IBHS *Fortified...for safer living®*

Self-Assessment Checklist for Mandatory Requirements
Flood Hazard

Thank you for your interest in the ***Fortified*** program. You must complete this checklist before a project application can be released to you. Your goal is to understand the requirements of the program and assess your readiness to seek a ***Fortified*** designation.

Date:_____

Last Name:_____

First Name:_____

Business Name:_____

Email Address:_____

Business Phone:_____

Project Address:_____

City:_____

State:_____

Zip:_____

I am a:

☐Fortified Project Manager

☐Builder

☐Designer

☐Homeowner

☐Manufacturer

☐General Contractor

☐Other:_____

Instructions:

1. First, read the ***Fortified*** Builder's Guide---do not assume you understand this program without reading the Guide.

2. Answer ALL questions.

3. Return this completed checklist via email to FB@IBHS.ORG. ***Fortified*** staff will review your answers to determine if an application can be released to you.

I have read the above instructions:☑

1. Identify flood zone for the site. Basic flood zones classified by the National Flood Insurance Program (NFIP) under FEMA include (select one):

   ☐V-Zone - Area along coasts that have a 1% 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.

   ☐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.

   ☐A-Zone - Areas not listed as V-Zones but identified on Flood Insurance Rate Map (FIRM) as being subject to inundation during a 100-year flood.

   ☑All Other Zones - Areas with designation not listed above. If true, skip to "**Recommendations For All Other Zones"** and answer questions 16, 17 and 18.

   NOTE: A certified survey of the property is likely to contain this information. Local building departments, your insurance agent, and the FEMA website are also good sources to determine the flood zones.

2. To specifically meet ***Fortified*** flood criteria, the design will be prepared and sealed by a Registered Engineer: YES☐

   If NO---project CANNOT meet ***Fortified*** requirements.

3. The design referenced above will be provided to IBHS: YES☐

4. Certified shop drawings and related engineering documents for components and their connections to superstructure (e.g.: piles, structural systems, wall panel products, or other pre-engineered and pre-manufactured building components) of the building will be reviewed/approved by the Professional of Record (Architect or Engineer licensed in the state of the site) **and** provided to IBHS: YES☐

5. An authorized inspector will verify that all mandatory design items have been correctly installed in the project during construction; inspection reports and photos will be provided to IBHS: YES☐

6. ***Fortified*** Design Flood Elevation (FDFE) of the structure must be at least Base Flood Elevation (BFE) + 3 feet.

   Site BFE =_____feet. +3 =_____= FDFE. NOTE: This is the final design elevation for the ***Fortified*** program and is above FEMA/NFIP requirements.

   Project will be planned according to FDFE: YES☐

7. For properties located in Special Flood Hazard Area (V-Zone, Coastal A-Zone, & A-Zone), the FEMA Elevation Certificate will require the following information to be certified and signed by the surveyor/engineer/architect:

   - ✓ Elevations of certain floors in the building
   - ✓ Lowest elevation of utility equipment/machinery
   - ✓ Floor slab elevation for attached garage
   - ✓ Adjacent grade elevations
   - ✓ Permanent opening (flood vent) information

   You will obtain ALL this information: YES☐

V-Zone and Coastal A-Zone---Mandatory Requirements

8. Open foundation system will support elevated structures: YES☐

9. Structure will be elevated above FDFE and supported by horizontal beams resting on vertical columns/piles: YES☐

10. The bottom of lowest horizontal beam members supporting the structure and the elevation of utility equipment/machinery will be set at or above FDFE: YES☐

11. Vertical columns and/or open foundation systems may be subjected to all natural hazard loads listed below simultaneously and must be designed by a licensed and qualified engineer to withstand these structural loads as listed below.

    - ✓ Wind loads
    - ✓ Flood loads (include hydrostatic and/or hydrodynamic)
    - ✓ Breaking wave loads
    - ✓ Debris Impact Loads

    NOTE: wall enclosures and/or breakaway decks below FDFE elevation, between vertical columns and/or open foundation support systems, are <u>not</u> recommended by FEMA/NFIP or IBHS.

    NOTE: The effect of scour and erosion must also be considered in the design.

    Project will be designed accordingly: YES☐

12. If wall enclosures and/or breakaway decks are presented, enclosures must meet specific requirements and must be designed and certified by a licensed engineer to breakaway during a storm surge condition---without producing debris damage to the structure or adjacent structures.

    NOTE: breakaway enclosures require stronger structural systems for support.

    Project will be designed accordingly: YES☐

A-Zone---Mandatory Requirement

13. The finished floor elevation of the lowest habitable floor and utility equipment/machinery will be at or above FDFE: YES☐

14. The lowest finish floor of the residence must be above the FDFE. The floor may be supported by an open type foundation, be supported by a stem wall with flood relief openings, or on a stem wall which retains soil backfill. Project will be designed accordingly: YES☐

15. All foundation and lower support systems prone to flood will be subject to soil pressure, wind and flood forces simultaneously, which requires a stronger support structure compared to one located in non-flood hazard areas. Project will be designed accordingly: YES☐

Recommendations For All Other Zones

NOTE: Flood hazards exist no matter where you live, but especially if you live in a low-lying area, on flat land, near water or downstream from a dam. Even very small streams, gullies, creeks, culverts, dry streambeds, or low-lying ground that appears harmless in dry weather can flood. Every state is at risk from this hazard (as noted by FEMA---Flood Hazard website).

16. Flood hazard requirement must be verified with local authorities and insurance agents. IBHS recommends the finished floor and utility equipment/machinery elevation to be at least 1 foot above local requirements or the crown of highest surrounding roadways---whichever is higher. Project will be designed accordingly: YES☑

General Mandatory Requirement

17. Flood Zones V, Coastal A, and A as well as areas likely to have expansive, compressible, shifting or otherwise unknown soil characteristics require a geotechnical report to determine the soil's characteristics at a particular location. A geotechnical report will be provided: YES☐ N/A☑

Additional

18. The ***Fortified*** program for hurricane/high wind and flood requires the building to be designed for the following code-plus criteria:

    - ✓ Wind speed of ASCE 7 plus 20 mph.
    - ✓ Elevate structure at least 3 feet above BFE.
    - ✓ Open foundation in Coastal-A Flood Zones.
    - ✓ Pile supported foundations / pile supported structures in V and Coastal-A Flood Zones.

    NOTE: even if you are not meeting the ***Fortified*** standards, FEMA/NFIP and local building codes require the engineer to design for the effects of wind, wave, and flood loads acting simultaneously on the structure in all flood zones, and that some local flood ordinances may extend the requirements beyond criteria established in ***Fortified*** standards.

    Project will be designed accordingly: YES☑

END OF CHECKLIST