



DENUMIRE PROIECT:
Modernizare stație de pompare a țițeiului
Moreni, jud. Dâmbovița



Fișă tehnică pentru vas îngropat

Modernizare stație de pompare a țițeiului Moreni, jud. Dâmbovița

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Instalatie	STAȚIE DE POMPARE MORENI		MECANIC	4
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1	Equip. name	BURIED VESSEL / VAS ÎNGROPAT	Fluidgroup	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2
2	TON	Double walled / Cu pereti dubli	Category	<input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV <input checked="" type="checkbox"/> SEP
3	Legal code	HG 123/2015_2014/68/EU	Modul	<input type="checkbox"/> G <input type="checkbox"/> H <input type="checkbox"/> H1 <input type="checkbox"/> B + F
4	Design Code	SR EN 12285-1	Location	<input checked="" type="checkbox"/> outdoor (underground) <input type="checkbox"/> indoor
5	Manufacturer		Orientation	<input checked="" type="checkbox"/> horizontal <input type="checkbox"/> vertical
6	Requisition No.		Special service	<input checked="" type="checkbox"/> no <input type="checkbox"/> CO ₂ <input type="checkbox"/> H ₂ S <input type="checkbox"/>
7	P&I-Diagram No.	PS-PID-003		<input type="checkbox"/> sour gas service <input type="checkbox"/> class 1 <input type="checkbox"/> class 2
8	OPERATING DATA			
9	Medium	Crude oil+water / Titei+apa		
10	Service description :			
11	- corrosion / erosion by	-		
12	- CO ₂ [vol-%]	-		
13	- partial pressure CO ₂ [bara]	-		
14				
15	Total / Max. operating volume [m ³]	10 / 8.00 /		
16	Operating temperature min. / norm. / max. [°C]	10 / 25 / 40 / /		
17	Operating pressure min. / norm. / max. [barg]	/ atm / / /		
18				
19	Liquid :			
20	- flow [kg/h]			
21	- density min. / max. [kg/m ³]	650 / 1050		
23	- density at normal operation conditions [kg/m ³]	830 (mix)		
24	- viscosity min. / max. [cSt]	1.2 / 25 /		
25	Vapor :			
26	- flow [kg/h]	n.a		
27	- molecular weight [kg/kmol]	n.a		
28	- density at normal operation conditions [kg/m ³]	n.a		
29	DESIGN DATA			
30	Chamber	Vessel		Heating coil, Jacket
31	Design Case	I	II	III
32		operation	steam out	standstill
33	Design temperature [°C]	-29 / 40	n.a.	n.a.
34	Design pressure min / max [barg]	0.025	n.a.	n.a.
35	MECHANICAL DATA		DESIGN	
36	Test press. <input checked="" type="checkbox"/> hydrost. <input type="checkbox"/> pneum. [barg]	int. 0.75 / ext. 0.1	Design code	SR EN 12285-1
37	Relief valve set pressure [barg]	n/a	Reference Temperature (Tr) [°C]	
38			Joint efficiency [%]	100
39	Diameter of shell (for pressure vessel) <input checked="" type="checkbox"/> ID [mm]	1800 (*)	Pulsation load :	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
40	Length between tangent lines [mm]	4000 (*)	- number of cycles	
41	Height of skirt / legs / saddle to TL/CL [mm]	n/a	- fatigue analysis	<input type="checkbox"/> ASME <input type="checkbox"/> Techn. Spec.
42	Cone angle / length [°] / [mm]	n/a	Nozzle loads	
43	Type of head	Elliptical	- calculation acc. to	<input type="checkbox"/> W.R.C. <input type="checkbox"/> BS 5500 <input checked="" type="checkbox"/> EN 13445
44	Corrosion allowance / cladding [mm]	3 / n/a	- min. nozzle loads acc. to	<input type="checkbox"/> Techn. Spec. <input type="checkbox"/> mfr's. std.
