Inc., MO [U]
(Alt. to G. R. Miller)
Lorrell Bush, National Fire Sprinkler Association, Inc.,
FL [M]
(Alt. to R. B. Treiber)
Eric Center, Cedar Hammock Fire Rescue, FL [E]
(Alt. to S. W. Peavey)
David Cook, Ralph Gerdes Consultants, LLC, IN [SE]
(Alt. to R. D. Gerdes)
Max L. Gandy, Church of Jesus Christ of Latter-day
Saints, UT [U]
(Alt. to V. L. Martindale)
Jerrold S. Gorrell, Theatre Safety Programs, AZ [U]
(Alt. to K. G. Ruling)
Waymon Jackson, University of Texas at Austin, TX [U]
(Voting Alt. to UT-Austin Rep.)

Eugene Leitermann, Theatre Projects Consultants, Inc.,
CT [SE]
(Alt. to W. Conner)
Christopher Prueher, Aon Fire Protection Engineering,
CA [I]
(Alt. to R. J. Battalora)
Charles J. Schweitzer, City of Lincoln, NE [E]
(Alt. to R. D. Fiedler)
Mark V. Smith, Alachua County Fire Rescue, FL [E]
(Alt. to J. Lake)
Elbert R. Thomas, Jr., New Orleans Fire Department,
LA [E]
(Alt. to B. Dhume)
Thomas G. Wellen, American Fire Sprinkler Association,
Inc., TX [IM]
(Alt. to S. J. Scandaliato)
Toby J. White, Arup, MA [SE]
(Alt. to J. S. Tubbs)

Ron Coté, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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 non-emergency and emergency movement of people in assembly occupancies, tents, and membrane structures.



Technical Committee on Board and Care Facilities

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

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

Scott D. Allen, LifeServices Management Corporation,
PA [U]

Gregory J. Austin, Gentex Corporation, MI [M]
Rep. National Electrical Manufacturers Association

Tracey D. Bellamy, Telgian Corporation, GA [SE]

Andrew Blum, Exponent, Inc., GA [SE]

Warren D. Bonisch, Aon Fire Protection Engineering
Corporation, TX [I]

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

Rep. International Fire Marshals Association

Richard L. Day, Michigan State Fire Marshal's Office,
MI [E]

Virgil Hall, U.S. Department of Veterans Affairs, IN [U]

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

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

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

Philip R. Jose, P. R. Jose & Associates, MI [SE]

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

Cindy Mahan, Friendship Community Care, Inc., AR [U]
Rep. American Network of Community Options
& Resources

Randy S. McDermott, U.S. Department of Health
& Human Services, TX [E]

David E. Mills, UL LLC, IL [RT]

Daniel E. Nichols, State of New York Department of
State, NY [E]

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

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

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

Jon Taluba, Russell Phillips & Associates, LLC, NY [SE]

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

Alternates

Robert Barnett, Illinois Department of Public Health,
IL [E]

(Alt. to H. Kowalenko)

Kerry M. Bell, UL LLC, IL [RT]

(Alt. to D. E. Mills)

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

(Alt. to G. J. Austin)

Chris Gaut, National Fire Sprinkler Association, Inc.,
MO [M]

(Alt. to K. E. Isman)

Peter A. Larrimer, U.S. Department of Veterans Affairs,
PA [U]

(Alt. to V. Hall)

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

(Alt. to D. E. Hugue)

Kaitlin McGillvray, Code Consultants, Inc., NY [SE]

(Alt. to T. Schultz)

David A. Seitz, HCF Management, Inc., OH [U]

(Alt. to E. R. Rosenbaum)

Andrew Shanahan, Aon Fire Protection Engineering,
RI [I]

(Alt. to W. D. Bonisch)

Yunyong P. Utiskul, Exponent, Inc., MD [SE]

(Alt. to A. Blum)

Gregory E. Harrington, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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.

Technical Committee on Building Service and Fire Protection Equipment

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 T. P. Hammerberg)
Michael Derr, The RJA Group, Inc., MD [SE]
(Alt. to M. H. Reiss)
Daniel P. Finnegan, Siemens Industry, Inc., NJ [M]
(Alt. to R. J. Roberts)
Greg Gottlieb, Hauppauge Fire District, NY [C]
(Alt. to J. M. Jardin)
Claudia Hagood, Klinker and Associates, Inc., MD [SE]
(Alt. to R. L. Klinker)
Bryan Lawrence Hoskins, Oklahoma State University,
OK [SE]
(Alt. to P. D. Brock)
Jeffrey M. Hugo, National Fire Sprinkler Association,
Inc., MI [M]
(Alt. to K. E. Isman)

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

Nonvoting

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

Gregory E. Harrington, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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 Detention and Correctional Occupancies

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 K. E. Isman)
William E. Koffel, Koffel Associates, Inc., MD [SE]
(Alt. to C. P. Aler)

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

Ron Coté, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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

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, AFCEA, 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 V. L. Dubrowski)

Max L. Gandy, Church of Jesus Christ of Latter-day Saints, UT [U]

(Alt. to V. L. Martindale)

Carmen A. Rao, Wallingford Fire Prevention Bureau, CT [E]

(Alt. to M. L. Sinsigalli)

Richard Jay Roberts, Honeywell Life Safety, IL [M]
(Alt. to M. B. Marks)

Daniel W. Uthe, Sonora Environmental Research Institute, Inc., AZ [C]

(Alt. to A. M. A. Wolf)

Kenneth Wood, Office of the Illinois State Fire Marshal, IL [E]

(Alt. to C. L. Stashak)

Ron Coté, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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 educational occupancies and day-care occupancies.



Technical Committee on Fire Protection Features

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 [U]

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 J. Humble)

Eric J. Apenis, The RJA Group, Inc., GA [SE]

(Alt. to J. A. Castellano)

Richard C. Butcher, Tarpon Springs Fire Rescue, FL [E]

(Alt. to J. W. Pasqualone)

David Cook, Ralph Gerdes Consultants, LLC, IN [SE]

(Alt. to R. D. Gerdes)

Erin N. Crowley, Code Consultants, Inc., MO [SE]

(Alt. to K. D. Morin)

Timmy Dee, Babcock & Wilcox Y-12, LLC, TN [U]

(Alt. to J. A. Gump)

Rick Glenn, Aon Fire Protection Engineering Corporation, IL [I]

(Alt. to J. F. Devlin)

David M. Hammerman, Marshall A. Klein and Associates, Inc., MD [SE]

(Alt. to M. A. Klein)

Joseph Patrick Higgins, U.S. Department of the Navy, AE [E]

(Alt. to M. O. Gencarelli)

Howard Hopper, UL LLC, CA [RT]

(Voting Alt. to UL Rep.)

Thomas R. Janicak, Ceco Door Products, IL [M]

(Alt. to K. A. Roeper)

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

(Alt. to W. Jackson)

Timothy J. Orris, AMCA International, Inc., IL [M]

(Alt. to V. J. Lovell)

Eric R. Rosenbaum, Hughes Associates, Inc., MD [SE]

(Alt. to B. T. Rhodes)

Robert A. Speed, North Carolina Office of the State Fire Marshal, NC [E]

(Voting Alt. to NC State Fire Marshal rep.)

Catherine L. Stashak, Office of the Illinois State Fire Marshal, IL [E]

(Alt. to K. Wood)

Andrew M. Wahl, Michael Baker Corporation, PA [SE]

(Alt. to A. 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

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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 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

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 Doeblner, Menomonee Falls Fire Department, WI [E]

Rep. International Fire Marshals Association

Robert J. Eugene, UL LLC, WA [RT]

David W. Frable, U.S. 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, U.S. 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 [M]

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 J. McNamara)

Sharon S. Gilyeat, Koffel Associates, Inc., MD [SE]

(Alt. to J. K. Lathrop)

Thomas P. Hammerberg, Automatic Fire Alarm Association, Inc., GA [M]

(Alt. to R. Reiswig)

Jeffrey M. Hugo, National Fire Sprinkler Association, Inc., MI [M]

(Alt. to V. B. Valentine)

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

(Alt. to F. Alfawakhiri)

Moriel E. Kaplan, Aon Fire Protection Engineering, MD [I]

(Alt. to S. T. Laramée)

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

(Alt. to A. Blum)

Rodney A. McPhee, Canadian Wood Council, Canada [M]

(Alt. to D. 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

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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

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]

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. U.S. 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]

Sandra 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 E. R. Rosenbaum)

Chad E. Beebe, ASHE - AHA, WA [U]
(Voting Alt. to ASHE - AHA Rep.)

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

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

A. Richard Fasano, Russell Phillips & Associates Inc.,
CA [U]

(Alt. to D. R. Hood)

Charles J. Giblin III, Maryland State Fire Marshal's
Office, MD [E]

(Alt. to K. E. Bush)

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

Robert G. Kleinheinz, National Fire Sprinkler
Association, Inc., IL [M]

(Alt. to B. Dewar)

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

Peter A. Larrimer, U.S. Department of Veterans Affairs,
PA [U]

(Alt. to D. P. Klein)

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

Kenneth Sun, U.S. Public Health Service, CO [E]
(Alt. to J. Merrill II)

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

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

Michael Zakowski, Code Consultants, Inc., MO [SE]
(Alt. to T. 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

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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 health care occupancies.

Technical Committee on Industrial, Storage, and Miscellaneous Occupancies

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]
Rep. Lonza Group, Ltd.
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. Skinner, 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 J. Humble)
Kathryn M. Cifa, Bechtel National, Inc., MD [SE]
(Alt. to C. B. Skinner)
Richard A. Craig, Compressed Gas Association, VA [M]
(Alt. to J. Sameth)
David M. Hammerman, Marshall A. Klein and Associates, Inc., MD [U]
(Alt. to M. A. Klein)
Roland J. Huggins, American Fire Sprinkler Association, Inc., TX [IM]
(Alt. to J. E. Golinveaux)
Andrew S. Klein, Marshall A. Klein & Associates, Inc., WA [U]
(Alt. to M. A. Klein)

Bruce Lecair, National Fire Sprinkler Association, Inc., CA [M]
(Alt. to R. W. Lonabaugh)
Katherine A. Pothier, Fisher Engineering, Inc., GA [SE]
(Alt. to S. A. Sheldon)
Marko J. Saric, Jr., The Sherwin-Williams Company, OH [U]
(Alt. to D. C. Tabar)
Jeffrey A. Scott, FP&C Consultants, Inc., MO [SE]
(Alt. to D. C. Birchler)
Bobbie L. Smith, Micron Technology, Inc., ID [U]
(Alt. to P. A. McLaughlin)
John R. Stauder, AECOM, CA [SE]
(Alt. to J. B. Biller)

Nonvoting

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

Kristin Bigda, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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

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]

Alternates

Rick J. Daughtery, City of Fort Thomas Fire Department,
KY [L]

(Alt. to M. Carrigan)

Timothy Earl, GBH International, MI [SE]

(Alt. to M. M. Hirschler)

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

(Alt. to H. Paszczuk)

James K. Lathrop, Koffel Associates, Inc. [M]

(Voting Alt. to CRI Rep.)

Randall K. Laymon, UL LLC, IL [RT]

(Alt. to D. E. Sloan)

Kristin Bigda, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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

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]

Warren D. Bonisch, Aon Fire Protection Engineering Corporation, TX [I]

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

Rep. International Fire Marshals Association

David S. Collins, The Preview Group, Inc., OH [SE]

Rep. American Institute of Architects

Richard L. Day, Michigan State Fire Marshal's Office, MI [E]

David A. de Vries, Firetech Engineering Inc., IL [SE]

Steven Di Pilla, ESIS Global Risk Control Services, 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]

Gary L. Nuschler, Otis Elevator Company, CT [M]

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

Vincent Quintero, Rhode Island State Fire Marshal's Office, RI [E]

Eric R. Rosenbaum, Hughes Associates, Inc., MD [SE]

Roy W. Schwarzenberg, U.S. Central Intelligence Agency, MD [U]

Michael S. Shulman, UL LLC, CA [RT]

Leslie Strull, The RJA Group, Inc., PA [SE]

Michael Tierney, Kellen Company, CT [M]

Rep. Builders Hardware Manufacturers Association

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

Alternates

Brian D. Black, BDBlack Codes, Inc., NY [M]
(Alt. to G. L. Nuschler)

William J. Burrus, Aon Fire Protection Engineering Corporation, TX [I]

(Alt. to W. D. Bonisch)

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

(Alt. to L. Strull)

Greg Drake, Door and Hardware Institute, VA [M]

(Alt. to R. R. Perry)

Joshua W. Elvove, Aurora, CO [SE]

(Alt. to D. A. de Vries)

William E. Koffel, Koffel Associates, Inc., MD [SE]

(Alt. to J. K. Lathrop)

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

(Alt. to W. Jackson)

R. T. Leicht, State of Delaware, DE [E]

(Alt. to K. E. Bush)

Wade Palazini, Rhode Island State Fire Marshal's Office, RI [E]

(Alt. to V. Quintero)

Richard D. Peacock, National Institute of Standards & Technology, MD [RT]

(Alt. to J. D. Averill)

Brian T. Rhodes, Hughes Associates, Inc., MD [SE]

(Alt. to E. R. Rosenbaum)

Jonathan Shimshoni, Escape Rescue Systems Ltd., Israel [M]

(Alt. to R. Alles)

Kelly R. Tilton, U.S. Central Intelligence Agency, MD [U]

(Alt. to R. W. Schwarzenberg)

John Woestman, Kellen Company, IA [M]

(Alt. to M. Tierney)

Nonvoting

John L. Bryan, Frederick, MD [SE]
(Member Emeritus)

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

Ron Coté, NFPA Staff Liaison

Matthew I. Chibbaro, U.S. Department of Labor, DC [E]

William R. Hamilton, U.S. Department of Labor, DC [E]

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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

Kenneth E. Bush, *Chair*

Maryland State Fire Marshals Office, MD [E]
Rep. International Fire Marshals Association

Kristin Bigda, *Administrative Secretary*

National Fire Protection Association, MA

Mark J. Aaby, Koffel Associates, Inc., MD [SE]

Tracey D. Bellamy, Telgian Corporation, GA [U]
Rep. The Home Depot

William J. Burrus, Aon Fire Protection Engineering 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, U.S. Architect of the Capitol, DC [E]

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]

Alternates

Farid Alfawakhiri, American Iron and Steel Institute, IL [M]

(Alt. to J. Humble)

Ronald W. Brown, National Fire Sprinkler Association, Inc., IN [M]

(Alt. to R. W. Lonabaugh)

Tiffney A. Cates, Koffel Associates, Inc., MD [SE]

(Alt. to M. J. Aaby)

Dwayne Griffith, Wal-Mart Security Services, AR [U]

(Alt. to A. W. Cole)

Brian L. Marburger, Travelers Insurance Company, CT [I]

(Alt. to A. C. Gumkowski)

Patrick A. McLaughlin, McLaughlin & Associates, ID [U]

(Alt. to D. C. Tabar)

Dennis L. Pitts, American Wood Council, TX [M]

(Alt. to S. W. Francis)

Leonard J. Ramo, Telgian Corporation, GA [U]

(Alt. to T. D. Bellamy)

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

(Alt. to A. J. Murdock)

Paul J. Vautour, Tyco/SimplexGrinnell, MA [M]

(Alt. to D. J. Gauvin)

Jim Widmer, Potter Roemer FIRE PRO, AL [M]

(Alt. to J. L. Tidwell)

Kristin Bigda, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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 for the emergency movement of people in mercantile and business occupancies.

Technical Committee on Residential Occupancies

Warren D. Bonisch, *Chair*

Aon Fire Protection Engineering Corporation, TX [I]

Gregory E. Harrington, *Administrative Secretary*

National Fire Protection Association, MA

H. Wayne Boyd, U.S. Safety & Engineering Corporation, CA [M]

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]

Alternates

David Cook, Ralph Gerdes Consultants, LLC, IN [SE]
(Alt. to R. D. Gerdes)

Donald P. Damron, Sarasota County Fire Department, FL [E]

(Alt. to B. T. Wright)

David M. Hammerman, Marshall A. Klein and Associates, Inc., MD [SE]

(Alt. to M. A. Klein)

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

(Alt. to A. M. Schneider)

Waymon Jackson, University of Texas at Austin, TX [U]

(Alt. to J. Lambert)

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

(Alt. to H. Paszczuk)

Bruce Lecair, National Fire Sprinkler Association, Inc., CA [M]

(Alt. to K. E. Isman)

Michael F. Meehan, VSC Fire & Security, VA [IM]
(Alt. to P. A. Brown)

David Newhouse, Gentex Corporation, MI [M]

(Alt. to R. J. Roberts)

Jake Pauls, Jake Pauls Consulting Services in Building Use & Safety, MD [C]

(Alt. to S. C. Harbuck)

Dennis L. Pitts, American Wood Council, TX [M]

(Alt. to S. W. Francis)

Kevin Spangler, Michael Baker Jr. Corporation, PA [SE]

(Alt. to A. F. Weisfield)

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

(Alt. to W. D. Bonisch)

Gregory E. Harrington, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

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 hotels, dormitories, apartments, lodging and rooming houses, and one- and two-family dwellings.



