





<b>EPs Contractor:</b>  <b>Petrochemical Industries Design &amp; Engineering Company (PIDEC)</b>		<b>ZANJAN UREA FERTILIZER PROJECT</b>		<b>Attachment No. : 07</b>	
<b>Project No. : 1231</b>		<b>Doc. No.: 1231-DE-10-QC-SOI-330</b>		<b>Rev.: 01</b>	
<b>REQUISITION FOR :</b>  <b>REFRIGERATION UNIT</b>		<b>Scope Of Inspection</b>		<b>Owner:</b>  <b>ZANJAN</b> Agricultural & Fertilizer Industries Co.	
<b>Project No.: 214</b>		<b>Project No.: 214</b>		<b>Project No.: 214</b>	
<b>ALWAYS REFER TO REQ. NO.</b>		<b>Rev.</b>		<b>Rev.</b>	
<b>REQ No.: 1231-DE-10-RE-REQ-330</b>		<b>00</b>		<b>00</b>	
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**SCOPE OF INSPECTION  
FOR  
REFRIGERATION UNIT**

DE		EXT		INQ		A	
Eng. Phase		Purpose of Distribution (POD)		Purpose of Issue (POI)		Owner's Action	
01	14.06.2020	Issued For Inquiry (As Per Owner Comment)		A.Shamsodini	S.Razavi	H.R.Rezaei	A. Kazemi
00	20.05.2020	Issued For Inquiry		A.Shamsodini	S.Razavi	H.R.Rezaei	A. Kazemi
<b>Rev.</b>	<b>Date</b>	<b>Description</b>		<b>Prepared by</b>	<b>Checked by</b>	<b>Approved by</b>	<b>Authorized by</b>

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**1. PROCEDURE:**

Please refer to project general shop inspection procedure in order to find more information about inspection policy.

**2. DEFINITIONS:**

**- Inspector**

Inspector Means Project inspector and/or OWNER /his THIRD PARTY inspectors as will be introduced after order placement.

**- Hold Point (HP)**

The designated feature is to be witnessed by INSPECTOR.

Vendor/manufacturer is to notify Project quality coordinator two weeks prior to performing the designated feature. Activities shall not proceed until the continuation of work is permitted by Project Quality coordinator or waived in writing by him ("inspection waiver").

**- Witness Point (WP)**

The designated feature is to be witnessed by INSPECTOR.

Vendor/manufacturer is to notify Project quality coordinator two weeks, prior to performing the designated feature. If the INSPECTOR fails to be present, activities may proceed without witnessing or waiving of the inspection as will be decided by Project quality coordinator.

**-Spot Witness (SW)**



Witness inspection / test at the initial stage and other times on the spot/ random basis.

**- Review Documentation (RD)**

Documentation will be reviewed/approved by Project Engineering team or INSPECTOR depend the nature of documents (refer to RFD form in order to find that documents which shall be reviewed & approved by Project engineering team and/or inspector).

**- Waived Inspection**

For the designated feature, shop inspection is not carried out, as will be decided by Project quality coordinator.

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**Item: ROTARY COMPRESSORS**

