

# **TENDER DOCUMENT**

**TENDER ENQUIRY NO: TE/544/KPD-MECH/ChWS/2018**

**“Procurement of Buffer Tank for Chilled Water System”**

**FIELD MANAGER KUNNAR/KPD-TAY FIELD  
(LOCAL PROCUREMENT)  
OIL & GAS DEVELOPMENT COMPANY LIMITED**

**BID SUBMISSION DATE: 28<sup>th</sup> July, 2018**

**OGDCL SALES TAX REGISTRATION NO. 07-02-2802-001-55**

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# OIL & GAS DEVELOPMENT COMPANY LIMITED

## KUNNAR/ KPD-TAY FIELD/PLANT, TANDO JAM SINDH

NO: - TE/544/KPD-MECH/ChWS/2018

SUBJECT: Procurement of Buffer Tank for Chilled Water System

**NOTE: BIDDERS SHOULD ALSO REFER TO THE “MASTER SET OF TENDER DOCUMENTS” AVAILABLE AT OGDCL’S WEBSITE AT THE FOLLOWING ADDRESS:**

<http://www.ogdcl.com/Tender/OpenTenders/Goods/>

Oil & Gas Development Company Limited (herein after referred to as the Purchaser) invites sealed bids from eligible Bidders for supply and delivery of goods, materials, equipment and/or services described in the schedule of requirement as Annexure “A” hereof.

The technical bid will be opened first on the date mentioned in SOR / Tender Notice. The financial bids of the technically qualified bidders will be opened publicly. Technical evaluation report will be published on OGDCL’s website before financial bid opening.

### **1. INSTRUCTIONS TO BIDDERS:-**

- 1.1 Only the Bids of bona fide buyers of Tender Document will be entertained. The Bidder shall bear all cost associated with the preparation and delivery of its Bid, and the Purchaser will in no case be responsible or liable for those costs.
- 1.2 In case of any doubt as to the meaning of any portion of the Specifications or other Terms and Conditions, Bidder may seek clarification of the same in writing, but not later than two weeks prior to deadline for submission of bid prescribed by the Purchaser.
- 1.3 At any time prior to the deadline for submission of Bids, a modification in bidding document in the form of an addendum may be issued in response to a clarification requested by a respective Bidder or even whenever the Purchaser considers it beneficial to issue such a clarification and/or amendment to all Bidders. Any clarification/amendment issued (in general) shall be addressed to all the prospective Bidder(s) who have purchased the Tender Document.  
Bidders are required to submit their Bid, **Procurement of Buffer Tank for Chilled Water System**  
“CONFIDENTIAL” and Tender # TE/544/KPD-MECH/ChWS/2018, “
- 1.4 The Purchaser does not take any responsibility for collecting the Bids from any Agency.
- 1.5 The Purchaser reserves the right to increase or decrease the quantities or may cancel any or all items shown in the Schedule of Requirement, without assigning any reason thereof.

- 1.6 The Purchaser Reserve the right to have the items inspected by its own representative, or by 3<sup>rd</sup> party at its own cost (if required).
- 1.7 It must be indicated in the offer that the quotation fully conforms to Technical Specifications and Terms and Conditions of the Tender.
- 1.8 The Purchaser reserves the right to accept or reject any Bid and to annul the bidding process and reject all the Bids at any time prior to award of Purchase Order without assigning any reason and without thereby incurring any liability to the affected bidder(s) or any obligation there under.
- 1.9 Unsolicited advice/clarifications and personal approaches by the Bidder at any stage of evaluation are strictly prohibited and shall lead to disqualification.
- 1.10 In the event that the Bidder submits an alternative Bid(s) whether in whole or against any of the items, a group or sub-group in addition to its Main Bid, the Bids must be marked as “Main Bid” and “Alternative Bid”. Alternative bid(s) which do not conform to the specifications, but meet the performance prescribed in, or the objectives of, the specifications may be submitted. However, only the Alternative Bid of the Bidder whose Main Bid is the lowest evaluated bid will be considered.
- 1.11 A Bidder, who wishes to have its Alternative Bid(s) considered on an equal basis with all other (Main) Bids, must submit a Bid Bond for each Alternative Bids, an Alternative Bid must be submitted in a sealed envelope clearly marked “Alternative Bid”, separate from the Main Bid.
- 1.12 The Bidder is expected to examine all instructions, forms, terms and specifications in the Bidding Documents. Failure to furnish all information required by the Bidding Documents or submission of a Bid not substantially responsive to Bidding Documents in every respect will result in the rejection of the Bid.
- 1.13 All prospective bidders are advised to read carefully all terms & conditions enunciated in the Tender Documents prior to filling / submission of their quotation.

## **2. BID PRICES:**

- 2.1. Firm Bid Prices must be quoted as per format of schedule of requirement (SOR).
- 2.2. Bidding form Annexure-B & B-1 must also be duly filled-in, stamped and signed by authorized representative of Bidder.
- 2.3. Prices must be quoted in Pakistani currency inclusive of all taxes and duties, indicating unit price and total Bid prices. GST must be quoted separately along with copy of GST Certificate. Bids offering prices in foreign currency will be rejected. Conditional bid / bid having any prices adjustment formula will also are rejected.
- 2.4. Prices must be quoted including all charges like handling, loading, transportation and un-loading, Octroi and Zila Tax etc. for delivery of material at Purchaser’s stores located at **KUNNAR/KPD-TAY FIELD**.
- 2.5. Quoted price shall be **valid for 120 days** from the opening date of the Financial Bid.
- 2.6. Technical brochure/literature confirming Size, Brand & Country of Origin of quoted items/material must be attached with the Technical Bid (where deemed necessary).
- 2.7. Any quotation not confirming to Clause 2.1 to 2.6 shall be rejected without any right of appeal.

### **3. EARNEST MONEY:**

- 3.1 The Bidder shall furnish, as part of his Bid, a Bank Draft/Call Deposit/Pay order/ Bank Guarantee (As per Annexure-C) in favor of Purchaser of Rs 40,000 (Rupees Forty Thousand Only) as Earnest Money with TECHNICAL Bid. Any Bid not accompanied by Earnest Money shall be rejected without any right of appeal.
- 3.2 Part Earnest Money or Crossed Cheque as Earnest Money is not acceptable.
- 3.3 The Earnest Money of un-successful Bidder(s) will be returned after award of Local Purchase Order to successful bidder(s). The Earnest Money of successful Bidder will be discharged/ returned upon Bidder's furnishing the required Bank Guarantee/ Performance Bond and executing the order/contract.
- 3.4 The Earnest Money of Bidder whose Bid is rejected will be returned forth-with.
- 3.5 The earnest Money may be forfeited:
  - 3.5.1 If a Bidder withdraws its Bid during the period of Bid validity.
  - 3.5.2 In case the successful Bidder fails to furnish performance bond.

### **4. SEALING AND MARKING OF BIDS:**

- 4.1. The Bidder shall furnish Technical & Financial bids in two separate sealed envelopes.
- 4.2. Technical Bids will be opened first.
- 4.3. Only Financial Bid of Technically responsive bidders will be opened publicly.
- 4.4. Financial Bids of technically non responsive bidders will be returned after award of Local Purchase Order to successful bidder(s).
- 4.5. The bid shall be submitted in a sealed envelope marked as under:

#### **Field Manager / Incharge Maintenance**

**Kunnar/KPD-TAY Field**

**C/O TCS Office Tando Jam Hyderabad Sindh -Pakistan**

**Oil & Gas Development Company Limited.**

Phone No. Direct: 92-22-2720752

Fax No. 022-2761410/ 022-2789410

E-mail: [kunnar@ogdcl.com](mailto:kunnar@ogdcl.com), [icmaintknr@ogdcl.com](mailto:icmaintknr@ogdcl.com)

- 4.6. The envelope shall also bear the word " CONFIDENTIAL" and following identifications:-

**Tender Enquiry TE/544/KPD-MECH/ChWS/2018**

**TECHNICAL/FINANCIAL BID(s) (INDICATE ONE ON EACH ENVELOPE)**

- 4.7. If the envelope is not marked, as instructed above, the Purchaser will assume no responsibility for the misplacement or premature opening of Bid.

## **5. DEADLINE FOR SUBMISSION OF BIDS:**

<b>Sr.#</b>	<b>Tender Enquiry No.</b>	<b>Description</b>	<b>Bids Submission Date &amp; Time</b>	<b>Bids Opening Date &amp; Time</b>
1	TE/544/KPD-MECH/ChWS/2018	Procurement of Buffer Tank for Chilled Water System	28.07.2018	28.07.2018
			10:00 HRS	10:30 HRS

All Bids must be delivered/ dropped in the Office Field Manager / Incharge Maintenance Kunnar/KPD-TAY Field on or before the prescribed deadline of 10:00 hrs on above mentioned date.

## **6. LATE BIDS:**

- 6.1 Any bid received by the Purchaser after the prescribed deadline for submission of bids will be rejected and returned un-opened to the bidder.

## **7. BID OPENING:**

- 7.1. OGDCL will open the Technical/Financial Bid(s), in the presence of bidder's representative(s) who may choose to attend on date, time & location mentioned above.
- 7.2. The bidder's names, bid prices (with or without discount) including bid price modification and bid withdrawals, if any, and the submission of requisite Earnest Money will be announced at the time of Financial bid opening.
- 7.3. OGDCL will examine the bids to determine whether they are complete, no computational errors have been made, the required sureties have been furnished, documents have been properly signed, and the bids are generally in order.
- 7.4. Arithmetical errors found will be corrected as follows:
- 7.4.1 Where there is a discrepancy between amount in figures and word, the amount in word will prevail.
- 7.4.2 Where there is a discrepancy between the unit price and the total amount derive from the multiplication of the unit price and the quantity, the unit price as quoted will govern, unless there is an obvious gross arithmetical error in unit price, in which event, the extended amount quoted would prevail.
- 7.4.3 In case the due date of bids opening falls on a holiday, the bids shall be opened on the next working day.

## **8. DETERMINATION OF RESPONSIVENESS:**

- 8.1. After opening of the bids, the purchaser will determine whether each bid is substantially responsive to the requirements of the bidding documents.

- 8.2. For the purpose of this clause, a substantially responsive bid is one, which conforms to all the terms and conditions of the bidding documents without material deviation. A material deviation is one which means in-consistent with the bidding document, affects in any substantial way the scope, quality or prescribed delivery schedule or which limits in any substantial way, the purchaser's right or the bidder's obligation under the contract.
- 8.3. A bid determined to be a non-responsive will be rejected by the purchaser and shall not subsequently be made responsive by the bidder by correction of the non-conformity.
- 8.4. The purchaser may waive any minor deviation non-conformity or irregularity in a bid, which does not constitute a material deviation, provided that the waiver does not prejudice or affect the relative standing order of other bidder(s).
- 8.5. To assist in determining a bid's responsiveness the bidder may be asked for a clarification of his bid. The bidder is not permitted, however, to change bid price or substance of his bid.

**9. ISSUANCE OF LOCAL PURCHASE ORDER (LPO):**

- 9.1. The purchaser will issue the local purchase order to the successful bidder whose bid is determined to be technically responsive and financially lowest evaluated.
- 9.2. Terms & Conditions (General) of LPO are available at Annexure-E.

**10. PERFORMANCE BOND:**

- 10.1 The successful bidder will have to submit a performance bond in the shape of bank guarantee equal to 10% of total value of order exclusive of GST, from any schedule bank in Pakistan as per format attached at Annexure-F within 15 days of the receipt of Purchase Order.
- 10.2 In case the successful bidder fails to furnish performance bond as per clause 10.1, the firm shall be debarred from participation in any future tender of the purchaser in addition to the action taken against such bidder as per clause 3.5(b).
- 10.3 The purchaser reserves the right to check the authenticity of performance bond from the concerned Bank.

