ISO Construction Classifications

Understanding the construction classifications outlined by the Insurance Services Office is important for builders, appraisers, underwriters and just about anybody invested in the life of a building. The factors that go directly into understanding the ISO’s construction classifications are the materials used in the construction of the building, and whether or not they’re combustible.

In this Quick Guide, we will explore the fundamentals of the Insurance Service Office’s construction classifications. The guide will provide a detailed explanation of the origins of the classifications and the elements making up each classification. For easy reference, the Quick Guide has been divided into multiple sections as listed below.

SECTION 1 - History of the ISO
SECTION 2 - Overview of the ISO Construction Classifications
SECTION 3 - Breaking down the ISO Construction Classifications
SECTION 4 – Why ISO Construction Classifications matter
SECTION 1

History of the Insurance Services Office
History of the Insurance Services Office

A starting point

Formed in 1971, the Insurance Services Office jumped into the business as an advisory and rating organization dealing with property/casualty insurance. The ISO specialized in statistical and actuarial services, developing insurance programs and assisting insurance companies in meeting State regulatory requirements.

Joining forces

In 2009, the ISO became a subsidiary of New Jersey-based Verisk Analytics, a data analytics and risk assessment firm.
What’s the role of the ISO?

According to Bloomberg, the Insurance Services Office “offers information and analytics for insurance risks.” The media company broke it down into specifics in its ISO company profile, noting “the company provides statistical, actuarial, underwriting and claims information, policy language, fraud-identification tools and various other technical services.”

A global reach

Although the Insurance Services Office is located in the United States, it serves customers across the world. The ISO does work for companies in the United Kingdom, China, Israel, Germany and India, to name a few.
SECTION 2
Overview of the ISO Construction Classifications

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Overview of the ISO Construction Classifications

Determining a construction classification

Understanding ISO construction classifications is important for builders, property owners or appraisers. The classifications correlate with the combustibility of a building, meaning how well a structure will do in a fire. There are two important factors in determining a construction classification:

**Building elements:** The materials used in the construction of the structural frame, exterior and interior bearing walls, exterior and interior nonbearing walls and partitions, floor construction (including supporting beams and joists) and roof construction (supporting beams and joists)

**Fire-resistance rating:** In construction classifications, a fire-resistance rating is usually measured in time. It’s the amount of time a passive fire protection system can withstand a standard fire-resistance test. Not all of the construction classifications carry fire-resistance ratings.
Overview of the ISO Construction Classifications

Developing an ISO checklist

Now that we know the two factors that are used to determine ISO construction classifications, let’s take it a step further. To properly classify a building according to ISO construction classes, you’ll need to be able to answer the following questions:

1. What materials make up the frame?
2. What materials make up the interior and exterior bearing walls?
3. What materials make up the floor construction?
4. What materials make up the roof construction?
5. What is the fire rating of these materials?

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SECTION 3
Breaking down ISO Construction Classifications
Breaking down the ISO Construction Classifications

Introducing the ISO classifications

Frame

Joisted Masonry

Noncombustible

Masonry Noncombustible

Modified Fire Resistive

Fire Resistive

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Breaking down the ISO Construction Classifications

Frame

Summary:
Buildings with interior walls, exterior walls, floors and roofs made with combustible materials (usually wood). However, some exterior walls may be constructed with noncombustible or slow-burning materials. The use of masonry veneer and metal clad do not change the construction.

Fire-resistance rating: None
Advantages: Easy to erect, economical
Examples: Housing, with no more than 3-4 stories
**Breaking down the ISO Construction Classifications**

**Joisted Masonry**

**Summary:**
Buildings in which combustible materials like wood are combined with other materials such as brick or stone veneer, wood iron clad or stucco. Concrete block, masonry or reinforced masonry load bearing exterior walls also fit into this classification. Typically these buildings are constructed with wood frames, roofs and floors.

**Fire-resistance rating:** Not less than 1 hour  
**Advantages:** Harder to ignite, more structural stability  
**Examples:** housing, small office or retail spaces with no more than 3-4 stories
Breaking down the ISO Construction Classifications

Noncombustible

Summary:
Buildings with exterior walls, floors, roofs and supports made up of slow-burning and noncombustible materials. Steel frames are common in this classification, and mixed in with masonry fill, brick veneer, metal sheathing and an exterior insulation finishing system. In multi-story noncombustible construction, floors are concrete on a steel frame with a steel deck.

Fire-resistance rating: None
Advantages: Easy to erect, economical
Examples: Warehouses and manufacturing facilities
Breaking down the ISO Construction Classifications

Masonry Noncombustible

**Summary:**
Buildings in which the exterior walls are constructed of masonry materials, not less than four inches thick. The floor and roof are constructed with metal or other noncombustible materials. Generally, concrete block, reinforced masonry or tilt-up concrete walls are combined with heavy steel framing.

**Fire-resistance rating:** Not less than 1 hour

**Advantages:** Uses materials that don’t readily burn

**Examples:** Shopping centers, strip malls, office buildings, warehouses and schools
Breaking down the ISO Construction Classifications

Modified or Semi-Fire Resistive

Summary:
Buildings with exterior walls, floors and roofs made up of masonry materials that are no less than four inches thick. Exterior nonbearing walls and panels may be slow-burning or combustible. Protected steel, concrete or heavy masonry walls and floors are common in this classification.

Fire-resistance rating: Less than 2 hours, but greater than 1 hour

Advantages: Allows greater height and area

Examples: High and mid-rise office buildings and condos
Breaking down the ISO Construction Classifications

Fire Resistive

**Summary:**
This classification requires walls of masonry materials, including reinforced concrete, not less than four inches thick. Hollow masonry is a possibility, but not less than eight inches thick. Exterior bearing walls must be made of noncombustible materials, but exterior nonbearing walls may be built from combustible materials.

**Fire-resistance rating:** Not less than 2 hours
**Advantages:** Uses load-bearing materials that resist fire
**Examples:** High-rise office buildings, condos or parking garages
SECTION 4
Why ISO Construction Classifications matter
Why ISO Construction Classifications matter

Establishing Replacement Costs

Replacement cost is the amount required to replace an entire property in like size, kind, and quality. ISO Construction Classifications help provide an understanding of the materials used to construct the building – a major factor in calculating replacement cost.

Determining Susceptibility to Risk

While ISO construction classifications are based on the combustibility of the structure, the factors that go into determining the classification can be used by catastrophe modeling programs to analyze how likely a building is to sustain losses due to fire, windstorm, or seismic risk events.

Example: A tale of two Construction Classes

A building with the construction classification “frame” is likely to have a lower replacement cost than a similar building with the construction classification “joisted masonry.” However, while it may be less expensive to build, the Framed construction might be more susceptible to risk than Joisted Masonry.
AssetWorks Can Help

Don’t let ISO construction classifications get you down! For decades, AssetWorks has been helping organizations, large and small, in the property appraisal process. Our team of experts can help gather the critical building attributes needed for everything from determining ISO construction class to catastrophe modeling. Our software solutions help bridge the gap between the collection and management of building characteristics and valuation data.

If you have questions about maintaining detailed building records for risk management purposes, one of our experts would be happy to help. To get the conversation started, simply contact AssetWorks today at 1-877-809-0600 or info@assetworks.com.