

	<p>TECHNICAL POLICY for INTERMODAL SHIPPING (CARGO) CONTAINERS ADAPTED AS A STRUCTURAL BUILDING MATERIALS</p>	<input checked="" type="checkbox"/> TECHNICAL GUIDELINE <input type="checkbox"/> CODE INTERPRETATION <input type="checkbox"/> CODE MODIFICATION
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Issue Date:	July 15, 2019
Building Code Sections:	104.11 (2018 IBC) and R104.11 (2018 IRC)
Developed by:	Building Safety Department & Planning Department
Approved by:	Djordje Pavlovic, P.E. (Acting Building Safety Official)
References:	City of Glendale Zoning Ordinance 7.301

The purpose of this Technical Policy is to clarify pertinent sections of adopted Building Codes (Standards) and Planning/Zoning Ordinances concerning the adaptation of Intermodal Shipping (Cargo) Containers as an Alternative Building Material/System in accordance with 2018 IBC, Section 104.11 and 2018 IRC, Section R104.11.

DEFINITION:

Intermodal Shipping (Cargo) Container is a six-sided steel unit originally constructed as a general cargo container used for transportation of goods or materials and designed to be mounted on rail car, truck or ship. Intermodal Shipping (Cargo) Containers are also known as metal containers, steel containers, cargo boxes, oceangoing vessels, or sea vans.

BUILDING CODE REGULATION:

Any owner or owner’s authorized agent who intends to install Intermodal Shipping (Cargo) Container on their property as Building/Structure shall obtain a Building Permit to justify compliance with 2018 International Building Code (IBC) or 2018 International Residential Code (IRC).

Structure classification and requirements:

1. Intermodal Shipping (Cargo) Container, used on the property for up to 180 days is considered a **Temporary Structure** and shall conform to the 2018 IBC, Sections 108 and 3103, and 2018 IRC, Section R107, to ensure public health, safety, and general welfare.
2. Intermodal Shipping (Cargo) Container, used on the property for 180 days or more, is considered a **Permanent Structure** and requires compliance with 2018 IBC, Sections 107 and 1603, and 2018 IRC, Sections R105 and R301, to conform with structural strength, means of egress, sanitation, adequate lighting and ventilation, accessibility, fire protection, and life safety requirements (see Addendum No. 1 for Building Permit technical requirements).

Exception:

Intermodal Shipping (Cargo) Container used strictly for tools or storage shed are not required to obtain a building permit but will need to satisfy applicable zoning regulations and design parameters.

ZONING REGULATION:

Any owner or owner’s authorized agent who intends to install Intermodal Shipping (Cargo) Container on their property as Building/Structure shall obtain an Approval from Planning Department.

Planning department requirements:

1. Intermodal Shipping (Cargo) Containers installed on property shall be considered as the Accessory Structures required to be in compliance with the City of Glendale Zoning Ordinance 7.301. (see Addendum No. 2 for accessory structures setback requirement).
2. The location of the containers shall not block, obstruct, or reduce any required exits, open spaces, windows, vent shafts, or required parking spaces (including access driveways) of the existing buildings on the lot.
3. The containers shall utilize paint color(s) of the existing primary structure on the property.

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ADDENDUM No. 1:

BUILDING PERMIT TECHNICAL REQUIREMENTS for INTERMODAL SHIPPING (CARGO) CONTAINERS (“CONTAINERS”):

1. SITE PLAN:

The location of all existing buildings on the lot and the size and location of the proposed container(s) with respect to the buildings and property lines shall be drawn to scale on the site plan in accordance with 2018 IBC, Section 107.2.6. and 2018 IRC, Section R106.2.

2. REQUIREMENTS AND RESTRICTIONS:

- a) Containers shall be constructed of steel or aluminum with a minimum 14-gauge thickness,
- b) Containers may be stacked on top of each other or joined only if complete engineering with drawings is provided for review,
- c) Containers shall not be used to store hazardous materials unless approved by the Fire Code Officials,
- d) Any alterations of containers require complete engineering analysis to justify adequacy of remaining structure to carry and resist all applicable loads.

