




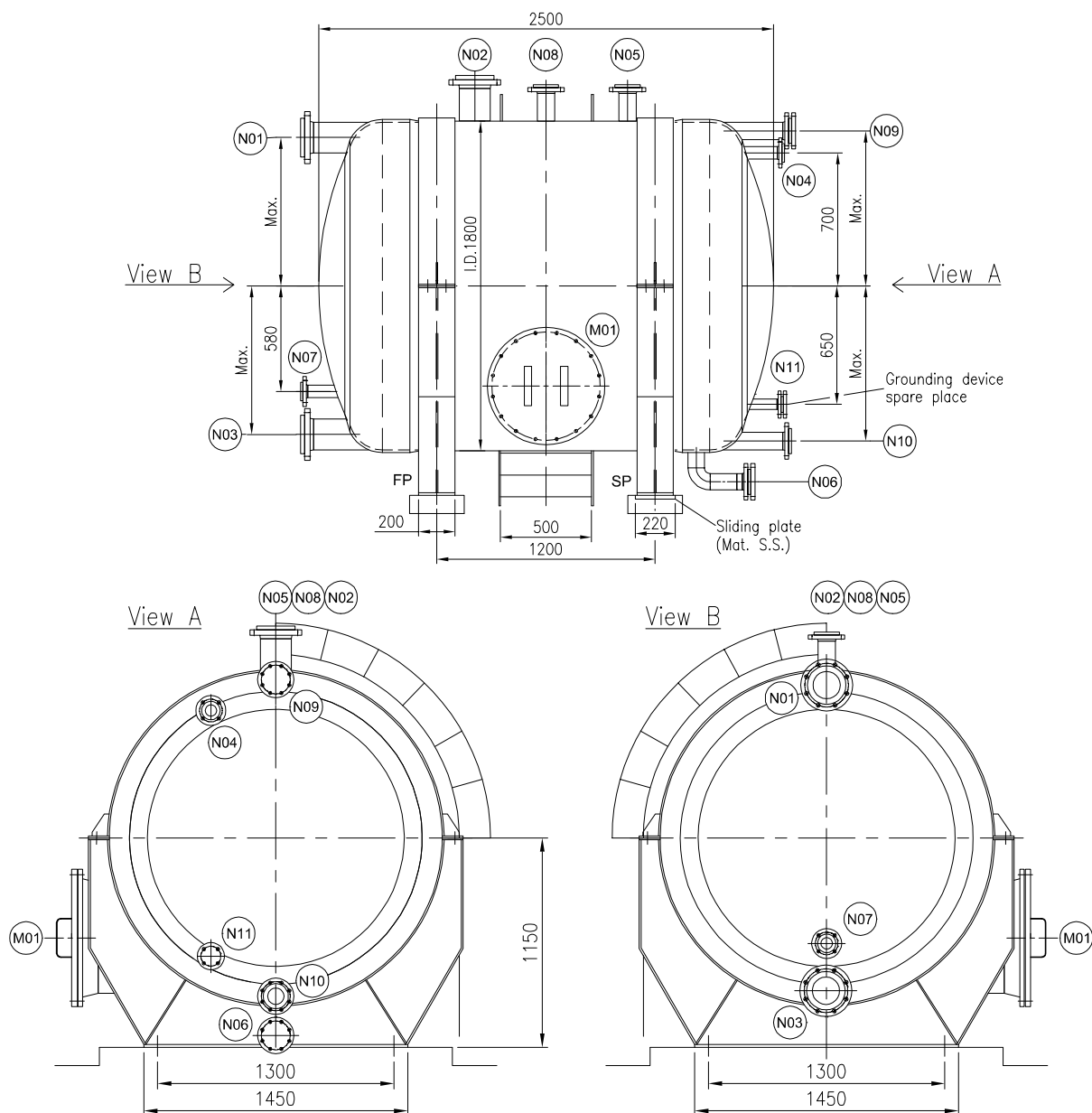


Plant CA		Client PCC Rokita		Code Rokita VI		Doc ID Code PDEL-EQS-G000-EC-00003		Project No. 05-1864											
<div></div>		Cover Sheet Anolyte Drain Tank						TON		07D005B									
								Item											
								Rev.		00	Page 1 of 8								
TECHNICAL SPECIFICATION																			
Page		Description								Revision									
1		Cover Sheet																	
2		Vessel Design Data Sheet																	
3		Nozzle Sheet																	
4		Detail																	
5		Applicable Codes & Standards																	
6		General Requirements																	
7		Inspection Data, Class: GRP2																	
8		Documentation																	
00		IFI		Issue for Inquiry		04-Mar-24		Langner		19-Mar-24									
Rev.		Status		Description		Date		Prepared		Date		Checked		Date		Approved		AC	
<div></div>														Category Code:					
Customer Document ID:																			
										Shown on PID: 0767									

Plant CA	Client PCC Rokita	Code Rokita VI	Doc ID Code PDEL-EQS-G000-EC-00003	Project No. 05-1864		
	Vessel Design Data Sheet Anolyte Drain Tank			TON	07D005B	
				Item		
				Rev.	00	Page 2 of 8
Line	Process Requirements I		IDX	Process Requirements II		IDX Rev.
2	Quantity Operat. / Stand-by	1 0		Nominal Volume	m³	5
3	Position (Horiz/Vertical)	Horizontal		Shell Diameter, Outside	mm	
4	Process Fluid	Anolyte, 215 g/l NaCl, Cl2 saturated	6)	Shell Diameter, Inside	mm	
5				Height (TL-TL) of Shell	mm	
6	Physical Condition	LG		Width	mm	
7	Class of Hazard		5)	Max.Fill.Lev.In Oper.Cond. %/mm		90
8	Density Solid/Bulk kg/m³			Material Process Side	GRP-HT	
9	Density Liquid kg/m³	1110		Surface Treatment/Coating	chemical protection layer, min. 2,5 mm	
10	Density Vapour/Gas kg/m³			(Process Side)		
11	pH-Value	2.0-11		Insulation Type		
12	H2-Partial Press. In/Out bara			Internals		
