



BULLBOX

7' CONTAINER TECHNICAL SPEC. BULLBOX

STEEL DRY CARGO CONTAINER
7'4" × 1800 × 1740

MODELO NO: **BULLBOX 7' CONTAINER**
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BULLBOX

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 **1.1 General**

This specification will cover the design, construction and materials performances of 7'4"x1800mmx1740mm type steel dry cargo containers.

These containers specified herein will be manufactured by Contenedores y Embalajes Normalizados, S.A (hereinafter referred to BULLBOX) under strict quality control by BULLBOX and be **approved by the classification society** (Bureau Veritas, China Clasification Society, Lloyd's Register of Shipping, American Bureau of Shipping...)

All materials used in the construction will be to withstand extremes of temperatura range from -40°C (40°F) to +70°C (+158°F) without effect on the strength of the basic structure and watertightness. The container will satisfy the following requirements and regulations, unless otherwise mentioned in this specification.

T.C.T. Certification: All exposed wooden components used for container will be treated to comply with the requirements of "Cargo Containers-Quarantine Aspects and Procedures" of the Commonwealth Department of Health, Australia.

 **1.2 Handling and Transportation**

The container will be constructed to be capable of being handled without any permanent deformation under the following conditions:

- a) Lifting, full or empty, at top corner fittings vertically by means of spreaders fitted with hooks, shackles or twistlocks.
- b) Lifting, full or empty, at bottom corner fittings using slings with terminal fittings at any angles between vertical and 60 degrees to the horizontal.
- c) Lifting, full or empty, at forklift pockets using forklift truck.

 **2. Dimensions and Ratings****External**

Length	2,235 + 0 mm	7'4" +0
	-5 mm	- 3/16"
Width	1,800 + 0 mm	5' 10 55/64" +0
	-5 mm	- 3/16"
Height	1,740 + 0 mm	5' 8 1/2" +0
	-5 mm	- 3/16"

Internal

Length	2,084 mm
Width	1,712 mm
Height	1,578 mm

Door opening dimensions

Width	1,706 mm
Height	1,518 mm

Internal cubic capacity

5.63 cu.m	198.8 cu.ft
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Forklift pockets


Center to center	800 mm +/- 50 mm
Width	320 mm
Height min	85 mm

Ratings

Max. Gross Weight	4,000 kgs	8,820 lbs
Tare Weight	710 kgs	1,565 lbs
Max. Payload	3,290 kgs	7,255 lbs

Tare Weight Tolerance 2%

Dimensions and ratings are subject to small variations depending on the batch


3. Materials

The following materials will be used in the construction of containers:


3.1 Parts specifications

Parts	Materials
1) Roof panels Door panels Side panels Front panels Bottom side rails Cross members Upper & lower plates of forklift pockets Rear corner posts (outer) Rear corner posts (inner) Door sill Door header (upper & lower) Door horizontal frames Door vertical frames Top side rails Front corner posts Front bottom end rail Front top end rail	Structural Steel: Q235B Y.P. : 245 N/sq mm ² T.S. : 402 N/sq mm ²
2) Door locking bars	Structural steel rectangular pipe : STKR400 (STKR41) Y.P. : 235 N/sq. mm ² T.S. : 402 N/sq. mm ²
3) Corners fittings	Casted weldable steel. SCW480 (SCW49) Y.P.: 275 N/mm ² T.S.: 480 N/mm ²
4) Locking gear cams and keepers	S20C Y.P.: 245 N/mm ² T.S.: 402 N/mm ²
5) Door hinge pins gasket retainers	Stainless steel. SUS304
6) Door gasket	EPDM
7) Floor board	Plywood board
8) Ventilator	ABS resin labyrinth type

Y.P. – Yielding Point

T.S. – Tensile Strength

 **4. Construction**

The container will be constructed with steel frames, fully vertical-corrugated steel sides and front wall, horizontal-corrugated steel double doors at rear end, die- stamped steel roof and corner fittings.

All welds of exterior including the base frames will be continuous welding using CO2 gas.

Interior welds - when needed - will be stitched with a minimum length of 10 mm.

Gaps between adjacent components to be welded will not exceed 3 mm or the thickness of the parts being welded.

Chloroprene sealant is to be applied at periphery of floor surface and inside unwelded seams, butyl sealant is used to caulk at invisible seam of floor joint area and between door gasket and frame.

The internal bend radii of pressed sections of steel will be not less than 1.0 time the thickness of the materials being pressed.

The wooden floor will be fixed to the base frames by zinc plated self-tapping screws.

 **4.1 Corner fittings**

The external dimensions of small corner fittings are 115 mm length, 98 mm width and 70 mm height.

