

**NOTICE OF ADOPTION OF EMERGENCY RULE RELATING TO THE LEVEL ABOVE THE
BASE FLOOD ELEVATION TO WHICH NEW, SUBSTANTIALLY DAMAGED OR
SUBSTANTIALLY IMPROVED BUILDINGS THAT ARE LOCATED IN AREAS OF SPECIAL
FLOOD HAZARD MUST BE DESIGNED AND CONSTRUCTED**

Pursuant to the authority of the Commissioner of Buildings under sections 643 and 1043(i) of the New York City Charter and section 28-103.19 of the New York City Administrative Code, notice is hereby given of the adoption of the following emergency rule, effective immediately, relating to the level above the base flood elevation to which new, substantially damaged or substantially improved buildings that are located in areas of special flood hazard must be designed and constructed.

Matter underlined is new to Title 1 of the Official Compilation of the Rules of the City of New York. Matter double-underlined is new to reference standard ASCE 24.

Subchapter G of chapter 3600 of title 1 of the rules of the city of New York is amended by adding a new section 3606-04, to read as follows:

§3606-04 American Society of Civil Engineers ("ASCE") 24 amendments relating to mandatory freeboard. Pursuant to Section 28-103.19 of the New York City Administrative Code, Table 2-1 of Section 2.3, Table 4-1 of Section 4.4, Table 5-1 of Section 5.1, Table 6-1 of Section 6.2, and Table 7-1 of Section 7.1 of ASCE 24 as amended by Section BC G501.1 of the New York City Building Code, are hereby amended to read as follows:

**TABLE 2-1
MINIMUM ELEVATION OF THE TOP OF LOWEST FLOOR
RELATIVE TO DESIGN FLOOD ELEVATION (DFE)—A-ZONES^a**

| <u>STRUCTURAL OCCUPANCY CATEGORY^b</u> | <u>MINIMUM ELEVATION OF LOWEST FLOOR</u> |
|-------------------------------------------------------------|-----------------------------------------------------|
| <u>I</u> | <u>DFE=BFE</u> |
| <u>II (1- and 2-family dwellings)</u> | <u>DFE=BFE+ 2 ft</u> |
| <u>II^c (all others)</u> | <u>DFE=BFE+ 1 ft</u> |
| <u>III^c</u> | <u>DFE=BFE+ 1 ft</u> |
| <u>IV^c</u> | <u>DFE=BFE+ 2 ft</u> |

a. Minimum elevations shown in Table 2-1 do not apply to V Zones (see Table 4-1). Minimum elevations shown in Table 2-1 apply to A-Zones unless specific elevation requirements are given in Section 3 of this standard.

b. See Table 1-1 or Table 1604.5 of the *New York City Building Code*, for structural occupancy category descriptions.

c. For nonresidential buildings and nonresidential portions of mixed-use buildings, the lowest floor shall be allowed below the minimum elevation if the structure meets the floodproofing requirements of Section 6.

TABLE 4-1
MINIMUM ELEVATION OF BOTTOM OF LOWEST SUPPORTING
HORIZONTAL STRUCTURAL MEMBER OF LOWEST FLOOR
RELATIVE TO DESIGN FLOOD ELEVATION (DFE)—V ZONES

| STRUCTURAL OCCUPANCY CATEGORY ^a | MEMBER ORIENTATION RELATIVE TO THE DIRECTION OF WAVE APPROACH | |
|--------------------------------------------------|------------------------------------------------------------------|----------------------------|
| | Parallel ^a | Perpendicular ^a |
| I | DFE=BFE | DFE=BFE |
| II (1- and 2-family dwellings) | DFE=BFE+ 2 ft | DFE=BFE+ 2 ft |
| II (all others) | DFE=BFE | DFE=BFE+ 1 ft |
| III | DFE=BFE+ 1 ft | DFE=BFE+ 2 ft |
| IV | DFE=BFE+ 1 ft | DFE=BFE+ 2 ft |

- a. See Table I-1, or Table 1604.5 of the *New York City Building Code*, for structural occupancy category descriptions.
b. Orientation of lowest horizontal structural member relative to the general direction of wave approach; parallel shall mean less than or equal to +20 degrees from the direction of approach; perpendicular shall mean greater than +20 degrees from the direction of approach.

