

**Technical Specification**  
**For**  
**40' x 8' x 9'6" ISO Type**  
**Dry Cargo Steel Container**

**Specification No. : S096A45G1**  
**Drawing No. : 096A45G1G**  
**Date of Issue : Jun. 16, 1998**  
**Revision #5 : Apr. 10, 2002**

**HULDA MARITIME INTERNATIONAL**  
**CONTAINER SERVICES CO., LTD**

---

## Scope

This specification covers design, construction, materials, testing, inspection & prototype container. The container is built in accordance with the requirements of I.S.O. 1AAA Type steel dry freight containers by appointed factory.

This Specification is for the purposes of information only and should not be copied without permission of the HULDA CONTAINERS.

## Contents

1. GENERAL .....	3
2. APPROVAL AND CERTIFICATES .....	3
3. HANDLING .....	4
4. TRANSPORTATION .....	4
5. DIMENSIONS AND RATINGS .....	5
6. GENERAL CONSTRUCTION .....	6
7. PRESERVATION .....	12
8. MARKINGS .....	15
9. TESTING AND INSPECTION .....	16
10. DOCUMENTS SUBMISSION .....	18
11. GUARANTEE .....	18
12. MATERIALS .....	19

## **1. GENERAL**

### **1.1 Operational Environment**

The container will be designed and constructed for the transportation of general cargo on sea ( above or under deck ) and on land ( road or rail ) throughout the world, and will be suitable for the environmental conditions imposed by those modes of transport. All materials used in the container are able to withstand extremes of temperatures found throughout the shipping area's of the world without any effect on their strength, watertightness, or other operating abilities within the temperature ranges from -40°C(-40°F) to 80°C(176°F).

### **1.2 Standards , Regulations and Rules**

#### **1.2.1 Standards and Regulations**

Containers shall comply with following in their latest editions:

1) I.S.O./TC-104

- 668 - Series 1 freight containers-Classification, external dimensions and ratings
- 6346 - Coding, identification and marking for freight containers
- 1161 - Specification of corner fittings for series 1 freight containers
- 1496/1 - Specification and testing of series 1 freight containers.  
Part 1 : General cargo containers for general purposes
- 830 - Freight containers-Terminology.
- 3874 - Freight containers-Handling and securing

2) The International Union of Railway ( UIC ) code 592-2 OR.

3) The Customs Convention on the International Transport of Goods( T.I.R. ).

4) The International Convention for Safe Containers ( CSC ).

5) Transportation Cargo Containers and Unit Loads Quarantine Aspects and Procedures by Commonwealth of Australia Department of Health. ( T.C.T. )

#### **1.2.2 To satisfy the requirements of Rules of B.V, A.B.S. L.R. or G.L. Classification.**

## **2. APPROVAL AND CERTIFICATES**

### **2.1 Classification Certificate**

All the containers shall be certified for design type and individually inspected by Classification Society.

### **2.2 Production Certificate**

The Production Certificate of series containers to be issued by the Classification Society. The Society's seal shall be provided.

### **2.3 T.C.T Certificate**

Certificate of timber treatment to the requirement of Australia Department of Health.

### **2.4 Customs Certificate (T.I.R.)**

Customs' Approval and Certificate to be issued by the Customs.

**2.5 U.I.C. Registration**

All the containers will be registered & comply with the International Union of Railways.

**2.6 C.S.C. Certificate**

All the containers will be certified and comply with the requirements of the International Convention for Safe Containers.

**3. HANDLING**

The container will be constructed to be capable of being handled without any permanent deformation which will render it unsuitable for use or any other abnormality during the following conditions:

- 1) Lifting, full or empty, at the top corner fittings vertically by means of spreaders fitted with hooks, shackles or twistlocks.
- 2) Lifting, full or empty, at the bottom corner fittings using slings with appropriate terminal fittings at slings angle of thirty ( 30°) degree to horizontal.

**4. TRANSPORTATION**

The container will be constructed to be suitable for transportation for following modes without any permanent deformation which will render the container unsuitable to use or any abnormality.

**4.1 Marine:**

- **In the ship cell guides:** Eight ( 8 ) high stacked base on Max. gross weight 30,480 kg ( Stacking capacity: 216,000 kgs )
- **On the deck :** Five ( 5 ) high stacked and secured by suitable vertical and diagonal wire lashings.