45	Wall thickness of shell int./ ext.(incl. c. a.) [mm]	6 (*) / 4 (*)	Earthquake design	<input type="checkbox"/> yes <input type="checkbox"/> no
46	- head int./ head ext. (incl. c. a.) [mm]	6 (*) / 4 (*)	<input type="checkbox"/> SR EN 1998-1 <input type="checkbox"/> SR EN 1998-1/NA:2008 <input type="checkbox"/> P100-1/2013	
47	- skirt / legs (without c. a.) [mm]	n/a / n/a	Technical specification (additional)	yes
48	Diam. of sump / dom <input type="checkbox"/> OD <input checked="" type="checkbox"/> ID [mm]	n/a / n/a	- design peak ground acc.horizontal	a _g = 0.35 g
49	- corrosion allowance / cladding [mm]	n/a /	- design peak ground acc.vertical	a _{vg} = 0.14 g
50	- wall thckn. (incl. c.a.) shell / head [mm]	n/a /	- response spectra (horizontal)	Tc= 0.7 s
51	SURFACE TREATMENT		- response spectra (vertical)	Tcv= 0.315 s
52	Shoot blasting :		Wind Load - according to :	n/a
53	- press. parts <input type="checkbox"/> internal <input type="checkbox"/> external :		<input type="checkbox"/> SR EN 1991-1-4 <input type="checkbox"/> SR EN 1991-1-4/NB:2007 <input type="checkbox"/> CR 1-1-4/2012	
54	- skirt / legs <input type="checkbox"/> inside <input type="checkbox"/> outside			
55	Painting acc. to: Paint. spec.			
56	- pressure parts <input type="checkbox"/> external		Snow Load - according to :	n/a
57	- skirt / legs <input type="checkbox"/> inside <input type="checkbox"/> outside n/a		<input type="checkbox"/> SR EN 1991-1-3 <input type="checkbox"/> SR EN 1991-1-3/NA:2006 <input type="checkbox"/> CR 1-1-3/2012	
58	Special coating <input type="checkbox"/> internal			
59	- Coating type (4)		Min. / max. temperature	2 °C / 40 °C
60	Pickling and passivating (SS) <input type="checkbox"/> internal <input type="checkbox"/> external		Rainfall - acc.to : STAS 9470/1973	Diagram no. 11
61	<input type="checkbox"/> glass beads blast. <input type="checkbox"/> brushing <input type="checkbox"/> internal <input type="checkbox"/> external		Fully dressed design	<input type="checkbox"/> yes <input type="checkbox"/> no
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1	MATERIAL SPECIFICATION			
2	Shell / cladding	S355JR (*) / n/a	Gaskets :	
3	Heads / cladding	S355JR (*) / n/a	- vessel flanges	SR EN 1514-1, flat, IBC, graphite
4	Skirt / Legs / saddle	n/a / n/a	- blinded nozzles	SR EN 1514-1, flat, IBC, graphite
5			- internal flanges	n/a
6	Nozzle pipes / cladding	P275NL1 (*) / n/a	Internals	
7	Nozzle flanges / cladding	P285NH / n/a	- half open pipe / baffle plate	n/a / SS Type (*)
8	Vessel flanges / cladding	n/a / n/a	- demister / trays	n/a / n/a
9	Type of cladding	n/a	- vertical vane pack	n/a
10			- vortex breaker	n/a
11	Bolts / nuts:	acc. SR EN 10269	- heating coil	n/a
12	- vessel flanges	42CrMo4QT / 42CrMo4QT	Nameplate / bracket	SS Type (*) / SS Type (*)
13	- blinded nozzles	42CrMo4QT / 42CrMo4QT	Earthing lug	SS Type (*)
14	- internals (SS)	n/a (*) / n/a (*)	Foundation bolts / nuts	/
15	HEAT TREATMENT		ACCESSORIES	
16	Stress relieving required :		Demister (Wiremesh)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
17	- process requirement	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Trays	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
18	- by code required	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	Baffle plate at nozzle N1	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
19	- partial stress relieving required	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	Vortex breaker at nozzle N	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
20			Vertical vane pack	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
21	INSULATION AND HEATING		Support for vessel	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
22	Insulation required	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> by others	Foundation bolts	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
