

INCH-POUND

MIL-PRF-32349A

24 August 2011

SUPERSEDING

MIL-PRF-32349

25 March 2011

## PERFORMANCE SPECIFICATION

CONTAINER, CARGO  
TRIPLE CONTAINER (Tricon)  
(WITHOUT CABINETS, DRAWERS, OR SHELVES)

This specification is approved for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 Scope. This specification describes a 6 feet (ft) 5-1/2 inches (in) long by 8 ft wide by 8 ft high (1968 millimeters (mm) by 2438 mm by 2438 mm) (external measurements) reusable International Standards Organization (ISO) compatible triple container (Tricon) used for the storage, transportation and distribution of dry cargo.

1.2 Description. Tricons will be available in two types as follows:

TYPE 1 - One set of double doors, located on one 6 ft 5-1/2 in (1968 mm) curb side, only.

TYPE 2 - Two sets of double doors, located on each of the 6 ft 5-1/2 in sides (1968 mm) curb and road sides.

Tricons will be manufactured to the latest ISO standards and their corresponding amendments as described in this document. Three Tricons, when coupled together, will be an ISO-compatible empty shell container with tie downs and will measure 19 ft 10-1/2 in long by 8 ft wide by 8 ft high (6058 mm by 2438 mm by 2438 mm) (external measurements) and will be in accordance with this specification. Throughout this document, three Tricons when coupled are referred to as a 20-foot module or container.

Comments, suggestions, or questions on this document should be addressed to U.S. Army RDECOM, Tank Automotive Research, Development and Engineering Center, ATTN: RDTA-EN/STND/TRANS MS #268, 6501 E. 11 Mile Road, Warren, MI 48397-5000 or emailed to [DAMI\\_STANDARDIZATION@conus.army.mil](mailto:DAMI_STANDARDIZATION@conus.army.mil). Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.daps.dla.mil>.

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## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract (see 6.2).

## FEDERAL SPECIFICATIONS

TT-C-490 - Chemical Conversion Coatings and Pretreatments for Ferrous Surfaces (Base for Organic Coatings)

## FEDERAL STANDARDS

FED-STD-595/34094 - Green 383  
FED-STD-595/33446 - Tan 686A

## COMMERCIAL ITEM DESCRIPTIONS

A-A-59745 - Zinc-Rich Coatings

## DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL-53072 - Chemical Agent Resistant Coating (CARC) System, Application Procedures and Quality Control Inspection

## DEPARTMENT OF DEFENCE STANDARDS

MIL-STD-1366 - Transportability Criteria

(Copies of these documents are available from <https://assist.daps.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

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### CODE OF FEDERAL REGULATIONS (CFR)

- 49CFR450 - Coast Guard, Department of Homeland Security, General
- 49CFR451 - Coast Guard, Department of Homeland Security, Testing and approval of containers
- 49CFR452 - Coast Guard, Department of Homeland Security, Examination of containers
- 49CFR453 - Coast Guard, Department of Homeland Security, Control and enforcement

### ARMY REGULATIONS (AR)

- AR 70-38 - Research, Development, Test and Evaluation of Materiel for Extreme Climatic Conditions (15 Sept 1979)

(Copies of these documents are available from [www.gpoaccess.gov/cfr/index.html](http://www.gpoaccess.gov/cfr/index.html) or U.S. Government Printing Office, P.O. Box 979050, St. Louis, MO 63197-9000.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract (see 6.2).

### ASTM INTERNATIONAL

- ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test
- ASTM F883 - Standard Performance Specification for Padlocks

(Copies of these documents are available from [www.astm.org](http://www.astm.org) or ASTM International, P.O. Box C700, West Conshohocken, PA 19428-2959.)

### GENERAL MOTORS CORPORATION (GM)

- GMW14872 - Cyclic Corrosion Laboratory Test - English

(Copies of this document are available from General Motors North America, c/o Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112 or [www.ih.com](http://www.ih.com) or as directed by the contracting officer.)

### INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

- ISO 668 - Containers, Series 1 Freight, Classification, Dimensions and Ratings (DoD Adopted)
- ISO 1161 - Containers, Series 1 Freight - Corner Fittings - Specification (DoD Adopted)
- ISO 1496-1 - Containers, Series 1 Freight - Specification and Testing - Part 1: General Cargo Containers for General Purposes

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## ISO 6346 - Freight Containers - Coding, Identification and Marking

(Copies of these documents are available from [www.iso.org](http://www.iso.org) or [www.ansi.org](http://www.ansi.org) or ANSI Customer Service Department, 25 W. 43rd Street, 4th Floor, New York, NY 10036.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2.

3.2 Materials. The materials selected for construction of the containers and connecting couplers are the responsibility of the contractor and shall be in accordance with applicable federal, military or national technical society, association or institute specification or standard. The materials shall be of sufficient durability to meet all the performance requirements as specified herein. The material shall have no adverse effect on the health of personnel when used for its intended purpose. Toxic chemicals, hazardous substances, or ozone depleting chemicals (ODCs) shall not be used. No radioactive materials, mercury, or cadmium plating shall be used. Care shall be exercised during design and in all material selection to reduce or eliminate the need for hazardous materials and emissions of volatile organic compounds (VOCs) throughout the product's lifecycle.

3.2.1 Material deterioration, prevention, and control. The containers and connecting couplers shall be fabricated from materials, inherently corrosion resistant such as galvanized steel to G-90 level, stainless steel or composites or treated materials that provide protection against the various forms of corrosion and deterioration that may be encountered in all of the operating and storage environments addressed in 3.4. All container designs shall be evaluated for corrosion prevention and control by the GMW14872 Cyclic Corrosion Laboratory Test (CCLT) for 120 cycles to qualify the system (pretreatment, coating type(s) and coating thicknesses). The containers shall operate for a minimum of 20-year service life without performance degradation due to corrosion. No actions beyond normal washing, scheduled maintenance (exclusive of paint touch up), repair of accidentally damaged areas (not a result of intended use, deficiency in design, materials, manufacturing or normal wear), and replacement of damaged paint shall be necessary to keep the corrosion prevention in effect. To meet the nuclear biological and chemical (NBC) survivability requirements, materials shall be selected which can be decontaminated without degradation when cleaned with Decontamination Solution Number 2 (DS2). The connecting couplers (see 3.5.5) shall be considered part of the container and shall also meet the 20-year service life; regardless that normal use of couplers could degrade standard corrosion protection methods. All container designs shall be tested and evaluated for corrosion prevention in accordance with 4.4.3.

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3.2.2 Treatment and painting. The containers shall be made of inherently corrosion resistant materials, or if made of aluminum or steel, shall be treated to provide corrosion resistance for an expected life of 20 years. The containers shall be cleaned, pretreated, primed and painted in accordance with the coating manufacturer's recommendations for the specific coating system that shall be used. The application of the CARC system shall be performed in accordance with MIL-DTL-53072 on all interior and exterior metal surfaces unless otherwise specified (see 6.2). All organic zinc rich coatings shall be in accordance with A-A-59745 with exception that the zinc content shall be 85% or higher by weight in dry film. Top-coat color shall be green 383, Color Number 34094 of FED-STD-595 unless otherwise specified (see 6.2). Top coat color may also be Tan 686A, Color Number 33446 of FED-STD-595 when specified (see 6.2). Coating system shall be selected to provide resistance to environmental degradation and coating chipping (see 4.4.6). The color of interior surfaces shall be green 383, Color Number 34094 of FED-STD-595 unless otherwise specified (see 6.2). When specified, in addition to CARC painting, the underside of the containers shall be undercoated with Tectyl 121B 2.8 Volatile Organic Content (VOC) (Daubert Chemical Company) to further prevent corrosion (see 6.2). A product with equivalent characteristics may be used in lieu of Tectyl 121B 2.8 VOC (see 6.2). Any welds and heat affected zones in galvanized steel shall be coated by zinc rich primer or thermal spray zinc to restore the zinc finish or provide equivalent protection provided by the zinc. Galvanized steel shall be pretreated with zinc phosphate per TT-C-490.

3.2.3 Dissimilar metals. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion.

3.2.4 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs. Used, rebuilt or remanufactured components, pieces, and parts shall not be incorporated into the container. Materials not specified shall be in accordance with applicable federal, military, or national technical society, association or institute specifications or standards.

3.2.5 Construction. The container shall be constructed to minimize recesses and voids where moisture can accumulate. No part of the container shall protrude beyond the outside plane surfaces of the corner fittings.

### 3.3 Operating and design requirements.

3.3.1 Description. Each Tricon shall be 6 ft 5-1/2 in long by 8 ft wide by 8 ft high (1969 mm by 2438 mm by 2438 mm) and shall be suitable for repeated use, waterproof, and non-collapsible. Used materials or components shall not be used as part of any Tricon. Three Tricons, when coupled together, shall hereinafter be referred to as a container for the purposes of this specification, and shall become a 19 ft 10-1/2 in by 8 ft by 8 ft (6058 mm by 2438 mm by 2438 mm) ISO-compatible container with tie downs, vertical logistic tracks, and shelf decking beams when specified (see 6.2) in accordance with this specification and figures 1 through 7. Shelf decking beams, beyond what is required for test in 4.4.5 shall be provided with each Tricon when specified (see 6.2). Unless otherwise specified herein, the container shall be compatible

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with the requirements of the latest version of ISO 1496-1 and its corresponding amendments. The three Tricons coupled shall be rated for 44,800 pounds (20,321 kg) gross weight. The tare weight of each Tricon shall not exceed 2,600 pounds (1,179 kg) for Type 1 and 2,800 pounds (1,270 kg) for Type 2. An individual Tricon shall be rated at 14,900 pounds (6,759 kg) gross weight. The construction of the three coupled Tricons shall allow for stacking according to the latest version of ISO 1496-1, and its corresponding amendments for 1C containers. Reference herein to any specific commercial company, product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or the Department of the Army (DoA), and shall not be used for advertising or product endorsement purposes.

3.3.2 Doors. Doors shall conform to ISO 1496-1 except as specified in this paragraph and in table I. Each door shall have a mechanically attached gasket (seal) capable of meeting all operating environment requirements of 3.4, 3.4.1, and 3.4.2, including conditions of high heat and relative humidity (RH) combined (+140 °F and 95% RH) to provide a weathertight seal. Doors shall be hung on the 6 ft 5-1/2 in (1968 mm) container frame and shall open to not less than the dimensions specified in below table. Tricon door opening dimensions shall be the same for both Type 1 and Type 2 Tricons. Each door shall be provided with minimum one exterior heavy-duty, handle operated cam-locking device with anti-rack provisions, which through lever type action aids in releasing the door seal from the doorframe. Each locking device handle must be capable of accepting a padlock and security seal. All locking rods (see figure 3) shall be mounted such that they cannot be removed by mechanical means from the exterior side of the container to defer pilfering and gain access to the container contents. Means shall be provided to hold and secure the doors in the full open position and shall be of a material which shall not scrape or chafe the container when the doors are closed. All moving parts of the door locking mechanism and door hinges shall be permanently lubricated. The distance between the centerline of each container door handle shall not be less than 35.5 inches (901.7 mm) and not greater than 36 inches (914.4 mm) from the bottom of the each Tricon (see figure 10). The height of each door handle saddle shall be a minimum of 4 inches (101.6 mm) to permit improved security (see figure 10). Other door saddle height dimensions may be considered by the government if sufficient evidence is provided by the contractor to demonstrate improved security beyond what is offered with the 4 inch saddle height.

