REVISION: "R0"
DATE: 04/04/00

20' TANK CONTAINER

STANDARD SPECIFICATION

MODEL NUMBER: 21 FSTD 2

QUOTATION NUMBER

PROPOSED BY:

TRENCOR TANK CONTAINERS

PREPARED FOR:

1. Technical Characteristics

1.1 Design & Testing

Tank – in accordance with:	IMDG, CFR 49, RID/ADR and ASME VIII, Div 1 US DOT Equivalent Thickness (mm): Standard IMDG Equivalent Thickness (mm): 6 mm
Frame – in accordance with:	ISO Standard 1496/3

1.2 ISO Type

1CC / 22T6

1.3 IMO Type

1

1.4 Nominal Capacity (-0 +1% Tolerance)

SI		US	
21 000	_	5548	US gal

1.5 Frame Dimensions and Weight

Max Gross Weight	36 000	kg	79366	lb.
Tare Weight (± 3% Tolerance)	3850	kg	8488	lb.
Length	6058	mm	20	ft
Width	2438	mm	8	ft
Height	2591		8 ft 6	in

1.6 Tank Dimensions

Internal Diameter	2200	mm	86.61	in
Seam to Seam	4913	mm	193.425	in
Shell Minimum Thickness	4.403	mm	0.1733	in
Shell Order Thickness	4.7	mm	0.1850	in
Head Minimum Thickness				
Knuckle	5.37	mm	0.2114	in
Crown	4.49	mm	0.1768	in
Corrosion Allowance	0	mm	0.0	in
Dished Ends	Torispherical			

1.7 Pressure & Temperature Rating

Tank Design Temperature	120	°C	246	°F
RID/ADR Calculation Pressure	6,0	bar	87,0	psi
Maximum Allowable Working Pressure	4,0	bar	58,0	psi
Test Pressure	6,0	bar	87,0	psi
Vacuum Pressure	0.4	bar	5,8	psi
Steam Heating				
Maximum Allowable Working Pressure	7,0	bar	101,5	psi
Test Pressure (Hydrostatic)	10,5	bar	152,25	psi

1.8 Material of Construction

Framework	EN 10210-1 S355 J2H (Hollow section) 50D or Equivalent (Tested to -40°C)
Corner Castings	ISO Standard 1161
Shell	DIN 171441 W1.4401 Low Carbon C ≤ 0.03% Cold Rolled 2B (ASTM A 240-93B, 316)
Heads (Columbus Material)	DIN 17440 W1.4401 Low Carbon C ≤ 0.03% Hot Rolled, Ra ≤ 1.6 (ASTM A 240-93B, 316)
Vacuum Stiffening Rings	ASTM A240 Gr. 304

2. Finish

Internal Welds Finish	
Longitudinal	Not ground, smooth low bead scotch brite polished
Circumferential	Bottom ± 400 mm ground flush and polished (Ra ≤ 1.6)
Repairs	Ground flush and/or polished (Ra ≤ 1.6)

3. Tank Fitting and Accessories

3.1 Manhole

Supplier	Swift
Dimensions	500 mm ID, Neckring Radius 1104 mm
Material	316 L
Description	8 point fixing
Gasket	PTFE braided fibre, non-leaking type

3.2 Safety Relief Valve

Supplier	Perolo
Quantity	One plus provision for a second valve
Description	2_" BSP Mega Superventix
Specifications	+4,4 bar pressure only
Gasket	Solid PTFE
Flanged Adaptor	Yes

3.3 Air Inlet Valve

Supplier	Perolo
Quantity	One
Description	1 _" BSP with s/steel cap
Gasket	PTFE

3.4 Top Discharge Provision

Quantity	One
Dimensions	DN 80 (3")
Specification	Blank flange (4 x M16 on 160 mm PCD)
Gasket	Klinger SIL C-4430 and PTFE
Remarks	Provision is made for the future fitting of a clamped 3" butterfly valve and 3" syphon tube
Guide for Syphon tube	Yes
Weld in flange	Yes
Blind flange	Yes

3.5 Thermometer

Supplier	WIKA
Quantity	One
Description	Surface type, 100 mm dial diameter Dual scale -20°C to 150°C, -4°F to 302°F
Type	Gas in metal / Contact type
Position	Rear end (8 o'clock)

3.6 Bottom Discharge

Supplier	Perolo
Dimensions	DN 80 (3") opening diameter
Specification	Internal valve – 30° foot valve
Gasket	Klinger SIL C-4430 / PTFE Envelope External valve – L.H. operated clamped butterfly valve
Gasket	Klinger SIL C-4430 / PTFE 3" BSP threaded connector closed by a stainless steel cap with retaining chain
Remarks	A remote control is connected to the internal valve handle with Fusible link provision