**4.2 Road - On flat bed or skeletal chassis:**

Secured by twistlocks or the equivalent at the four bottom corner fittings.

**4.3 Rail - On the flat cars or special container car:**

Secured by twistlocks or the equivalent at the four bottom corner fittings.

**4.4 One door off operation:**

Five (5) high stacked on the deck base on Max. gross weight 30,480 kg.

**5. DIMENSIONS AND RATINGS**

**5.1 Dimension**

	<u>External Dimensions</u>	<u>Internal Dimensions</u>
Length	12,192 ( 0, -10 ) mm	12,032 ( 0, -10 ) mm
Width	2,438 ( 0, -5 ) mm	2,352 ( 0, -5 ) mm
Height	2,896 ( 0, -5 ) mm	2,698 ( 0, -5 ) mm

No part of the container will protrude beyond the external dimensions mentioned above.

Maximum allowable difference between two diagonals on any one of the following surfaces is as follow:

Roof, Bottom and Side Diagonals	.....	19 mm.
Front and Rear Diagonals	.....	10 mm.

**5.2 Door Opening**

Width	.....	2,340 ( 0,-5 )	mm
Height	.....	2,585 ( 0,-5 )	mm

**5.3 Gooseneck Tunnel**

Length	.....	3,315 ( +2,-2 )	mm
Width	.....	1,029 ( +3,0 )	mm
Height	.....	120 ( 0,-3 )	mm

**5.4 Inside Cubic Capacity**

76.4 cu.m	2,700 cu.ft
-----------	-------------

**5.5 Rating**

Maximum Gross Weight	.....	30,480 kg	67,200 lb
Maximum Payload	.....	26,620 kg	58,690 lb
Tare Weight ( ±2%)	.....	3,860 kg	8,510 lb

**5.6 Corner Protrusions**

- 1) The upper faces of the top corner fittings will protrude above the highest lever of the roof construction except corner plate by 6 mm.
- 2) For the containers under empty condition the lower faces of the cross members in their bases including their end transverse members shall be on a plane located at 12.5 (+5, -1.5) mm above the lower faces of the bottom corner fittings except the corner plates.
- 3) The outer side faces of the corner fittings will protrude from the outside faces of the corner post by about 3 mm. The outer side faces of the corner fittings will protrude from the outside faces of the side wall by nominal 7 mm and from the outside faces of the end wall by 7.4 mm.
- 4) For the containers under the condition such as the load equal to 1.8R - T is uniformly distributed over the floor, no part of the container base will deflect by more than 6 mm below the lower faces of the bottom corner fittings.

**6. CONSTRUCTION**

**6.1 General**

The container will be constructed with steel frames, fully vertically corrugated steel side and end walls, die-stamped corrugated steel roof, wooden flooring, corrugated double hinged doors and ISO corner fittings at eight corners. All steelworks will be built up by means of automatic and semi-automatic CO2 gas

arc welding. All exterior weldings including that on base structure will be continuous to give perfect watertightness, Interior welds will be intermittent with a minimum bead length of 25 mm for every 200 mm. All the welds, even spots, will have penetration without undercutting or porosity. A min. of 95% of the length of any seam of any side, front, and door panel must be fully penetrated

## **6.2 Corner Fittings**

Corner fittings will be designed in accordance with ISO/1161 standard, and manufactured at the workshops approved by the Classification Society. The front top corner fittings will have a minimum 12.5 mm spherical radius on their lower inside corners.

## **6.3 Base Frame**

The base frame will be composed of two (2) bottom side rails, a number of cross-members and a gooseneck tunnel, which are welded together as a sub-assembly.

### **6.3.1 Bottom Side Rail**

Each bottom side rail is built of a steel pressing made in one piece. The bottom flange face outwards so as to be easily repaired and hard to corrode.

Qty. : 2  
 Shape : Channel section  
 Dimension : 162 x 48 x 30 x 4.5 mm

### **6.3.2 Crossmember**

The crossmembers are composed of a number of small pressed channel section and some large one located beneath each board joint of the plywood with four 4.5 mm thick webs .