TABLE I. Tricon door opening dimensions (all dimensions are minimums).

Tricon Type	Height	Width
Type 1 and Type 2	85.5 in (2171.7 mm)	73.625 in (1870.075 mm)

3.3.3 Side walls, end walls, door walls, roof and floor strength. Strength requirements for containers shall meet ISO 1496-1 and shall withstand loading in accordance with ISO 1496-1 test procedures. All Tricon end and side walls, shall meet the ISO 1496-1 strength requirements for side walls.

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3.3.4 Floor. The floor shall be watertight and shall be permanently attached to its bottom side rails and cross members. The floor shall be designed and installed to support the container's payload ( $P_g$ ) as defined in 6.1.1 of ISO 1496-1.

3.3.5 Roof. The roof shall be self-draining and its roof strength (per ISO 1496-1) shall allow less than 1/4 inch (6.35 mm) permanent deflection. No water shall leak into the container, and the roof shall retain not more than 1/8 inch of water when the Tricon is tested in accordance with the ISO 1496-1 weatherproofness test (test number 13) and is level to within 5 degrees.

3.3.6 Seams. Tricon seams shall be sealed with chloroprene/neoprene type sealant where necessary such that the Tricon shall be weathertight.

3.3.7 Anti-pilferage provisions. Hinge-pins and screws, bolts, and other fasteners used for securing the hinges and closing devices to the container, and for holding the essential parts of the sides, ends and roof, shall be welded or otherwise secured in such a manner as to prevent access to the interior of the container without leaving visible signs of tampering. Where such welding destroys the protective coating on the items being welded or on other container parts, the protective coating and the surrounding areas shall be restored to the original condition. All locking device handles shall be furnished with provisions for padlocking and customs sealing. When specified (see 6.2), the locking provisions shall include a steel locking bar and security seal system to deter pilfering, and to permit the rapid identification of tampering used to gain access to the container. When connected and when specified (see 6.2), the locking bar shall be secured to both the left and right door locking rod on each set of double doors provided, and the security seal or cable shall be connected to both the locking rod (see figure 3) and the door catch mechanism in lieu of a padlock (the security seal or cable shall be a bright color such that it is easily recognizable when it has been removed and tampering has occurred). All locking rods (see figure 3) shall be mounted such that they cannot be removed by mechanical means from the exterior side of the container to defer pilfering and gain access to the container contents. The TIR plate (see 3.6.3) shall be mounted on the interior flange of the secondary door as identified in figure 10 to further deter pilferage from prying. The distance as measured from the bottom of the Tricon to the centerline of the TIR plate shall not be less than 82.5 inches (2,095.5 mm) and not greater than 83 inches (2,108.2 mm). A padlock protection box shall be provided such that the box shall prevent bolt cutters from being used on the padlock. The padlock shall be accessible through the bottom of the box, and the box shall be composed of two sections. The section on the right-hand, or primary door, shall contain a covered protection box with a slotted plate designed to receive the protruding plate attached to the left hand, or secondary door. The left-hand, or secondary door, shall contain a protruding plate with a padlock shackle hole in it, and the protruding plate shall be designed to pass through the slotted plate on the right-hand door. When both doors are closed the protruding plate shall pass through the slotted plate and expose the padlock shackle hole inside the protection box. The padlock shackle shall be able to be passed through the padlock shackle hole in the protruding plate of the left hand, or secondary door; and the padlock shall be able to be secured without tools. The padlock protection box shall be composed of minimum 1/4-inch corrosion resistant steel. Each Tricon shall be provided with a Type P01 captive padlock conforming to ASTM F833 with two keys.



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3.3.8 Shoring slots. Type 1 Tricons shall have shoring slots on both interior walls immediately adjacent to the one set of double doors, from floor to ceiling. Type 2 containers shall have shoring slots on both interior walls, immediately adjacent to each set of double doors, from floor to ceiling. All shoring slots shall begin inside the Tricon not more than 3-3/4 inches (95.2 mm) from the closed-doors to restrain the cargo and prevent it from forcing the door open during sudden stops or tilts of the container during transportation. The shoring slots shall be a minimum of 1-5/8 inches (41.275 mm) wide to allow for the attachment of round shoring support bars. The shoring slot shall be fabricated to support 0.4 times the force by the maximum permissible payload, as defined in this specification, applied in the longitudinal direction at any point along the shoring slot. The spacing of the shoring slot tie downs (see 3.5.4.2), in each shoring slot, shall be every 15 inches (381 mm) starting at the floor. Five (5) shoring slot tie downs shall be fabricated from 0.5-inch (12.7 mm) round bar, and shall be located in each slot (see 3.5.4.2). Door opening dimensions as specified in 3.3.2 shall not be obstructed by the shoring slots.

3.3.9 Vertical logistic tracks. Each Tricon shall contain five Series E or Series A vertical logistic tracks (see 6.5) which are made of high strength 12-gauge steel. Each set of five vertical logistic tracks shall be individually welded on each side wall, and as identified on figure 2. The Series E or A vertical logistic tracks shall be within the limits of the corrugation pitch and in the 1-3-1 configuration. The 1-3-1 configuration shall be defined as having one vertical logistic track near each corner of each end wall, with the remaining three vertical logistic tracks being equally spaced near the center of each end wall within the limits of the corrugation pitch (see figure 9). A minimum of twenty-three (23) 1-inch (25.4 mm) minimum welds, equally spaced apart a minimum of 4 inches (101.6 mm) from center to center, shall be used on each side of each vertical logistic track. The distance from the container floor to the centerline of the first slot from the floor of each vertical logistic track shall be a maximum of 9 inches (228.6 mm), and the distance from the container ceiling to the centerline of the first slot from the ceiling of each vertical logistic track shall be a maximum of 9 in (228.6 mm). All vertical logistic tracks shall be one continuous length, and shall correspond with one another and be of the same distance from the floor ( $\pm 0.12$  in) ( $\pm 3.048$  mm).

3.3.10 Shelf decking beams. Shelf decking beams shall meet the requirements stated herein. The length of the shelf decking beam shall be adjustable to accommodate variations in the distance between vertical logistic tracks caused by distortion during use. Shelf decking beams, when connected to the Series E or Series A vertical logistic tracks, shall be positively secured in all directions (i.e., right to left, and up and down). The shelf decking beam connection shall have some type of locking device that secures the shelf decking beam to the Series E or Series A vertical logistic track. This locking device shall allow easy and quick installation and removal of the shelf decking beam without the use of any tools. The decking shelf shall have a working load capacity rating of not less than 2,000 pounds (907 kg) uniformly distributed over a shelf spanning three shelf decking beams as depicted on figure 2, and connected at the same level to each vertical track. Shelf decking beams, beyond what is required for test in 4.4.5, shall be provided with each Tricon when specified (see 6.2).

3.3.11 Vents. All containers shall have minimum of two passive ventilating systems comparable to those used on commercial ISO containers. The vents shall be located in upper



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diagonal corners on opposite walls or doors such that they provide maximum diagonal cross airflow and hot air exhaust, and they shall be designed to deflect rain or spray and prevent water ingress. As a minimum, the external venting surface area of each vent shall be 452 mm<sup>2</sup> (0.7 in<sup>2</sup>) to permit depressurization of the Tricon during air transportation. When specified (see 6.2) vents shall be able to be opened and closed, without tools, from the outside of the Tricon. There shall be no air flow through the vents when they are in the closed position. These opening and closing vents shall be able to lock in place in both the open and closed positions such that they shall remain in their set position.

3.3.12 Manifest box. Unless otherwise specified (see 6.2) two manifest boxes shall be provided on each container. One shall be securely and rigidly fastened to the inside of the right hand door, and one to a flat surface of the outside upper portion of the right hand door as depicted on figure 3. The manifest box on the inside shall not interfere with the shelving area at any level. The manifest box on the outside shall be designed and located in an area that minimizes interference or damage with forklift carriages and backrests being used to lift the Tricon. The manifest box shall be weathertight with a hinge type cover, painted to match the interior or exterior color. The manifest box shall be designed to hold an 8-1/2 inches by 11 inches by 1-1/4 inches thick document (215.9 mm by 279.4 mm by 31.75 mm).

3.4 Operating environmental requirements. The container shall operate under the following environmental conditions without degradation in performance, material failures, or permanent deformation. The container shall be capable of uncovered long term storage in extreme hot and cold climate, high humidity, blowing sand, dust, heavy snows, mud, soft ground, earthquakes, debris, or combination of the above, as defined in AR 70-38 to include stowage on Pre-Positioning (PREPO) afloat vessels up to 30 months without loss of mission essential functions with routine unit-level (i.e., -10 level) maintenance performed every six months. Mission essential functions shall be defined as being transportable by all modes in 3.5.9 through 3.5.9.5, and being able to safely stow a full payload without any damage or deformation.

3.4.1 Storage and transit temperature. The container shall not be damaged by storage or transit in temperature conditions from -40 °F (-40 degrees Celsius (°C)) to +160 °F (+71.1 °C).

3.4.2 Operation in rain. The container shall not exhibit water leakage when subjected to the ISO 1496-1 weatherproofness test (test number 13).

### 3.5 Interface requirements.

3.5.1 Weight, ratings and dimensions. The tare weight of the empty container shall not exceed 2,600 pounds (1,179 kg) for Type 1 and 2,800 pounds (1,270 kg) for Type 2. The maximum gross weight rating of an individual Tricon shall be a maximum of 14,900 pounds (6,759 kg). The three Tricons coupled as a single container shall have a maximum gross weight rating of 44,800 pounds (20,321 kg) (Type 1 and Type 2). The minimum internal dimensions and actual external dimensions and tolerances shall be in accordance with table II. Interior width dimensions from the interior road side wall sill to the edge of the connector-locking holder device (see 3.5.6) located on the bottom half of the interior of the right door shall be no less than 7 ft 3-1/2 in (2222.5 mm). The external dimensions of three Tricons coupled as a single

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container shall become a 19 ft 10.5 in by 8 ft by 8 ft (6058 mm by 2438 mm by 2438 mm) ISO-compatible container. Unless otherwise specified herein, the container shall be in accordance with the requirements of ISO 1496-1. Also, unless otherwise specified herein, the minimum internal dimensions, actual external dimensions, tolerances, and diagonal differences of the container shall be in accordance with ISO 668.

TABLE II. Tricon dimensions.

	Length	Width		Height
Interior (minimums)	74.09 in (1882 mm)	<u>Type 1</u> 90.59 in (2301 mm)	<u>Type 2</u> 88.58 in (2250 mm)	88.15 in (2239 mm)
Exterior	77.50 in (+0, -.079 in) (1969 mm (+0, -2.0 mm))	96 in (+0, -0.1875 in) (2438.4 mm (+0, -5.0 mm))		96 in (+0, -0.1875 in) (2438.4 mm (+0, -5.0))

3.5.2 Forklift pockets and relief notches. The container shall have forklift pockets that conform to ISO 1496-1, Annex C, unless otherwise specified in this paragraph. Type 1 and Type 2 containers shall have four-way entry, and the entry points shall not interfere with the doors or door height requirements in 3.3.2. A relief notch shall be provided along the bottom rail at the corner block on all four sides of each Tricon. The forklift pockets on the door side and the side wall opposite of the door side shall be a minimum of 4.5 inches high and 14.0 inches wide. The forklift pockets on the front and rear end walls shall be a minimum of 4.0 inches high and 12.0 inches wide and conforming with ISO 1496-1.

