

Chapter 5

Underwriting Property Insurance

Underwriting loss exposures related to the fire cause of loss has been a significant responsibility of property underwriters, and underwriting such loss exposures dominates the discussion in this chapter. This chapter also discusses underwriting other property loss exposures; the consequences of property loss; and underwriting crime, ocean marine, and inland marine loss exposures. Finally, the chapter examines the loss control function performed by many insurance organizations. Loss control is directly related to property insurance underwriting and performs a customer service function.

UNDERWRITING FIRE INSURANCE

Fire is generally the most significant cause of loss for most forms of property insurance involving buildings and personal property. Although most fire losses are partial losses and loss frequency is typically low for any given insured, fire can still produce a total loss.

Fire underwriting typically focuses on physical hazards, although moral and morale (or attitudinal) hazards are also important. Property underwriters analyze the following four areas, traditionally referred to with the acronym “COPE”:

1. Construction
2. Occupancy
3. Protection
4. External loss exposures

Construction

The first area that property underwriters analyze is construction. The construction of the covered building, or the building that contains insured property, is a primary underwriting consideration. The building's construction characteristics relate directly to its ability to withstand damage by fire and other causes of loss and to protect its contents.

The insurance application and an inspection report provided by the producer or loss control representative identify a building's construction. Advisory organizations publish building construction information for buildings subject to specific rating. If an underwriter needs additional information, independent inspection companies can be hired to conduct a property survey.

Construction Classes

Insurance Services Office (ISO) divides building construction into six classes.¹ Construction classes reflect the construction materials' ability to resist fire damage. Ratings consider (1) the vertical load-bearing members that ultimately support the building's weight and (2) the materials used in the roof and floors, which spread the weight across the vertical load-bearing members. The six ISO construction classes, in descending order, are as follows:

Class 6—Fire-resistive construction

Class 5—Modified fire-resistive construction

Class 4—Masonry noncombustible construction

Class 3—Noncombustible construction

Class 2—Joisted masonry construction

Class 1—Frame construction

Fire-resistive construction

Construction that incorporates load-bearing members and that has a fire-resistance rating of at least two hours.

ISO Class 6 is fire-resistive construction. In a building of **fire-resistive construction**, the structure's load-bearing members can withstand fire damage for *at least two hours*. The construction materials are either (1) noncombustible with a fire-resistance rating of at least two hours or (2) protected by a noncombustible covering such as concrete, masonry, plaster, or gypsum that provides at least a two-hour fire-resistance rating. Fire-resistive ratings are assigned to construction material based on laboratory evaluations in test furnaces. Evaluations certify that materials can withstand fire damage under certain weight loads regardless of whether materials can be repaired or reused. The performance of such materials can differ significantly under actual fire conditions.

The load-bearing components of a fire-resistive building do not buckle or collapse as readily as those of other construction types. This is a higher standard than requiring that the structure not burn, because even though a structure does not burn, the fire's intense heat can still cause a building's load-bearing components to collapse. Fire-resistive construction is superior to other types of building construction, but it is not "fireproof."

Modified fire-resistive construction

Construction that has load-bearing walls and columns of masonry or reinforced concrete construction and that has a fire-resistance rating of one to two hours.

From an underwriting standpoint, fire resistive is the best type of construction to prevent damage from most causes of loss. In addition to resisting fire damage, the strength of a fire-resistive structure gives it superior resistance to causes of loss such as windstorm, earthquake, and flood.

Masonry noncombustible construction

Masonry construction or construction that includes exterior walls of fire-resistive construction with a fire-resistance rating of not less than one hour.

ISO Class 5 is modified fire-resistive construction. A building of **modified fire-resistive construction** has bearing walls (walls supporting the weight of the upper floors and roof) and columns of masonry or reinforced concrete construction. It is similar to fire-resistive construction, except that the material's fire-resistance rating is *one to two hours*.

ISO Class 4 is masonry noncombustible construction. In **masonry noncombustible construction**, the building's exterior walls are made of self-supporting masonry materials, and the floors and roof are made of metal or

some other noncombustible or slow-burning material. The exterior walls are made of construction with a fire-resistive rating of not less than one hour.

A typical masonry noncombustible building has a masonry nonbearing wall surface, a concrete floor, a metal deck roof, and an unprotected metal frame. Low initial cost and low maintenance have made this type of construction extremely popular.

ISO Class 3 is noncombustible construction. A building of noncombustible construction has exterior walls, roof, and floor constructed of and supported by metal or other noncombustible materials such as gypsum. Although these buildings are noncombustible, they are not fire resistive. The buildings' unprotected steel structural supports twist and bend when subjected to the heat of a typical fire (see Exhibit 5-1). If this type of building is filled with combustible contents, structural failure is extremely likely in a serious fire.

EXHIBIT 5-1

Light Noncombustible Building After Fire



Photo by Kim Holston.

Even though these structures are constructed of noncombustible material and do not provide fuel for a fire, their susceptibility to damage makes them only marginally safer from a fire underwriting perspective than joisted masonry or frame construction (described next).

ISO Class 2 is joisted masonry construction. **Joisted masonry construction** has load-bearing exterior walls made of brick, adobe, concrete, gypsum, stone, tile, or similar materials, with floors and roofs of combustible materials. Joisted masonry construction is also called ordinary construction, ordinary masonry, brick, wood joisted, and brick joisted. Exterior walls can be fire-resistive construction with a fire-resistance rating of at least one hour or can be masonry construction. The walls are self-supporting, meaning that they

Joisted masonry construction Construction that has load-bearing exterior walls made of brick, adobe, concrete, gypsum, stone, tile, or similar materials; that has floors and roofs of combustible materials; and that has a fire-resistance rating of at least one hour.