



ENGINEERING & CONSTRUCTION d.o.o Beograd

MAHLE
Industry

Proračun čvrstoće posude pod pritiskom FD – 4304

Klijent :	NIS Naftna Industrija Srbije	N°	1428-FD-4304
Postrojenje :	Projekat modernizacije; S – 4300	Rev.	0
Lokacija :	Rafinerija nafte Pančevo, Srbija	Datum	16.02.2012.
		Strana	4 / 48
Oprema :	Fabrički br.:	Proizvođač :	Rekvizicija:
FD – 4304 Filter za protivpožarnu vodu	103415 - 60	MAHLE Industriefiltration GmbH	0386

ZAKLJUČAK

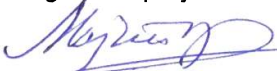
Na osnovu pregleda kompletnosti dostavljene projektno dokumentacije; atestno-tehničke dokumentacije uvida u rezultate kontrolnog proračuna čvrstoće zaključujemo da je Filter FD – 4304, fabričkog broja **103415 - 60** bezbedan za rad sa sledećim projektnim parametrima:

Parametar	Veličina /Jedinica	Prostor
Najveći dozvoljeni radni pritisak	$p_{r,max}$ [bar]	16
Projektni pritisak	p [bar]	16
Ispitni pritisak (SRPS M.E2.200)	p_i [bar]	23
Najveća radna temperatura	$t_{r,max}$ [°C]	60
Projektna temperatura	t [°C]	60
Temperatura ispitnog fluida	t_i [°C]	+20
Zapremina	V [m ³]	0.24
Radni medijum		Voda
Ispitni medijum	voda	Voda
Klasa posude (SRPS M.E2.151)		IV

Pod sledećim uslovima :

1. Izvršiti ispitivanje posude na pritisak i nepropusnost u skladu sa zahtevima Pravilnika o tehničkim normativima za stabilne posude pod pritiskom, SI.list SFRJ br.16/83, SRPS M.E2.201
2. Naredne preglede i ispitivanja posude vršiti u skladu sa Pravilnikom o tehničkim normativima za stabilne posude pod pritiskom, SI.list SFRJ br.16/83
3. Rukovanje posudom poveriti za to obučanim radnicima
4. Vršiti tehničku kontrolu ispravnosti i podešavanja ventila sigurnosti postavljenog na posudi ili na drugoj lokaciji najmanje jedanput godišnje,
5. Vršiti redovnu kontrolu i podešavanje merno-regulacione opreme koja se nalazi na posudi
6. Posudu koristiti i održavati u skladu sa tehničkim uputstvima i preporukama proizvođača opreme i uputstvom za bezbedan i siguran rad koji odgovara zahtevima zakonske regulative iz oblasti bezbednosti i zdravlja na radu.

Odgovorni projektant :


Miloš Majstorović, dipl.inž.maš.



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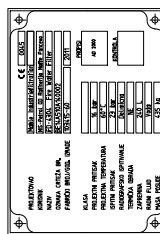
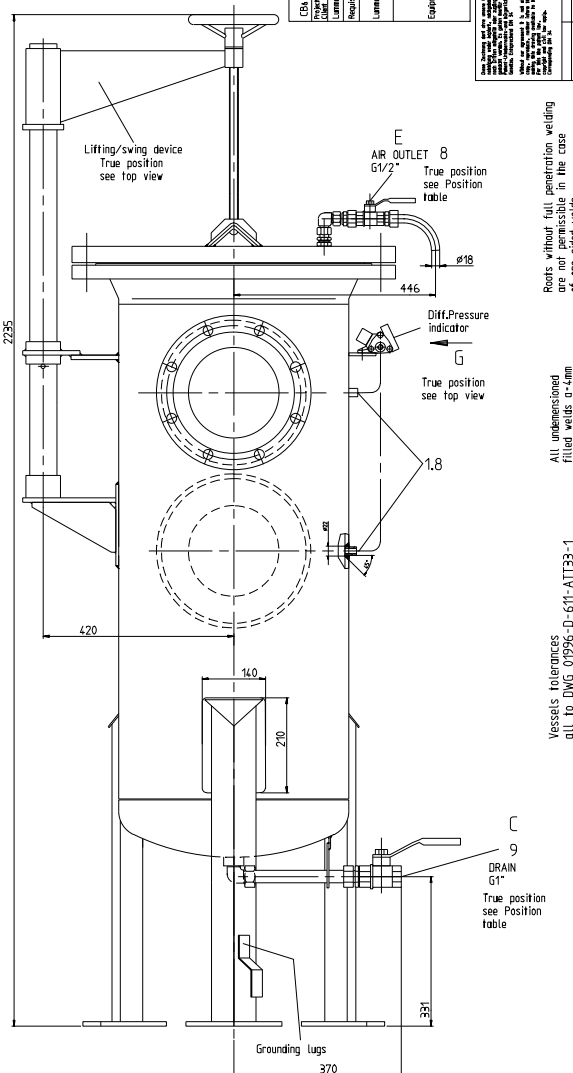
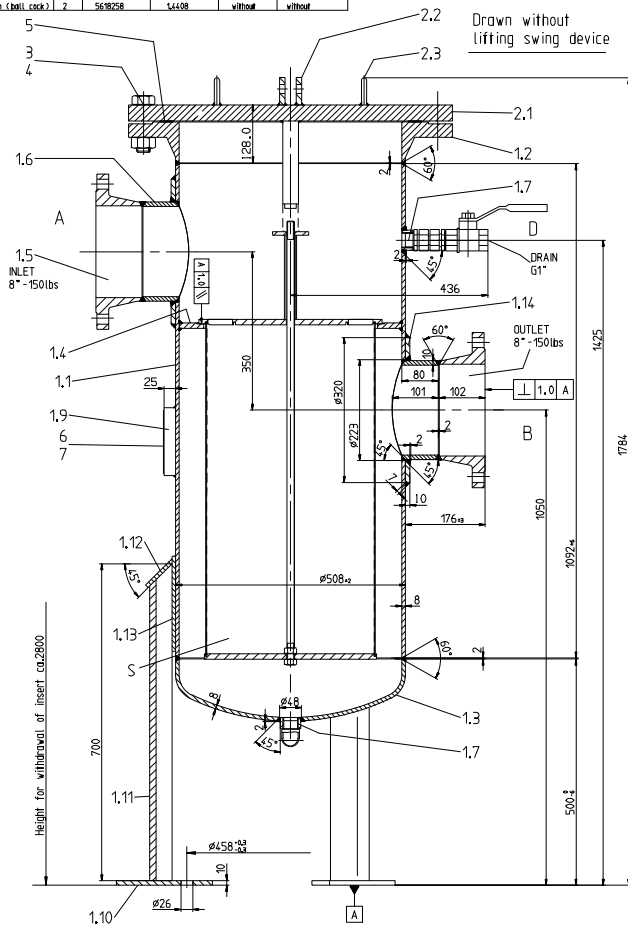