3.5.3 Corner fittings. All eight corner fittings on each Tricon shall be bottom corner fittings as specified in ISO 1161 to permit horizontal coupling between containers. The corner fittings shall be mounted to the container so that the elongated top and bottom apertures are parallel to the door end of the Tricon.

3.5.4 Tie downs. Type 1 Tricons shall be provided with top rail, bottom rail and corner post tie-downs per 3.5.4.1 and 3.5.4.2. Type 2 Tricon shall be provided with top rail and bottom rail tie-downs per 3.5.4.1. All tie downs shall be capable of accepting snap hooks or 1-inch (25.4-mm) wide metal strapping without tearing the strapping. Adequate clearance shall be provided at the tie down for attachment of a metal hook with adjustable webbing, and with minimum hook dimensions as specified on figure 7. All top and bottom rail loop tie-downs shall withstand a 4,000-pound load at an angle of 45-degrees from the horizontal and 45 degrees from the vertical without permanent deformation. All corner post and shoring slot tie-downs shall withstand a 2,000-pound load at an angle of 45-degrees from the horizontal and 45 degrees from the vertical without permanent deformation. The tie down provisions shall restrain the load without any of the following: weld failure; permanent deformation; cracking; and loosening or breaking of the provision or its connecting structural components. Conduct tie down tests in accordance with 4.4.2.

3.5.4.1 Top and bottom rail tie downs. A total of 28 top and bottom rail loop tie downs for Type 1 Tricons shall be provided in each container as depicted on figure 1, and as in table III. Five loop tie downs shall be provided and welded on the bottom rail and five on the top rail of each enclosed end wall and four on the top and bottom of the side wall opposite the door. The

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five tie downs on each rail shall be set into the recess of the wall corrugations so as not to impinge on the usable interior cubic volume of the container. Type 2 Tricons shall have 5 loop tie downs welded on the top and bottom rails of each enclosed end wall for a total of 20 loop tie downs as shown in Table III. All loop tie downs shall be constructed of 1/2-inch (12.7 mm) rod steel and formed into a loop as depicted on figures 1 and 8. All top and bottom rail loop tie downs shall be positioned as shown in figure 1. There shall be a minimum distance of 74-1/4 inches (1885.95 mm) between the inside of each bottom rail loop tie down on each end wall and the inside of the corresponding tiedown on the opposite end wall. The measurement shall be taken parallel to the floor and perpendicular to the end walls.

3.5.4.2 Corner post and shoring slot tie downs. Type 1 containers shall have 5 tie downs on each of the two corner posts opposite the door as shown on figure 1 and Table III, and all containers shall have 5 tie downs in each of the shoring slots as required in 3.3.8 and as shown in figure 1 and Table III. Corner post and shoring slot tie downs shall be positioned at 15, 30, 45, 60, and 75 ( $\pm 1/2$ ) inches respectively (381, 762, 1143, 1524, and 1905 ( $\pm 12.7$ ) mm respectively) and from the floor as depicted on figure 1, and as in below table III. Corner post and shoring slot tie downs (see 3.3.8) shall be constructed of 1/2-inch (12.7 mm) rod steel and welded to the corner post as depicted on figure 1.

TABLE III. Configuration of tiedowns.

Tricon Type	Top Rails	Bottom Rails	Corner Post	Shoring slot
Type 1	14 total (5 each end wall and 4 on side wall opposite door)	14 total (5 each end wall and 4 on side wall opposite door)	10 total (5 each corner opposite the door)	10 total (5 each side of the door)
Type 2	10 total (5 each end wall)	10 total (5 each end wall)	None	20 total (5 each side of both doors)

3.5.5 Tricon connecting couplers. Three Tricons shall be coupled with connectors to form an integral 20-foot (actual 19 ft 10-1/2 in, 6058 mm) module or container, which is dimensionally equivalent to, and does not violate, ISO envelope requirements for the standard ISO 1C container, unless otherwise specified herein. The coupling process shall not take more than 30 minutes using the connecting couplers provided with the three containers, 2 guides, and one forklift truck to position and assist in the connection. All connecting couplers shall be one-piece assembly units, and all connecting coupler parts shall be capable of being operated and connected to the container without any tools. Each connecting coupler shall be capable of being securely fastened to a single container's corner fitting allowing the connection to be made first to one container and then to another. The deflection of the long bottom rail below the surface of the corner fittings of an individual Tricon container shall not exceed 1 in (25.4 mm) after being lifted with a test load from the 4 top corner fittings on an assembled 20-foot (actual 19 ft 10-1/2 in, 6058 mm) module or container; and lifted with a test load on an individual Tricon container. The four top corner fittings shall be bottom corner fittings as specified in ISO 1161 to permit horizontal coupling between containers (see 3.5.3). Testing shall be in accordance with 5.3.4 of ISO 1496-1 and 4.4.9 herein, and each individual Tricon container shall

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be loaded so that the combined mass of the individual Tricon container with its test load is 1.8 times the rated capacity load of each Tricon container (i.e., 1.8R). The currently used coupling is NSN 3040-01-387-4048, although all connecting couplers that meet the requirements of 3.5.5 shall be permitted. Tricon connecting couplers shall meet operating and storage temperature requirements specified in 3.4.1.

**3.5.6 Connecting couplers, quantity and storage.** Each container shall be provided with three connecting couplers conforming to the requirements identified above. A connector-locking holder device shall be provided to secure and store three connecting couplers. The device shall be located on the bottom half of the interior of the right door. The depth of the device shall not exceed 4-5/8 inches (117.475 mm). The length and width of the device shall be reasonably sized to allow adequate storage and ease of use, not reduce specified internal dimensions of the container, or interfere with the capability of shelves to be raised up or down.

**3.5.7 Container stacking.** The construction and design of the Tricons shall permit stacking of the three coupled Tricons as a 20-foot (actual 19 ft 10-1/2 in, 6058 mm) module or container in accordance with the latest version of ISO 1496-1, and its corresponding amendments, for 1C containers (Test 1). The following shall be required per Table 3 of ISO 1496-1 for 9-high stacking: the test force per container, represented by three tricons coupled together; on all four corners simultaneously shall be 3,767 KN (846,855.3 lbf); the test force per pair of end fittings shall be 1,883 KN (423,315.2 lbf); and the superimposed mass represented by the test force shall be 470,380 lb (213,360 kg).

**3.5.8 Convention for Safe Containers (CSC) certification.** The container design and each Tricon shall be certified in accordance with 49CFR, Parts 450 through 453. The 9-high stacking test shall be for three (3) Tricons coupled together supporting loaded ISO 668, 1C containers in accordance with the latest version of ISO 1496-1, and its corresponding amendments, for 1C containers. The CSC plate data shall show the 9-high stacking certification.

**3.5.9 Transportability.** Individual Tricons and three Tricons coupled together to form an equivalent ISO 1C container unless specified herein, shall be transportable by air, highway, marine and rail assets as specified herein. The individual container, and three containers coupled together, shall also be capable of being stacked and transported by military and commercial vehicles, and trailers, trains, marine vessels, aircraft, dolly sets, forklifts, and cranes; and shall withstand the impact forces encountered in shipment and loading without damage or permanent deformation.

**3.5.9.1 Air transportability.** Three coupled Tricons, and individual Tricons, shall be internally air transportable by C-130, C-5, and C-17 aircraft. Three coupled Tricon containers, and individual Tricons, shall be externally transportable by CH-47, V-22, CH-53, and UH-60 helicopters by sling.

**3.5.9.2 Rail transportability.** Three Tricons coupled together as a 20-foot (actual 19 ft 10-1/2 in, 6058 mm) container or module, and individual Tricons shall be rail transportable in CONUS and NATO countries without restriction.

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3.5.9.3 Marine transportability. Three Tricons coupled together as a 20-foot (actual 19 ft 10-1/2 in, 6058 mm) container or module, and individual Tricons shall be transportable by breakbulk cargo ships, Roll-On/Roll-Off (RORO) ships; C-8 and larger, Lighter Aboard Ship (LASH); barge carrying ships (SEABEE); Lighter, Amphibious, Resupply, Cargo (LARC)-LX, and larger lighter vessels; Landing Craft Utility (LCU); Landing Craft Mechanized (LCM); Landing Craft Utility (LCU) 1646 and LCU 2000 lighters and the Logistics Support Vessel (LSV); and Army barges and lighters in accordance with MIL-STD-1366. Individual Tricons and three Tricons coupled as a 20-foot (actual 19 ft 10-1/2 in, 6058 mm) container or module shall withstand, without damage, the shock, rolling and pitching normally experienced in marine transportation on the deck or in the hold of the cargo vessel. Marine transportation shall include, but not be limited to, Vertical Replenishment (VERTREP) missions and Connected Replenishment (CONREP) missions.

3.5.9.4 Highway transportability. Three Tricons coupled together as a 20-foot (actual 19 ft 10-1/2 in, 6058 mm) container or module, and individual Tricons shall be capable of unrestricted highway transport.

3.5.9.5 Loading and handling equipment. Individual Tricons, and Tricons coupled in the two and three configuration, fully loaded, shall be able to be lifted and handled by suitably rated forklifts and cranes so that they may be transported in all the modes described in 3.5.9 through 3.5.9.4.

### 3.6 Support and ownership requirements.

3.6.1 Exterior markings. Each Tricon shall be marked in accordance with ISO 6346. Example locations for the required markings are provided in figures 3 through 6, although other locations may be used provided that they conform to ISO 6346 and contain all the required data and information. The location of the other optional markings may be specified at the time of purchase by the customer. If specified at the time of purchase, the contractor may obtain the user's serial numbers from the contracting officer (see 6.2). Unless otherwise specified, the contractor shall stencil in 1-in (25.4 mm) letters on the exterior of the left hand door panel in the area below the CSC data plate, and as shown on figure 3: "CARC" and the month and year the Tricon was painted, using a two digit numerical format.

3.6.2 Interior markings. The owner's code, serial number, and check digit, as defined by ISO 6346, shall be stamped in characters not less than 1/2-inch (12.7 mm) high. The unit number shall be located on either the top surface of the curb side rear, bottom corner fitting (close to the data plate on the door side), or on the interior surface of the curb side door header within 18 inches (457 mm) from the interior of the curb side, front, top corner fitting, where it shall not be obscured.

3.6.3 Approval plates. An International Convention for Safe Containers (CSC), Transport Internationale des Routiers (TIR), and Timber Component Treatment Requirements, if applicable, of the Australian Department of Health (TCT) plates or plaques shall be applied for and obtained from a designated approval authority and attached and displayed as required by the

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CSC, in accordance with 49CFR450 through 49CFR453. Each Tricon shall be affixed with the seal of the approval authority.

3.6.4 Consolidated data plate. The Consolidated Data Plate shall contain: Transport Internationale des Routiers (TIR) markings; Manufacturer's Data Plate markings; and CSC plate data required in 3.5.8. The height of the data plate shall be no less than 250 mm (9.8425 in). The location of the consolidated data plate shall be as depicted on figure 3.

3.6.5 Workmanship. Each Tricon shall have no evidence of cracks, dents, scratches, burrs, sharp edges, pinching hazards, loose parts, missing fasteners, distortions, spatter, foreign material, or any other cosmetic or structural defects which may degrade the performance requirements of this specification.

#### 4. VERIFICATION

4.1 Classification of inspections. Inspections shall be classified as follows:

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.2 First article inspection. When a first article inspection is required (see 6.2), it shall be performed on an individual Tricon as well as on three completed Tricons connected together. For the individual Tricon, the inspection shall include the conformance examinations per table IV and the testing in 4.4. Three Tricons coupled together shall be tested in accordance with 4.4.1. Nonconformance to any specified requirements or the presence of one or more defects shall be cause for rejection and failure of the first article inspection.