TABLE 5-1
MINIMUM ELEVATION, RELATIVE TO DESIGN FLOOD
ELEVATION (DFE), BELOW WHICH FLOOD-DAMAGE-RESISTANT
MATERIALS SHALL BE USED

| STRUCTURAL OCCUPANCY CATEGORY ^a | A-ZONE | V-ZONES | |
|--------------------------------------------------|---------------|--------------------------------------|-------------------------------------------|
| | | Orientation Parallel ^b | Orientation Perpendicular ^b |
| I | DFE=BFE | DFE=BFE | DFE=BFE |
| II (1- and 2-family dwellings) | DFE=BFE+ 2 ft | DFE=BFE+ 2 ft | DFE=BFE+ 2 ft |
| II (all others) | DFE=BFE+ 1 ft | DFE=BFE+ 1 ft | DFE=BFE+ 2 ft |
| III | DFE=BFE+ 1 ft | DFE=BFE+ 2 ft | DFE=BFE+ 3 ft |
| IV | DFE=BFE+ 2 ft | DFE=BFE+ 2 ft | DFE=BFE+ 3 ft |

- a. See Table I-1, or Table 1604.5 of the *New York City Building Code*, for structural occupancy category descriptions.
b. Orientation of lowest horizontal structural member relative to the general direction of wave approach; parallel shall mean less than or equal to +20 degrees from the direction of approach; perpendicular shall mean greater than +20 degrees from the direction of approach.

TABLE 6-1
MINIMUM ELEVATION OF FLOODPROOFING, RELATIVE TO
DESIGN FLOOD ELEVATION (DFE)—A-ZONES

| STRUCTURAL OCCUPANCY CATEGORY ^a | MINIMUM ELEVATION OF FLOODPROOFING ^b |
|-----------------------------------------------|----------------------------------------------------|
| I | DFE=BFE+ 1 ft |
| II ^c | DFE=BFE+ 1 ft |
| III | DFE=BFE+ 1 ft |
| IV | DFE=BFE+ 2 ft |

- a. See Table I-1, or Table 1604.5 of the *New York City Building Code*, for structural occupancy category descriptions.
b. Wet or dry floodproofing shall extend to the same level.
c. Dry floodproofing of residential buildings and residential portions of mixed use buildings shall not be permitted.

TABLE 7-1
MINIMUM ELEVATION OF UTILITIES AND ATTENDANT EQUIPMENT RELATIVE TO DESIGN FLOOD ELEVATION (DFE)

| STRUCTURAL OCCUPANCY CATEGORY^a | LOCATE UTILITIES AND ATTENDANT EQUIPMENT ABOVE^b | | |
|--------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------|----------------------------------------------|
| | A-Zones | V-Zones | |
| | | Orientation Parallel^a | Orientation Perpendicular^a |
| I | <u>DFE=BFE</u> | <u>DFE=BFE</u> | <u>DFE=BFE</u> |
| II (1- and 2-family dwellings) | <u>DFE=BFE+ 2 ft</u> | <u>DFE=BFE+ 2 ft</u> | <u>DFE=BFE+ 2 ft</u> |
| II (all others) | <u>DFE=BFE+ 1 ft</u> | <u>DFE=BFE+ 1 ft</u> | <u>DFE=BFE+ 2 ft</u> |
| III | <u>DFE=BFE+ 1 ft</u> | <u>DFE=BFE+ 2 ft</u> | <u>DFE=BFE+ 3 ft</u> |
| IV | <u>DFE=BFE+ 2 ft</u> | <u>DFE=BFE+ 2 ft</u> | <u>DFE=BFE+ 3 ft</u> |

a. See Table I-1, or Table 1604.5 of the *New York City Building Code*, for structural occupancy category descriptions.

b. Locate utilities and attendant equipment above elevations shown unless otherwise provided in the text.

