Lowest Floor Elevation

Purpose: *To describe the benefits of exceeding the National Flood Insurance Program (NFIP) minimum elevation requirements; to identify common construction practices that violate NFIP regulations, which result in significantly higher flood insurance premiums; and to discuss the NFIP Elevation Certificate.*

Why Is the Lowest Floor Elevation Important?

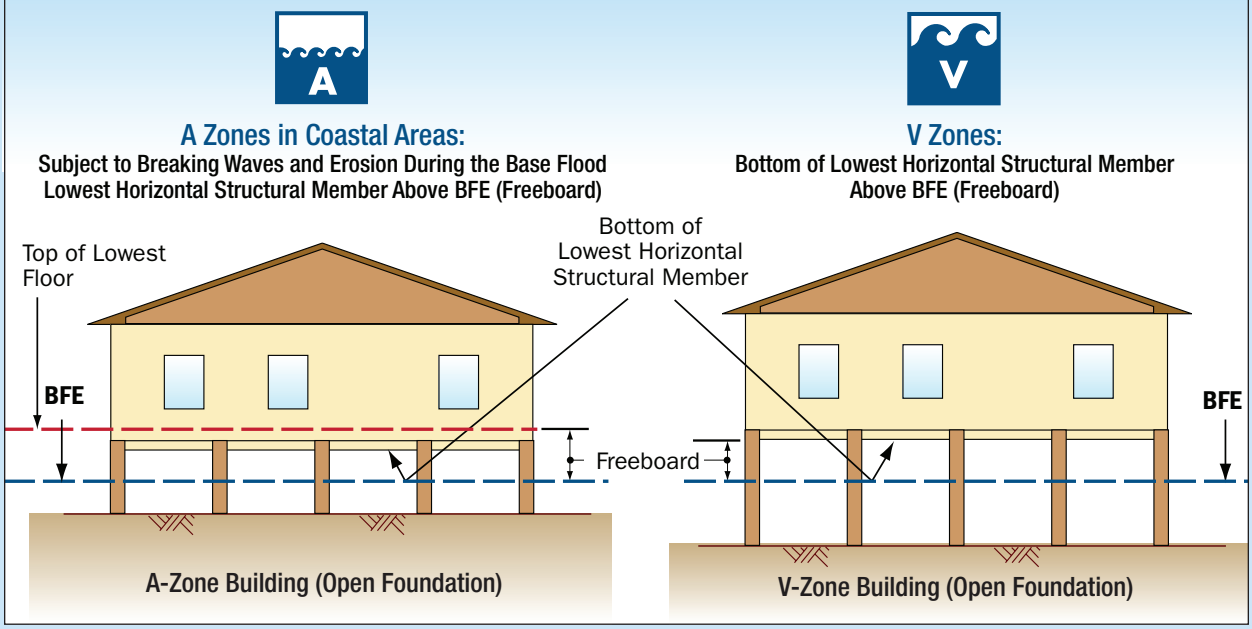
In riverine and other inland areas, experience has shown that if the lowest floors of buildings are not elevated above the flood level, these buildings and their contents will be damaged or destroyed. In coastal areas, wave action causes even more damage, often destroying enclosed building areas below the flood level (and any building areas above the flood level that depend on the lower area for structural support). Once waves rise above the lowest structural member in V Zones or Coastal A Zones, the elevated portion of the building is likely to be severely damaged or destroyed.

Recommended Lowest Floor Elevations*

Because of the additional hazard associated with wave action in V Zones and in Coastal A Zones, it is recommended that the elevation requirements of ASCE 24 (that exceed the minimum elevation requirements of the NFIP) be followed:

- The bottom of the lowest horizontal structural member of a building in the V Zone is elevated 1 foot or more above the Base Flood Elevation (BFE) (i.e., add freeboard).
- The lowest horizontal structural member of a building in the A Zone in coastal areas is elevated 1 foot or more above the BFE (i.e., add freeboard).

Recommended Practice:



* NFIP minimum elevation requirements: A Zones – elevate top of lowest floor to or above BFE; V Zones – elevate bottom of lowest horizontal structural member to or above BFE. In both V Zones and A Zones, many people have decided to elevate a full story to provide below-building parking, far exceeding the elevation requirement. See Fact Sheet No. 1.2 for more information about NFIP minimum requirements in A Zones and V Zones.