4.3 Conformance inspection.

4.3.1 Examination. Each Tricon production unit shall be examined through document and visual method as specified in table IV. Nonconformance to any specified requirements or the presence of one or more defects shall be cause for rejection.

4.4 Testing. All retest of failed parts shall be at the contractor's expense. Any loss of form, fit, or function of the Tricons during testing shall be considered a failure and shall require corrective action as required by the contract. Expendable items (identified prior to the test) shall retain their function for their intended service life and are not subject to these criteria.

4.4.1 Tests. Using the coupling connectors, three Tricons shall be connected to form an integral 20-foot (actual 19 ft 10-1/2 in, 6058 mm) module or container. The 20-foot (actual 19 ft 10-1/2 in, 6058 mm) module or container shall then be subjected to all the tests as described in ISO 1496-1 with the exception of the floor test. The weatherproofness test shall be performed as the last ISO 1496-1 test. In addition, the coupled Tricons shall be certified for CSC 9-high stacking, and tested in accordance with the latest version of ISO 1496-1, and its corresponding amendments, for CSC 9-high stacking (see 3.5.8). Nonconformance to 3.5.7 and any



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requirement in section 3, the failure of any test, or the presence of one or more defects shall be cause for rejection or failure of the first article inspection.

TABLE IV. Examination schedule.

Number	Test/Examination	Reference requirement paragraph	First article	Conformance
101	Materials not as specified	3.2	X	X
102	Corrosion Control Performance not as specified.	3.2.1	X	
103	Protection and coating adherence not as specified	3.2.2	X	X
104	Coating thickness not as specified	3.2.2	X	X
105	CARC painting missing or not as specified	3.2.2	X	X
106	Color not as specified	3.2.2	X	X
107	Dissimilar metals are not effectively insulated from each other	3.2.3	X	X
108	Used, rebuilt, or remanufactured components, pieces, or parts used	3.2.4	X	X
109	Construction not as specified.	3.2.5	X	X
110	Components missing or not as specified	3.3.1	X	X
111	Doors missing or not as specified	3.3.2	X	X
112	Side walls missing or not as specified	3.3.3	X	X
113	End walls missing or not as specified	3.3.3	X	X
114	Floor missing or not as specified	3.3.4	X	X
115	Roof missing or not as specified	3.3.5	X	X
116	Seams not as specified	3.3.6	X	X
117	Anti-pilferage provisions missing or not as specified	3.3.7	X	X
118	Padlock protection box not as specified	3.3.7	X	X
119	Height of TIR plate measured from bottom of Tricon not as specified.	3.3.7	X	X
120	Height of door handles measured from bottom of Tricon not as specified.	3.3.2	X	X
121	Restraint system/shoring slots missing or not as specified.	3.3.8	X	X
122	Vertical logistic track missing or not as specified	3.3.9	X	X
123	Doors missing or not as specified	3.3.2	X	X
124	Vents missing or not as specified	3.3.11	X	X
125	Weight not as specified	3.5.1	X	
126	Forklift pockets and relief notches missing or not as specified	3.5.2	X	X
127	Corner fittings missing or not as specified	3.5.3	X	X
128	Tie downs missing or not as specified	3.5.4	X	X

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Number	Test/Examination	Reference requirement paragraph	First article	Conformance
129	Loop tie downs missing or not as specified	3.5.4.1	X	X
130	Corner post tie downs missing or not as specified	3.5.4.2	X	X
131	Connecting couplers missing or not as specified	3.5.5, 3.5.6	X	X
132	Deflection not as specified.	3.5.5	X	X
133	Stacking not as specified.	3.5.7	X	X
134	Exterior markings missing or not as specified	3.6.1	X	X
135	Interior markings missing or not as specified	3.6.2	X	X
136	Approval plates missing or not as specified	3.6.3	X	X
137	Consolidated data plate missing or not as specified	3.6.4	X	X

#### 4.4.2 Tie down testing.

4.4.2.1 Top and bottom rail tie down testing. Ability of the tie downs to accept strapping hooks and withstand required loads shall be verified. Loads applied to each tie down provision shall be measured with an appropriate measuring device, such as a load cell. Analysis and testing shall be as follows:

- a. An interface test shall be conducted on each type of tie down provision using a hook with minimum dimensions as specified on figure 7. The tie down provisions shall permit the hook to fully engage with the tie down provision. The hook shall not be blocked, or its movement restricted, by the container wall or post. Adjustment of the strapping shall not be restricted. The tie down provisions shall not cause tearing or other damage to the strapping.
- b. A load of 6,000 pounds shall be applied statically and independently at an angle of 45-degrees from the horizontal and 45 degrees from the vertical, and shall be conducted on each tie down provision; and each tie down provision may be tested individually.
- c. The 6,000 pound load shall be applied statically and independently for not less than 6.0 seconds.
- d. The points used to apply the load to the tie down shall be located so they do not interfere with or reduce the loading on the structural member next to the tie down provisions.
- e. Failure of the tie down provisions to perform as specified in 3.5.4 shall constitute failure of this test.

4.4.2.2 Corner post and shoring slot tie downs. Ability of the tie downs to accept strapping hooks and withstand required loads shall be verified. Loads applied to each tie down

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provision shall be measured with an appropriate measuring device, such as a load cell. Analysis and testing shall be as follows:

- a. An interface test shall be conducted on each type of tie down provision using a hook with minimum dimensions as specified on figure 7. The tie down provisions shall permit the hook to fully engage with the tie down provision. The hook shall not be blocked, or its movement restricted, by the container wall or post. Adjustment of the strapping shall not be restricted. The tie down provisions shall not cause tearing or other damage to the strapping.
- b. A load of 3,000 pounds shall be applied statically and independently at an angle of 45-degrees from the horizontal and 45 degrees from the vertical, and shall be conducted on each tie down provision; and each tie down provision may be tested individually.
- c. The 3,000 pound load shall be applied statically and independently for not less than 6.0 seconds.
- d. The points used to apply the load to the tie down shall be located so they do not interfere with or reduce the loading on the structural member next to the tie down provisions.
- e. Failure of the tie down provisions to perform as specified in 3.5.4 shall constitute failure of this test.

4.4.3 Corrosion test. Nonconformance to 3.2 through 3.2.5 shall constitute failure of this test.

- a. All container, container connecting couplers, and Tricon designs shall be evaluated for corrosion prevention and control. The GMW14872 CCLT shall be performed for 120 cycles to qualify the system (pretreatment, coating type(s) and coating thicknesses). To evaluate corrosion resistance, a minimum of six test coupons for each material variation and process shall be manufactured with the substrate and coating system that shall be used in production. Test coupons (4 inches (101.6 mm) by 12 inches (304.8 mm)) shall be scribed through the coating system to the substrate prior to testing. Test coupons shall be fabricated with and without CARC topcoat. There shall be no more than 1 mm scribe creep (measured from one side of the scribe) after scraping with a metal putty knife after 120 cycles of testing. There shall be no blistering and no more than 5 rust spots in any 24 square inches (15,483.84 square mm) of test surface. All twelve test coupons of each test variation shall meet these acceptance requirements to be considered an acceptable design.
- b. A minimum of four connector couplings for each material variation and process shall be manufactured with the substrate and coating system that shall be used in production. Connector couplings shall be scribed through the coating system to the substrate prior to testing. Connector couplings shall be fabricated with and without CARC topcoat. There shall be no more than 1 mm scribe creep (measured from one side of the scribe) after scraping with a metal putty knife after 120 cycles of testing. There shall be no blistering and no more than 5 rust spots in any 2 square in (1290.32 square mm) of test surface. All 8 connector couplings of each test variation shall meet these acceptance requirements to be considered an acceptable design.

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- c. All retest of failed parts shall be at the contractor's expense.
- d. Pass - Fail Criteria: Any loss of form, fit, or function shall be considered a corrosion failure and requires the same type of corrective action during or after the GMW14872 CCLT as any other failure occurring during or after the Initial Production Test (IPT). Expendable items (identified prior to the test) shall retain their function for their intended service life and are not subject to these criteria.

4.4.4 Weatherproofness test. The weatherproofness test shall be performed as indicated in ISO 1496-1 (test number 13). The self-draining test shall be performed simultaneously. Nonconformance to 3.3.5 and 3.4.2 shall constitute failure of this test.

4.4.5 Shelf decking beam test. The shelf decking beams shall meet the working load capacity as specified in 3.3.10. A 3/4-inch (19.05 mm) shelf shall be used for the purpose of conducting this test. The shelf shall span the entire length and width of the Tricon interior. Install the first 3/4-inch (19.05 mm) plywood shelf at 2 ft  $\pm$  2 in (609.6 mm  $\pm$  50.8 mm) from the floor of the Tricon, and then install three subsequent 3/4-inch (19.05 mm) plywood shelves equally spaced every 16 inches (406.4 mm) above the initial shelf. Uniformly load and secure each shelf with not less than 2,000 pounds (907 kg). The load shall remain on each shelf for all drop tests. Close the Tricon doors and center a nominal 4 inches (101.6 mm) by 4 inches (101.6 mm) piece of lumber under the bottom rail of the door end of the Tricon. Raise the opposite side of the Tricon to a height of 12 inches (+3/4, -1/4 in) (304.8 mm (+19.05, -6.35 mm)) and then allow it to fall freely onto a concrete surface using the 4 inches (101.6 mm) by 4 inches (101.6 mm) piece of timber as a pivot. As a minimum, the Tricon lift height shall be measured at each corner of the Tricon. The same procedures shall be completed for each of the sides of a Tricon; with the raised side always on the side opposite the timber. Lift the entire Tricon 12 inches (+3/4, -1/4 in) (304.8 mm (+19.05, -6.35 mm)) and then allow the Tricon to fall freely onto a flat concrete surface. Following completion of each individual test, the Tricon and shelves shall be inspected. Permanent deformation, dislocation, damage to, and/or failure of the E or A vertical logistic tracks, welds, shelf decking beams, or related components shall be cause for rejection. Nonconformance to 3.3.9 through 3.3.10 shall constitute failure of this test.

4.4.6 Protection and coating adherence test. Coating adhesion shall be verified by ASTM D3359 Method B and MIL-DTL-53072. Nonconformance to 3.2.2 shall constitute failure of this test.

4.4.7 Coating thickness test. Test in accordance with MIL-DTL-53072. Nonconformance to 3.2.2 shall constitute failure of this test.

4.4.8 Shoring slots test. A 1-5/8 inch (41.275 mm) wide, rigid metal bar is to be inserted in each pair of shoring slot supports so that it runs transversely across the Tricon between the two supports. A load equal to 0.6 *P* is to be distributed across the middle 915 mm (3 ft) of the bar such that the load is applied horizontally towards the Tricon's doors. The doors shall be fully opened during this test. This load shall be maintained on the bar for at least 2 minutes. Nonconformance to 3.3.8 shall constitute failure of this test.

