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Flood Resistant Design and Construction

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AMERICAN SOCIETY OF CIVIL ENGINEERS

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PREFACE

The 2024 edition contains a number of significant changes to the standard including the alignment of the standard with the sweeping changes introduced in ASCE 7-22 Supplement 2 and changes to floodplain management. ASCE 7-22 Supplement 2 set minimum loads based on Mean Recurrence Intervals tied to a building's Risk Category and increased the area of applicability to the 500-year floodplain. Revisions to the 2024 edition from the 2014 edition include, but are not limited to, the following:

1. The Flood Hazard Area was expanded to include land in the 500-year floodplain.
2. The Design Flood Elevation now corresponds to the greater of the elevation set by the community or the elevation pertaining to a Mean Recurrence Interval corresponding to the Flood Design Class plus Sea Level Rise. This change aligns ASCE 24 with ASCE 7-22 Supplement 2.
3. Sea Level Rise corresponding to the minimum historic rate.
4. The Mean Recurrence Interval for Flood Design Class 1 is 100-year.
5. The Mean Recurrence Interval for Flood Design Class 2 is 500-year.
6. The Mean Recurrence Interval for Flood Design Class 3 is 750-year.
7. The Mean Recurrence Interval for Flood Design Class 4 is 1000-year.
8. The elevation requirements have been removed from individual chapters and have been relocated and modified to Chapter 1.
9. Elevation requirements now correspond to the higher of the DFE or the BFE plus a specified freeboard amount.
10. Flood loads for use in design are now calculated in accordance with ASCE 7-22 Supplement 2.
11. Requirements for Agricultural Structures were updated to align with FEMA Floodplain Management Bulletin P-2140.
12. Clarifications were made to the Flood Design Class applicable to Hospitals, Health Care Facilities, and Ambulatory Care Facilities.
13. Residential Portions of Mixed-Use Buildings is now a defined term in the standard utilized in the limitations for dry floodproofing provisions.
14. Definitions have been added for flood barriers and shields along with testing and certification requirements and criteria for use.
15. Flood mitigation pumps are required to remove accumulated water in dry floodproofed spaces.
16. Inspection and maintenance requirements, flood emergency operation plans, and limits of human intervention for dry floodproofed areas are identified.
17. Flood mitigation valves are required to mitigate the passage of water into protected areas.
18. Exceptions in the location of flood vents have been made for buildings on sloped sites and interior areas with a single exterior wall.
19. Provisions are added to prevent slabs on grade from being elevated without an assessment and, if required by the assessment, strengthening.
20. For wet floodproofed building access, an additional exterior door is required above the DFE to allow for an elevated area to be secured.
21. Criteria for helical piles and anchors have been added.
22. Criteria for the distinction between columns and walls have been added.
23. New buildings and structure shall not be supported by or bear on bulkheads, seawalls, revetments, and other erosion control structures.
24. GFRP reinforcement has been added to Chapter 5 Materials.
25. Attendant utilities and equipment serving residential buildings and residential portions of mixed-use buildings are not permitted in dry floodproofed enclosures.
26. Automatic pressure control valves are required for flammable gas and fuel supply lines.
27. Self-supporting decks and porches shall be located to avoid obstructing the free flow of floodwater under structures.
28. Tents and membrane structures have been added to Chapter 9.
29. References and their formatting have been updated.

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CHAPTER 1
GENERAL

1.1 SCOPE

This standard provides minimum requirements for flood resistant design and construction of structures that are subject to building code requirements, or subject to floodplain management regulations or other requirements that cite this standard, and that are located, in whole or in part, in flood hazard areas. This standard applies to the following: (1) New construction, including subsequent work to such structures, and (2) work classified as substantial improvement of existing structures that are not historic structures (Figure 1-1).

The general provisions of this chapter shall apply to all new construction and substantial improvements in flood hazard areas, in addition to the requirements of this section (Figure 1-2).

