STYRENE PARK OFFSITE

Document Title

General Arrangement Drawing-Active Carbon Filter

FOR

Active Carbon Package

R1	2024/04/13	Issued For Approval	M.Teymouri	E.Malek	H.Keshmiri
R0	2024/03/04	Issued For Approval	M.Teymouri	E.Malek	H.Keshmiri
Rev.	**Issued Date**	**DESCRIPTION**	**PREPARED**	**CHECKED**	**APPROVED**

REVISION RECORD SHEET

Page	Revisions								Page	Revisions						
	R0	R1	R2	R3	R4	R5	R6			R0	R1	R2	R3	R4	R5	R6
1	×	×							41							
2	×	×							42							
3	×	×							43							
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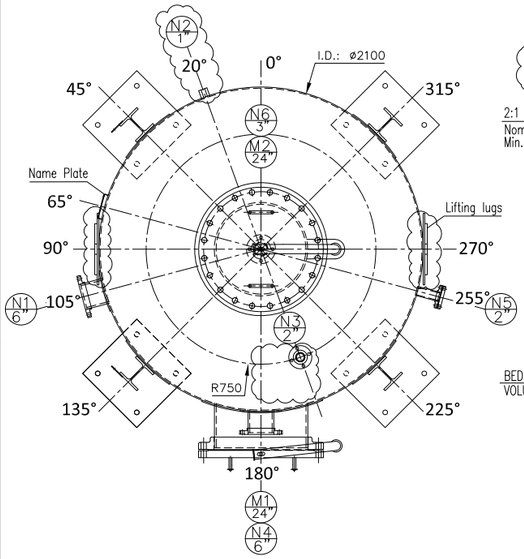
DESIGN DATA △01

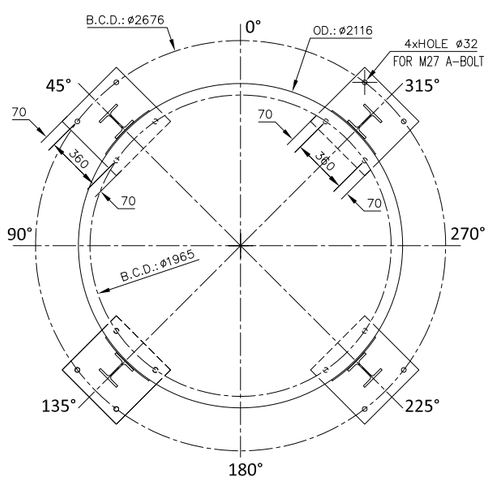
APPLICABLE CODE	ASME, Sec.VIII , Div 1, (2017)	DENSITY	1.19	
WIND CODE	UBC	DESIGN PRESSURE	−0.1~0.2	Bar(g)
WIND DESIGN DATA	SPEED:125 Km/hr EXPOSURE: C IMP. FACTOR: 1.15	OPERATING PRESSURE	ATM/0.07/0.1	Bar(g)
		VOLUME (Uncor./cor.)	21.16/21.3	
SEISMIC CODE	ASCE/SEI 7−16	HYDROSTATIC TYPE	UG−99b	Bar(g)
SEISMIC DESIGN DATA	SITE CLASS: C SEISMIC ZONE=1 I=1.25/R:2.0 Fa:1.05/Fv:1.1 Ss:1.31/S1:0.46 z/h:0.0/ap:0.0	HYDRO. TEST PRESSURE/POSITION	3.629/HORIZONTAL	Bar(g)
		M.A.W.P	2.792	Bar(g)
		J.E (Shell/Head)	0.85/0.85	
		R.T (Shell/Head)	SPOT/SPOT	
SERVICE	VOC ABATEMENT FROM STYRENE STORAGE TANK EFFLUENT	CORROSION ALLOWANCE	3.0	mm
LOCATION	OUTDOOR	P.W.H.T	NO	
FLUID	Air+Styrene (3.5 g/Nm3)	INSULATION/FIRE PROOF	NO / NO	
DESIGN TEMP.	85 °C	IMPACT TEST	NO	
AMBIENT TEMP.(Min./Max)	5/52 °C	PAINTING	Acco. To Painting Spec.	
WORKING TEMP.	31 °C	M.D.M.T(REQU./ Cal)	−5/−37	°C

MATERIAL LIST △01

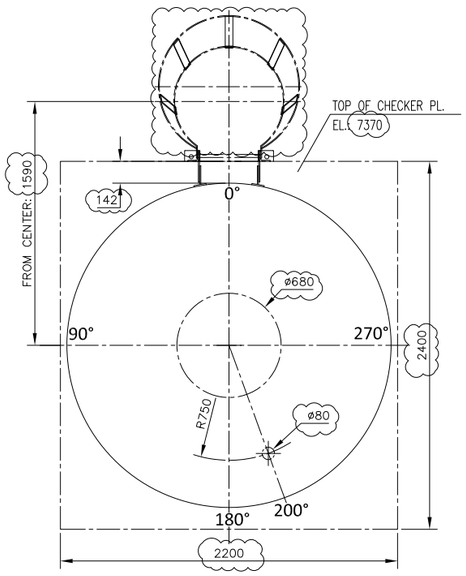
SHELL/HEAD	SA−516 70	BODY FLANGE	N.A.
FORGED FLANGE/BLIND	SA−105	STUD BOLT/NUT	SA−193 B7/SA−194 2H
PIPE	SA−106 B	ANCHOR BOLT	SA−36
FITTING	A234 WPB	LIFTING LUG/EARTH LUG	SA−283 C/S.S. 304
NOZZLE WELDED NECK	SA−516 70	NAME PLATE	S.S. 304
GASKET	S.W. Type, Graphite filled with inner/outer S.S. rings.	INTERNAL WELDED ATTACHMENT	SA−516 70
REINFORCING PAD	SA−516 70	INTERNAL REMOVAL ATTACHMENTS	S.S. 304



