

## CODES AND WOOD PRODUCTS<sup>1</sup>

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### ABSTRACT

Background on the National Forest Products Association is provided with emphasis on their role in helping to achieve equitable use of wood products. The NFPA is interested in building code requirements that state where and how wood products can be utilized in building construction. With the realization that structural components themselves are not a fire hazard, a positive trend involving expanded use of wood products has appeared. The use of the automatic fire suppression system has allowed additional height and area in buildings along with increased use of wood products in building construction. Although the need for a uniform building code is recognized, its jurisdiction should remain local in scope rather than regulated by the federal government.

**Keywords:** National Forest Products Association, building codes, model codes, wood construction, automatic fire suppression systems, fire protection.

### INTRODUCTION

The National Forest Products Association has for 75 years been the lead organization of the forest products industry on national affairs affecting timber and land management and solid wood products. Formed in 1902 as the National Lumber Manufacturers Association, it evolved into a broader role, which was reflected in its 1965 name change.

NFPA now represents the interests of approximately 2,500 timber growers, manufacturers, and distributors of softwood and hardwood lumber, plywood, specialized wood, and wood fiber products. NFPA's combined membership operates in all fifty of the United States. It owns and maintains the Forest Industries Building in Washington, D.C.

NFPA is a nonprofit trade association. Its purpose is to represent the interests of the forest products industry before legislative, executive, and judicial branches of the federal government as well as specific bu-

reaus and other regulatory agencies and to develop and advance wood technology for improving market acceptance of wood products.

NFPA is organized as a federation of some 26 other trade associations in the forest products industry with provision for direct corporate members. It works in close cooperation with the American Paper Institute based in New York City. NFPA also executes certain programs for the Forest Industries Council.

NFPA's staff functions are divided among subject division: Executive, Resource and Environment, Technical Services, Government Affairs, Economics, Communications, and Business Affairs. NFPA's headquarters in the Forest Industries Building is located at 1619 Massachusetts Avenue, N.W., Washington, DC 20036; telephone (area code 202) 797-5800. It maintains Technical Services Field Offices in San Francisco, Los Angeles, Glen Ellyn, IL, Metairie, LA, Hahokus, NJ, and Columbus, OH.

### BUILDING CODES

Building codes play an important role in regulating the use of lumber and other wood products in building construction. A building code's various requirements can

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restrict or permit the use of wood products in a variety of ways or through permitted usage can allow the use of other materials in a manner that is more competitive than wood. The technical requirements of code regulations require almost day-to-day surveillance by qualified code specialists to ensure that any prohibitive requirements are remedied and to maintain legitimate markets for wood products. The importance of building codes to wood products markets has long been recognized by the NFPA, which maintains a staff of qualified building code consultants throughout the United States. Their primary function is to assist national, state, and local code organizations and governing bodies to achieve an equitable use of wood products. The NFPA building code staff has been involved in these activities for over sixty years, and all indications are that the need for this involvement will continue indefinitely.

In addition to their association with code groups and code enforcement agencies, much effort is expended with related activities in the standards field, such as the American National Standards Institute, the American Society for Testing and Materials, and the National Fire Protection Association. NFPA technical representatives serve on ASTM and the National Fire Protection Association committees, which influence construction or design requirements by the publication of recommended test methods and construction practices. In addition, NFPA maintains contact with federal agencies such as the General Services Administration, Public Health Service, Federal Housing Administration, National Bureau of Standards, and Department of Defense.

NFPA is principally interested in building code requirements that govern where and how wood products can be used in buildings. Consequently, their staff spends considerable time reviewing and preparing amendments for submission to model building codes which are published by the four nationally recognized model code organizations: the Building Officials and Code Administrators International, the Interna-

tional Conference of Building Officials, the American Insurance Association, and the Southern Building Code Congress International. In recent years, many local government agencies, as well as state code bodies, have discovered that the adoption of one of these model codes has proven highly satisfactory in the establishment of building regulations. The National Forest Products Association wholeheartedly endorses this method of enacting construction regulations and discourages extensive amendments to these model codes by governing authorities.