Shape : Channel section  
 Small one : 122 x 45 x 45 x 4.0 mm , Qty. : 26  
 Large one : 122 x 75 x 45 x 4.0 mm , Qty. : 3

### **6.3.3 Gooseneck Tunnel**

The gooseneck tunnel consists of one piece pressed hat section tunnel plate, a number of pressed channel bows, one welding enclosed section tunnel bolster and tunnel outriggers. The gooseneck is designed according to ISO standard:

- a) Tunnel plate thickness : 4.0 mm Qty. : 1
- b) Tunnel bow thickness : 4.0 mm Qty. : 12
- c) Bolster thickness: 4.0 mm Qty. : 1
- d) Outriggers - "C" section: 118x75x45x4.0 mm, Qty. : 1/each side  
 118x45x45x4.0 mm, Qty. : 9/each side

### **6.3.4 Reinforcement**

Reinforcement plate will be welded to each end of bottom side rail.

---

Dimension: 200 x 153 x 4.0 mm

#### **6.4 Front End**

The front end will be composed of corrugated end wall and front end frame, which are welded together as a sub-assembly.

##### **6.4.1 Front End Wall**

The front end wall is composed of steel sheet fully vertically corrugated into trapezium section, butt joint together to form one panel by means of automatic MAG welding.

Thickness: 2.0 mm  
Corrugation dimension- Depth : 45.6 mm ,  
Inter face : 104 mm , Slope : 18 mm  
Outer face : 110 mm , Pitch : 250 mm

##### **6.4.2 Front End Frame**

The front end frame will be composed of one front sill, two corner posts, one front header and four corner castings.

###### **6.4.2.1 Front Sill**

The front sill consists of a "C" section steel pressed with top flange extending inwards as the wood support, and a square tube on top of it. Two channel section steel recesses are provided in the lower end rail adjacent to the bottom fittings to prevent damage due to any twistlock misalignment.

'C' section steel : 100x122x40x4.0 mm  
Square tube : 60 x 60 x 3.0 mm  
Channel section : 200 x 75 x 9 mm

###### **6.4.2.2 Corner Post**

Each corner post is made of a 6.0 mm thick section Hi-Yield steel pressing to ensure the suitable strength, light-weight and easy maintenance.

###### **6.4.2.3 Front Header**

The front header is constructed with steel square tube lower part and steel strip upper part. The upper part is extended inwards of the container certain distance with full width from front part of top corner fitting.

Lower rail : 60 x 60 x 3.0 mm RHS  
Upper part : 3.0 mm thick

#### **6.5 Rear End**

Rear end is composed of Rear End Frame which consists of one door sill, two corner posts, one rear header with header plate and four corner fittings, which are welded together as a sub-assembly, and Door Systems which are with locking devices.

**6.5.1 Door Sill**

The door sill is built of a special channel section steel pressing having four internal stiffening ribs, at the back of each cam keeper. The upper face of the sill is 2 mm higher than floor level & has a slope for better drainage. Two channel section steel recesses are provided in the door sill adjacent to the bottom fitting to prevent damage due to any twistlock misalignment.

Door sill	: 4.5 mm Thk.	Stiffener ribs	: 4.5 mm Thk.
Slope	: 1 : 10 approx	Channel section	: 200 x 75 x 9 mm

**6.5.2 Corner Post**

Each corner post is constructed from an inner part of channel shaped hot-rolled section steel and an outer part, welded together to form a hollow section to ensure suitable strength against the stacking and racking force. Four ( 4 ) sets of hinge pin lugs are welded to each outer part of the corner post.

Inner part	: 113 x 40 x 12 mm
Outer part	: 6.0 mm thick

**6.5.3 Door Header**

The door header is constructed from a lower part of a "U" shaped steel pressing with four internal stiffener ribs and an upper part of steel pressing rear header plate, they are welded together to form a box section to provide a high rigidity.

Rear header	: 4.0 mm Thk.
Header plate	: 3.0 mm Thk.
Stiffener ribs	: 4.0 mm Thk., Qty.: 4

**6.5.4 Door Systems**

Doors will consist of two door leaves, each leaf with two locking devices, four hinges and pins, seal gaskets and the door holders. The doors will be installed by hinge pins to the rear end frame and capable of swinging to 270 degrees smoothly.

**6.5.4.1 Door Leaves**

Each leaf consists of door panel, steel door frame which consists of horizontal ( upper & lower ) and vertical ( inner & outer ) members. They are welded together to form the rectangular door leaf. The doors are so arranged that the left leaf can not be opened without displacement of the right leaf.

a. Door Panel : With 5 corrugations

Depth	: 36 mm,	Slope	: 68 mm
Width	: 72 mm ,	Panel thickness	: 2.0 mm

b. Door Frame

- (1) Vertical door member : 100 x 50 x 3.2 mm RHS (outer & inner).
- (2) Horizontal door member : 150 x 50 x 3.2 mm, Channel section.