 **4.2 Base frame structure**

Base frame will be composed of two bottom side rails, four cross members, and a set of forklift pockets.

Bottom side rail: Each bottom side rail is built of a 3.0 mm thick pressed open section steel made in one piece.

Cross member: The cross members made of pressed channel section steel with a dimension of 45x90x30x3.0 mm will be welded to each bottom end rail.

Forklift pockets: Each forklift pocket is built of 3.0 mm thick full depth flat steel top plate and two 200 mm deep x 6.0 mm thick flat lower end plates between two channel section cross members.

 **4.3 Flooring**

The floor will consist of two pieces plywood boards, floor center rail, and self-tapping screws. The wooden floor constructed with 28 mm thick 19-ply hardwood plywood boards are laid transversely on the cross members between the 3.0 mm thick flat section Steel floor center rail and the 3.0 mm thick pressed angle section steel floor guide rails stitched welded to the bottom end rails. The wooden floor are tightly secured to each cross member by self-tapping screws, and all butt joint areas and peripheries of the floor are caulked with sealant.

 **4.4 Rear frame structure**

The rear frame will be composed of one door sill, two corner posts, one door header and four corner fittings, which will be welded together to make the door-way.

The door sill to be made of a 4.0 mm thick pressed open section steel is reinforced by two internal gussets at the back of each locking cam keeper location and four external gussets.

05–SURFACE PRESERVATION

The floor guide rails of 3.0 mm thick pressed angle section steel are provided to the door sill by stitch welding.

Each rear corner post of hollow section is fabricated with 3.0 mm thick pressed Steel outer part and 3.0 mm thick pressed angle section steel inner part, which are welded continuously together to ensure a maximum width of the door opening and to give a sufficient strength against stacking and racking forces. Three (3) sets of hinge pin lugs are welded to each rear corner post.

The door header is made of a 60x60x3.0 mm thick square hollow section steel having two upper gussets at the back of each locking cam keeper location.

4.5 Door

Each container will have double wing doors at rear end frame, and each door will be capable of swinging approximately 270 degrees.

Each door is constructed with two 3.0 mm thick pressed channel section Steel horizontal frames for the top and bottom, 100x50x2.3 thick rectangular hollow section vertical frames for the post side and center side of door respectively, 1.6 mm thick horizontally corrugated steel door panel, which are continuously welded within frames.

One set of galvanized "BE-2566 MN" bolt on model locking assemblies with forged steel handles are fitted to each door using zinc plated steel bolts. Locking bar retainers are fitted with nylon bushings at the top, bottom and intermediate bracket. Locking gears should be assembled after painting of container.

The handles of Locking Gear shall be raised to the height of 1 meter from the ground. Each unit will have one Lock Box welded on the door end.

The door hold-back of nylon rope is provided to the locking bar on each door and a hook of steel bar is welded to each bottom side rail.

Each door is suspended by three hinges being provided with stainless steel pins, self-lubricating nylon bushings and the brass washers, which are placed at the hinge lugs of the rear corner posts.

The door gasket to be made of an extruded J&C-type EPDM rubber is installed to the door peripheries frames with stainless steel gasket retainers which must be caulked with butyl sealant before installation of gasket, and fastened by stainless Steel rivets at a pitch of 160 mm.

4.6 Roof structure

The roof will be constructed with two four-corrugated corrugated (die-stamped) Steel Panels.

The roof panel is constructed with 1.6 mm thick die-stamped steel sheets having about 6.0 mm upward smooth camber, which are welded together to form one panel and continuously welded to the top side rails and top end rails. All overlapped joints of inside unwelded seams are caulked with chloroprene sealant.

4.7 Top side rail

Each top side rail is made of 3.0 mm thick pressed "Z" section steel.

4.8 Side Wall

The trapezium section side wall is constructed with 1.6 mm thick fully vertically continuous-corrugated steel panels, which are butt welded together to form one panel and continuously welded to the side rails and corner posts.

 **4.9 Front structure**

Front end structure will be composed of one bottom end rail, two corner posts, one top end rail, four corner fittings and an end wall, which are welded together.

The bottom end rail is made of 50x125x30x3.0 mm thick pressed channel section steel. The floor guide rails of 3.0 mm thick pressed angle section steel are provided to the bottom end rails by stitch welding.

Each corner post is made of 3.0 mm thick pressed open section steel in a single piece, and designed to give a sufficient strength against stacking and racking forces.

Top end rail is made of a 60x60x3.0 mm thick square hollow section steel.

The trapezium section front wall is constructed with 1.6 mm thick vertically corrugated steel panels, butt welded together to form one panel, and continuously welded to front end rails and corner posts.

