

## SECTION R322 FLOOD RESISTANT CONSTRUCTION (Residential Code Only)

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**Background.** 780 CMR Section R322.1 as revised in the ninth edition states that *“Buildings and structures constructed in whole or in part in flood hazard areas and coastal dunes, and substantial improvement and restoration of substantial damage of buildings and structures in those areas shall be designed and constructed in accordance with the provisions contained in this section. Buildings and structures located in more than one flood hazard area and coastal dunes shall comply with the most restrictive provisions. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24. See section R105.3.1.1 for substantial improvements and damage and see section R309 for garage requirements. Flood hazard areas include the following:*

1. AO zones, where shallow flooding exists without waves;
2. A zones; and
3. V zones, where high velocity wave action exists and wave heights are greater than or equal to three feet.

**Question.** When are lateral or horizontal additions to structures in floodplains required to be elevated?

**Answer.** This depends on many variables. Each situation is addressed individually below. This FAQ addresses lateral additions only. It does not address improvements that consist of additions and other work to the existing structure. In all cases, substantial improvements that consist of a combination of additions and other work to the existing structure require that the entire structure be elevated to the standards for the applicable flood zone.

**A1. A zones.** Lateral additions to pre-FIRM structures that are not substantial improvements are not required to be elevated. Lateral additions to post-FIRM structures that are not substantial improvements are required to be elevated to at least the elevation of the existing lowest floor.

**A2. A zones.** Lateral additions that are substantial improvements and are not structurally connected to pre-FIRM or post-FIRM structures require only the addition to be elevated to the standards of R322.2.

**A3. A zones.** Lateral additions that are substantial improvements and are structurally connected to pre-FIRM or post-FIRM structures require the existing structure and the addition to be elevated to the standards of R322.2.

**A4. V zones.** Lateral additions to existing structures in V zones that are not substantial improvements are required to meet the standards of R322.3 (6).

**A5. V zones.** Lateral additions that are substantial improvements require the existing structure and the addition to be elevated to the standards of R322.3. This is true for all lateral additions regardless of whether they are structurally connected to the existing structure. It applies to pre-

FIRM and post-FIRM structures. In situations where the base flood elevation has changed, the structure must comply with the new base flood elevation.

### **Justification.**

These FAQs are based on the guidance in FEMA P-758 Substantial Improvement/Substantial Damage Desk Reference. This document explains FEMA's interpretation of its minimum standards for communities that participate in the National Flood Insurance Program.

A4 (above) is included in MA amendments (R322.3.2 (6)).

### **Terms defined:**

**Not Structurally Connected.** A lateral addition is "non-structurally connected" if it involves no alteration of the load-bearing structure of the existing building, is attached to the building with minimal connection, and has a doorway as the only modification to the common. An addition that is below the BFE and "not structurally connected" is expected to sustain damage, but should not transfer loads to the building. Long-standing FEMA guidance refers to "modification of the common wall by no more than a doorway," which is one way to describe not structurally connected.

**Structurally Connected.** A lateral addition is "structurally connected" if it has its load-bearing structure connected to the load-bearing structure of the base building, which typically involves significant alternation of the common wall. An addition that is below the BFE and "structurally connected" would transfer flood loads imposed on it to the existing building.

**Pre-FIRM.** A building for which construction or substantial improvement occurred on or before December 31, 1974, or before the effective date of the community's initial FIRM.

**Post-FIRM.** A building for which construction or substantial improvement occurred after December 31, 1974, or after the date of the community's initial FIRM, whichever is later.

The reason that there are different standards for pre-FIRM and post-FIRM structures is that post-FIRM structures are generally elevated, compliant structures. Additions to those structures cannot be allowed if the addition causes the structure to become non-compliant with flood-resistant construction standards.