3. CONSTRUCTION DOCUMENTS:

In accordance with 2018 IBC, Section 107.2, and 2018 IRC, Section R106.1. following are minimum submittal requirements for container structures:

- a) A Foundation Plan showing a foundation system and construction details shall be provided bearing the signature and date on the seal of an Arizona registered Civil or Structural Engineer,
- b) A Floor Plan with all dimensions and locations of proposed openings (if applicable),
- c) Elevations with dimensions and proposed exterior colors/materials for complete building articulation.

4. MANUFACTURER’S INFORMATION:

Containers shall be manufactured and certified in accordance with the Acceptance Criteria for Structural Building Materials from Shipping Containers, ICC-ES AC462.

5. CONNECTIONS:

All connections (bolted or welded) between containers that are connected or between containers and foundation system shall be identified on construction documents.

6. FOUNDATIONS AND ANCHORAGE:

A permanent foundation system is required to support single or multi-level containers. Container structures require anchorage to the foundation system to provide continuous load path in accordance with 2018 IBC, Section 1604.8 and 2018 IRC, Section R403.1.6.

7. STRUCTURAL DESIGN:

In accordance with 2018 IBC, Section 107.3.4 and 2018 IRC, Section R301.1.3, the container used as building/structure shall be analyzed for code compliance and engineering calculations shall be provided bearing the signature and date on the seal of an Arizona registered Civil or Structural Engineer.

8. MECHANICAL/PLUMBING/ELECTRICAL:

A separate plumbing, mechanical, or electrical permit may be required when a container is supplied with electric power, gas, water, or sewer utilities whether installed on a temporary or permanent basis.

9. OTHER REQUIREMENTS:

- a) If container floor is constructed of wood, all wood members shall be protected from decay and treated against termites in accordance with 2018 IBC, Section 2304.12 or 2018 IRC, Section R317.1.2.
- b) If containers are attached or connected, all joints and voids that create concealed space between containers shall be protected by an approved fire-resistance joint system.



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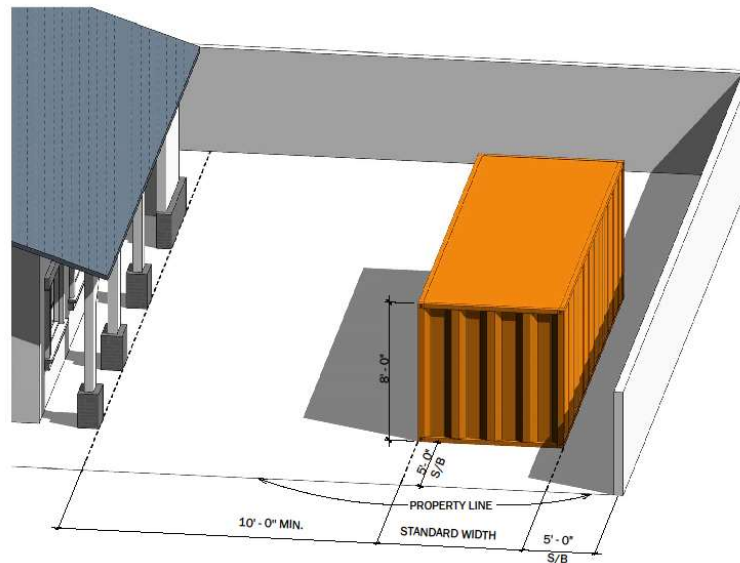
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- CODE INTERPRETATION
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ADDENDUM No. 2:

PLANNING/ZONING SETBACK REQUIREMENTS for INTERMODAL SHIPPING (CARGO) CONTAINERS ("CONTAINERS"):

1. R1 ZONING DISTRICT – ACCESSORY SETBACKS:

Structures that are 7 feet in height the setback is 3 feet, however for each foot over 7 feet in height, the setback for that portion of the building height over 7 feet shall increase 2 feet on ground (i.e. 8 feet height = 5 feet setback). There shall also be a 10 feet setback from the principal home and any accessory structure or building on the property.



2. A1, RR, and SR ZONING DISTRICT – ACCESSORY SETBACKS:

Structures that are 7 feet in height the setback is 3 feet, however for each foot over 7 feet in height, the setback for that portion of the building height over 7 feet shall increase 1 foot on ground (i.e. 8 feet height = 4 feet setback). There shall also be a 10 feet setback from the principal home and any accessory structure or building on the property.