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4.4.9 Coupling and lifting test. Three Tricon containers shall be coupled with their supplied connectors in the locked position to form an integral 20-foot (actual 19 ft 10-1/2 in, 6058 mm) module or container in not more than 30 minutes. A maximum of one forklift truck shall be used to position and assist in the connection of the Tricons to form an ISO equivalent 20-foot (actual 19 ft 10-1/2 in, 6058 mm) module or container. The 20-foot (actual 19 ft 10-1/2 in, 6058 mm) module or container shall be loaded as required in 3.5.5 and lifted from the 4 top corner fittings. The four top corner fittings shall be bottom corner fittings as specified in ISO 1161 to permit horizontal coupling between containers (see 3.5.3). The Tricons shall be uncoupled in not more than 30 minutes with one forklift truck after being lifted, and the connecting couplers shall be returned to their original storage area in each Tricon container during the 30 minutes. The lifting test shall be repeated on each individual Tricon container with their loads as required in 3.5.5. Following completion of the coupling and lifting test, the Tricon containers and their connectors shall be inspected. Deflection of the long bottom rail below the surface of the corner fittings of each individual Tricon container shall be measured, and shall not exceed 1 inch (25.4 mm). Permanent deformation, dislocation, damage to, and/or failure of the containers and their connectors shall be cause for rejection. Nonconformance to 3.5.5, 3.5.6, and 3.5.9.5 shall also constitute failure of this test.

## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2).

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The Tricon covered by this specification is intended for the storage, transportation and distribution of dry cargo. These Tricons are based on commercial designs and manufactured using commercial processes. They are further modified for military unique requirements which are identified within this specification for operation in an extreme environment, under conditions typically found in military operations. Military unique requirements include, but are not limited to the following: NBC survivability; military tie downs, corrosion resistance; storage and transit in temperatures from -40 °F (-40 degrees Celsius (°C)) to +160 °F (+71.1 °C); internally air transportable by a variety of military aircraft; and externally air transportable from a CH-47 helicopter by sling. Further military unique modifications to Tricons may include, but are not limited to the following: field petroleum systems; field hygiene systems; command and control posts; and chapels. Army users shall contact the Tank-automotive and Armaments Command (TACOM) Natick Integrated Logistics Support Center (ILSC) - AMSTA-LC-CESI, (508) 233-6002 for Tricon ordering requirements. Other services may also contact the TACOM ILSC for Tricon ordering requirements. CARC green 383, color number 34094 of FED-STD-595 is the default paint requirement for the Tricon described within this specification, and the NSN for this Tricon is 8150-01-579-3761. Other NSNs are available for ordering non-CARC and additional interior and exterior colors for Tricons manufactured to this specification (see 6.2). Contact the Natick ILSC for further guidance and ordering.

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6.2 Acquisition requirements. Acquisition documents will specify the following:

- a. Title, number, and date of this publication.
- b. If required, the specific issue of individual documents referenced (see 2.1.1 and 2.3).
- c. When first article testing is required (see 3.1 and 4.2).
- d. When exterior color is other than as specified (see 3.2.2).
- e. When exterior color is Tan 686A, Color Number 33446 of FED-STD-595 (see 3.2.2).
- f. When interior color is other than as specified (see 3.2.2).
- g. Optional markings (see 3.6.1).
- h. When Tectyl 121B 2.8 VOC (Daubert Chemical Company) or equivalent undercoating is specified (see 3.2.2).
- i. When shelf decking beams are specified (see 3.3.10).
- j. Packaging requirements (see 5.1).
- k. When locking bar and security seal or cable is specified (see 3.3.7).
- l. When serial numbers are specified (see 3.6.1).
- m. When CARC paint is other than as specified (see 3.2.2).
- n. When opening and closing vents are specified (see 3.3.11).
- o. When manifest boxes are not required (see 3.3.12).

6.3 First article inspection. When a first article inspection is required, the item(s) should be a first article production unit. The contracting officer should include specific instructions in acquisitions' documents regarding arrangements for examinations, approval of the first article test results, and disposition of the first article(s).

6.4 Corrosion control methods. Corrosion control can be achieved by a combination of design features as in TACOM Design Guidelines for Prevention of Corrosion in Combat and Tactical Vehicles, March 1988), material selection (e.g. composites, corrosion resistant metal, galvanized steel), organic or inorganic coatings (e.g. zinc phosphate pre-treatment, corrosion resistant plating, E-coat, powder coating) and production techniques (e.g. coil coating, process controls, inspection and documentation). To obtain high level of corrosion resistance/paint adhesion, the manufacturer may want to consider the use of new high performance, "Combat Grade" Powder Coat Primers. These primers can only be applied by approved applicators. The Specification controlling both the primers and their application are available upon request from the U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC), RDTA-EN/ME, (586) 282-8818.

6.5 Series E and A vertical logistic tracks. Series E and A vertical logistic tracks are available from, but not limited to, the suggested sources identified below:

ANCRA International, Eastern Region  
 3300 Turfway Road, Suite 110  
 Erlanger, KY 48018  
 Phone (800) 233-5138  
 Facsimile (800) 347-2627.



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Kinedyne Corporation  
3701 Greenway Circle  
Lawrence, KS 66046-5442  
Point of Contact: Mr. Joe Takacs  
Phone (785) 841-4000  
Facsimile (785) 841-3668.

6.6 Loop tiedown hooks and web assemblies. Web assembly NSN 3990-01-204-3009 with hooks that meet tiedown interface requirements is available from, but not limited to, the suggested sources identified below:

Davis Aircraft Products Co., Inc.  
1150 Walnut Avenue  
Bohemia, NY 11716  
Phone (631) 563-1500  
Facsimile (631) 563-1117

ANCRA International LLC  
4880 W. Rosecrans Ave.  
Horthorne, CA 90250-6614  
Phone (800) 233-5138  
Facsimile (859) 371-1103

Kinedyne Corporation  
3701 Greenway Circle  
Lawrence, KS 66046-5441  
Phone (785) 841-4000  
Facsimile (785) 841-3668

6.7 Locking bar and security seal or cable. When specified (see 6.2) locking bars with security seals or cables are available from, but not limited to, the suggested sources identified below:

American Seals  
P.O. Box 841003  
Pembroke Pines, FL 33084  
Phone (954) 438-8323  
Facsimile (954) 438-8077

PJ Murray Associates, Inc.  
P.O. Box 472627  
Charlotte, NC 28247  
Phone (704) 844-8600  
Facsimile (704) 849-9197

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6.8 Disclaimer: Reference herein to any specific commercial company, product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or the Department of the Army (DoA), and will not be used for advertising or product endorsement purposes.

6.9 Definitions.

6.9.1 Dissimilar metals. For its purpose, this document considers metals dissimilar when two specimens in contact with each other promote accelerated galvanic corrosion (see 3.2.3).

6.9.2 Recovered materials. For the purpose of this document, recovered materials are those materials that have been collected from solid waste and reprocessed to become a source of raw materials, as distinguished from virgin raw materials (see 3.2.4).

6.9.3 Tricon. A Tricon is a rigid metal container, that 3 are coupled and locked together at their corner fittings form a 19 ft 10.5 in by 8 ft by 8 ft (6058 mm by 2438 mm by 2438 mm) ISO-compatible container. Tricon is an abbreviation of and originates from the words triple and container combined together.

6.9.4 Owner code. The owner code consists of three capital letters of the Latin alphabet such as USA for United States Army, to indicate the owner or principal operator of the container. This code needs to be registered at the Bureau International des Containers in Paris to ensure uniqueness world-wide. The code must be supplied to the contractor by the United States Army.

6.9.5 Serial Number. The serial number consists of 6 (Arabic) numeric digits, assigned by the owner or operator, uniquely identifying the container within that owner/operators fleet.

6.9.6 Check Digit. The check digit consists of one (Arabic) numeric digit that follows the serial number, and provides a means of validating the recording and transmission accuracies of the owner code and serial number.

6.10 Supersession. This specification supersedes purchase description ATPD 2298C, dated 05 March 2010.

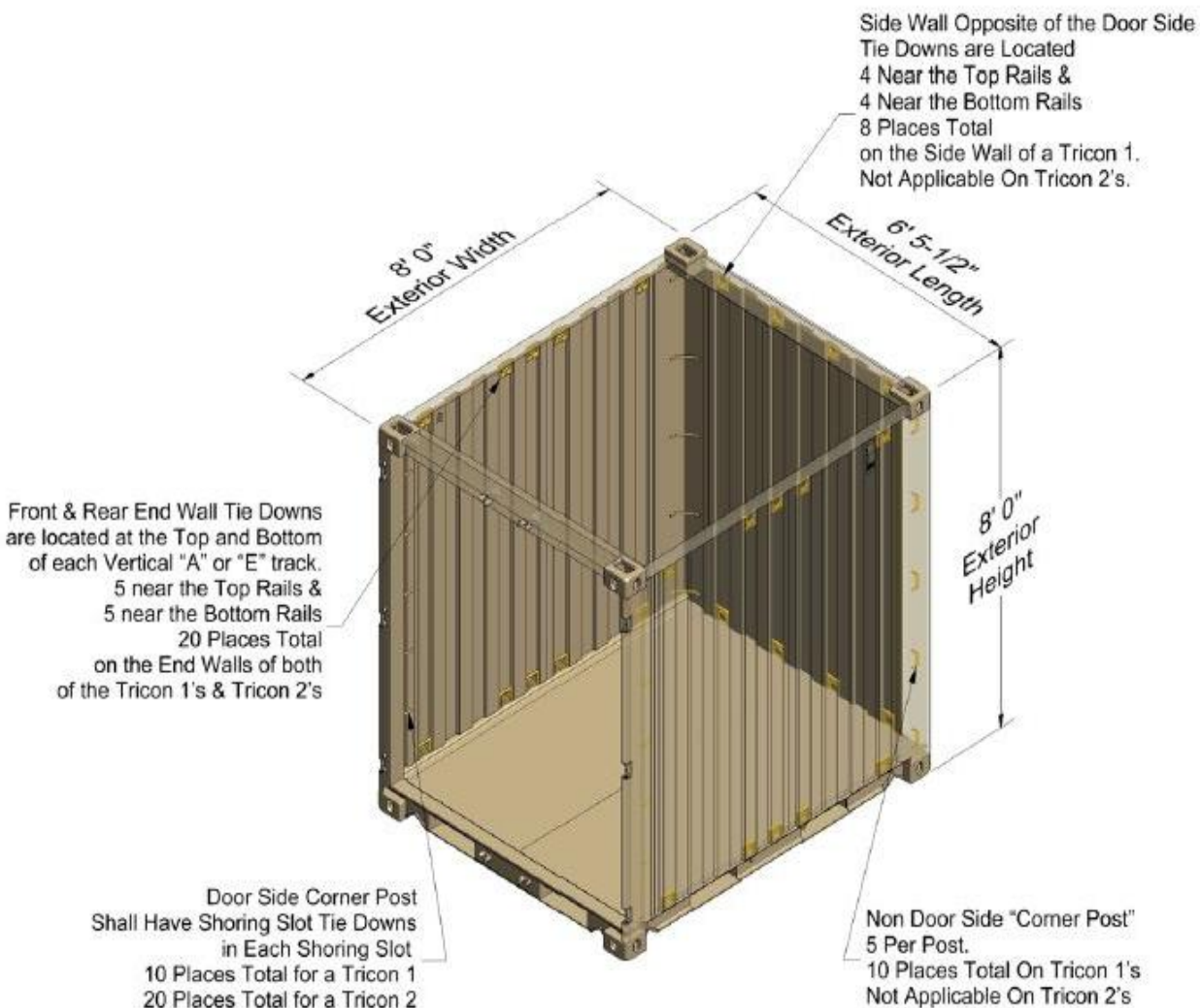
6.11 Subject term (key word) listing.