**Inspection Extent:**     PRE - INSPECTION MEETING     IN - PROCESS INSPECTION     FINAL INSPECTION

Rev.	Description of Inspection Points	HP	WP	SW	RD
	1- Materials (Dimensions, Marking And Test Certificates_EN-10204 Type 3.1)			✓	
	2- Storage Of Materials And Welding Consumables			✓	
	3- Adherence To Approved Procedures (Welding, Heat Treatment, Etc.)			✓	
	4- Adherence To Agreed Inspection Plan			✓	
	5- Workmanship, Cleanliness			✓	
	6- Review of Orders/ Sub Supplier Survey ( if Required)			✓	
	7- Welders qualifications (incl. Identification marks on welds)				✓
	8- Welding (Incl. Preparation and Fit-Up, Welding Process, Back gouging. Etc.)			✓	
	9- Nondestructive Testing Personnel Qualifications				✓
	10- Nondestructive Testing (Incl. Review of Radiographs)			✓	
	11- Destructive Testing Results (Production Test Plates)(If Req'd)				✓
	12- Execution Of Major Repairs	✓			
	13- Hydro Test For Pressure Containing Parts Of Compressor And Auxiliary Equipment	✓			
	14- Post Test Inspection		✓		
01	15- Performance Test	✓			
	16- Gear Unit Run Test (If Applicable)				✓
	17- Alloy Verification Or Chemical Analysis				✓
	18- Lube Oil System: Hydro testing		✓		
	19- Lube Oil System : Dimensional And Visual (Cleanliness)		✓		
	20- Lube Oil System : Functional Performance Test				✓
	21- Mechanical Running Test With Bearing Temperature Measurement	✓			
	22- Safety And Alarm Devices			✓	
	23- Noise Level Measurement	✓			
	24- Vibrations Measurement Heat stability check	✓			
	25- Dismantling (Check Bearings, Clearances, Etc.)		✓		
	26- Run Out Measurement(Deflection Check)				✓
	27- Capacity Control Test				✓
	28- Charpy impact test, when required				✓
	29- - Gas leak test, when specified		✓		
	30- - Helium test of casing, when specified		✓		
	31- Gearing, Pinion Forging and Main Wheel Forging or Casting				✓
	32- Painting, Coating, Preservation, Pickling& Passivation			✓	
	33- Ancillary Items(Glands, Cables Thermometers, etc.)			✓	
	34- Check of Spare Parts		✓		
	35- Final Visual And Dimensional Inspection	✓			
	36- Documentation review prior to release				✓
	37- Preparation for shipment (Nameplate, Tagging, Packing, Marking, Color Coding, etc.)	✓			

**Remarks:**



Percentage of the random inspection for material will be finalized during PIM.

**If Required\***

As per Purchase Requisition and relative specified standard and agreement.





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**Item: SHELL AND TUBE HEAT EXCHANGERS**

**Inspection Extent:**     **PRE - INSPECTION MEETING**     **IN - PROCESS INSPECTION**     **FINAL INSPECTION**

Rev.	Description of Inspection Points	HP	WP	SW	RD
	1- Materials (Dimensions, Marking And Test Certificates_EN-10204 Type 3.1)			✓	
	2- Storage Of Materials And Welding Consumables			✓	
	3- Adherence To Approved Procedures (Welding, Heat Treatment, Etc.)			✓	
	4- Adherence To Agreed Inspection Plan			✓	
	5- Workmanship, Cleanliness			✓	
	6- Review of Orders/ Sub Supplier Survey ( if Required)			✓	
	7- Welders qualifications (incl. Identification marks on welds)				✓
	8- Welding (Incl. Preparation and Fit-Up, Welding Process, Back gouging. Etc.)			✓	
	9- Visual Inspection of Welds			✓	
	10- Nondestructive Testing Personnel Qualifications				✓
	11- Nondestructive Testing (Incl. Review of Radiographs)			✓	
	12- Tube Bundle Assembly		✓		
	13- Tube To Tube Sheet Welding And Expanding			✓	
	14- Visual And Dimensional Check Prior To Heat Treatment		✓		
	15- Heat Treatment Execution (If Req'd)		✓		
	16- Ladder & Platform Dimensional Check			✓	
	17- Destructive Testing Results (Mock-up Test)(If Req'd)				✓
	18- Destructive Testing Results (Production Test Plates)(If Req'd)				✓
	19- Hardness Measurements In Final Condition			✓	
	20- Alloy Verification Or Chemical Analysis (PMI Test IF Applicable)				✓
	21- Reinforcing Pad Air-Soap Test			✓	
	22- Visual Check Shell Internal And Tube Bundle Insertion			✓	
	23- Leak Testing			✓	
	24- Visual And Dimensional Inspection Prior To Hydro Testing		✓		
	25- Hydro Test (If Required)	✓			
	26- Installation Of Internals And Dimensional Check		✓		
	27- Installation Of Insulation(If Req'd)			✓	
	28- Execution Of Major Repairs	✓			
	29- Painting, Coating, Preservation, Pickling& Passivation		✓		
	30- Ancillary Items ( Spare Parts, Gaskets, Bolts and Nuts, etc.)			✓	
	31- Final Visual And Dimensional Inspection	✓			
	32- Documentation review prior to release				✓
	33- Preparation for shipment (Nameplate, Tagging, Packing, Marking, Color Coding, etc.)	✓			

**Remarks:**

Percentage of the random inspection for material will be finalized during PIM.

**If Required\***

As per Purchase Requisition and relative specified standard and agreement.