What Does FEMA Consider the Lowest Floor?

- The ***lowest floor*** means "the lowest floor of the lowest enclosed area, except for unfinished or flood-resistant enclosures used solely for parking of vehicles, building access, or storage."
- If the lowest enclosed area is used for anything other than **vehicle parking, building access, or storage**, the floor of that area is considered the lowest floor. Such prohibited use will violate NFIP requirements, resulting in drastically increased flood insurance premiums.
- Note that **any below-BFE finished areas**, including foyers, will violate NFIP requirements, may sustain unreimbursable flood damage, and make the building subject to increased flood insurance premiums.
- The floor of a basement (where "basement" means the floor is below grade on all sides) will **always** be the lowest floor, regardless of how the space is used. Basements are prohibited from being constructed in V Zones and A Zones unless the basement is elevated to or above the flood elevation or a basement exception has been granted.
- Walls of enclosed areas below the BFE must meet special requirements in coastal areas (see Fact Sheet No. 8.1, *Enclosures and Breakaway Walls*; TB 5, *Free-of-Obstruction Requirements* (2008); and TB 9, *Design and Construction Guidance for Breakaway Walls Below Elevated Coastal Buildings* (2008)). **However, it should be emphasized that in no instance are basements recommended in Coastal A Zones**.

Construction Practices and the Lowest Floor

Constructing the lowest floor at the correct elevation is critical. Failure to do so can result in a building being built below the BFE. As a result, construction work can be stopped, certificates of occupancy can be withheld, and correcting the problem can be expensive and time-consuming. Here are some helpful tips to consider when constructing the lowest floor:

- After the piles have been installed and the lowest horizontal structural supporting members have been installed, have a licensed professional engineer, architect, or surveyor validate the intended elevation of the lowest floor before the piles are cut off. This should be noted on the Elevation Certificate.
- Alternatively, after the piers or columns have been constructed, the intended elevation of the lowest floor should be validated during an inspection by the licensed professional and noted on the Elevation Certificate prior to installation of the lowest horizontal structural supporting members.

Do not modify building plans to create habitable space below the intended lowest floor. Doing so will put the building in violation of floodplain management ordinances and building code requirements. Also, this space cannot be converted to living space after the certificate of occupancy is awarded.

FEMA Elevation Certificate

The NFIP requires participating communities to adopt a floodplain management ordinance that specifies minimum requirements for reducing flood losses. Communities are required to **obtain and maintain a record of the lowest floor elevations for all new and substantially improved buildings**. The Elevation Certificate (see the following pages) allows the community to comply with this requirement and provides insurers the necessary information to determine flood insurance premiums.

A licensed surveyor, engineer, or architect must complete, seal, and submit the Elevation Certificate to the community code official. Not placing the lowest supporting horizontal members and the first floor of a building at the proper elevation in a coastal area can be extremely costly and difficult to correct. Following the carpenter's adage to measure twice, but cut once, the elevation of the building must be checked at several key stages of construction. Note that **multiple Elevation Certificates may need to be submitted for the same building**: a certificate may be required when the lowest floor level is set (and before additional vertical construction is carried out); a final certificate must be submitted **upon completion of all construction prior to issuance of the certificate of occupancy**.

The Elevation Certificate requires that the following information be certified and signed by the licensed professional (surveyor/engineer/architect) and signed by the building owner:

- Name and address of property owner.
- NFIP flood zone and elevation from a Digital Flood Insurance Rate Map (DFIRM) and/or Flood Insurance Study (FIS).
- GPS coordinates.
- Adjacent grade elevation.
- Lowest horizontal structural supporting member elevation.
- Elevation of certain floors in the building.
- Lowest elevation of utility equipment/machinery.

The Elevation Certificate provided in this fact sheet expires March 31, 2012. Updated versions can be found at http://www.fema.gov/business/nfip/forms.shtm. The Elevation Certificate and instructions are available on FEMA's website: http://www.fema.gov/pdf/nfip/elvcert.pdf.