



Toase-e Park Sanati Gohar Ofogh
 Petrochemical Co.
**CONCEPTUAL, BASIC and DETAIL DESIGN
 ENGINEERING OF STYRENE PARK OFFSITE**



ARKAN SANAT PAYDAR
 Procurement & Construction

Document Title:
 Hydro test procedure for Ru0001A / B-D-02

Document No.: EI027-ASP-VD-ME-PRO-011

Rev. R0

Page 1 of 7

STYRENE PARK OFFSITE

Hydro test procedure for Ru0001A / B-D-02

R0	08-04-2025	IFA	F.Malekifar	M.Yasini	GH.Azizi
Rev.	Issued Date	DESCRIPTION	PREPARED	CHECKED	APPROVED



Toase-eh Park Sanati Gohar Ofogh
Petrochemical Co.
**CONCEPTUAL, BASIC and DETAIL DESIGN
ENGINEERING OF STYRENE PARK OFFSITE**



ARKAN SANAT PAYDAR
Procurement & Construction

Document Title:
Hydro test procedure for Ru0001A / B-D-02





Document No.: EI027-ASP-VD-ME-PRO-011

Rev. R0

Page 2 of 7

REVISION RECORD SHEET

Page Page	Revisions							Page	Revisions						
	R0	R1	R2	R3	R4	R5	R6		R0	R1	R2	R3	R4	R5	R6
1	X							41							
2	X							42							
3	X							43							
4	X							44							
5	X							45							
6	X							46							
7	X							47							
8								48							
9								49							
10								50							
11								51							
12								52							
13								53							
14								54							
15								55							
16								56							
17								57							
18								58							
19								59							
20								60							
21								61							
22								62							
23								63							
24								64							
25								65							
26								66							
27								67							
28								68							
29								69							
30								70							
31								71							
32								72							
33								73							
34								74							
35								75							
36								76							
37								77							
38								78							
39								79							
40								80							

 	Toase-ehe Park Sanati Gohar Ofogh Petrochemical Co. CONCEPTUAL, BASIC and DETAIL DESIGN ENGINEERING OF STYRENE PARK OFFSITE	 
	Document Title: Hydro test procedure for Ru0001A / B-D-02	
	Document No.: EI027-ASP-VD-ME-PRO-011	Rev. R0

1. Scope

This procedure describes the actions to be taken in order to prepare and actuate the hydrostatic test of drums, reactors, according to ASME SEC.VIII Div.1

2. Definition

Abbr.	Description
PROJECT	Receiver Header/ PR200
Client / TPI	HSE
(C) CONTRACTOR	Toase-ehe Park Sanati Gohar Ofogh
(V) Vendor	Arkan Sanat Paydar Company(ASP)





Note: In case of conflict between this procedure and any project specifications, data sheets, referenced standards and codes, it shall be drawn immediately to attention of CONTRACTOR in writing for approval before commencement of work.

3. RESPONSIBILITY

1. Vendor shall carry out all inspection and testing required by code and project specification and shall correct all deficiencies evidenced by inspection and/or test. Vendor will also advise the contractor of any major repairs required and submit proposed repair procedure for the Contractor approval.
2. Hydrostatic test is "HOLD" point for Manufacturer representative, Purchaser inspector and also Third party/Client inspector. Before hydrostatic test all reports shall be submitted by manufacturer to involved parties for review.
3. TESTING PERSONNEL QUALIFICATION: The personnel-performing test shall be qualified in accordance with Quality Control Procedure.
4. The personnel who carry out the tests are required to notify QC of any problem that occurred during the test.

4. EQUIPMENT

- 4.1. All test equipment and necessary instruments, such as indicator gauges, connections, valves, etc., are checked before use.
- 4.2. Use at least two calibrated pressure gage with range of 1.5 min and 3 max times of test pressure.

 	Toase-eh Park Sanati Gohar Ofogh Petrochemical Co. CONCEPTUAL, BASIC and DETAIL DESIGN ENGINEERING OF STYRENE PARK OFFSITE	  ARKAN SANAT PAYDAR Procurement & Construction	
	Document Title: Hydro test procedure for Ru0001A / B-D-02		
	Document No.: EI027-ASP-VD-ME-PRO-011	Rev. R0	Page 4 of 7

- 4.3. Do not re-adjust the gauges if their readings are different from the calculated hydrostatic head. If the gages obviously out of adjustment, they must be change of with another calibrated gauge.
- 4.4. Test gauges shall be in conformity with the requirements of ASME VIII DIV I, UG-102
- 4.5. To seal the flanges, the blind flanges at the same size & sch. previously calculated according to the pressure test shall be used.

5. ACCEPTANCE CRITERIA






No leakage should occur during test and no pressure drop should be encountered.

6. WATER FILLING

- 6.1. The water to be used for the hydrotest of carbon steel equipment shall be potable water and free from suspended soil and other foreign matters with chloride content < 50 ppm for carbon steel part and stainless steel equipment shall be completely dried and water pockets / stagnations can be removed by rags.
- 6.2. Fill up the vessel with water from the proper access.
- 6.3. When the filling is completed, one indicator gage is mounted at the top and another at the bottom of equipment.
- 6.4. The least temperature of water must be indicated for hydrostatics test and will be at between 15 °C and 40 °C.
- 6.5. All vent holes and openings shall be completely closed and inspected prior to hydrotest.
- 6.6. All weld joints shall be inspected during hydrotest.