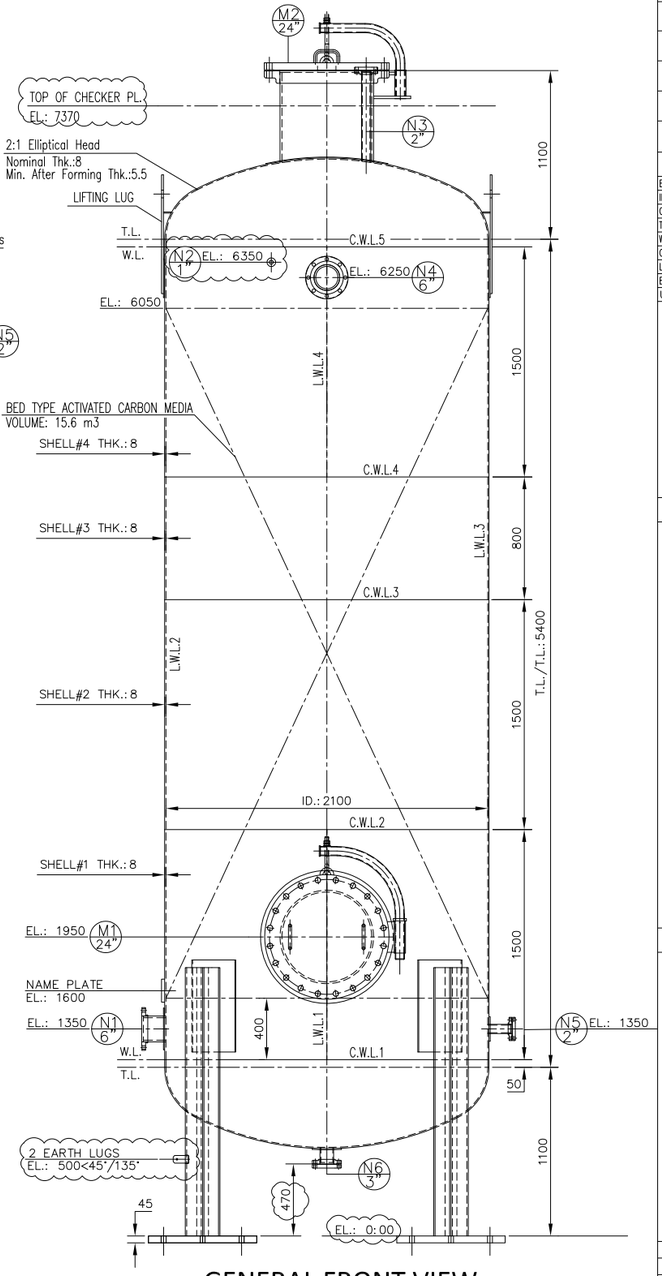
NOZZLE ORIENTATION △01
SCALE 1:40



ANCHORAGE ARRANGMENT
SCALE 1:40



LADDER & PLATFORM LOCATION △01
SCALE 1:40



GENERAL FRONT VIEW △01
SCALE 1:40

REFERENCE DRAWING	DWG NO.	REV.
P&ID	EI027-ENR-VD-PR-PID-003	R1
Equipment Data Sheet-Active Carbon Filter	EI027-ENR-VD-ME-DSH-001	R1
Strength Calculation-Active Carbon Filter	EI027-ENR-VD-ME-CAL-003	R1
GAD For Package	EI027-ENR-VD-PI-DWG-001	R0

LEGENDS : △01

EL.:	ELEVATION	CRR.:	CORRODED
ID.:	INTERNAL DIAMETER	M.A.W.P:	MAX. ALLOWABLE WORKING PRES.
OD.:	OUTSIDE DIAMETER	J.E.:	JOINT EFFICIENCY
T.L.:	TANGENT LINE	R.T.:	RADIOGRAPHY TEST
W.L.:	WELD LINE	P.W.H.T:	POST WELD HEAT TREATMENT
C.W.L.:	CIRCUMFERENTIAL WELD LINE	M.D.M.T:	MIN. DESIGN METAL TEMP.
L.W.L.:	LONGITUDINAL WELD LINE	SHL.:	SHELL
B.C.D.:	BOLT CENTER DIAMETER	BHD.:	BOTTOM HEAD
UNCRR.:	UN CORRODED	THD.:	TOP HEAD

NOTES :

1− ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
2− ALL THICKNESS SHOWN ON THIS DOCUMENT SHALL BE CONSIDERED AS A MINIMUM REQUIRED THICKNESS AFTER FORMING.
3− FLANGE BOLT HOLES SHALL BE STRADDLE TO EQUIPMENT MAIN AXIS.
4− FLANGE SURFACE FINISH ACCORDING TO ASME B16.5
5− HYDROSTATIC TEST PRESSURE SHALL BE ACCORDING TO UG−99 (B)
6− (TOW) EARTH LUGS HAVE BEEN CONSIDERED ON LEGS.
7− BOTTOM OF BASERING PLATES HAS ELEVATION OF EL. 0.00 mm
8− ALL PROJECTIONS OF THE NOZZLES ON THE SHELL ARE MEASURED FROM THE FLANGE FACE TO THE VESSEL CENTERLINE.
9− ALL PROJECTIONS OF THE NOZZLES ON THE HEAD ARE MEASURED FROM THE FLANGE FACE TO THE LOWER HEAD T.L. (i.e. B.L.).
10− THE MANHOLE INCLUDES BLIND FLANGE WITH DAVIT, GASKET, STUD BOLTS, AND NUTS.
11− ALL REMOVABLE INTERNALS (IF ANY) WILL BE DESIGNED TO PASS THROUGH THE MANHOLE.
12− SPIRAL WOUND GASKETS ARE MADE FROM S.S. 316 FOR INNER RING, GRAPHITE FIBER FOR WINDING, AND C.S. FOR OUTER RING.
13− ANY MATERIAL DIRECTLY WELDED TO THE BODY SHALL BE THE SAME AS THE BODY MATERIAL.
14− THE REPORTED M.A.W.P. BELONGS TO THE VESSEL'S BODY.
15− PAINTING IS CONDUCTED AS PER THE "TEST PROCEDURES" DOC. MENTIONED IN THE REFERENCE DOC. LIST.
16− ALLOWABLE NOZZLE LOADS ARE APPLIED TO THE JUNCTION OF THE NOZZLE NECK WITH THE VESSEL.
17− ALL REINFORCEMENT PADS SHALL HAVE ONE VENT HOLE OF 6mm IN DIAMETER. THE HOLE SHALL BE FILLED WITH ANTI−CORROSION MATERIAL, e.g. GREASE, AFTER AIR SOAP TEST.

KEY PLAN :

NOZZLES DATA TABLE △01

ITEM	QTY.	TITLE	SIZE	FLANGE RATING	FLANGE TYP.	FLANGE FACE	SCH/THK −/mm	REINFORCING PAD (OD/THK.)(mm)	PROJ./EL. (mm)	ORIENTATION
N1	1	Gas Inlet	6"	#150	S.O.	R.F	80/−	270/8	150/1350	105° (SHL)
N2	1	PI	FULL COUPLING THREADED,6000#						52/6350	20° (SHL)
N3	1	Vent	2"	#150	S.O.	R.F	160/−	160/8	AS DWG	225° (SHE)
N4	1	Gas Outlet	6"	#150	S.O.	R.F	STD/−	270/8	150/6250	180° (SHL)
N5	1	Utility Connection	2"	#150	S.O.	R.F	160/−	−/−	150/1350	255° (SHL)
N6	1	Drain	3"	#150	S.O.	R.F	80/−	190/8	100/AS DWG	0° (BHD)
M1	1	Manhole	24"	#150	S.O.	R.F	−/8	1000/8	250/1950	180° (SHE)
M2	1	Manhole	24"	#150	S.O.	R.F	−/8	1000/8	AS DWG	0° (THD)

ALLOWABLE NOZZLE LOADS

NAME	SIZE	(Kgf) Fx	Fy	Fz	(Kg−m) Mx	My	Mz
N3	2"	64.8	−51.8	64.8	11.0	17.5	13.9
N6	3"	95.4	−76.2	95.4	23.6	38.3	30.2
N1/N4	6"	180.7	−144.4	180.7	84.4	136.2	106.9

WEIGHTS (Kgf) △01

FABRICATED	4811.0
EMPTY	12942.0
OPERATING	12967.3
FIELD TEST	26044.7

UN-FACTORED FOUNDATION LOADS ON TOP OF ALL LEGS △01

WIND SHEAR LOAD (Kgf)	2356.0	SIESMIC SHEAR LOAD (Kgf)	7782.0
WIND MOMENT LOAD (Kg−m)	6425.0	SIESMIC MOMENT LOAD (Kg−m)	26311.0

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	COMPANY
R1	08−Apr−24	Issued for Approval	M.T.	E.M.	H.K.	HRCO
R0	04−Mar−24	Issued for Approval	M.T.	E.M.	H.K.	HRCO

CLIENT: پتروشیمی توسعه پارک صنعتی گوهر افق

CONSULTING ENGINEER: HAMOON RAH

PROJECT: *STYRENE PARK OFFSITE*

DRAWING TITLE: *General Arrangement Drawing-Active Carbon Filter (PK0002-A/B)*

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027−ENR−VD−ME−DWG−005	R1	A3	AS DWG	3 of 3