Nikola Garić, dipl.inž.maš.
Direktor

Item	Description	Qty.	Base size	Drawing	Material-No/ Eurocode	Code	Certificate
11	Jugel	1	8x16,558x0,97	without	10215 / P265GH	EN 10028-2	AD-W1/3/1
12	Flange	1	CS505x58, 010x36	without	10038 / S235 JR	EN 10025-2	AD-W1/3/1
13	Bottom ring	1	1A, 55x88, 010x201	without	10038 / S235 JR	EN 10028-2	AD-W1/3/1
14	Bottom ring	1	CS, 450x180, 8	without	10038 / S235 JR	EN 10025-2	AD-W1/3/1
15	Flange	1	CS, 450x180, 8	without	10038 / S235 JR	EN 10025-2	AD-W1/3/1
16	Nozzle	2	8x16, 17x660	17010009	10038 / S235 JR	EN 10028-2	AD-W1/3/1
17	Welded nipple	1	81", 17x10991	N2837	10038 / S235 JR	EN 10025-2	AD-W1/3/1
18	Welded nipple	2	63x1", 17x15007		10038 / S235 JR	EN 10025-2	AD-W1/3/1
19	Header	1	CS, 160x360	170290047	10038 / S235 JR	EN 10025-2	AD-W1/3/1
20	Flange	1	CS, 160x360	170290047	10038 / S235 JR	EN 10025-2	AD-W1/3/1
21	Angle	Angle	70x70x70	without	10038 / S235 JR	EN 10025-2	AD-W1/3/1
22	Plate	3	8x16, 20x120	170202054	10038 / S235 JR	EN 10025-2	AD-W1/3/1
23	Plate	3	8x16, 20x120	17030329	10038 / S235 JR	EN 10028-2	AD-W1/3/1
24	Plate	2	8x16, 95x212	17022020	10038 / S235 JR	EN 10028-2	AD-W1/3/1

Item	Description	Qty.	Base size	Drawing	Material-No./ Eurocode	Code	Certificate
2.1	Blind flange	1	B500 PN16 DN2527	without	1.0460 / C22.8	WAT09_350/3	WAT09_3/1
2.2	Lug	2	12x60x120	T1954.0004	1.0038 / S235JR	EN 10025-2	WZ 0009 DN10004/22
2.3	Lug	2	12x20x150	T42500000	1.0038 / S235JR	EN 10025-2	without

Item	Description	Qty.	Base size	Material Eurocode	No./ Code	Certificate
3	Hexagon bolt	20	M8x95 DIN933	5.6	DIN267 Teil9	A0-M7 stamped
4	Hexagon nut	20	M8 DIN934	5-2	DIN267 Teil9	A0-M7 stamped
5	Seal joint gasket	1	6x8x5/2026	Fedelstahlschling	mit Grafil-Auflage	Fachwissen
6	1" Diffuser	1	M20 Tm 5.01	14571	without	without
7	Nonalocate	1	723010049	14301	without	without
8	Air outlet	1	663000048	14571	without	without
9	Drain ball (cock)	2	5618258	14408	without	without

