 TORUS	· Owner T-101 LIQUIDS TANK DATASHEET		Document No.	MEC-DS-004	
			Revision / Date	A · September 29, 2026	
			Issue purpose	Issued for Review	
MECHANICAL · T-101 LIQUIDS TANK DATASHEET					
Rev.	Date	Revision description	Prepared	Reviewed	Approved
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GENERAL

The general data for T-101 are given in Table 1.

Table 1: General Data

Field	Value	Field	Value
Tag	T-101	Quantity	One
Service	Liquids from V-101 and the PR-101 barrel drain	Type	Vertical cone-roof shop-welded steel tank, atmospheric
P&ID	 PRO-DWG-110	Plot location	Station grid (30, 100), in 24 ft x 24 ft containment
Codes	API Spec 12F; venting per API Standard 2000	Venting calculation	 PRO-CAL-007, Pressure Relief Devices and Tank Venting

SERVICE AND DESIGN CONDITIONS

The service and design conditions are given in Table 2. The emergency venting requirement from  PRO-CAL-007 exceeds the blow-by through a failed-open LCV-104 (180,000 SCFH air equivalent without restriction), which RO-104 further limits.

Table 2: Service and Design Conditions

Field	Value	Field	Value
Nominal capacity	100 bbl	Shell volume	101 bbl (567 ft ³)
Contents	Condensate and produced water, flashing, SG 0.7 to 1.0 (HOLD H-12)	Design pressure	16 oz/in ² (1 psig)
Design vacuum	1 oz/in ²	Design temperature	-20 °F to 150 °F
Normal out-breathing	30,900 SCFH air, including flash	Normal in-breathing	4,900 SCFH air
Emergency venting	253,000 SCFH air equivalent	Shell stress at 16 oz/in ²	304 psi

MATERIALS

The materials are listed in Table 3.

Table 3: Materials

Component	Material	Thickness
Shell	SA-36 or ASTM A1011	3/16 in
Bottom	SA-36	1/4 in
Cone roof	SA-36 or ASTM A1011	3/16 in
Nozzles	A106 B pipe, A105 flanges, Class 150 RF	Sch 80
Internal lining	Epoxy on the bottom and the first 2 ft of shell	Per coating vendor

DIMENSIONS AND ELEVATIONS

Dimensions are given in Table 4. The plot plan keeps a 12 ft diameter allowance inside the containment.



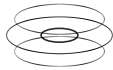
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Table 4: Dimensions and Elevations

Field	Value	Field	Value
Size	9.5 ft OD x 8.0 ft shell height	Size basis	API 12F 100 bbl standard size, TBV against API 12F Table 1 (HOLD H-15)
Grade	EL 1152.05 ft	Foundation top	EL 1152.55 ft
Roof peak (approx.)	EL 1161.30 ft	Anchorage	Anchored; SDC B, 108 mph wind

NOZZLES

The nozzle schedule is given in Table 5. The inlet manifold carries lines 1060 and 1061 only, through HV-191A and HV-191B locked open; the vent stack base drain does not connect to the tank because it cannot drain to the roof inlet by gravity.

Table 5: Nozzle Schedule

Mark	Size	Type	Service	Location	Connects to
N1	4 in	Cl 150 RF, dip pipe to 12 in above bottom	Liquids inlet	Roof	4"-L-1190-D1
N2	6 in	Cl 150 RF	PVRV-193 with FA-193	Roof	Atmosphere
N3	3 in	Cl 150 RF	Truck loadout	Shell, 6 in above bottom	3"-L-1191-D1
N4	2 in	Cl 150 RF	Bottom drain and water draw	Shell, 2 in above bottom	2"-L-1192-D1
N5	4 in	Cl 150 RF	LT-191 radar level	Roof	Instrument
N6	2 in	Cl 150 RF	LSHH-192 (90 %)	Shell	Closes LCV-104 and SDV-106
N7	8 in	Thief hatch, weighted, lockable	Gauging	Roof	None
N8	24 in	Bolted manway	Access	Shell	None
N9	3/4 in	Coupling and valve	Sample	Shell	None
N10	16 in	Weighted cover	EV-193 emergency vent	Roof	Atmosphere

INTERNALS AND ACCESSORIES

Accessories are listed in Table 6.

Table 6: Accessories

Field	Value
PVRV-193 / FA-193	NPS 6, set 8 oz/in ² pressure and 0.4 oz/in ² vacuum
EV-193	16 in weighted emergency vent
Ladder and platform	Caged ladder to a roof platform with handrail at the thief hatch and PVRV
Grounding	Two grounding lugs at the base; bonding clamp at the loadout valve HV-191E

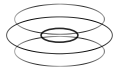
INSPECTION AND TESTING

Inspection and testing are given in Table 7.

Table 7: Inspection and Testing

Field	Value
Shop test	API 12F leak test of shell, bottom and roof



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Field	Value		
Welds	Visual examination of all welds		
Nameplate	Per API 12F: capacity, design pressure and vacuum, year, serial		

PAINTING AND INSULATION

Painting is given in Table 8.

Table 8: Painting and Insulation

Field	Value
External	Per  SPC-SPC-010
Internal	Epoxy lining as in the materials table
Insulation	None

WEIGHTS

Weights for foundation design are given in Table 9.

Table 9: Weights

Condition	Weight (lb)	Basis
Empty	3,800	Calculated plate weights plus typical appurtenances
Operating, full of water	39,100	Conservative, SG 1.0
Test, full of water	39,100	Hydrostatic fill test

DESIGN CALCULATIONS SUMMARY

Table 10 summarizes the checks. The emergency vent estimate uses a simple orifice model and shows ample margin; the vendor shall certify the capacity. The containment check is gross; civil deducts the tank displacement and adds rainfall.

Table 10: Design Calculations Summary

Check	Basis	Required	Result
Shell volume	$\pi D^2 H / 4$	100 bbl nominal	101 bbl
Shell stress at 16 oz/in ²	PR/t	Negligible	304 psi
Emergency vent capacity	16 in opening, $C_d = 0.5$, air at 1 psi	253,000 SCFH	About 790,000 SCFH (3.1 times)
Containment	Gross at 2.5 ft wall vs 110 % of shell	624 ft ³	1,440 ft ³ gross

NOTES AND HOLDS

1. Dimensions, weights and vent capacities are typical, confirm with vendor data (HOLD H-15).
2. Liquid composition and flash gas depend on the extended gas analysis (HOLD H-12).

VENDOR DATA REQUIRED

General arrangement, nozzle orientation, venting capacity certificates, weights, anchor details.

