



HUNTER
CONTINUOUS INSULATION

Hunter Xci Tech Topic #106

International Building Code Classification

**Question: How does the IBC classify different types of buildings?
What are the wall requirements in those different classifications?**

Answer: The International Building Code classifies structures “erected or to be erected, altered or extended in height into five construction types.” They also classify these structures by deferring to material test performances. All but Type IV are broken down into subsets (Type A, B) or fire resistance ratings within the type. These subsets are further broken down by intended occupancy, height and building area.

TYPE I-A: Fire Resistive Non-combustible (Commonly found in high-rise buildings and Group I occupancies).

- 3 Hr. Exterior Walls* +
- 3 Hr. Structural Frame
- 2 Hr. Floor/Ceiling Assembly
- 1½ Hr. Roof Protection
- Allowable Building Unlimited Height†

TYPE I-B: Fire Resistive Non-Combustible (Commonly found in mid-rise office & Group R buildings).

- 2 Hr. Exterior Walls* +
- 2 Hr. Structural Frame
- 2 Hr. Ceiling/Floor Separation
- 1 Hr. Ceiling/Roof Assembly
- Allowable Building Height 160 ft†

TYPE II-A: Protected Non-Combustible (Commonly found in newer school buildings).

- 1 Hr. Exterior Walls +
- 1 Hr. Structural Frame
- 1 Hr. Floor/Ceiling/Roof Protection
- Allowable Building Height 65 ft†

TYPE II-B: Unprotected Non-Combustible (Most common type of non-combustible construction used in commercial buildings).

- Building constructed of non-combustible materials but these materials have no fire resistance.
- Allowable Building Height 55 ft†

TYPE III-A: Protected Combustible (Also known as “ordinary” construction with brick or block walls and a wooden roof or floor assembly which is 1 hour fire protected).

- 2 Hr. Exterior Walls*+
- 1 Hr. Structural Frame
- 1 Hr. Floor/Ceiling/Roof Protection
- Allowable Building Height 65 ft†

TYPE III-B: Unprotected Combustible (Also known as “ordinary” construction; has brick or block walls with a wooden roof or floor assembly which is not protected against fire. These buildings are frequently found in “warehouse” districts of older cities.)

- 2 Hr. Exterior Walls*+
- No fire resistance for structural frame, floors, ceilings, or roofs.
- Allowable Building Height 55 ft†



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TYPE IV: Heavy Timber (also known as “mill” construction; to qualify all wooden members must have a minimum nominal dimension of 8 inches.)

- 2 Hr. Exterior Walls**
- 1 Hr. Structural Frame or Heavy Timber
- Heavy Timber Floor/Ceiling/Roof Assemblies
- Allowable Building Height 65 ft†

TYPE V-A: Protected Wood Frame (Commonly used in the construction of newer apartment buildings; there is no exposed wood visible.)

- 1 Hr. Exterior Walls#
- 1 Hr. Structural Frame
- 1 Hr. Floor/Ceiling/Roof
- Allowable Building Height 50 ft†

TYPE V-B: Unprotected Wood Frame (Examples of Type V-N construction are single family homes and garages. They often have exposed wood so there is no fire resistance.)

- Allowable Building Height 40 ft†

- * Note exceptions in the building code for fire resistance ratings of exterior walls and opening protection.
- + Exterior Walls of buildings of Type I, II, III or IV Construction of any height shall comply with IBC Sections 2603.5.5 and comply with the acceptance criteria of NFPA 285.
- † Building height is based on 2012 IBC Section 503.
- # Exterior Walls of Building Type V Construction shall comply with IBC Sections 2603.3 and 2603.4

Table 601 of the IBC – Fire-resistance Rating Requirements for Building Elements (hours)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A ^e	B	A ^e	B	HT	A ^e	B
Structural frame ^a	3 ^b	2 ^b	1	0	1	0	HT	1	0
Bearing walls									
Exterior ^f	3	2	1	0	2	2	2	1	0
Interior	3 ^b	2 ^b	1	0	1	0	1/HT	1	0
Nonbearing walls and partitions	See Table 602 of the IBC								
Exterior									
Nonbearing walls and partitions	0	0	0	0	0	0	See Section 602.4.6 of the IBC	0	0
Interior ^f									
Floor construction	2	2	1	0	1	0	HT	1	0
Including supporting beams and joists									
Roof construction	1½ ^c	1 ^{c, d}	1 ^{c, d}	0 ^{c, d}	1 ^{c, d}	0 ^{c, d}	HT	1 ^{c, d}	0
Including supporting beams and joists									

For SI: 1 foot=304.8 mm.

- a. The structural frame shall be considered to be the columns and the girders, beams, trusses and spandrels having direct connections to the columns and bracing members designed to carry gravity loads. The members of floor or roof panels which have no connection to the columns shall be considered secondary members and not part of the structural frame.
- b. Roof supports: Fire-resistance ratings of structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- c. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- d. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
- e. An approved automatic sprinkler system in accordance with Section 903.3.1.1 of the IBC shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 of the IBC or an allowable height increase in accordance with Section 504.2 of the IBC. The 1-hour substitution for the fire-resistance of exterior walls shall not be permitted.
- f. Not less than the fire-resistance rating required by other sections of this code.
- g. Not less than the fire-resistance rating based on fire separation distance (see Table 602 of the IBC).