23	- shell / head thickn. [mm]	/	Foundation bolts number req. x size	<input checked="" type="checkbox"/> x
24	- insulation type	<input type="checkbox"/> HC <input type="checkbox"/> CC <input type="checkbox"/> PP	Templates (2 sets)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
25	- insulation clips	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> by others	Sliding plates	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
26			Fire proofing	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> by others
27	Vessel heating req.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> by others :	- thickness [mm]	n/a
28	- type of heating	<input type="checkbox"/> electrical	Name plate : (3)	<input checked="" type="checkbox"/> yes <input type="checkbox"/> by others
29		<input type="checkbox"/> heat transfer fluid	- engraved by	Vendor
30	- construction type	<input type="checkbox"/> coil outside <input type="checkbox"/> coil inside	Earthing lugs	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
31		<input type="checkbox"/> jacket <input type="checkbox"/> mfr.type	Trunnions / lifting lugs for erection	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
32		<input type="checkbox"/> halfpipe		
33	Electrical heater :	<input type="checkbox"/> Y <input type="checkbox"/> N	Ladders, piping	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
34	- voltage / frequency [V]/[Hz]	/	- total weight to be delivered [kg]	
35	- power [KW]		Top davit	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
36			Spare gaskets [sets]	1
37	Heat transfer fluid :		Spare bolts / nuts (min.1 of each) [%]	10
38	- medium	<input type="checkbox"/> LP-steam <input type="checkbox"/> MP-steam <input type="checkbox"/> hot oil		
39	Fluidgroup	<input type="checkbox"/> 1 <input type="checkbox"/> 2	Gas blanketing req. for transportation:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
40	Category	<input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV	- blanketing gas	<input type="checkbox"/> N ₂ <input type="checkbox"/>
41	Module	<input type="checkbox"/> G <input type="checkbox"/> H <input type="checkbox"/> H1	- blanketing pressure [bar g]	
42	Operating data		- incl. bottle, press. gauge & connect.	<input type="checkbox"/> yes <input type="checkbox"/> no
43	- operating temp. min. / max. [°C]	/	Desiccant bags	<input type="checkbox"/> yes <input type="checkbox"/> no
44	- operat. press. min. / max. [bara]	/		
45	- hydrostatic test pressure [bar g]	n/a	Special tools required	<input type="checkbox"/> yes <input type="checkbox"/> no
46	Total surface required [m ²]		Hydraulic bolt tensioning device for bolts > M 36	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> by others
47	O. dia. of tube / wallthickness [mm]	/	Torque & forces to be indicated in drwg.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
48	- total length of tube [mm]			
49	INSPECTION		Oil buckets	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
50	Inspection class		Weirs	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
51	Inspection authority		Equalizing pipe	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
52			Inlet distributor	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
53	Fabrication supervision by	MFR	Distribution baffle	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
54			CERTIFICATION & TESTING	
55	Final Inspection		Test certificates	<input checked="" type="checkbox"/> acc. to Code <input type="checkbox"/> Techn. Spec. Yes
56	WEIGHTS & SHIPPING INFORMATION			<input type="checkbox"/>
57	Shipping weight • (1) [kg] appr. (*)		Radiography (RT)	<input checked="" type="checkbox"/> acc. to Code <input type="checkbox"/> Techn. Spec.
58	Internals [kg] appr. (*)		test	<input type="checkbox"/> full at least spot
59	Operating weight (5) [kg] appr. (*)		Ultra sonic test (UT)	<input type="checkbox"/> acc. to Code <input type="checkbox"/> Techn. Spec.
