

Document Name:

- Contractor Quality Control Plan for Fix or Stationery Equipment Installation
 - Inspection and Test Plan for Fix or Stationery Equipment Installation
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No.	Item description	Responsibility		
		CC	TPI	Owner
3.	Mechanical items			
3.1	Columns, vessel, tower, drums, heat exchangers, air cooler filter, ejector, reactor, off gas expander and evaporator (stationery equipment)			
3.1.1	Pre-installation check 1) Foundation and anchor bolts - Dimension - Visual check 2) Visuals check 3) Identification marking	H		
3.1.2	Installation 1) Orientation 2) Elevation	H		
3.1.3	Assembling layout and arrangement	H		
3.1.4	Alignment 1) Plumb of verTPIal equipment 2) Leveling of horizontal equipment	H		
3.1.5	Tightness of connection and fastening	H		
3.1.6	Grouting and leveling (Refer to section 1.2.5 grout and mortar finishing for foundation)	H		
3.1.6	Final visual check	H		
3.1.7	Drum 1) Centering check	H		
3.1.8	Superheater & sperheater header 1) End caps of superheater header and tube 2) Damage of superheater header and tube 3) Beveling of tube and header nozzle 4) Header inside 5) Arrangement of the superheater tubes 6) Clearance for expansion 7) Tack welding of header bolts after installation	H		

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3.1.9	<p>Heat exchanger</p> <ol style="list-style-type: none"> 1) Centerlines and elevation 2) Nipples in reinforcing pads (insulated exchanger only) 3) Installation of ladder and platforms 4) Insulation 5) Slide plate installed and lubricated with nuts locked 6) Gasket and bolting 7) Weep holes in reinforcing pads are filled with suitable grease 	H		
3.1.10	<p>Vessel</p> <ol style="list-style-type: none"> 1) Centerlines and elevation 2) Nipples in reinforcing pads (insulated exchanger only) 3) Installation of ladder and platforms 4) Insulation 	H		
3.1.11	<p>Dryer</p> <ol style="list-style-type: none"> 1) Cleaness and no damage for flange, pipe thread 2) Damage and cracks 3) Unit secured to foundation 4) Flow direction 5) Inlet and outlets connected 6) Purge out connected 7) Pressure gauges and temp. gauge installed 8) Electrical power connected, electrical control 9) Skid bolted to foundation 10) Pressure relief valve installed and connected to vent 11) Correct amount of desiccant installed 12) Grounded 13) - Rotating of motor 	H		

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3.1.12	<p>Filter</p> <ol style="list-style-type: none"> 1) Flange, pipe thread are clean and no damage 2) Filter body inspected for damage and cracks 3) Gaskets and dements are in place and no damage 4) Operation of cover lift mechanism checked 5) Flow direction 6) Inlet and outlet connected 7) Drain and cent connected 8) Instrument connections made 9) Filter element installed 10) Backwash flow control valve installed 	H		
3.1.13	<p>Ejector</p> <ol style="list-style-type: none"> 1) Ejector inspected for damage and cracks 2) Flow direction 3) All flange, threaded connections are no damage 4) Identify and pipe connections 	H		
3.2	Columns trays			
3.2.1	<p>Pre-installation check</p> <ol style="list-style-type: none"> 1) Identification marking 2) Visual checks 3) Cleaning 	H		
3.2.2	<p>Installation and assembling</p> <ol style="list-style-type: none"> 1) Support beams 2) Tray decks 3) Downcomers 4) Draw - off boxes 5) Seal pans 6) Baffles 7) Distributors 8) Weirs 9) Seal plates 	H		

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3.2.3	Level 1) Tray deck 2) Top of weir 3) Top of downcomer	H		
3.2.4	Dimension 1) Weir height form tray deck 2) Weir height from seal pan 3) Weir height from distributor 4) Downcomer clearance 5) Tray spacing 6) Donwcomer width 7) Bubble cap skirt clearance	H		
3.2.5	Leak test (if specified) 1) Bubble cap tray 2) Draw – off pan	H		
3.2.6	Tightness of connection and fastening	H		
3.2.7	Final check for box-up 1) Visual check 2) Cleaning 3) Manway deck installation	H		
3.3	Internals of columns and drums	H		
3.3.1	Pre-installation check 1) Identification marking 2) Visual checks 3) Packing material marking 4) Cleaning	H		
3.3.2	Installation and assembling 1) Packing supports 2) Gratings grid and wire meshes 3) Distributors 4) Thermo-well 5) Weirs 6) Internal piping 7) Baffles	H		

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	8) Demister 9) Distribution piping	H		
3.3.3	Packing of rasching ring, catalyst and other packings 1) Packing height marking 2) Filled up level check	H		
3.3.4	Tightness of connection and fastening	H		
3.3.5	Final check for box-up 1) Visual check 2) Cleaning	H		

CC: Construction Contractor

TPI: Third Party Inspection

H: Hold Point; Hold on the production till TPI Inspector performs inspection and supervise the required test

If you want to use this draft for inspection and test plan you need to fill the TPI and Owner Column based your project requirement. You may use following abbreviation for filling the columns:

W: Witness Point; Manufacture shall notify client and TPI Inspector but there is no hold on the Construction;

R: Document Review; Review means Review document, which includes of material test certificates, test reports, records and etc.

A: Approval

SW: Spot Witness; for items with spot witness contractor shall notify TPI inspector as fulfilling the monitoring;