

## Space Use Category

**Table 4-1. Space use categories**

<b>Classrooms (100 series)</b>	General purpose classrooms, lecture halls, recitation rooms, seminar rooms, and other spaces used primarily for scheduled nonlaboratory instruction.
<b>Laboratory Facilities (200 series)</b>	Rooms or spaces characterized by special purpose equipment or a specific configuration that ties instructional or research activities to a particular discipline or a closely related group of disciplines.
<b>Office Facilities (300 series)</b>	Offices and conference rooms specifically assigned to each of the various academic, administrative, and service functions.
<b>Study Facilities (400 series)</b>	Study rooms, stacks, open-stack reading rooms, and library processing spaces.
<b>Special Use Facilities (500 series)</b>	Military training rooms, athletic and physical education spaces, media production rooms, clinics, demonstration areas, field buildings, animal quarters, greenhouses, and other room categories that are sufficiently specialized in their primary activity or function to merit a unique room code.
<b>General Use Facilities (600 series)</b>	Assembly rooms, exhibition space, food facilities, lounges, merchandising facilities, recreational facilities, meeting rooms, child and adult care rooms, and other facilities that are characterized by a broader availability to faculty, students, staff, or the public than are special use areas.
<b>Support Facilities (700 series)</b>	Computing facilities, shops, central storage areas, vehicle storage areas, and central service space that provide centralized support for the activities of a campus.
<b>Health Care Facilities (800 series)</b>	Facilities used to provide patient care (human and animal).
<b>Residential Facilities (900 series)</b>	Housing facilities for students, faculty, staff, and visitors to the campus.
<b>Unclassified Facilities (000 series)</b>	Inactive or unfinished areas, or areas in the process of conversion.
<b>Circulation Area (WWW series)</b>	Nonassignable spaces required for physical access to floors or subdivisions of space within the building, whether directly bounded by partitions or not.
<b>Building Service Area (XXX series)</b>	Nonassignable spaces used to support its cleaning and public hygiene functions.
<b>Mechanical Area (YYY series)</b>	Nonassignable spaces of a building designed to house mechanical equipment and utility services, and shaft areas.

## Space Use Category

### 4.2.1 Primary Use

Space use codes are assigned based on **primary** use. Most rooms and spaces in an institution fall readily into one space use code. In some cases, however, individual rooms or groups of rooms have multiple uses (e.g., office and art studio). If a space inventory system uses only a single code to indicate the use, the coding should be based on the primary use of the space. Thus, a space that is a laboratory by appearance or design but is currently being used primarily as a classroom is coded as a classroom rather than as a laboratory. As another example, a space that is used as both an Office (310) and a Research/Nonclass Laboratory (250) equipped and used principally for research, but which also includes some space used occasionally as an office, should be coded as a laboratory facility.

It is recommended that primary use be evaluated in terms of **time**, the human activity element that focuses on **use** rather than space. In the event that time of use is not readily available, the amount of space allocated to each activity or function should be the determining factor. Where multiple room use codes are accommodated in a system, prorations may be used. Where multiple space use codes can be accommodated in the database, a system to prorate space may be used (see below). Primary use or proration also applies to the assignment of spaces to organizational units, functional categories, or academic discipline, as discussed below.

#### Reference:

Postsecondary Education Facilities Inventory and Classification Manual (FICM): 2006 Edition. Pg 38-39

## Construction Codes

ISO Fire Construction Code	Description	Abbreviation	Description
0	Unknown	UNK	Unknown
1	Frame	Frame	Buildings characterized by combustible construction. the exterior walls are constructed of wood or steel studs, covered with wood siding, shingles, stucco, brick or stone veneer.
2	Joisted Masonry	JM	Buildings with exterior walls constructed of masonry material such as brick, concrete block, stone or similar materials. The floors and roof are wholly or partially constructed of wood or other combustible materials.
3	Non-Combustible	NC	Buildings with structural steel framing members. Walls and roofs are usually constructed of metal panels or sandwich panels. Pre-engineered steel frame buildings are included in this class.
4	Masonry Non-Combustible	MNC	Buildings with exterior walls constructed of masonry materials such as brick, concrete block, stone or similar materials. The floors and roof are noncombustible materials supported by structural steel frame. The structural steel frame is not fire proofed
5	Modified Fire Resistive	MFR	Buildings with structural steel frame that is fireproofed with masonry, concrete, plaster, gypsum or other noncombustible material. The walls are noncombustible materials and the floors and roof are reinforced concrete or concrete on fireproofed steel de
6	Fire Resistive	FR	Buildings with reinforced concrete frame. Walls are noncombustible materials and floors and roof are reinforced concrete or concrete on fireproofed steel deck. Fire resistive rating is minimum 2 hours.
7	Heavy Timber Joisted Masonry	HT JM	Floor thickness at least 2 inches, supported by beams of at least 6 inches.