13	Max Operating Temp. °C	90				
14	Max Operating Pressure barg	0.00		Heating / Cooling Device		
15	Operating Pressure bara	0.974		Overall length, Vessel mm	2500	
16	Operating Temperature °C	80		Shell Diameter, inside mm	1800	
17	Allowable Pressure barg	-0.05 0.4				
18	Allowable Temperature °C	3 95				
19						
20	Abbreviations for Physical Condition: (S)olid, (L)iquid, (G)as, (V)apour, (IDX) Index for Remarks					
21	Mechanical Requirements		IDX	MATERIAL		
22	Design Code	EN 13121-2016		Part	Materials	Remarks
23				Shell	GRP-HT	
24	Corros. Allow., for Calc. mm	0.0		Heads	GRP-HT	
25	Joint Efficiency			Shell Flange		
26	Seismic Loads			Supports	CS	
27	Wind Loads			Clips	SS / GFK	
28	Inspection by	Rokita		Nozzle Pipes	PP-R / GFK	
29	Test Pressure barg	Acc. to Code		Nozzle Flange	GFK / CS galv.	3)
30	Heat Treatment			Internals Welded		
31	Non-Destructive Test	Acc. to Code		Internals Removable		
32	Painting	ES-Y1		Bolts / Nuts Inside		
33	Pickling and Passivation	For SS Parts		Bolts / Nuts Outside	SS	
34	Insulation mm			Gaskets Inside		
35	Weight, delivery kg		1)	Gaskets Outside	EPDM W. St Ins.	
36	Weight, w. process fluid kg		1)	Gaskets Shell Flange		
37	Weight, water-filled kg		1)	Davit		
38				Footring		
39				Lifting Lugs / Trunnions		
40				Anchor Bolts	SS (chemical anchor bolts)	
41				Demister		
42				Ladders/Platforms	CS painted	
43						
44	Remarks :					
45	1) To be given by manufacturer 2) All materials shall be supplied with test certificates. 3) Loose flanges for NPS <= 150 - Prestressed GRP; for NPS >150 - CS Hot dip galvanised. 4) According to painting specification for saddles (ES-Y1) 5) Line 7 Class of hazard: GHS Hazard Statement H290, H302, H314, H315, H319, H331, H335, H400, H411 6) NaCl 215 gpl, NaClO3 <8 gpl, Na2SO4 <13 gpl Note the addition for GRP-Vessels on page 6					