Contents

Chapter 1 Administration	101- 23	7.7 Discharge from Exits	101- 80
1.1 Scope	101- 23	7.8 Illumination of Means of Egress	101- 81
1.2 Purpose	101- 23	7.9 Emergency Lighting	101- 81
1.3 Application	101- 23	7.10 Marking of Means of Egress	101- 82
1.4 Equivalency	101- 23	7.11 Special Provisions for Occupancies with High Hazard Contents	101- 84
1.5 Units and Formulas	101- 23	7.12 Mechanical Equipment Rooms, Boiler Rooms, and Furnace Rooms	101- 85
1.6 Enforcement	101- 23	7.13 Normally Unoccupied Building Service Equipment Support Areas	101- 85
Chapter 2 Referenced Publications	101- 23	7.14 Occupant Evacuation Elevators	101- 86
2.1 General	101- 23	Chapter 8 Features of Fire Protection	101- 88
2.2 NFPA Publications	101- 24	8.1 General	101- 88
2.3 Other Publications	101- 25	8.2 Construction and Compartmentation ...	101- 88
2.4 References for Extracts in Mandatory Sections	101- 26	8.3 Fire Barriers	101- 89
Chapter 3 Definitions	101- 26	8.4 Smoke Partitions	101- 94
3.1 General	101- 26	8.5 Smoke Barriers	101- 94
3.2 NFPA Official Definitions	101- 26	8.6 Vertical Openings	101- 96
3.3 General Definitions	101- 27	8.7 Special Hazard Protection	101- 99
Chapter 4 General	101- 37	8.8 Inspection and Testing of Door Assemblies	101-100
4.1 Goals	101- 37	Chapter 9 Building Service and Fire Protection Equipment	101-100
4.2 Objectives	101- 37	9.1 Utilities	101-100
4.3 Assumptions	101- 38	9.2 Heating, Ventilating, and Air-Conditioning	101-100
4.4 Life Safety Compliance Options	101- 38	9.3 Smoke Control	101-101
4.5 Fundamental Requirements	101- 38	9.4 Elevators, Escalators, and Conveyors	101-101
4.6 General Requirements	101- 38	9.5 Waste Chutes, Incinerators, and Laundry Chutes	101-101
4.7 Fire Drills	101- 40	9.6 Fire Detection, Alarm, and Communications Systems	101-102
4.8 Emergency Action Plan	101- 41	9.7 Automatic Sprinklers	101-105
Chapter 5 Performance-Based Option	101- 41	9.8 Other Automatic Extinguishing Equipment	101-105
5.1 General Requirements	101- 41	9.9 Portable Fire Extinguishers	101-105
5.2 Performance Criteria	101- 41	9.10 Standpipe Systems	101-105
5.3 Retained Prescriptive Requirements	101- 41	9.11 Fire Protection System Operating Features	101-106
5.4 Design Specifications and Other Conditions	101- 42	9.12 Carbon Monoxide (CO) Detection and Warning Equipment	101-106
5.5 Design Fire Scenarios	101- 42	9.13 Special Inspections and Tests	101-106
5.6 Evaluation of Proposed Designs	101- 43	Chapter 10 Interior Finish, Contents, and Furnishings	101-106
5.7 Safety Factors	101- 43	10.1 General	101-106
5.8 Documentation Requirements	101- 44	10.2 Interior Finish	101-106
Chapter 6 Classification of Occupancy and Hazard of Contents	101- 44	10.3 Contents and Furnishings	101-109
6.1 Classification of Occupancy	101- 44	Chapter 11 Special Structures and High-Rise Buildings	101-110
6.2 Hazard of Contents	101- 48	11.1 General Requirements	101-110
Chapter 7 Means of Egress	101- 48		
7.1 General	101- 48		
7.2 Means of Egress Components	101- 50		
7.3 Capacity of Means of Egress	101- 75		
7.4 Number of Means of Egress	101- 77		
7.5 Arrangement of Means of Egress	101- 78		
7.6 Measurement of Travel Distance to Exits	101- 79		

11.2	Open Structures	101-111	16.6	Day-Care Homes	101-182
11.3	Towers	101-111	16.7	Operating Features	101-184
11.4	Water-Surrounded Structures	101-113	Chapter 17 Existing Day-Care Occupancies	101-184	
11.5	Piers	101-113	17.1	General Requirements	101-184
11.6	Vehicles and Vessels	101-114	17.2	Means of Egress Requirements	101-186
11.7	Underground and Limited Access Structures	101-114	17.3	Protection	101-188
11.8	High-Rise Buildings	101-115	17.4	Special Provisions	101-189
11.9	Permanent Membrane Structures	101-116	17.5	Building Services	101-189
11.10	Temporary Membrane Structures	101-117	17.6	Day-Care Homes	101-190
11.11	Tents	101-118	17.7	Operating Features	101-192
Chapter 12 New Assembly Occupancies	101-119		Chapter 18 New Health Care Occupancies	101-192	
12.1	General Requirements	101-119	18.1	General Requirements	101-192
12.2	Means of Egress Requirements	101-120	18.2	Means of Egress Requirements	101-195
12.3	Protection	101-127	18.3	Protection	101-200
12.4	Special Provisions	101-130	18.4	Special Provisions	101-205
12.5	Building Services	101-139	18.5	Building Services	101-207
12.6	Reserved	101-139	18.6	Reserved	101-208
12.7	Operating Features	101-139	18.7	Operating Features	101-208
Chapter 13 Existing Assembly Occupancies	101-143		Chapter 19 Existing Health Care Occupancies ...	101-210	
13.1	General Requirements	101-143	19.1	General Requirements	101-210
13.2	Means of Egress Requirements	101-144	19.2	Means of Egress Requirements	101-212
13.3	Protection	101-151	19.3	Protection	101-218
13.4	Special Provisions	101-153	19.4	Special Provisions	101-223
13.5	Building Services	101-162	19.5	Building Services	101-224
13.6	Reserved	101-162	19.6	Reserved	101-225
13.7	Operating Features	101-162	19.7	Operating Features	101-225
Chapter 14 New Educational Occupancies	101-166		Chapter 20 New Ambulatory Health Care Occupancies	101-227	
14.1	General Requirements	101-166	20.1	General Requirements	101-227
14.2	Means of Egress Requirements	101-167	20.2	Means of Egress Requirements	101-229
14.3	Protection	101-168	20.3	Protection	101-230
14.4	Special Provisions	101-170	20.4	Special Provisions	101-232
14.5	Building Services	101-171	20.5	Building Services	101-233
14.6	Reserved	101-171	20.6	Reserved	101-233
14.7	Operating Features	101-171	20.7	Operating Features	101-233
Chapter 15 Existing Educational Occupancies ...	101-172		Chapter 21 Existing Ambulatory Health Care Occupancies	101-235	
15.1	General Requirements	101-172	21.1	General Requirements	101-235
15.2	Means of Egress Requirements	101-172	21.2	Means of Egress Requirements	101-236
15.3	Protection	101-174	21.3	Protection	101-238
15.4	Special Provisions	101-176	21.4	Special Provisions	101-239
15.5	Building Services	101-177	21.5	Building Services	101-240
15.6	Reserved	101-177	21.6	Reserved	101-240
15.7	Operating Features	101-177	21.7	Operating Features	101-240
Chapter 16 New Day-Care Occupancies	101-177		Chapter 22 New Detention and Correctional Occupancies	101-242	
16.1	General Requirements	101-177	22.1	General Requirements	101-242
16.2	Means of Egress Requirements	101-178	22.2	Means of Egress Requirements	101-244
16.3	Protection	101-180	22.3	Protection	101-246
16.4	Special Provisions	101-181	22.4	Special Provisions	101-249
16.5	Building Services	101-182	22.5	Building Services	101-253

22.6	Reserved	101-253	30.5	Building Services	101-286
22.7	Operating Features	101-253	30.6	Reserved	101-286
Chapter 23	Existing Detention and Correctional Occupancies	101-254	30.7	Operating Features	101-286
23.1	General Requirements	101-254	Chapter 31	Existing Apartment Buildings	101-286
23.2	Means of Egress Requirements	101-257	31.1	General Requirements	101-286
23.3	Protection	101-259	31.2	Means of Egress Requirements	101-287
23.4	Special Provisions	101-262	31.3	Protection	101-289
23.5	Building Services	101-263	31.4	Special Provisions	101-291
23.6	Reserved	101-264	31.5	Building Services	101-291
23.7	Operating Features	101-264	31.6	Reserved	101-291
Chapter 24	One- and Two-Family Dwellings	101-264	31.7	Operating Features	101-292
24.1	General Requirements	101-264	Chapter 32	New Residential Board and Care Occupancies	101-292
24.2	Means of Escape Requirements	101-265	32.1	General Requirements	101-292
24.3	Protection	101-267	32.2	Small Facilities	101-292
24.4	Reserved	101-267	32.3	Large Facilities	101-296
24.5	Building Services	101-267	32.4	Suitability of an Apartment Building to House a Board and Care Occupancy	101-302
Chapter 25	Reserved	101-267	32.5	Reserved	101-302
Chapter 26	Lodging or Rooming Houses	101-267	32.6	Reserved	101-302
26.1	General Requirements	101-267	32.7	Operating Features	101-302
26.2	Means of Escape Requirements	101-268	Chapter 33	Existing Residential Board and Care Occupancies	101-303
26.3	Protection	101-269	33.1	General Requirements	101-303
26.4	Reserved	101-270	33.2	Small Facilities	101-304
26.5	Building Services	101-270	33.3	Large Facilities	101-309
26.6	Reserved	101-270	33.4	Suitability of an Apartment Building to House a Board and Care Occupancy	101-316
26.7	Operating Features	101-270	33.5	Reserved	101-316
Chapter 27	Reserved	101-270	33.6	Reserved	101-316
Chapter 28	New Hotels and Dormitories	101-270	33.7	Operating Features	101-316
28.1	General Requirements	101-270	Chapter 34	Reserved	101-317
28.2	Means of Egress Requirements	101-271	Chapter 35	Reserved	101-317
28.3	Protection	101-273	Chapter 36	New Mercantile Occupancies	101-317
28.4	Special Provisions	101-275	36.1	General Requirements	101-317
28.5	Building Services	101-275	36.2	Means of Egress Requirements	101-318
28.6	Reserved	101-275	36.3	Protection	101-320
28.7	Operating Features	101-275	36.4	Special Provisions	101-321
Chapter 29	Existing Hotels and Dormitories	101-276	36.5	Building Services	101-324
29.1	General Requirements	101-276	36.6	Reserved	101-324
29.2	Means of Egress Requirements	101-276	36.7	Operating Features	101-324
29.3	Protection	101-278	Chapter 37	Existing Mercantile Occupancies	101-324
29.4	Special Provisions	101-280	37.1	General Requirements	101-324
29.5	Building Services	101-280	37.2	Means of Egress Requirements	101-326
29.6	Reserved	101-280	37.3	Protection	101-328
29.7	Operating Features	101-280	37.4	Special Provisions	101-329
Chapter 30	New Apartment Buildings	101-281	37.5	Building Services	101-331
30.1	General Requirements	101-281			
30.2	Means of Egress Requirements	101-282			
30.3	Protection	101-283			
30.4	Special Provisions	101-286			

37.6	Reserved	101-332	Chapter 41	Reserved	101-344
37.7	Operating Features	101-332	Chapter 42	Storage Occupancies	101-344
Chapter 38	New Business Occupancies	101-332	42.1	General Requirements	101-344
38.1	General Requirements	101-332	42.2	Means of Egress Requirements	101-345
38.2	Means of Egress Requirements	101-332	42.3	Protection	101-346
38.3	Protection	101-334	42.4	Special Provisions	101-347
38.4	Special Provisions	101-335	42.5	Building Services	101-347
38.5	Building Services	101-335	42.6	Special Provisions for Aircraft Storage Hangars	101-348
38.6	Reserved	101-335	42.7	Special Provisions for Grain Handling, Processing, Milling, or Other Bulk Storage Facilities	101-348
38.7	Operating Features	101-335	42.8	Special Provisions for Parking Structures	101-348
Chapter 39	Existing Business Occupancies	101-336	42.9	Operating Features	101-351
39.1	General Requirements	101-336	Chapter 43	Building Rehabilitation	101-351
39.2	Means of Egress Requirements	101-336	43.1	General	101-351
39.3	Protection	101-338	43.2	Special Definitions	101-352
39.4	Special Provisions	101-339	43.3	Repairs	101-352
39.5	Building Services	101-339	43.4	Renovations	101-352
39.6	Reserved	101-339	43.5	Modifications	101-353
39.7	Operating Features	101-339	43.6	Reconstruction	101-353
Chapter 40	Industrial Occupancies	101-340	43.7	Change of Use or Occupancy Classification	101-354
40.1	General Requirements	101-340	43.8	Additions	101-355
40.2	Means of Egress Requirements	101-340	43.9	Reserved	101-355
40.3	Protection	101-343	43.10	Historic Buildings	101-355
40.4	Special Provisions	101-344	Annex A	Explanatory Material	101-357
40.5	Building Services	101-344	Annex B	Supplemental Evacuation Equipment	101-469
40.6	Special Provisions for Aircraft Servicing Hangars	101-344	Annex C	Informational References	101-471
40.7	Operating Features	101-344	Index	101-475	

NFPA 101

Life Safety Code

2015 Edition

IMPORTANT NOTE: This NFPA document is made available for use subject to important notices and legal disclaimers. These notices and disclaimers appear in all publications containing this document and may be found under the heading “Important Notices and Disclaimers Concerning NFPA Standards.” They can also be obtained on request from NFPA or viewed at www.nfpa.org/disclaimers.

NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex C. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

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

Chapter 1 Administration

1.1* Scope.

1.1.1 Title. NFPA 101, *Life Safety Code*, shall be known as the *Life Safety Code*®, is cited as such, and shall be referred to herein as “this Code” or “the Code.”

1.1.2 Danger to Life from Fire. The Code addresses those construction, protection, and occupancy features necessary to minimize danger to life from the effects of fire, including smoke, heat, and toxic gases created during a fire.

1.1.3 Egress Facilities. The Code establishes minimum criteria for the design of egress facilities so as to allow prompt escape of occupants from buildings or, where desirable, into safe areas within buildings.

1.1.4 Other Fire-Related Considerations. The Code addresses other considerations that are essential to life safety in recognition of the fact that life safety is more than a matter of egress. The Code also addresses protective features and systems, building services, operating features, maintenance activities, and other provisions in recognition of the fact that achieving an acceptable degree of life safety depends on additional safeguards to provide adequate egress time or protection for people exposed to fire.

1.1.5* Considerations Not Related to Fire. The Code also addresses other considerations that, while important in fire conditions, provide an ongoing benefit in other conditions of use, including non-fire emergencies.

1.1.6 Areas Not Addressed. The Code does not address the following:

- (1)*General fire prevention or building construction features that are normally a function of fire prevention codes and building codes

- (2) Prevention of injury incurred by an individual due to that individual’s failure to use reasonable care
- (3) Preservation of property from loss by fire

1.2* Purpose. The purpose of this Code is to provide minimum requirements, with due regard to function, for the design, operation, and maintenance of buildings and structures for safety to life from fire. Its provisions will also aid life safety in similar emergencies.

1.3 Application.

1.3.1* New and Existing Buildings and Structures. The Code shall apply to both new construction and existing buildings and existing structures.

1.3.2 Vehicles and Vessels. The Code shall apply to vehicles, vessels, or other similar conveyances, as specified in Section 11.6, in which case such vehicles and vessels shall be treated as buildings.

1.4* Equivalency. Nothing in this Code is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this Code.

1.4.1 Technical Documentation. Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.

1.4.2 Approval. The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

1.4.3* Equivalent Compliance. 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 Units and Formulas.

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

1.5.2 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.

1.6 Enforcement. This Code shall be administered and enforced by the authority having jurisdiction designated by the governing authority.

Chapter 2 Referenced Publications

2.1 General. The documents referenced in this chapter, or portions of such documents, are referenced within this Code, 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.

Section 2.2 was revised by a tentative interim amendment (TIA). See page 1.

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

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 20, *Standard for the Installation of Stationary Pumps for Fire Protection*, 2013 edition.

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, 2014 edition.

NFPA 30, *Flammable and Combustible Liquids Code*, 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 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 54, *National Fuel Gas Code*, 2015 edition.

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

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

NFPA 72®, *National Fire Alarm and Signaling Code*, 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 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 101A, *Guide on Alternative Approaches to Life Safety*, 2013 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 160, *Standard for the Use of Flame Effects Before an Audience*, 2011 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 220, *Standard on Types of Building Construction*, 2015 edition.

NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls*, 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 260, *Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture*, 2013 edition.

NFPA 261, *Standard Method of Test for Determining Resistance of Mock-Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes*, 2013 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 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 400, *Hazardous Materials Code*, 2013 edition.

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

NFPA 418, *Standard for Heliports*, 2011 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 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 914, *Code for Fire Protection of Historic Structures*, 2010 edition.

NFPA 1126, *Standard for the Use of Pyrotechnics Before a Proximate Audience*, 2011 edition.

