

Building on Strong and Safe Foundations

H. Glossary

3-second peak gust – The wind speed averaging time used in ASCE 7 and the IBC.

Allowable Stress Design (ASD) – A method of proportioning structural members such that elastically computed stresses produced in the members by nominal loads do not exceed specified allowable stresses (also called working stress design).

A Zone – A zones are the areas not listed as V zones, but also identified on a Flood Insurance Rate Map (FIRM) as being subject to inundation during a 100-year flood. The associated flood elevation has a 1-percent chance of being equaled or exceeded in any given year. There are several categories of A zones that may be identified on a FIRM with one of the following designations: AO, AH, A1-30, AE, and unnumbered A zones.

Base flood – A flooding having a 1-percent chance of being equaled or exceeded in any given year; also known as the 100-year flood.

Base Flood Elevation (BFE) – Elevation of the 1-percent flood. This elevation is the basis of the insurance and floodplain management requirements of the National Flood Insurance Program (NFIP).

Coastal A zone – The portion of the Special Flood Hazard Area (SFHA) landward of a V zone or landward of an open coast without mapped V zones (e.g., the shorelines of the Great Lakes), in which the principal sources of flooding are astronomical tides, storm surges, seiches, or

tsunamis, not riverine sources. Like the flood forces in V zones, those in Coastal A zones are highly correlated with coastal winds or coastal seismic activity. Coastal A zones may therefore be subject to wave effects, velocity flows, erosion, scour, or combinations of these forces. During base flood conditions, the potential for breaking wave heights between 1.5 feet and 3.0 feet will exist. Coastal A zones are not shown on present day FIRMs or mentioned in a community's Flood Insurance Study (FIS) Report.

Crawlspace foundation – Crawlspace foundations are typically low masonry perimeter walls with interior piers supporting a wood floor system. These foundations are usually supported by shallow footings and are prone to failure caused by erosion or scour.

Design flood – The design flood is often, but not always equal to the base flood for areas identified as SFHAs on a community's FIRM.

Design Flood Elevation (DFE) – The elevation of the design flood, including wave height relative to the datum specified on a community's Flood Hazard Map.

Design professional – A State licensed architect or engineer.

Erosion – Process by which floodwaters lower the ground surface in an area by removing upper layers of soil.

Exposure Category B – A wind exposure identified in ASCE 7 and the International Building Code (IBC) as urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger.

Exposure Category C – A wind exposure identified in ASCE 7 and the IBC as open terrain with scattered obstructions having heights generally less than 30 feet (9.1 meters). This category includes flat open country, grasslands, and all water surfaces in hurricane-prone regions.

Fixity – Resistance to flotation; stable or immovable.

Flood Insurance Rate Map (FIRM) – An official map of a community, on which FEMA has delineated both the SFHA and the risk premium zones applicable to the community. The map shows the extent of the base floodplain and may also display the extent of the floodway and BFEs.

Freeboard – The height added to place a structure above the base flood to reduce the potential for flooding. The increased elevation of a building above the minimum design flood level to provide additional protection for flood levels higher than the 1-percent chance flood level and to compensate for inherent inaccuracies in flood hazard mapping.

Hydrodynamic forces – The amount of pressure exerted by moving floodwaters on an object, such as a structure. Among these loads are positive frontal pressure against the structure, drag forces along the sides, and suction forces on the downstream side.

Hydrostatic forces – The amount of lateral pressure exerted by standing or slowly moving floodwaters on a horizontal or vertical surface, such as a wall or a floor slab. The water pressure increases with the square of the water depth.

Leeward – The side away, or sheltered, from the wind.

Limit of Moderate Wave Action (LiMWA) – The landward extent of coastal areas designated Zone AE where waves higher than 1.5 feet can exist during a design flood (also known as the Coastal A zone).

National Flood Insurance Program (NFIP) – The NFIP is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction in floodplains, the Federal Government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. The program was created by Congress in 1968 with the passage of the National Flood Insurance Act of 1968.

National Geodetic Vertical Datum 1929 (NGVD 1929) – A vertical elevation baseline determined in 1929 as a national standard. Used as the standard for FIRMs until 2000.

North American Vertical Datum 1988 (NAVD 1988) – A vertical elevation baseline determined in 1988 as a more accurate national standard. The current vertical elevation standard for new FIRMs.

Scour – Erosion by moving water in discrete locations, often as a result of water impacting foundation elements.

Shore-normal – Perpendicular to the shoreline.

Slab-on-grade foundation – Type of foundation in which the lowest floor of the house is formed by a concrete slab that sits directly on the ground.

Slug – A unit of mass in the English foot-pound-second system. One slug is the mass accelerated at 1 foot per second (fps) by a force of 1 pound (lb). Since the acceleration of gravity (g) in English units is 32.174 fps, the slug is equal to 32.174 pounds (14.593 kilograms).

Special Flood Hazard Area (SFHA) – Portion of the floodplain subject to inundation by the base flood.

Stem wall foundation – A type of foundation that uses masonry block and reinforced with steel and concrete. The wall is constructed on a concrete footing, back-filled with dirt, compacted, and the slab is then poured on top.

Strength Design – A method of proportioning structural members such that the computed forces produced in the members by the factored loads do not exceed the member design strength (also called load and resistance factor design).

V zones – V zones are areas identified on FIRMs as zones VE, V1-30, or V. These areas, also known as Coastal High Hazard Areas, are areas along the coast that have a 1 percent or greater annual chance of flooding from storm surge and waves greater than 3 feet in height, as well as being subject to significant wind forces.

Wave trough – The lowest part of the wave between crests.

Windward – The side facing the wind.