**6.5.4.2 Hinges and Pins**



Four forged hinges, providing with bushed hole, are welded to each door leaf. Each door is installed by hinge pins, washers and bushings.

Washer : SUS 304, under the bottom of hinge  
 Bushing : Self-lubricating synthetic / bronze  
 Pin : SUS 304

#### 6.5.4.3 Locking Devices

Two locking bars are of steel tube with forged handles, anti-racking rings and cam ends, and fixed to each door leaf with bolts / nuts and six huck bolts at TIR locations, by top and bottom bearing brackets and one bar guide bracket. The bars are suspended in bearing brackets with bush of self-lubricating synthetic material.

Cam-keepers are welded to the door header and sill.

- a) Locking device: Bloxwich BE 2566M or BE 2566MN.
- b) Locking Bar Treatment: Hot-Dip galvanized (Min. 75 $\mu$ )
- c) Lock rod full assemblies (including all handles, gasket, retaining straps, swing latches, and bushings and keepers) .
- d) Strap gasket holes to be 1/2 mm smaller than fastener and the fasteners to be sealed with sealant.

#### 6.5.4.4 Door Holder and Receptacle

A door holder per door, made of mixed nylon rope, is tied to the centerside of locking rod and the receptacle (hook type) is welded to each bottom side rail to remain the door at the open position.

#### 6.5.4.5 Seal Gaskets

The door seal gaskets ( black colour ) are special E.P.D.M rubber and of a "C" type for the bottom, "J" type for the other side, assembled by rivets at an about 125 mm pitch, using angle type strips retainer and adhesive sealant is applied underneath the gasket before installation.

Retainer : SUS 304 ( angle type )  
 Rivet : SUS 304

#### 6.5.4.6 EPDM Gasket

The EPDM gasket will be placed over all the holes on door for fastener. Diameter of screws holes in EPDM strap gaskets will be 1/2 mm smaller than strap fastener diameter and the fasteners to be sealed with sealant.

### **6.6 Side Wall Assembly**

#### 6.6.1 Top Side Rails

Each top side rail will be made of a square steel pipe.

Rail : 60 x 60 x 3.0 mm RHS

#### 6.6.2 Side Walls

Each side wall will be composed of a number of sheets for the intermediate (inner) parts and outer panels at each end of side wall, fully vertically corrugated into trapezium section, butt welded together to form one panel by automatic welding.

- a) Side panel : 1.6 mm Thk. , Qty. : 11 Pcs/side
- b) Trapezium - Depth : 36 mm
  - Outer face : 72 mm , Slope : 68 mm
  - Inner face : 70 mm , Pitch : 278 mm

## **6.7 Roof**

The roof will be constructed by several die-stamp corrugated steel sheets with a certain upwards camber at the center of each trough and corrugation, these sheets are butt jointed together to form one panel by automatic welding.

- Corrugation Shape - Depth : 20 mm , Pitch : 209 mm
- Inter face : 91 mm , Slope : 13.5 mm
- Outer face : 91 mm ,
- Camber upwards : 5 mm
- Panel thickness : 2.0 mm
- Sheets Qty. : 11 Pcs.

### **6.7.1 Roof reinforcement plate**

Four reinforcement plates shall be mounted around the four corner castings. The width's edge will be terminated on the top side rail same as the roof sheet's edge.

- Dimension : 300 x 270 x 3.2 mm

## **6.8 Floor**

### **6.8.1 The Floor Boards**

The floor consists of Apitong and/or Keruing plywood. The plywood with conventional 3x3 longitudinal ply layup (Top, CTR., Bottom) is treated with wood preservative containing " Phoxim " or equivalent according to the Commonwealth Department of Health, Australia..

- Plywood thickness : 28 mm
- Plywood moisture content : Less than 14 %
- Plywood plies Qty. : 19 plies

### **6.8.2 Arrangement and Fixing**

The plywood boards are longitudinally laid on the crossmember with a pre-blasted painted hat section steel joint at the center and two angle steel joints along both side rails. The top of hat section steel to be 1-2 mm below the top of the floor with 2 mm +/- 0.5 mm gap between its vertical legs and panel edge. The ends and under joints of center rail will be plugged with rubber blocks. The plywood boards are tightly secured to each crossmember with countersunk self-tapping electro-zinc plated steel screws. The drill diameter for screw shall be less than 7.1 mm and optimum sized as required for specific self

tapping floor screws to be installed in container. These heads of the floor screws are countersunk below the level of the upper surface of the floor by 1.5 mm to 2.5 mm. The top edges of transverse plywood joints to be chamfered at 1.5 mm x 45 degrees.