Orientation of lowest horizontal structural member relative to the general direction of wave approach; parallel shall mean less than or equal to +20 degrees from the direction of approach; perpendicular shall mean greater than +20 degrees from the direction of approach

Statement of Basis and Purpose

This rule is promulgated pursuant to the authority of the Commissioner of Buildings under Sections 643 and 1043 of the New York City Charter and Section 28-103.19 of the New York City Administrative Code.

The current reference standard American Society of Civil Engineers ("ASCE") 24, as modified by Section BC G501.1 of the New York City Building Code, does not mandate freeboard above the Base Flood Elevation ("BFE") for buildings in Structural Occupancy Category I or II. This rule will amend this reference standard so as to require freeboard of up to two feet for these categories of buildings, depending on the type of building and the type of flood risk.

As defined in the regulations of the Federal Emergency Management Agency relating to the National Flood Insurance Program, 44 C.F.R. 59.1, the term "freeboard" means a factor of safety usually expressed in feet above a flood level for purposes of flood plain management. Freeboard tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

As per Section BC G201.2 of the New York City Building Code, the BFE is the elevation of the flood having a 1-percent chance of being equaled or exceeded in any given year.

In accordance with Table 1-1 of ASCE 24, as modified by Section BC G501.1, buildings in Structural Occupancy Category I or II include the majority of new construction in New York City, including 1- and 2-family dwellings, apartment houses, retail stores, and office buildings.

This rule will require freeboard for new, substantially damaged or substantially improved buildings that are located in areas of special flood hazard. The rule will bring the New York City Building Code into alignment with the latest edition of New York State Uniform Fire Prevention and Building Code (2010) by requiring two feet of freeboard for 1- and 2-family dwellings, and into alignment with the latest edition of ASCE 24 (2005) by requiring one or two feet of freeboard for other Structural Occupancy Category II buildings and for Structural Occupancy Category I buildings with certain flood risks.

This rule will result in new construction and substantial improvements that exceed the BFE, preventing loss of life, property and business interruption in cases of flooding.

Finding of Imminent Threat Pursuant to New York City Charter Section 1043(i)(1)

IT IS HEREBY CERTIFIED that the immediate effectiveness of this emergency rule relating to the level above the base flood elevation to which new, substantially damaged or substantially improved buildings must be designed and constructed is necessary to prevent an immediate threat to health, safety and property, by addressing the recent devastation wrought by a severe storm ("Hurricane Sandy") and the immediate reconstruction efforts that are currently underway. I hereby make the following finding of immediate threat to health, safety and property necessary to establish that an emergency rulemaking is required in relation to the protection of health, safety and property.

On October 28th and 29th, Hurricane Sandy brought unprecedented flooding and destruction to many parts of the city. The flooding levels were by all accounts several feet higher than the base flood elevation estimated by FEMA. However, the current requirements for reconstruction of most buildings damaged or destroyed requires flood protection only as high as FEMA's base flood elevation.

Applications for building permits to reconstruct the buildings damaged or destroyed by Hurricane Sandy have already begun to be filed with the department, and many more applications are anticipated to be filed in the coming months. If these permits are issued and the buildings constructed under the current requirements, these completed buildings would not be protected against future flooding events similar to Hurricane Sandy. Further, these buildings would be deemed noncompliant with the increased base flood elevations anticipated in the revised final flood insurance rate maps to be issued by FEMA by the end of 2013.

IT IS THEREFORE HEREBY CERTIFIED that the immediate effectiveness of a rule relating to the level above the base flood elevation to which new, substantially damaged or substantially improved buildings must be designed and constructed is necessary to address an immediate threat to health, safety and property.

Dated: January 31, 2013



ROBERT D. LIMANDRI
COMMISSIONER OF BUILDINGS

APPROVED:



MICHAEL R. BLOOMBERG
MAYOR