# ISO Types 1-6: Construction Code Descriptions

## ISO 1 – Frame (combustible walls and/or roof)

### Typically RMS Class 1

Wood frame walls, floors, and roof deck

Brick Veneer, wood/hardiplank siding, stucco cladding

#### Wood frame roof with wood decking and typical roof covers below:

- \*Shingles
- \*Clay/concrete tiles
- \*BUR (built up roof with gravel or modified bitumen)
- \*Single-ply membrane
- \*Less Likely metal sheathing covering
- \*May be gable, hip, flat or combination of geometries

#### Roof anchorage

- \*Toe nailed
- \*Clips
- \*Single Wraps
- \*Double Wraps

**Examples:** Primarily Habitational, max 3-4 stories

## ISO 2 – Joisted Masonry (JM) (noncombustible masonry walls with wood frame roof)

### Typically RMS Class 2

Concrete block, masonry, or reinforced masonry load bearing exterior walls

\*if reported as CB walls only, verify if wood frame (ISO 2) or steel/noncombustible frame roof (ISO 4)

\*verify if wood frame walls (Frame ISO 1) or wood framing in roof only (JM ISO 2)

Stucco, brick veneer, painted CB, or EIFS exterior cladding

Floors in multi-story buildings are wood framed/wood deck or can be concrete on wood or steel deck.

#### Wood frame roof with wood decking and typical roof covers below:

- \*Shingles
- \*Clay/concrete tiles
- \*BUR (built up roof with gravel or modified bitumen)
- \*Single-ply membrane
- \*Less Likely metal sheathing covering
- \*May be gable, hip, flat or combination of geometries

#### Roof anchorage

- \*Toe nailed
- \*Clips
- \*Single Wraps
- \*Double Wraps

**Examples:** Primarily Habitational, small office/retail, max 3-4 stories

If “tunnel form” construction meaning there is a concrete deck above the top floor ceiling with wood frame roof over the top concrete deck, this will react to wind forces much the same way as typical JM construction. It is slightly better from a fire rating standpoint and from a wind standpoint in terms of potential damage if the wood frame is damaged. Please provide comments in the construction details of SOV for this type of construction.

**A subset of JM Construction is Heavy Timber Joisted Masonry JM Class II, also known at ISO 7.** This is Joisted Masonry constructed buildings where the following additional conditions exist: Where the entire roof has a minimum thickness of 2 inches with Roof Supported by timber and having a minimum dimension of 6 inches, or where the entire roof assembly is documented to have a UL wind uplift classification of 90 or equivalent.

## ISO 3 - Non Combustible (NC)

### Class NC-I, Typically RMS Class Class 4A, 4B, or 4C

Minimal combustible materials in the building construction

Typical steel frame walls with masonry in-fill, brick veneer, metal sheathing, EIFS. Steel framing is load bearing portion of the building frame. AMBS (all metal building system) pre-engineered construction is common. Light steel frame ISO 3 smaller geometry with no interior building support columns. Heavier ISO 3 larger geometries with internal support columns and heavier roof framing. If multi-story, floors are commonly concrete on steel frame on steel deck.

#### Roof deck and roof cover systems:

- \*Steel deck

## ISO Types 1-6: Construction Code Descriptions

- BUR (built up roof with gravel or modified bitumen)
- Single-ply membrane
- Lesser extent foam/spray applied roof which is typically applied over an existing roof cover – this is not considered a roof cover replacement.
- Usually flat/low sloped

### \*Metal

- Lap seam metal panel (exposed fasteners)
- Standing seam metal panel (concealed fasteners)
- May or may not be coated/sealed
- May be gable, hip, flat or combination of geometries

### Roof anchorage:

- \*Light steel frame ISO 3 may still incorporate clips, single wraps, or double wraps
- \*Because of heavier construction with no wood framing in roof, roof to wall anchorage is typically an engineered bolted and/or **structural** roof connection. Toe nailing, Clips, single wraps, double wraps do not apply.

