



Boiling Hot Coffee 11/12/2009: Wall Combustibility
courtesy of the United States Fire Administration (USFA).
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The November 10, 2009 Coffee Break Training [Understanding Construction Types](#) set off a flurry of responses regarding wall combustibility.

In the printed table in the above document, there is a reference to the combustibility of bearing walls:

The following table summarizes just one element of the different construction types. The materials that make up the components of the structural frame, bearing walls or floors or ceilings generally must be noncombustible or may be combustible depending upon the construction type.

Wall Combustibility (Source: USFA)

Construction Type	Structural Frame	Bearing Walls	Floor/Ceiling Assemblies
..I	Noncombustible	Noncombustible	Noncombustible
..II	Noncombustible	Noncombustible	Noncombustible
..III	Combustible	Combustible	Combustible
..IV	Combustible	Combustible	Combustible
..V	Combustible	Combustible	Combustible

A number of readers pointed out that in Types III and IV construction, the building codes require exterior walls to be non-combustible.

Firstly, it's important to note that the table header says bearing walls, not exterior walls. Interior bearing walls in Types III and IV construction may be combustible. If non-combustible materials were required, the construction type would be upgraded to Type I or II.

Secondly, while the text of the building codes opens by stating Type III [or Type IV] construction type is that type of construction in which the exterior walls are non-combustible . . ., both types allow combustible fire-retardant treated wood in exterior wall assemblies having a two-hour fire resistance rating or less.

According to the codes, fire-retardant-treated wood is any wood product which, impregnated with by chemical with a pressure process or other means during manufacture, shall have, when tested in accordance with ATSM E 84, a listed flame spread index of 25 or less and show no evidence of progressive combustion when the test is continued for an additional 20-minute period. [Emphasis added.] While fire-retardant-treated wood may have limited combustibility, it still is combustible.

The building codes also allow combustible aggregate in gypsum and portland cement concrete mixtures approved for fire-resistance-rated construction, such as might be found in exterior walls.

It's important that one always perform thorough research, and not rely solely on snapshots or condensations from the code books.

One goal of Coffee Break Training is to get readers to perform research in their locally adopted codes. Evidently, this one succeeded.

Thanks to everyone for your feedback.