**11. PAYMENT:**

- 11.1 Progressive Payments will be made as per following payment milestones on the completion of works:
- 11.2 100 % after delivery of material & punch list clearance and provisional acceptance by OGDCL/ Engineering Consultant



## **12.DELIVERY SCHEDULE:**

- 11.3 OGDCL is currently working on chilled water system and buffer Tank is required on site within shortest possible time. Bidders are encouraged to please quote their best possible delivery period considering day-night shift fabrication.  
OGDCL preferred delivery period is within **TWO-THREE WEEKS** after issuing the LOI (Letter of Intent) nevertheless, bidders are requested to please quote their best shortest possible achievable delivery period.  
Maximum allowable time for Ex-Works tank supply is **FOUR WEEKS**.  
OGDCL will visit bidders works for design review meeting specially to finalize Fabrication Drawings to support delivery schedule.

## **13. EXTENSION IN THE DELIVERY / COMPLETION PERIOD:**

- 13.1. Providing of the services shall be made by the supplier/contractor in accordance with the given delivery schedule in purchase/work order.
- 13.2. The supplier may claim extension of the time limits as set forth in the purchase order in case of:-
- 13.1.1 Changes in Scope of Work or in the specifications of goods, material & equipment by the OGDCL.
- 13.1.2 Delay in provision of clarifications regarding material, drawings and services by the OGDCL
- 13.1.3 Force Majeure pursuant to clause 15.
- 13.3. Justified reasons subject to a written request high-lighting the same within a period of seven working days prior to expiry of delivery period mentioned in Purchase Order.
- 13.4. It should be noted that a request for extension in delivery/ completion period shall be considered only if the supplier/ contractor agrees in writing to pay any increase in taxes or any other charges levied by the government during the extended delivery period. OGDCL shall not bear any additional price increase during the extended period.
- 13.5. In case of extension in delivery period, the supplier/ contractor will extend validity of Performance Bond accordingly at his cost.
- 13.6. If the supplier/ contractor fails to supply/ complete the ordered services for any reason, within stipulated time, his Performance Bond with the purchaser shall be forfeited and material shall be purchased from elsewhere at his risk and cost.

## **14. PENALTY.**

- 14.1 For failure to comply with delivery schedule of purchase order, penalty will be imposed on defaulting supplier as under:-

14.1.1 @ 1 % of the cost of entire order (excluding GST) or of such items as remains unsupplied for every day up to maximum of 15% for 10 days exceeding the delivery period.

14.1.2 If the material is not supplied even after paying penalty for 10 (ten) consecutive days. OGDCL reserves the right to cancel supply order and to obtain the required items from elsewhere at your risk and cost.

14.1.3 In case suppliers fails to deliver the goods against order, the purchaser reserves the right to claim interest/financial charges from the supplier on the amount of advance paid to him as per terms/conditions of order for such a period the supplier has detained the amount of advance.

## **15 FORCE MAJEURE:**

- 15.1. The supplier shall not be liable for penalty for delay in delivery of ordered goods, if, and to the extent delay in delivery or other failure to perform his obligation under the purchase order, of being the result of occurrence of Force Majeure i.e. causes such as natural calamities, war, civil disturbance, military action, fire as well as other circumstance proved to the satisfaction of the purchaser to be beyond the reasonable control of the supplier, which may impede the fulfillment of the obligations under the purchase order.
- 15.2. The supplier shall notify the purchaser promptly of the occurrence of Force Majeure and submit his case in writing within 07 days of such occurrence.
- 15.3. If any of the party is prevented to fulfill its assumed obligations by Force Majeure of constant duration of at least one month, the party shall meet for negotiation. If no satisfactory agreement is reached within a period of two months from the commencement of the Force Majeure conditions, either party shall have the right to cancel the purchase order with immediate effect.

## **16. INSPECTION AND TEST:**

- 16.1 The OGDCL's representative(s) shall have the right to inspect and/or test the goods to confirm their conformity with respect to specifications mentioned in the Purchase Order. The representative of Field Manager Kunnar/KPD-TAY Field will witness the inspection (where so required).
- 16.2. Should any inspected or tested goods fail to conform to the specifications the purchaser shall reject them and supplier shall replace the rejected goods. All costs incurred on such replacement shall be entirely born by the supplier.
- 16.3. Rejected material/ work shall be moved/ replaced by the supplier within 07 days from the receipt of letter/fax issued by the Field Manager Kunnar/KPD-TAY Field. The supplier shall be liable for the storage charges @ ½% (half percent) of the cost of rejected material on every day basis, if the same is not removed within seven days.
- 16.4. Acceptance/rejection of the material by 3rd party will be final and binding on both the parties.

## **17. WARRANTY:**

- 17.1. The supplier/ contactor shall warrant that all supplied material/ Services under purchase order shall be according to specifications given in Purchase Order and approved drawings/design etc. Any deviation in material, drawing/design (where applicable) will be replaced by the Supplier/ Contactor at his cost.

- 17.2. OGDCL shall promptly notify the supplier in writing, of any claims arising under this warranty.
- 17.3. The supplier/ contactor will invariably provide warranty/guarantees

**18. QUALIFICATION OF SELECTED BIDDERS:**

- 18.1. OGDCL will determine to its satisfaction whether the bidder selected as having submitted the lowest evaluated, technically responsive bid qualifies to satisfactorily perform the order.
- 18.2. The determination will take into account the bidders financial, technical & production capabilities, availability of items ordered for. The bidder shall provide necessary documents as proof along with the bid.
- 18.3. Any affirmative determination will be a pre-requisite for award of the purchase order to the bidder. A negative determination will result in rejection of the bid.
- 18.4. OGDCL reserves the right at the time of award of order to increase or decrease to a reasonable extent in the quantity of goods specified in the Tender Document without any change in price or other terms and conditions.

**19. LITIGATION CLAUSE:**

- 19.1 Without prejudice to other right of the Company, tenderers, their subcontractors and other suppliers shall be disqualified from participating in the bidding process if:
- 19.1.1 They are or have been at any time during the past five year, involve in litigation, arbitration or any other dispute or even that may in the opinion of the company, have material adverse effect on the Tender’s ability to perform the Contract.
- 19.1.2 Its involvement in litigation is chronic.
- 19.1.3 Its past conduct or execution of works under contract has been poor.

**20. You are encouraged to inform Managing Director & Head of Department on the following addresses/contacts, in case where any OGDCL employee ask for any type of favor whether monetary or in kind:-**

DESIGNATION	ADDRESS	TEL #	FAX #	E. MAIL
Managing Director	OGDCL House	051-9209701	051-9209708	
Field Manager	Kunnar/KPD-TAY Field	022-2761401	022-2761410	<a href="mailto:kunnar@ogdcl.com">kunnar@ogdcl.com</a>

Field Manager / Incharge Maintenance  
**Kunnar/KPD-TAY Field**  
**C/O TCS Tando Jam Hyderabad Sindh -Pakistan**  
**Oil & Gas Development Company Limited.**  
 Phone No. Direct: 92-22-2720752  
 Fax No. 022-2761410  
 E-mail: [icmaintknr@ogdcl.com](mailto:icmaintknr@ogdcl.com)



# KPD-TAY GAS & LPG PROCESSING PLANT



**OIL AND GAS DEVELOPMENT COMPANY LIMITED  
KUNNAR/KPD-TAY FIELD  
SCHEDULE OF REQUIREMENT**

**TENDER ENQUIRY # TE/544/KPD-MECH/ChWS/2018  
Procurement of Buffer Tank for Chilled Water System**

**Subject: Supply of Buffer Tank**

Sr No	Tag No.	Equipment	Qty	Unit	Unit Rate (Rs)		Total Rs
					(Exc. of GST)	(Inc. of GST)	
1	-	Buffer Tank (As per Attached Scope of Work, Sketches and Data Sheet)	1	EA			

**Note:** Refer to mentioned Scope of Work Document, Sketches and Data Sheets (attached) for details.

## **CHILLED WATER BUFFER TANK SUPPLY SCOPE OF WORK / TOR**

<b>PROJECT NO.</b>	KT-ECR-1001				
<b>PROJECT TITLE:</b>	T2 Dehydration Plant Interim Chilled Water Supply System				
<b>DOCUMENT NO:</b>	KT-ECR-1001-97-ME-SOW-0001	<b>DATE:</b>	08-07-2018	<b>REV</b>	0
<b>DOCUMENT TITLE:</b>	CHILLED WATER BUFFER TANK SUPPLY SCOPE OF WORK	<b>REV DESCRIPTION:</b>	ISSUED FOR TENDER		

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## INTRODUCTION

Oil and Gas Development Company Ltd (OGDCL) is Pakistan's National Oil & Gas Exploration and Production Company. OGDCL is currently operating Country's largest Oil & Gas sector including saleable Oil & Gas Processing Plants.

KPD-TAY Integrated Development Project Phase-II is a Gas & LPG Processing Plant, located in Hyderabad District about 25 km away from Hyderabad and approx 195 km from Karachi, Sindh Province of Pakistan. The plant is comprised of two gas processing trains installed in the close proximity of Oil wells. The processing plant is connected with the wells through gas gathering network which terminates into slug catcher at the process plant premises.

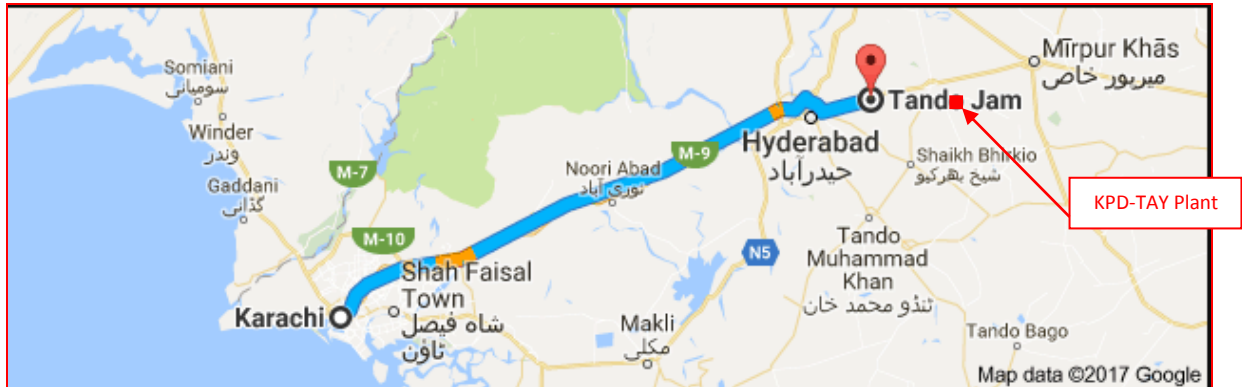


Figure 1: Location of the Plant

OGDCL intends to engage services of experienced Company for the design and supply of Chilled Water Buffer Tank, to be installed at KPD-TAY Gas & LPG Processing Plant.

## BUFFER TANK DESIGN AND SUPPLY SCOPE

Buffer tank will be designed and fabricated in accordance with attached process data sheet No. 6649-01-S1224-001-01.

Scope of work include, but not limited to following:

### 2.1. FABRICATION DRAWINGS OF OVERALL TANK INCLUDING ACCESS LADDER

Fabrication drawings for tank will be prepared by a qualified Engineer in accordance with attached Process Data Sheet. The design engineer must have minimum five years of design experience. The design company will maintain engineering design deliverables quality in compliance with ISO-9001 requirements.

Operators access ladder and roof top railing shall be installed in accordance with industry standards, keeping in view people and operations safety. The ladder shall be provided with cage and fall protection barrier (preferably hinged steel bar/ pipe) at roof top level.

The key fabrication drawings including nozzle orientation etc. will be submitted to OGDCL for approval prior to commence fabrication of related parts.

OGDCL may propose joint drawings review meeting at bidder's office/works location to minimize the review cycle time, keeping in view stretched delivery target.

