THALETEC

Lifetime checklist for glass-lined agitated reactors

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Vessel data

Serial number:	
Type and size of the equipment:	
Designation (plant no.):	

Inspection data

Date of inspection:	
Inspector's name:	
Signature:	

Purpose of the inspection (Please tick if "yes")

No.	yes	Aspect
1		Upon goods receipt
2		For storage
3		For the installation
4		Before initial commissioning
5		During operation
6		After the operation process
7		After decommissioning
8		Before the disassembly
9		Before the reglassing process

1 Upon goods receipt (yes / no please tick the applicable box or click to select it)

1	yes	no	Test step	Reference / measure
1.1			Has the vessel been delivered in properly closed condition?	
1.2			Has the component been checked for external damage?	
1.3			Has a high voltage spark test (5KV max) test been performed for the glassed surfaces and have the results been documented?	Request THALETEC service technician under +49 (0) 3947-778-111
1.4			Has a high voltage spark test (5KV max) test been performed for the mounting parts and have the results been documented?	Request THALETEC service technician under +49 (0) 3947-778-111
1.5			Has the vessel been closed properly again upon completion of the tests?	Request THALETEC service technician under +49 (0) 3947-778-111

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2 For storage (yes / no please tick the applicable box or click to select it)

2	yes	no	Test step	Reference / measure
2.1			Is the reactor, tank or component stored so as to prevent the ingress of rainwater into the vessel or its shell?	
2.2			Is the reactor, tank or component stored so as to provide that rainwater can drain off?	
2.3			Is the reactor, tank or component covered by means of a protective cover and in this way protected against any weather effects and against the ingress of water?	WEPRO protective covers in compliance with ***Flyer K118***
2.4			Are all nozzles closed using protective caps, wooden covering and protective hoods?	WEPRO protective covers in compliance with ***Flyer K118***
2.5			Are the shell nozzles open and positioned so as to prevent the ingress of water?	
2.6			Is the gearbox positioned so as to prevent the leakage of gearbox oil from the bleed screw?	
2.7			Have the thermosiphon system and the mechanical seal been drained completely?	
2.8			Are all metallically bright surfaces protected against corrosion and rust film?	

3 For the installation (yes / no please tick the applicable box or click to select it)

3	yes	no	Test step	Reference / measure
3.1			Has the rating plate of the reactor or tank been attached so that it is clearly visible and are all entries and stamps clearly identifiable?	
3.2			Have internal wooden blocking beams or transport supports on components been removed?	Request THALETEC service technician under +49 (0) 3947-778-111
3.3			Does the direction of rotation of the agitator comply with the data provided in the drawing?	
3.4			Does the agitator shaft comply with the maximum permissible concentricity deviations in the area of the mechanical seal?	Request THALETEC service technician under +49 (0) 3947-778-111
3.5			Are all infeed nozzles provided with infeed tubes made of PTFE?	
3.6			Is the baffle mounted in the correct mounting position (paddling usually vertically to the inflow direction)?	
3.7			Have the agitating nozzles been mounted and aligned correctly?	
3.8			Are only flange gaskets used that are approved by the manufacturer?	AGR Premium (***Flyer K025***), GRX Premium (***Flyer K099***) or Conduseal (***Flyer K100***)
3.9			Have all flange connections been tightened with the correct torque?	Request THALETEC service technician under +49 (0) 3947-778-111
3.10			Are all flange gaskets provided with TA air certificate and identification, if applicable?	AGR Premium (***Flyer K025***), GRX Premium (***Flyer K099***) or Conduseal (***Flyer K100***)
3.11			Has the correct number of clamp screws been used on the nozzles? Please refer to the drawing to verify the correct number.	See drawing of apparatus
3.12			Have the flanged connections been tightened in the correct order and using the correct torque, and have they been retightened at rated torque after the first warm run of the system?	Request THALETEC service technician under +49 (0) 3947-778-111

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3	yes	no	Test step	Reference / measure
3.13			Have all pipes connected to the tank nozzles been installed via elastic compensators using zero force?	
3.14			Have the temperature sensors been connected?	
3.15			Has the safety valve been installed, connected and tested?	
3.16			Has the pressure monitoring system (manometer) been established and (electrically) connected?	
3.17			Have the transport facilities and packaging (boxes, carriage, blocking beams) been marked and stored so that they can be retrieved (e.g. for shipment due to reglassing)?	
3.18			Have all components been electrically earthed?	

