TORUS	[Redacted] · Owner SK-110 METER SKID STRUCTURAL AND FABRICATION DATASHEET	Document No.	[Redacted] MEC-DS-009		
		Revision / Date	A · September 29, 2026		
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Rev.	Date	Revision description	Prepared	Reviewed	Approved
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GENERAL

The general data for SK-110 are given in Table 1.

Table 1: General Data

Field	Value	Field	Value
Tag	SK-110	Quantity	One
Scope	Inlet header 1010, meter runs 1011 and 1012, crossover 1015 with MOV-115, outlet header (first leg of 1020)	Skid limits	Flange TI-S1 on line 1003 at (64, 89.0); flange TI-S2 on line 1020 at (104, 104.5)
P&ID	 PRO-DWG-103	Footprint	48 ft x 14 ft (X 60 to 108, Y 90 to 104)
Canopy	Separate structure on its own piers, by civil and structural; does not bear on the skid	Measurement design	Volume 2 (measurement); this datasheet covers structure and fabrication

SERVICE AND DESIGN CONDITIONS

The design conditions are given in Table 2. The 150 °F rating is limited by the Class 600 flanges.

Table 2: Service and Design Conditions

Field	Value	Field	Value
Piping class	A6	Design pressure	1,440 psig at -20 °F to 133 °F; 1,420 psig at 150 °F
MDMT	-20 °F	Run and header centerline	EL 1153.62 ft
Run spacing	Run 1 at Y 93, run 2 at Y 101, crossover at Y 97	Meter tubes	NPS 10 Sch 80 (0.594 in), bore matched to the meter
Isolation valves	MOV-111, 112, 121, 122, 115: NPS 10 Class 600 full-bore trunnion ball, API 6D, DBB, electric, fail as-is	Codes	ASME B31.8 (F = 0.50), AISC 360-22, API 1104 or ASME IX

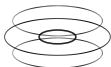
MATERIALS

The materials are listed in Table 3.

Table 3: Materials

Component	Material	Note
Headers NPS 12	API 5L X52 PSL2, 0.375 in	CVN at -20 °F
Meter tubes NPS 10	API 5L X52 PSL2 SMLS, Sch 80	Bore per meter vendor
Fittings / flanges	MSS SP-75 WPHY-52; A105N, Class 600 RF	Impact tested at -20 °F
Skid steel	ASTM A992 W-shapes, A36 plate	Main beams W12x40 minimum
Grating	Galvanized steel	Walkways and toe boards



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DIMENSIONS AND ELEVATIONS

The structural arrangement is given in Table 4.

Table 4: Structure

Field	Value
Main beams	Two longitudinal, W12x40 minimum (vendor to design)
Piers	Four lines at 16 ft maximum spacing, by civil
Anchorage	Fixed at the west pier line, slotted clips elsewhere for thermal movement
Walkways	3 ft grating between the runs and along the north side
Shipping	One piece (oversize load) or two sections with bolted beam splices at X 84

NOZZLES

The skid connections are given in Table 5.

Table 5: Skid Connections

Mark	Size	Rating / face	Service	Location	Connects to
TI-S1	12 in	Cl 600 RF WN	Inlet	(64, 89.0)	12"-G-1003-A6
TI-S2	12 in	Cl 600 RF WN	Outlet	(104, 104.5)	12"-G-1020-A6
B1	1 in	Cl 150 RF	DBB bleed collector	North side, X 80	1"-V-1120-S1
T1	3/8 in	Tube fitting	Sample (SP-141 on 1020)	Off skid	3/8"-G-1080-T1

INTERNALS AND ACCESSORIES

Supports and accessories are given in Table 6.

Table 6: Accessories and Supports

Field	Value
Meter supports	Adjustable screw-jack saddles with PTFE pads within 2 ft of each MOV and at each meter tube end; meter bodies and flow conditioners are not supports
Axial restraint	One point per run only
Pipe support spacing	12 ft maximum for NPS 10 and 12 ( MEC-CAL-005)
Lifting	Four pad-eye lugs, design load 20,800 lb each, proof tested at 1.25 times
Support isolation	Isolation pads at every pipe-to-steel contact
Grounding	Two pads at diagonal corners

INSPECTION AND TESTING

Inspection and testing are given in Table 7. At a 2,175 psig target the test window allows 103 ft of elevation difference; the skid has less than 1 ft.



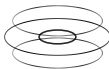
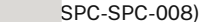
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Table 7: Inspection and Testing

Field	Value
Welding	Qualified procedures with impact tests at -20 °F ( SPC-SPC-007)
NDE	100 % RT or AUT of butt welds; 100 % MT or PT of fillet, socket and branch welds ( SPC-SPC-008)
Meter tube bore	Internal weld protrusion ground flush for 10D upstream of each meter; clean, no mill scale
Shop hydrotest	2,160 psig minimum at the high point, 2,220 psig maximum at the low point, 4 h hold as a pre-tested unit
Meters in test	Replaced by spools unless the meter vendor certifies the body
Drying	To -40 °F dewpoint, capped and nitrogen blanketed for shipment ( MEC-CAL-003)

PAINTING AND INSULATION

Painting and insulation are given in Table 8. The meter tubes are insulated to limit temperature stratification at the meters.

Table 8: Painting and Insulation

Field	Value
Piping and steel	Three-coat system per  SPC-SPC-010; skid steel may be hot-dip galvanized
Insulation	Meter tubes from the flow conditioner to the test well and the meter bodies: 2 in mineral wool or cellular glass, aluminium jacket, removable covers at transducers and flanges
Marking	Tag, line numbers, flow arrows, weights and center of gravity

WEIGHTS

Weights for foundation design are given in Table 9.

Table 9: Weights

Condition	Weight (lb)	Basis
Empty / shipping	36,700	Piping from the station model plus valves, meters and skid steel, typical (HOLD H-15)
Operating	37,300	Gas at 1,440 psig
Test, water filled	41,600	Shop and station test

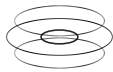
DESIGN CALCULATIONS SUMMARY

Table 10 summarizes the skid beam checks. The simple-span stiffness check is conservative for a beam continuous over four piers.

Table 10: Design Calculations Summary

Check	Basis	Required	Selected
Beam stiffness	L/720, 16 ft span, w = 388 lb/ft per beam	$I = 74 \text{ in}^4$	W12x40, $I = 307 \text{ in}^4$
Lifting strength	4-point lift, 32 ft between lugs, factor 2.0, $F_y = 50 \text{ ksi}$, $\Omega = 1.67$	$S_x = 44 \text{ in}^3$	W12x40, $S_x = 51.5 \text{ in}^3$
Deflection in lift	L/360	No permanent set	Vendor to verify



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NOTES AND HOLDS

1. Valve, meter and skid steel weights are typical, confirm with vendor data (HOLD H-15).

VENDOR DATA REQUIRED

Skid general arrangement, structural calculations, lifting plan with center of gravity, weights, foundation loads, inspection and test plan, test records.

