

Annex E Types of Construction

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

The five different types of construction can be summarized briefly as follows (see also Table E.2):

Type I is a Fire-Resistive construction type. All structural elements and most interior elements are required to be noncombustible. Interior, nonbearing partitions are permitted to be 1 or 2 hour rated. For nearly all occupancy types, Type I construction can be of unlimited height.

Type II construction has 3 categories: Fire-Resistive, One-Hour Rated, and Non-Rated. The number of stories permitted for multifamily dwellings varies from two for

Non-Rated and four for One-Hour Rated to 12 for Fire-Resistive construction.

Type III construction has two categories: One-Hour Rated and Non-Rated. Both categories require the structural framework and exterior walls to be of noncombustible material. One-Hour Rated construction requires all interior partitions to be one-hour rated. Non-Rated construction allows nonbearing interior partitions to be of non-rated construction. The maximum permitted number of stories for multifamily dwellings and other structures is two for Non-Rated and four for One-Hour Rated.

Type IV is a single construction category that provides for heavy timber construction. Both the structural frame-

Table E.1 Fire Resistance Ratings for Type I Through Type V Construction (hr)

	Type I		Type II			Type III		Type IV	Type V	
	442	332	222	111	000	211	200	2HH	111	000
Exterior Bearing Walls^a										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0 ^b	2	2	2	1	0 ^b
Supporting one floor only	4	3	2	1	0 ^b	2	2	2	1	0 ^b
Supporting a roof only	4	3	1	1	0 ^b	2	2	2	1	0 ^b
Interior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	2	1	0
Supporting one floor only	3	2	2	1	0	1	0	1	1	0
Supporting roofs only	3	2	1	1	0	1	0	1	1	0
Columns										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H	1	0
Supporting one floor only	3	2	2	1	0	1	0	H	1	0
Supporting roofs only	3	2	1	1	0	1	0	H	1	0
Beams, Girders, Trusses, and Arches										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H	1	0
Supporting one floor only	2	2	2	1	0	1	0	H	1	0
Supporting roofs only	2	2	1	1	0	1	0	H	1	0
Floor-Ceiling Assemblies	2	2	2	1	0	1	0	H	1	0
Roof-Ceiling Assemblies	2	1½	1	1	0	1	0	H	1	0
Interior Nonbearing Walls	0	0	0	0	0	0	0	0	0	0
Exterior Nonbearing Walls^c	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b

Source: Table 7.2.1.1 from *NFPA 5000[®], Building Construction and Safety Code[®]*, 2006 edition.

H: Heavy timber members.

^aSee 7.3.2.1 in *NFPA 5000*.

^bSee Section 7.3 in *NFPA 5000*.

^cSee 7.2.3.2.12, 7.2.4.2.3, and 7.2.5.6.8 in *NFPA 5000*.

Table E.2 Maximum Number of Stories for Types V, IV, and III Construction

Construction Type	Maximum Number of Stories Permitted
V Non-Rated	2
V Non-Rated, Sprinklered	3
V One-Hour Rated	3
V One-Hour Rated, Sprinklered	4
IV Heavy Timber	4
IV Heavy Timber, Sprinklered	5
III Non-Rated	2
III Non-Rated, Sprinklered	3
III One-Hour Rated	4
III One-Hour Rated, Sprinklered	5

work and the exterior walls are required to be noncombustible except that wood members of certain minimum sizes are allowed. This construction type is seldom used for multifamily dwellings but, if used, would be permitted to be four stories high.

Type V construction has two categories: One-Hour Rated and Non-Rated. One-Hour Rated construction re-

quires a minimum of one-hour rated construction throughout the building. Non-rated construction allows non-rated interior partitions with certain restrictions. The maximum permitted number of stories for multifamily dwellings and other structures is 2 for Non-Rated and 3 for One-Hour Rated.

The system of designating types of construction also includes a specific breakdown of the types of construction through the use of arabic numbers. These arabic numbers follow the roman numeral notation where identifying a type of construction [for example, Type I(442), Type II(111), Type III(200)] and indicate the fire resistance rating requirements for certain structural elements as follows:

- (1) First arabic number — exterior bearing walls
- (2) Second arabic number — columns, beams, girders, trusses and arches, supporting bearing walls, columns, or loads from more than one floor
- (3) Third arabic number — floor construction

Table E.3 provides a comparison of the types of construction for various model building codes. [5000: A.7.2.1.1]

Table E.3 Cross-Reference of Building Construction Types

<i>NFPA 5000</i>	I(442)	I(332)	II(222)	II(111)	II(000)	III(211)	III(200)	IV(2HH)	V(111)	V(000)
UBC	—	I FR	II FR	II 1 hr	II N	III 1 hr	III N	IV HT	V 1 hr	V N
B/NBC	1A	1B	2A	2B	2C	3A	3B	4	5A	5B
SBC	I	II	—	IV 1 hr	IV UNP	V 1 hr	V UNP	III	VI 1 hr	VI UNP
IBC	—	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB

Source: Table 7.2.1.1 from *NFPA 5000*[®], *Building Construction and Safety Code*[®], 2006 edition.

UBC: *Uniform Building Code*.

FR: Fire rated.

N: Nonsprinklered.

HT: Heavy timber.

B/NBC: *National Building Code*.

SBC: *Standard Building Code*.

UNP: Unprotected.

IBC: *International Building Code*.