7. HYDROSTATIC TEST

- 7.1. Before hydrostatic test, all previous steps of inspection shall be reviewed and confirmed to project requirements.
- 7.2. Detailed test temperature, test time and test pressure should be according to vendor's final test report requests.
- 7.3. Calculate the hydrostatic head above the gauges, noting the gauge reading. Pump water into the vessel to a pressure of a 0.5-bar g. At top and check fittings for tightness.
- 7.4. The Hydrostatic test must be performed according to specification that has been given in the fabrication drawings of any equipment.
- 7.5. The hydrostatic pressure in the pressure equipment shall be increased. The maximum allowable working pressure may be assumed to be the same as the design pressure when calculations are not made to determine allowable working pressure. Thereafter, the test pressure shall be increased in steps of approximately 2-bar g every minute up to hydrostatic pressure.

 	Toase-eh Park Sanati Gohar Ofogh Petrochemical Co. CONCEPTUAL, BASIC and DETAIL DESIGN ENGINEERING OF STYRENE PARK OFFSITE	  	
	Document Title: Hydro test procedure for Ru0001A / B-D-02		
	Document No.: EI027-ASP-VD-ME-PRO-011	Rev. R0	Page 5 of 7

- 7.6. The test pressure should be hold for one hours. Then pressure shall be reduced to two third of hydrostatic test pressure and maintained for 15 minutes for examining any sign of leakage and general plastic deformation.
- 7.7. When the pressure testing is completed, all joints should be inspected.
- 7.8. Make close inspection of all joints and connections.
- 7.9. Hammering on the shell is not allowed during the test.
Minimum metal temperature during hydrostatic test shall be maintained at least 17°C above the minimum design metal temperature to minimize the risk of brittle, fracture. The test pressure shall not be applied until the vessel and its contents are at about the same temperature. If the test temperature exceeds 48.9 °C, it is recommended that inspection of the vessel to be delayed until the temperature is reduced to 120 °F or less.
- 7.10. Vents shall be provided at all high points of the vessel in the position in which it is to be tested to purge possible air pockets while the vessel is filling.
- 7.11. In case of occurring any leakage of any stage, the test shall be stopped, vessel emptied up and after weld repairs, again all the above procedures shall begin to continue hydro test.
- 7.12. Except any welding repair due to test failure other activities such as impacting heat treatment are not allowed.





Item	Tag No.	Design Pressure (Barg)	Test Pressure (Barg)	Holding Time (hr)
1	Ru0001A / B-D-02	Full of Water	Full of Water	1

8. SAFETY PRECAUTIONS

- 8.1. Precautions shall be taken to ensure the safe condition of the pressure test.
- 8.2. Do not allow anyone on or near vessel while pressure is being applied for first time or while pressure is greater than design pressure.
- 8.3. During filling, any unusual settlement or distortion must be investigated properly.

9. REPAIRS

If any pressure drop is detecting during test, SURGE DRUM will be depressurized and repairs will be done. If necessary, before refilling water, the related NDTs will be performed after the repair. Deaking or sweating occurring at a weld during pressure tests shall involve the repair of the weld itself, after removal of the faulty portion.

 	Toase-eh Park Sanati Gohar Ofogh Petrochemical Co. CONCEPTUAL, BASIC and DETAIL DESIGN ENGINEERING OF STYRENE PARK OFFSITE	  ARKAN SANAT PAYDAR Procurement & Construction	
	Document Title: Hydro test procedure for Ru0001A / B-D-02		
	Document No.: EI027-ASP-VD-ME-PRO-011	Rev. R0	Page 6 of 7

10. DISMANTLING AFTER THE TEST

- 10.1. After the test is completed, open top manhole and or other nozzles remove the water completely.
- 10.2. Clean out and dry any standing water, silt or other dirt left in the tank or vessel so that the tank interior is broom clean, dried by air and ready for inspection and use.
- 10.3. Mark the proper data on the face of the recording chart and sign.

11. REPORT (HT INSPECTION REPORT FORM)

- The following information should be recorded at the time of the measurements
- and included in the report.
- Date tested
- Item tested
- Pressure gauge range, calibration certificate
- Test conditions (Temperature, pressure, test time, holding time)
- Leak location and rate
- Test medium (Copy of water analysis including chloride content)
- Inspector signature
- Pressure Graph (Detailed testing pressure graph will be provided from vendor in final test report requests.)



Toase-eh Park Sanati Gohar Ofogh
Petrochemical Co.
**CONCEPTUAL, BASIC and DETAIL DESIGN
ENGINEERING OF STYRENE PARK OFFSITE**




ARKAN SANAT PAYDAR
Procurement & Construction

Document Title:
Hydro test procedure for Ru0001A / B-D-02

Document No.: EI027-ASP-VD-ME-PRO-011

Rev. R0

Page 7 of 7

PROJECT: *****		HYDROSTATIC TEST REPORT			
CLIENT: *****					
MANUFAC.: ARKAN SANAT PAYD		ITEM NO.		DWG NO: *****	
INSPECTOR : *****		*****		DATE: *****	
APPLICABLE CODE/PROCEDURE			ASME SEC.VIII UG-99		
TEST CONDITION		HYDROSTATIC TEST		PNEUMATIC TEST	
DESIGN	DESIGN PRESSURE				
	TEST PRESSURE				
ACTUAL TEST PRESSURE					
HOLDING TIME (min)					
TEST TEMP. (°C)	AMB				
	AREA				
TEST MEDIUM					
CL CONTENT (MAX. PPM)					
PRESSURE GAGE NO.					
TEST / INSPECTION DATE					
<p>PRESSURE DIAGRAM</p> <p>WE HEREBY CERTIFY THAT THE ABOVE EQUIPMENT (ITEM) HAS BEEN SATISFACTORILY THE HYDROSTIC/PNEUMATIC.</p>					
MAUFACTURE QC SIGNATURE		INSPESTOR SIGNATURE		CLIENT SIGNATURE	
Date:		Date:		Date:	