CALHOUN

Engineering Bulletin 034

RE: Navigating the Building Code Landscape: NBC 2025 and IBC 2024

When planning a structure building owners tend to focus on the immediate considerations: building dimensions, site preparation, budget, and timeline. But there's a foundational element that affects every aspect of the project—the building code the structure must comply with. Understanding how model codes are released, adopted, and enforced can save dealers and owners from costly delays, re-engineering, or worse, a structure that doesn't meet local requirements.

What Are Model Building Codes?

Model building codes are comprehensive documents developed by standards organizations to establish minimum requirements for building safety, structural integrity, and performance. In North America, two primary model codes govern fabric structure design and construction:

The **International Building Code (IBC)** serves as the foundation for building regulations across the United States. Published by the International Code Council (ICC), the IBC addresses structural design, fire safety, accessibility, and other critical requirements. IBC 2024 incorporates updated wind load provisions, snow load criteria, and other structure specifications that reflect current engineering practice and material science.

The **National Building Code of Canada (NBC)** fulfills a similar role north of the border. Developed by the National Research Council of Canada, NBC 2025 represents the latest edition. The NBC includes detailed provisions for structural loading, including seismic design, wind loads, and snow accumulation.

These model codes don't automatically become law. They're published as reference documents that jurisdictions can adopt, modify, or reject based on local needs and priorities.

Why New Editions Matter

Model codes are updated on a three-year cycle (IBC) or a five-year cycle (NBC) to incorporate new research, address emerging materials and construction methods, and respond to lessons learned from structural failures and natural disasters.

Relevant to fabric structures, recent code editions have brought important changes:

- Refined wind load calculations that better account for building geometry and terrain
- Updated snow load provisions addressing drift patterns and unbalanced loading
- Enhanced seismic design requirements in regions with earthquake risk
- Revised foundation requirements based on long-term performance data

These updates represent real-world improvements in safety and performance. A fabric structure designed to IBC 2024 or NBC 2025 benefits from engineering experience and research that earlier editions didn't necessarily incorporate.

The Jurisdiction Adoption Process

Here's where things get complicated: the publication date of a model code and its adoption by your local jurisdiction rarely align. Understanding this lag time is critical for project planning.

How Jurisdictions Adopt Codes

Building codes are adopted at different governmental levels depending on location. In the United States, adoption typically occurs at the state, county, or municipal level. Some states adopt the IBC statewide with amendments; others delegate authority to counties or cities. In Canada, provinces and territories adopt the NBC, often with provincial modifications.

The adoption process follows a predictable pattern, though timelines vary widely:

Review and consultation begins when a new model code edition is published. Government officials, building departments, engineering associations, and industry groups review the new provisions. This phase can take six months to two years.

Legislative or regulatory action comes next. Depending on the jurisdiction, code adoption may require a vote by state legislature, approval by a regulatory board, or executive action by a governor or premier. Public comment periods and hearings often extend this timeline.

Implementation and training follows formal adoption. Building officials need time to study new provisions, develop permit review procedures, and train staff. Many jurisdictions establish an effective date several months after the model code publishing date to allow this transition.

The result? A jurisdiction might not enforce IBC 2024 until 2026, 2027, or even later. Similarly, NBC 2025 adoption across Canadian provinces will occur over several years. Some jurisdictions move quickly to adopt the latest codes; others lag by one or even two code cycles.

Amendments and Local Modifications

Complicating matters further, jurisdictions may not adopt model codes verbatim. Local amendments address region-specific concerns:

- Enhanced wind provisions in hurricane-prone coastal areas
- Increased snow load requirements in regions with heavy snowfall
- Stricter seismic design criteria in earthquake zones
- Modified foundation requirements for areas with expansive soils or permafrost

These amendments can affect fabric structure design. A building that meets the IBC 2024 model code requirements might not satisfy the amended code your jurisdiction enforces.

Determining Which Code Applies to Your Project

For dealers and building owners, the critical question is which code version and which amendments apply to a specific project? The answer requires direct communication with the local authority having jurisdiction (AHJ)—typically the building department or building official.

Contacting Your Building Official

Before finalizing building specifications or signing a purchase agreement, dealers and owners should contact their local building department. This conversation should happen early in the planning process, not after committing to specific dimensions or structural details.

Here are four suggestions for interactions with the AHJ:

Identify the correct contact. Most county or municipal websites list building department contact information. For rural areas or unincorporated locations, the county building department typically has jurisdiction. If there's uncertainty about which authority governs a site, starting with the county is the best approach—they can direct inquiries to the correct office.

Ask specific questions. When contacting the building department, dealers and owners should request clear information:

- Which edition of the IBC or NBC is currently enforced?
- What is the effective date of that code adoption?
- Are wind, snow, or seismic load criteria modified from the base code?
- Are local amendments in place, and where can a copy be obtained?

Get it in writing. Written confirmation of the applicable code and load criteria should be requested. The locally adopted code is typically available via the jurisdictions website, ensure this can be obtained.

Confirm permit requirements. During the conversation with the building department, dealers and owners should clarify what the permit application requires: stamped engineering drawings, foundation details, fabric material certifications, calculations, or other documentation. Understanding these requirements early prevents delays at permit submission.

Regional Variations and Special Considerations

Some locations present unique challenges. Coastal areas subject to hurricane wind loads, high-seismic zones in California or British Columbia, and regions with extreme snow loads all impose requirements beyond base code provisions. A fabric building for salt storage on the Gulf Coast or a fertilizer facility in British Columbia faces different demands than a similar structure in a temperate inland location.

Calhoun Super Structure, along with our engineering partners, can supply buildings for challenging jurisdictions and can work with dealers and owners to ensure compliance with local requirements, regardless of which code edition or amendments apply.

Planning for Long-Term Code Compliance

Building codes establish minimum safety and performance standards that apply throughout a structure's life, from initial construction through decades of service. Understanding which code a building was designed and permitted under provides important context for later expansion or modification.

Stamped engineering drawings, permit documents, and code compliance certification should be kept in a safe location. When transferring property ownership, these documents demonstrate that the structure was properly engineered and permitted—valuable information for any buyer.

Most importantly, code compliance should not be approached as an obstacle. It provides assurance that the investment is designed to withstand the specific environmental challenges a site will face over decades of service. A fabric structure engineered to the correct code, with proper load criteria and local amendments, is a structure owners can count on.

Calhoun Super Structure's engineering team stays current with model code updates and jurisdiction-specific requirements across North America. Whether a project is a mining site shelter, composting operation cover, or equipment storage facility falling under IBC 2024, NBC 2025, or an earlier code edition with local amendments, Calhoun ensures each fabric structure meets applicable requirements. The path to a successful project is paved by contacting the local building official early, gathering the necessary code information, and working with experienced professionals who understand the regulatory landscape.

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