

Advisory

December 21, 2018

Subject:

Intermodal Container or Shipping Container – Building Permit Requirements

Background

Intermodal Containers could be considered buildings as defined in the Alberta Building Code (ABC). Once an Intermodal Container is no longer used for the transportation of goods from one place to another, is placed on land and given an occupancy, it is considered a building. Intermodal Containers pose risks in many ways. There are structural concerns, risk of uplift or overturning, snow loads, improper storage of hazardous materials, and excessive settlement into the ground. Intermodal Containers must comply with all aspects of the ABC.

Advisory

In general, a building permit for construction involving an Intermodal Container is required. If an Intermodal Container is being added to a building as an addition, it must comply with all classification requirements including construction type, fire alarm and sprinkler system if applicable. They may require a Fire Resistance Rating on exterior walls, anchorage, and the addition of a standard swinging door. Note that an existing building may not be sprinklered but the addition of an Intermodal Container to the area of a building may require the building to be sprinklered. Temporary permits (under 3 years) may be granted for exceptions to compliance with the code on a case by case basis. Professional involvement will be required for stacked Intermodal Containers based on complexity and will be reviewed on a case by case basis (Division C, 2.4.2.1(9) ABC). For Intermodal Containers not used as a residence and located on a private residential site (single family home) see link to Accessory buildings (<http://www.calgary.ca/PDA/pd/Pages/Home-building-and-renovations/Garages-and-sheds.aspx>). Other permits may be required for the installation of related building services. (i.e Electrical)

Building Permit Drawing Submission Requirements

Division C, 2.2.2.1 - Plans shall indicate the nature and extent of work in sufficient detail to establish that the work will conform to the ABC.

Architectural

Plans must be drawn to scale and include the following information:

- Division C, 2.4.2.1 Stamped by a registered architect or engineer if required by this section of the ABC
- Division A, 1.3.3.2/1.3.3.3 Classification of building and occupancy (Division A, 1.4.1.2 Definition of major occupancy) to be provided. If storage, types of materials to be stored
- Division B, 3.2.3/9.10.14. Provide spatial separation calculations for all buildings, new and existing. Note the requirements for rated assemblies and provide tested listed assemblies that provide the required fire resistance rating (FRR). In the case that there is no property line between buildings to calculate limiting distance, an arbitrary line is drawn between the two buildings and limiting distance is calculated to this line for both buildings. Improvements to the existing building may also be required.
- Division B, 3.4/9.9. Ensure minimum 1 exit is provided (standard swinging door). Requirements for a standard swinging door may be waived if the exceptions of Division B, 9.9.6.4 (5) are met. (not more than 20sq.m., opens directly outside, warehouse building not more than one storey)

- Division B, 3.8/9.5.2 except as provided in articles 9.5.2.3 and 3.8.1.1 every building shall be designed in conformance with Section 3.8 - Barrier free design or as relaxed in accordance with Article 2.2.1.4. of Division C.
- Division B, 3.7/9.31 Health requirements, washrooms will be required as per this section. Portable washrooms may be accepted if the Intermodal Container is temporary.

Mechanical

Plans must be drawn to scale and include the following information:

- Division C, 2.4.2.1 Professional engineer's stamp if required by this section of the ABC 2014
- Ventilation must meet the requirements of Part 6 of the ABC 2014 unless serving a single dwelling (may then use Subsection 9.32.3)

Electrical

Plans must be drawn to scale and show the following information:

- Division C, 2.4.2.1 Professional engineer's stamp if required by this section of the ABC 2014
- Emergency lighting, exit signage and fire alarm system, if required.

Structural

Plans must be drawn to scale and show the following information:

- Division C 2.4.2.2 Professional engineer's stamp required.
- Design loading including snow loads, wind loads, slab etc.
- Location and size of all structural members, anchorage and foundations
- A professional engineer registered to practice in the province of Alberta shall provide written verification that the design and construction is in substantial compliance and confirming that the Intermodal Container has been structurally supported and anchored in accordance with:
 - all of Part 4 requirements of the ABC.
OR
 - Part 4, Welds - The design of welded steel components must meet the requirements of the following standards: CSA S16, "Design of Steel Structures," and CAN/CSA-S136, "North American Specification for the Design of Cold-Formed Steel Structural Members,
 - Division B, 4.3.4.3 - Steel must conform with Steel *building* systems shall be manufactured by companies certified in accordance with the requirements of CSA A660, "Certification of Manufacturers of Steel Building Systems." AND
 - Division A Appendix A -1.1.1.1.(2) - Factory constructed buildings bear the label of an accredited certification agency using CSA A277. Please contact CSA to determine if this is achievable.

Energy Code

The National Energy Code for Buildings 2011 or Alberta Building Code 2014 Division B, 9.36 will apply.

- The NECB/9.36 applies to all new *buildings* and *additions*, where *addition* is defined per NECB Division A, 1.4.1.2. This definition includes all new *conditioned* space that increases the building's *floor surface* area by more than 10 m². Buildings may be exempt from the requirements of the NECB if it will have an occupancy duration of one year or less (3 years or less under ABC 2014 9.36). Temporary permits seeking exemption from NECB or 9.36 requirements will not be granted extensions. www.Calgary.ca/energycodes

Sprinkler

Sprinkler drawings are required if a sprinkler system has to be added or altered.

Plans must be drawn to scale and show the following information:



- Division C, 2.4.2.1. (8) Professional engineer's stamp required.
- Type of commodities stored in the Intermodal Container and resulting sprinkler system type
- Statement that the sprinkler system will meet the requirements of NFPA 13

For storage of dangerous goods, refer to the Alberta Fire Code 2014 Part 3 for further requirements. If storage containers are used for food and/or alcohol, please contact Alberta Health Services and Alberta Gaming & Liquor Commission for further information.

This interpretation is made by the Codes and Standards Technical Interpretation Committee (CSTIC), October 10, 2018.

Chief Building Official
Calgary Building Services
Planning & Development