**NOTE:** The approval of drawings by OGDCL shall not relieve the Tank Supply Company from their contractual obligations against design, fabrication, painting, QA/QC etc.

### 2.2. TANK FABRICATION

Tank fabrication and welding will be carried out in accordance with OGDCL approved drawings, applicable design/ fabrication codes, industry standards and good practices. welders' qualification and procedures will be submitted to OGDCL.

### **2.3. TANK NOZZLES, MAN WAY ACCESS LADDER AND ROOF TOP RAILING**

Tank nozzles pressure rating will be in accordance with process data sheet and must be manufactured by reputed manufacturer in accordance with ANSI B 16.5. Tank Supply company will submit evidence of purchase order for all the nozzles to demonstrate OEM origin/name.

The nozzles and man-way will be installed with suitable pipe extension length to facilitate minimum 4" insulation and cladding installation and subsequent pipe work.

Man-way cover will be installed with hooks for manual handling at the time removal and installation. Man-way cover will be supplied with asbestos free gaskets and galvanized or zinc plated stud bolts.

Access ladder and railing will be installed in accordance with approved design drawings and only galvanized or zinc plated structure and stud bolts shall be used.

### **2.4. SUPPLY OF ANCHOR BOLTS**

Anchor bolts for civil foundation will be supplied as part of this scope and to be transported to site soon after finalization of design. Anchor bolt pockets will be left in the foundation at the time of concrete pouring, however the dimensions of anchor pocket and orientation will be advised by the Tank Supply Company on the related drawings.

### **2.5. SURFACE PREPARATION, COATING AND PAINTING**

Surface preparation (inside/outside) using sand or grit blasting to near white surface finish level to achieve SA 2-1/2 or NACE-2 standard.

Coating/painting (inside/outside) will be carried out in accordance with attached specification no. 165- 4-SPM-058.

Coating/painting will be carried out all around inside and outside of tank including buffer zone plates.

The ladder and railing will be painted in bright yellow color for high visibility purpose.

### **2.6. TESTING**

The testing will be carried out in accordance with design code API 650 and other agreed/ OGDCL approved procedures and methodologies.

### **2.7. INSULATION**

Suitably designed supports/brackets for minimum 4" thick Polyurethane insulation shall be installed on the overall circumference of tank as part of this scope.

Supply and installation 3" thick polyurethane between weir plates of tank buffer zone as specified in process data sheet.

Supply and installation of Insulation & Cladding on the outer side of Tank is NOT in the scope of this tender.

### **2.8. TRANSPORTATION TO SITE**

Transportation of tank from works to plant site will be arranged by OGDCL at own cost. However Tank supply company shall have following responsibilities under this SOW:

- Requirement of type and size of trailer for tank safe transportation will be advised to OGDCL.



- Arrangements of crane for loading of tank on to the trailer at fabrication site/works.
- Supply of cradles./ frame etc. for safe transportation of tank to site. (These cradles/ frames etc. will be returned to the Tank Supply Company after unloading of tank at site).

The gas plant is located near TANDO-JAM and the access road is branched-off from Hyderabad – Mirpurkhas main Road. The access road to plant is black-topped in good condition and being used for LPG Tankers and Oil Tankers transportation on daily basis)(refer [link for plant location map](https://www.google.com/maps/place/Kunnar+LPG+Plant+%26+Oil+Field/@25.4006602,68.5560658,12.75z/data=!4m5!3m4!1s0x0:0x3e7b3170875b85bc!8m2!3d25.3816779!4d68.5820995))(<https://www.google.com/maps/place/Kunnar+LPG+Plant+%26+Oil+Field/@25.4006602,68.5560658,12.75z/data=!4m5!3m4!1s0x0:0x3e7b3170875b85bc!8m2!3d25.3816779!4d68.5820995>)

OGDCL will arrange crane for tank unloading from Trailer to foundation at the plant site.

### **DELIVERY SCHEDULE**

OGDCL is currently working on chilled water system and buffer Tank is required on site within shortest possible time. Bidders are encouraged to please quote their best possible delivery period considering day-night shift fabrication.

OGDCL preferred delivery period is within TWO-THREE WEEKS after issuing the LOI (Letter of Intent) nevertheless, bidders are requested to please quote their best shortest possible achievable delivery period.

Maximum allowable time for Ex-Works tank supply is FOUR WEEKS.

OGDCL will come for design review meeting in Fabrication Drawings Office to support delivery schedule.

### **SCOPE OF WORK EXCLUSIONS**

Transportation from works to plant.

Crane for onsite unloading of tank.

Any kind of instrumentation and controls.

Process discipline related design of tank (OGDCL will yet approve nozzles orientation and elevation drawings to be submitted under this work scope).

Tank nozzles companion flanges, gaskets and stud bolts. (man-way gaskets and stud bolts to be supplied under Tank supply scope).

### **EXCEPTIONS, DEVIATIONS AND EXCLUSIONS**

Bidders to please mention any of the exceptions, deviations, exclusions in Annexure-2 of this document.

### **QA/QC AND TESTING REQUIREMENTS**

All QA/QC to be carried out in accordance with relevant design code (NDT/ DPT etc.)

Hydrostatic testing at ambient conditions using potable water.

### **DOCUMENTS TO BE SUBMITTED WITH TECHNICAL BID**

CV for design engineer.

Bidders are requested to please submit 2~3 Tank "Sample Fabrication Drawings" for information to demonstrate design deliverables quality.

Tank Delivery schedule.

ITP (Tank inspection and test plan).

#### **BIDS SUBMISSION AND EVALUATION PROCESS**

Bidders are required to submit Technical (unpriced) and Financial Bid (Priced) in two separate sealed envelopes. Technical bids will be opened first and evaluation will be carried out in accordance with criteria defined in Annexure-1. Financial bids will be opened only for the technically qualified/compliant bidders.

#### **DESIGN DOCUMENTS TO BE SUBMITTED TO OGDCL AFTER AWARD OF CONTRACT**

Following drawings and other documents are envisaged to be supplied after award of contract, however bidder may propose changes in their technical bid submission, if appears necessary:-

- i. Fabrication drawings of all parts of tank.
- ii. Nozzles orientation drawings .
- iii. Tank base anchor bolts drawing showing orientation/ template.
- iv. Railing and Caged Ladder Details
- v. Insulations Support Details
- vi. MDR (manufacturer's data dossiers)

Tank Supply Company will submit quality inspection dossier containing all the fabrication drawings/ documents, Quality Inspection Plans, QA/QC records/reports.

The dossier will be submitted in the following order.

- Two folders in hard copy form.

#### **COMMERCIAL BID SUBMISSION**

Commercial bid to be submitted in accordance with Annexure-3 (Commercial Bid Format)

#### **REFERENCE DOCUMENTS**

13.1 TANK PROCESS DATA SHEET NO. 6649-01-S1224-001-01

13.2 SPECIFICATION FOR PAINTING, LINING & SURFACE PREPARATION1 NO. 65- 4-SPM-058.

## ANNEXURE-1

### TECHNICAL BIDS EVALUATION CRITERIA

This criteria is developed to evaluate the technical bids to be submitted for design, fabrication and supply of Buffer Tank.

Category	Criteria	Qualification Points	Requirement/ Reference
1	Minimum five years experience as Design Engineer for Pressure vessels/ tanks and/or Atmospheric vessels and/or Tanks design.	30	<p><b><u>Bidders to submit:</u></b></p> <p>1.1 CV of design engineer clearly stating design related experience and description of design work.</p> <p><b><u>NOTE:</u></b> Bidders must obtain 30 points to achieve technical bid compliance requirement.</p>
2	Minimum five years experience as Company for Heavy Structural Steel Works OR Pressure vessels/ tanks OR Atmospheric vessels OR Tanks fabrication.	40	<p><b><u>Bidders to submit:</u></b></p> <p>2.1 Company Experience profile/description of their work completed under category of for Heavy Structural Steel Works OR Pressure vessels/ tanks OR Atmospheric vessels OR Tanks fabrication etc.</p> <p><b><u>NOTE:</u></b> Bidders must obtain 40 points to achieve technical bid compliance requirement.</p>
3	Delivery schedule	20	<p><b><u>Bidders to submit:</u></b></p> <p>3.1 Tank delivery schedule/duration stating minimum possible delivery period but not more than FOUR weeks for delivery EX-Works.</p> <p>3.2 It must be noted that countdown for delivery period will start from issuance of LOI (letter of intent by OGDCL via email)</p> <p><b><u>NOTE:</u></b> Bidders must obtain 20 points to achieve technical bid compliance requirement.</p>
4	Company Business Registration requirements - Company must have NTN. - Company must be registered for Sales Tax.	10	<p><b><u>Bidders to submit:</u></b></p> <p>1.1 CV of design engineer clearly stating design related experience and description of design work.</p> <p><b><u>NOTE:</u></b> Bidders must obtain 30 points to achieve technical bid compliance requirement.</p>

## ANNEXURE-2

### EXCEPTIONS, DEVIATIONS AND EXCLUSIONS

#### NOTES:

1. Bidders to please submit detailed Exceptions, Deviations and Exclusions (Including those related to Financial bid, in un-priced format) along with Technical Bids under this Annexure .
2. No further exception will be allowed to the Bidder, if asked after award of Contract, but not mentioned this annexure.
3. In case of no exceptions, bidders to please mention " **NO EXCEPTIONS, DEVIATIONS AND EXCLUSIONS UNDER ANNEXURE 2**".

## ANNEXURE-3

### COMMERCIAL BID FORMAT

Bidders are required to submit their financial bid in the following format.

SR. NO	SCOPE OF WORK/ SUPPLY DESCRIPTION	COST ON LUMP SUM BASIS IN PAK RS.	NOTES
1	Buffer Tank fabrication (mechanical) drawings, all types of materials supply, fabrication, QA/QC/NDT, surface preparations, painting, insulation brackets, foundation anchor bolts (for civil foundation), loading on trailer at works.		
3	All types of taxes, as applicable		
	<b>TOTAL COST</b>		

**Note:**

1. Quoted prices shall be inclusive of all taxes, duties, levies, and charges. ICT/PST (which ever applicable) on services/ equipment supply shall be quoted as separate line item accordingly to applicability on each line item on the basis of province wherein the services are being rendered
2. Any special terms and conditions related to financial bid, which could lead to additional and/or hidden costs to OGDCL at later stage, must be mentioned in technical bid Annex-2 (EXCEPTIONS, DEVIATIONS AND EXCLUSIONS) in an un-priced format.
3. 100% payment shall be made through account payee cheque after completion of study and submission of final report along with invoice duly accepted/approved by OGDCL. Taxes shall be deducted at source.