Connecting couplers  
Corner fittings  
Corner post  
End walls  
Forklift pockets  
Shoring slot  
Side walls

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6.12 Changes from the previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes

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## NOTES:

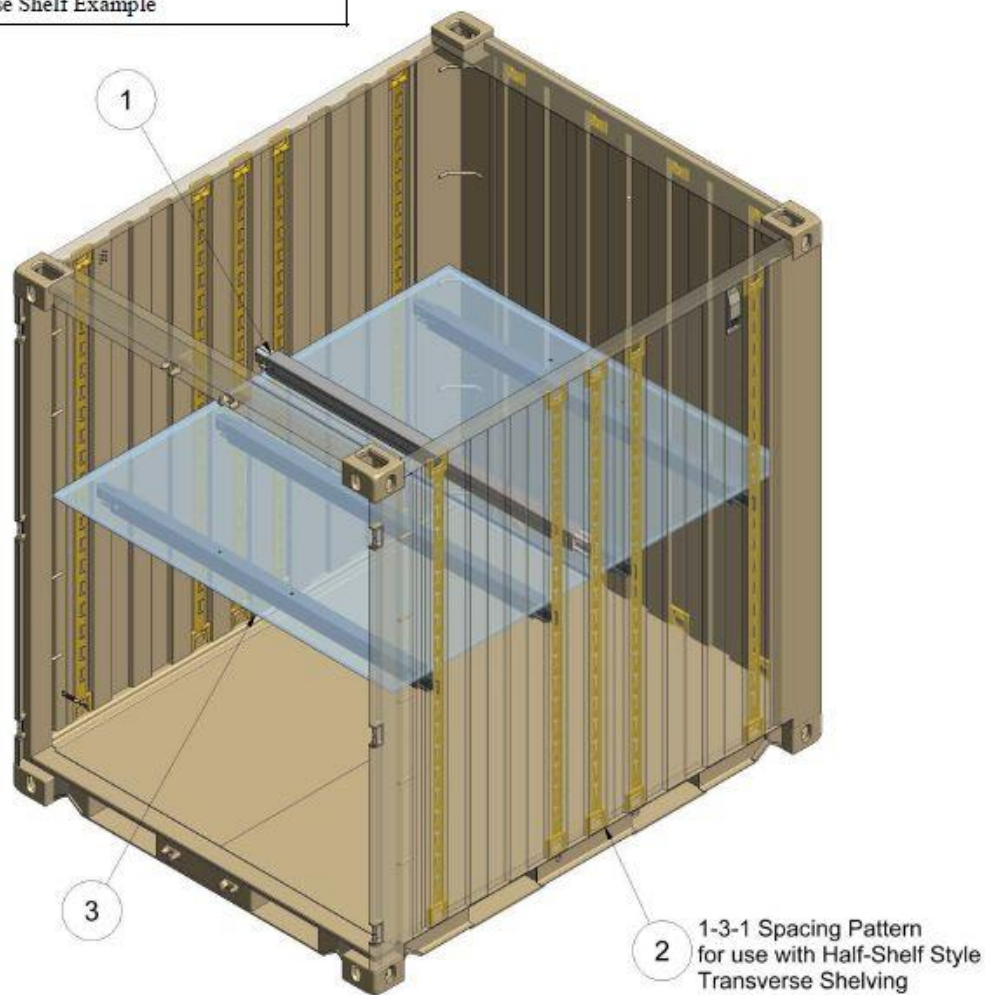
1. See 3.3.8, 3.5.4, 3.5.4.1 and 3.5.4.2 for more detail.
2. Tricon 1 (48) total tie downs.
3. Tricon 2 (40) total tie downs.
4. Tie downs shall be positioned as close as possible to the innermost face of the side wall sections without intruding into the usable cargo area. Locations shown are approximate.

FIGURE 1. Tricon tie downs loop positions for Tricon Type 1 (shown above).

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Table V.

COMPONENTS OF DECKING SYSTEM	
ITEM NO.	DESCRIPTION
1	Shelf-Decking Beams
2	Vertical Logistic Tracks "A" or "E" Type with 4" (102 mm) Slots Spacing
3	Transverse Shelf Example



NOTE: See 3.3.9 and 3.3.10 for more details.

FIGURE 2. Tricon shelf decking support system.

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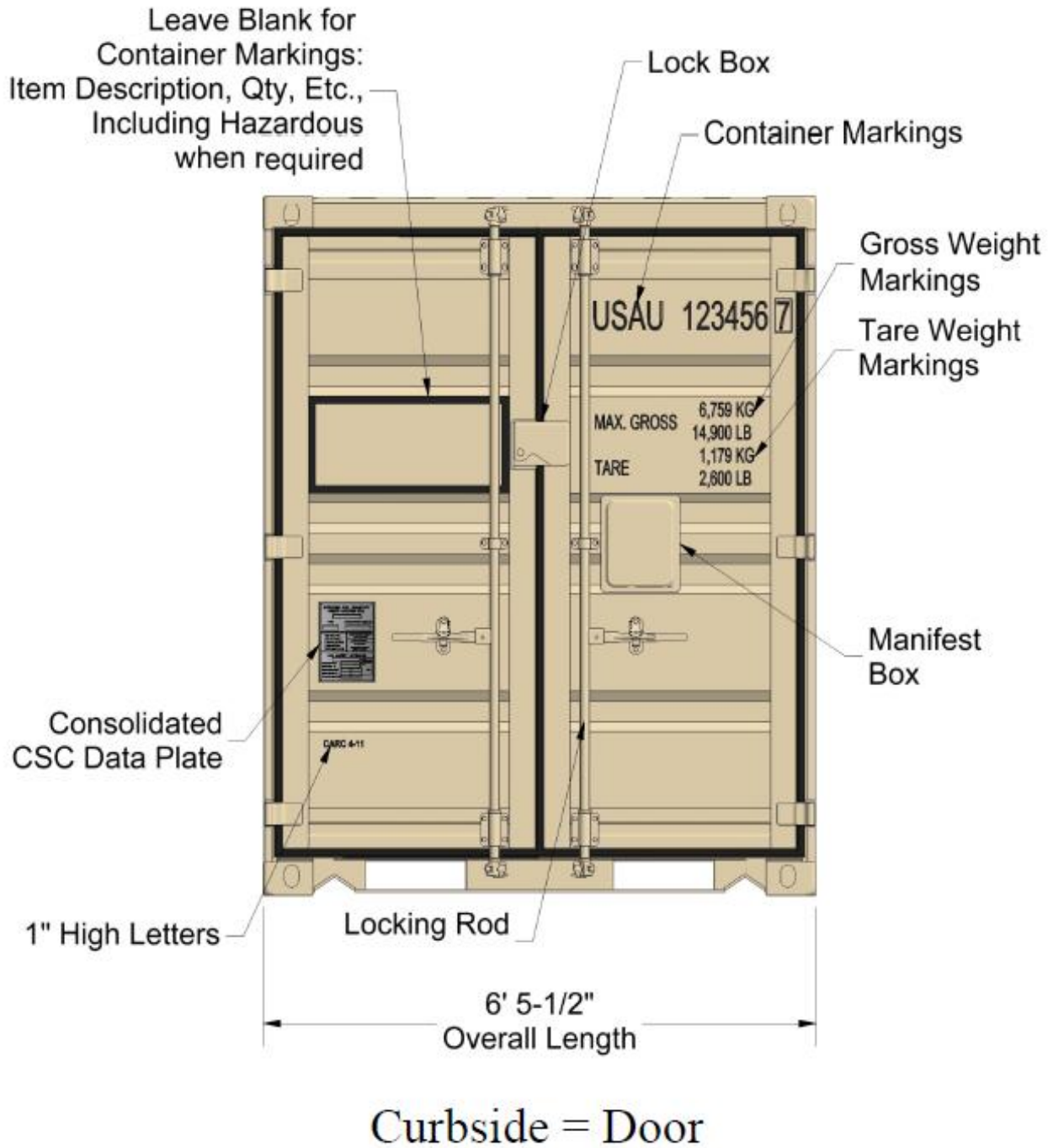


FIGURE 3. Tricon Type 1 markings example.



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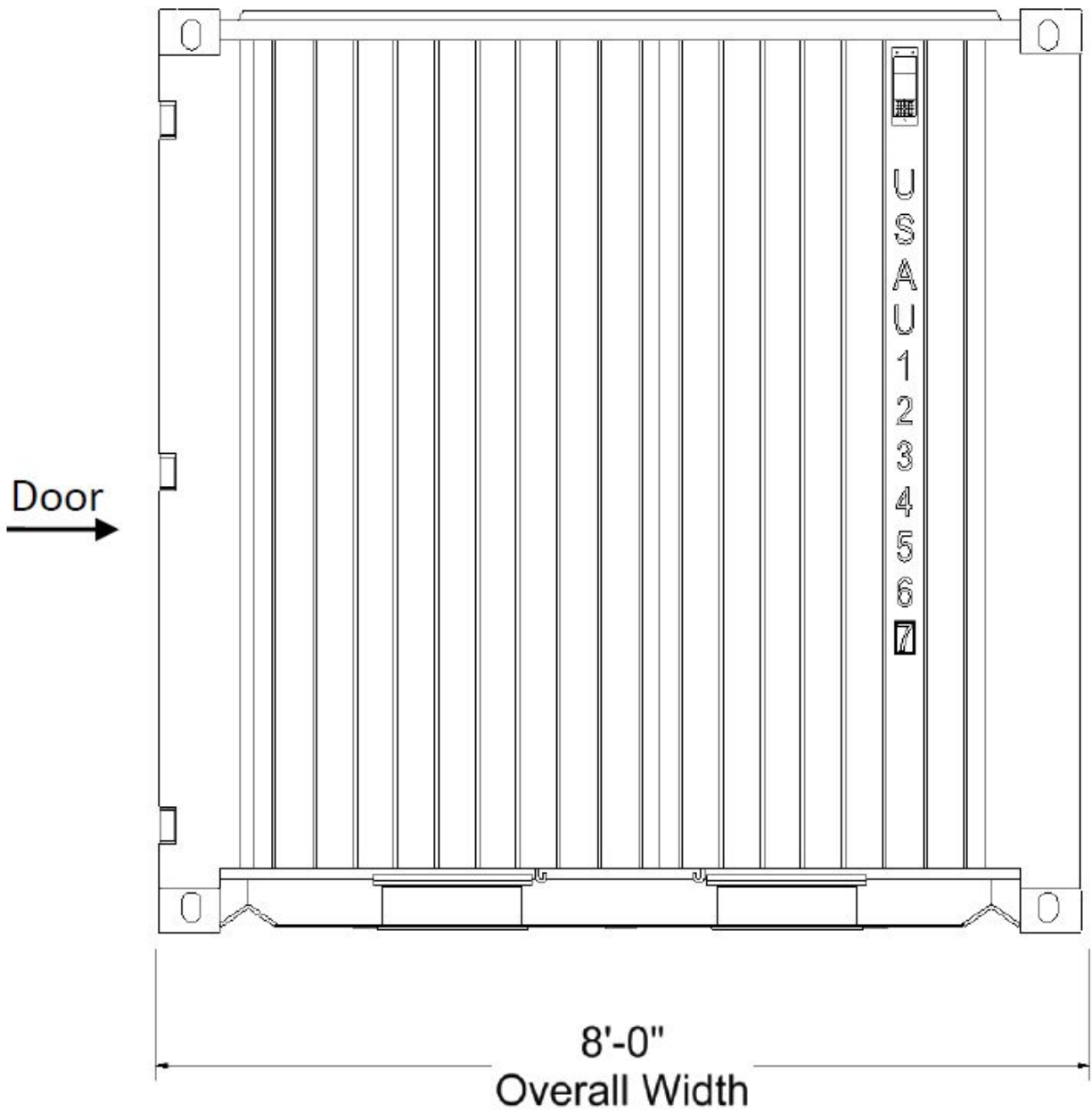


FIGURE 4. Front end view of Tricon Type 1 marking example.