60	Hydrotest weight at site • [kg] appr. (*)			<input type="checkbox"/>
61			Impact test	<input checked="" type="checkbox"/> acc. to Code <input type="checkbox"/> Techn. Spec.
62	Fully dressed • (2) [kg] appr. (*)			<input type="checkbox"/>
63			Max. hardness of base material [HV]	n/a
64	Max. shipping dim. (L x B x H) [m]	MFR x MFR x MFR	Max. chloride content of test water [ppm]	
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BOLTING									
Nozzle flange <input checked="" type="checkbox"/> ISO metric					Vessel flange <input checked="" type="checkbox"/> ISO metric				
bolting <input type="checkbox"/> inch (UNC/UN) <input checked="" type="checkbox"/> stud bolts					bolting <input type="checkbox"/> inch (UNC/UN) <input checked="" type="checkbox"/> stud bolts				
NOZZLE DATA LIST									
Code requirement for flange standard <input checked="" type="checkbox"/> EN 1092 <input type="checkbox"/> ASME B16.5 (ANSI) <input type="checkbox"/> ASME B16.47 Series A <input type="checkbox"/> OTHER									
MARK	NO. REQ.	NOZZLE SIZE DN	FLANGE RATING [PN]	FLANGE FACING	FLANGE TYPE WN/LWN	GASKET	DESCRIPTION		REMARKS
R1	1	200	16	B	11		Liquid Inlet / Admisie lichid		
R2	1	(*)	(*)	B	11		Pump connection / Racord pompa		
R3	1	(*)	(*)	B	11		liquid Outlet / Evacuare lichid		
R4	1	50	16	B	11		Level switch connection / Racord pentru traductor de nivel		
R5	1	50	16	B	11		Level switch connection / Racord pentru traductor de nivel		
R6	1	50	16	B	11		Level switch connection / Racord pentru traductor de nivel		
R7	1	100	16	B	11		Hose connection (truck) / Racord pentru furtun		
R8a	1	50	16	B	11		Nitrogen inlet / Admisie azot		
R8b	1	50	16	B	11		Vent for interstitial space / Aerisire pentru spatiul interstitial		
R9	1	200	16	B	11		Vent connection / Aerisire		
M1	1	600	16	B	01		Nozzle for pump / Racord pentru pompa		
M2	1	400	16	B	01		Nozzle for auxiliary connection / Racord pentru conexiuni auxiliare		
M3	1	800	16	B	01		Manhole / Gura de vizitare		
REMARKS									
<input checked="" type="checkbox"/> Applicable. Vendor shall design / provide / supply accordingly.						<div>MINISTERUL ECONOMIEI ȘI FINANTELOR VERIFICATOR DE PROIECTE LUCRĂRI DE MONTAJ ISPAS LAURENȚIU GABRIEL Seria A Nr. 0379 ROMÂNIA</div> <p>- CE Marking -required, according to PED.</p> <p>(*) Shall be specified by Manufacturer.</p> <p>NOTES:</p> <p>- Material certification will be acc. SR EN 10204-type 3.1 for all elements</p> <p>- Vessel will be double shell and will be provided with a pressure monitoring system in the space between shells.</p>			
<input checked="" type="checkbox"/> Data / information must be completed by the bidder with the bid.									
Abbreviations :									
HC = Heat Conservation									
CC = Cold Conservation									
PP = Personnel Protection									
WN = Welding Neck									
LWN = Long Welding Neck									
c.a. = corrosion allowance									
n/a = not applicable									
TBC = To be confirmed									
(1) Without internals.									
(2) Fully dressed means shipping weight plus weight of piping, insulation, platforms and ladders.									
(3) Nameplate will be mounted on Manhole M3 at accesible point to be readed.									
(4) Buried tank will be anticorrosive protected with 3 mm Artec V3 Bitumen membrane reinforced with composite fiber glass and glass mat longitudinal direction.									
(5) For 80% filling degree.									
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