## ANNEXURE-A-1

### GENERAL TERMS AND CONDITIONS:

- A. FINANCIAL BIDS OF ONLY TECHNICALLY RESPONSIVE BIDDERS WILL BE OPENED PUBLICLY.
- B. AFTER TENDER OPENING "TECHNICAL BIDS" WILL BE REVIEWED. THE BIDS WILL BE BROUGHT TECHNICALLY AT PAR BY SEEKING CLARIFICATIONS. THE BIDDERS WILL **NOT** BE ASKED FOR ANY PRICE CHANGE IN THEIR FINANCIAL BIDS DUE TO CERTAIN CLARIFICATIONS AND SUBSEQUENT CHANGE IN THEIR TECHNICAL PROPOSALS. THE BIDDERS WILL **NOT** BE ALLOWED TO SUBMIT SUPPLEMENTARY PRICE PROPOSALS IN A SEPARATE SEALED ENVELOPE TO MAKE IT A PART OF THE ALREADY SUBMITTED UNOPENED FINANCIAL BIDS AND TO ADJUST THEIR QUOTED PRICE SUBSEQUENTLY AFFECTED DUE TO CHANGE IN TECHNICAL PROPOSALS.
- C. SEALED FINANCIAL BIDS OF TECHNICALLY NON-RESPONSIVE BIDDERS WILL BE RETURNED UN-OPENED.
- D. OGDCL RESERVES THE RIGHT TO REJECT ANY OR ALL THE BIDS WITHOUT ASSIGNING ANY REASON.
- E. QUOTED PRICES MUST BE FIRM (INCLUSIVE OF GST, OTHER TAXES, AND DUTIES).
- F. OGDCL RESERVES THE RIGHT TO EVALUATE THE BID(S) EITHER ITEM-WISED OR FULL PASKAGE BASIS WITHOUT ASSIGNING ANY REASON. TO QOUTE COMPETITIVE PRICES FOR ALL OR ANY ITEMS ENABLE COMPANY TO DECIDE PURCHASE.
- G. BIDDERS TO SUBMIT THEIR COMPANY PROFILES, EXPERIENCE OF SIMILAR SUPPLIES IN PAKISTAN ALONG WITH TECHNICAL BIDS

**BIDDING FORM (TECHNICAL BID)**

Oil & Gas Development Company Limited  
Kunnar/KPD-TAY Field  
C/O TCS office Tando JAM Distt Hyderabad

Gentlemen,

1. Having examined the Bidding Documents including the specifications, the receipt of which is hereby acknowledged, we the undersigned, offer to supply & deliver «Description» in conformity with drawings, specifications of goods and conditions of Tender Document.
2. We undertake, if our bid is accepted, to commence delivery within \_\_\_\_\_ days (Please specify days) from the date of receipt of your firm Purchase Order.
3. If our bid is accepted, we will provide the Performance Bond equal to 10% of the Purchase Order excluding GST, for due performance of the purchase order.
4. We agree to abide by all the terms & conditions of the tender for the period of \_\_\_\_\_ days (*Please specify days*) from the date fixed for receiving the same & it shall remain binding upon us and may be accepted at any time before the expiry of that period or any extension thereof agreed by us.
5. Until a formal Purchase Order is placed, this bid, together with your written acceptance thereof, shall constitute a binding contract between us. We understand that you are not bound to accept the lowest priced or any bid you may receive.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 200\_\_\_\_\_

(Signature)  
(In the capacity of)

Duly authorized to sign Bid for and on behalf of \_\_\_\_\_

(Signature of Witness)

Name: - \_\_\_\_\_

Address:- \_\_\_\_\_

\_\_\_\_\_

**BID SUMMARY SHEET**  
**TENDER NO. (TE/544/KPD-MECH/ChWS/2018)**  
**(TO BE ATTACHED WITH TECHNICAL BID)**

1. Bidder Name \_\_\_\_\_
- a. Address, Phone & Fax No \_\_\_\_\_
- b. E-mail address \_\_\_\_\_
2. Manufacturer Name & \_\_\_\_\_
- a. Country of Origin: \_\_\_\_\_
- b. (Where required) \_\_\_\_\_
3. Items Quoted:(give serial no. only): \_\_\_\_\_
4. Price Validity: \_\_\_\_\_
5. Offered Delivery/ Completion Period: \_\_\_\_\_
6. GST Registration No. \_\_\_\_\_
7. Bidding Form (Annexure-B Attached with Technical Bid):      Yes      No
8. Bid Bond Attached with **TECHNICAL** Bid:                              Yes      No
9. Any Deviation: \_\_\_\_\_

Signature \_\_\_\_\_

Name & Designation \_\_\_\_\_



**BIDDING FORM (FINANCIAL BID)**

**Oil & Gas Development Company Limited**  
**Kunnar/KPD-TAY Field**  
**C/O TCS office Tando JAM Distt Hyderabad.**

Gentlemen,

1. Having examined the Bidding Documents including the specifications, the receipt of which is hereby acknowledged, we the undersigned offer to supply & deliver «Description» in conformity with drawings, specifications of goods and conditions of Tender for the sum of Rs. \_\_\_\_\_ (Total bid amount in words) (inclusive of all taxes) or such other sum as may be ascertained in accordance with the said conditions.

2. Until a formal Purchase Order is placed, this bid, together with your written acceptance thereof, shall constitute a binding contract between us. We understand that you are not bound to accept the lowest priced or any bid you may receive.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 201\_\_\_\_

(Signature)  
(In the capacity of)

Duly authorized to sign Bid for and on behalf of \_\_\_\_\_

(Signature of Witness)

Name: - \_\_\_\_\_

Address: - \_\_\_\_\_

\_\_\_\_\_

**BID SUMMARY SHEET**  
**TENDER NO. (TE/544/KPD-MECH/ChWS/2018)**  
**(TO BE ATTACHED WITH FINANCIAL BID)**

1. Bidder Name \_\_\_\_\_  
Address, Phone & Fax No \_\_\_\_\_  
E-mail address \_\_\_\_\_
2. Manufacturer Name & \_\_\_\_\_  
Country of Origin: \_\_\_\_\_  
(Where required)
3. Items Quoted: (give serial no. only): \_\_\_\_\_  
\_\_\_\_\_
4. Price Validity: \_\_\_\_\_
5. Total FOR (Destination) Price (Without GST): Rs \_\_\_\_\_
6. Total FOR (Destination) Price (With GST): Rs \_\_\_\_\_
7. Amount of Bid Bond (without GST): Rs \_\_\_\_\_
8. Validity of Bid Bond (Expiry Date): \_\_\_\_\_
9. Offered Delivery Period: \_\_\_\_\_
10. Payment Terms: \_\_\_\_\_
11. GST \_\_\_\_\_ Registration \_\_\_\_\_ No. \_\_\_\_\_
12. Bidding Form (Annexure-B-1 attached with TECHNICAL bid): Yes No
13. Any Deviation: \_\_\_\_\_

Signature \_\_\_\_\_

Name & Designation \_\_\_\_\_

**BANK GUARANTEE AS EARNEST MONEY**

Guarantee # : \_\_\_\_\_  
Date of Issue : \_\_\_\_\_  
Date of Expiry : \_\_\_\_\_  
Amount : \_\_\_\_\_

**Oil & Gas Development Company Limited  
Kunnar/KPD-TAY Field  
C/O TCS Office Tando JAM Distt Hyderabad**

In consideration of \_\_\_\_\_  
Hereinafter called "THE BIDDER" HAVING SUBMITTED THE ACCOMPANYING Bid and  
in consideration of value received from (the bidder above), we hereby agree to undertake as  
follows:

1. To make unconditional payment of Rs. \_\_\_\_\_  
(Rupees \_\_\_\_\_) up on your written  
demand without further recourse, question or reference to the BIDDER or any other  
person in the specified Bid after opening of the same for the validity thereof or if no such  
period be specified, within 120 days after the said opening or if the Bidder, having been  
notified of the acceptance of his bid by the Purchaser during the period of bid validity:
  - a) Fails or refuses to execute the Purchase Order in accordance with the instructions  
to the Bidders, or
  - b) Fails or refuses to furnish Performance Bond in accordance with the instructions  
to Bidders.
2. To accept written intimation(s) from you as conclusive and sufficient evidence of the  
existence of a default or non-compliance as aforesaid on the part of the BIDDER and to  
make payment accordingly within 03 (three) days of receipt of the written intimation.
3. No grant of time or other indulgence to or composition or arrangement with the Bidder in  
respect of aforesaid Bid with or without notice to us shall affect this Guarantee and our  
liabilities and commitments hereunder.
4. This guarantee shall be binding on us and our successors in interest and shall be  
irrevocable.

**(BANKER)**

**DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC.**  
**CERTIFICATE**

Submitted to OGDCL with the reference to Purchase Order No. \_\_\_\_\_

---

Hereby declares its intention not to obtain or induce the procurement of any contract, right, interest, privileges or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any corrupt business practice.

Without limiting the generality of the foregoing, the Seller/ Supplier represents and warrants that it has fully declared the brokerage, commission, fees etc., paid or payable to anyone and not given or agreed to give and shall not be given or agree to give to anyone within or outside Pakistan either directly or indirectly through any national or juridical person, including its affiliate, agent, associate, broker, consultant, briber, finder's fee or kickback, whether described as consultant fee or otherwise, with the object of obtaining or including the procurement of a contract right, interest, privilege or other obligation or benefit in whatsoever form from GOP except that privilege or other obligation or benefit in whatsoever form from GOP except that which has been expressly declared pursuant hereto.

The Seller/ Supplier certifies that it has made and will make full disclosure of all agreement and arrangements with all persons in respect of or related to the transaction with GOP and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

The Seller/ Supplier accepts full responsibility and strict liability for making any false declaration not making full disclosure, mis-representing facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right interest, Privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other rights and remedies available to GOP under any law, contract or other instrument, be voidable at the option of GOP.

Notwithstanding any rights and remedies exercised by GOP in this regard, the Seller/ Supplier agrees to indemnify GOP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GOP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by the Seller/ Supplier as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GOP.

For & On Behalf of  
Seller/ Supplier



**OIL & GAS DEVELOPMENT COMPANY LTD**

Oil & Gas Development Company Limited  
Kunnar/KPD-TAY Field,

C/O TCS Office Tando Jam Hyderabad Sindh-Pakistan

TEL: : 92 022-2761407  
FAX: : 92 022-2761410  
EMAIL: : [icmaintknr@ogdcl.com](mailto:icmaintknr@ogdcl.com)

Web Site: [www.ogdcl.com](http://www.ogdcl.com)  
GST No: 07-02-2802-001-55

**LPO No : TE/544/KPD-MECH/ChWS/2018**

ISSUED ON : \_\_\_\_\_

M/s \_\_\_\_\_,  
\_\_\_\_\_  
\_\_\_\_\_.

**SUBJECT: LOCAL PURCHASE ORDER.**

Dear Sir,

Ref your quotation dated \_\_\_\_\_ opened on \_\_\_\_\_ against our  
Press Tender/Tender Enquiry/Fax Enquiry # PROC-L ( ) \_\_\_\_\_  
Dated \_\_\_\_\_ regarding procurement of \_\_\_\_\_.

We feel pleasure in placing an order on you for the supply of stores given below. Terms  
and Conditions of supply are noted below and on reverse.