1. Chapter 2 shall apply to all new construction and substantial improvements in flood hazard areas and High Risk Flood Hazard Areas except those that are identified as Coastal High Hazard Areas (CHHAs) and Coastal A Zones (CAZs).
2. Chapter 3 shall apply to all new construction and substantial improvements in High Risk Flood Hazard Areas.
3. Chapter 4 shall apply to all new construction and substantial improvements in CHHAs and CAZs.
4. Chapters 5, 6, 7, 8, and 9 shall apply to all new construction and substantial improvements.

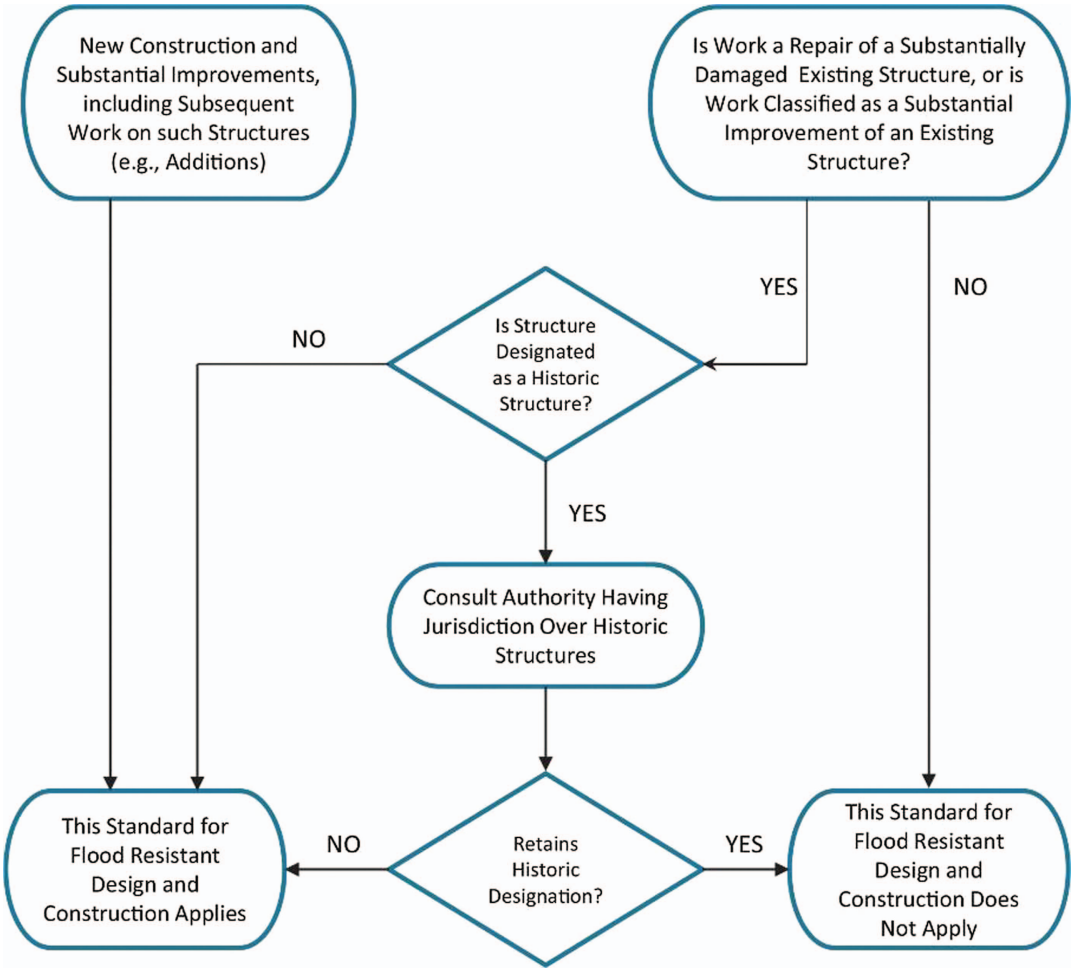


Figure 1-1. Illustration of application of this standard.