Plant CA		Client PCC Rokita		Code Rokita VI		Doc ID Code PDEL-EQS-G000-EC-00003		Project No. 05-1864	
		Nozzle Sheet Anolyte Drain Tank						TON 07D005B	
								Item	
								Rev.	00
Nozzle Symbol	Designation	DN mm	PN	Standard DIN	Flange Type	Flange Facing	Pipe Dimensions mm	Remarks	Rev.
N01	Anolyte Inlet	150	10	16966	F1,B2	Plain			
N02	Anolyte Inlet	150	10	16966	F1,B2	Plain			
N03	Anolyte Outlet	150	10	16966	F1,B2	Plain			
N04	Level switch	50	10	16966	F1,B2	Plain			
N05	Vent	80	10	16966	F1,B2	Plain			
N06	Drain	80	10	16966	F1,B2	Plain		with Blind Flange	
N07	Level switch	50	10	16966	F1,B2	Plain			
N08	Level transmitter	80	10	16966	F1,B2	Plain			
N09	Spare	80	10	16966	F1,B2	Plain		with Blind Flange	
N10	Level transmitter	80	10	16966	F1,B2	Plain			
N11	Spare	40	10	16966	F1,B2	Plain		with Blind Flange	
M01	Manhole	600	10	UN2002-03	C	Plain		with Cover and Handle	
Remark:									
N11 -> Grounding device spare place									
1) Nozzle length: 200 mm for DN<= 100, 250 mm for DN > 100									
2) For nozzle <= DN 80 the conical reinforcement shall be provided									

Plant CA	Client PCC Rokita	Code Rokita VI	Doc ID Code PDEL-EQS-G000-EC-00003	Project No. 05-1864	
	Detail Anolyte Drain Tank			TON	07D005B
				Item	
				Rev.	00 Page 4 of 8




Design features:


- 1) Heads: torispherical heads in acc. with DIN 28011;
- 2) Support saddles:
 - based on DIN 28080, clammed at shell with upper strip, neopren inlet between saddle and vessel and 1x earthin lug per saddle.;
 - lifting lugs fastened at saddles;
 - sliding point with sliding plate (Material S.S.)
 - anchor bolts (chemical anchors);
 - name plate
- 3) Technological steel constructions:
 - ladder (material C.S. painted) with railing;


Notes:


- anchor bolts calculation and supply by vendor;
- final nozzle location acc. to nozzle orientation sheet;
- all dimensions in mm
- sketch is not to scale

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Plant CA		Client PCC Rokita		Code Rokita VI		Doc ID Code PDEL-EQS-G000-EC-00003		Project No. 05-1864		
		Applicable Codes & Standards Anolyte Drain Tank						TON 07D005B		
								Item		
								Rev.	00	Page
1	Info	Type	Description					Issue Date		Rev.
2		Global Codes & Standards								
3		<input type="checkbox"/> PED 2014/68/EU	Pressure Equipment Directive					latest issue		
4		<input type="checkbox"/> EN 13445	Unfired pressure vessel					latest issue		
5		<input checked="" type="checkbox"/> EN 13121	GRP tanks and vessels for used above ground					latest issue		
6		<input type="checkbox"/> Manufacturer Standard								
7										
8		Company Standards: tk Uhde Project Engineering Specifications								
9		<input checked="" type="checkbox"/> PDEL-EQS-G000-EC-0001	ES Vessels and Equipment of GRP							
10		<input type="checkbox"/> PDEL-EQS-G000-EC-0002	ES for Plate Heat Exchanger							
11		<input type="checkbox"/> PDEL-EQS-G000-EC-0003	Process vessel and equipment>0.5bar(g) (based on PED)							
12										
13		Company Standards: UN								
14		<input checked="" type="checkbox"/> UN 2000-06 Part 2	Clips for ladders and platforms							
15		<input type="checkbox"/> UN 2000-09 Part 1	Name plate for vessel							
16		<input type="checkbox"/> UN 2000-10 Part 1	Title blocks for manufactures drawing							
17		<input checked="" type="checkbox"/> UN 2002-05 Part 1	Manufacturing defects at glass reinforced thermosetting plastics vessel and equipment							
18		<input checked="" type="checkbox"/> UN 2002-03 Part 1	Vessel and equip. of glass-fibre-reinforced plastics; Typical configuration							
19		<input checked="" type="checkbox"/> UN 2002-04	Transport and erection for vessel and tanks of GRP							
20		<input checked="" type="checkbox"/> UN 2003-01	Earthing connections for vessels and equipment							
21		<input checked="" type="checkbox"/> UN V416-04	Water quality for pressure tests and flushing of equipment and other components							
22		<input checked="" type="checkbox"/> UN 8281-02 Part 7	Foundation and anchoring, type F							
23		<input checked="" type="checkbox"/> ES-Y1	Painting							
24										
25		Remarks :								
26										