A/C CODE: \_\_\_\_\_

INDENT No. \_\_\_\_\_ DT. \_\_\_\_\_

FOR: (LOCATION \_\_\_\_\_ ) DEPARTMENT \_\_\_\_\_

S. NO.	DESCRIPTION	QTY	UNIT	INDEX NUMBER	UNIT RATE (RUPEES)		TOTAL (RUPEES)
					(EXCL OF GST)	(INCL OF GST)	
(RUPEES ONLY)					GRAND TOTAL: (INCLUSIVE OF % GST)		

**TERMS & CONDITIONS:**

- DELIVERY PLACE & PERIOD:** AT OUR \_\_\_\_\_ WITHIN \_\_\_\_\_ AFTER ISSUANCE OF LPO.
- PAYMENT CLAUSE:**
  - PAYMENT AFTER DELIVERY (OR)
  - PAYMENT AGAINST DELIVERY (OR)
  - \_\_\_\_\_ % ADVANCE PAYMENT AGAINST BANK GUARANTEE.
- PERFORMANCE BOND:** 10% PERFORMANCE BOND IN SHAPE OF BANK GUARANTEE AS PER CLAUSE # \_\_\_\_\_ OF TENDER DOCUMENTS MUST BE SUBMITTED WITHIN 10DAYS.
- INSPECTION:** .....
- PLEASE ACKNOWLEDGE RECEIPT OF THIS ORDER IMMEDIATELY ACKNOWLEDGEMENT AND/OR PERFORMANCE, PARTIAL OR COMPLETE, OF THIS PURCHASE ORDER SHALL CONSTITUTE THE SUPPLIER/SELLER'S ACCEPTANCE OF ALL TERMS AND CONDITIONS OF THIS PURCHASE ORDER WITHOUT REGARD TO AND IN SUPERSESSION OF ANY AND ALL PREVIOUS CORRESPONDENCE/ DOCUMENTATION BETWEEN THE PARTIES.

for **OIL & GAS DEVELOPMENT COMPANY LTD.**

## **GENERAL TERMS AND CONDITIONS**

1. **GENERAL:** These terms and conditions shall form an integral part of this Local Purchase Order and both the Supplier/Seller and the Purchaser shall be bound by all the provisions contained hereunder.
2. **DELIVERY:**
  - a. The material strictly according to specification must be delivered through Delivery Challan in triplicate at the place and within the time mentioned in this order (on reverse) by you at your own expenses {excluding a grace period of 10 (Ten) days for postal delivery of this Purchase Order}.
  - b. Time is of the essence of this order.
3. **EXTENSION IN SUPPLY PERIOD:** Supply period may be extended in exception cases provided that;
  - a. Force Majeure case is established by the Supplier.
4. **INSPECTION:** All items of this order will be subject to acceptance/rejection by the Inspection Committee/3<sup>rd</sup> Party Inspector (if required), who will give its decision within 07 days of receipt of material. Rejected material shall be removed / replaced by the Supplier within 07 days from the date of receipt of letter/fax, issued by the Field Manager KPD-TAY. The Supplier will be liable to pay storage charges @ ½ % of the cost of rejected material on every day basis if the same is not removed within 07 days. After 10 days the penalty will be charged at the rate of 5% per day with the supplier's maximum liability under this clause not to exceed 15% of the total value of the Purchase Order.
5. **PENALTY:** For failure to comply with Delivery Clause, penalty shall be imposed on the Supplier as under:
  - a. @ ½ % of cost of entire order or such items as remain un-supplied for every day upto a maximum of 15% for 10 days exceeding the delivery period.
  - b. If the material is not supplied even after paying penalty for 10 (ten) consecutive days. OGDCL reserves the right to cancel the supply order and to obtain the required items from elsewhere at your risk and cost.
6. **DOCUMENTATION FOR PAYMENT:** Following documents must be provided after receipt of Local Purchase Order (LPO) and payment will be processed only after receipt of said certificates:
  - a. National Tax Number (NTN), General Sales Tax (GST) and Professional Tax Paid Certificates must be provided by the firm immediately after receipt of Local Purchase Order (LPO) and payment will be processed only after receipt of said certificates.
  - b. Commercial Invoice having NTN/CNIC Numbers
  - c. Sales Tax Invoice
  - d. Professional Tax Paid Certificate
  - e. Copy of valid Tax Exemption Certificate (if any)
  - f. Delivery Challan
7. **You are encouraged to inform the M.D. and Head of Deptt (s) on the following addresses/ contacts, in case where any OGDCL employee asks for any type of favour whether monetary or in kind:**

DESIGNATION	ADDRESS	TEL #	FAX #	E. MAIL
MANAGING DIRECTOR	OGDCL HOUSE, JINNAH AVENUE, ISLAMABAD	051- 9209701	051- 9209708	
I/C Mechanical Section	Kunnar/KPD-TAY Field	022-2720752	022-2761410	icmaintknr@ogdcl.com
8. **GOVERNING LAW:** This Local Purchase Order and any matter relating thereto shall be governed by the laws of Pakistan.
9. **WARRANTIES:** Supplier/Seller warrants that all goods, material, equipment or services furnished hereinabove will conform strictly to the Purchaser's specifications.
10. **TITLE:** Supplier/seller warrants that the goods, material, equipment shall be delivered free from any and all security interests, liens, encumbrances and claims of any nature.
11. **COMPLIANCE WITH LAWS:** Supplier/seller agrees to indemnify the Purchaser for any loss, damage or cost suffered by the Purchaser as a consequence of the Supplier/seller's failure, deliberate or otherwise, to comply with any applicable laws, rules, regulations or orders/directives of any public sector entity and/or Government.
12. **ARBITRATION:** Any dispute, difference or question arising out of or in respect of this Purchase Order shall be settled by arbitration in accordance with the Arbitration Act, 1940.
13. Acknowledge receipt of this order immediately.

**BANK GUARANTEE AS PERFORMANCE BOND**



**Guarantee #** \_\_\_\_\_  
**Date of issue: -** \_\_\_\_\_  
**Date of expiry:-** \_\_\_\_\_  
**Amount: -** \_\_\_\_\_

**Oil & Gas Development Company Limited  
Kunnar/KPD-TAY Field  
C/O TCS Office Tando JAM Distt Hyderabad.**

In consideration of your issuance of Local Purchase Order # // \_\_\_\_\_ dated \_\_\_\_\_ to M/s. \_\_\_\_\_ called supplier and in consideration for value received from supplier we (Please mention name of Bank) at the request of M/s. (Please mention name of supplier) hereby agree and undertake as:-

1. To make unconditional payments to you as called upon 5% of the value of the LPO (please mention amount of guarantee in words and figures) mentioned in the said LPO on your return demands without further recourse, question or reference to supplier or any other person in the event of default, non-performance or non-fulfillment by supplier of his obligations, liabilities, responsibilities under the said LPO which you shall be the soul judge.
2. to accept return intimation from you as conclusive and sufficient evidence of existence if a default or breach as aforesaid on the part of supplier and to make payment accordingly within 03 (Three) days of receipt thereof .
3. To keep this guarantee in full force from the date hereof until 30 (Thirty) days from the date of delivery of last consignment of material at given destination as per LPO.
4. To keep 50% amount of this guarantee enforce from the date hereof until 12 months from the date of delivery of last consignment of the material of at given destination as per LPO.
5. That no grant of time or other indulgence to, amendment in the terms of LPO by agreement between the parties or imposition or agreement with LPO in respect of the performance of this obligations under the said agreement, with or without notice to us shall in any manner discharged or otherwise affect this guarantee and our liabilities and commitments their under.
6. This guarantee shall be binding on us and our successor's interest and shall be irrevocable.
7. This guarantee shall not be affected by any change in the constitutions of the Guarantor Bank or the supplier.

(BANKER)

					<b>ISSUED FOR APPROVAL</b>	
1	9-Jul-18	ISSUED FOR CONSTRUCTION.	MYF	AHQ	KNQ	
0	29-Jun-18	ISSUED FOR CONSTRUCTION.	MYF	AHQ	KNQ	
A	26-Jun-18	ISSUED FOR APPROVAL	MYF	AHQ	KNQ	
REV.	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	
		<b>OIL &amp; GAS DEVELOPMENT COMPANY LIMITED.</b>	KPD-TAY GAS PROCESSING PLANT. Phone# 0222-761401-8, Fax# 0222761405.		<b>OGDCL</b> Project. No.	-
		<b>DESCON ENGINEERING SERVICES &amp; TECHNOLOGY (PVT.) LIMITED</b>	18-km, Ferozepur Road, Lahore - 54760 Tel: +92 (0) 42 35990053 Fax: +92 (0) 42 35810867		<b>DESCON</b> Project. No.	6649
PROJECT TITLE		<b>CHILLED WATER SUPPLY INTERIM OPTION          BASIC ENGINEERING (PHASE-2)</b>				
DOCUMENT TITLE		<b>CHILLED WATER BUFFER TANK - PROCESS DATA-SHEET</b>				
DOCUMENT INFORMATION:						
OGDCL Document Number			DESCON Document Number		Page	Rev.
-			6649-01-S1224-001-01		1 of 2	1



CHILLED WATER SUPPLY INTERIM OPTION BASIC ENGINEERING (PHASE-2)

DOC. NO.

6649-01-S1224-001-01

SHEET

Rev.