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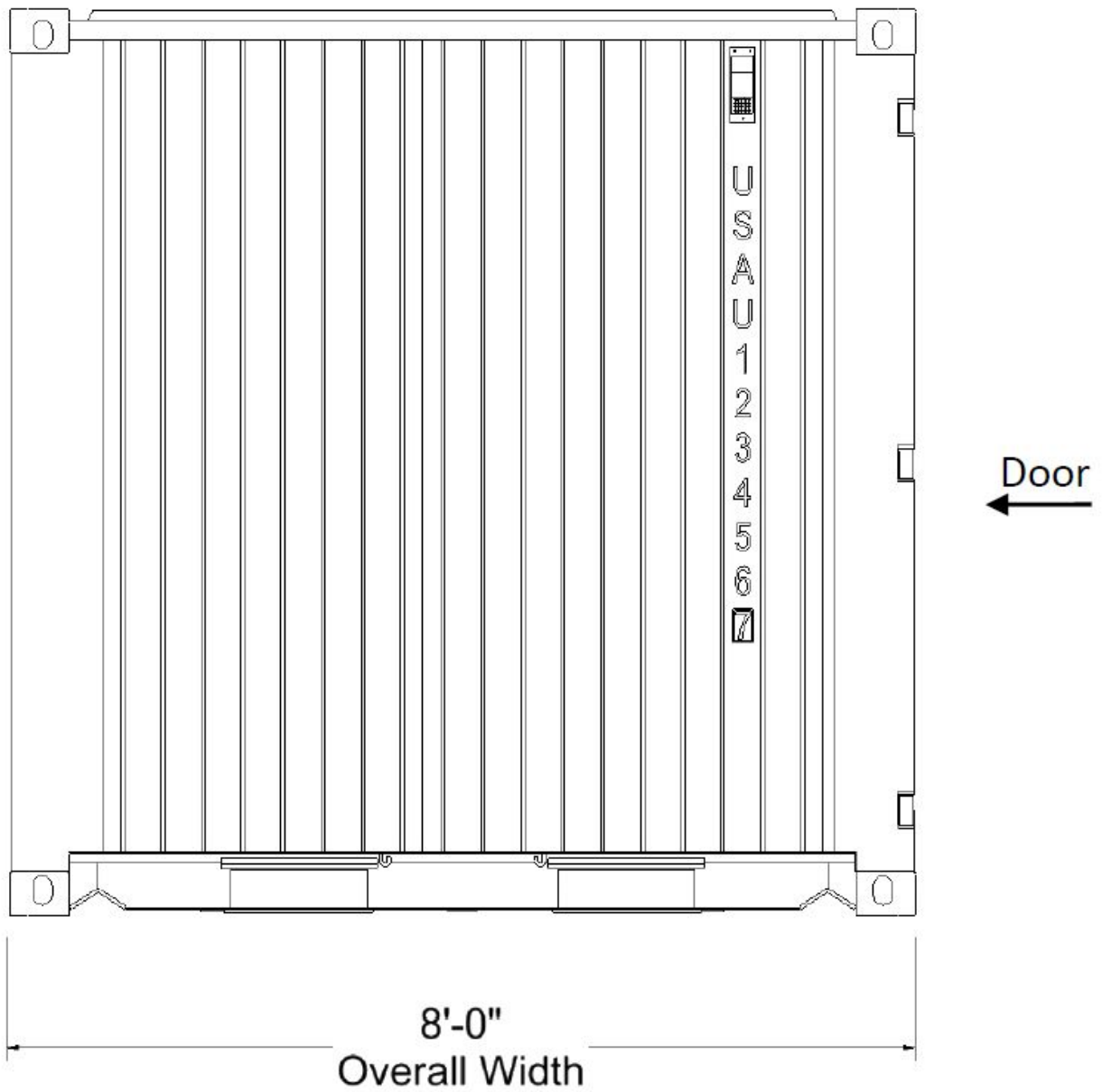


FIGURE 5. Rear end view of Tricon Type 1 marking example.

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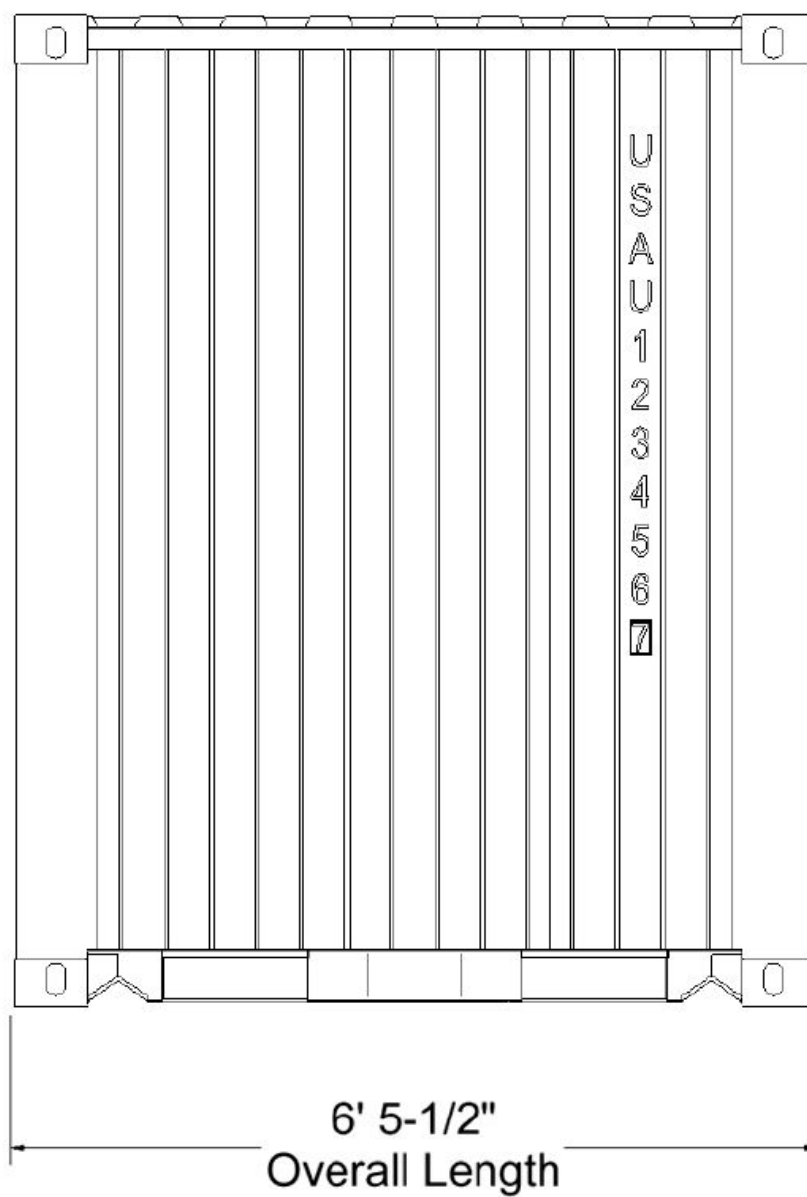


FIGURE 6. Roadside wall opposite of door of Tricon Type 1 marking example.

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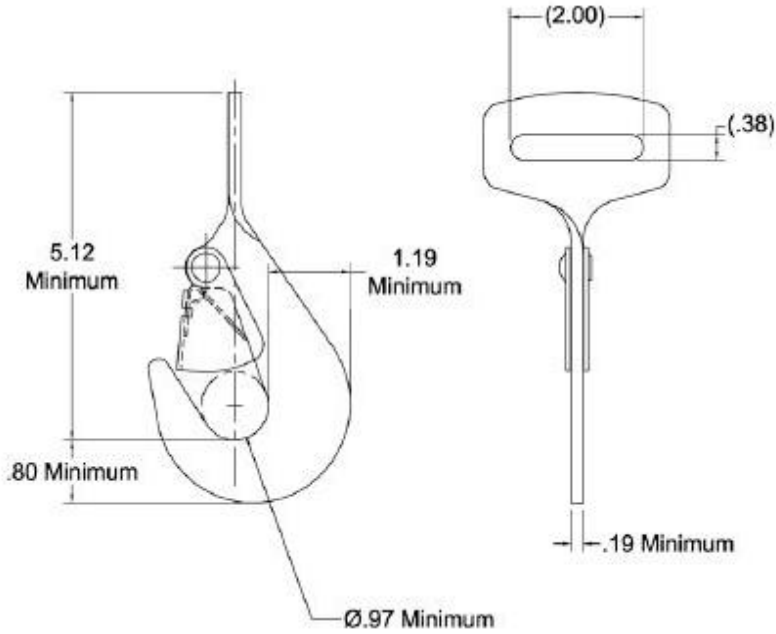
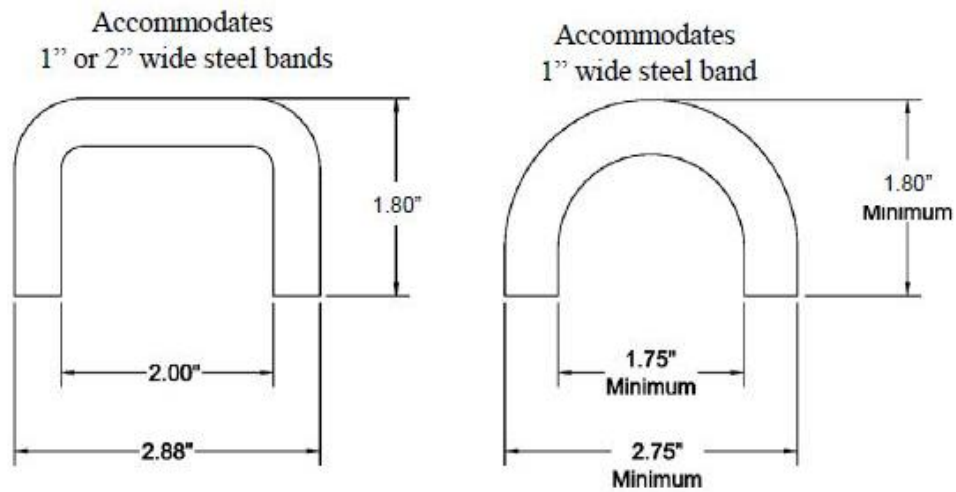


FIGURE 7. Snap hook interface dimensions.

**Either Shape Below is acceptable and designed to accommodate the Snap Hook described above**



NOTE: See 3.5.4 for more details.

FIGURE 8. Loop tie down steel to have a safe working load of 4000 lbs and tested not breaking at 6000 lbs.

