

International Building Code 2000

SECTION 1612

FLOOD LOADS

1612.1 General.

Within flood hazard areas as established in Section 1612.3, all new construction of buildings, structures and portions of buildings and structures, including substantial improvements and restoration of substantial damage to buildings and structures, shall be designed and constructed to resist the effects of flood hazards and flood loads.

1612.2 Definitions.

The following words and terms shall, for the purposes of this section, have the meanings shown herein.

BASE FLOOD. The flood having a 1-percent chance of being equaled or exceeded in any given year.

BASE FLOOD ELEVATION. The elevation of the base flood, including wave height, relative to the National Geodetic Vertical Datum (NGVD), North American Vertical Datum (NAVD) or other datum specified on the flood insurance rate map (FIRM).

BASEMENT. The portion of a building having its floor subgrade (below ground level) on all sides.

DESIGN FLOOD. The flood associated with the greater of the following two areas:

1. Area with a floodplain subject to a 1-percent or greater chance of flooding in any year; or
2. Area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.

DESIGN FLOOD ELEVATION. The elevation of the "design flood," including wave height, relative to the datum specified on the community's legally designated flood hazard map.

DRY FLOODPROOFING. A combination of design modifications that result in a building or structure, including the attendant utility and sanitary facilities, being watertight with walls substantially impermeable to the passage of water and with structural components having the capacity to resist loads as identified in ASCE 7.

EXISTING CONSTRUCTION. Any buildings and structures for which the "start of construction" commenced before the effective date of the community's first floodplain management code, ordinance or standard. "Existing construction" may also be referred to as "existing structures."

EXISTING STRUCTURE. See "Existing construction?"

FLOOD or FLOODING. A general and temporary condition of partial or complete inundation of normally dry land from:

1. The overflow of inland or tidal waters.
2. The unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD DAMAGE-RESISTANT MATERIALS. Any construction material capable of withstanding direct and prolonged contact with floodwaters without sustaining any damage that requires more than cosmetic repair.

FLOOD HAZARD AREA. The greater of the following two areas:

1. The area within a floodplain subject to a 1-percent or greater chance of flooding in any year.
2. The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.

FLOOD HAZARD AREA SUBJECT TO HIGH VELOCITY WAVE ACTION. Area within the flood hazard area that is subject to high velocity wave action, and shown on a Flood Insurance Rate Map or other flood hazard map as Zone V, VO, VE, or V 1-30.

FLOOD INSURANCE RATE MAP (FIRM). An official map of a community on which the Federal Emergency Management Agency has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

FLOOD INSURANCE STUDY. The official report provided by the Federal Emergency Management Agency containing the Flood Insurance Rate Map, the Flood Boundary and Floodway Map (FBFM), the water surface elevation of the base flood and supporting technical data.

FLOODWAY. The channel of the river, creek, or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

LOWEST FLOOR. The floor of the lowest enclosed area, including basement, but excluding any unfinished or flood-resistant enclosure, usable solely for vehicle parking, building access, or limited storage provided that such enclosure is not built so as to render the structure in violation of this section.

SPECIAL FLOOD HAZARD AREA. The land area subject to flood hazards and shown on a Flood Insurance Rate Map or other flood hazard map as Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE, or V1-30.

START OF CONSTRUCTION. The date of permit issuance for new construction and substantial improvements to existing structures, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement is within 180 days after the date of issuance. The actual start of construction means the first placement of permanent construction of a building (including a manufactured home) on a site, such as the pouring of a slab or footings, installation of pilings or construction of columns.

Permanent construction does not include land preparation (such as clearing, excavation, grading, or filling), or the installation of streets or walkways, or excavation for a basement, footings, piers or foundations, or the erection of temporary forms, or the installation of accessory buildings such as garages or sheds not occupied as dwelling units or not part of the main building. For a substantial improvement, the actual "start of construction" means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

SUBSTANTIAL DAMAGE. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

SUBSTANTIAL IMPROVEMENT. Any repair reconstruction, rehabilitation, addition, or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions.

2. Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.

16123 Establishment of flood hazard areas.

To establish flood hazard areas, the governing body shall adopt a flood hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineering report entitled "The Flood Insurance Study for [INSERT NAME OF JURSDICTION]' dated [INSERT DATE OF ISSUANCE], as amend or revised with the accompanying Flood Insurance Rate M (FIRM) and Flood Boundary and Floodway Map (FBFM) a related supporting data along with any revisions thereto. T adopted flood hazard map and supporting data are herd adopted by reference and declared to be part of this section.

1612.4 Design and construction.

The design and construction of buildings and structures located in flood hazard areas, including flood hazard areas subject to high velocity wave action, should be designed and constructed in accordance with ASCE 24.

1612.5 Flood hazard certificates.

The following certifications shall be submitted to the building official:

1. For construction in flood hazard areas not subject high-velocity wave action:
 - 1.1. As part of the lowest floor elevation inspection required in Section 109.3.3, certification of the elevation of the lowest floor, including basement

 - 1.2. For fully enclosed areas below the design flood elevation where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.6.1 ASCE 24, certification by a registered design professional that the design will provide equalization of hydrostatic flood forces in accordance with Section 2.6.1.2, ASCE 24.

 - 1.3. For dry flood-proofed nonresidential building certification by a registered design professional that the dry flood-proofing is designed in accordance with ASCE 24.
2. For construction in flood hazard areas subject to high velocity wave action:
 - 2.1. As part of the lowest floor elevation inspection required in Section 109.3.3, a certification of elevation of the lowest horizontal structure member.

 - 2.2. A certificate prepared by a registered design professional that the building is designed in accordance with ASCE 24, including that the pile column foundation and building or structure to attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and flood loads acting simultaneously on all building components, in accordance with the load requirements of Chapter 16.
 - 2.3. For breakaway walls designed to resist a nominal load of less than 10 pounds per square foot (0.48 kN/m²) or more than 20 pounds per square foot (0.96 kN/m²), a certificate prepared by a registered design professional that the breakaway wall is designed in accordance with ASCE 24.