

2012 Uniform Mechanical Code
[a compilation of flood resistant provisions, prepared by FEMA]

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CHAPTER 2 – DEFINITIONS

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. In areas designated as Zone AO, the design flood elevation is the elevation of the highest existing grade of the building’s perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number is taken as being equal to 2 feet (610 mm).

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 given 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. – An 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 V1-30.

308.0 Location.

308.2 Protection Against Flood Damage. For buildings located in flood hazard areas, heating, ventilating, air-conditioning, refrigeration, miscellaneous heat-producing, and energy-utilizing equipment and appliances shall be elevated at or above the elevation required by the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher.

Exception: Equipment and appliances are permitted to be located below the elevation required by the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher, provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to such elevation in accordance with the flood-resistant construction requirements of the building code.

308.2.1 Walls Below Buildings in Flood Hazard Areas Subject to High Velocity Wave Action. In flood hazard areas subject to high velocity wave action, equipment and appliances, including piping, shall not be mounted on or penetrate walls intended to break away under flood loads.

2012 UMC Flood Provisions (continued)

308.2.2 Air Exhaust and Intake Openings. Outside air exhaust openings and air intake openings shall be located at or above the elevation required by the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher.

603.6 Protection Against Flood Damage. In flood hazard areas, ducts shall be located above the elevation required by the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher, or shall be designed and constructed to prevent water from entering or accumulating within the ducts during floods up to such elevation. Where the ducts are located below that elevation, the ducts shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to such elevation.

607.0 Use of Under-Floor Space as Supply Plenum for Dwelling Units.

607.1 General. An under-floor space shall be permitted to be used as a supply plenum.

607.2 Dwelling Units. The use of under-floor space shall be limited to dwelling units not more than two stories in height. Except for the floor immediately above the under-floor plenum, supply ducts shall be provided extending from the plenum to registers on other floors levels.

Exception: In flood hazard areas, under-floor spaces shall not be used as supply plenums unless the flood opening requirements in the building code are met.

1334.0 Oil Supply.

1334.6.7 Flood Hazard Areas. In flood hazard areas, tanks shall be elevated to or above the design flood elevation or they shall be designed, constructed, installed, and anchored to resist flood-related and other loads during the design flood, or lesser floods, without release of contents into floodwaters or infiltration by floodwaters into the contents.

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CHAPTER 2 – DEFINITIONS

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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 given 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 V1-30.

301.3 Flood Hazard Areas. Plumbing systems shall be located above the elevation in accordance with the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher.

Exception: Plumbing systems shall be permitted to be located below the elevation in accordance with the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher, provided that the systems are designed and installed to prevent water from entering or accumulating within their components and the systems are constructed to resist hydrostatic and hydrodynamics loads and stresses, including the effects of buoyancy, during the occurrence of flooding to such elevation.

301.3.1 Flood Hazard Areas Subject to High-Velocity Wave Action. Plumbing systems in buildings located in flood hazard areas subject to high-velocity wave action shall be in accordance with the requirements of Section 301.3, and plumbing systems, pipes, and fixtures shall not be mounted on or penetrate through walls that are intended to breakaway under flood loads in accordance with the building code.

2012 UPC Flood Provisions (continued)

APPENDIX H. PRIVATE SEWAGE DISPOSAL SYSTEMS

H 1.4 Flood Hazard Areas. Disposal systems shall be located outside of flood hazard areas.

Exception: Where suitable sites outside of flood hazard areas are not available, disposal systems shall be permitted to be located in flood hazard areas on sites where the effects of inundation under conditions of the design flood are minimized.

H 5.11 Structural Design. The structural design of septic tank shall comply with the following requirements:

- (1) Each such tank shall be structurally designed to withstand all anticipated earth or other loads. Septic tank covers shall be capable of supporting an earth load of not less than 500 pounds per square foot (lb/ft²) (2441 kg/m²) where the maximum coverage does not exceed 3 feet (914 mm).
- (2) In flood hazard areas, tanks shall be anchored to counter buoyant forces during conditions of the design flood. The vent termination and service manhole of the tank shall be not less than 2 feet (610 mm) above the design flood elevation or fitted with covers designed to prevent the inflow of floodwater or the outflow of the contents of the tanks during conditions of the design flood.

