

Lowest Floor Elevation



FEMA



Purpose: To discuss benefits of exceeding the National Flood Insurance Program (NFIP) minimum elevation requirements, to point out common construction practices that are violations of NFIP regulations and result in significantly higher flood insurance premiums, and to discuss the NFIP Elevation Certificate.

Why Is the Lowest Floor Elevation Important?

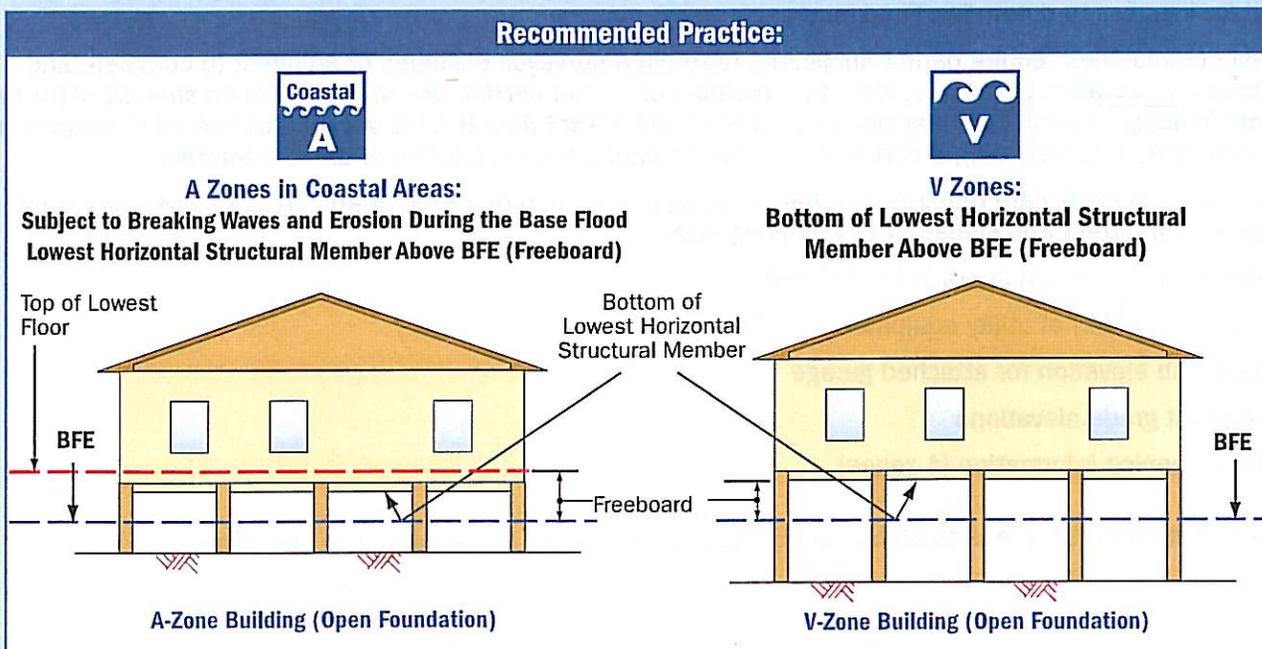
In inland areas, experience has shown that floods damage areas of buildings not elevated above the flood level and destroy contents of those areas. In coastal areas, wave action causes even more damage, often **destroying enclosed building areas below the flood level (and any building areas above the flood level that depend on the lower area for structural support). Once waves rise above the lowest structural member in a V zone or coastal A zone, 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 A zones in coastal areas, it is recommended that the minimum elevation requirements of the NFIP be exceeded in these areas:

- It is recommended that **the bottom of the lowest horizontal structural member of V-zone buildings be elevated 1 foot or more above the Base Flood Elevation (BFE), i.e., add freeboard.**
- It is recommended that **the lowest horizontal structural member of A-zone buildings in coastal areas be elevated 1 foot or more above the BFE (i.e., add freeboard).**

*NFIP minimum elevation requirements: A zone – elevate top of lowest floor to or above BFE; V zone – elevate bottom of lowest horizontal structural member to or above BFE. **In both V and A zones, many people have decided to elevate a full story for below-building parking, far exceeding the elevation requirement.** See Fact Sheet No. 2 for more information about NFIP minimum requirements in A 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 **parking of vehicles, building access, or storage**, the floor of that area is considered the lowest floor. This will violate NFIP requirements and drastically increase flood insurance premiums.
- Note that **any below-BFE finished areas**, including foyers, will violate NFIP requirements, sustain unreimbursable flood damage, and increase 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.
- Walls of enclosed areas below the BFE must meet special requirements in coastal areas (see Fact Sheet No. 27).

Construction Practices and the Lowest Floor

Setting the lowest floor at the correct elevation is critical. Failure to do so can result in a building being constructed below the BFE. As a result, work can be stopped, certificates of occupancy can be withheld, and correcting the problem can be expensive and time-consuming.

- After piles have been installed, the intended elevation of the lowest floor should be checked before the piles are cut off.
- Alternatively, after piers or columns have been constructed, the intended elevation of the lowest floor should be checked before the lowest horizontal structural supporting members are installed.
- After the lowest horizontal structural supporting members have been installed, the elevation should be checked again, before any further vertical construction is carried out.

Do not modify building plans to create habitable space below the intended lowest floor. Doing so will put the building in violation of flood regulations and building codes.

FEMA Elevation Certificate

The NFIP requires participating communities to adopt a floodplain management ordinance that specifies minimum requirements for reducing flood losses. One such requirement is that communities **obtain, and maintain a record of, the lowest floor elevations for all new and substantially improved buildings.**

The Elevation Certificate (see following pages) provides a way for a community to comply with this requirement and for insurers to determine flood insurance premiums.

Most communities require permit applicants to retain a surveyor, engineer, or architect to complete and submit the elevation certificate. 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 certificate *will* be required **upon completion of all construction.**

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

- elevations of certain floors in the building
- lowest elevation of utility equipment/machinery
- floor slab elevation for attached garage
- adjacent grade elevations
- flood opening information (A zones)

The Elevation Certificate is available on FEMA's web site: <http://www.fema.gov/nfip/elvinst.shtm>