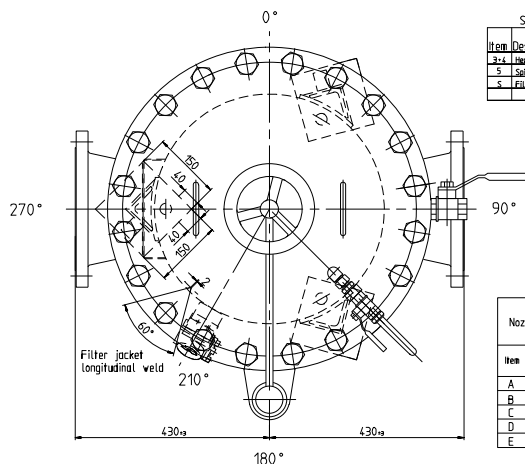
PERFORMANCE SERVICE OVERPRESSURE	% BAR	100/325
TEST OVERPRESSURE	2.5 BAR	
TEMPERATURE	0-60 °C	
SERVICE TEMPERATURE	Water	
Medium	Medium	
Max. depth mts.	35000	
Max. pressure mts.10.0	max.10.0	
POT PRESSURE	240 liter	
WELDING FACTOR	0.85	
Corrosion allowance	1.5 mm	
Material	see list of parts	
Pressure vessel acc.	to PED 97/23/EC acc. AH.33	
NON DESTRICTIVE TESTING	LONGIT SEAM	
Weight approx.	435 - Operating 675 - Test 675	
	CIRCULAR SEAM	
	JOINTS	

[illegible][illegible]

Roots without full penetration welding are not permissible in the case of one-sided welds

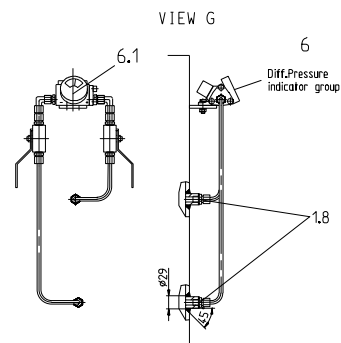
undimensioned
filled welds 0.4 mm

Vessels tolerances
Call to DWG 01996-D-611-ATT33-1

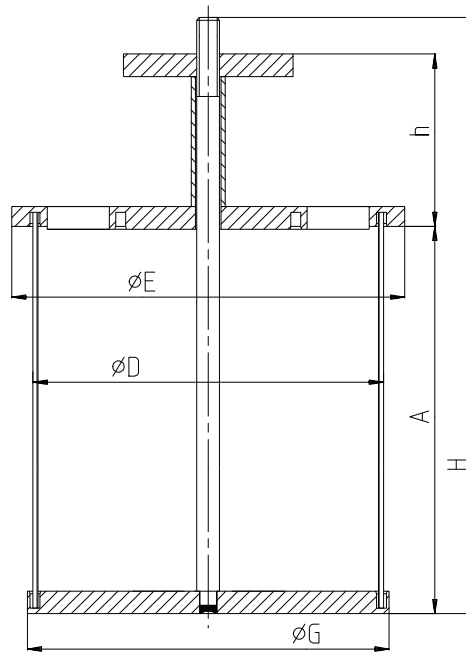


Item	Description	Qty.	Base size	Material-No./ Eurocode	Code	Certificate
3-4	Hexagon bolt-nut	20	M30x105 DIN933-M30 DIN934	5.6 - 5-2	DIN267 Teil13	AD-W7 stamped
5	Spiral bound gasket	2	#618/520x2	Edelstahlwellring	NI-Grafit-Auflage	Fa.Kempchen
5	Filter element	1	5#	SA14A038	14571	

Nozzle list		*) Raised face up to vessel center						
Item	Flange acc. to ANSI (ASA)	DN	PN	Type	Position	hazze section thickness	h distance	Use
A	8"	50lbs	RF	270°	90°	8	430	Inter
B	8"	50lbs	RF	90°	90°	8	430	Outlet
C	G1"	---	---	180°	---	---	370	Drain
D	G1"	---	---	90°	---	---	436	Drain
F	G1/2"	---	---	135°	---	---	446	Air outlet



EINFACH-EINSÄTZE
SINGLE INSERTS



DN	EINFACH SINGLE	DOPPEL DOUBLE	øD	ød	øE	øG	A	h	H	EINFACH SINGLE		DOPPEL DOUBLE	
	Art. Nr.									cm2	kg	cm2	kg
250	SA141	SA142	375	250	405	380	740	205	968	8170	26.0	14470	26.5
300	SA151	SA152	430	291	462	436	832	230	1085	11050	32.5	18470	33.0

Änderung vorbehalten / Subject to change