2012 Uniform Swimming Pool, Spa and Hot Tub Code [a compilation of flood resistant provisions, prepared by FEMA]

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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. In areas designated as Zone AO, the design flood elevation is the elevation of the highest existing grade of the building’s perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number is taken as being equal to 2 feet (610 mm).

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 given 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 V1-30.

Floodway. The channel of a river, creek or other watercourse and the adjacent land areas that shall be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Floodways shall be permitted to be delineated on flood hazard maps.

301.2 Swimming Pools in Flood Hazard Areas. Where located in flood hazard areas, aboveground swimming pools, inground swimming pools that involve the placement of earthen fill, and onground swimming pools shall comply with this section.

301.2.1 Controls, Equipment, Appurtenances, and Associated Components. Where swimming pools are located in flood hazard areas:

- (1) Pool controls shall be inside an elevated building or, where located in a non-elevated accessory structure, the controls shall be elevated to or above the design flood elevation.
- (2) Pool equipment, appurtenances, and other associated components shall either:
 - (a-) Be elevated and securely anchored to a platform; the height of the platform shall either be at or above the design flood elevation or as high as practical, given limitations on the owner’s access.
 - (b) Where not elevated, be anchored to prevent flotation and protected to prevent water from entering or accumulating within the components during flooding.
- (3) Tanks shall either be elevated or anchored to resist anticipated flood loads during conditions of the design flood.

2012 USWPSHT Flood Provisions (continued)

301.2.2 Swimming Pools Located in Floodways. Where swimming pools are located in floodways designated on flood hazard maps, documentation shall be submitted to the Authority Having Jurisdiction that demonstrates that the proposed swimming pool will not increase the design flood elevation at any point within the jurisdiction.

301.2.3 Swimming Pools Located Where Floodways have not been Designated.

Where swimming pools are located in flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed swimming pool will not increase the design flood elevation more than 1 foot (305 mm) at a point within the jurisdiction.

301.2.4 Swimming Pools Located in Flood Hazard Areas Subject to High Velocity Wave Action. Where pools are located in flood hazard areas subject to high velocity wave action, swimming pools shall:

- (1) Be elevated so that the lowest horizontal structural member is elevated to or above the design flood elevation.
- (2) Be designed and constructed to break away during design flood conditions without producing debris capable of causing significant damage to any structure.
- (3) Be sited to remain in the ground during design flood conditions without obstructing flow that results in damage to adjacent structures.

809.7.5 Venting.

809.7.5.1 Line Gas Pressure Regulators.

(4) In flood hazard areas where regulators will be submerged during floods, a special antiflood-type breather vent fitting shall be installed, or the vent line shall be extended above the design flood elevation.

2012 Uniform Solar Energy Code

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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. In areas designated as Zone AO, the design flood elevation shall be the elevation of the highest existing grade of the building’s perimeter plus the depth number in feet (m) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

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 given 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 which 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 V1-30.

Solar energy system components. Any appliance, assembly, device, equipment or piping used in the conversion of solar energy into thermal energy for service, water heating, pool water heating, space heating and cooling, and electrical service.

303.0 Structural Design Loads.

303.1 General. Solar Energy system components, including building components and attachments, shall be designed and constructed to withstand the following loads in accordance with the building code:

- (1) Dead loads.
- (2) Live loads.
- (3) Snow loads.
- (4) Wind loads.
- (5) Seismic loads.
- (6) Flood loads.
- (7) Expansion and contraction loads resulting from temperature changes.

2012 USEC Flood Provisions (continued)

302.3 Flood Hazard Areas. Solar systems and components shall be located above the elevation in accordance with the building code for utilities and attendant equipment. Where mounted on or located in a building, solar energy systems and components shall be located not less than the design flood elevation or the elevation of the lowest floor, whichever is higher.

Exception:

- (1) Solar energy systems that are designed and installed to prevent water from entering or accumulating within their components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to such elevation in accordance with the flood-resistant construction requirements of the building code.
- (2) Tanks and dry storage containment structures that are designed, constructed, installed, and anchored to resist all flood-related and other loads during the design flood, or lesser floods.

302.3.1 Flood Hazard Areas Subject To High Velocity Wave Action. In flood hazard areas subject to high velocity wave action, solar energy systems and components shall comply with Section 302.3 and shall not be mounted on or penetrate through walls that are intended to break away under flood loads in accordance with the building code.

302.3.2 Flood Resistant Materials. Solar system components installed in flood hazard areas and below the design flood elevation shall be made of flood damage-resistant materials.