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

2.3 Other Publications.

2.3.1 ACI Publications. American Concrete Institute, P.O. Box 9094, Farmington Hills, MI 48333. www.concrete.org

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

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

ANSI A14.3, *Safety Requirements for Fixed Ladders*, 1992.

ICC/ANSI A117.1, *American National Standard for Accessible and Usable Buildings and Facilities*, 2009.

ANSI/BHMA A156.3 *Exit Devices*, 2008.

BHMA/ANSI A156.19, *American National Standard for Power Assist and Low Energy Power Operated Doors*, 2007.

ANSI Z223.1, *National Fuel Gas Code*, 2006.

2.3.3 ASCE Publications. American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191-4400. www.asce.org

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

2.3.4 ASME Publications. American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990. www.asme.org

ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, 2007.

ASME A17.3, *Safety Code for Existing Elevators and Escalators*, 2008.

ASME A17.7/CSA B44.7, *Performance-Based Safety Code for Elevators and Escalators*, 2007.

2.3.5 ASSE Publications. American Society of Sanitary Engineering, 901 Canterbury Road, Suite A, Westlake, OH 44145-1480.

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.

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

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

ASTM D 1929, *Standard Test Method for Determining Ignition Temperatures of Plastic*, 2012.

ASTM D 2859, *Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials*, 2006 (2011).

ASTM D 2898, *Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing*, 2010.

ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, 2013.

ASTM E 108, *Standard Test Methods for Fire Tests of Roof Coverings*, 2011.

ASTM E 119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, 2012a.

ASTM E 136, *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C*, 2012.

ASTM E 648, *Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*, 2010 e1.

ASTM E 814, *Standard Test Method for Fire Tests of Through-Penetration Fire Stops*, 2011a.

ASTM E 1354, *Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter*, 2011b.

ASTM E 1537, *Standard Test Method for Fire Testing of Upholstered Furniture*, 2012.

ASTM E 1590, *Standard Test Method for Fire Testing of Mattresses*, 2012.

ASTM E 1591, *Standard Guide for Obtaining Data for Deterministic Fire Models*, 2007.

ASTM E 1966, *Standard Test Method for Fire-Resistive Joint Systems*, 2007 (2011).

ASTM E 2072, *Standard Specification for Photoluminescent (Phosphorescent) Safety Markings*, 2010.

ASTM E 2307, *Standard Test Method for Determining Fire Resistance of Perimeter Fire Barrier Systems Using Intermediate-Scale, Multi-Story Test Apparatus*, 2010.

ASTM E 2404, *Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) Wall or Ceiling Coverings, and of Facings and Wood Veneers Intended to be Applied on Site Over a Wood Substrate, to Assess Surface Burning Characteristics*, 2012.

ASTM E 2573, *Standard Practice for Specimen Preparation and Mounting of Site-Fabricated Stretch Systems to Assess Surface Burning Characteristics*, 2012.

ASTM E 2599, *Standard Practice for Specimen Preparation and Mounting of Reflective Insulation, Radiant Barrier, and Vinyl Stretch Ceiling Materials for Building Applications to Assess Surface Burning Characteristics*, 2011.

ASTM E 2652, *Standard Test Method for Behavior of Materials in a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750 Degrees C*, 2012.

ASTM E 2768, *Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)*, 2011.

ASTM F 851, *Standard Test Method for Self-Rising Seat Mechanisms*, 1987 (2005).

ASTM F 1577, *Standard Test Methods for Detention Locks for Swinging Doors*, 2005.

ASTM G 155, *Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials*, 2005a.

2.3.7 FM Publications. FM Global, 1301 Atwood Avenue, P.O. Box 7500, Johnston, RI 02919. www.fmglobal.com

ANSI/FM 4880, *American National Standard for Evaluating Insulated Wall or Wall and Roof/Ceiling Assemblies, Plastic Interior Finish Materials, Plastic Exterior Building Panels, Wall/Ceiling Coating Systems, Interior or Exterior Finish Systems*, 2007.

FM Approval Standard 6921, *Containers for Combustible Waste*, 2004.

2.3.8 NEMA Publications. National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

NEMA SB 30, *Fire Service Annunciator and Interface*, 2005.

2.3.9 UL Publications. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096. www.ul.com

ANSI/UL 9, *Standard for Fire Tests of Window Assemblies*, 2009.

ANSI/UL 10B, *Standard for Fire Tests of Door Assemblies*, 2008, Revised 2009.

ANSI/UL 10C, *Standard for Positive Pressure Fire Tests of Door Assemblies*, 2009.

ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*, 2011.

ANSI/UL 294, *Standard for Access Control System Units*, 1999, Revised 2010.

ANSI/UL 300, *Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment*, 2005, Revised 2010.

UL 300A, *Extinguishing System Units for Residential Range Top Cooking Surfaces*, 2006.

ANSI/UL 305, *Standard for Safety Panic Hardware*, 1997, Revised 2012.

ANSI/UL 555, *Standard for Fire Dampers*, 2006, Revised 2012.

ANSI/UL 555S, *Standard for Smoke Dampers*, 1999, Revised 2012.

ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, 2008, Revised 2010.

ANSI/UL 790, *Test Methods for Fire Tests of Roof Coverings*, 2004, Revised 2008.

ANSI/UL 924, *Standard for Emergency Lighting and Power Equipment*, 2006, Revised 2011.

ANSI/UL 1040, *Standard for Fire Test of Insulated Wall Construction*, 2009, Revised 2013.

ANSI/UL 1315, *Standard for Safety for Metal Waste Paper Containers*, 2007, Revised 2013.

ANSI/UL 1479, *Standard for Fire Tests of Through-Penetration Firestops*, 2003, Revised 2012.

ANSI/UL 1715, *Standard for Fire Test of Interior Finish Material*, 1997, Revised 2013.

ANSI/UL 1784, *Standard for Air Leakage Tests for Door Assemblies*, 2001, Revised 2009.

ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*, 2006.

ANSI/UL 1994, *Standard for Luminous Egress Path Marking Systems*, 2004, Revised 2010.

ANSI/UL 2079, *Standard for Tests for Fire Resistance of Building Joint Systems*, 2004, Revised 2012.

2.3.10 U.S. Government Publications. U.S. Government Printing Office, Washington, DC 20402. www.access.gpo.gov

Title 16, Code of Federal Regulations, Part 1500 and Part 1507.

Title 16, Code of Federal Regulations, Part 1632, "Standard for the Flammability of Mattresses and Mattress Pads" (FF 4-72).

2.3.11 Other Publication.

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections.

NFPA 1, *Fire Code*, 2015 edition.

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

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

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

NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls*, 2015 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 288, *Standard Methods of Fire Tests of Horizontal Fire Door Assemblies Installed in Horizontal Fire Resistance-Rated Assemblies*, 2012 edition.

NFPA 301, *Code for Safety to Life from Fire on Merchant Vessels*, 2013 edition.

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

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

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

NFPA 921, *Guide for Fire and Explosion Investigations*, 2014 edition.

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

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 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.

3.3.1 Accessible Area of Refuge. See 3.3.22.1.

3.3.2 Accessible Means of Egress. See 3.3.172.1.

3.3.3 Accessible Route. A continuous unobstructed path that complies with this Code and ICC/ANSI A117.1, *American National Standard for Accessible and Usable Buildings and Facilities* (SAF-MEA).

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

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

3.3.6 Air Traffic Control Tower. See 3.3.281.1.

3.3.7 Aircraft Loading Walkway. An aboveground device through which passengers move between a point in an airport terminal building and an aircraft. Included in this category are walkways that are essentially fixed and permanently placed, or walkways that are essentially mobile in nature and that fold, telescope, or pivot from a fixed point at the airport terminal building. [415, 2013] (SAF-AXM)

3.3.8 Air-Inflated Structure. See 3.3.272.1.

3.3.9 Airport Terminal Building. See 3.3.36.1.

3.3.10 Air-Supported Structure. See 3.3.272.2.

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

3.3.12 Aisle Ramp. See 3.3.221.1.

3.3.13 Aisle Stair. See 3.3.265.1.

3.3.14 Alarm.

3.3.14.1 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] (SAF-BSF)

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

3.3.15 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. (SAF-FUN)

3.3.16 Ambulatory Health Care Occupancy. See 3.3.190.1.

3.3.17 Analysis.

3.3.17.1 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. (SAF-FUN)

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

3.3.18 Anchor Building. See 3.3.36.2.

3.3.19 Apartment Building. See 3.3.36.3.

3.3.20 Approved Existing. See 3.3.81.1.

3.3.21 Area.

3.3.21.1 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. (SAF-DET)

3.3.21.2 Floor Area.

3.3.21.2.1* 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. (SAF-MEA)

3.3.21.2.2 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. (SAF-MEA)

3.3.21.3 Gross Leasable Area. Fifty percent of 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 centerlines of joint partitions to the outside of the tenant walls. (SAF-MER)

3.3.21.4* 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. (SAF-FIR)

3.3.21.5 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. (SAF-RES)

3.3.21.6* 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. (SAF-MEA)

3.3.21.7 Occupiable Area. An area of a facility occupied by people on a regular basis. (SAF-FUN)

3.3.21.8 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 excluding portions of the building where work not initially intended by the owner is specifically required. (SAF-FUN)

3.3.22* 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. (SAF-MEA)

3.3.22.1 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* (SAF-MEA).

3.3.23 Assembly.

3.3.23.1 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] (SAF-MEA)

3.3.23.1.1 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] (SAF-FIR)

3.3.23.1.1.1 Horizontal 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 or roof. [288, 2012] (SAF-FIR)

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

3.3.24 Assembly Occupancy. See 3.3.190.2.

3.3.25 Assisted Mechanical Type Parking Structure. See 3.3.272.7.1.

3.3.26 Atmosphere.

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

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

3.3.27* 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. (SAF-FIR)

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

3.3.29 Automated Type Parking Structure. See 3.3.272.7.2.

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

3.3.31 Barrier.

3.3.31.1* 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. (SAF-FIR)

3.3.31.2* 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. (SAF-FIR)

3.3.31.3* Thermal Barrier. A material that limits the average temperature rise of an unexposed surface to not more than 250°F (139°C) for a specified fire exposure complying with the standard time-temperature curve of ASTM E 119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*. (SAF-BCF)

3.3.32 Basement. Any story of a building wholly or partly below grade plane that is not considered the first story above grade plane. (See also 3.3.126.1, *First Story Above Grade Plane*.) (SAF-FUN)

3.3.33* 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. (SAF-MER)

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

3.3.35 Board and Care. See 3.3.190.12, Residential Board and Care Occupancy.

3.3.36* Building. Any structure used or intended for supporting or sheltering any use or occupancy. (SAF-FUN)

3.3.36.1 Airport Terminal Building. A structure used primarily for air passenger enplaning or deplaning, including ticket sales, flight information, baggage handling, and other necessary functions in connection with air transport operations. This term includes any extensions and satellite buildings used for passenger handling or aircraft flight service functions. Aircraft loading walkways and "mobile lounges" are excluded. [415, 2013] (SAF-AXM)

3.3.36.2 Anchor Building. A building housing any occupancy 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. (SAF-MER)

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

3.3.36.4 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. (SAF-MER)

3.3.36.5* 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. (SAF-FUN)

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

3.3.36.7* 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. (SAF-FUN)

3.3.36.8* Historic Building. A building or facility deemed to have historical, architectural, or cultural significance by a local, regional, or national jurisdiction. (SAF-FUN)

3.3.36.9* 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. (SAF-MER)

3.3.36.10* Special Amusement Building. A building that is temporary, permanent, or mobile and contains a device or system that conveys passengers or provides a walkway along, around, or over a course in any direction as a form of amusement arranged so that the egress path is not readily apparent due to visual or audio distractions or an intentionally confounded egress path, or is not readily available due to the mode of conveyance through the building or structure. (SAF-AXM)

3.3.37* Building Code. The building code enforced by the jurisdiction or agency enforcing this *Code*. (SAF-FUN)

3.3.38 Bulk Merchandising Retail Building. See 3.3.36.4.

3.3.39 Business Occupancy. See 3.3.190.3.

3.3.40 Categories of Rehabilitation Work. The nature and extent of rehabilitation work undertaken in an existing building. (SAF-FUN)

3.3.41* Cellular or Foamed Plastic. A heterogeneous system comprised of not less than two phases, one of which is a continuous, polymeric, organic material, and the second of which is deliberately introduced for the purpose of distributing gas in voids throughout the material. (SAF-INT)

3.3.42 Change of Occupancy Classification. The change in the occupancy classification of a structure or portion of a structure. (SAF-FUN)

3.3.43 Change of Use. A change in the purpose or level of activity within a structure that involves a change in application of the requirements of the *Code*. (SAF-FUN)

3.3.44 Combustible (Material). See 3.3.171.1.

3.3.45 Combustion. A chemical process of oxidation that occurs at a rate fast enough to produce heat and usually light in the form of either a glow or flame. (SAF-FUN)

3.3.46 Common Atmosphere. See 3.3.26.1.

3.3.47* Common Path of Travel. The portion of exit access that must be traversed before two separate and distinct paths of travel to two exits are available. (SAF-MEA)

3.3.48 Compartment.

3.3.48.1* Fire Compartment. A space within a building that is enclosed by fire barriers on all sides, including the top and bottom. (SAF-FIR)

3.3.48.2* Smoke Compartment. A space within a building enclosed by smoke barriers on all sides, including the top and bottom. (SAF-FIR)

The definition of Consumer Fireworks 1.4G was deleted by a tentative interim amendment (TIA). See page 1.

3.3.49 Contents and Furnishings. Any movable objects in a building that normally are secured or otherwise put in place for functional reasons, excluding (1) parts of the internal

structure of the building, and (2) any items meeting the definition of interior finish. (SAF-INT)

3.3.50 Court. An open, uncovered, unoccupied space, unobstructed to the sky, bounded on three or more sides by exterior building walls. (SAF-MEA)

3.3.50.1 Enclosed Court. A court bounded on all sides by the exterior walls of a building or by the exterior walls and lot lines on which walls are permitted. (SAF-MEA)

3.3.50.2 Food Court. A public seating area located in a mall that serves adjacent food preparation tenant spaces. (SAF-MER)

3.3.51* Critical Radiant Flux. The level of incident radiant heat energy in units of W/cm² on a floor-covering system at the most distant flameout point. (SAF-INT)

3.3.52 Data Conversion. The process of developing the input data set for the assessment method of choice. (SAF-FUN)

3.3.53 Day-Care Home. See 3.3.142.1.

3.3.54 Day-Care Occupancy. See 3.3.190.4.

3.3.55 Deep-Fat Frying. A cooking method that involves fully immersing food in hot oil. (SAF-HEA)

3.3.56 Design Fire Scenario. See 3.3.105.1.

3.3.57 Design Specification. See 3.3.262.1.

3.3.58 Design Team. A group of stakeholders including, but not limited to, representatives of the architect, client, and any pertinent engineers and other designers. (SAF-FUN)

3.3.59 Detention and Correctional Occupancy. See 3.3.190.5.

3.3.60 Detention and Correctional Residential Housing Area. See 3.3.21.1.

3.3.61 Device.

3.3.61.1* Emergency Stair Travel Device. Device designed and constructed to facilitate travel over interior floor surfaces, interior and exterior stairs, and exterior accessible pathways. (SAF-MEA)

3.3.61.2 Multiple-Station Alarm Device. Two or more single-station alarm devices that can be interconnected so that actuation of one causes all integral or separate audible alarms to operate; or one single-station alarm device having connections to other detectors or to a manual fire alarm box. [72, 2013] (SAF-BSF)

3.3.62 Door.

3.3.62.1 Elevator Lobby Door. A door between an elevator lobby and another building space other than the elevator shaft. (SAF-MEA)

3.3.62.2 Fire Door. The door component of a fire door assembly. (SAF-FIR)

3.3.63 Door Assembly. See 3.3.23.1.

3.3.64* Dormitory. A building or a space in a building in which group sleeping accommodations are provided for more than 16 persons who are not members of the same family in one room, or a series of closely associated rooms, under joint occupancy and single management, with or without meals, but without individual cooking facilities. (SAF-RES)

3.3.65 Draft Stop. A continuous membrane used to subdivide a concealed space to resist the passage of smoke and heat. (SAF-FIR)

3.3.66* Dwelling Unit. One or more rooms arranged for complete, independent housekeeping purposes with space for eating, living, and sleeping; facilities for cooking; and provisions for sanitation. (SAF-RES)

3.3.66.1* One- and Two-Family Dwelling Unit. A building that contains not more than two dwelling units with independent cooking and bathroom facilities. (SAF-RES)

3.3.66.2 One-Family Dwelling Unit. A building that consists solely of one dwelling unit with independent cooking and bathroom facilities. (SAF-RES)

3.3.66.3 Two-Family Dwelling Unit. A building that consists solely of two dwelling units with independent cooking and bathroom facilities. (SAF-RES)

3.3.67 Educational Occupancy. See 3.3.190.6.

3.3.68* Electroluminescent. Refers to a light-emitting capacitor in which alternating current excites phosphor atoms placed between electrically conductive surfaces and produces light. (SAF-MEA)

3.3.69 Elevator Evacuation System. See 3.3.274.1.

3.3.70 Elevator Lobby. A landing from which occupants directly enter an elevator car(s) and into which occupants directly enter upon leaving an elevator car(s). (SAF-MEA)

3.3.71 Elevator Lobby Door. See 3.3.62.1.

3.3.72 Emergency Stair Travel Device. See 3.3.61.1.

3.3.73 Enclosed Court. See 3.3.50.1.

3.3.74 Enclosed Parking Structure. See 3.3.272.7.3.

3.3.75 Equipment or Fixture. Any plumbing, heating, electrical, ventilating, air-conditioning, refrigerating, and fire protection equipment; and elevators, dumbwaiters, escalators, boilers, pressure vessels, or other mechanical facilities or installations that are related to building services. (SAF-FUN)

3.3.76 Equivalency. An alternative means of providing an equal or greater degree of safety than that afforded by strict conformance to prescribed codes and standards. (SAF-FUN)

3.3.77 Evacuation. The withdrawal of occupants from a building. [72, 2013] (SAF-BSF)

3.3.78* Evacuation Capability. The ability of occupants, residents, and staff as a group either to evacuate a building or to relocate from the point of occupancy to a point of safety.

