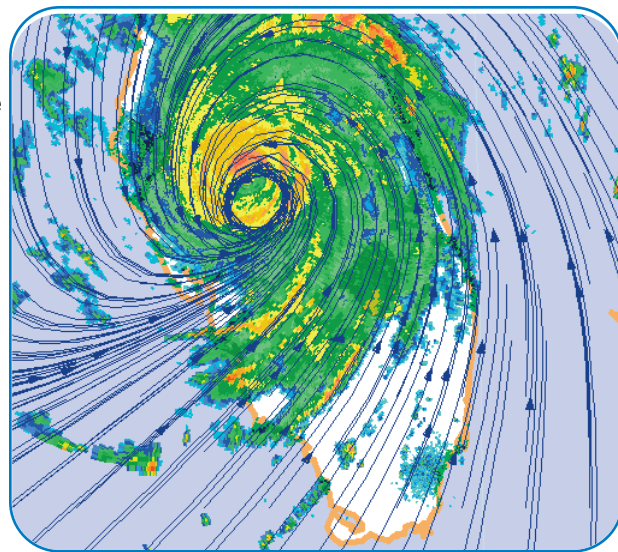


What is the Florida Building Code (FBC)?

The FBC is based on national building codes and standards adapted specifically for Florida's wind load needs. The code enforces minimum construction standards with emphasis on uniformity throughout the state. The FBC provides design requirements for buildings and structures including cooling towers. For wind load design requirements, the FBC refers extensively to ASCE/SEI 7, the consensus standard published by the American Society of Civil Engineers.

Wind Load Design Variables

Several key variables are provided in the project design documents to determine the wind load requirements for factory assembled cooling towers. These variables are discussed below:



Exposure Category - Exposure Category is selected based on the ground surface roughness. Roughness is determined from the topography, vegetation, and structures located in the proximity of the cooling tower installation.

Exposure B – Terrain with numerous closely spaced obstructions including, but not limited to urban, suburban areas, and wooded areas. The majority of Florida's counties are located in Exposure Category B.

Exposure C – Applies to all cases where Exposure Category B or D do not apply including, but not limited to flat open country, grasslands, and all water surfaces in hurricane prone regions.

Exposure D – Flat, unobstructed areas, and water surfaces outside hurricane prone regions including, but not limited to smooth mud flats and salt flats.

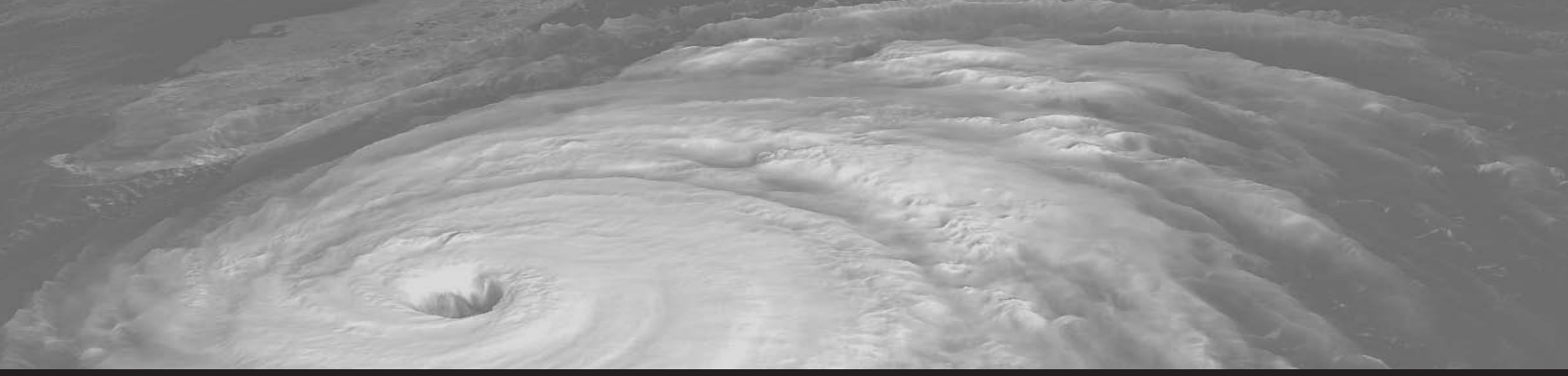
Occupancy Category - A classification ranging from I to IV is assigned to buildings and other structures based on the level of occupancy and the nature of use.

Category I - Buildings and other structures that represent a low hazard to human life in the event of failure including, but not limited to agricultural, minor storage, and certain temporary facilities.

Category II - All buildings and other structures except those listed in Categories I, III, and IV.

Category III - Buildings and other structures containing sufficient quantities of toxic, explosive or other hazardous substances or represent a substantial hazard to human life in the event of failure including, but not limited to petrochemical facilities, high occupancy buildings, education facilities, and minor health care facilities.

Category IV - Buildings and other structures that are equipped with secondary containment of toxic, explosive or other hazardous substances or other structures designated as essential facilities including, but not limited to hospitals, emergency facilities, communication centers, and power generation facilities.



Wind Velocity - Wind velocity, used in the determination of design wind loads on structures, is obtained from Florida wind velocity maps.

Importance Factor - Structures are assigned an importance factor ranging from 0.77 to 1.15 based on the occupancy category and wind velocity.

Tower's Location - The height of the cooling tower installation on a building affects the design wind load.

Product Qualification Methods

BAC qualifies all new products for wind load using a comprehensive approach:

- Three-dimensional finite element analysis (FEA)
- Computer models optimize the tower design for various load conditions and product configurations
- Physical properties of computer models are validated using full-scale test data

The need to withstand severe weather is not specific to only coastal regions. Essential facilities, such as hospitals, emergency response centers, government buildings, and data centers require that their cooling equipment withstands severe weather events.

BAC Wind Load Solutions

BAC's standard and upgraded Series 3000 and PT2 Cooling Tower products offer cost effective solutions for any code compliance need. Each installation requires careful analysis to specify the appropriate cooling tower. Please contact your local BAC Representative to discuss your project's specific requirements.



Series 3000 Cooling Tower



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