1

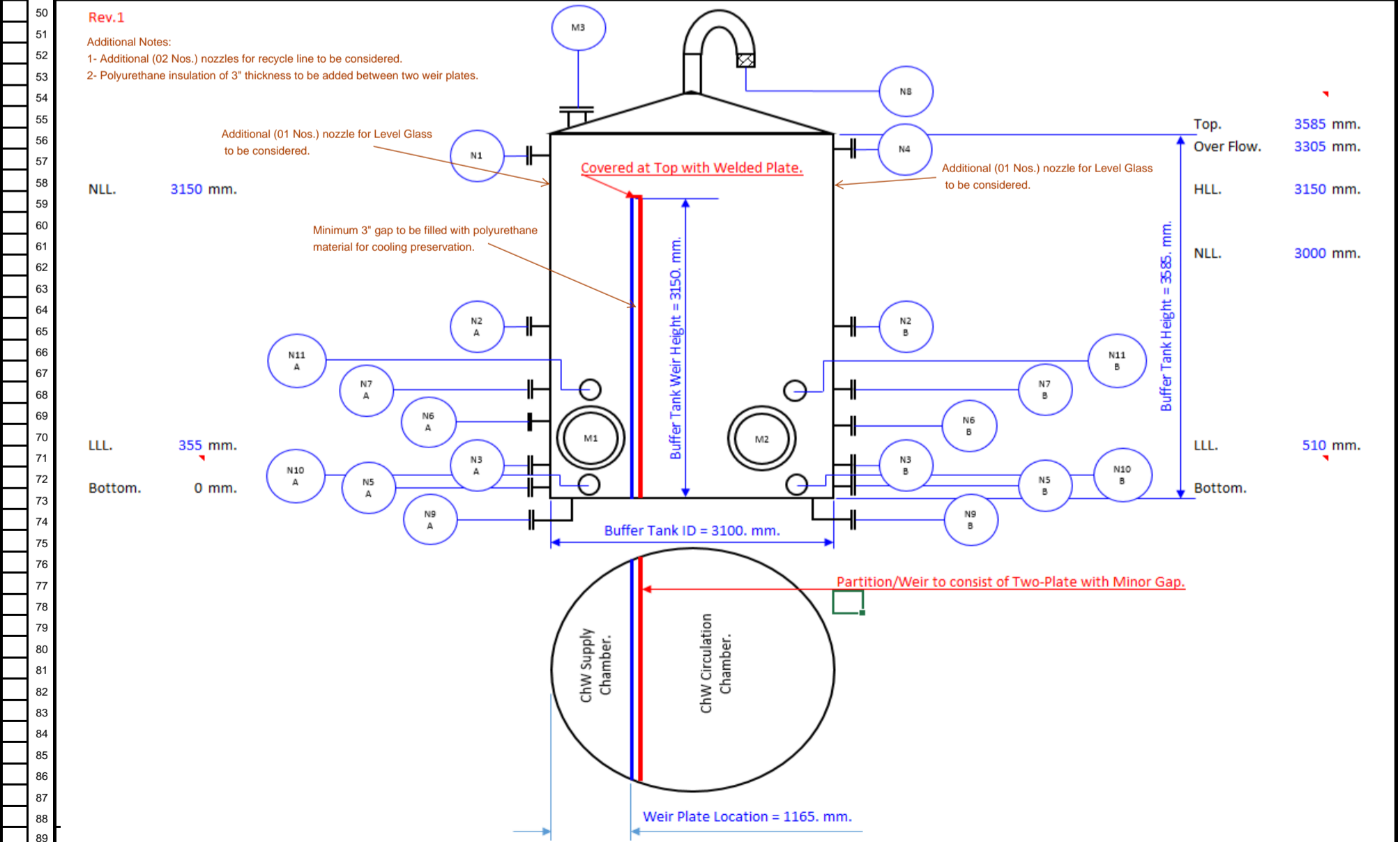
2 OF 2

CHILLED WATER BUFFER TANK - PROCESS DATA-SHEET

1	Unit:	DEHYDRATION TRAIN-1/2.	Service:	CHILLED WATER BUFFER TANK.	Tank Tag Nos.:	T-XX01/T-YY01
2	Location	Indoor <u>Outdoor</u>	No. Req'd	02 (Two)		
3	Type	Vertical, Cylindrical with Conical Roof. Note-1.	Shell I.D	3100 mm	Height (Cylindrical)	3585 mm
4	Regulation		Code	API-650		
5	Design Condition					
6					Materials	
7	Fluid	CHILLED WATER.			Shell	CS.
8	Liquid Density	1020.53 (63.71)	kg/m <sup>3</sup> (lb <sub>m</sub> /ft <sup>3</sup> )	Head	CS.	
9	Operating Press.	Atm	barG (psig)	Nozzle	CS.	
10	Design Press.	+ 3.8 (+ 0.054)	mbarG (psig)	Flange	CS.	
11	Vac. Design	- 3.8 (- 0.054)	mbarG (psig)	Internal	CS.	
12	Operating Temp.	7.3 to 23.3 (45 to 74) Note-2.	°C (°F)	Bolt	VTA.	
13	Design Temp.	65.7 (150)	°C (°F)	Nut	VTA.	
14	Hydro. Test Press.	As Per Code	barG (psig)	Gasket		VTA.
15	Leak Test Press.	As Per Code	barG (psig)	Jacket		-
16	Radiograph	As Per Code	%	Coil		-
17	Post weld Heat Treatment	As Per Code				
18	Joint Efficiency	As Per Code	%			
19	Corrosion Allowance	1.6 (1/16)	mm (inch)	Anchor Bolt & Nut		VTA.
20	Volume Full	27.1 (957)	m <sup>3</sup> (ft <sup>3</sup> )			VTA.
21	Operating	23 (812)	m <sup>3</sup> (ft <sup>3</sup> )			
22	Retention Time	Note-3.	Min.			
23	Painting (External)	Note-4.				
24	Insulation	Yes. Note-5.	mm (inch)			
25	Accessories					
26	Weight	Empty : VTA.	kg.	Full Water : VTA.	kg.	Operating : VTA. kg

Notes \*1) Tank to have Two Chambers with Weir Plate in between; 01 Supply Chamber + 01 Circulation Chamber. \*7) VTA = Vendor to Advise. ChW = Chilled Water.  
 \*2) Min/Max Ambient Temps are 5 °C/48°C. \*8) Nozzles' Orientation & Elevations to be furnished in Detail Engineering.  
 \*3) 3 Minutes Holdup is provided in each Chamber. \*9) Railing/Ladder to be included in Mechanical Data-Sheet/GA during Detail Engineering.  
 \*4) As per Client Specs. \*10) Partition/Weir to consist of Two-Plates with in-between Minor Gap and Covered at Top.  
 \*5) Cold Insulation Material/Thickness/Other related Items to be provided as per Applicable OGDCL Insulation Specs.  
 \*6) Gooseneck type with Insect Cage.

Mark	Q'TY	Nominal Size (inch.)	Rating	Service	Mark	Q'TY	Size	Rating	Service
N1	1	3	150#	ChW System Filling.	N6B	1	2	150#	ChW Circulation Chamber Low Level Switch.
N2A	1	10	150#	ChW Supply Inlet from Chillers.	N7A	1	2	150#	ChW Supply Chamber Temp Gauge.
N2B	1	6	150#	ChW Return Inlet from Exchangers.	N7B	1	2	150#	ChW Circulation Chamber Temp Gauge.
N3A	1	6	150#	ChW Supply Outlet to Exchangers.	N8	1	2	150#	Open Vent. Note-6.
N3B	1	10	150#	ChW Circulation Outlet to Chillers.	N9A	1	2	150#	ChW Supply Chamber Drain.
N4	1	4	150#	ChW Over Flow.	N9B	1	3	150#	ChW Circulation Chamber Drain.
N5A	1	2	150#	ChW Supply Chamber Level Gauge.	M1	1	24	As per Code.	Shell Manhole at Supply Chamber.
N5B	1	2	150#	ChW Circulation Chamber Level Gauge.	M2	1	24	As per Code.	Shell Manhole at Circulation Chamber.
N6A	1	2	150#	ChW Supply Chamber Low Level Switch.	M3	1	24	As per Code.	Roof Manhole.
N10A	1	2	150#	ChW Supply Chamber Level Transmitter.	N11A	1	2	150#	ChW Supply Chamber Temp Transmitter.
N10B	1	2	150#	ChW Circulation Chamber Level Transmitter.	N11B	1	2	150#	ChW Circulation Chamber Temp Transmitter.





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## OIL & GAS DEVELOPMENT COMPANY LTD.

### SPECIFICATION FOR

### PAINTING, LINING & SURFACE PREPARATION



Rev.	Date	Description	Prepared By	Checked By	Approved By
2	18-11-2013	Re-issued for Tender	SMHA	MIAH	MAS
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## 1.0 **GENERAL**

### 1.1 **Scope**

This specification covers the minimum requirements for the selection of material, surface preparation, supply and application of the painting system to be used on the external surfaces of pipeline, process plant, storage tanks, buildings and production facilities, including structural steel, piping, equipment, internal surface of storage tanks and its structure. This specification is applicable to both shop and field/site painting works.

The painting works to be performed shall include all supply of painting material, material required for application of painting, surface preparation, protection of other works, application of primer, intermediate and top coat, repair of damages to painting works, cleaning of the working area as well as all intermediate and final inspection works. Vendor may propose superior painting system subject to Company Consultant's approval.

1.2 The following surfaces are not required to be coated:

- Nonferrous materials (stainless steels, aluminium, etc.) unless specifically required.
- Plastic or plastic-coated materials not susceptible to ultra-violet deterioration.

1.3 Machined and threaded surfaces shall be protected with a temporary rust preventative.

1.4 Any deviation from this specification shall be approved in writing by the Company / Consultant. Failure of CONTRACTOR/SUPPLIER to consult with the Company / Consultant to clarify any item in the specification will, in no way, relieve the CONTRACTOR/SUPPLIER of his responsibility of satisfactory compliance with this specification.

### 1.5 **Definitions**

Following definitions apply throughout this document:

OWNER / COMPANY: Oil & Gas Development Company Ltd. (OGDCL)

CONSULTANT M/s. Zishan Engineers (Pvt.) Ltd. (ZEL).  
ZEL have been awarded the work of Engineering, Procurement Assistance and Project Management.

CONTRACTOR: Means the construction company to be engaged by the COMPANY to perform the Construction work.

VENDOR / SUPPLIER: The organization, firm or agency with whom order for the supply of equipment and or material has been placed.

## 1.6 **Errors or Omissions**

1.6.1 Review and comment by the Company / Consultant of any CONTRACTOR/SUPPLIER'S drawings, procedures or documents shall only indicate acceptance of general requirements and shall not relieve the CONTRACTOR/SUPPLIER of its obligations to comply with the requirements of this specification and other related parts of the Contract Documents.

1.6.2 Any errors or omissions noted by the CONTRACTOR/SUPPLIER in this Specification shall be immediately brought to the attention of Company / Consultant.

## 1.7 **Deviations**

All deviations to this Specification, other related specifications or attachments shall be brought to the knowledge of the Company / Consultant in the bid. All deviations made during the procurement, design, manufacturing, testing and inspection of the Works shall be with written approval of the Company / Consultant prior to execution of work. Such deviations shall be shown in the documentation prepared by the Company / Consultant.

## 1.8 **Conflicting Requirements**

In the event of any conflict, inconsistency or ambiguity between the Contract scope of work, this Specification, National Codes & Standards referenced in this Specification or any other documents, the CONTRACTOR/SUPPLIER shall refer to the Company / Consultant whose decision shall prevail.

## 1.9 **Work Procedure**

1.9.1 The CONTRACTOR/SUPPLIER shall submit detailed procedures for approval to the Company / Consultant:

- Surface Preparation
- Paint material storage and preparation procedure
- Primer application
- Intermediate and finish coat application
- Inspection and data recording procedures
- Paint repair procedure
- Painted equipment/material transportation, storage and handling procedure
- Type of abrasive to be used

The above procedure shall include the application equipment/tools. All procedures shall meet the minimum requirement stated in this specification.

- 1.9.2 Material specification for the surface preparation and painting, and mixing materials, shall be submitted to the Company / Consultant for approval. Detailed manufacturers data shall be submitted with these specifications. Material shall not be procured prior to approval of the Company / Consultant.

## 2.0 **CODES, STANDARDS & SPECIFICATIONS**

The codes and rules to be taken into consideration are:

- The SSPC (Steel Structures Painting Council)
  - Volume 1: good painting practice
  - Volume 2: systems and specifications
- The SIS 05 59 00  
Swedish standard - Pictorial surface preparation Standards for painting steel surface.
- ASTM E337 Standard Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet and Dry-Bulb Temperature).

## 3.0 **SURFACE PREPARATION**

### 3.1 **Ferrous Structures and Equipment**

- 3.1.1 All rough welds, burrs, weld spatter, indentations and all other sharp surface projections shall be ground smooth prior to further surface preparation. Any grinding on piping surface is forbidden after blast cleaning.
- 3.1.2 All bolt holes shall be drilled and smoothed before blast cleaning.
- 3.1.3 All surfaces to be coated shall be blast cleaned to:
- SSPC-SP 10 “Near white blast cleaning” per Steel Structures Painting Council (SSPC) surface preparation specification SP-10-63T.
  - S.A. 2.5 of Swedish Standards Institution SIS 05 5900.
- 3.1.4 All surfaces shall be blast cleaned to achieve the desired surface profile. Material used for blast cleaning shall be submitted to the Company / Consultant for approval. Company / Consultant will have the right to select most appropriate material. CONTRACTOR/SUPPLIER shall provide a surface profile meter at site for the inspection of achieved surface profile.

- 3.1.5 Any oil, grease, dust or foreign matter deposited on the surface shall be removed prior to the surface preparation. In the event rusting occurs after completion of surface preparation, surfaces shall again be cleaned in accordance with the specified method.
- 3.1.6 Cleaning shall be discontinued each day in sufficient time to permit the surfaces cleaned to be primed before the end of the working day.
- 3.1.7 Dry blast cleaning operations shall not be conducted on surfaces that will be wet after blasting and before painting. If relative humidity is greater than 80%, permission to blast shall be obtained from Company / Consultant.
- 3.1.8 Extreme care shall be exercised to prevent damage when blasting near nameplates, machined surfaces and factory-coated items. These surfaces shall be adequately protected.
- 3.1.9 Mill scales, rust scales, old paints marking, slags and sediments, weld spatter and other foreign materials shall be thoroughly removed.
- 3.1.10 Cloth is not allowed to be used on blasted surfaces for cleaning the sand dust which accumulated due to blasting operation, soft brush shall be used for the purpose.
- 3.1.11 Blasted and cleaned surfaces shall be inspected and approved by the Company / Consultant, prior to priming/painting works.
- 3.1.12 Sand particle size and abrasive contamination shall be regularly checked.

## 3.2 Non-Ferrous Structures

Surface preparation for non ferrous structures shall consists of two separate operations, surface cleaning and eventual pretreatment of the surface to be painted with the proper priming coat.

### 3.2.1 Cement, Concrete, Masonry

#### a) Surface Cleaning

The surface cleaning shall be undertaken by means of one or all of the following processes, depending on the initial state of the surfaces to be painted:

- The surface shall be roughened by power or hand weathering or abrasion.
- In all cases removing of oil or grease is mandatory.
- In all cases the surfaces are to be dried.

### 3.2.2 Lead

#### a) Surface Cleaning

Surface cleaning shall be performed by one of the following processes:

- solvent cleaning
- light wire brushing or sanding

#### b) Pretreatment

None, provided that the surface cleaning is carefully performed.

### 3.2.3 Plaster

#### a) Surface Preparation

After allowing the plaster to completely cure, surface shall be prepared for final coating by use of emulsion paints or resin emulsion paints on new or damp plaster.

#### b) Pretreatment

None After the above preparation, the plaster surfaces are ready for priming and painting, provided the preparation coats are allowed to dry.

