

CHAPTER 6

TYPES OF CONSTRUCTION

780 CMR 601.0 GENERAL

601.1 Scope: The provisions 780 CMR 6 shall control the classification of all buildings as to type of construction.

601.2 Application of other laws: The provisions of 780 CMR 6 shall not be deemed to nullify any provisions of the *zoning* law or any other statute of the jurisdiction pertaining to the location or type of construction of buildings, except as is specifically required by the provisions of 780 CMR.

601.3 Hospitals: Pursuant to M.G.L. c. 111, § 51, hospitals other than college and school infirmaries shall be constructed of at least Type 1B construction.

780 CMR 602.0 CONSTRUCTION CLASSIFICATION

602.1 General: All buildings and structures erected or to be erected, altered or extended in *height* or *area* shall be classified in one of the five construction types defined in Table 602 and 780 CMR 603.0 through 606.0.

602.2 False designation: A building shall not be designated as a given type of construction unless it conforms to the minimum requirements for that type.

602.3 Minimum requirements: Where a type of construction is used that is superior to the minimum herein required for any specified use, *height* and *area* of the building, nothing in 780 CMR shall be construed to require full compliance with the specifications for the higher type; but the designated construction classification of the building shall be that of the lesser type, unless all of the requirements for the higher type are fulfilled.

602.4 Noncombustibility requirements: Where a structure or a part of a structure is required to be constructed of noncombustible construction, the use of combustible elements shall be permitted subject to the limitations of 780 CMR 602.0 without altering the construction classification.

602.4.1 Roofs, floors and walls: Combustible elements in roofs, floors and walls are permitted to be used for the following components:

1. Interior finish and trim materials as regulated by 780 CMR 803.0, 804.0 and 806.0.
2. Light-transmitting *plastics* as permitted by 780 CMR 26.
3. Fireretardant-treated wood complying with 780 CMR 2310.0 as permitted by Table 602.
4. Mastics and caulking materials applied to provide flexible seals between components of exterior wall construction.
5. Roof covering materials as regulated by 780 CMR 15.
6. Thermal and sound insulation as permitted by 780 CMR 707.4.722.0. 1509.0. 2309.4 and 2603.0.
7. Exterior veneer and trim as permitted by 780 CMR 1406.0.
8. Nailing or furring strips as permitted by 780 CMR 804.0.
9. Windows and doors as permitted by 780 CMR 706.4.
10. Heavy timber as permitted by 780 CMR 1006.3.1, 714.2 and 714.4.
11. Partitions as permitted by 780 CMR 603.2.
12. Roof structures as permitted by 780 CMR 1510.0.
13. Platforms as permitted by 780 CMR 412.4.1.

602.4.2 Ducts: The use of nonmetallic ducts is permitted in accordance with the mechanical code listed in *Appendix A*.

602.4.3 Piping: The use of combustible piping materials is permitted in accordance with the mechanical and plumbing codes listed in *Appendix A*.

602.4.4 Electrical: The use of insulated electrical wiring and related components is permitted in accordance with 527 CMR listed in *Appendix A*.

Table 602
FIRE RESISTANCE RATINGS OF STRUCTURE ELEMENTS^k

Structure element Note a		Type of construction 780 CMR 602.0									
		Noncombustible					Noncombustible/Combustible			Combustible	
		Type 1 780 CMR 603.0		Type 2 780 CMR 603.0			Type 3 780 CMR 604.0		Type 4 780 CMR 605.0	Type 5 780 CMR 606.0	
		Protected	Protected	Unprotected	Protected	Unprotected	Heavy timber Note c	Protected	Unprotected		
1A	1B	2A	2B	2C	3A	3B	4	5A	5B		
1	Exterior walls	4	3	2	1	0	2	2	2	1	0
		← Not less than the rating based on fire separation distance (see 780 CMR 705.2) →									
	Nonloadbearing	← Not less than the rating based on fire separation distance (see 780 CMR 705.2) →									
2	Fire walls and party walls (780 CMR 707.0)	4	3	2	2	2	2	2	2	2	2
		← Not less than the fireresistance rating required by Table 707.1 →									
	Fire enclosure of exits (780 CMR 1014.11, 709.0 and Note b)	2	2	2	2	2	2	2	2	2	2
	Shafts (other than exits) & elevator hoistway (780 CMR 709, 710.0 & Note b)	2	2	2	2	2	2	2	2	1	1
	Mixed use & fire area separations (780 CMR 313.0)	← Not less than the fireresistance rating required by Table 313.1.2 →									
3	Fire separation assemblies (780 CMR 709.0)	1	1	1	1	1					
	Other Separation assemblies (Note i)	← Note d →					1	1	1	1	1
	Exit access corridors (Note g)	← Not less than the fireresistance rating required by 780 CMR 1011.4 →									
		← Note d →									
4	Fire partitions (780 CMR 711.0)	1	1	1	1	0					
	Tenant spaces separations (Note f)	← Note d →					1	0	1	1	0
5	Dwelling unit separations (780 CMR 711.0, 713.0 & Notes f & j)	1	1	1	1	1					
		← Note d →					1	1	1	1	1
6	Smoke barriers (780CMR 712.0 & Note g)	1	1	1	1	1	1	1	1	1	1
7	Other nonloadbearing partitions	0	0	0	0	0					
		← Note d →					0	0	0	0	0
8	Interior load-bearing walls, loadbearing partitions, columns, girders, trusses (other than roof trusses) & framing (780 CMR 715.0)								See 780 CMR 605.0		
	Supporting more than one floor	4	3	2	1	0	1	0		1	0
	Supporting one floor only or a roof only	3	2	1½	1	0	1	0	See 780 CMR 605.0	1	0
9	Structural members supporting wall (780 CMR 715.0 & Note g)	3	2	1½	1	0	1	0	1	1	0
		← Not less than fireresistance rating of wall supported →									
10	Floor construction including beams (780 CMR 713.0 & Note h)	3	2	1½	1	0	1	0	See 780 CMR 605.0, Note c	1	0
11	Roof construction, including beams, trusses and framing, arches & roof deck (780 CMR 714.0 & Notes e, i)								See 780 CMR 605.0, Note c		
	15' or less in height to lowest member	2	1½	1	1	0	1	0		1	0
		← Note d →									
	More than 15' but less than 20' in height to lowest member	1	1	1	0	0			See 780 CMR 605.0	1	0
		← Note d →					0	0			
	20' or more in	0	0	0	0	0	0	0	See	0	0