3.3.78.1 Impractical Evacuation Capability. The inability of a group to reliably move to a point of safety in a timely manner. (SAF-BCF)

3.3.78.2 Prompt Evacuation Capability. The ability of a group to move reliably to a point of safety in a timely manner that is equivalent to the capacity of a household in the general population. (SAF-BCF)

3.3.78.3 Slow Evacuation Capability. The ability of a group to move reliably to a point of safety in a timely manner, but not as rapidly as members of a household in the general population. (SAF-BCF)

3.3.79 Exhibit. A space or portable structure used for the display of products or services. (SAF-AXM)

3.3.80 Exhibitor. An individual or entity engaged in the display of the products or services offered. (SAF-AXM)

3.3.81* Existing. That which is already in existence on the date this edition of the *Code* goes into effect. (SAF-FUN)

3.3.81.1 Approved Existing. That which is already in existence on the date this edition of the *Code* goes into effect and is acceptable to the authority having jurisdiction. (SAF-FUN)

3.3.82 Existing Building. See 3.3.36.5.

3.3.83* Exit. That portion of a means of egress that is separated from all other spaces of the building or structure by construction, location, or equipment as required to provide a protected way of travel to the exit discharge. (SAF-MEA)

3.3.83.1* Horizontal Exit. A way of passage from one building to an area of refuge in another building on approximately the same level, or a way of passage through or around a fire barrier to an area of refuge on approximately the same level in the same building that affords safety from fire and smoke originating from the area of incidence and areas communicating therewith. (SAF-MEA)

3.3.84 Exit Access. That portion of a means of egress that leads to an exit. (SAF-MEA)

3.3.85 Exit Discharge. That portion of a means of egress between the termination of an exit and a public way. (SAF-MEA)

3.3.85.1* Level of Exit Discharge. The story that is either (1) the lowest story from which not less than 50 percent of the required number of exits and not less than 50 percent of the required egress capacity from such a story discharge directly outside at the finished ground level; or (2) where no story meets the conditions of item (1), the story that is provided with one or more exits that discharge directly to the outside to the finished ground level via the smallest elevation change. (SAF-MEA)

3.3.86 Exposition. An event in which the display of products or services is organized to bring together the provider and user of the products or services. (SAF-AXM)

3.3.87 Exposition Facility. See 3.3.90.1.

3.3.88* Exposure Fire. A fire that starts at a location that is remote from the area being protected and grows to expose that which is being protected. (SAF-FUN)

3.3.89 Externally Illuminated. See 3.3.146.1.

3.3.90 Facility.

3.3.90.1 Exposition Facility. A convention center, hotel, or other building at which exposition events are held. (SAF-AXM)

3.3.90.2* Limited Care Facility. A building or portion of a building used on a 24-hour basis for the housing of four or more persons who are incapable of self-preservation because of age; physical limitations due to accident or illness; or limitations such as mental retardation/developmental disability, mental illness, or chemical dependency. (SAF-HEA)

3.3.91 Festival Seating. See 3.3.239.1.

3.3.92 Finish.

3.3.92.1 Interior Ceiling Finish. The interior finish of ceilings. (SAF-INT)

3.3.92.2* Interior Finish. The exposed surfaces of walls, ceilings, and floors within buildings. (SAF-INT)

3.3.92.3* Interior Floor Finish. The interior finish of floors, ramps, stair treads and risers, and other walking surfaces. (SAF-INT)

3.3.92.4 Interior Wall Finish. The interior finish of columns, fixed or movable walls, and fixed or movable partitions. (SAF-INT)

3.3.93 Finished Ground Level (Grade). The level of the finished ground (earth or other surface on ground). (See also 3.3.126, *Grade Plane*.) (SAF-FUN)

3.3.94 Fire Barrier. See 3.3.31.1.

3.3.95 Fire Barrier Wall. See 3.3.288.1.

3.3.96* Fire Code. The fire code enforced by the jurisdiction or agency enforcing this *Code* (SAF-FUN).

3.3.97 Fire Compartment. See 3.3.48.1.

3.3.98 Fire Door. See 3.3.62.2.

3.3.99 Fire Door Assembly. See 3.3.23.1.1.

3.3.100 Fire Exit Hardware. See 3.3.135.1.

3.3.101* Fire Model. A structured approach to predicting one or more effects of a fire. (SAF-FUN)

3.3.102 Fire Protection Rating. See 3.3.223.1.

3.3.103 Fire Resistance Rating. See 3.3.223.2.

3.3.104 Fire Safety Functions. Building and fire control functions that are intended to increase the level of life safety for occupants or to control the spread of the harmful effects of fire. (SAF-BSF)

3.3.105* Fire Scenario. A set of conditions that defines the development of fire, the spread of combustion products throughout a building or portion of a building, the reactions of people to fire, and the effects of combustion products. (SAF-FUN)

3.3.105.1 Design Fire Scenario. A fire scenario selected for evaluation of a proposed design. (SAF-FUN)

3.3.106 Fire Watch. The assignment of a person or persons to an area for the express purpose of notifying the fire department, the building occupants, or both of an emergency; preventing a fire from occurring; extinguishing small fires; or protecting the public from fire or life safety dangers. [1, 2015] (SAF-BSF)

3.3.107 Fire Window Assembly. See 3.3.23.2.

3.3.108 Fire-Rated Glazing. Glazing with either a fire protection rating or a fire resistance rating. (SAF-FIR)

3.3.109 Fire-Retardant-Treated Wood. A wood product impregnated with chemical by a pressure process or other means during manufacture, treated to exhibit reduced surface-burning characteristics and resist propagation of fire. [703, 2015] (SAF-FIR)

3.3.110 First Story Above Grade Plane. See 3.3.126.1.

3.3.111 Fixed Seating. See 3.3.239.2.

3.3.112* Flame Spread. The propagation of flame over a surface. (SAF-INT)

3.3.113 Flame Spread Index. See 3.3.149.1.

3.3.114 Flashover. A stage in the development of a contained fire in which all exposed surfaces reach ignition temperature more or less simultaneously and fire spreads rapidly throughout the space. (SAF-INT)

3.3.115 Flexible Plan and Open Plan Educational or Day-Care Building. See 3.3.36.6.

3.3.116 Floor Fire Door Assembly. See 3.3.23.1.1.1.

3.3.117 Flow Time. A component of total evacuation time that is the time during which there is crowd flow past a point in the means of egress system. (SAF-AXM)

3.3.118 Fly Gallery. A raised floor area above a stage from which the movement of scenery and operation of other stage effects are controlled. (SAF-AXM)

3.3.119 Foam Plastic Insulation. See 3.3.152.1.

3.3.120 Folding and Telescopic Seating. See 3.3.239.3.

3.3.121 Food Court. See 3.3.50.2.

3.3.122 Fuel Load. See 3.3.164.1.

3.3.123 General Industrial Occupancy. See 3.3.190.8.1.

3.3.124 Goal. A nonspecific overall outcome to be achieved that is measured on a qualitative basis. (SAF-FUN)

3.3.125 Grade. See 3.3.93, Finished Ground Level (Grade).

3.3.126* Grade Plane. A reference plane upon which vertical measurements of a building are based representing the average of the finished ground level adjoining the building at all exterior walls. (SAF-FUN)

3.3.126.1 First Story Above Grade Plane. Any story having its finished floor surface entirely above grade plane, except that a basement is to be considered as a first story above grade plane where the finished surface of the floor above the basement is (1) more than 6 ft (1830 mm) above grade plane or (2) more than 12 ft (3660 mm) above the finished ground level at any point. (SAF-FUN)

3.3.127* Grandstand. A structure that provides tiered or stepped seating. (SAF-AXM)

3.3.128 Gridiron. The structural framing over a stage supporting equipment for hanging or flying scenery and other stage effects. (SAF-AXM)

3.3.129 Gross Floor Area. See 3.3.21.2.1.

3.3.130 Gross Leasable Area. See 3.3.21.3.

3.3.131 Guard. A vertical protective barrier erected along exposed edges of stairways, balconies, and similar areas. (SAF-MEA)

3.3.132 Guest Room. An accommodation combining living, sleeping, sanitary, and storage facilities within a compartment. (SAF-RES)

3.3.133 Guest Suite. See 3.3.273.1.

3.3.134 Handrail. A bar, pipe, or similar member designed to furnish persons with a handhold. (SAF-MEA)

3.3.135 Hardware.

3.3.135.1 Fire Exit Hardware. A type of panic hardware that additionally provides fire protection where used as part of a fire door assembly. (SAF-MEA)

3.3.135.2 Panic Hardware. A door-latching assembly incorporating an actuating member or bar that releases the latch bolt upon the application of a force in the direction of egress travel. (SAF-MEA)

3.3.136 Hazardous Area. See 3.3.21.4.

3.3.137 Health Care Occupancy. See 3.3.190.7.

3.3.138* Heat Release Rate (HRR). The rate at which heat energy is generated by burning. [921, 2014] (SAF-INT)

3.3.139 High Hazard Industrial Occupancy. See 3.3.190.8.2.

3.3.140 High-Rise Building. See 3.3.36.7.

3.3.141 Historic Building. See 3.3.36.8.

3.3.142 Home.

3.3.142.1* Day-Care Home. A building or portion of a building in which more than 3 but not more than 12 clients receive care, maintenance, and supervision, by other than their relative(s) or legal guardians(s), for less than 24 hours per day. (SAF-END)

3.3.142.2 Nursing Home. A building or portion of a building used on a 24-hour basis for the housing and nursing care of four or more persons who, because of mental or physical incapacity, might be unable to provide for their own needs and safety without the assistance of another person. (SAF-HEA)

3.3.143 Horizontal Exit. See 3.3.83.1.

3.3.144 Hospital. A building or portion thereof used on a 24-hour basis for the medical, psychiatric, obstetrical, or surgical care of four or more inpatients. (SAF-HEA)

3.3.145* Hotel. A building or groups of buildings under the same management in which there are sleeping accommodations for more than 16 persons and primarily used by transients for lodging with or without meals. (SAF-RES)

3.3.146 Illuminated.

3.3.146.1* Externally Illuminated. Refers to an illumination source that is contained outside of the device or sign legend area that is to be illuminated. (SAF-MEA)

3.3.146.2* Internally Illuminated. Refers to an illumination source that is contained inside the device or legend that is illuminated. (SAF-MEA)

3.3.147 Impractical Evacuation Capability. See 3.3.78.1.

3.3.148 Incapacitation. A condition under which humans do not function adequately and become unable to escape untenable conditions. (SAF-FUN)

3.3.149 Index.

3.3.149.1 Flame Spread Index. A comparative measure, expressed as a dimensionless number, derived from visual measurements of the spread of flame versus time for a material tested in accordance with ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Burning Materials*. (SAF-INT)

3.3.149.2 Smoke Developed Index. A comparative measure, expressed as a dimensionless number, derived from measurements of smoke obscuration versus time for a material tested in accordance with ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or

ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Burning Materials*. (SAF-INT)

3.3.150 Industrial Occupancy. See 3.3.190.8.

3.3.151 Input Data Specification. See 3.3.262.2.

3.3.152 Insulation.

3.3.152.1 Foam Plastic Insulation. A cellular plastic, used for thermal insulating or acoustical applications, having a density of 20 lb/ft³ (320 kg/m³) or less, containing open or closed cells, and formed by a foaming agent. (SAF-INT)

3.3.152.2 Reflective Insulation. Thermal insulation consisting of one or more low-emittance surfaces bounding one or more enclosed air spaces. (SAF-INT)

3.3.153 Interior Ceiling Finish. See 3.3.92.1.

3.3.154 Interior Finish. See 3.3.92.2.

3.3.155 Interior Floor Finish. See 3.3.92.3.

3.3.156 Interior Wall Finish. See 3.3.92.4.

3.3.157 Internally Illuminated. See 3.3.146.2.

3.3.158 Joint. A linear opening in or between adjacent assemblies that is designed to allow independent movement of the building. (SAF-FIR)

3.3.159 Level of Exit Discharge. See 3.3.85.1.

3.3.160 Life Safety Evaluation. A written review dealing with the adequacy of life safety features relative to fire, storm, collapse, crowd behavior, and other related safety considerations. (SAF-AXM)

3.3.161 Limited Access Structure. See 3.3.272.3.

3.3.162 Limited Care Facility. See 3.3.90.2.

3.3.163 Living Area. See 3.3.21.5.

3.3.164 Load.

3.3.164.1* Fuel Load. The total quantity of combustible contents of a building, space, or fire area. (SAF-FUN)

3.3.164.2 Occupant Load. The total number of persons that might occupy a building or portion thereof at any one time. (SAF-MEA)

3.3.165 Load-Bearing Element. Any column, girder, beam, joist, truss, rafter, wall, floor, or roof sheathing that supports any vertical load in addition to its own weight, or any lateral load. (SAF-FIR)

3.3.166 Lock-Up. An incidental use area in other than a detention and correctional occupancy where occupants are restrained and such occupants are mostly incapable of self-preservation because of security measures not under the occupants' control. (SAF-DET)

3.3.167 Lodging or Rooming House. A building or portion thereof that does not qualify as a one- or two-family dwelling, that provides sleeping accommodations for a total of 16 or fewer people on a transient or permanent basis, without personal care services, with or without meals, but without separate cooking facilities for individual occupants. (SAF-RES)

3.3.168 Major Tenant. A tenant space, in a mall building, with one or more main entrances from the exterior that also serve as exits and are independent of the mall. (SAF-MER)

3.3.169 Mall. A roofed or covered common pedestrian area within a mall building that serves as access for two or more



tenants and does not exceed three levels that are open to each other. (SAF-MER)

3.3.170 Mall Building. See 3.3.36.9.

3.3.171 Material.

3.3.171.1 Combustible (Material). A material that, in the form in which it is used and under the conditions anticipated, will ignite and burn; a material that does not meet the definition of noncombustible or limited-combustible. (SAF-FUN)

3.3.171.2 Limited-Combustible (Material). See 4.6.14.

3.3.171.3 Metal Composite Material (MCM). A factory-manufactured panel consisting of metal skins bonded to both faces of a core made of any plastic other than foamed plastic insulation as defined in 3.3.152.1. (SAF-MER)

3.3.171.4 Noncombustible (Material). See 4.6.13.

3.3.171.5 Weathered-Membrane Material. Membrane material that has been subjected to a minimum of 3000 hours in a weatherometer in accordance with ASTM G 155, *Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials*, or approved equivalent. (SAF-IND)

3.3.172* Means of Egress. A continuous and unobstructed way of travel from any point in a building or structure to a public way consisting of three separate and distinct parts: (1) the exit access, (2) the exit, and (3) the exit discharge. (SAF-MEA)

3.3.172.1 Accessible Means of Egress. A means of egress that provides an accessible route to an area of refuge, a horizontal exit, or a public way. (SAF-MEA)

3.3.173 Means of Escape. A way out of a building or structure that does not conform to the strict definition of means of egress but does provide an alternate way out. (SAF-MEA)

3.3.174* Membrane. A thin layer of construction material. (SAF-FIR)

3.3.175 Membrane Structure. See 3.3.272.4.

3.3.176 Mercantile Occupancy. See 3.3.190.9.

3.3.177 Metal Composite Material (MCM). See 3.3.171.3.

3.3.178 Mezzanine. An intermediate level between the floor and the ceiling of any room or space. (SAF-FIR)

3.3.179 Mixed Occupancy. See 3.3.190.10.

3.3.180* Modification. The reconfiguration of any space; the addition or elimination of any door or window; the addition or elimination of load-bearing elements; the reconfiguration or extension of any system; or the installation of any additional equipment. (SAF-FUN)

3.3.181 Multilevel Play Structure. See 3.3.272.5.

3.3.182 Multiple Occupancy. See 3.3.190.11.

3.3.183 Multiple Station Alarm Device. See 3.3.61.2.

3.3.184 Multipurpose Assembly Occupancy. See 3.3.190.2.1.

3.3.185 Net Floor Area. See 3.3.21.2.2.

3.3.186 Non-Patient-Care Suite (Health Care Occupancies). See 3.3.273.2.

3.3.187 Normally Unoccupied Building Service Equipment Support Area. See 3.3.21.6.

3.3.188 Nursing Home. See 3.3.142.2.

3.3.189* Objective. A requirement that needs to be met to achieve a goal. (SAF-FUN)