 **4.10 Special Feature**

Two (2) lashing hoop rings are welded to each top and bottom side rail at recessed corrugations of side panels but not extruded any cargo space (total 8 rings).

Two (2) lashing rods are welded to front corner post at the position of 200 mm higher from the floor and 200 mm lower from the bottom surface of top corner fitting.

Each container will have some labyrinth type small plastic ventilators. Each ventilator is fixed to each side wall by three 5.0 mm dia. steel rivets after drying of top coating, and caulked with sealant around the entire periphery except underside to prevent the leakage of water.



5.1 Surface preparation

- 1) All steel surfaces - prior to forming or after - will be fully abrasive shot blasted conforming to Swedish Standard SA 2 1/2 to remove all rust, dirt, mill scale and all other foreign materials. The shot blasted surface profile shall be have a maximum peak to valley height not exceeding 50 microns and average peak to valley height of about 25 microns.
- 2) All door hardwires will be hot-dipping zinc galvanized with approximately 75 microns thickness.
- 3) All fasteners such as self-tapping screws and bolts, nuts, hinges, cam keepers and lashing fittings will be electro-galvanized with approximately 13 microns thickness.



5.2 Coating

All steel surfaces will be coated with 10 microns thick two-pack polyamide cured zinc rich epoxy primer immediately after shot blasting, and then dried up in drying room.

All weldments will be shot blasted to remove all welding fluxes, splatters, burnt primer coatings caused by welding heat, and other foreign materials. Then all blasted weldments will be coated with zinc rich epoxy primer.

The total dry film will be (microns):

All surface of the assembled container will be have coating system as follows:

Where	Paint name	DFT (u)
Exterior surface	Zinc rich primer	10
	W/B zinc rich primer	20
	W/B Epoxy primer	40
	W/B Acrylic top coating	40
		Total: 110
Interior Surface	Zinc rich primer	10
	W/B zinc rich primer	20
	W/B Epoxy topcoat	45
		Total: 75
Under structure	Zinc rich primer	10
	W/B zinc rich primer	20
	W/B Bitumen	150
		Total: 180

 **6. Marking****Arrangement**

The containers will be marked in accordance with ISO requirements, owner's marking specifications and other required regulations.

Materials

- 1) Decal: - Self-adhesive, high tensile PVC film for seven (7) years guarantee without peeling off, tenting or color fading.
- 2) The owner's serial numbers and manufacturer's serial numbers will be stamped on the inside right rear corner post.


7. Testing

The prototype container manufactured in accordance with this specification will be tested by manufacturer under the supervision of classification society.

<i>Test & loads</i>	<i>Test methods</i>
a) Lifting (from top corner fitting) Internal load : 2R-T	Lifting vertically. Time duration : 5 minutes
b) Lifting (from bottom corner fittings) Internal load : 2R-T	Lifting 60 deg. to the horizontal. Time duration : 5 minutes
c) Lifting (for forklift corner fittings) Internal load : 1.6R-T	Lifting by horizontal bars. Bar length : 1,828mm Bar width : 200mm
d) Operation Floor.	After completion of test, the operation of doors, locks, hinges, etc. will be checked.
e) Dimensions and weight	After completion of test, the dimensions and weight will be checked.
F) Weatherproofness	Inside dia. of nozzle : 12.5mm Distance : 1.5 m Speed : 100 mm/sec. Pressure : 1 kg/sq. cm

* Note:

R - Maximum Gross Weight

T - Tare Weight

P – Maximum Payload

 **8 Guarantee****Structure**

All the containers shall be guaranteed by manufacturer to be free from defects in materials, workmanship and structure for a period of one (1) year, from the date of acceptance of the container by the buyer.

Painting

The paint system coated on the container surface shall be guaranteed to be free from corrosion and failure for a period of three (3) years from the date of acceptance of the container by the buyer.

Corrosion is defined as rusting which exceeds RE3 (European Scale of degree of Rusting) on at least ten (10) percent of the total container surface, excluding that resulting from impact or abrasion damage, contact with solvents or corrosive chemicals and abnormal use.

If the corrosion exceeds RE3 as defined above within the guarantee period, inspection of the corrosion shall be carried out by the buyer, Bullbox and paint manufacturer to detect the cause. As the result of the inspection, if it is mutually agreed and accepted that the corrosion has been caused by the defective paint quality and/or poor workmanship, Bullbox and/or paint manufacturer shall correct the defect on their accounts.

Decals

Decals applied on the container shall be guaranteed for a period of seven (7) years without peeling off, tenting or colour fading if decals are supplied by BULLBOX.

BULLBOX shall not be liable for any consequential damage or expenses occasioned by any defects for whatsoever reason or any loss of time due to repair or correction.



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