height to lowest member	←Note d →		780 CMR 605.0	
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THE MASSACHUSETTS STATE BUILDING CODE

Note a. For fire-resistance rating requirements for structural membranes and assemblies which support other fire-resistance rated members or assemblies, see 780 CMR 715.1.

Note b. For reductions in the required fire-resistance rating of exit and shaft enclosures, see 780 CMR 1014.11 and 710.3

Note c. For substitution of other structural materials for timber in Type 4 construction, see 780 CMR 2304.2.

Note d. For fire retardant-treated wood permitted in roof construction and nonloadbearing walls where the required fire-resistance rating is one hour or less, see 780 CMR 603.2 and 2310.0.

Note e. For permitted uses of heavy timber in roof construction in buildings of Types 1 and 2 construction, see 780 CMR 714.4.

Note f. For reductions in required fire-resistance ratings of tenant separations and dwelling unit separations, see 780 CMR 1011.4 and 1011.4.1.

Note g. For exceptions to the required fire-resistance rating of construction supporting exit access corridor walls, tenant separation walls in covered mall buildings, and smoke barriers, see 780 CMR 711.4 and 712.2.

Note h. For buildings having habitable or occupiable stories or basements below grade, see 780 CMR 1006.3.1.

Note i. Not less than the rating required by 780 CMR.

Note j. For Use Group R-3, see 780 CMR 310.5.

Note k. Fire-resistance ratings are expressed in hours.

Note l. 1 foot = 304.8 mm.

780 CMR 603.0 TYPES 1 AND 2 CONSTRUCTION

603.1 General: Buildings and structures of Types 1 and 2 construction are those in which the walls, partitions, structure elements, floors, ceilings, roofs and *exits* are constructed of approved noncombustible materials. Each structure element shall not be less than the required fire-resistance rating specified in Table 602, except as otherwise specifically provided for in 780 CMR. Buildings of Types 1 and 2 construction shall be further classified as Type 1A, 1B, 2A, 2B or 2C. Fire-retardant-treated wood shall only be used as specified in Table 602 and 780 CMR 2310.0.

603.2 Interior partitions: In buildings or structures of Types 1, 2A and 2B construction, partitions of a single thickness of wood or approved composite panels, and glass or other approved materials of similar combustible characteristics, are permitted to subdivide rooms or spaces into offices, entries or other similar compartments in all occupancies other than Use Groups I and R, provided that such partitions neither establish a *corridor* serving an occupant load of more than 30 in areas occupied by a single tenant nor exceed 5,000 square feet (465 m²) between *fire separation assemblies* or *fire walls*. The maximum allowable compartment size shall be increased to 7,500 square feet (700 m²) where subdivided with fire-retardant-treated wood that complies with 780 CMR 2310.0.

780 CMR 604.0 TYPE 3 CONSTRUCTION

604.1 General: Buildings and structures of Type 3 construction are those in which: the exterior walls are constructed of masonry or other approved

noncombustible materials; the interior structure elements, loadbearing walls, partitions, floors and roofs are constructed of any approved materials. Each structure element shall have not less than the required fire-resistance rating specified in Table 602, except as otherwise specifically provided for in 780 CMR. Buildings of Type 3 construction shall be further classified as Type 3A or 3B.

780 CMR 605.0 TYPE 4 CONSTRUCTION

605.1 General: Buildings and structures of Type 4 construction are those in which the exterior walls are constructed of approved noncombustible materials and the interior structural members are of solid or laminated wood without concealed spaces or the loadbearing walls, partitions, floors and roofs are constructed of any noncombustible materials permitted by 780 CMR. Each structure element shall have not less than the required fire-resistance rating specified in Table 602. The elements of Type 4 construction shall comply with the provisions of 780 CMR 2304.0.

780 CMR 606.0 TYPE 5 CONSTRUCTION

606.1 General: Buildings and structures of Type 5 construction are those in which the exterior walls, loadbearing walls, partitions floors and roofs are constructed of any approved materials. Each structure element shall have not less than the required fire-resistance rating specified in Table 602. Buildings of Type 5 construction shall be further classified as Type 5A or 5B.

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