Plant CA		Client PCC Rokita		Code Rokita VI		Doc ID Code PDEL-EQS-G000-EC-00003		Project No. 05-1864	
		General Requirements Anolyte Drain Tank						TON 07D005B	
								Item	
								Rev.	00
1	Info	Description							Rev.
2		General							
3		<input checked="" type="checkbox"/> Stress analysis shall be performed by the manufacturer in accordance with design specifications							
4		<input checked="" type="checkbox"/> Specified wall thicknesses are minimum values and shall be increased if required by stress calculation							
5		<input checked="" type="checkbox"/> Nozzle necks shall be least DN 50/ 2". They shall be reduced to the required nominal flange size if necessary.							
6		<input checked="" type="checkbox"/> Bolts, nuts and gaskets for joints with tapped holes have to be supplied by the vessel manufacturer.							
7									
8		Supplies Shall include the following Items							
9		<input checked="" type="checkbox"/> Clips, pads and ladders for vessel							
10		<input checked="" type="checkbox"/> Additional 2 sets gaskets for flanges with cover and blind flanges							
11		<input checked="" type="checkbox"/> Additional 10% of bolts and nuts, as spare							
12		<input checked="" type="checkbox"/> Lifting lugs for erection							
13		<input checked="" type="checkbox"/> 2 separate earthing connections to be provided 180 degree apart resp. 1 per saddle, if not otherwise specified							
14		<input type="checkbox"/> All internals							
15		<input checked="" type="checkbox"/> Spare parts for 2 years to be quoted separately							
16		<input checked="" type="checkbox"/> Anchor Bolts							
17		<input checked="" type="checkbox"/> For applicable standards see page ' Index of Applicable Codes and Standards'							
18									
19		Remarks :							
20		<p>1) Materials: Structure of chemical protection layer: - Min. thickness 2.5 mm. - One C-glass fibre tissue 30-50g/m², residual structure with E-glass mats 250-450g/m². - Textileglass tissue is not allowed. Structure of carrying laminate: - Only polyester powder bonded textileglass- mats. -tissues and roving of E-glass shall be used. Resin: GRP-HT (Tdesign > 80°C) - Special Blend DERAKANE MOMENTUM™ 470-300, - Final resin coat: shall include an UV- stabilizator.</p> <p>2) Stress calculation: - Thickness of chemical protection layer is not allowed to be considered at calculations.</p> <p>3) Manufacturing: - Vessels shall be post-cured by heating (tempering).</p> <p>4) Tests: - Cut-out for nozzles are to be marked with item-no., nozzle-no. and kept minimum 2 years for tests</p>							