**Examples:** warehouses, manufacturing facilities

### ***A subset of NC Construction is Superior Non-Combustible Construction NC-II, also known as ISO 8.***

This shall apply to Non-combustible constructed buildings where the following additional conditions exist: Where the entire roof is constructed of 2 inches of masonry on steel supports; or, where the entire roof is constructed of 22 gauge metal (or heavier) on steel supports; or, where the entire roof assembly is documented to have a wind uplift classification of 90 or equivalent. This is heavy noncombustible construction.

## ISO 4 - Masonry Non Combustible (MNC)

### **Class MNC-I, Typically RMS Class 2, 2C1, or 3C**

Concrete block, reinforced masonry, tilt-up concrete load bearing walls – may be combined with some heavy steel framing. Floors commonly concrete on steel deck for multi-story buildings. Roof construction is typically heavy steel frames.

### Roof deck and roof cover systems:

- \*Steel deck with insulation boards (commonly called insulated steel deck roofing system)
  - BUR (built up roof with gravel or modified bitumen)
  - Single ply membrane
  - Lesser extent foam/spray applied roof which is typically applied over an existing roof cover – this is not considered a roof cover replacement.
  - Flat/low sloped
- \*Lightweight insulating concrete or gypsum board on steel deck
  - BUR (built up roof with gravel or modified bitumen)
  - Single ply membrane
  - Lesser extent foam/spray applied roof which is typically applied over an existing roof cover – this is not considered a roof cover replacement.
  - Flat/slow slope
  - Sometimes possibly heavier concrete on steel deck or precast concrete panels for roof frame may still be considered ISO 4 if exposed steel is not fire proofed to obtain fire ratings needed to be ISO 5.
- \*Steel frame with metal sheathing roof cover
  - Lap seam metal panel (exposed fasteners)
  - Standing seam metal panel (concealed fasteners)
  - May or may not be coated/sealed
  - May be gable, hip, flat or combination of geometries

### Roof anchorage

- \*Because of heavier construction with no wood framing in roof, roof to wall anchorage is typically an engineered bolted and/or **structural** roof connection. Toe nailing, Clips, single wraps, double wraps do not apply.

Walls have minimum 1 hour fire rating

**Examples:** shopping centers, strip centers, office buildings, warehouses, schools

***A subset of MNC Construction is Superior Masonry Non-Combustible Construction MNC-II, also known as ISO 9.*** This shall apply to Masonry Non-combustible constructed buildings where the following

## ISO Types 1-6: Construction Code Descriptions

additional conditions exist: Where the entire roof is constructed of 2 inches of masonry on steel supports; or, where the entire roof is constructed of 22 gauge metal (or heavier) on steel supports; or, where the entire roof assembly is documented to have wind uplift classification of 90 or equivalent.

### ISO 5 - Modified or Semi Fire Resistive (MFR or SFR)

#### Typically RMS Class 4A or 4C

Protected steel and/or concrete or heavy masonry walls and floors.

Semi wind resistive

#### Roof deck and roof cover systems

- \*Heavy steel frame with concrete poured on steel deck
  - BUR (built up roof with gravel or modified bitumen)
  - Single ply membrane
  - Lesser extent foam/spray applied roof which is typically applied over an existing roof cover – this is not considered a roof cover replacement.
  - Flat/low sloped
  - Exposed steel must be fireproofed to achieve required fire rating
- \*Precast concrete (PC) panels
  - BUR (built up roof with gravel or modified bitumen)
  - Single ply membrane
  - Lesser extent foam/spray applied roof which is typically applied over an existing roof cover – this is not considered a roof cover replacement.
  - Flat/low sloped
- \*Steel deck with insulation boards, gypsum, lightweight insulating concrete
  - BUR (built up roof with gravel or modified bitumen)
  - Single ply membrane
  - Lesser extent foam/spray applied roof which is typically applied over an existing roof cover – this is not considered a roof cover replacement.
  - Flat/low sloped
  - Exposed steel must be fire proofed to achieve required fire rating.

