



## TECHNICAL SPECIFICATION

**CLIENT : OCI**

®A **SPECIFICATION NO. : SP1-21.4.36-ENQC5732 REVA**

**WO : 2305**

**DESCRIPTION : 21000 LITRE IMO TYPE 1 BEAM TANK CONTAINER**

**SERIAL NO'S : TASU 211000 TO TASU 211009**

### 1.0 Technical Characteristics

#### 1.1 Design & Testing

Tank - in accordance with: IMDG, CFR49, RID/ADR  
 Frame - in accordance with: ISO Standard 1496/3

	SI	US
1.2 <b>Nominal Capacity (± 0,75% Tolerance)</b>	<b>21000</b> $\square$	<b>5548</b> US gal

#### 1.3 Frame Dimensions And Weight

®A	Max Gross Weight	<b>36000</b> kg	<b>79365</b> lbs
	Tare Weight (± 3% Tolerance)	<b>3300</b> kg	<b>7275</b> lbs
	Length	6058 mm	20 ft
	Width	2438 mm	8 ft
	Height	2591 mm	8 ft 6 in

#### 1.4 Tank Dimensions

Internal Diameter	2180 mm	85,827 in	
Tan to Tan	5085 mm	200,197 in	
Shell Minimum Thickness	4,5 mm	0,177 in	
Head Minimum Thickness	5,0 mm	0,197 in	
Corrosion Allowance	0	mm	0,0
Dished Ends- Torispherical	CROWN 2050 mm	KNUCKLE 250 mm	in
MS Equivalent Thickness CFR49 - 178.270-5 (c)	6,35 mm	IMDG 6 mm	

#### 1.5 Pressure & Temperature Rating

®A	Metallurgical Design Temperature	<b>130</b> °C	<b>266</b> °F
	RID/ADR Calculation Pressure	6,0 bar	87,0 psig
	Maximum Allowable Working Pressure	4,0 bar	58,0 psig
	Hydrostatic Test Pressure	6,0 bar	87,0 psig
	Vacuum Pressure	0,41 bar	6,0 psig

#### 1.6 Material Of Construction

Framework	:	Hollow section	EN 10210 S355 J2H / Supraform TM 380
		Plates	EN 10025 S355 K2G3C / Supraform TM 380
		Rolled section	EN 10025 S355 K2G3
Corner Castings			ISO Standard 1161
Shell			DIN 17441 W1.4401 C ≤ 0,03% <b>Cold Rolled 2B</b>
Heads			DIN 17441 W1.4401 C ≤ 0,03% <b>Cold Rolled, Polished</b>
Vacuum Stiffening Rings (3 off 3mm thick)			ASTM A240 Gr 316

## 2.0 Tank Fittings And Accessories

### 2.1 Manhole

- Supplier Swift
- Quantity One
- Dimensions 500mm ID
- Specification Stainless steel 316; 4 bar pressure rating; 8 point fixing
- Gasket Sweet white rubber

### 2.2 Safety Relief Valve Assembly

- Supplier Fort Vale
- Quantity One
- Dimensions 2\_" BSP MKIII Super Maxi Highflow, part No G10/16300
- Specification +4,4 bar (+63,8 psi)  
A flame arrestor is fitted to the valve
- Gasket Adaptor flange = Klinger SIL C-4430/PTFE
- Remarks Provision is made for future fitting of a rupture disc and manometer

### 2.3 Air Inlet Assembly

- Supplier Gestra
- Quantity One
- Dimensions DN 40 (1\_" )
- Specification Stainless steel 316 ball valve with 1\_" BSP nipple and cap on the inlet side.  
No gauge provision is provided.
- Gasket PTFE

### 2.4 Thermometer

- Supplier Consani (Rhombert)
- Quantity One
- Dimensions 80mm dial diameter
- Specification Surface type. Dual scale - 20°C to 200°C / 0°F to 400°F

### 2.5 Top Discharge Provision

- Supplier Consani
- Quantity One
- Dimensions DN 80 (3")
- Specification Stainless steel 316
- Gasket Klinger SIL C-4430 and PTFE
- Remarks Provision is made for the future fitting of a clamped 3" butterfly valve and a 3" syphon tube

### 2.6 Bottom Discharge

- Supplier Fort Vale
- Quantity One
- Dimensions DN 80 (3") opening diameter
- Specification Internal valve - 30° Highlift foot valve, part No 830/3200 bolted to a steam heated tank pad  
External valve - clamped butterfly valve, part No 368/7000B, with a 3" BSP threaded connector closed by a stainless steel cap & retaining chain
- Gasket Klinger SIL C-4430 / PTFE
- Remarks A cable remote control is connected to the internal valve handle. Provision is made for the future fitting of a fusible link.

### 2.7 Protective Housing / Spillbox

- Supplier Consani
- Quantity Two
- Dimensions Air inlet / top discharge provision - 700mm x 635mm  
Relief valve / manhole - 770mm x 950mm
- Specification ASTM A240 - 304; 2,5mm housing; 2mm hinged lid. Each housing is provided with surface mounted PVC tubes draining to the bottom part of the container.