Screws	: M8 x 45 x $\phi$ 16 (head), electro-zinc plated
Screw's Qty.	: 9 Pcs/joint, 9 Pcs/door sill and bolster, 5 Pcs/other 5 Pcs/outrigger joint, 4 Pcs/other outrigger
Floor center rail	: 4.0mm Thk, primed and painted
Angle steel	: 3.0 mm Thk.

## **6.9 Special Features**

### **6.9.1 Customs Seal Provision**

Customs seal devices are made on each locking handle and retainer in accordance with TIR requirements with rivets.

### **6.9.2 Lashing rings**

- 1) Lashing rings are welded to each bottom and top side rail at corresponding recessed area of side wall at equal distance.

Lashing rings' Qty./ Bottom or top side rail: 10, Total : 40

- 2) Lashing rods are welded on each rear & front corner post slot, and on each top corner fitting.

Lashing rods Qty. / Each front corner post : 3, Total : 6

Lashing rods Qty. / Each rear corner post : 3, Total : 6

Position:

Front/ rear top : 30 mm from ceiling surface

(between top side rails and corner fittings)

Front/ rear middle : 1100 mm from floor surface

Front/ rear bottom : 100 mm from floor surface

- 3) Capabilities of pull load of every lashing point are as following:
  - a) Lashing rings on the side rails : Working load = 2,000 kg
  - b) Lashing rods on the corner post : Working load = 1,500 kg
- 4) Lashing ring/ bar's surface treatment : Electro-zinc plated (13  $\mu$ ).

### **6.9.3 Ventilator**

One ventilator with E.P.D.M seal gasket is supplied on each side wall at the right-hand end when facing the side from outside of container, fixed by three aluminum huck bolts, the seal is to be applied on the edges except the bottom side of the ventilator, after the completion of paint.

Quantity : 1 / each side panel

Material : ABS Labyrinth Type.

## **7. PRESERVATION**

### **7.1 Surface Preparation of the Steelwork**

- 1) All the steel surface prior to forming or after will be degreased and shot blasted to Swedish Standard SA 2.5 to obtain the surface roughness at 25 to

35µ which can result in the removal of all the rust, dirt, mill scale and all other foreign materials.

- 2) Locking rod assemblies, which are welded with gear cams, bars holder and handle hinges, are hot dipping galvanized ( Thickness : 75 µ ).
- 3) All fasteners not mentioned in this Spec., such as bolts, nuts self-tapping screws will be electro zinc plated ( Thickness : 13µ ).
- 4) Sealant  
Each perimeter of the floor, all the overlapped joints of inside, all the holes for bolts and nuts and all the places where may leak water will be sealed to give prevention against water entry.

Sealant Materials:

- a. Chloroprene ( Cargo contact area )
- b. Butyl ( Hidden parts )

**7.2 Coating**

**7.2.1 Prior to Assembly**

All the steel surfaces will be primed with Zinc Rich Primer at 10-15 microns D.F.T. immediately after shot-blasting.

**7.2.2 After Assembly**

All the weld joints will be shot-blasted to remove all the welding fluxes, spatters, burnt primer coatings caused by welding heat, and other foreign materials, and followed with the secondary paint operation immediately.

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

Process	Paint Name	DFT ( µ )
Exterior Surface	Epoxy zinc rich primer	25
	Epoxy primer	40
	Chlorinated rubber or Acrylic topcoat Color:	45
<b>Total : 110</b>		
Interior Surface	Epoxy zinc rich primer	20
	Pure epoxy Colour:	50
	<b>Total: 70</b>	
Underside	Epoxy zinc rich primer	25
	Bitumen	195
<b>Total: 220</b>		

\* Epoxy zinc rich primer and epoxy topcoat are not applied to the wooden floor.

**7.2.4 The paint suppliers are Hempel, Kansai, MEGA or Chugoku.**

**8. MARKINGS**

**8.1 Lettering**

The markings will be designed decal and arranged according to buyer's requirement. The markings consist of the following contents:

- 1) Owner's emblems ..... according to owner's design.

