

Chapter 184. Flood Damage Prevention

Article V. Provisions for Flood Hazard Reduction

§ 184-16. General standards.

In all areas of special flood hazard, compliance with the applicable requirements of the Uniform Construction Code (N.J.A.C. 5:23) and the following standards, whichever is more restrictive, is required:

- A. Anchoring.
 - (1) All new construction to be placed or substantially improved and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.
 - (2) All manufactured homes to be placed or substantially improved shall be anchored to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.
- B. Construction materials and methods.
 - (1) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
 - (2) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
- C. Utilities.
 - (1) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;
 - (2) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into floodwaters;
 - (3) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding; and
 - (4) For all new construction and substantial improvements the electrical, heating, ventilation, plumbing and air-conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
- D. Subdivision proposals.
 - (1) All subdivision proposals and other proposed new development shall be consistent with the need to minimize flood damage;
 - (2) All subdivision proposals and other proposed new development shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize

flood damage;

- (3) All subdivision proposals and other proposed new development shall have adequate drainage provided to reduce exposure to flood damage; and
 - (4) Base flood elevation data shall be provided for subdivision proposals and other proposed new development which contain at least 50 lots or five acres (whichever is less).
- E. Enclosure openings. All new construction and substantial improvements having fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria: A minimum of two openings in at least two exterior walls of each enclosed area, having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, or other covering or devices provided that they permit the automatic entry and exit of floodwaters.

§ 184-17. Specific standards.

In all areas of special flood hazard where base flood elevation data have been provided as set forth in § 184-7, Basis for establishing the areas of special flood hazard, or in § 184-14B, Use of other base flood and floodway data, the following standards are required:

A. Residential construction.

- (1) For Coastal A Zone construction, see § 184-19, Coastal high hazard area and Coastal A Zone.
- (2) New construction and substantial improvement of any residential structure located in an A or AE zone shall have the lowest floor, including basement together with the attendant utilities and sanitary facilities, elevated at or above the base flood elevation plus one foot or as required by ASCE/SEI 24-14, Table 2-1, whichever is more restrictive.
- (3) Require within any AO or AH zone on the municipality's FIRM that all new construction and substantial improvement of any residential structure shall have the lowest floor, including basement, together with the attendant utilities and sanitary facilities, elevated above the depth number specified in feet plus one foot above the highest adjacent grade (at least three feet if no depth number is specified). And, require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.

B. Nonresidential construction.

- (1) In an Area of Special Flood Hazard, all new construction and substantial improvement of any commercial, industrial or other nonresidential structure located in an A or AE zone (for Coastal A Zone construction see § 184-19, Coastal high hazard area and Coastal A Zone), shall have the lowest floor, including basement together with the attendant utilities and sanitary facilities, either:
 - (a) Elevated to or above the base flood elevation plus one foot or as required by ASCE/SEI 24-14, Table 2-1, whichever is more restrictive; and
 - (b) Require within any AO or AH zone on the municipality's DFIRM to elevate above the depth number specified in feet plus one foot above the highest adjacent grade (at least three feet if no depth number is specified). And, require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures; or
 - (c) Be floodproofed so that below the base flood level plus one foot or as required by ASCE/SEI 24-14, Table 6-1, whichever is more restrictive, the structure is watertight with

walls substantially impermeable to the passage of water;

- (d) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and
- (e) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of this subsection. Such certification shall be provided to the official as set forth in § **184-14C(2)(b)**.

C. Manufactured homes.

- (1) Manufactured homes shall be anchored in accordance with § **184-16A(2)**.
- (2) All manufactured homes to be placed or substantially improved within an area of special flood hazard shall:
 - (a) Be consistent with the need to minimize flood damage;
 - (b) Be constructed to minimize flood damage;
 - (c) Have adequate drainage provided to reduce exposure to flood damage; and
 - (d) Be elevated on a permanent foundation such that the top of the lowest floor is at or above the base flood elevation plus one foot or as required by ASCE/SEI 24-14, Table 2-1, whichever is more restrictive.

§ 184-18. Floodways.

Located within areas of special flood hazard established in § **184-7** are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

- A. Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless a technical evaluation demonstrates that encroachment shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- B. If § **184-18A** is satisfied, all new construction and substantial improvements must comply with Article **V**, Provisions for Flood Hazard Reduction.
- C. In all areas of special flood hazard in which base flood elevation data has been provided and no floodway has been designated, the accumulative effect of any proposed development, when combined with all other existing and anticipated development, shall not increase the water surface elevation of the base flood more than 0.2 of a foot at any point.

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Article V. Provisions for Flood Hazard Reduction

§ 184-19. Coastal high hazard area and Coastal A Zone.

Coastal high hazard areas (V or VE Zones) and Coastal A Zones are located within the areas of special flood hazard established in § 184-7. These areas have special flood hazards associated with high velocity waters from tidal surges and hurricane wave wash; therefore, the following provisions shall apply:

A. Location of structures.

- (1) All buildings or structures shall be located landward of the reach of the mean high tide.
- (2) The placement of manufactured homes shall be prohibited, except in an existing manufactured home park or subdivision.

B. Construction methods.

- (1) Elevation. All new construction and substantial improvements shall be elevated on piling or columns so that:
 - (a) The bottom of the lowest horizontal structural member of the lowest floor (excluding the piling or columns) is elevated to or above the base flood elevation plus one foot or as required by ASCE/SEI 24-14, Table 4-1, whichever is more restrictive; and
 - (b) With all space below the lowest floor's supporting member open so as not to impede the flow of water, except for breakaway walls as provided or in § 184-19B(4).
- (2) Structural support.
 - (a) All new construction and substantial improvements shall be securely anchored on piling or columns.
 - (b) The pile or column foundation and structure attached thereto shall be anchored to resist flotation, collapse or lateral movement due to the effects of wind and water loading values each of which shall have a 1% chance of being equaled or exceeded in any given year (100-year mean recurrence interval).
 - (c) Prohibit the use of fill for structural support of buildings within Zones V1-30, VE, V, and Coastal A on the community's FIRM.
- (3) Certification. A registered professional engineer or architect shall develop or review the structural design specifications and plans for the construction and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for compliance with the provisions of § 184-19B(1) and (2)(a) and (b).
- (4) Space below the lowest floor.

- (a) Any alteration, repair, reconstruction or improvement to a structure started after the enactment of this chapter shall not enclose the space below the lowest floor unless breakaway walls, open wood lattice-work or insect screening are used as provided for in this section.
 - (b) Breakaway walls, open wood lattice-work or insect screening shall be allowed below the base flood elevation provided that they are intended to collapse under wind and water loads without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Breakaway walls shall be designed for a safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design-safe loading of 20 pounds per square foot (either by design or when so required by local or state codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:
 - [1] Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and
 - [2] The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement or other structural damage due to the effects of wind and water load acting simultaneously on all building components (structural and nonstructural). Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable state or local building standards.
 - (c) If breakaway walls are utilized, such enclosed space shall be used solely for parking of vehicles, building access, or storage and not for human habitation.
 - (d) Prior to construction, plans for any breakaway wall must be submitted to the Construction Code Official or Building Subcode Official for approval.
- C. Sand dunes. Prohibit man-made alteration of sand dunes within Coastal A Zones, VE and V Zones on the community's DFIRM which would increase potential flood damage.