### 3.2.4 Wood

#### a) Surface Preparation

All cracks, crevices and holes shall be scraped out, primed and made good with proper products of approved manufacturer, faced up and rubbed down to an even surface.

All knots shall be treated to prevent bleeding. Large or loose knots shall be cut out, removed and replaced with sound wood or cut back and the surfaces made good with stoppers.

All previously painted woodwork, if any, shall be washed with soap and water, will rinses with clean water and rubbed down with waterproof abrasive paper before re-painting works being undertaken.

#### b) Pretreatment

None, provided that surface preparation has been properly performed.



#### 4.0 **PAINT MIXING, THINNING & STORAGE**

- 4.1 All containers of coating material shall remain unopened until required for use and shall be stored under cover. Painting materials shall be stored in accordance with the instructions of the paint manufacturer/supplier.
- 4.2 Painting material which has jelled or otherwise deteriorated during storage shall not be used.
- 4.3 All ingredients in any container shall be thoroughly mixed before use to a smooth and uniform consistency. Mechanical agitation during application shall be sufficient to keep pigment in solution.
- 4.4 Where a skin has formed in the container, the skin shall be cut loose and discarded. If such skins are sufficiently thick to have a practical effect on the composition and quality, the paint shall not be used.
- 4.5 All pigmented material shall be strained after mixing except where application equipment is provided with adequate strainers. Strainers shall be capable of passing the pigment and removing any skin.
- 4.6 Painting material which does not have a limited life or does not deteriorate on standing may be mixed any time before using and shall not remain in spray pots or buckets overnight, but shall be gathered in to a closed container and remixed before use.
- 4.7 No thinner shall be added unless necessary for proper application. Thinning shall not exceed limitations established by Manufacturer/Supplier.
- 4.8 Type of thinner shall comply with Manufacturer's/Supplier's instructions.
- 4.9 When use of thinner is permissible, it shall be added during the mixing process. Painters shall not add thinner after it has been thinned to the proper consistency. All thinning shall be done under supervision of someone acquainted with the correct amount and type to be added.
- 4.10 All painting materials shall have prior approval of the Company / Consultant.

## 5.0 COATING PROCEDURE

### 5.1 Ferrous Structures and Equipment

#### 5.1.1 Painting System

- a) The type of paint, number of coats and thickness shall be applied as outlined in Sections–7.1 to 7.8 other painting materials can be used only with Company / Consultant prior approval.
- b) Primers and finish coats for any particular system shall be from the same Manufacturer/Supplier to ensure material compatibility.
- c) Manufacturer/Supplier’s instructions, including safety precautions, are a part of this specifications. In case of conflict, the Manufacturer/Supplier’s mandatory instructions shall govern.

#### 5.1.2 Application

- a) Surfaces shall not be painted in rain, wind, snow, fog, mist in areas where injurious airborne elements exist, when the steel surface temperature is less than 3°C above dew-point, when the relative humidity is greater than 80% or when the temperature is below 5°C.
- b) To the maximum extent practical, each coat of material shall be applied as a continuous film of uniform thickness free of pores. Any thin spots or areas missed in the application shall be recoated and permitted to dry before the next coat is applied.
- c) Each coat shall be in a proper state of cure or dryness before the application of the succeeding coat. Material shall be considered dry for re-coating when an additional coat can be applied without the development of any detrimental film irregularities such as lifting or loss of adhesion of the undercoat.
- d) When successive coats of the same color have been specified, alternate coats shall be tinted when practical, sufficiently to produce enough contrast to indicate complete coverage of the surface.

When the material is the color of the steel or when the tinting of the final coat is objectionable, the first coat to be applied shall be tinted. The tinting material shall be compatible with the material and not detrimental to its service life.

- e) All blast cleaned surfaces shall be coated with the specified primer within four hours after blasting, before rusting occurs. No acid washes or other cleaning solutions or solvents shall be used on metal surfaces after they are blasted.
- f) Brush application of paint shall be in accordance with the following:

- Brushes shall be of a style and quality that will enable proper application of paint. Round or oval brushes are most suitable for rivets, bolts, irregular surfaces and rough or pitted steel, wide, flat brushes are suitable for large flat areas, but they shall not have a width over one hundred and twenty five (125) millimeters.
  - The brushing shall be done so that a smooth coat as nearly uniform in thickness as possible is obtained.
  - Paint shall be worked into all corners.
  - Any runs or sags shall be brushed out.
  - There shall be a minimum of brush marks left in the applied paint.
  - Surfaces not accessible to brushes shall be painted by spray, daubers or sheepskin.
- g) Roller application of paint could also be used. Rollers of different length of nap should be selected as per the requirement.
- h) Airless spray application shall be in accordance with the following:
- The equipment used shall be suitable for the intended purpose and shall be capable of properly atomizing the paint to be applied. The nozzles shall be those recommended by the Manufacturer of the equipment for the material being sprayed. The equipment shall be kept in satisfactory condition to permit proper paint application.
  - Most suitable spray tip and pressure should be selected and used.
  - The spray fan should be kept at right angle to the surface and the gun should be triggered off at the end of each pass.
  - Proper distance should be maintained for holding an airless spray gun from the surface being coated, in order to avoid pin holing, dry spraying and over-spraying.
  - When in use, avoid placing hands or fingers in front of the gun, as contact with the pressurized point can cause serious injury.
  - Spray trigger-locking device should be in working order and only released during spraying operation.
  - Spray equipment shall be kept sufficiently clean so that dirt, dried paint and other foreign materials are not deposited in the paint film. Any solvents left in the spray equipment shall be completely removed before applying paint to the surfaces being painted.

- Paint shall be applied in a uniform layer with overlapping at the edge of the spray pattern. The spray pattern shall be adjusted so that the paint is deposited uniformly.
  - Areas inaccessible to the spray gun shall be painted by brush; if not accessible by brush, daubers or sheepskins shall be used. Brushes shall be used to work paint into cracks, crevices and blind spots which are not adequately painted by spray.
  - Particular precautions are necessary in spraying inorganic zinc.
- i) All nameplates, Supplier's identification tags, machined surfaces, instrument glass, finished flange faces, control valve stems and similar items shall be masked to prohibit coating deposition. If these surfaces are coated, the component shall be cleaned and restored to its original condition.
  - j) Edges of structural shapes and irregular coated surfaces shall be coated first and an extra full pass made later.
  - k) Contact surfaces of all components (bottom of skids, mounting surfaces of equipment etc.) are included in the scope of work to be coated.
  - l) Wet paint shall be protected against contamination from dust or other foreign matter.
  - m) Sand blasting yard and painting yard shall be appropriately apart or if close shall be segregated by a proper partition.
  - n) Second primer coat and finish coats, as specified, shall be applied after fabrication, erection and welding activities.

### 5.1.3 Drying of Coated Surfaces

- a) No coat shall be applied until the preceding coat has dried. Material shall be considered dry for re-coating when another coat can be applied without the development of any film irregularities such as lifting or loss of adhesion to under coats and the drying time of the applied coat does not exceed the maximum specified for it as a first coat.
- b) No paint shall be forced dried under conditions which will cause checking wrinkling, blistering, formation of pores or detrimentally affect the condition of the paint.
- c) No drier shall be added to a paint on the job unless specifically called for in the manufacturer's specification for the paint.
- d) Paint shall be protected from rain, condensation, contamination, snow and freezing until dry to the fullest extent practical.

#### 5.1.4 Repair of Damaged Paint Surface

Run, sags, voids, drips, over spray, loss of adhesion, blistering, peeling, mud-cracking, crazing, inadequate cure, or rusting of the substrate shall not be acceptable. Where shop painting has been damaged in transit or where damage has occurred to field coats, the following shall apply:

- a) All damaged and loosely adhering paint shall be removed and the surface thoroughly cleaned.
- b) Edges of the breaks shall be feathered and the designated number of prime and finish paint applied.
- c) Paint shall match the original color and gloss.
- d) Cure and thickness check shall be carried out.
- e) Repair area shall be fully documented and traceable.

CONTRACTOR/SUPPLIER shall submit proposals to Company / Consultant for the preparation of painting and paint repair of grating tie down spots, i.e. spot weld, stud welds, tack welds etc. in between the panels and panel slats and also the grating panels.

### 5.2 Non Ferrous Structures and Facilities

#### 5.2.1 Coating System

The surface painting of the non ferrous structures shall be carried out after the surface preparation has been performed in a proper way and accepted by the Company / Consultant.

Surface painting consists of two separate coats, primer coat and final coat which shall be applied and after drying of the primer coat.

## 6.0 INSPECTION

- 6.1 CONTRACTOR/SUPPLIER shall deploy a qualified team for the Quality Control of the painting Works. Detailed QC procedures shall be developed by the CONTRACTOR/SUPPLIER and submitted to the Company / Consultant for approval. All painting Works shall be carried out only in accordance with the approved procedure.
- 6.2 All materials supplied and Works performed under this specification shall be subject to inspection by inspectors nominated by the CONTRACTOR/SUPPLIER.
- 6.3 All parts of the work shall be readily accessible to the Company / Consultant inspector.
- 6.4 Approval of each of the following shall be obtained before proceeding with any subsequent phase:

- Weather Conditions
  - Location of work
  - Surface Preparation and painting of Equipment and Material
  - First coat
  - Each subsequent coats
- 6.5 Company / Consultant shall have the authority to reject any Work that does not conform to the specifications. Applicator shall correct work found defective under this specification.
- 6.6 Painting work inspection shall be undertaken in five (5) steps according to the hereunder sequence:
- 6.6.1 Blast cleaning required grade shall be checked by means of pictorial surface standards.
- 6.6.2 Surface cleanliness, result of the surface preparation.
- 6.6.3 An in-process checking will be given to check the wet film thickness by means of the wet film thickness gauge.
- 6.6.4 After coating, the dry film thickness shall be measured by means of 9 DFT meter. In case minimum dry film thickness as specified in this specification are not achieved due to whatever reasons, the number of coats will be increased accordingly to achieve the only specified DFT.
- 6.6.5 Coating integrity testing will be achieved by the use of a holiday detector. In case of lack of paint detection, the CONTRACTOR/SUPPLIER shall mark the holiday to indicate the location of repair work to be performed.
- 6.7 All equipment necessary to measure the performance of painting shall be provided by the CONTRACTOR/SUPPLIER.

## 7.0 PAINTING SYSTEMS

The painting system to be applied for each type of equipment/structure and facilities shall be according to the system described hereunder. The CONTRACTOR/SUPPLIER shall obtain written approval of color scheme to be followed by Company / Consultant. The CONTRACTOR/SUPPLIER shall check the dry film thicknesses by DFT meter in the presence of Company / Consultant.