4 Before initial commissioning (yes / no please tick the applicable box or click to select it)

4	yes	no	Test step	Reference / measure
4.1			Does the mechanical seal show signs of leaking sealing agent?	
4.2			Are there any signs of leaking gearbox oil?	
4.3			Has the rolling bearing relubrication unit on the mechanical seal been connected and activated?	***Flyer K086***
4.4			Is the lubrication level of the gearbox and mechanical seal correct?	
4.5			Has the gearbox oil approved by the manufacturer been filled in for the gearbox?	
4.6			Has the sealing agent approved for the mechanical seal been used?	
4.7			Have the secondary seals (O rings) of the mechanical seal been replaced if the storage duration exceeds 2 years?	
4.8			Have all process connections been connected and bolted using the correct torque?	
4.9			Have unused nozzles been closed by means of blind flanges?	
4.10			Are all flanged connections tight?	
4.11			Are there any flanged connections for which the seal between the flanges is displaced?	Remove and replace seal
4.12			Is the manhole opening provided with a seal and closed, and have the clamp screws been tightened using the correct torque?	
4.13			Are the inspection glasses free from scratches and damage?	
4.14			Have the seals for flanges starting from DN 500 been shimmed using THALETEC QuickShim?	QuickShim in compliance with ***Flyer K105***, Request THALETEC service technician under +49 (0) 3947-778-111
4.15			Has inertisation been carried out and protection been provided?	

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4	yes	no	Test step	Reference / measure
4.16			Is the shaft seal provided with the necessary sealing pressure, which is to be above that of the maximum vessel pressure?	
4.17			Are the chemicals used compatible with the repair elements (if applicable)?	
4.18			Are the transport locks of the mechanical seal swung out and secured?	
4.19			Has the motor of the agitator been connected so as to provide for a correct direction of rotation of the agitator?	
4.20			Have all components been electrically earthed?	
4.21			Have all guards and safety devices been installed safely and effectively?	

5 During operation (yes / no please tick the applicable box or click to select it)

5	yes	no	Test step	Reference / measure
5.1			Are the temperatures of the process media and the media supplied within the permissible limits for glass lined apparatuses?	***Flyer K003***
5.2			Do electrostatic discharges occur?	***Flyer K098***
5.3			Does the gearbox show signs of unusual noise generation or heat build-up?	
5.4			Is the temperature of the mechanical seal's sealing medium within the permissible range after a runtime of at least 24h?	

6 After the operation process (yes / no please tick the applicable box or click to select it)

6	yes	no	Test step	Reference / measure
6.1			Are abnormalities visible in the places repaired (e.g. external signs of corrosion)?	***Flyer K097***
6.2			Are the temperatures of the cleaning media and the media supplied within the permissible limits for glass-lined equipment?	***Flyer K003***

7 After decommissioning (yes / no please tick the applicable box or click to select it)

7	yes	no	Test step	Reference / measure
7.1			Have the vessel and shell interior been drained completely?	
7.2			Have all infeed lines been disconnected or securely closed?	
7.3			Is ventilation and pressure compensation of the tank interior and shell interior provided for?	
7.4			Have precautions been taken to safely prevent the ingress of rainwater into the vessel, into mounting parts and into the shell?	

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7	yes	no	Test step	Reference / measure
7.5			Has the sealing medium of the mechanical seal been drained and the sealing medium tank vented?	
7.6			Are the assembly aids on the mechanical seal swung in and secured?	

8 Before the disassembly (yes / no please tick the applicable box or click to select it)

8	yes	no	Test step	Reference / measure
8.1			Are there employees provided to carry out the disassembly, who have professional expertise of the "glass lining" material?	Request THALETEC service technician under +49 (0) 3947-778-111
8.2			Have the supports of the mounting parts (wooden locking beams) been inserted and mounted professionally?	Request THALETEC service technician under +49 (0) 3947-778-111
8.3			Has a potentially available PowerBaffle been disassembled or properly supported?	

9 Before the reglassing process (yes / no please tick the applicable box or click to select it)

9	yes	no	Test step	Reference / measure
9.1			Has the interior tank been decontaminated and has the decontamination been certified?	Download decontamination certificate
9.2			Has the shell interior been decontaminated and has the decontamination been certified?	Download decontamination certificate
9.3			Are all necessary technical documents provided?	Clarification of the necessary documents with THALETEC
9.4			Does the apparatus meet the future requirements after the reglassing process, or are modifications and adaptations required?	Contact the THALETEC Sales Department to discuss possible modifications and adaptations: ***sales@thaletec.com***

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