

Plant <b>MRPL Mangalore</b>	Client <b>MRPL</b>	Contract Code <b>WSS for PFCC Flue Gas</b>	Document ID <b>6723-IEX-G00-EC-0001-A208</b>	Contract No. <b>66-6723</b>				
	<b>Indicative Inspection and Test Plan(IITP) for PFA Lined Ball &amp; Plug Valves</b>							
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<p>The tests indicated are general minimum requirements of tKIS India. All Tests, as applicable, have to be performed as specified in the Order, Order Attachments, Codes, tKIS India Specifications, Licensor's Specifications and Standards. In case of discrepancies between the Indicative Inspection Test Plan and the workshop documents Approved / Reviewed by LSTK Contractor, the latter shall apply. The Manufacturer shall be responsible for the required Tests to be performed and for the Inspector to be invited in due time to witness the Tests. The Manufacturer shall try to perform as many individual Tests as possible on same day, provided that the fabrication process permits such a procedure</p>								
Sr. No.	Component / Operation	Stage Description	Characteristics	Reference Std.	Acceptance Std.	Inspection		
						Vendor	LSTK Contractor	TPIA

QAP Approval										
Sr. No.	Component / Operation	Stage Description	Characteristics	Reference Std.	Acceptance Std.	Format of Record	Vendor	LSTK Contractor	TPIA	PMC / Owner
A	1	Raw material	Visual  Dimensions  Steel making process, heat treatment, Chemical, mechanical properties, NDE (RT, DP, MT, Hardness as applicable ) etc. IGC for SS material	MSS-SP-55, ASME B16.34, Material Specification	MSS-SP-55, ASME B16.34, Material Specification	Inspection report	H	H	H	--
		Forgings, Castings for Body, End Piece, Cover Ball/Plug		Order Specification, Relevant ASTM Std. & Approved drawing	Order Specification, Relevant ASTM Std. & Approved drawing	Inspection report	H	--	--	--
		Lining Material (PFA, ETFE, FEP ,Rubber)	Chemical, mechanical properties, etc.	Order Specification, Relevant ASTM Std. & Approved drawing	Order Specification, Relevant ASTM Std. & Approved drawing	Manufacture r's test certificate	R	R	R	--
		Fasteners	Chemical, mechanical properties, heat treatment etc.	Order Specification, Relevant ASTM Std. & Approved drawing	Order Specification, Relevant ASTM Std. & Approved drawing	Manufacture r's test certificate	R	R	R	--

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2	In process	Machined Components	Visual & dimension	Drawing	Drawing	Inspection report	H	--	--	--
3	Final inspection	Strip test (1% of offered qty.)	Visual	Drawing, order specification	Drawing, order specification	Inspection report	H	H	H	--
		Visual	Workmanship / Finish	MSS-SP-55, ASME B16.34, Specification	MSS-SP-55, ASME B16.34, Specification	Inspection report	H	100% H	100% H	--
		Dimensions	Measurement & check	Approved drawing, Order spec	Approved drawing, Order spec	Inspection report	H	H*	H*	--
		Pressure test (shell, high pressure closure & low pressure closure tests) & Functional Test	Leak Tightness	Applicable testing std./approved drawing.	Applicable testing std./approved drawing.	Inspection report	H	H*	H*	--
		Helium and cryogenic test as applicable	Conformance to requirements	Drawing, order specification	Drawing, order specification	Test report	H	H-100%	H-100%	--
		Spark test	Visual	Applicable testing std./approved drawing.	Applicable testing std./approved drawing.	Inspection report	H	H*	H*	--

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		Marking details	Visual	Approved drawing.	Approved drawing	Inspection report	H	100% H	100% H	--
		Surface preparation & painting, pickling and passivation, colour coding.	Paint DFT, shade etc	Applicable std., specification	Applicable std., Order specification	Inspection report	H	H	R	--
4	Inspection before despatch	100% Stamping by LSTK Contractor & TPIA and issue of Inspection Release Note.	Review of Documents	Drawings & order specification	Drawings & order specification	Inspection report	H	H	H	--
		Packing	Visual	Order specification, manufacturer's std.	specification, manufacturer's std.	Internal records, packing slip	H	R	R	--
5	Inspection documentation & Issue of Inspection of Release Note	Valve Test reports, Material Test Certificate	Review of Documents	100%	As per Applicable Material & Order Specifications	Conformance to Codes & Order Specification	IRN, MTC With back up reports	P	H	R
6	Final documentation on Despatch Clearance.	Compilation of final documents	Verification for completeness	Purchase Order	Purchase Order, Order specification	Dossier	R	H	--	H

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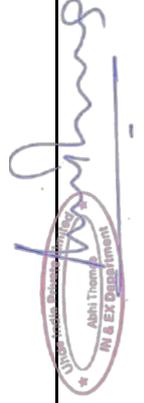
Notes -

Additional project specific requirements for raw material , final product shall be met

- LSTK contractor to prepare final QAP based on this IITP, Applicable specifications, standards and codes and submit to PMC for final approval
- Testing/acceptance standard shall be as per Order Specification , approved drawing, applicable testing standards, viz. EN 12266 part 1 or 2, API 598, etc.
- \*Quantity of check shall be 100% by Vendor & 10%(per Tag, per size, per visit) by LSTK Contractor and TPIA.
- Helium test for valves shall be in line with EDB-0006.
- Seat tests are to be carried out from both directions (Exception-unidirectional valves). WPS/PQR shall be submitted for LSTK Contractor, TPIA review for all welds including Bypass welds. Bypass valve shall be tested as per the requirements of main valve.
- Statutory requirement and inspection by Statutory Authority, if applicable, the same shall be met. IBR requirements for EDB-0006 shall be met. Original IBR Forms shall be submitted.
- LSTK Contractor may increase percentage of inspection up to 100% if any rejection or non-conformity is observed during sampling inspection or based on past experience with the vendor.
- Fire safe valves shall be as per Process requirement.
- In addition to the requirements of IITP, all requirements of Purchase order, material specification and Order Technical requirements (Document ID: EDB-0006) for raw material and final product shall be fulfilled. In addition, Material in Hydrogen Service shall comply with the requirements of Annexure F of document EDB-0006. Material in Sour service shall comply with the requirements of NACE MR0103 & MR0175 & EDB-0006
- Hydro test Water quality shall be as potable for CS and LAS. For SS material Chloride shall be 20 ppm max

Legends: W - Witness, R - Review, H – Hold do not proceed, unless cleared in writing, A-Approval

Devesh Sharma	Abhi Thomas / T.V. Sundar	Syam N.S.
Prepared by: LE	Checked by: SSP / DQAR	Approved by: HOD
		Syam S Nelliparambil



Digitally signed by Syam S  
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