Regarding trends in fire protection, building codes permit or restrict use of wood products through requirements that can best be described as having evolved through both analytical and empirical means. All codes govern the use of wood products in regard to permitted heights and areas of buildings; requirements within fire limits as established by local municipalities; uses in fire-resistive types of construction such as floors, doors, framing, interior finish and trim; and the occupancy classification or how the building will be used. Finally, codes either permit or restrict the use of wood products according to design industry standards that are referenced by the code.

Since the inception of building codes, the word "noncombustible" has been a strong factor in restricting wood products in construction. The fact that wood products are combustible has tended to minimize their use under building code requirements.

Throughout the history of building codes, such catastrophic fires as the Coconut Grove, the La Salle Hotel, or our Lady of Angels School have triggered a rash of anti-wood legislation. Normally, these catastrophies are the result of lack of proper precautions and contents of the building or design features that were the major contributor to these holocausts. Yet, many authorities are quick to single out wood as either the major or the sole contributing factor. Hardly a week goes by but that a headline proclaiming "One Killed in Wood-

Frame Dwelling Fire" will appear in a local newspaper. In checking further into the article or subsequently with local fire authorities, it is found that the victim had fallen asleep with a lighted cigarette, and death was caused by smoke inhalation with the only property damage resulting from the loss of the couch where the body was found and water and smoke damage. Yet, the phrase "wood-frame dwelling" will remain with the readers of that article. This example illustrates how the reputation of wood products suffers because of its combustible nature.

In recent years, a trend has developed placing greater restrictions on the use of heretofore common interior finish materials. To a large extent, many of these restrictions are unjustified and are the result of over-reactions to one or more incidents involving other circumstances. Mobile home regulations exemplify the situation. They are restrictive in the use of paneling with little consideration given to furnishings, other contents, or housekeeping.

The first building code resembling contemporary ones resulted from conflagrations in high density business districts at least a century ago. The remedy for this was the installation of fire walls between buildings to prevent the rapid lateral spread of fire. Heavy timber or mill construction and ordinary wood frame construction with masonry exterior walls met early code requirements and are permitted today in congested areas of our cities with restrictions placed on permitted heights and areas. Because of high urban area land values, these constructions are not used extensively in large cities where greater heights are required in relation to land costs. However, where fire-resistive construction is used, the code may permit wood floors; wood windows and doors; wood mouldings, trim, interior finishes; and to some extent, wood framing members along with facades, cornices, and other architectural appendages usually of fire-retardant treated wood. Materials in competition with wood products, essentially those belonging to the noncombustible category, aim their efforts at prohibiting such

wood usage, but the NFPA has been successful in maintaining many important markets.

Much emphasis is being placed on efforts to restrict the use of materials customarily employed in such items as kitchen cabinets, doors and windows, shelving, and built-in furniture by classifying these items as interior finish and establishing end points for their use. As previously stated, much activity has been underway regarding this consideration in the mobile home industry as well as other occupancies, and it is expected that activities in this area will continue in the future.

#### POSITIVE TRENDS IN WOOD CONSTRUCTION

On the positive scale, a trend has appeared that could benefit the expanded use of wood products. The "noncombustible myth" has been losing ground, and more emphasis is now being placed on fire resistance of assemblies, regardless of the materials used. The realization that structural components of a building are not themselves a hazard to life safety is resulting in more reasonable requirements for heights and areas in wood-constructed occupancies such as nursing homes, schools, recreational facilities, restaurants, and multi-family dwellings.