3.3.190 Occupancy. The purpose for which a building or other structure, or part thereof, is used or intended to be used. [ASCE/SEI 7:1.2] (SAF-FUN)

3.3.190.1* Ambulatory Health Care Occupancy. An occupancy used to provide services or treatment simultaneously to four or more patients that provides, on an outpatient basis, one or more of the following: (1) treatment for patients that renders the patients incapable of taking action for self-preservation under emergency conditions without the assistance of others; (2) anesthesia that renders the patients incapable of taking action for self-preservation under emergency conditions without the assistance of others; (3) emergency or urgent care for patients who, due to the nature of their injury or illness, are incapable of taking action for self-preservation under emergency conditions without the assistance of others. (SAF-HEA)

3.3.190.2* Assembly Occupancy. An occupancy (1) used for a gathering of 50 or more persons for deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation, or similar uses; or (2) used as a special amusement building, regardless of occupant load. (SAF-AXM)

3.3.190.2.1 Multipurpose Assembly Occupancy. An assembly room designed to accommodate temporarily any of several possible assembly uses. (SAF-AXM)

3.3.190.3* Business Occupancy. An occupancy used for the transaction of business other than mercantile. (SAF-MER)

3.3.190.4* Day-Care Occupancy. An occupancy in which four or more clients receive care, maintenance, and supervision, by other than their relatives or legal guardians, for less than 24 hours per day. (SAF-END)

3.3.190.5* Detention and Correctional Occupancy. An occupancy used to house one or more persons under varied degrees of restraint or security where such occupants are mostly incapable of self-preservation because of security measures not under the occupants' control. (SAF-DET)

3.3.190.6* Educational Occupancy. An occupancy used for educational purposes through the twelfth grade by six or more persons for 4 or more hours per day or more than 12 hours per week. (SAF-END)

3.3.190.7* Health Care Occupancy. An occupancy used to provide medical or other treatment or care simultaneously to four or more patients on an inpatient basis, where such patients are mostly incapable of self-preservation due to age, physical or mental disability, or because of security measures not under the occupants' control. (SAF-HEA)

3.3.190.8* Industrial Occupancy. An occupancy in which products are manufactured or in which processing, assembling, mixing, packaging, finishing, decorating, or repair operations are conducted. (SAF-IND)

3.3.190.8.1* General Industrial Occupancy. An industrial occupancy in which ordinary and low hazard industrial operations are conducted in buildings of conventional design suitable for various types of industrial processes. (SAF-IND)

3.3.190.8.2* High Hazard Industrial Occupancy. An industrial occupancy in which industrial operations that include high hazard materials, processes, or contents are conducted. (SAF-IND)

3.3.190.8.3 Special-Purpose Industrial Occupancy. An industrial occupancy in which ordinary and low hazard industrial operations are conducted in buildings designed for, and suitable only for, particular types of operations, characterized by a relatively low density of employee population, with much of the area occupied by machinery or equipment. (SAF-IND)

3.3.190.9* Mercantile Occupancy. An occupancy used for the display and sale of merchandise. (SAF-MER)

3.3.190.10 Mixed Occupancy. A multiple occupancy where the occupancies are intermingled. (SAF-FUN)

3.3.190.11 Multiple Occupancy. A building or structure in which two or more classes of occupancy exist. (SAF-FUN)

3.3.190.12* Residential Board and Care Occupancy. An occupancy used for lodging and boarding of four or more residents, not related by blood or marriage to the owners or operators, for the purpose of providing personal care services. (SAF-BCF)

3.3.190.13* Residential Occupancy. An occupancy that provides sleeping accommodations for purposes other than health care or detention and correctional. (SAF-RES)

3.3.190.14 Separated Occupancy. A multiple occupancy where the occupancies are separated by fire resistance-rated assemblies. (SAF-FUN)

3.3.190.15* Storage Occupancy. An occupancy used primarily for the storage or sheltering of goods, merchandise, products, or vehicles. (SAF-IND)

3.3.191 Occupant Characteristics. The abilities or behaviors of people before and during a fire. (SAF-FUN)

3.3.192 Occupant Load. See 3.3.164.2.

3.3.193 Occupiable Area. See 3.3.21.7.

3.3.194 Occupiable Story. See 3.3.269.1.

3.3.195 One- and Two-Family Dwelling Unit. See 3.3.66.1.

3.3.196 One-Family Dwelling Unit. See 3.3.66.2.

3.3.197 Open Parking Structure. See 3.3.272.7.4.

3.3.198 Open Structure. See 3.3.272.6.

3.3.199 Open-Air Mercantile Operation. An operation conducted outside of all structures, with the operations area devoid of all walls and roofs except for small, individual, weather canopies. (SAF-MER)

3.3.200 Outside Stair. See 3.3.265.2.

3.3.201 Panic Hardware. See 3.3.135.2.

3.3.202 Parking Structure. See 3.3.272.7.

3.3.203 Patient Care Non-Sleeping Suite (Health Care Occupancies). See 3.3.273.3.

3.3.204 Patient Care Sleeping Suite (Health Care Occupancies). See 3.3.273.4.

3.3.205 Patient Care Suite (Health Care Occupancies). See 3.3.273.5.

3.3.206* Performance Criteria. Threshold values on measurement scales that are based on quantified performance objectives. (SAF-FUN)

3.3.207 Permanent Structure. See 3.3.272.8.

3.3.208* Personal Care. The care of residents who do not require chronic or convalescent medical or nursing care. (SAF-BCF)

3.3.209* Photoluminescent. Having the ability to store incident electromagnetic radiation typically from ambient light sources, and release it in the form of visible light. [301, 2013] (SAF-MEA)

3.3.210 Pinrail. A rail on or above a stage through which belaying pins are inserted and to which lines are fastened. (SAF-AXM)

3.3.211* Platform. The raised area within a building used for the presentation of music, plays, or other entertainment. (SAF-AXM)

3.3.211.1 Temporary Platform. A platform erected within an area for not more than 30 days. (SAF-AXM)

3.3.212 Plenum. A compartment or chamber to which one or more air ducts are connected and that forms part of the air-distribution system. (SAF-FIR)

3.3.213 Point of Safety. A location that (a) is exterior to and away from a building; or (b) is within a building of any construction type protected throughout by an approved automatic sprinkler system and that is either (1) within an exit enclosure meeting the requirements of this *Code*, or (2) within another portion of the building that is separated by smoke barriers in accordance with Section 8.5 having a minimum ½-hour fire resistance rating, and that portion of the building has access to a means of escape or exit that conforms to the requirements of this *Code* and does not necessitate return to the area of fire involvement; or (c) is within a building of Type I, Type II(222), Type II(111), Type III(211), Type IV, or Type V(111) construction (see 8.2.1.2) and is either (1) within an exit enclosure meeting the requirements of this *Code*, or (2) within another portion of the building that is separated by smoke barriers in accordance with Section 8.5 having a minimum ½-hour fire resistance rating, and that portion of the building has access to a means of escape or exit that conforms to the requirements of this *Code* and does not necessitate return to the area of fire involvement. (SAF-BCF)

3.3.214 Previously Approved. That which was acceptable to the authority having jurisdiction prior to the date this edition of the *Code* went into effect. (SAF-FUN)

3.3.215 Private Party Tent. See 3.3.279.1. (SAF-AXM)

3.3.216 Professional Engineer. A person registered or licensed to practice engineering in a jurisdiction, subject to all laws and limitations imposed by the jurisdiction. (SAF-FUN)

3.3.217 Prompt Evacuation Capability. See 3.3.78.2. (SAF-BCF)

3.3.218* Proposed Design. A design developed by a design team and submitted to the authority having jurisdiction for approval. (SAF-FUN)

3.3.219 Proscenium Wall. See 3.3.288.2.

3.3.220 Public Way. A street, alley, or other similar parcel of land essentially open to the outside air deeded, dedicated, or otherwise permanently appropriated to the public for public use and having a clear width and height of not less than 10 ft (3050 mm). (SAF-MEA)

3.3.221* Ramp. A walking surface that has a slope steeper than 1 in 20. (SAF-MEA)

3.3.221.1 Aisle Ramp. A ramp within a seating area of an assembly occupancy that directly serves rows of seating to the side of the ramp. (SAF-AXM)

3.3.222 Ramp Type Parking Structure. See 3.3.272.7.5.

3.3.223 Rating.

3.3.223.1* Fire Protection Rating. The designation indicating the duration of the fire test exposure to which an opening protective assembly was exposed. [221, 2015] (SAF-FIR)

3.3.223.2 Fire Resistance Rating. The time, in minutes or hours, that materials or assemblies have withstood a fire exposure as determined by the tests, or methods based on tests, prescribed by this *Code*. (SAF-FIR)

3.3.224* Reconstruction. The reconfiguration of a space that affects an exit or a corridor shared by more than one occupant space; or the reconfiguration of a space such that the rehabilitation work area is not permitted to be occupied because existing means of egress and fire protection systems, or their equivalent, are not in place or continuously maintained. (SAF-FUN)

3.3.225 Reflective Insulation. See 3.3.152.2.

3.3.226 Registered Architect. A person licensed to practice architecture in a jurisdiction, subject to all laws and limitations imposed by the jurisdiction. (SAF-FUN)

3.3.227 Registered Design Professional (RDP). An individual who is registered or licensed to practice his/her respective design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed. (SAF-FUN)

3.3.228 Regular Stage. See 3.3.264.2.

3.3.229 Rehabilitation Work Area. See 3.3.21.8

3.3.230 Relocation. The movement of occupants to a safer area within the same building. (SAF-FUN)

3.3.231 Repair. The patching, restoration, or painting of materials, elements, equipment, or fixtures for the purpose of maintaining such materials, elements, equipment, or fixtures in good or sound condition. (SAF-FUN)

3.3.232 Residential Board and Care Occupancy. See 3.3.190.12.

3.3.233 Residential Board and Care Resident. A person who receives personal care and resides in a residential board and care facility. (SAF-BCF)

3.3.234 Residential Occupancy. See 3.3.190.13.

3.3.235 Safe Location. A location remote or separated from the effects of a fire so that such effects no longer pose a threat. (SAF-FUN)

3.3.236 Safety Factor. A factor applied to a predicted value to ensure that a sufficient safety margin is maintained. (SAF-FUN)

3.3.237 Safety Margin. The difference between a predicted value and the actual value where a fault condition is expected. (SAF-FUN)

3.3.238 Sally Port (Security Vestibule). A compartment provided with two or more doors where the intended purpose is to prevent continuous and unobstructed passage by allowing the release of only one door at a time. (SAF-DET)

3.3.239 Seating.

3.3.239.1* Festival Seating. A form of audience/spectator accommodation in which no seating, other than a floor or finished ground level, is provided for the audience/spectators gathered to observe a performance. (SAF-AXM)

3.3.239.2 Fixed Seating. Seating that is secured to the building structure. (SAF-AXM)

3.3.239.3 Folding and Telescopic Seating. A structure that is used for tiered seating of persons and whose overall shape and size can be reduced, without being dismantled, for purposes of moving or storing. (SAF-AXM)

3.3.239.4 Smoke-Protected Assembly Seating. Seating served by means of egress that is not subject to smoke accumulation within or under the structure. (SAF-AXM)

3.3.240 Self-Closing. Equipped with an approved device that ensures closing after opening. (SAF-MEA)

3.3.241* Self-Luminous. Illuminated by a self-contained power source and operated independently of external power sources. (SAF-MEA)

3.3.242* Self-Preservation (Day-Care Occupancy). The ability of a client to evacuate a day-care occupancy without direct intervention by a staff member. (SAF-END)

3.3.243 Sensitivity Analysis. See 3.3.17.1.

3.3.244 Separate Atmosphere. See 3.3.26.2.

3.3.245 Separated Occupancy. See 3.3.190.14.

3.3.246 Severe Mobility Impairment. The ability to move to stairs but without the ability to use the stairs. (SAF-MEA)

3.3.247 Single Station Alarm. See 3.3.14.1.

3.3.248 Site-Fabricated Stretch System. See 3.3.274.2.

3.3.249* Situation Awareness. The perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future. (SAF-FUN)

3.3.250 Slow Evacuation Capability. See 3.3.78.3.

3.3.251 Smoke Alarm. See 3.3.14.2.

3.3.252 Smoke Barrier. See 3.3.31.2.

3.3.253 Smoke Compartment. See 3.3.48.2.

3.3.254 Smoke Detector. A device that detects visible or invisible particles of combustion. [72, 2013] (SAF-BSF)

3.3.255 Smoke Developed Index. See 3.3.149.2.

3.3.256* Smoke Partition. A continuous membrane that is designed to form a barrier to limit the transfer of smoke. (SAF-FIR)

3.3.257* Smokeproof Enclosure. An enclosure designed to limit the movement of products of combustion produced by a fire. (SAF-MEA)

3.3.258 Smoke-Protected Assembly Seating. See 3.3.239.4.

3.3.259 Special Amusement Building. See 3.3.36.10.

3.3.260 Special Inspection. Services provided by a qualified person, retained by the owner and approved by the authority having jurisdiction, who observes the installation and witnesses the pretesting and operation of the system or systems. (SAF-BSF)

3.3.261 Special-Purpose Industrial Occupancy. See 3.3.190.8.3.

3.3.262 Specification.

3.3.262.1* Design Specification. A building characteristic and other conditions that are under the control of the design team. (SAF-FUN)

3.3.262.2 Input Data Specification. Information required by the verification method. (SAF-FUN)

3.3.263 Staff (Residential Board and Care). Persons who provide personal care services, supervision, or assistance. (SAF-BCF)

3.3.264 Stage. A space within a building used for entertainment and utilizing drops or scenery or other stage effects. (SAF-AXM)

3.3.264.1 Legitimate Stage. A stage with a height greater than 50 ft (15 m) measured from the lowest point on the stage floor to the highest point of the roof or floor deck above. (SAF-AXM)

3.3.264.2 Regular Stage. A stage with a height of 50 ft (15 m) or less measured from the lowest point on the stage floor to the highest point of the roof or floor deck above. (SAF-AXM)

3.3.265* Stair.

3.3.265.1 Aisle Stair. A stair within a seating area of an assembly occupancy that directly serves rows of seats to the side of the stair, including transition stairs that connect to an aisle or a landing. (SAF-AXM)

3.3.265.2 Outside Stair. A stair with not less than one side open to the outer air. (SAF-MEA)

3.3.266 Stakeholder. An individual, or representative of same, having an interest in the successful completion of a project. (SAF-FUN)

3.3.267 Storage Occupancy. See 3.3.190.15.

3.3.268* Stories in Height. The story count starting with the level of exit discharge and ending with the highest occupiable story containing the occupancy considered. (SAF-FUN)

3.3.269* Story. The portion of a building located between the upper surface of a floor and the upper surface of the floor or roof next above. (SAF-FUN)

3.3.269.1 Occupiable Story. A story occupied by people on a regular basis. (SAF-FUN)

3.3.270 Street. A public thoroughfare that has been dedicated for vehicular use by the public and can be used for access by fire department vehicles. (SAF-MEA)

3.3.271* Street Floor. A story or floor level accessible from the street or from outside the building at the finished ground level, with the floor level at the main entrance located not more than three risers above or below the finished ground level, and arranged and utilized to qualify as the main floor. (SAF-MER)

3.3.272* Structure. That which is built or constructed. (SAF-FUN)

3.3.272.1 Air-Inflated Structure. A structure whose shape is maintained by air pressure in cells or tubes forming all or part of the enclosure of the usable area and in which the occupants are not within the pressurized area used to support the structure. (SAF-IND)

3.3.272.2* Air-Supported Structure. A structure where shape is maintained by air pressure and in which occupants are within the elevated pressure area. (SAF-IND)

3.3.272.3 Limited Access Structure. A structure or portion of a structure lacking emergency openings. (SAF-IND)

3.3.272.4 Membrane Structure. A building or portion of a building incorporating an air-inflated, air-supported, tensioned-membrane structure; a membrane roof; or a membrane-covered rigid frame to protect habitable or usable space. (SAF-IND)

3.3.272.5 Multilevel Play Structure. A structure that consists of tubes, slides, crawling areas, and jumping areas that is located within a building and is used for climbing and entertainment, generally by children. (SAF-AXM)

3.3.272.6* Open Structure. A structure that supports equipment and operations not enclosed within building walls. (SAF-IND)

3.3.272.7* Parking Structure. A building, structure, or portion thereof used for the parking, storage, or both, of motor vehicles. [88A, 2015] (SAF-IND)

3.3.272.7.1 Assisted Mechanical Type Parking Structure. A parking structure that uses lifts or other mechanical devices to transport vehicles to the floors of a parking structure, where the vehicles are then parked by a person. [88A, 2015] (SAF-IND)

3.3.272.7.2 Automated Type Parking Structure. A parking structure that uses computer controlled machines to store and retrieve vehicles, without drivers, in multi-level storage racks with no floors. [88A, 2015] (SAF-IND)