#### Roof anchorage

- \*Because of heavier construction with no wood framing in roof, roof to wall anchorage is typically an engineered bolted and/or **structural** roof connection. Toe nailing, Clips, single wraps, double wraps do not apply.

Overall construction of fire resistive materials with fire rating less than 2 hours but greater than 1 hour. Exterior walls, floors and roof deck typically of masonry materials not less than 4 in thick but less thick than required for the 2 hour minimum rating for fire resistive construction.

**Examples:** high and mid-rise office buildings and condos

### ISO 6 - Fire Resistive (FR)

#### Typically RMS Codes 3A, 3B, or 3C

Reinforced Concrete Construction building frame and floors and/or very well protected steel and concrete

Floors are minimum 4" cast in place concrete, precast concrete or concrete on protected steel

Wind resistive

Precast construction - brought in from elsewhere / Cast in Place is poured on site

#### Roof deck and roof cover systems

- \*Cast in place reinforced concrete or precast concrete
  - BUR (built up roof with gravel or modified bitumen)
  - Single ply membrane
  - Lesser extent foam/spray applied roof which is typically applied over an existing roof cover – this is not considered a roof cover replacement
  - Flat/low sloped
  - In some cases, structural concrete poured on steel deck, but exposed steel must be fireproofed to achieve required minimum 2 hour fire rating
  - If exposed concrete, such as on parking deck, leave roof cover as Unknown on SOV. This is typically an exposed or sealed concrete roof deck and the ISO 5 or 6 construction and occupancy will account for the roof deck/cover type. Can provide construction comment on SOV.

#### Roof anchorage

## ISO Types 1-6: Construction Code Descriptions

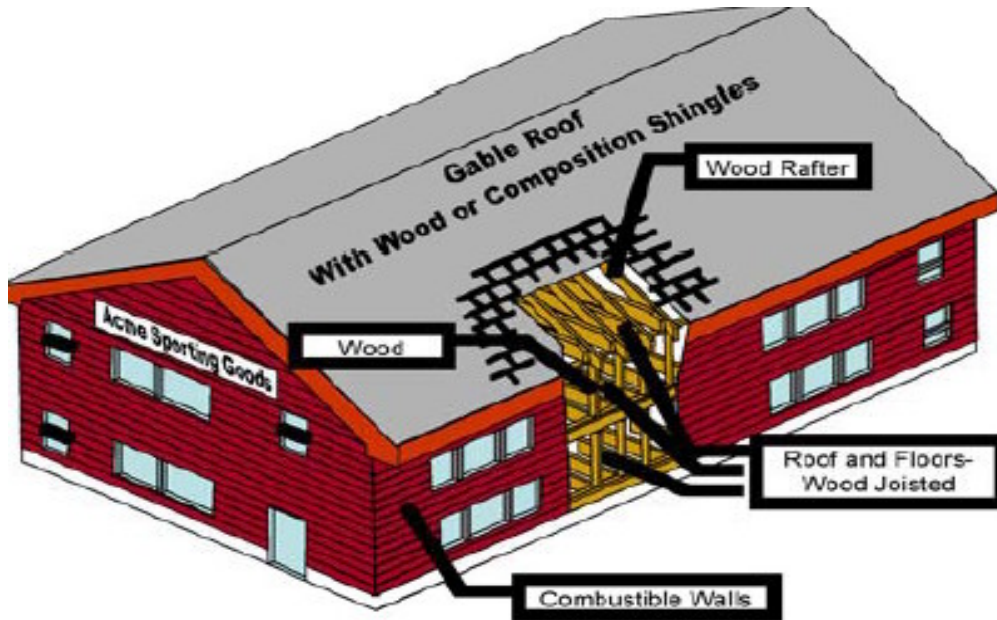
\*Because of heavier construction with no wood framing in roof, roof to wall anchorage is typically an engineered bolted and/or **structural** roof connection. Toe nailing, Clips, single wraps, double wraps do not apply.