Plant CA	Client PCC Rokita	Code Rokita VI	Doc ID Code PDEL-EQS-G000-EC-00003	Project No. 05-1864			
	Inspection Data, Class: GRP2 Anolyte Drain Tank			TON	07D005B		
				Item			
				Rev.	00	Page	7
<p>The tests indicated are min. requirements. They have to be performed in addition to the tests specified in the codes and standards. In case of discrepancies between the inspection data sheet (IDS) and the workshop documents approved by tk Uhde the latter shall apply. The manufacturer shall be responsible that the required tests are performed and that the inspector is invited in due time to witness the tests. The manufacturer shall try to perform as many individual tests as possible on the same day, provided that the fabrication process permits such a procedure.</p>							
Line				Inspection by		IDX	Rev
				Manuf.	NCA		
1	Examination before manufacturing						
2	Checking of "Quality Control" of manufacturer (audit)			-	◇		
3	Checking of laminator's qualification (DVS 2220)			△	X		
4	Examination during manufacturing (consider duty class acc. UN 2002-05 Part 1 and DDS)						
5	Checking of the tensil strength (EN ISO 527-4)			△	X		
6	Bending test (EN ISO 14125)			△	X		
7	Checking of the glass content and the laminate structure (EN ISO 1172)			△	X		
8	Checking of the hardening (tendency to creep acc. to AD 2000 - N1 or examination of the residual styrene content acc. to ISO 4901)			△	X		
9	Barcol - hardness test (EN 59)			△	X		
10	Interlaminar shear strength (EN ISO 14130)			△	X		
11	Examination after manufacturing (consider duty class acc. UN 2002-05 Part 1 and DDS)						
12	Dimensional check / as build drawing			△	□		
13	Pressure test / leakage test			△	■		
14	Visual check of chemical protective coating after prior tests			△	■		
15	Visual check, outside			◇	■		
16	Checking of tempering protocoll			△	X		
17	Checking of marking			◇	□		
18	Checking of completeness			◇	◇		
19	Checking of documentation, presentation during final inspection			◇	◇		
20	<div>Inspection data Sheet Legend</div> <div>■ - Hold Point, Fabrication stop until inspection has been performed or written release note is given</div> <div>□ - Witeness Point, Fabrication may be continued if inspector is not present after invitation issued in due time</div> <div>△ - Examination with test report</div> <div>X - Review of test report</div> <div>◇ - Test respectively execution</div> <div><div>LS = Longitudinal seam</div><div>CS = Circumferential seam</div><div>NCS = Shell-nozzle seam</div><div>AS = Attachment seam</div><div>TS = T-Joints</div></div> <div><div>MT = Magnetic particle examination</div><div>PT = Liquid penetrant examination</div><div>UT = Ultrasonic examination</div><div>RT = Radiographic examination</div><div>DK = Leakage class acc. to UN V416-02 part 1</div></div> <div><div>DDS = Design Data Sheet</div><div>t = Wall thickness</div><div>DN = Nominal pipe size (NPS)</div><div>HAZ = Heat affected zone</div><div>PWHT = Post Weld Heat Treatment</div></div>						

Plant CA	Client PCC Rokita	Code Rokita VI	Doc ID Code PDEL-EQS-G000-EC-00003	Project No. 05-1864						
 thyssenkrupp	Documentation Anolyte Drain Tank				TON 07D005B					
					Item					
					Rev. 00 Page 8 of 8					
	For Information		For Review		For Approval		Erection Doc.		Final Doc.	
	Dispatch of Documents	No. of copies	Dispatch of Documents	No. of copies	Dispatch of Documents	No. of copies	Dispatch of Documents	No. of copies	Dispatch of Documents	No. of copies
Priced spare parts list	2 weeks after order	e								
Fabrication schedule	4 weeks after order/each month	e								
Material status report	8 weeks after order/each month	e								
Stress calculation			6 weeks after order	e					with delivery	4
Foundation loads Foundation drawing 1)	3 weeks after order	e								
General arrangement drawing (1st issue)					4 weeks after order	e	2 months before delivery	e	with delivery	4
General arrangement drawing (rev. issue)					2 week after receipt of comments	e				
Detail drawing with part list (1st issue)					4 weeks after order	e	2 months before delivery	e	with delivery	4
Detail drawing with part list (rev. issue)					2 weeks after receipt of comments	e				
Welding procedure specification (WPS) and qualification record (PQR)			8 weeks after order	e					with delivery	4
Quality plan and testing schedule			4 weeks after order	e			2 months before delivery	e	with delivery	4
Transportation sketch			8 weeks after order	e			2 months before delivery	e	with delivery	4
Operation and maintenance instruction 2)			8 weeks after order	e			2 months before delivery	e	with delivery	4
Storage instruction			8 weeks after order	e			2 months before delivery	e		
Certificates (material test, test/inspection, quality, welder/laminator qualification, etc.)									with delivery	4
1) penalized data 2) in English and Polish language e-> electronic format										