3.3.272.7.3 Enclosed Parking Structure. Any parking structure that is not an open parking structure. [88A, 2015] (SAF-IND)

3.3.272.7.4 Open Parking Structure. A parking structure that meets the requirements of 42.8.1.3 (SAF-IND).

3.3.272.7.5 Ramp Type Parking Structure. A parking structure that utilizes sloped floors for vertical vehicle circulation. [88A, 2015] (SAF-IND)

3.3.272.8 Permanent Structure. A building or structure that is intended to remain in place for a period of more than 180 days in any consecutive 12-month period. (SAF-FUN)

3.3.272.9 Temporary Structure. A building or structure not meeting the definition of *permanent structure*. (See also 3.3.272.8, *Permanent Structure*.) (SAF-FUN)

3.3.272.10 Tensioned-Membrane Structure. A membrane structure incorporating a membrane and a structural support system such as arches, columns and cables, or beams wherein the stresses developed in the tensioned membrane interact with those in the structural support so that the entire assembly acts together to resist the applied loads. (SAF-IND)

3.3.272.11* Underground Structure. A structure or portions of a structure in which the floor level is below the level of exit discharge. (SAF-IND)

3.3.272.12 Water-Surrounded Structure. A structure fully surrounded by water. (SAF-IND)

3.3.273 Suite.

3.3.273.1 Guest Suite. An accommodation with two or more contiguous rooms comprising a compartment, with or without doors between such rooms, that provides living, sleeping, sanitary, and storage facilities. (SAF-RES)

3.3.273.2 Non-Patient-Care Suite (Health Care Occupancies). A suite within a health care occupancy that is not intended for sleeping or treating patients. (SAF-HEA)

3.3.273.3 Patient Care Non-Sleeping Suite (Health Care Occupancies). A suite for treating patients with or without patient beds not intended for overnight sleeping. (SAF-HEA)

3.3.273.4 Patient Care Sleeping Suite (Health Care Occupancies). A suite containing one or more patient beds intended for overnight sleeping. (SAF-HEA)

3.3.273.5 Patient Care Suite (Health Care Occupancies). A series of rooms or spaces or a subdivided room separated from the remainder of the building by walls and doors. (SAF-HEA)

3.3.274 System.

3.3.274.1 Elevator Evacuation System. A system, including a vertical series of elevator lobbies and associated elevator lobby doors, an elevator shaft(s), and a machine room(s), that provides protection from fire effects for elevator passengers, people waiting to use elevators, and elevator equipment so that elevators can be used safely for egress. (SAF-MEA)

3.3.274.2 Site-Fabricated Stretch System. A system, fabricated on-site, and intended for acoustical, tackable, or aesthetic purposes, that is comprised of three elements: (1) a frame (constructed of plastic, wood, metal, or other material) used to hold fabric in place, (2) a core material (infill, with the correct properties for the application), and (3) an outside layer, comprised of a textile, fabric, or vinyl, that is stretched taut and held in place by tension or mechanical fasteners via the frame. (SAF-INT)

3.3.275 Technically Infeasible. A change to a building that has little likelihood of being accomplished because the existing structural conditions require the removal or alteration of a load-bearing member that is an essential part of the structural frame, or because other existing physical or site constraints prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with applicable requirements. (SAF-FUN)

3.3.276 Temporary Platform. See 3.3.211.1.

3.3.277 Temporary Structure. See 3.3.272.9.

3.3.278 Tensioned-Membrane Structure. See 3.3.272.10.

3.3.279* Tent. A temporary structure, the covering of which is made of pliable material that achieves its support by mechanical means such as beams, columns, poles, or arches, or by rope or cables, or both. (SAF-IND)

3.3.279.1 Private Party Tent. A tent erected in the yard of a private residence for entertainment, recreation, dining, a reception, or similar function. (SAF-AXM)

3.3.280 Thermal Barrier. See 3.3.31.3.

3.3.281 Tower. An enclosed independent structure or portion of a building with elevated levels for support of equipment or occupied for observation, control, operation, signaling, or similar limited use. (SAF-IND)

3.3.281.1 Air Traffic Control Tower. An enclosed structure or building at airports with elevated levels for support of equipment and occupied for observation, control, operation, and signaling of aircraft in flight and on the ground. (SAF-IND)

3.3.282 Two-Family Dwelling Unit. See 3.3.66.3.

3.3.283 Uncertainty Analysis. See 3.3.17.2.

3.3.284 Underground Structure. See 3.3.272.11.

3.3.285 Verification Method. A procedure or process used to demonstrate or confirm that the proposed design meets the specified criteria. (SAF-FUN)

3.3.286* Vertical Opening. An opening through a floor or roof. (SAF-FIR)

3.3.287 Vomitory. An entrance to a means of egress from an assembly seating area that pierces the seating rows. (SAF-AXM)

3.3.288 Wall.

3.3.288.1 Fire Barrier Wall. A wall, other than a fire wall, that has a fire resistance rating. (SAF-FIR)

3.3.288.2 Proscenium Wall. The wall that separates the stage from the auditorium or house. (SAF-AXM)

3.3.289* Wall or Ceiling Covering. A textile-, paper-, or polymeric-based product designed to be attached to a wall or ceiling surface for decorative or acoustical purposes. (SAF-INT)

3.3.290 Water-Surrounded Structure. See 3.3.272.12.

3.3.291 Weathered-Membrane Material. See 3.3.171.5.

3.3.292 Yard. An open, unoccupied space other than a court, unobstructed from the finished ground level to the sky on the lot on which a building is situated. (SAF-MEA)

Chapter 4 General

4.1* Goals.

4.1.1* Fire. A goal of this *Code* is to provide an environment for the occupants that is reasonably safe from fire by the following means:

- (1)*Protection of occupants not intimate with the initial fire development
- (2) Improvement of the survivability of occupants intimate with the initial fire development

4.1.2* Comparable Emergencies. An additional goal is to provide life safety during emergencies that can be mitigated using methods comparable to those used in case of fire.

4.1.3* Crowd Movement. An additional goal is to provide for reasonably safe emergency crowd movement and, where required, reasonably safe nonemergency crowd movement.

4.2 Objectives.

4.2.1 Occupant Protection. A structure shall be designed, constructed, and maintained to protect occupants who are not intimate with the initial fire development for the time needed to evacuate, relocate, or defend in place.

4.2.2 Structural Integrity. Structural integrity shall be maintained for the time needed to evacuate, relocate, or defend in place occupants who are not intimate with the initial fire development.

4.2.3 Systems Effectiveness. Systems utilized to achieve the goals of Section 4.1 shall be effective in mitigating the hazard or condition for which they are being used, shall be reliable, shall be maintained to the level at which they were designed to operate, and shall remain operational.

4.3* Assumptions.

4.3.1* General. The protection methods of this *Code* are based on the hazards associated with fire and other events that have comparable impact on a building and its occupants.

4.3.2 Single Fire Source. The fire protection methods of this *Code* assume a single fire source.

4.4 Life Safety Compliance Options.

4.4.1 Options. Life safety meeting the goals and objectives of Sections 4.1 and 4.2 shall be provided in accordance with either of the following:

- (1) Prescriptive-based provisions per 4.4.2
- (2) Performance-based provisions per 4.4.3

4.4.2 Prescriptive-Based Option.

4.4.2.1 A prescriptive-based life safety design shall be in accordance with Chapters 1 through 4, Chapters 6 through 11, Chapter 43, and the applicable occupancy chapter, Chapters 12 through 42.

4.4.2.2 Prescriptive-based designs meeting the requirements of Chapters 1 through 3, Sections 4.5 through 4.8, and Chapters 6 through 43 of this *Code* shall be deemed to satisfy the provisions of Sections 4.1 and 4.2.

4.4.2.3 Where a requirement of this *Code* conflicts with another requirement of this *Code*, the following shall apply:

- (1)*Where a specific requirement contained in Chapters 11 through 43 conflicts with a general requirement contained in Chapters 1 through 4 and Chapters 6 through 10, the requirement of Chapters 11 through 43 shall govern.
- (2)*Where a requirement contained in Chapters 1 through 4 and Chapters 6 through 10 conflicts with another requirement contained in Chapters 1 through 4 and Chapters 6 through 10, the more specific requirement shall govern.
- (3)*Where a requirement contained in Chapters 11 through 43 conflicts with another requirement contained in Chapters 11 through 43, the more specific requirement shall govern.

4.4.3 Performance-Based Option. A performance-based life safety design shall be in accordance with Chapters 1 through 5.

4.5 Fundamental Requirements.

4.5.1 Multiple Safeguards. The design of every building or structure intended for human occupancy shall be such that reliance for safety to life does not depend solely on any single safeguard. An additional safeguard(s) shall be provided for life safety in case any single safeguard is ineffective due to inappropriate human actions or system failure.

4.5.2 Appropriateness of Safeguards. Every building or structure shall be provided with means of egress and other fire and life safety safeguards of the kinds, numbers, locations, and capacities appropriate to the individual building or structure, with due regard to the following:

- (1) Character of the occupancy, including fire load
- (2) Capabilities of the occupants
- (3) Number of persons exposed
- (4) Fire protection available
- (5) Capabilities of response personnel

- (6) Height and construction type of the building or structure
- (7) Other factors necessary to provide occupants with a reasonable degree of safety

4.5.3 Means of Egress.

4.5.3.1 Number of Means of Egress. Two means of egress, as a minimum, shall be provided in every building or structure, section, and area where size, occupancy, and arrangement endanger occupants attempting to use a single means of egress that is blocked by fire or smoke. The two means of egress shall be arranged to minimize the possibility that both might be rendered impassable by the same emergency condition.

4.5.3.2 Unobstructed Egress. In every occupied building or structure, means of egress from all parts of the building shall be maintained free and unobstructed. Means of egress shall be accessible to the extent necessary to ensure reasonable safety for occupants having impaired mobility.

4.5.3.3 Awareness of Egress System. Every exit shall be clearly visible, or the route to reach every exit shall be conspicuously indicated. Each means of egress, in its entirety, shall be arranged or marked so that the way to a place of safety is indicated in a clear manner.

4.5.3.4 Lighting. Where artificial illumination is needed in a building or structure, egress facilities shall be included in the lighting design.

4.5.4* Occupant Notification. In every building or structure of such size, arrangement, or occupancy that a fire itself might not provide adequate occupant warning, fire alarm systems shall be provided where necessary to warn occupants of the existence of fire.

4.5.5* Situation Awareness. Systems used to achieve the goals of Section 4.1 shall be effective in facilitating and enhancing situation awareness, as appropriate, by building management, other occupants and emergency responders of the functionality or state of critical building systems, the conditions that might warrant emergency response, and the appropriate nature and timing of such responses.

4.5.6 Vertical Openings. Every vertical opening between the floors of a building shall be suitably enclosed or protected, as necessary, to afford reasonable safety to occupants while using the means of egress and to prevent the spread of fire, smoke, or fumes through vertical openings from floor to floor before occupants have entered exits.

4.5.7 System Design/Installation. Any fire protection system, building service equipment, feature of protection, or safeguard provided to achieve the goals of this *Code* shall be designed, installed, and approved in accordance with applicable NFPA standards.

4.5.8 Maintenance. Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this *Code*, such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be maintained, unless the *Code* exempts such maintenance.

4.6 General Requirements.

4.6.1 Authority Having Jurisdiction.

4.6.1.1 The authority having jurisdiction shall determine whether the provisions of this *Code* are met.

4.6.1.2 Any requirements that are essential for the safety of building occupants and that are not specifically provided for by this *Code* shall be determined by the authority having jurisdiction.

4.6.1.3 Where it is evident that a reasonable degree of safety is provided, any requirement shall be permitted to be modified if, in the judgment of the authority having jurisdiction, its application would be hazardous under normal occupancy conditions.

4.6.1.4 Technical Assistance.

4.6.1.4.1 The authority having jurisdiction shall be permitted to require a review by an approved independent third party with expertise in the matter to be reviewed at the submitter's expense. [1:1.15.1]

4.6.1.4.2 The independent reviewer shall provide an evaluation and recommend necessary changes of the proposed design, operation, process, or new technology to the authority having jurisdiction. [1:1.15.2]

4.6.1.4.3 The authority having jurisdiction shall be authorized to require design submittals to bear the stamp of a registered design professional. [1:1.15.3]

4.6.2 Previously Approved Features. Where another provision of this *Code* exempts a previously approved feature from a requirement, the exemption shall be permitted, even where the following conditions exist:

- (1) The area is being modernized, renovated, or otherwise altered.
- (2) A change of occupancy has occurred, provided that the feature's continued use is approved by the authority having jurisdiction.

4.6.3 Stories in Height. Unless otherwise specified in another provision of this *Code*, the stories in height of a building shall be determined as follows:

- (1) The stories in height shall be counted starting with the level of exit discharge and ending with the highest occupiable story containing the occupancy considered.
- (2) Stories below the level of exit discharge shall not be counted as stories.
- (3) Interstitial spaces used solely for building or process systems directly related to the level above or below shall not be considered a separate story.
- (4) A mezzanine shall not be counted as a story for the purpose of determining the allowable stories in height.
- (5) For purposes of application of the requirements for occupancies other than assembly, health care, detention and correctional, and ambulatory health care, where a maximum one-story abovegrade parking structure, enclosed, open, or a combination thereof, of Type I or Type II (222) construction or open Type IV construction, with grade entrance, is provided under a building, the number of stories shall be permitted to be measured from the floor above such a parking area.

4.6.4 Historic Buildings.

4.6.4.1 Rehabilitation projects in historic buildings shall comply with Chapter 43.

4.6.4.2* The provisions of this *Code* shall be permitted to be modified by the authority having jurisdiction for buildings or structures identified and classified as historic buildings or structures where it is evident that a reasonable degree of safety is provided.

4.6.5* Modification of Requirements for Existing Buildings. Where it is evident that a reasonable degree of safety is provided, the requirements for existing buildings shall be permitted to be modified if their application would be impractical in the judgment of the authority having jurisdiction.

4.6.6 Time Allowed for Compliance. A limited but reasonable time, commensurate with the magnitude of expenditure, disruption of services, and degree of hazard, shall be allowed for compliance with any part of this *Code* for existing buildings.

4.6.7 Building Rehabilitation.

4.6.7.1 Rehabilitation work on existing buildings shall be classified as one of the following work categories in accordance with 43.2.2.1:

- (1) Repair
- (2) Renovation
- (3) Modification
- (4) Reconstruction
- (5) Change of use or occupancy classification
- (6) Addition

4.6.7.2 Rehabilitation work on existing buildings shall comply with Chapter 43.

4.6.7.3 Except where another provision of this *Code* exempts a previously approved feature from a requirement, the resulting feature shall be not less than that required for existing buildings.

4.6.7.4* Existing life safety features that exceed the requirements for new buildings shall be permitted to be decreased to those required for new buildings.

4.6.7.5* Existing life safety features that do not meet the requirements for new buildings, but that exceed the requirements for existing buildings, shall not be further diminished.

4.6.8 Provisions in Excess of Code Requirements. Nothing in this *Code* shall be construed to prohibit a better building construction type, an additional means of egress, or an otherwise safer condition than that specified by the minimum requirements of this *Code*.

4.6.9 Conditions for Occupancy.

4.6.9.1 No new construction or existing building shall be occupied in whole or in part in violation of the provisions of this *Code*, unless the following conditions exist:

- (1) A plan of correction has been approved.
- (2) The occupancy classification remains the same.
- (3) No serious life safety hazard exists as judged by the authority having jurisdiction.

4.6.9.2 Where compliance with this *Code* is effected by means of a performance-based design, the owner shall annually certify compliance with the conditions and limitations of the design by submitting a warrant of fitness acceptable to the authority having jurisdiction. The warrant of fitness shall attest that the building features, systems, and use have been inspected and confirmed to remain consistent with design specifications outlined in the documentation required by Section 5.8 and that such features, systems, and use continue to satisfy the goals and objectives specified in Sections 4.1 and 4.2. (See Chapter 5.)

4.6.10 Construction, Repair, and Improvement Operations.

4.6.10.1* Buildings, or portions of buildings, shall be permitted to be occupied during construction, repair, alterations, or

additions only where required means of egress and required fire protection features are in place and continuously maintained for the portion occupied or where alternative life safety measures acceptable to the authority having jurisdiction are in place.

4.6.10.2* In buildings under construction, adequate escape facilities shall be maintained at all times for the use of construction workers. Escape facilities shall consist of doors, walkways, stairs, ramps, fire escapes, ladders, or other approved means or devices arranged in accordance with the general principles of the *Code* insofar as they can reasonably be applied to buildings under construction.

4.6.10.3 Flammable or explosive substances or equipment for repairs or alterations shall be permitted in a building while the building is occupied if the condition of use and safeguards provided do not create any additional danger or impediment to egress beyond the normally permissible conditions in the building.

4.6.11 Change of Use or Occupancy Classification. In any building or structure, whether or not a physical alteration is needed, a change from one use or occupancy classification to another shall comply with 4.6.7.