Another positive factor in the expanded use of wood construction materials is current thought being given to the subject of fire limits within a city. The model building codes and other major codes are now giving serious consideration to the abolishment of the One, Two, or Three Fire Zone Concept in favor of a structure being "In or Out" of fire limits, or in some cases, the total elimination of fire limits. This represents very rational thinking with the realization that properly constructed and maintained buildings within specified height and area limitations that utilize open spaces and provide separations as well as the manner in which the buildings are occupied present a more realistic approach to the use of construction materials and still achieve the desired degree of life and property safety.

Also on the positive side, the increased voluntary and/or mandatory use of automatic fire suppression systems is permitting increases in heights and areas of buildings utilizing wood constructions as well as an increased use of wood products in other elements of the buildings. Automatic fire suppression systems have an excellent record of performance in buildings where they have traditionally been installed. The wood industry recommends their continued use in such buildings. However, high costs and technical deficiencies can render presently available automatic fire suppression systems impractical and unnecessary for certain occupancies. The development and use of technically suitable and economically feasible automatic suppression systems deserve support.

#### ACHIEVING A UNIFORM BUILDING CODE

Realizing that building code requirements can and do differ from jurisdiction to jurisdiction even among model codes, there has been much discussion for years concerning the development of a federal building code in an attempt to create nationwide uniformity. In the 1960's, the National Commission on Urban Problems under the Chairmanship of Senator Paul Douglas reviewed building code requirements throughout the United States. Although agreeing in principle with the model code system, the Commission's preliminary report related to code inconsistencies in local jurisdictions as well as a general lack of uniformity in metropolitan areas.

In 1966, the Advisory Commission on Intergovernmental Relations published its findings on building code uniformity or the lack of it. They suggested an 11-point program leading to uniformity of building codes through action by a national commission and state enforcing agencies. Shortly thereafter, the National Bureau of Standards assisted in establishing the National Conference of States on Building Codes and Standards. The evolution of NCSBCS into a viable national organization representing the fifty states has had and is having a major impact in such fields

as mobile home and modular housing regulation as well as the implementation of energy conservation programs throughout the nation. Much of this work is being conducted with federal grants and has a tendency to unite the various states through the enactment of programs resulting in uniformity and the common good for all citizens. NFPA has been heavily involved with the work of NCSBCS and participates on several committees in this organization.

As stated previously, much of the effort of the NFPA building code staff is involved with the model building code process. The present system of developing building codes under model code agencies is viewed as preferable to promulgation of a national building code by the federal government. This is supported on the grounds that the existing model code system offers a more democratic procedure involving a broader latitude of knowledge and experience and a more efficient system for regular review and modernization. NFPA encourages state legislation that will require state agencies and local jurisdictions to adopt a current edition of one of the model building codes where a statewide code is considered necessary. The need for code modernization and uniformity both within and among states is recognized as well as the fact that the police power for enforcing codes lies with the state. Historically, the power of enforcement has been delegated to local jurisdictions, and this practice should be continued.

Furthermore, it is recognized that the federal government is obligated in developing specifications and standards to cover construction financed entirely or in part by federal funds, or construction for which mortgages are insured by the federal government. Continuation of the Commodity Standards Procedures of the Department of Commerce for industry groups, which voluntarily choose to take advantage of such procedures, is recommended.

The development of specifications and standards to cover construction financed entirely from private funds or covering construction financed by state or local govern-

ments should not be the responsibility of the federal government. Building codes and other construction ordinances intended to regulate such construction should be developed by the jurisdiction concerned and should be outside the province of the federal government.

#### CONCLUSION

NFPA is currently and will continue to be heavily involved in a number of activities intended to secure the broadest possible acceptance of untreated and treated wood products. A number of these include

involvement with studies concerning the rate of heat release of construction assemblies, smoke toxicity, a proposed fire flow formula that would restrict construction according to the availability of water to combat a fire, equitable fractional fire endurance ratings where such ratings are deemed necessary, and energy conservation in building requirements. In the meantime, the building code staff of NFPA will continue to represent the best interests of the wood products industry in the expansion of markets for the use of wood products as well as the protection of current markets that are presently enjoyed.