- 2) Owner's code , serial number and check digit ( outside & inside )
- 3) Size and type code ( outside )
- 4) Weight details ( on door )
- 5) Other marking: According to owner's requirements.

## **8.2 Consolidate Plating**

**8.2.1** The containers will bear marking plate in accordance with the requirements of the Classification Authorities and owner such as mentioned in section 2.2 in this specification. The plate will be permanently riveted to the specified position by rivets. A 1-2 mm thick EPDM DIE CUT gasket to the exact size of the data plate, with gasket holes 1/2 mm less than diameter of plate fastener, will be provided and installed under the data plate.

Plate material	: STAINLESS STEEL
Plate treatment	: Chemically etched
Rivets material	: Stainless steel
Plate thickness	: 0.8 mm

**8.2.2** Contents of the Plate:

- 1) Owner's plate ( name and address ) .
- 2) CSC approval No.
- 3) Customs approval No.
- 4) Australian wood treatment .

The engraved letters on this plate are as following :

- IM : Immunization
  - XXXX : The name of preservative.
  - XXXX : The time of immunization.
- 5) Date of manufacture (year-engraved, month-stamped)
  - 6) Owner's serial number (stamped)
  - 7) Owner's model number.
  - 8) One-door-off stacking, racking and end wall strength ratings.

## **9. TESTING AND INSPECTION**

### **9.1 Proto-type Container**

Proto-type container to be manufactured in accordance with this specification and shall be tested according to procedures described in the ISO 1496/1. and the Classification Society's requirements. The containers will be fabricated & tested in advance of the mass production.

### **9.2 Container in Mass Production**

**9.2.1** Every container in mass production shall be manufactured under effective quality control procedures to meet the specified standards.

One of every 100 of containers shall be tested for following items:

- a) Stacking test
- b) Lifting from top corner fitting test

- c) Lifting from bottom corner fitting test
- d) Floor test. ( Refer to the appendix, 1 test per 50 units)

After completion, all the containers shall be subject to dimension check, door operation check, light leakage test & production type weather-proofness test. The containers shall be inspected by the surveyor of Classification Society and identified by the appropriate society seal.

**9.2.2** Each assembled corner post structure will have tension test with 15,240 kg after welding in the construction line.

**9.3 The proposed criteria table for general prototype testing:**

Test No.	Test Load	Method
a. Stacking	Internal Load: 1.8R-T Testing load: 97,200 kg / Post	Hydraulic cylinder load to corner post through top corner fittings. Time duration: 5 mins .
b. Lifting From Top Corner Fittings	Internal Load: 2R-T	Lifting vertically from top corner fittings. Time duration: 5 mins .
c. Lifting From Bottom Corner Fittings	Internal Load: 2R-T	Lifting from bottom corner fitting 30 deg. to horizontal Time duration: 5 mins .
d. Restraint (Longitudinal)	Testing Load: 2R(R/ side) Internal Load: R-T	Hydraulic cylinder load applied to bottom side rails in compression & then tension. Time duration: 5 mins .
e. Floor Strength	Truck Load: 7,260 kg	Special truck is used. 9 pass. Total contact area: 284 sq.cm, Wheel width: 180 mm, Wheel center distance: 760 mm

f. Wall Strength (Front & Door)	Test Load: 0.4 P	Compressed air bag is used. Time duration: 5 mins.
g. Side Wall Strength	Test Load: 0.6 P	Compressed air bag is used. Time duration: 5 mins.
h. Roof Strength	Test Load: 300 kg	Applied area will be the weakest place of 600 x 300 mm. Time duration: 5 mins.
i. Rigidity (Transverse)	Test Force: 15,240 kg (150 kn)	Hydraulic cylinder will be applied to front top end rail & door header through top corner fittings, each time pulling & pushing. Time duration: 5 mins.
j. Rigidity (Longitudinal)	Test Force: 7,620 kg/Rail (75 kn/Rail)	Hydraulic cylinder load will applied to side top rail through top corner fittings. Time duration : 5 mins .

k. Lashing Rings Lashing bars	Lashing rings: 2,000 kg x 1.5 = 3,000 kg pull test Lashing bars : 1,500 kg x 1.5 = 2,250 kg pull test
l. Weather proofness	Nozzle: 12.5 mm ( inside dia.)      Speed : 100 mm/Sec. Pressure :100 Kpa(1 kg/sq.cm)      Distance : 1.5 m

Note: **R** - Max. gross weight, **T** - Tare weight, **P** - Max. payload

**9.4 One door off operation test**

The container shall be tested for one door open off operation and marked the allowance to CSC plate. The test shall include stacking test and transverse rigidity test with right hand door moved

**9.4.1 Stacking Test**

The test shall base on five (5) high stacked.  
Internal Load: 1.8R-T, Testing load: 54,860 kg/post.