4.6.12 Maintenance, Inspection, and Testing.

4.6.12.1 Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature is required for compliance with the provisions of this *Code*, such device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature shall thereafter be continuously maintained. Maintenance shall be provided in accordance with applicable NFPA requirements or requirements developed as part of a performance-based design, or as directed by the authority having jurisdiction.

4.6.12.2 No existing life safety feature shall be removed or reduced where such feature is a requirement for new construction.

4.6.12.3* Existing life safety features obvious to the public, if not required by the *Code*, shall be either maintained or removed.

4.6.12.4 Any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature requiring periodic testing, inspection, or operation to ensure its maintenance shall be tested, inspected, or operated as specified elsewhere in this *Code* or as directed by the authority having jurisdiction.

4.6.12.5 Maintenance, inspection, and testing shall be performed under the supervision of a responsible person who shall ensure that testing, inspection, and maintenance are made at specified intervals in accordance with applicable NFPA standards or as directed by the authority having jurisdiction.

4.6.13* Noncombustible Material.

4.6.13.1 A material that complies with any of the following shall be considered a noncombustible material:

- (1)*A material that, in the form in which it is used and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat
- (2) A material that is reported as passing ASTM E 136, *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C*

- (3) A material that is reported as complying with the pass/fail criteria of ASTM E 136 when tested in accordance with the test method and procedure in ASTM E 2652, *Standard Test Method for Behavior of Materials in a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750 Degrees C*

4.6.13.2 Where the term *limited-combustible* is used in this *Code*, it shall also include the term *noncombustible*.

4.6.14* Limited-Combustible Material. A material shall be considered a limited-combustible material where all the conditions of 4.6.14.1 and 4.6.14.2, and the conditions of either 4.6.14.3 or 4.6.14.4, are met.

4.6.14.1 The material shall not comply with the requirements for noncombustible material in accordance with 4.6.13.

4.6.14.2 The material, in the form in which it is used, shall exhibit a potential heat value not exceeding 3500 Btu/lb (8141 kJ/kg) where tested in accordance with NFPA 259, *Standard Test Method for Potential Heat of Building Materials*.

4.6.14.3 The material shall have the structural base of a noncombustible material with a surfacing not exceeding a thickness of 1/8 in. (3.2 mm) where the surfacing exhibits a flame spread index not greater than 50 when tested in accordance with ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*.

4.6.14.4 The material shall be composed of materials that, in the form and thickness used, neither exhibit a flame spread index greater than 25 nor evidence of continued progressive combustion when tested in accordance with ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, and shall be of such composition that all surfaces that would be exposed by cutting through the material on any plane would neither exhibit a flame spread index greater than 25 nor exhibit evidence of continued progressive combustion when tested in accordance with ASTM E 84 or ANSI/UL 723.

4.6.14.5 Where the term *limited-combustible* is used in this *Code*, it shall also include the term *noncombustible*.

4.6.15 Grade Plane. The grade plane shall be established by calculating the average of the finished ground level adjoining the building at all exterior walls. Where the finished ground level slopes down from the exterior walls, the grade plane shall be established by the lowest points within the area between the building and the lot line or, where the lot line is more than 6 ft (1.8 m) from the building, between the building and a point 6 ft (1.8 m) from the building.

4.7* Fire Drills.

4.7.1 Where Required. Emergency egress and relocation drills conforming to the provisions of this *Code* shall be conducted as specified by the provisions of Chapters 11 through 43, or by appropriate action of the authority having jurisdiction. Drills shall be designed in cooperation with the local authorities.

4.7.2* Drill Frequency. Emergency egress and relocation drills, where required by Chapters 11 through 43 or the authority having jurisdiction, shall be held with sufficient frequency to familiarize occupants with the drill procedure and to establish conduct of the drill as a matter of routine. Drills shall include suitable procedures to ensure that all persons subject to the drill participate.

4.7.3 Orderly Evacuation. When conducting drills, emphasis shall be placed on orderly evacuation rather than on speed.

4.7.4* Simulated Conditions. Drills shall be held at expected and unexpected times and under varying conditions to simulate the unusual conditions that can occur in an actual emergency.

4.7.5 Relocation Area. Drill participants shall relocate to a predetermined location and remain at such location until a recall or dismissal signal is given.

4.7.6* A written record of each drill shall be completed by the person responsible for conducting the drill and maintained in an approved manner.

4.8 Emergency Action Plan.

4.8.1 Where Required. Emergency action plans shall be provided as follows:

- (1) Where required by the provisions of Chapters 11 through 42
- (2) Where required by action of the authority having jurisdiction

4.8.2 Plan Requirements.

4.8.2.1* Emergency action plans shall include the following:

- (1) Procedures for reporting of emergencies
- (2) Occupant and staff response to emergencies
- (3)*Evacuation, relocation, and shelter-in-place procedures appropriate to the building, its occupancy, emergencies, and hazards
- (4) Appropriateness of the use of elevators
- (5) Design and conduct of fire drills
- (6) Type and coverage of building fire protection systems
- (7) Other items required by the authority having jurisdiction

4.8.2.2 Required emergency action plans shall be submitted to the authority having jurisdiction for review.

4.8.2.3* Emergency action plans shall be reviewed and updated as required by the authority having jurisdiction.

Chapter 5 Performance-Based Option

5.1 General Requirements.

5.1.1* Application. The requirements of this chapter shall apply to life safety systems designed to the performance-based option permitted by 4.4.1 and 4.4.3.

5.1.2 Goals and Objectives. The performance-based design shall meet the goals and objectives of this *Code* in accordance with Sections 4.1 and 4.2.

5.1.3 Qualifications. The performance-based design shall be prepared by a registered design professional.

5.1.4* Independent Review. The authority having jurisdiction shall be permitted to require an approved, independent third party to review the proposed design and provide an evaluation of the design to the authority having jurisdiction.

5.1.5 Sources of Data. Data sources shall be identified and documented for each input data requirement that must be met using a source other than a design fire scenario, an assumption, or a building design specification. The degree of conservatism reflected in such data shall be specified, and a justification for the source shall be provided.

5.1.6* Final Determination. The authority having jurisdiction shall make the final determination as to whether the performance objectives have been met.

5.1.7* Maintenance of Design Features. The design features required for the building to continue to meet the performance goals and objectives of this *Code* shall be maintained for the life of the building. Such performance goals and objectives shall include complying with all documented assumptions and design specifications. Any variations shall require the approval of the authority having jurisdiction prior to the actual change. (*See also* 4.6.9.2.)

5.1.8 Definitions.

5.1.8.1 General. For definitions, see Chapter 3, Definitions.

5.1.8.2 Special Definitions. A list of special terms used in this chapter follows:

- (1) **Alternative Calculation Procedure.** See 3.3.15.
- (2) **Data Conversion.** See 3.3.52.
- (3) **Design Fire Scenario.** See 3.3.105.1.
- (4) **Design Specification.** See 3.3.262.1.
- (5) **Design Team.** See 3.3.57.
- (6) **Exposure Fire.** See 3.3.88.
- (7) **Fire Model.** See 3.3.101.
- (8) **Fire Scenario.** See 3.3.105.
- (9) **Fuel Load.** See 3.3.164.1.
- (10) **Incapacitation.** See 3.3.148.
- (11) **Input Data Specification.** See 3.3.262.2.
- (12) **Occupant Characteristics.** See 3.3.191.
- (13) **Performance Criteria.** See 3.3.206.
- (14) **Proposed Design.** See 3.3.218.
- (15) **Safe Location.** See 3.3.235.
- (16) **Safety Factor.** See 3.3.236.
- (17) **Safety Margin.** See 3.3.237.
- (18) **Sensitivity Analysis.** See 3.3.17.1.
- (19) **Stakeholder.** See 3.3.266.
- (20) **Uncertainty Analysis.** See 3.3.17.2.
- (21) **Verification Method.** See 3.3.285.

5.2 Performance Criteria.

5.2.1 General. A design shall meet the objectives specified in Section 4.2 if, for each design fire scenario, assumption, and design specification, the performance criterion in 5.2.2 is met.

5.2.2* Performance Criterion. Any occupant who is not intimate with ignition shall not be exposed to instantaneous or cumulative untenable conditions.

5.3 Retained Prescriptive Requirements.

5.3.1* Systems and Features. All fire protection systems and features of the building shall comply with applicable NFPA standards for those systems and features.

5.3.2 Means of Egress. The design shall comply with the following requirements in addition to the performance criteria of Section 5.2 and the methods of Sections 5.4 through 5.8:

- (1) Changes in level in means of egress — 7.1.7
- (2) Guards — 7.1.8
- (3) Doors — 7.2.1
- (4) Stairs — 7.2.2, excluding the provisions of 7.2.2.5.1, 7.2.2.5.2, 7.2.2.6.2, 7.2.2.6.3, and 7.2.2.6.4
- (5) Ramps — 7.2.5, excluding the provisions of 7.2.5.4.1, 7.2.5.5, and 7.2.5.7.1
- (6) Fire escape ladders — 7.2.9
- (7) Alternating tread devices — 7.2.11
- (8) Capacity of means of egress — Section 7.3, excluding the provisions of 7.3.3 and 7.3.4
- (9) Impediments to egress — 7.5.2

- (10) Illumination of means of egress — Section 7.8
- (11) Emergency lighting — Section 7.9
- (12) Marking of means of egress — Section 7.10

5.3.3 Equivalency. Equivalent designs for the features covered in the retained prescriptive requirements mandated by 5.3.2 shall be addressed in accordance with the equivalency provisions of Section 1.4.

5.4 Design Specifications and Other Conditions.

5.4.1* Clear Statement. Design specifications and other conditions used in the performance-based design shall be clearly stated and shown to be realistic and sustainable.

5.4.2 Assumptions and Design Specifications Data.

5.4.2.1 Each assumption and design specification used in the design shall be accurately translated into input data specifications, as appropriate for the method or model.

5.4.2.2 Any assumption and design specifications that the design analyses do not explicitly address or incorporate and that are, therefore, omitted from input data specifications shall be identified, and a sensitivity analysis of the consequences of that omission shall be performed.

5.4.2.3 Any assumption and design specifications modified in the input data specifications, because of limitations in test methods or other data-generation procedures, shall be identified, and a sensitivity analysis of the consequences of the modification shall be performed.

5.4.3 Building Characteristics. Characteristics of the building or its contents, equipment, or operations that are not inherent in the design specifications, but that affect occupant behavior or the rate of hazard development, shall be explicitly identified.

5.4.4* Operational Status and Effectiveness of Building Features and Systems. The performance of fire protection systems, building features, and emergency procedures shall reflect the documented performance and reliability of the components of those systems or features, unless design specifications are incorporated to modify the expected performance.

5.4.5 Occupant Characteristics.

5.4.5.1* General. The selection of occupant characteristics to be used in the design calculations shall be approved by the authority having jurisdiction and shall provide an accurate reflection of the expected population of building users. Occupant characteristics shall represent the normal occupant profile, unless design specifications are used to modify the expected occupant features. Occupant characteristics shall not vary across fire scenarios, except as authorized by the authority having jurisdiction.

5.4.5.2* Response Characteristics. The basic response characteristics of sensibility, reactivity, mobility, and susceptibility shall be evaluated. Such evaluation shall include the expected distribution of characteristics of a population appropriate to the use of the building. The source of data for these characteristics shall be documented.

5.4.5.3 Location. It shall be assumed that, in every normally occupied room or area, at least one person shall be located at the most remote point from the exits.

5.4.5.4* Number of Occupants. The design shall be based on the maximum number of people that every occupied room or area is expected to contain. Where the success or failure of the design is contingent on the number of occupants not exceeding

a specified maximum, operational controls shall be used to ensure that the maximum number of occupants is not exceeded.

5.4.5.5* Staff Assistance. The inclusion of trained employees as part of the fire safety system shall be identified and documented.

5.4.6 Emergency Response Personnel. Design characteristics or other conditions related to the availability, speed of response, effectiveness, roles, and other characteristics of emergency response personnel shall be specified, estimated, or characterized sufficiently for evaluation of the design.

5.4.7* Post-Construction Conditions. Design characteristics or other conditions related to activities during the life of a building that affect the ability of the building to meet the stated goals and objectives shall be specified, estimated, or characterized sufficiently for evaluation of the design.

5.4.8 Off-Site Conditions. Design characteristics or other conditions related to resources or conditions outside the property being designed that affect the ability of the building to meet the stated goals and objectives shall be specified, estimated, or characterized sufficiently for evaluation of the design.

5.4.9* Consistency of Assumptions. The design shall not include mutually inconsistent assumptions, specifications, or statements of conditions.

5.4.10* Special Provisions. Additional provisions that are not covered by the design specifications, conditions, estimations, and assumptions provided in Section 5.4, but that are required for the design to comply with the performance objectives, shall be documented.

5.5* Design Fire Scenarios.

5.5.1 Approval of Parameters. The authority having jurisdiction shall approve the parameters involved in design fire scenarios. The proposed design shall be considered to meet the goals and objectives if it achieves the performance criteria for each required design fire scenario. (See 5.5.3.)

5.5.2* Evaluation. Design fire scenarios shall be evaluated using a method acceptable to the authority having jurisdiction and appropriate for the conditions. Each design fire scenario shall be as challenging as any that could occur in the building, but shall be realistic, with respect to at least one of the following scenario specifications:

- (1) Initial fire location
- (2) Early rate of growth in fire severity
- (3) Smoke generation

5.5.3* Required Design Fire Scenarios. Design fire scenarios shall comply with the following:

- (1) Scenarios selected as design fire scenarios shall include, but shall not be limited to, those specified in 5.5.3.1 through 5.5.3.8.
- (2) Design fire scenarios demonstrated by the design team to the satisfaction of the authority having jurisdiction as inappropriate for the building use and conditions shall not be required to be evaluated fully.

5.5.3.1* Design Fire Scenario 1. Design Fire Scenario 1 shall be described as follows:

- (1) It is an occupancy-specific fire representative of a typical fire for the occupancy.
- (2) It explicitly accounts for the following:
 - (a) Occupant activities

- (b) Number and location of occupants
- (c) Room size
- (d) Contents and furnishings
- (e) Fuel properties and ignition sources
- (f) Ventilation conditions
- (g) Identification of the first item ignited and its location

5.5.3.2* Design Fire Scenario 2. Design Fire Scenario 2 shall be described as follows:

- (1) It is an ultrafast-developing fire, in the primary means of egress, with interior doors open at the start of the fire.
- (2) It addresses the concern regarding a reduction in the number of available means of egress.

5.5.3.3* Design Fire Scenario 3. Design Fire Scenario 3 shall be described as follows:

- (1) It is a fire that starts in a normally unoccupied room, potentially endangering a large number of occupants in a large room or other area.
- (2) It addresses the concern regarding a fire starting in a normally unoccupied room and migrating into the space that potentially holds the greatest number of occupants in the building.

5.5.3.4* Design Fire Scenario 4. Design Fire Scenario 4 shall be described as follows:

- (1) It is a fire that originates in a concealed wall or ceiling space adjacent to a large occupied room.
- (2) It addresses the concern regarding a fire originating in a concealed space that does not have either a detection system or a suppression system and then spreading into the room within the building that potentially holds the greatest number of occupants.

5.5.3.5* Design Fire Scenario 5. Design Fire Scenario 5 shall be described as follows:

- (1) It is a slowly developing fire, shielded from fire protection systems, in close proximity to a high occupancy area.
- (2) It addresses the concern regarding a relatively small ignition source causing a significant fire.

5.5.3.6* Design Fire Scenario 6. Design Fire Scenario 6 shall be described as follows:

- (1) It is the most severe fire resulting from the largest possible fuel load characteristic of the normal operation of the building.
- (2) It addresses the concern regarding a rapidly developing fire with occupants present.

5.5.3.7* Design Fire Scenario 7. Design Fire Scenario 7 shall be described as follows:

- (1) It is an outside exposure fire.
- (2) It addresses the concern regarding a fire starting at a location remote from the area of concern and either spreading into the area, blocking escape from the area, or developing untenable conditions within the area.

5.5.3.8* Design Fire Scenario 8. Design Fire Scenario 8 shall be described as follows:

- (1) It is a fire originating in ordinary combustibles in a room or area with each passive or active fire protection system independently rendered ineffective.
- (2) It addresses concerns regarding the unreliability or unavailability of each fire protection system or fire protection feature, considered individually.

- (3)*It is not required to be applied to fire protection systems for which both the level of reliability and the design performance in the absence of the system are acceptable to the authority having jurisdiction.

5.5.4 Design Fire Scenarios Data.

5.5.4.1 Each design fire scenario used in the performance-based design proposal shall be translated into input data specifications, as appropriate for the calculation method or model.

5.5.4.2 Any design fire scenario specifications that the design analyses do not explicitly address or incorporate and that are, therefore, omitted from input data specifications shall be identified, and a sensitivity analysis of the consequences of that omission shall be performed.

5.5.4.3 Any design fire scenario specifications modified in input data specifications, because of limitations in test methods or other data-generation procedures, shall be identified, and a sensitivity analysis of the consequences of the modification shall be performed.

5.6* Evaluation of Proposed Designs.

