

603.1.1 Ducts. The use of nonmetallic ducts shall be permitted when installed in accordance with the limitations of the *International Mechanical Code*.

603.1.2 Piping. The use of combustible piping materials shall be permitted when installed in accordance with the limitations of the *International Mechanical Code* or the

Massachusetts Fuel Gas and Plumbing Code (248 CMR), when applicable.

603.1.3 Electrical. The use of electrical wiring methods with combustible insulation, tubing, raceways and related components shall be permitted when installed in accordance with the limitations of the *Massachusetts Electrical Code (527 CMR 12)*.

**TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)**

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A ^d	B	A ^d	B	HT	A ^d	B
Structural frame ^a Including columns, girders, trusses	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	2	2	1/HT	1	0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior ^e	0	0	0	0	0	0	See 780 CMR 602.4.6	0	0
Floor construction Including supporting beams and joists	2	2	1	0	1	0	HT	1	0
Roof construction Including supporting beams and joists	1½ ^c	1 ^c	1 ^c	0 ^c	1 ^c	0	HT	1 ^c	0

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 a part of the structural frame.
- b. Roof supports: Fire-resistance ratings of structural frame and bearing walls are permitted to be reduced by one hour where supporting a roof only.
- c. 1. Except in Factory-Industrial (F-1), Hazardous (H), Mercantile (M) and Moderate-Hazard Storage (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.
2. In all occupancies, heavy timber shall be allowed where a one-hour or less fire-resistance rating is required.
3. In Type I and II construction, fire-retardant-treated wood shall be allowed in buildings including girders and trusses as part of the roof construction when the building is:
 - i. Two stories or less in height;
 - ii. Type II construction over two stories; or
 - iii. Type I construction over two stories and the vertical distance from the upper floor to the roof is 20 feet or more.
- d. An approved automatic sprinkler system in accordance with 780 CMR 903.3.1.1 shall be allowed to be substituted for one-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of 780 CMR or used for an allowable area increase in accordance with 780 CMR 506.3 or an allowable height increase in accordance with 780 CMR 504.2. The one-hour substitution for the fire resistance of exterior walls shall not be permitted.
- e. Not less than the fire-resistance rating required by other sections of 780 CMR.
- f. Not less than the fire-resistance rating based on fire separation distance (see Table 602).