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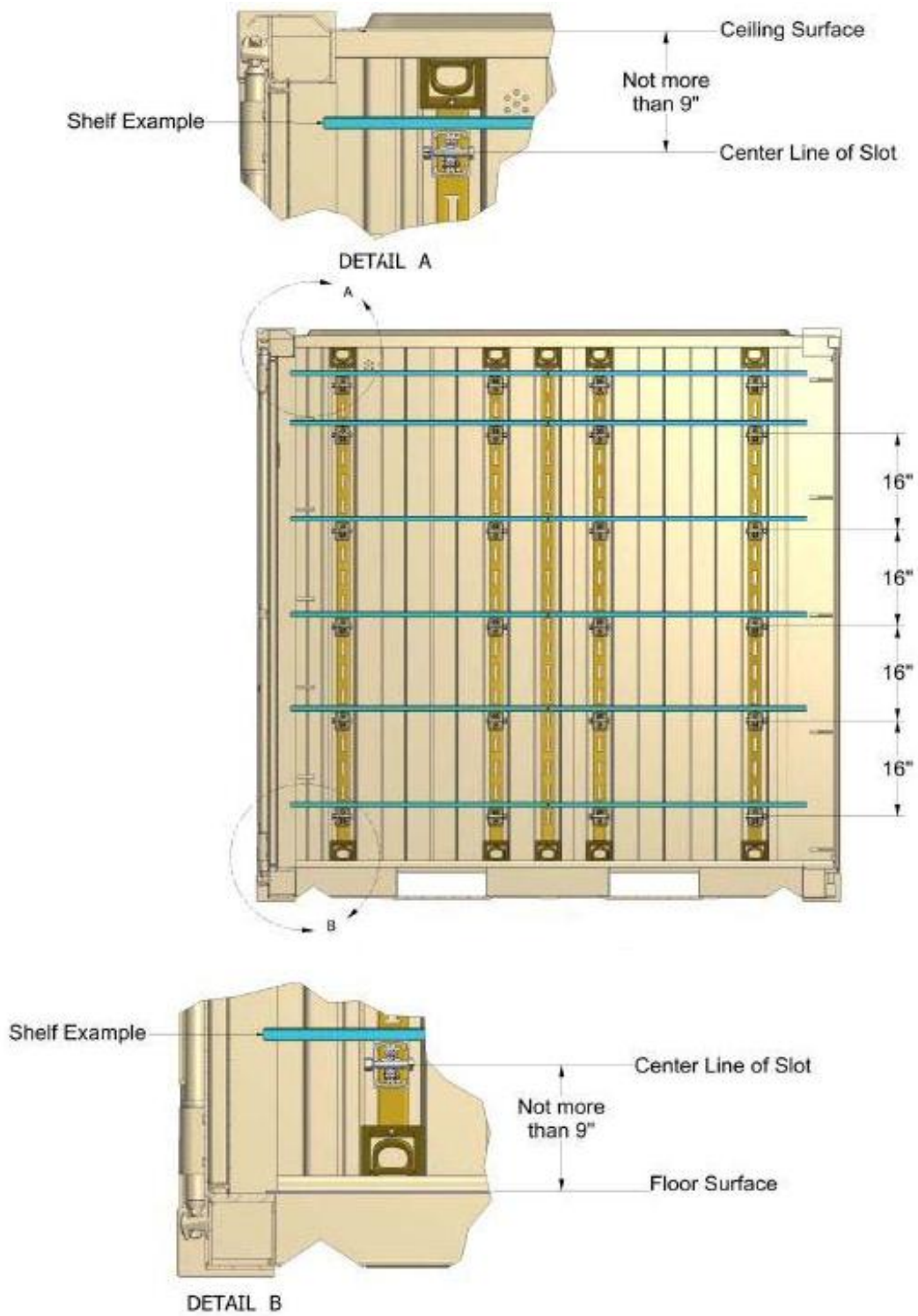


FIGURE 9. "E" or "A" vertical logistic track placement.

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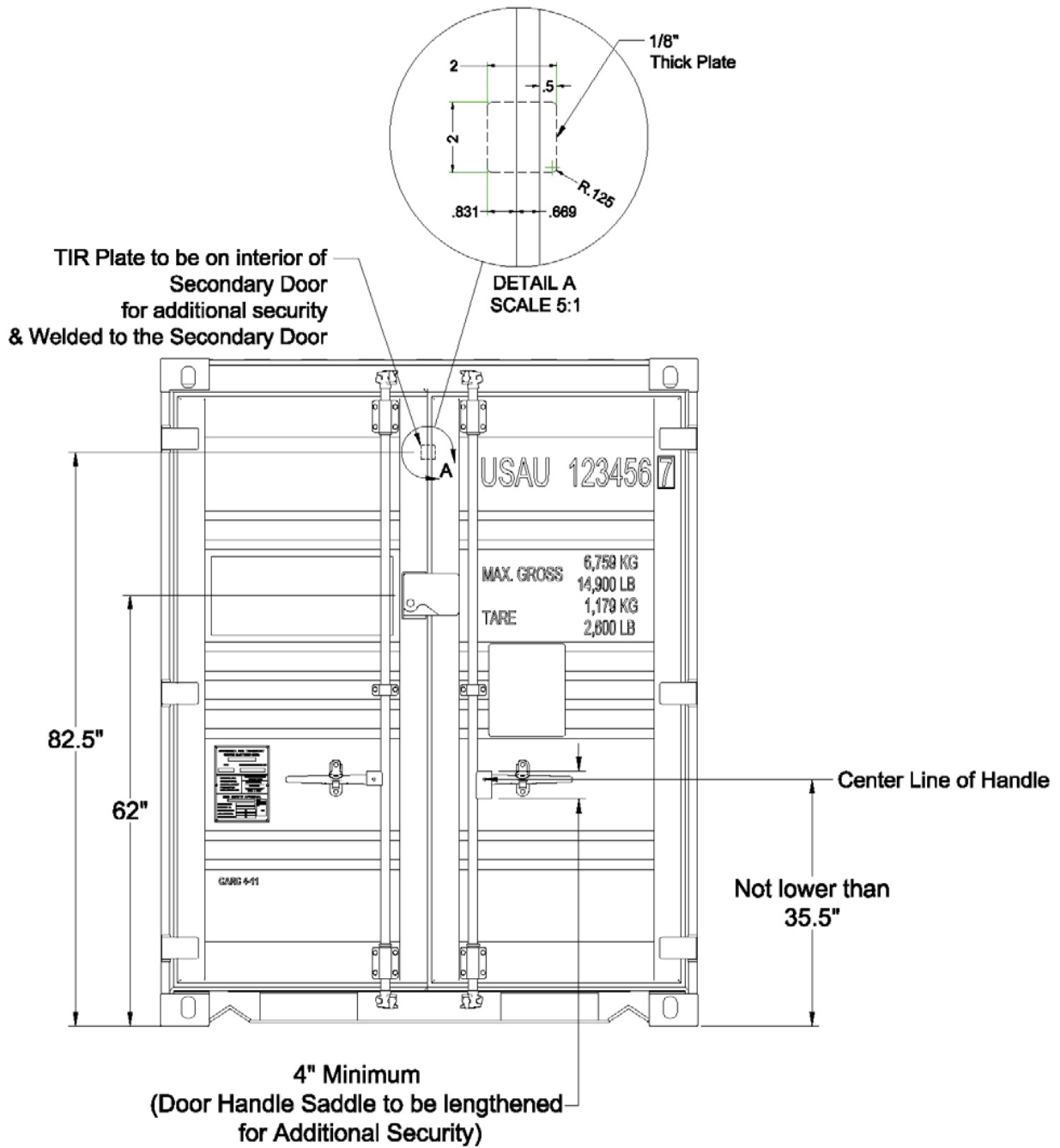


FIGURE 10. Door hardware.



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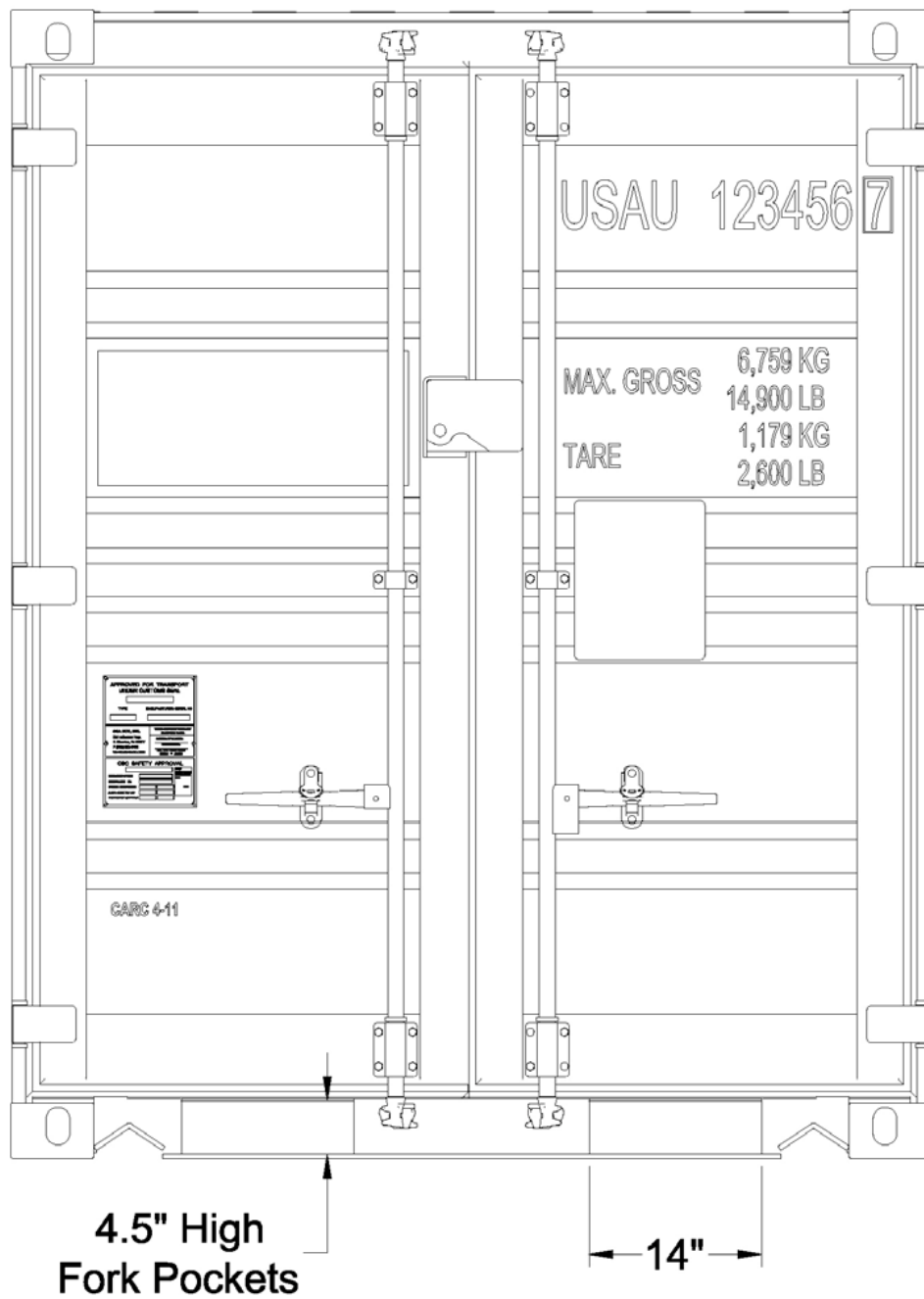


FIGURE 11. Fork lift pockets.

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Custodians:

Army - AT  
Navy - SA  
Air Force - 11

Preparing activity:

Army - AT

(Project 8115-2011-003)

Review activities:

Army - SM, MT  
Navy - AS, CG  
Air Force - 03, 69  
DLA - DH  
NGA - MP

Civil agencies:

GSA - FAS  
USDA - FGI

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.daps.dla.mil>.