**9.4.2 Racking Test**

Test force: 11,430 kg.

**9.4.3 Door Wall Strength Test**

Test load: 5,650 kg, applied to the closed door side.

**9.5 Inspection**

**9.5.1 Materials and Component Parts Inspection**

All the materials and components will be inspected by Quality Control Dept. to make sure that the most suitable and qualified components being used for the containers and to meet this specification.

**9.5.2 Production Line Inspection**

Every container will be manufactured under effective Quality Control procedures, and every production line of the factory will be inspected and controlled by the Quality Control Dept. to meet this specification.

**10. DOCUMENTS SUBMISSION**

**10.1 When Contracting**

The factory shall submit the specification with following drawing (3 sets):

- |                     |                     |
|---------------------|---------------------|
| General arrangement | Side wall assembly  |
| Base assembly       | Front end assembly  |
| Rear end assembly   | Marking arrangement |

**10.2 When delivery**

The owner should inform the factory all the documents needed by the owner two weeks before the delivery date & the factory will be willing to submit them to the owner.

**11. GUARANTEE**

The guarantee period will commence at the day of delivery and the delivery is

not later than three (3) months after the containers are accepted by the Classification Society.

**11.1 Paint Guarantee**

The paint system applied to the container surface shall be guaranteed against corrosion and/or paint failure for a period of five (5) years. The guarantee shall be applied to all the kinds of faults/failures affecting more than 10% of the painted surface and partial or total repainting shall be assured for the container(s) at the manufacturer's expense. Normal wear/tear, or corrosion caused by acid, alkaline solution or result from damages by abrasion impact or accident are excluded.

Corrosion is defined as the rusting exceeding RE3 ( European scale of degree of rusting ).

**11.2 Other Guarantee**

All containers shall be guaranteed by the factory against any defects or omissions in construction, poor workmanship, or defective materials for a period of one (1) year. Any damages caused by mis-handling, mis-securing, mis-loading, impact and other natures of accident are excluded. The self-adhesive film Decal shall be guaranteed nine (9) years.

**12. MATERIALS**

The main materials used in construction are as follows or approved equivalent:

<b>Where used</b>	<b>Materials</b>
<u>Front End Assembly</u>	
Front corner post	Corten A
Front sill	Corten A
Front panel	Corten A
Front header	Corten A
Front header cap	Corten A
<u>Base Assembly</u>	
Bottom side rail	Corten A
Crossmember	Corten A
Outrigger	Corten A
Gooseneck tunnel	Corten A
Floor centre rail	Corten A
Floor support angle	Corten A
<u>Rear End Assembly</u>	
Rear corner post	Corten A
Rear corner post ( inner )	SS50 (or SM50YA)
Door sill	Corten A
Rear header cap	Corten A
Door header lower	Corten A
Door panel frame	Corten A



Door panel	Corten A
Door hinge	S25C, electro-zinc plated
Door hinge pin	SUS 304
Locking device	Bloxwich BE 2566M or BE 2566MN
Locking cam, cam keeper	S20C
Locking rod	STKR41
Door gasket	E.P.D.M
Gasket retainer	SUS 304
Washer	SUS 304
Rivet	SUS 304
Gasket	E.P.D.M.
Corner casting	SCW49

Side Wall Assembly

Side panel	Corten A
Top side rail	Corten A
Lashing ring	SS41, electro-zinc plated
Ventilator	A.B.S

Roof Assembly

Roof corner gusset	Corten A
Roof panel	Corten A

Floor

Floor board	Plywood (Aпитong / Keruing )
Floor screw	Electro zinc plated

Note :

<b>Material</b>	<b>Yield point (kg/sq.mm)</b>	<b>Tensile strength (kg/sq.mm)</b>
SS41	25	41
SCW49	28	49
SS50	29	50
S20C	25	42
S25C	28	46
SM50YA	37	50
Corten A	35	49
SM50A	33	50
STKR41	24	41