Fire rating not less than 2 hours for walls, floors, and roofs. This typically requires walls of masonry materials minimum of 4 in thick, hollow masonry minimum 8 in thick, floors and roofs minimum of 4 in thick reinforced concrete, and any structural steel load bearing components with minimum of 2 hour fire rating,

**Examples:** high-rise office buildings and condos, parking garages

# ISO Types 1-6: Construction Code Descriptions

## ISO 1 – Frame (combustible walls or roof)

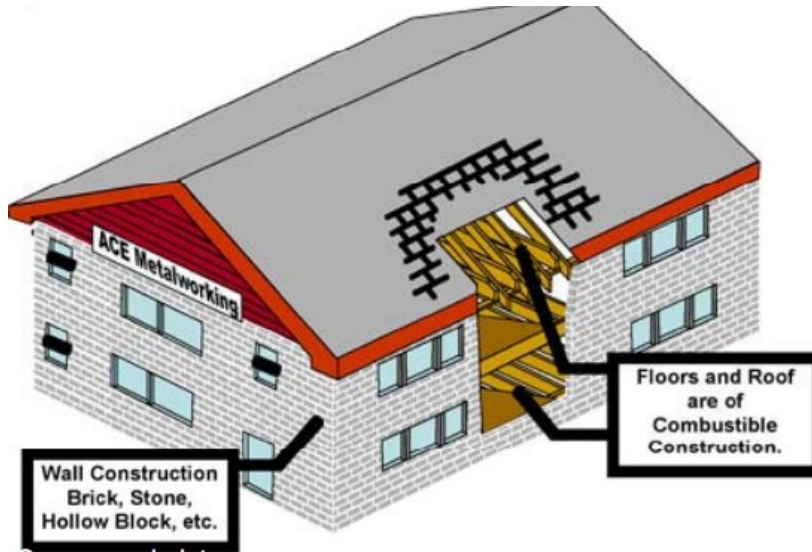


Source: [www.isopropertyresources.com](http://www.isopropertyresources.com)



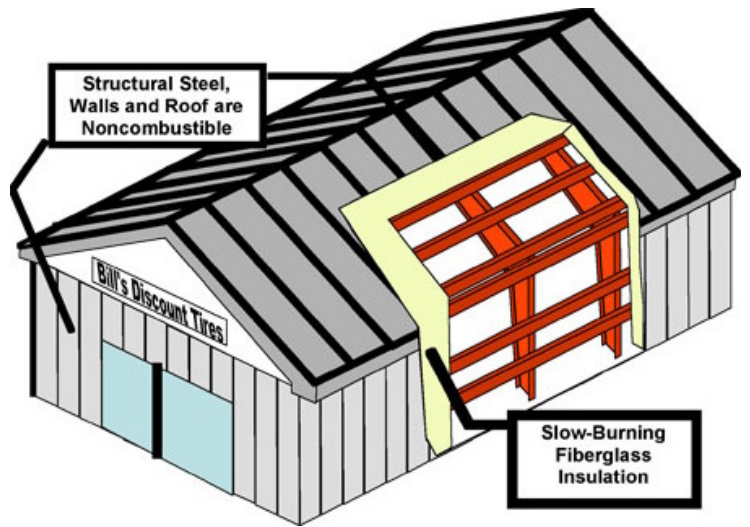
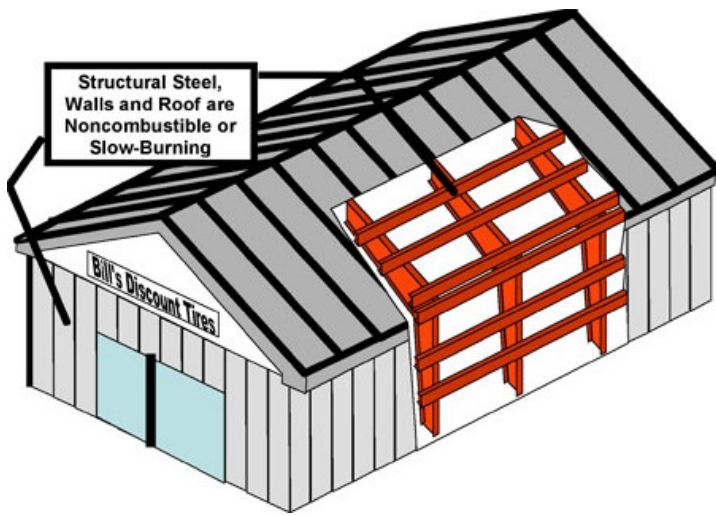
# ISO Types 1-6: Construction Code Descriptions

