

**STATE OF NORTH CAROLINA**  
**GENERAL REQUIREMENTS FOR SHIPPING CONTAINERS AS**  
**BUILDING MODULAR UNITS**

All new and used steel cargo shipping containers that are intended for manufacture or remanufacture and use as commercial or residential modular buildings shall comply with the following requirements:

**NEW STEEL SHIPPING CONTAINERS**

All new steel shipping containers shall comply with the International Standards Organization (ISO) Standard 1496-1 and shall have a valid Container Safety Convention (CSC) plate affixed to them.

**USED STEEL SHIPPING CONTAINERS**

All used steel shipping containers shall comply with the following additional requirements:

- 1) Used containers shall be a minimum Grade A or Grade B in accordance with the Institute of International Container Lessors (IICL) *Guide for Container Equipment Inspection, 6<sup>th</sup> edition* (IICL-6) or an equivalent grading standard, as well as the following:
  - A) They shall be certified as cargo worthy (CWO) as required by appropriate ISO, CSC, ABS or an equivalent classification society
  - B) They shall have a legible and valid CSC plate affixed to them.
  - C) They shall have a copy of a valid certification certificate obtained from the certification company and the certificate shall be verified for authenticity to be retained for record by the third-party agency with copies to the occupancy owner and the State Agency.
- 2) Used containers shall not have been manufactured more than 48 months prior to the date of the third-party agency approval.
- 3) Containers shall not have been previously designated or used for transportation or storage of any hazardous materials. The entire container shall be sanitized, free of asbestos and any toxic or deleterious residues. Containers suspected of having harmful levels of toxicity present (i.e., fumigants, pesticides, formaldehyde, styrene, benzene, toluene, or any other toxic chemicals or contaminants shall be properly tested for toxicity as required by appropriate hygienic standards. **The manufacturer's QC Manual shall include the method of verification.**

- 4) Used containers shall be in good condition, free from excessive dents and other severe visual or structural defects, undamaged and have no previous repairs. Containers showing signs of wear (i.e., small rust spots, holes, peeling or flaking paint, etc.) shall be properly evaluated, sanded and repaired, resealed and repainted to meet with current approved repair standards.
- 5) Existing preservative treated wood flooring shall be evaluated and (if deemed necessary) may be encapsulated per current EPA remediation guidelines or entirely removed and replaced with new flooring to comply with the current requirements for interior finishes in the North Carolina Building Code. **The manufacturer's QC Manual shall include the method of evaluation and encapsulation.**
- 6) Used Containers shall not have been painted with any lead paint. If lead paint is found, the paint shall be removed and remediated per current EPA remediation guidelines for lead based paint.

**NOTE:**

**Model plans shall be submitted for container buildings that include any structural Modifications and load calculations for clear spans, cut wall openings, etc. The model plans and structural calculations shall be approved by the third-party agency and stamped by a North Carolina Registered Professional Engineer. **The manufacturer's QC Manual shall include an Appendix to address acceptance and inspection procedures for shipping containers.** A State of North Carolina Modular Construction "Validating Stamp" shall be affixed to each shipping container modular building unit that are intended for manufacture or remanufacture as commercial or residential modular (factory-built) building units per NCGS § 143-139.1 and the North Carolina Modular Construction Regulations (North Carolina Building Code - Volume VIII).**

**Shipping Containers and shipping container modular building units that are intended for manufacture or remanufacture are under the scope of the North Carolina Modular Certification Program. This also applies to any new or used **shipping containers for use as modular building units that** are intended for use as Construction Site Office Buildings, with or without storage.**

**EXCEPTION:**

Shipping Containers used for Fire Training Structures and Props are exempt from the Requirements of the North Carolina State Building Code and the requirements described in these procedures except that training structures and props shall meet the design requirements of NFPA 1402 (Standard on Facilities for Fire Training and Associated Props) and the general requirements for shipping container. A North Carolina Registered Engineer sealed design and letter showing compliance with NFPA 1402 is required. The letter shall indicate that the Engineer or his or her representative inspected the structure to confirm compliance with the sealed design. A North Carolina Modular Construction "Validating Stamp" WILL NOT be issued for these structures.

