



**Indian Oil Corporation Limited**

**Panipat Hydrogen Generation Unit  
Praxair India Private Limited**

Linde Plant-Project ID <b>2910A70M</b>	Client Project ID <b>NA</b>	
Linde Plant-Project Code <b>Panipat_HGU</b>	Client Project Code <b>NA</b>	
Linde Document No. <b>0022MC5770-(RQSC-0001)-W-TB 9219.003 (EN)</b>	Client Document No. <b>NA</b>	Client Rev. <b>NA</b>

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## INSPECTION & TEST PLAN FOR GRATING

A <input checked="" type="checkbox"/> No further submission. Document accepted as final.	
P <input type="checkbox"/> Incorporate comments and resubmit the document.	
X <input type="checkbox"/> Document not accepted and rejected.	
This review constitutes of acceptance or approval of design details, calculations, analysis, test methods, or other technical information submitted by vendor. It does not relieve supplier from full compliance with specifications and commercial obligations.	
<b>Linde</b> Linde Engineering Date: 10 May 2024 Dept: ENOM Name: Hardik Patel	

Comments:	Opt:	Date:
VE	GCTB	10. May 2024
Name: Sujoy Mullick		

Vendor Name <b>VISHAL ENTERPRISE</b>	Vendor Project Number <b>VE/2023-24/09</b>
Vendor Document Number <b>VE/LINDE/HGU/ITP/002</b>	Vendor Document Revision <b>REV.1</b>

IFR	02	10.05.2024	SHIVANG DIWAKAR	HARDIK PRAJAPATI	HARDIK PRAJAPATI	
IFR	01	23.04.2024	SHIVANG DIWAKAR	HARDIK PRAJAPATI	HARDIK PRAJAPATI	
Status	Issue	Date	Prepared	Reviewed	Approved	Remark

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		<b>VISHAL ENTERPRISE</b> <b>INSPECTION &amp; TEST PLAN ( ITP) FOR GRATINGS</b>								
CLIENT:- LINDE ENGINEERING INDIA PVT. LTD.					VE DOCUMENT NO : VE/LINDE/HGU/ITP/002					
PROJECT :- PANIPAT HYDROGEN GENERATION UNIT					REV. NO.: 01					
SR NO	INSPECTION / TEST ACTIVITY DESCRIPTION	VERIFICATION ACTIVITY DESCRIPTION / REFERENCE DOCUMENTS	ACCEPTANCE CRITERIA	RECORD / CHECKLIST FORM NUMBER	INSPECTION POINTS			REMARKS		
					VENDOR	VE	LEI/ TPI			
<b>1</b>	<b>RAW MATERIAL</b>									
1.1	Raw Material Inspection (Bearing & Frame Bar, Twisted Bar, Toe Plate & Clamps)	Chemical & Mechanical Properties, Dimension, Thickness / PO Requirement, Drawing requirements, Standard Drawing for Gratings : &AG-(2910A70M)-N-SD 1002 (EN)	As per the Material specification, Client specification	Manufacturer test Certificates / Lab Test Certificates	H	R	R			
<b>2</b>	<b>IN-PROCESS INSPECTION &amp; DIMENTION CHECK IN BLACK CONDITION</b>									
2.1	WPS + PQR	Documents as per the requirements of ASME SEC IX	ASME SEC IX	WPS + PQR Records	H	R	R			
2.2	Welder Qualification	Documents as per the requirements of ASME SEC IX	ASME SEC IX	WPQ Records	H	R	R			
2.3	Gratings material cutting activities	Visual, dimensional, material compliance with order specification, Standard Drawing for Gratings : &AG-(2910A70M)-N-SD 1002 (EN)	As per the Drawing	Inspection Records	H	R	R			
2.4	Weld & Surface visual, Welded by Electroforged welding	Soundness of weld & Surface Visual, Fusion	As per the Drawing, Client procedure & specification.	Inspection Records	H	W	RW			
2.5	Final Dimension	Dimensional inspection, Standard Drawing for Gratings : &AG-(2910A70M)-N-SD 1002 (EN)	As per the Drawing, Client procedure & specification.	Inspection Records	H	W	RW			
<b>3</b>	<b>Galvanizing Material &amp; Final Inspection</b>									

Linde Plant-Project ID <b>2910A70M</b>	Linde Document No. <b>0022MC5770-(RQSC-0001)-W-TB 9219.003 (EN)</b>	Issue <b>02</b>
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		<b>VISHAL ENTERPRISE</b>						
		<b>INSPECTION &amp; TEST PLAN ( ITP) FOR GRATINGS</b>						
CLIENT:- LINDE ENGINEERING INDIA PVT. LTD.				VE DOCUMENT NO : VE/LINDE/HGU/ITP/002				
PROJECT :- PANIPAT HYDROGEN GENERATION UNIT				REV. NO.: 01				
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					VENDOR	VE	LEI/ TPI	
3.1	Visual Inspection	100% of Items / ASTM A123 or ISO 1461	Surface to be free from defects like Bare / Black spots (except when small and suitable for patching), flux ash & dross inclusions, lumps, runs, rust stains, pimples, bulky white deposited & blisters etc.	Inspection Records	H	RW	RW	
3.2	Thickness of Zinc Coating	3 Samples per dipping / ASTM A123 or ISO 1461, whichever has less requirements.	1) Table 3 of ISO 1461 2) Table 1 of ASTM A 123, 5 mm and above : Avg. 100 Microns, Minimum 70 Microns	Inspection Records	H	RW	RW	
3.3	Uniformity of Zinc Coating	1 sample per lot / ASTM A 123 or IS 2633 / IS 4736	Material to withstand 4 dips of 1 Minute without showing adherent red deposit of copper upon the base metal	Inspection Records	H	RW	RW	
3.4	Adhesion of Zinc coating	1 sample per lot / ASTM A 123 or ISO 1461	No removal or lifting of coating in areas between hammer test impression	Inspection Records	H	RW	RW	
<b>NOTES:</b>								
1. For any Hold (H) or Witness point (W) as per ITP stated by LEI the manufacturer (VE) shall give notice 3 working days in advance by e-mails / CMS.								
Abbreviation :								
1) H : Hold : Work shall not proceed without written clearance of respective inspection agency.								
2) W : Witness Point : Activity shall be performed in presence of CLIENT, If CLIENT/TPI is present. If the CLIENT is absent Activity will proceed. CLIENT/TPI shall be given intimation in either writing or verbal.								
3) RW : 10% Random Witness : Activity shall be Randomly witnessed by CLIENT, If CLIENT/TPI is present. If the CLIENT is absent Activity will proceed. CLIENT/TPI shall be given intimation in either writing or verbal.								
4) R : Review : Documents shall be reviewed 100%								