## ISO 2 – Joisted Masonry (JM) (noncombustible)



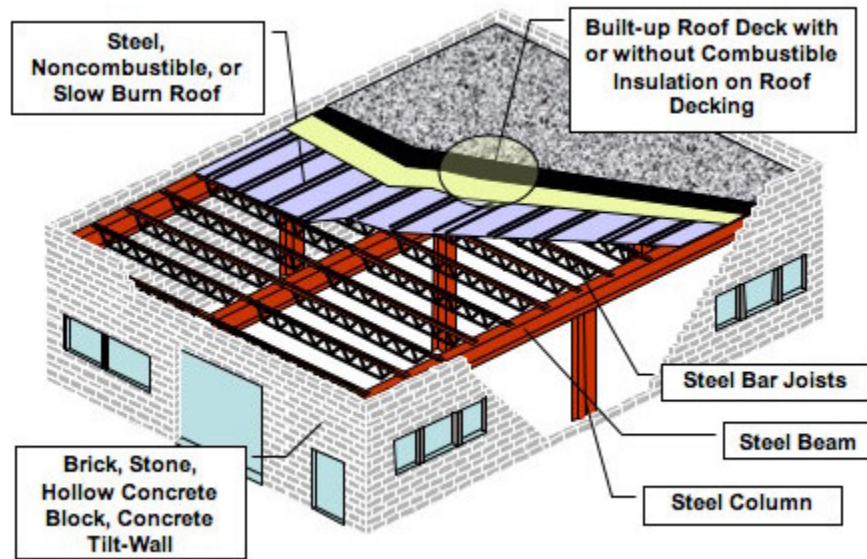
# ISO Types 1-6: Construction Code Descriptions

## ISO 3 - Non Combustible (NC)



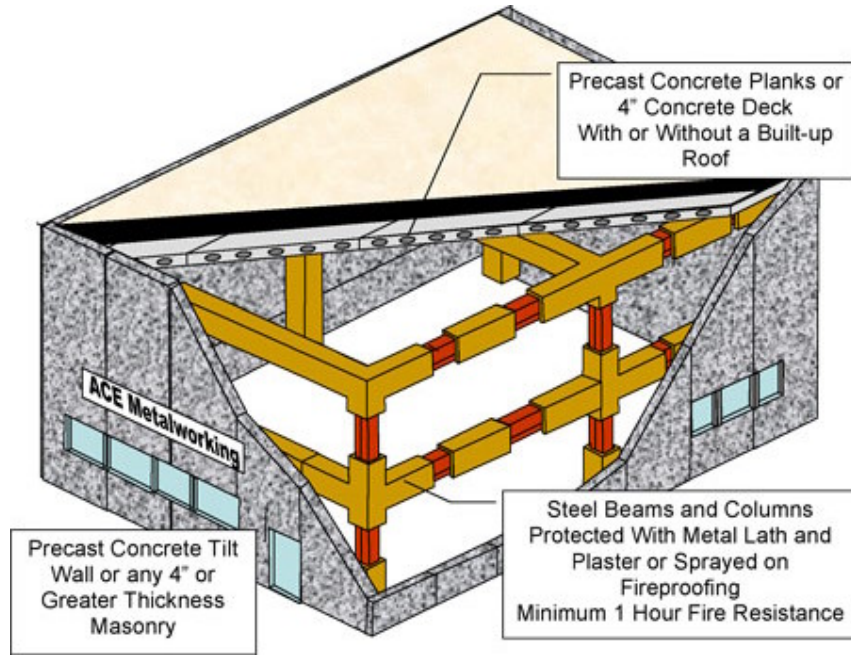
# ISO Types 1-6: Construction Code Descriptions

