



BULLBOX

40' FLAT RACK TECHNICAL SPEC. BULLBOX

STEEL DRY CARGO CONTAINER
BULLBOX 40' - 40' x 8' x 8'6"

MODELO NO: **BULLBOX 40' FLAT RACK**
COLLAPSIBLE
DATE OF ISSUE: **October, 2017**



BULLBOX

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 **1.1 General**

This specification covers design, construction, materials, testing, inspection & prototype container. The flatrack is built in accordance with the requirements of I.S.O.1AA Type platform and platform-based containers by BULLBOX.

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 Classification Society, Lloyd's Register of Shipping, American Bureau of Shipping...)

The flatracks will be constructed with flat paneled end walls which fold on top of the floor such that the folded flatrack can be used as a platform flat. The walls are counterbalanced to enable manual erection and folding.

 **1.2 Operational environment**

The flatracks will be suitable for use on sea, road and rail as envisaged by ISO 3874: 1988 (E) and may not be carried on the lower level of double stack rail cars with laden containers above.

 **1.3 Handling**

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 30 degrees to the horizontal.
- c) Lifting, empty only, from a set of Forklift pockets.

 **1.4 ISO Standards**

The flatracks will be built generally in accordance with the following documents but varied according to agreed design criteria.

- ISO 668-1995 (E) - Series 1 freight containers – External dimensions and ratings.
- ISO 1496 part 5 - Series 1 freight containers – Specification and testing for Platform based containers with incomplete superstructure and folding ends.
- ISO 1161-1984 (E) - Specification of corner fittings for series 1 freight containers.
- ISO 6346-Coding, identification & marking.
- ISO 3874-Freight containers, securing & handling.
- ISO 830-Freight containers-terminology.

 **1.5 Certification**

The flatrack will be constructed in accordance with the applicable standards and requirements set forth by the following societies: ABS, GL, BV, CCS, KR, LR, etc.

The International Convention for Safe Containers (CSC)

The Australian Plant Quarantine Regulation for Exposed timber in Freight Containers (TCT)

 **1.6 Certification Society**

The flatracks will be certified by Classification Society (ABS, GL, BV, CCS, KR, LR, etc.) in design and inspection during its production.

2. Dimensions and Ratings

The flatracks are built to the following dimensions and tolerances, but the reads must refer to the drawings to determine the shape of the flatrack and its suitability for cargo:

External

Length:	12,192	(0, -10)	mm	(Base, bottom castings)
Length:	12,202	max	mm	(Tare condition, top castings)
Length:	12,172	min	mm	(Loaded to R, top castings)
Width:	2,438	(0, -5)	mm	(Base bottom castings)
Height:	2,591	(0, -5)	mm	(End frame erected)
Height:	648	(0, -3)	mm	(End frame folded)
Camber:	50	(+5, 0)	mm	(after preloading)
Stack height:	Folds 4 into	2,591	mm	(8'-6")

Internal

Length	11,652	(0, -10)	mm	(Between corner posts)
Width	2,374	(0, -5)	mm	(Over bottom side rail)
Height	1,959	(0, -5)	mm	(side rail adjacent to post top castings)

Forklift Pockets

Width	2,343	mm
Height	2,280	mm
Centres	2,050	mm

Tare Weight (est.)

5,100 kg (11,240 lbs) ± 2%

Gross Weight

Maximum Gross Wt.: 52,500 kg (115,740 lbs)

Payload

Maximum Payload (UDL): 47,400 kg (104,500 lbs)

Concentrated Load

30,000 kg (66,140 lbs) over center 2 meters span.

Stacking

8 high at 30,480 kg or 5 high at 52,500 kg gross.

Lashing Bars

Maximum allowable load: 5,000 kg

 **3. Testing Criteria**

Proto-type container to be manufactured in accordance with this specification and shall be tested according to procedures described in the ISO 1496-5 requirements. The container will be fabricated & tested in advance of the mass production. One in every 100 of containers shall be tested for following items:

Stacking

Lifting from top corner fittings

The proposed criteria table for general prototype testing:

<i>Test & loads</i>	<i>Test methods</i>
a) Stacking Internal load : 1.8R-T Test load : 97,200 kgf/post.	Hydraulic cylinder load to corner post through top corner fittings. Time duration : 5 minutes
b) Lifting (from top corner fitting) Internal load : 2R-T	Lifting vertically. Time duration : 5 minutes
c) Lifting (from bottom corner fittings) Internal load : 2R-T	Lifting 30 deg. to the horizontal. Time duration : 5 minutes
d) Restraint (longitudinal) Internal load : R-T Test load : 2R	Hydraulic cylinder load to bottom side rail in compression then in tension. Time duration: 5 mins
e) Floor strength. Test load : 3,630 kgf (12,000 lbs)	Use of a special truck. Total contact area : 284 cm ² Wheel width : 180 mm Wheel center : 760 mm
f) End Wall strength Test Load : 0.3 P P=R - T	Compressed air bag will be used load applied over gross end wall structure and opening. Time duration : 5 minutes
g) Rigidity (Transverse) Test Force: 150 KN (15,240 Kgf)	Hydraulic cylinder will be applied to Top End Rail through top corner fittings, each time pulling & pushing. Time duration : 5 mins
h) Rigidity (Longitudinal) Test Load: 75KN (7,620 Kgf)	Hydraulic cylinder load applied either separately or simultaneously to each of top corner fittings on one end of the container in lines parallel both to the base of the container and to the planes of the sides of the container without tie bar. The load shall be applied first towards and then away from the top corner fitting. Time duration : 5 mins

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<p>i) Cargo lashing test Test load: 7,500 kgf</p>	<p>Pull in a direction typical of in-service lashing direction.</p>
<p>j) Lifting an interlock pile by top Test load: 25,000kgf/twistlock</p>	<p>The container in tare with end walls folded shall be placed on four level pads and secured from vertical movement through the bottom apertures of all four bottom corner fitting by devices the same or similar to its integral interlocking devices. A tensile load of 25,000kg shall be applied through all four stub posts top corner fitting via its integral interlocking device. Time: duration 5 mins</p>
<p>K) Stacking at folded position Test load: 97,200 kgf/post</p>	<p>The container in the tare and folded condition shall be placed on four level pads, A vertical force shall simultaneously applied to each of the four top corner fittings or on each pair of top end fittings via test plates offset in the same direction by 25.4mm laterally and 38mm longitudinally.</p>
<p>L) Top lifting when Folded Internal Load: 2R-T</p>	<p>Lifting vertically from top lifting apertures of the corn stub posts when end walls folded. Time duration : 5 mins.</p>
<p>M) Lifting from stub Post Test load: 31,250 kgf per post</p>	<p>Lifting vertically from top lifting apertures of the cornstub posts when end walls folded. Time duration : 5 mins.</p>
<p>N) Lifting from fork lift pocket Internal Load: 4*1.6T-T</p>	<p>a flatrack will be uniformly loaded to a total load of stack & payload = 4x 1.6T-T .The test stack should be slowly lifted through the flatrack's fork pockets. Time duration: 5 mins.</p>
<p>O 1) Concentrated load Internal Load: 1.8P'-T (P'=30,000kgf)</p>	<p>A concentrated load over center 2 meters of the base. Lifting deflection to be within ISO limits.</p>
<p>O 2) Concentrated load Internal Load: 2P'-T (P'=30,000kgf)</p>	<p>A concentrated load over the center 2 meters the base. No excessive permanent deformation that will render it unsuitable for use.</p>

* Note:

R - Maximum Gross Weight

T - Tare Weight

P - Maximum Pay



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