- 2.8 **Steam Heating**
- Supplier Consani
  - Quantity Steam contact area of 5m<sup>2</sup>. Effective area 10m<sup>2</sup>.
  - Dimensions 4 longitudinal runs 110mm wide x 4726mm long plus 3 vacuum circumferential rings with 1/2" BSP inlet and outlet connections. Caps are secured with cable preventing them from dropping below the frame.
  - Specification ASTM A240 – 316L; 6 bar working pressure, hydrostatically tested at 8 bar
  - Remarks A 4 bar MAWP decal is fitted.
- 2.9 **Insulation And Cladding**
- Supplier Consani
  - Quantity The complete tank is coated with anti-stress corrosion lacquer (15-25 micron DFT) prior to insulation.
  - Dimensions Insulation: Shell : Tanklite 50mm, density 21kg/m<sup>3</sup>  
Ends : Glasswool, density 16kg/m<sup>3</sup>, thickness to suit end profile  
Cladding: Shell: 0,8mm thick pre-painted white aluminium (RAL 9010) (Grade 5251) with sealed lapped joints  
Ends: White GRP (RAL 9010) retained with stainless steel straps.
  - Remarks Diameter 8mm drain holes are provided on the underside of the cladding at 1 meter spacing.
- 2.10 **Walkways**
- Supplier Consani
  - Quantity One longitudinal, two lateral sections
  - Dimensions 475mm wide
  - Specification Marine resistant aluminium. Stainless steel fasteners with Nylock nuts and nylon washers.
- 2.11 **Ladder**
- One ladder 300mm wide integral with the frame is provided on the right hand side of the rear end frame. Material is commercial quality mild steel. The ladder is painted. Ladder rungs to be non-slip type.
- 2.12 **Corner Protection Spreaders**
- 4-off per tank located at the top frame corners.
- 2.13 **Earthing Connection**
- 1 off stainless steel lug 60 x 50 x 2,5mm with 20mm hole, is located at rear of tank frame adjacent to bottom discharge.
- 2.14 **Document Holder**
- 1-off PVC document holder 90mm diameter x 300mm long. The holder is water resistant and is fixed in a position that affords adequate protection.
- 2.15 **Decals**
- One set per tank as per code requirements. Owner logos supplied by client and applied by Consani.
- 2.16 **Data Plates**
- One set of stainless steel data plates per tank as per code requirements
- 2.17 **Calibration**
- Two calibration plates, one marked in cm/litres and the other in inches/US gallons, are mounted to the spillbox lid. A Calibrated stainless steel 316L dipstick, is mounted to the manhole neck.
- 2.18 **Valve Cabinet**
- Not fitted.
- 3.0 **Finish**
- 3.1 **Shell**
- |                        |   |
|------------------------|---|
| Internal Shell Surface | 2B finish   |
| Longitudinal Welds     | As welded.  |
| Circular Welds         | Weld bead fused with bottom 400mm ground flush (Ra = 1,3um max) |

3.2	<b>Dished Ends</b>	Internal Surface Weld Seams	Polished (Ra = 1,3um max) Ground flush
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### 3.3 Cleaning

On completion of fabrication, the vessel's internal surface is degreased, pickled, passivated and neutralised. A white cloth test will be performed on the internal surface to check for cleanliness. The opening points are sealed so that the tank is supplied clean and ready for use.

### 3.4 Painting (Hempel)

The carbon steel frame components are shotblasted to SA 2\_ and painted as follows:

First coat	Hempadur Zinc (1536)	30 micron min DFT
Intermediate coat	Hempadur Primer (1530)	30 micron min DFT
Final coat	Hempatex Hibuild (4641)	<u>70 micron min DFT</u>
	TOTAL	<u>130 micron min DFT</u>

DA Colour: Matt Black RAL 9005.

### 4.0 Test and Homologations

1. These tank containers are constructed according to an approved design.
2. Each production unit is subject to testing and non-destructive examination as required by ASME VIII Division 1, UIC and Consani's own quality requirements. Each unit is inspected by the independent Inspection Authority, Lloyds Register.
3. The tank container has been specially tested and approved for a stacking load of 86400 kg per corner post, which corresponds to nine-high stacking.
4. The tank container fulfils the performance specification of the following International Organisation's regulations and recommendations and is supplied with their Approvals.

US DOT-IM101  
TIR/Customs  
RID/ADR  
AAR 600  
IMDG-IMO Type 1  
CSC  
TC  
UIC

### 5.0 Documentation

The following documentation will be provided:

1. Certificate of cleaning (placed in the document holder).
2. Initial Inspection Certificate for each tank.

6.0 **Products**

Approved for products in classes 3; 6.1, 8 and 9 as applicable.

**DESIGN:** Compiled by : ..... Reviewed by: .....

**SALES/CONTRACTS** : .....

**CUSTOMER APPROVAL** : \_\_\_\_\_

**BY** : \_\_\_\_\_

**DATE** : \_\_\_\_\_

**Revision History:**

**From Original specification to Rev A (14/09/2000)**

- 1) Max gross weight of 31000kg removed (1.3).
- 2) Metallurgical design temperature changed from 120°C to 130°C (1.5).
- 3) Safety relief valve changed to pressure only (2.2).
- 4) Thermometer manufacturer specified as Rhomberg (2.4).
- 5) Retaining cable on bottom discharge cap changed to a chain (2.6).
- 6) Spillbox dimension changed (2.7).
- 7) Steam heating details modified (2.8).
- 8) Drain holes added to underside of cladding (2.9).
- 9) Nylock nuts and washers added to walkways (2.10).
- 10) Dipstick added (2.17).
- 11) Frame top coat specified (3.4).

**From Enquiry Rev A to WO (21/12/2000)**

- 1) Enquiry specification changed to a WO. Serial numbers added.