## ISO 4 - Masonry Non Combustible (MNC)



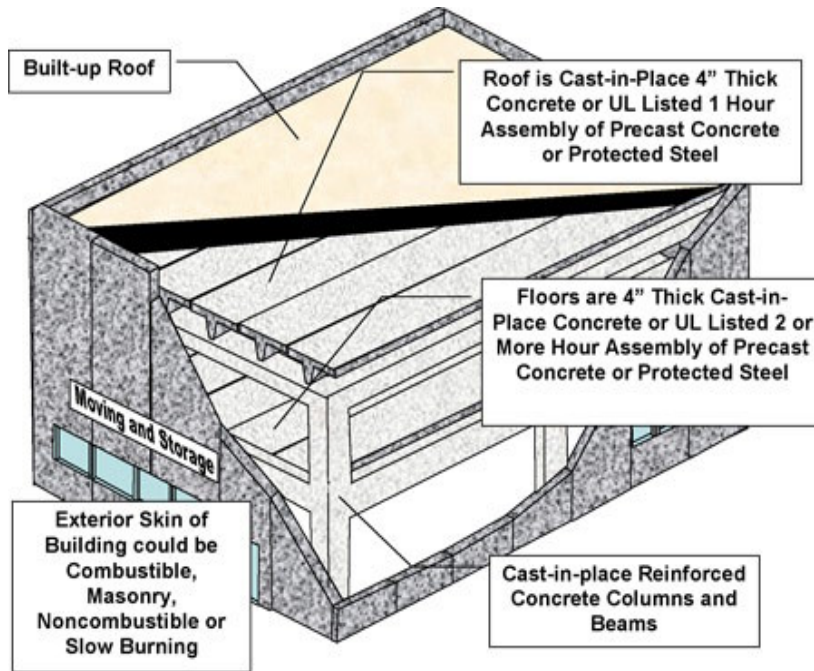
# ISO Types 1-6: Construction Code Descriptions

## ISO 5 - Modified or Semi Fire Resistant (MFR or SFR)



# ISO Types 1-6: Construction Code Descriptions

## ISO 6 - Fire Resistive (FR)



## RMS Construction Class

RMS Class Code	Description
0	Unknown
1	Wood
2	Masonry
2B	Unreinforced Masonry (URM)
2C	Structural Masonry
2C1	Reinforced Masonry Shear Wall
3	Reinforced Concrete
3A	Cast-in-place Reinforced Concrete With Concrete Roof Deck
3A1	Reinforced Concrete Moment Resisting Frame (RCMRF)
3A2	RC MRF with Shear Walls
3A3	RC MRF with URM Infill
3A4	RC Shear Wall
3A5	Waffle or Flat Slab
3A6	Steel and Reinforced Composite Frame
3B	Precast Reinforced Concrete wConcrete Roof Deck
3B4	Tilt-Up
3B6	Lift Slab
3C	Reinforced Concrete wWood or Metal Roof Deck
4	Steel
4A	Steel Frame wConcrete Roof Deck
4A1	Steel MRF
4A4	Centrally Braced Steel Frame
4A5	Eccentrically Braced Steel Frame
4B	Light Metal Frame
4C	Steel Frame wWood or Metal Roof Deck

## RMS Secondary Characteristics

RMS Secondary Characteristics for Earthquake	Numerical Code	Description
<b>1 Shape Configuration</b>	<b>0</b> Unknown	Configurations can be regular (square, rectangular, circular) or irregular (L- shape, T- shape, triangular). Irregular buildings tend to twist in addition to shaking laterally. Damage often occurs at the corners between different wings of a building.
	<b>1</b> Regular	
	<b>2</b> Irregular	
<b>2 Cladding Type</b>	<b>0</b> Unknown	Even though they have little or no structural value, the cladding elements, such as an exterior wall of unreinforced masonry on a wood frame home, can cause significant loss if they sustain serious damage.
	<b>1</b> No cladding	
	<b>2</b> Glass or precast concrete	
	<b>3</b> Unreinforced masonry	
<b>3 Retrofit</b>	<b>0</b> Unknown	If there have been known retrofits for this building to bring it inline with earthquake code at the time, enter the year these retrofits were made.
	Yes - Enter Year	
	<b>2</b> No	
<b>4 Seal of Approval</b>	<b>0</b> Unknown	Factor that accounts for the level of professional engineering attention given to design of the structure (Engineered building/foundation and soil testing etc.)
	<b>1</b> No	
	<b>2</b> Yes	