Shipping containers used for offices or classrooms, in conjunction with Fire Training Structures and Props must comply with the North Carolina Modular Construction Regulations and the North Carolina State Building Code for the occupancy type.

**ADDITIONAL & ALTERNATE REFERENCES:**

Georgia Information Bulletin No. 110-2-18 Shipping Containers, General Requirements

ICC-ES AC462 Acceptance Criteria for Structural Building Materials from Shipping Containers

MBI Safe Use and Compliance of Modified ISO Shipping Containers for use as Buildings and Building Components

NFPA 1402-2019 Standard on Facilities for Fire Training and Associated Props

North Carolina Quality Control and Inspection Protocols for Acceptance of Shipping Container Building Modular Units

**STATE OF NORTH CAROLINA**  
**QUALITY CONTROL AND INSPECTION PROTOCOLS FOR ACCEPTANCE FOR SHIPPING**  
**CONTAINER BUILDING MODULAR UNITS**

The North Carolina approved third-party agency shall be responsible for the evaluation, inspection and approval of all new or used shipping containers and shipping container building modular units as defined by the following definitions:

**CONTAINER:**

A single rigid, sealed, reusable, metal (corrugated) box in which cargo or freight is shipped by sea vessel, air, truck or rail, that is generally 10, 20, 30 or 40 feet in length by 8 feet wide by 8, 8.5, or 9.5 feet high and is designed and constructed in conformance with International Standards Organization (ISO) standards and International Convention for Safe Containers (ICSC) regulations to withstand normal stresses applied during regular transport.

**SHIPPING CONTAINER BUILDING MODULAR UNIT:**

A new or used container which has been inspected, tested and certified by a North Carolina approved third party agency in accordance with the following approved quality control and inspection protocol.

**QUALITY CONTROL AND INSPECTION PROTOCOLS**  
**FOR SHIPPING CONTAINER MODULAR BUILDING UNITS**

- 1) New and used containers shall be certified to comply with the current International Organization for Standardization (ISO) Standard ISO-1496.1 and the International Commission for Safe Containers (CSC) regulations. Containers shall be general purpose or dry bulk cargo type with a valid "CSC" safety approval plate. Containers which do not have a valid safety approval plate shall not be permitted for manufacture or remanufacture as factory modular buildings. Containers previously designated to transport hazardous materials, dangerous or toxic substances shall not be permitted for manufacture or remanufacture as factory modular buildings. The manufacturer's QC Manual shall include the method of verification.
- 2) Used containers shall be a minimum Grade A or Grade B in accordance with the Institute of International Container Lessors (IICL) *Guide for Container Equipment Inspection, 6<sup>th</sup> edition* (IICL-6) or an equivalent grading standard and shall be certified as cargo worthy (CWO) as required by ISO, CSC, ABS or an equivalent classification society and shall have a legible and valid CSC plate affixed to them. A copy of the valid certification certificate shall be obtained from the certification company (when available) and shall be verified for authenticity and retained for record by the third-party agency, or

- 3) Used containers shall comply with one of the following evaluations, testing and inspection protocols:
- a) Acceptance based on an ICC-Evaluation Service Report (ESR) or equivalent evaluation report from an approved accredited testing evaluation agency which conforms to AC-462 *Acceptance Criteria for Shipping Container Building Modular Units*, or
  - b) Acceptance based on current International Organization for Standardization (ISO) or International Convention for Safe Containers (ICSC) or International Container Lessors (IICL) or American Bureau of Shipping (ABS) or equivalent certification organization which perform the evaluation, testing and inspection of existing shipping containers, or
  - c) Acceptance based on an equivalent alternative protocol approved by the North Carolina Department of Insurance, Office of the State Fire Marshal, Manufactured Building Division.

**ADDITIONAL & ALTERNATE REFERENCES:**

**Georgia Information Bulletin No. 110-2-19 Quality Control and Inspection Protocols for Shipping Container Building Modules**

**ICC-ES AC462 Acceptance Criteria for Structural Building Materials from Shipping Containers**

**MBI Safe Use and Compliance of Modified ISO Shipping Containers for use as Buildings and Building Components**

**NFPA 1402-2019 Standard on Facilities for Fire Training and Associated Props**

**North Carolina General Requirements for Shipping Container Building Modular Units**