5.6.1 General. A proposed design's performance shall be assessed relative to each performance objective in Section 4.2 and each applicable scenario in 5.5.3, with the assessment conducted through the use of appropriate calculation methods. The authority having jurisdiction shall approve the choice of assessment methods.

5.6.2 Use. The design professional shall use the assessment methods to demonstrate that the proposed design will achieve the goals and objectives, as measured by the performance criteria in light of the safety margins and uncertainty analysis, for each scenario, given the assumptions.

5.6.3 Input Data.

5.6.3.1 Data. Input data for computer fire models shall be obtained in accordance with ASTM E 1591, *Standard Guide for Obtaining Data for Deterministic Fire Models*. Data for use in analytical models that are not computer-based fire models shall be obtained using appropriate measurement, recording, and storage techniques to ensure the applicability of the data to the analytical method being used.

5.6.3.2 Data Requirements. A complete listing of input data requirements for all models, engineering methods, and other calculation or verification methods required or proposed as part of the performance-based design shall be provided.

5.6.3.3* Uncertainty and Conservatism of Data. Uncertainty in input data shall be analyzed and, as determined appropriate by the authority having jurisdiction, addressed through the use of conservative values.

5.6.4* Output Data. The assessment methods used shall accurately and appropriately produce the required output data from input data, based on the design specifications, assumptions, and scenarios.

5.6.5 Validity. Evidence shall be provided to confirm that the assessment methods are valid and appropriate for the proposed building, use, and conditions.

5.7* Safety Factors. Approved safety factors shall be included in the design methods and calculations to reflect uncertainty in the assumptions, data, and other factors associated with the performance-based design.

5.8 Documentation Requirements.

5.8.1* General. All aspects of the design, including those described in 5.8.2 through 5.8.14, shall be documented. The format and content of the documentation shall be acceptable to the authority having jurisdiction.

5.8.2* Technical References and Resources. The authority having jurisdiction shall be provided with sufficient documentation to support the validity, accuracy, relevance, and precision of the proposed methods. The engineering standards, calculation methods, and other forms of scientific information provided shall be appropriate for the particular application and methodologies used.

5.8.3 Building Design Specifications. All details of the proposed building design that affect the ability of the building to meet the stated goals and objectives shall be documented.

5.8.4 Performance Criteria. Performance criteria, with sources, shall be documented.

5.8.5 Occupant Characteristics. Assumptions about occupant characteristics shall be documented.

5.8.6 Design Fire Scenarios. Descriptions of design fire scenarios shall be documented.

5.8.7 Input Data. Input data to models and assessment methods, including sensitivity analyses, shall be documented.

5.8.8 Output Data. Output data from models and assessment methods, including sensitivity analyses, shall be documented.

5.8.9 Safety Factors. The safety factors utilized shall be documented.

5.8.10 Prescriptive Requirements. Retained prescriptive requirements shall be documented.

5.8.11* Modeling Features.

5.8.11.1 Assumptions made by the model user, and descriptions of models and methods used, including known limitations, shall be documented.

5.8.11.2 Documentation shall be provided to verify that the assessment methods have been used validly and appropriately to address the design specifications, assumptions, and scenarios.

5.8.12 Evidence of Modeler Capability. The design team's relevant experience with the models, test methods, databases, and other assessment methods used in the performance-based design proposal shall be documented.

5.8.13 Performance Evaluation. The performance evaluation summary shall be documented.

5.8.14 Use of Performance-Based Design Option. Design proposals shall include documentation that provides anyone involved in the ownership or management of the building with notification of the following:

- (1) Approval of the building as a performance-based design with certain specified design criteria and assumptions
- (2) Need for required re-evaluation and reapproval in cases of remodeling, modification, renovation, change in use, or change in established assumptions

Chapter 6 Classification of Occupancy and Hazard of Contents

6.1 Classification of Occupancy.

6.1.1 General.

6.1.1.1 Occupancy Classification. The occupancy of a building or structure, or portion of a building or structure, shall be classified in accordance with 6.1.2 through 6.1.13. Occupancy classification shall be subject to the ruling of the authority having jurisdiction where there is a question of proper classification in any individual case.

6.1.1.2 Special Structures. Occupancies in special structures shall conform to the requirements of the specific occupancy chapter, Chapters 12 through 43, except as modified by Chapter 11.

6.1.2 Assembly. For requirements, see Chapters 12 and 13.

6.1.2.1* Definition — Assembly Occupancy. An occupancy (1) used for a gathering of 50 or more persons for deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation, or similar uses; or (2) used as a special amusement building, regardless of occupant load.

6.1.2.2 Other. (Reserved)

6.1.3 Educational. For requirements, see Chapters 14 and 15.

6.1.3.1* Definition — Educational Occupancy. An occupancy used for educational purposes through the twelfth grade by six or more persons for 4 or more hours per day or more than 12 hours per week.

6.1.3.2 Other Occupancies. Other occupancies associated with educational institutions shall be in accordance with the appropriate parts of this *Code*.

6.1.3.3 Incidental Instruction. In cases where instruction is incidental to some other occupancy, the section of this *Code* governing such other occupancy shall apply.

6.1.4 Day Care. For requirements, see Chapters 16 and 17.

6.1.4.1* Definition — Day-Care Occupancy. An occupancy in which four or more clients receive care, maintenance, and supervision, by other than their relatives or legal guardians, for less than 24 hours per day.

6.1.4.2 Other. (Reserved)

6.1.5 Health Care. For requirements, see Chapters 18 and 19.

6.1.5.1* Definition — Health Care Occupancy. An occupancy used to provide medical or other treatment or care simultaneously to four or more patients on an inpatient basis, where such patients are mostly incapable of self-preservation due to age, physical or mental disability, or because of security measures not under the occupants' control.

6.1.5.2 Other. (Reserved)

6.1.6 Ambulatory Health Care. For requirements, see Chapters 20 and 21.

6.1.6.1* Definition — Ambulatory Health Care Occupancy. An occupancy used to provide services or treatment simultaneously to four or more patients that provides, on an outpatient basis, one or more of the following:

- (1) Treatment for patients that renders the patients incapable of taking action for self-preservation under emergency conditions without the assistance of others



- (2) Anesthesia that renders the patients incapable of taking action for self-preservation under emergency conditions without the assistance of others
- (3) Emergency or urgent care for patients who, due to the nature of their injury or illness, are incapable of taking action for self-preservation under emergency conditions without the assistance of others

6.1.6.2 Other. (Reserved)

6.1.7 Detention and Correctional. For requirements, see Chapters 22 and 23.

6.1.7.1* Definition — Detention and Correctional Occupancy. An occupancy used to house one or more persons under varied degrees of restraint or security where such occupants are mostly incapable of self-preservation because of security measures not under the occupants' control.

6.1.7.2* Nonresidential Uses. Within detention and correctional facilities, uses other than residential housing shall be in accordance with the appropriate chapter of the *Code*. (See 22.1.3.3 and 23.1.3.3.)

6.1.8 Residential. For requirements, see Chapters 24 through 31.

6.1.8.1 Definition — Residential Occupancy. An occupancy that provides sleeping accommodations for purposes other than health care or detention and correctional.

6.1.8.1.1* Definition — One- and Two-Family Dwelling Unit. A building that contains not more than two dwelling units with independent cooking and bathroom facilities.

6.1.8.1.2 Definition — Lodging or Rooming House. A building or portion thereof that does not qualify as a one- or two-family dwelling, that provides sleeping accommodations for a total of 16 or fewer people on a transient or permanent basis, without personal care services, with or without meals, but without separate cooking facilities for individual occupants.

6.1.8.1.3* Definition — Hotel. A building or groups of buildings under the same management in which there are sleeping accommodations for more than 16 persons and primarily used by transients for lodging with or without meals.

6.1.8.1.4* Definition — Dormitory. A building or a space in a building in which group sleeping accommodations are provided for more than 16 persons who are not members of the same family in one room, or a series of closely associated rooms, under joint occupancy and single management, with or without meals, but without individual cooking facilities.

6.1.8.1.5 Definition — Apartment Building. A building or portion thereof containing three or more dwelling units with independent cooking and bathroom facilities.

6.1.8.2 Other. (Reserved)

6.1.9 Residential Board and Care. For requirements, see Chapters 32 and 33.

6.1.9.1* Definition — Residential Board and Care Occupancy. An occupancy used for lodging and boarding of four or more residents, not related by blood or marriage to the owners or operators, for the purpose of providing personal care services.

6.1.9.2 Other. (Reserved)

6.1.10 Mercantile. For requirements, see Chapters 36 and 37.

6.1.10.1* Definition — Mercantile Occupancy. An occupancy used for the display and sale of merchandise.

6.1.10.2 Other. (Reserved)

6.1.11 Business. For requirements, see Chapters 38 and 39.

6.1.11.1* Definition — Business Occupancy. An occupancy used for the transaction of business other than mercantile.

6.1.11.2 Other. (Reserved)

6.1.12 Industrial. For requirements, see Chapter 40.

6.1.12.1* Definition — Industrial Occupancy. An occupancy in which products are manufactured or in which processing, assembling, mixing, packaging, finishing, decorating, or repair operations are conducted.

6.1.12.2 Other. (Reserved)

6.1.13 Storage. For requirements, see Chapter 42.

6.1.13.1* Definition — Storage Occupancy. An occupancy used primarily for the storage or sheltering of goods, merchandise, products, or vehicles.

6.1.13.2 Other. (Reserved)

6.1.14 Multiple Occupancies.

6.1.14.1 General.

6.1.14.1.1 Multiple occupancies shall comply with the requirements of 6.1.14.1 and one of the following:

- (1) Mixed occupancies — 6.1.14.3
- (2) Separated occupancies — 6.1.14.4

6.1.14.1.2 Where exit access from an occupancy traverses another occupancy, the multiple occupancy shall be treated as a mixed occupancy.

6.1.14.1.3* Where incidental to another occupancy, areas used as follows shall be permitted to be considered part of the predominant occupancy and shall be subject to the provisions of the *Code* that apply to the predominant occupancy:

- (1) Mercantile, business, industrial, or storage use
- (2)*Nonresidential use with an occupant load fewer than that established by Section 6.1 for the occupancy threshold

6.1.14.2 Definitions.

6.1.14.2.1 Multiple Occupancy. A building or structure in which two or more classes of occupancy exist.

6.1.14.2.2 Mixed Occupancy. A multiple occupancy where the occupancies are intermingled.

6.1.14.2.3 Separated Occupancy. A multiple occupancy where the occupancies are separated by fire resistance-rated assemblies.

6.1.14.3 Mixed Occupancies.

6.1.14.3.1 Each portion of the building shall be classified as to its use in accordance with Section 6.1.

6.1.14.3.2* The building shall comply with the most restrictive requirements of the occupancies involved, unless separate safeguards are approved.

6.1.14.4 Separated Occupancies. (See also 6.1.14.1.2.)

6.1.14.4.1 Where separated occupancies are provided, each part of the building comprising a distinct occupancy, as described in this chapter, shall be completely separated from other occupancies by fire-resistive assemblies, as specified in 6.1.14.4.2, 6.1.14.4.3, Table 6.1.14.4.1(a), and Table 6.1.14.4.1(b), unless separation is provided by approved existing separations or as otherwise permitted by 6.1.14.4.6.

Table 6.1.14.4.1(a) Required Separation of Occupancies (hours)†, Part 1

Occupancy	Assembly ≤300	Assembly >300 to ≤1000	Assembly >1000	Educational	Day-Care >12 Clients	Day-Care Homes	Health Care	Ambulatory Health Care	Detention & Correctional	One- & Two-Family Dwellings	Lodging or Rooming Houses	Hotels & Dormitories
Assembly ≤ 300	—	0	0	2	2	1	2‡	2	2‡	2	2	2
Assembly >300 to ≤1000	0	—	0	2	2	2	2‡	2	2‡	2	2	2
Assembly >1000	0	0	—	2	2	2	2‡	2	2‡	2	2	2
Educational	2	2	2	—	2	2	2‡	2	2‡	2	2	2
Day-Care >12 Clients	2	2	2	2	—	1	2‡	2	2‡	2	2	2
Day-Care Homes	1	2	2	2	1	—	2‡	2	2‡	2	2	2
Health Care	2‡	2‡	2‡	2‡	2‡	2‡	—	2‡	2‡	2‡	2‡	2‡
Ambulatory Health Care	2	2	2	2	2	2	2‡	—	2‡	2	2	2
Detention & Correctional	2‡	2‡	2‡	2‡	2‡	2‡	2‡	2‡	—	2‡	2‡	2‡
One- & Two- Family Dwellings	2	2	2	2	2	2	2‡	2	2‡	—	1	1
Lodging or Rooming Houses	2	2	2	2	2	2	2‡	2	2‡	1	—	1
Hotels & Dormitories	2	2	2	2	2	2	2‡	2	2‡	1	1	—
Apartment Buildings	2	2	2	2	2	2	2‡	2	2‡	1	1	1
Board & Care, Small	2	2	2	2	2	2	2‡	2	2‡	1	2	2
Board & Care, Large	2	2	2	2	2	2	2‡	2	2‡	2	2	2
Mercantile	2	2	2	2	2	2	2‡	2	2‡	2	2	2
Mercantile, Mall	2	2	2	2	2	2	2‡	2	2‡	2	2	2
Mercantile, Bulk Retail	3	3	3	3	3	3	2‡	2‡	2‡	3	3	3
Business	1	2	2	2	2	2	2‡	1	2‡	2	2	2
Industrial, General Purpose	2	2	3	3	3	3	2‡	2	2‡	2	2	2
Industrial, Special-Purpose	2	2	2	3	3	3	2‡	2	2‡	2	2	2
Industrial, High Hazard	3	3	3	3	3	3	2‡	2‡	NP	3	3	3
Storage, Low & Ordinary Hazard	2	2	3	3	3	2	2‡	2	2‡	2	2	2
Storage, High Hazard	3	3	3	3	3	3	2‡	2‡	NP	3	3	3

NP: Not permitted.

†Minimum Fire Resistance Rating. The fire resistance rating is permitted to be reduced by 1 hour, but in no case to less than 1 hour, where the building is protected throughout by an approved automatic sprinkler system in accordance with 9.7.1.1(1) and supervised in accordance with 9.7.2.

‡The 1-hour reduction due to the presence of sprinklers in accordance with the single-dagger footnote is not permitted.

Table 6.1.14.4.1(b) Required Separation of Occupancies (hours)†, Part 2

Occupancy	Apartment Buildings	Board & Care, Small	Board & Care, Large	Mercantile	Mercantile, Mall	Mercantile, Bulk Retail	Business	Industrial, General Purpose	Industrial, Special-Purpose	Industrial, High Hazard	Storage, Low & Ordinary Hazard	Storage, High Hazard
Assembly ≤ 300	2	2	2	2	2	3	1	2	2	3	2	3
Assembly >300 to ≤1000	2	2	2	2	2	3	2	2	2	3	2	3
Assembly >1000	2	2	2	2	2	3	2	3	2	3	3	3
Educational	2	2	2	2	2	3	2	3	3	3	3	3
Day-Care >12 Clients	2	2	2	2	2	3	2	3	3	3	3	3
Day-Care Homes	2	2	2	2	2	3	2	3	3	3	2	3
Health Care	2‡	2‡	2‡	2‡	2‡	2‡	2‡	2‡	2‡	2‡	2‡	2‡
Ambulatory Health Care	2	2	2	2	2	2‡	1	2	2	2‡	2	2‡
Detention & Correctional	2‡	2‡	2‡	2‡	2‡	2‡	2‡	2‡	2‡	NP	2‡	NP
One- & Two-Family Dwellings	1	1	2	2	2	3	2	2	2	3	2	3
Lodging or Rooming Houses	1	2	2	2	2	3	2	2	2	3	2	3
Hotels & Dormitories	1	2	2	2	2	3	2	2	2	3	2	3
Apartment Buildings	—	2	2	2	2	3	2	2	2	3	2	3
Board & Care, Small	2	—	1	2	2	3	2	3	3	3	3	3
Board & Care, Large	2	1	—	2	2	3	2	3	3	3	3	3
Mercantile	2	2	2	—	0	3	2	2	2	3	2	3
Mercantile, Mall	2	2	2	0	—	3	2	3	3	3	2	3
Mercantile, Bulk Retail	3	3	3	3	3	—	2	2	2	3	2	2
Business	2	2	2	2	2	2	—	2	2	2	2	2
Industrial, General Purpose	2	3	3	2	3	2	2	—	1	1	1	1
Industrial, Special-Purpose	2	3	3	2	3	2	2	1	—	1	1	1
Industrial, High Hazard	3	3	3	3	3	3	2	1	1	—	1	1
Storage, Low & Ordinary Hazard	2	3	3	2	2	2	2	1	1	1	—	1
Storage, High Hazard	3	3	3	3	3	2	2	1	1	1	1	—

NP: Not permitted.

†Minimum Fire Resistance Rating. The fire resistance rating is permitted to be reduced by 1 hour, but in no case to less than 1 hour, where the building is protected throughout by an approved automatic sprinkler system in accordance with 9.7.1.1(1) and supervised in accordance with 9.7.2.

‡The 1-hour reduction due to the presence of sprinklers in accordance with the single-dagger footnote is not permitted.