3.7 Spillboxes

Quantity	Two, manhole with safety relief, accessories
Position:	On centre line around Manhole and Off centre around Top Discharge
Dimensions	945 mm x 750 mm and 550 mm x 400 mm
Material	ASTM A240 316L, 2mm
Drain Pipes	External
Material	Reinforced plastic 25 mm NB

3.8 Steam Heating

Heating area	6.64 m_ (effective)
No. of runs	8
Inlet diameter	_ inch BSP male threaded
Outlet diameter	_ inch BSP male threaded
Drain valve	Yes, _ inch BSP Ball Valve
End cap material	PVC

3.9 Tank Treatment

Pickling	
Internal	Yes
External	Welds & Heat marks
Passivation	
Internal	Yes
External	Spillboxes only
Anti-stress lacquer	Whole exterior of tank including skirts

3.10 Insulation and Cladding

Material	Mineral Wool	Polyurethane
Shell	30 mm (min 60kg/m_)	20 mm (min 35kg/m_)
Ends	varies (min 60kg/m_)	
Cladding	0,8 mm thick pre-painted white aluminium (Grade 3004 H32) or equivalent	

3.11 Walkway

Layout	“T” Type
Width / thick	475 mm / 3.0 mm
Material	Aluminium Grade 5042-0

3.12 Ladder

One ladder painted in 3 coat system 300 mm (32 x 32 mm section) wide is provided on the right hand side of the rear frame. The ladder rungs are made from stainless steel and have an anti-slip surface. One handhold is provided adjacent to the ladder.

3.13 Corner Protection

8 off per tank located at the top and bottom frame corners.

3.14 Earthing Connection

One stainless steel lug 50 x 30 x 3 mm, with 15 mm hole, located at rear of tank frame.

3.15 Document Holder

1-off PVC document holder 90 mm diameter 300 mm long.

Colour:	Opaque
Drain hole diameter	6mm

3.16 Data Plates

One stainless steel data plate per tank as per code requirements.

3.17 Dipstick No Bracket : Yes

3.17 Calibration

Actual paper chart	Yes, supplied in document holder
Calibration plate	Yes, marked in litres and US gallons/cm, tack welded inside the main Spillbox.
Chart Material	316 Stainless Steel

3.18 Frame Treatment

Surface Preparation Shot Blasting to SA 2,5 Finish

3.19 Painting of Frame

Coat	Type	DFT (min)
Primer	Zinc Rich	30 micron
Intermediate	Zinc Phosphate	40 micron
Top coat	CTC free chlorinated rubber	50 micron
Colour of frame	TBA (semi gloss)	
RAL Number	TBA	
Supplier	KCC	

3.20 Decals

Standard, Mandatory decals:

Description	Quantity
Operator's Code and Serial Number	6
Size and Type Code "22T6"	3
IMO 1 / IM 101	2
TC Impact Approved	2
UIC "IC70"	2
Weight (Max Gross Weight 36 000kg)	1
RID / ADR	2
Warning Overhead Electrical Cables	1
Working Pressure "4 Bar MAWP"	2
Earthing	1
Remote Control "EMERGENCY – PULL CABLE TO CLOSE"	1
Nominal Capacity (21 000_/5548 US Gal)	1
Classification Society (Bureau Veritas)	1
AAR 600	2
Foot Valve Warning	1
Steam Outlet	1
Steam Inlet Maximum Pressure 4 Bar	1
Manufacturer "Trencor"	3
No Walking	2
No Forklift	2
UIC "Super Heavy"	3
MAGW for UIC Rail 34000 kg	1
BSLT	1
Steam Heating Drain Valve	1
Height decal (2,6)	2

Customer Decals (Free Issue)

Decal Warranty:	Mandatory Decals	7 years

4. Tests and Approvals

4.1 These tanks containers are constructed according to an approved design.

4.2 Each production unit is subject to testing and non-destructive examination as required by ASME VIII Division 1, UIC and Suppliers own quality requirements. The independent Inspection Authority, Bureau Veritas, inspects each unit.

4.3 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.

4.4 The tank container fulfils the performance specification of the following International Organization's regulations and recommendations and is supplied with their Approvals / Registrations.

US-DOT	IMDG – (via US DOT)
TIR (Customs)	CSC
RID / ADR	Transport Canada
AAR 600	UIC (IC 70)

4.5 Radiography (UW51 and UW52)

Shell	Spot
Dished Ends	100%

5. Documentation

The following documentation will be provided:

5.1 Details and GA drawings with indication of the serial number
5.2 Technical data sheet
5.3 Cleanliness Certificate issued by an Independent Party (one copy in plastic pouch in document holder)
5.4 Initial Inspection Certificate
5.5 BV technical note / approvals
5.6 One set of Digital Photos per Contract
5.7 User's Manual in English

Files must be prepared as specified hereafter:
1 x paper file
1 x CD ROM

6. Products (RID / ADR)

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