### 7.1 **Tank External Surfaces (Shell & Roof)**

#### Tank shell

First Coat	Inorganic Zinc Silicate	40-50 microns DFT
Second Coat	Inorganic Zinc Silicate	40-50 microns DFT
Third Coat	Alkyd Enamel	20-25 microns DFT
Fourth Coat	Alkyd Enamel	20-25 microns DFT
Total Thickness		120 microns minimum 150 microns maximum

Tank Roof Surfaces

First Coat	Coal Tar Epoxy (Black)	65-75 Microns
Second Coat	Coal Tar Epoxy (Brown)	65-75 Microns
Third Coat	Hi-Build Epoxy Finish	45-55 Microns
Fourth Coat	Hi-Build Epoxy Finish	45-55 Microns
Total Thickness		220 microns minimum 260 microns maximum

Tank Appurtenances

For all appurtenances such as nozzles, manholes, staircase, handrail etc., the system given below shall be followed:

First Coat	Inorganic Zinc Silicate	40-50 microns DFT
Second Coat	Inorganic Zinc Silicate	40-50 microns DFT
Third Coat	Alkyd Enamel	20-25 microns DFT
Fourth Coat	Alkyd Enamel	20-25 microns DFT
Total Thickness		120 microns minimum 150 microns maximum

**Tank Internal Surface**

Topside of the bottom plates, and lower 2 meter of shell plate, and equal height of the internal piping/structure columns shall be painted as under:

First Coat	Epoxy Zinc Phosphate Primer	75-80 microns DFT
Second Coat	High Build Epoxy White	125-130 microns DFT
Third Coat	High Build Epoxy White	125-130 microns DFT
Total Thickness		325 microns minimum 340 microns maximum

Underside of The Tank Bottom Plates

First Coat	Coaltar Epoxy	75-80 microns DFT
Second Coat	Coaltar Epoxy	75-80 microns DFT
Third Coat	Coaltar Epoxy	75-80 microns DFT
Total Thickness		225-240 microns

7.2 **Piping & Steel Structure**

Primer Coat	Inorganic Zinc Silicate	1 Coat 40-50 microns DFT
Intermediate Coat	Micaceous Iron Oxide (MIO)	1 Coat 125-130 microns DFT
Finish Coat	Polly Urethane Enamel	1 Coat 40-50 microns DFT
Total Thickness		225-230 microns



### 7.3 **Un-insulated Equipment**

(Heat Exchangers, Air Fin Coolers, Vessels, Furnace etc. Including external attachment) (up to 90°C)

Primer Coat	Double build Alkyd Zinc Phosphate Primer.	1 Coat 40-50 microns DFT
Intermediate Coat	Double build Alkyd Zinc Phosphate Primer.	1 Coat 40-50 microns DFT
Intermediate Coat	Synthetic alkyd enamel.	1 Coat 25-30 microns DFT
Finish Coat	Synthetic alkyd enamel.	1 Coat 25-30 microns DFT
Total Thickness		130 microns minimum

### 7.4 **Un-insulated Equipment**

(Heat Exchangers, Air Fin Coolers, Vessels, Furnace etc. Including external attachment) (up to 91°C to 400°C)

Primer Coat	Inorganic Zinc Silicate Primer	1 Coat 50-55 microns DFT
Intermediate Coat	Heat Resisting Paint (Silicone Resin)	1 Coat 25 microns DFT
Finish Coat	Heat Resisting Paint (Silicone Resin)	1 Coat 25 microns DFT
Total Thickness		100 microns minimum

### 7.5 **Low temperature equipment & Piping**

(Piping, vessels and equipments) (Cryogenic services)

First Coat	Inert Multipolymeric Matrix	1 Coat 100 microns DFT
Second Coat	Inert Multipolymeric Matrix	1 Coat 100 microns DFT
Total Thickness		200 microns minimum

### 7.6 **Cabinets and Instrument Panels**

For carbon steel surfaces of cabinets and control panels for instrument and electrical equipment etc.

7.6.1 Exterior surfaces of cabinets, panels, etc....

Type	Prime Coat Wash Primer	Intermediate & Finish Coats Aliphatic Polyurethane
Number of coats	1	2
DFT, microns/coat	15	25

7.6.2 Interior Surface of cabinets, panels, etc. same as exterior surfaces, but with only one finish coat.



## 7.7 Hot-dipped Galvanized Structures

- 7.7.1 Structural steel galvanized coating shall be per ASTM specification A-123, except coating weight in grammess per square meter shall not average less than 700 grammes (92.3 ounces per square foot), individual specimen shall show less than 615 grammes (2.0 ounces).
- 7.7.2 Pipe galvanized coating shall be per ASTM A.120 or as specified above for structural steel.
- 7.7.3 All cuttings, shaping and welding shall be done before galvanizing.
- 7.7.4 Any areas damaged in handling shall be cleaned and coated with galvoweld or equivalent product.
- 7.7.5 Galvanized component surfaces shall be degreased and sand swepted to remove surface film and provide an anchor pattern for paint before applying coating.

Material to be galvanized shall be cleaned of dirt oil and other contaminants that could interface with adherence of galvanized.

- 7.7.6 Dry film thickness of the galvanized surface shall be as follows:

Type	Prime Coat	Finish Coats
Number of coats	1	1
DFT, microns/coat	50	50

## 7.8 Non Ferrous Structures

Material to be painted	Prime Coat	Finish Coats
Cement, concrete and masonry. (See Note 1)	<ul style="list-style-type: none"> <li>– Oil paints or</li> <li>– Styreos butadiene copolymer paints or</li> <li>– Polyvinyl acetate emulsion paints. or</li> <li>– Resin emulsion paints. or</li> <li>– Chlorinated rubber paints or</li> <li>– Epoxy or</li> <li>– Urethane</li> </ul> <p>One coat of the selected paint Depending on the use of the coated surface</p>	<ul style="list-style-type: none"> <li>– Same as priming.</li> </ul> <p>One coat</p>

Material to be painted	Prime Coat	Finish Coats
Copper	<ul style="list-style-type: none"> <li>– Any good oil or alkyd paint.</li> </ul> <p style="text-align: center;">One coat</p>	<ul style="list-style-type: none"> <li>– Any paint compatible with service, environment and priming paint.</li> </ul> <p style="text-align: center;">One coat</p>
Lead	<ul style="list-style-type: none"> <li>– Any good oil or alkyd paint.</li> </ul> <p style="text-align: center;">One coat</p>	<ul style="list-style-type: none"> <li>– Any paint compatible with service, environment and priming paint.</li> </ul> <p style="text-align: center;">One coat</p>
Plaster	<ul style="list-style-type: none"> <li>– Primer sealer or</li> <li>– Styrene butadiene emulsion paint or</li> <li>– Polyvinyl acetate emulsion paint or</li> <li>– Non-penetrating oil or alkyd paint.</li> </ul> <p style="text-align: center;">One coat of the selected paint depending on the needs to be met</p>	<ul style="list-style-type: none"> <li>– Same paints used for priming except that.</li> </ul> <p>Primer Sealer, if used as finishing coat, will consist of one coat with semi-gloss or gloss Oleoresinous finish paint.</p>
Wood (Exterior and interior)	<ul style="list-style-type: none"> <li>– New wood</li> <li>– Wood primer or</li> <li>– Add up to 25 % of raw linseed oil in commercial house paint.</li> <li>– Previously painted</li> <li>– Use finish paint as primer</li> </ul>	<ul style="list-style-type: none"> <li>– Latex Paints  or</li> <li>– Oil paints</li> </ul>

**Note:**

- 1) As a guide for paints selection, the following shall be taken into consideration:
  - Surface such as concrete, cement, masonry and plaster are alkaline. Good results are achieved by using alkali resistant paints such as chlorinated rubber, styrene butadiene copolymer, polyvinyl acetate, acrylic emulsions, epoxies or urethanes. The finish paint color shall comply with the color schedule requirements.

## 8.0 LININGS

### 8.1 Alloy Linings

Alloy linings shall be one of the following types:

#### 8.1.1 Integrally Clad:

- a) Hot rolled.
- b) Explosion bonded.

Clad material shall conform to ASME SEC II A SA-263, ASME SEC II A SA-264 or ASME SEC II A SA-265, whichever is applicable, based on the material of lining and shall show minimum shear strength of 20,000 psi. One shear test shall be made on each such clad plate, as rolled, and the results shall be reported on the certified mill test report.

#### 8.1.2 Alloy Weld Overlay.

Even if the cladding material cannot be included in the pressure calculations, it is always advisable to perform a shear strength test. Doing this will help eventual vessel re-rating.

Connections, manways and inspection openings in alloy-lined portions of vessels shall conform to one of the following methods of construction (loose-sleeve liners are not permitted):

- a) Connections of all sizes shall be fabricated from integrally clad plate or protected with deposited alloy weld metal.
- b) Solid, stabilized austenitic nozzles and other connections shall be welded to ferritic base material in noncyclic service with COMPANY approval.
- c) Flanges of ferritic base material with alloy weld overlay shall be welded to alloy nozzles with COMPANY approval.

## 9.0 COLOUR SCHEDULE AND MARKING

Requirement for colors and marking for piping systems as vessels, tanks, structural steel and miscellaneous other items are described in this Section. Final colors scheme shall be selected by the Company / Consultant prior to painting of the equipment/system.

### 9.1 Definitions

#### 9.1.1 Piping System

Piping systems shall include pipes of any kinds and, in addition, fittings valves and other miscellaneous devices involved in the piping field (not buried).

### 9.1.2 Tanks and Vessels

Tanks and vessels shall include all liquid containers, pressurized or not, vertical or horizontal, provided that they are not buried, and allowing storage of the different fluids handled for operational and safety purpose.

### 9.1.3 Structural Steel

Structural steel works shall include all platforms, gangway, ladders, safety cages, building structures, as well as skids, supports, etc. foreseen for access and/or safety purposes and mechanical needs of the project.

It shall include all cranes, davits, overhead traveling cranes.

## 9.2 **Method of Identification**

### 9.2.1 Marking

Positive identification of the content of a piping systems or vessel tanks shall be by lettered and numbered legend. Arrows shall be used to indicate direction of flow. The identification of piping marking shall refer to the line number shown in the P&ID.

The content of vessels and tanks shall be indicated. P&ID and the tank or vessel identification number shall be painted at a prominently visible location. Depending on the size of the tanks, two to four markings shall be required, at equal distance on the circumference.

Marking shall be applied close to valves and adjacent to changes in direction, branches and where the pipes pass through walls floors, and at frequent intervals on straight pipe runs. Not less than (5) five meters.

### 9.2.2 Color Coding

Standardization shall be accomplished in all facilities as follows:

9.2.2.1 All process equipment and pipework apart from Fire Fighting System shall be finished in either Light Grey (RAL 7035) or White along its entire length as the decorative colour.

9.2.2.2 The fluid contents of all flow-lines shall be identified by tapes which are appropriately colored; the nature of the pipe contents shall be identified by means of a Three Band Colour Code Identification Band System (CCIB). The outer bands, which will be the same colour, are the Basic/Primary Identification Bands (PIB) and the middle band is the Safety / Secondary Identification Band (SIB).

- a. The Basic/Primary Identification Band (PIB) Colour determines the type of fluid, e.g. Oil, Gas, Chemical or Water.

Type of Fluid	Basic/Primary Identification Band (PIB) Colour	
	Colour	RAL Code
Water (Raw; Potable; Storm; Treated; Produced)	Green	RAL 6037
Steam	Crimson Red	RAL 3020
Firefighting	Signal Red	RAL 3010

Type of Fluid	Basic/Primary Identification Band (PIB) Colour	
	Colour	RAL Code
Oils (Combustible Liquids)	Dark Brown	RAL 8002
Chemicals	Orange	RAL 2004
Gases (Gaseous or Liquefied)	Yellow	RAL 1026
Acids & Alkalis	Purple	RAL 4001
Air (Utility; Service, Instrument)	Light Blue	RAL 5012
Process Effluents (Drain; Vent; Flare)	Black	RAL 9005

- b. A Safety / Secondary Identification Band (SIB) colour is added to the middle of the PIB, to identify the fluid conveyed more precisely. The SIB, used in conjunction with the PIB's, is designed to provide a unique combined Colour Code identification Band (CCIB) for each fluid that is being conveyed.

Hazard / Sign	Safety / Secondary Identification Band (SIB) Colour	
	Colour	RAL Code
Safety	Grass Green	RAL 6010
Attention	Golden Yellow	RAL 1004
Danger	Signal Red	RAL 3001
Mandatory	Blue	RAL 5017
Alert	Yellow	RAL 1026
Electrical Service	Orange	RAL 2004
Traffic Lines	White	RAL 9010

### 9.2.3 Visibility

Attention shall be given to visibility with reference to pipe markings, where the pipes are located above or under the normal line of vision, the marking shall be placed above or under the pipe centerlines.

### 9.2.4 Type and Size of Markings

#### 1) General

Maximum contrast shall be provided between color field and markings for readability. The enclosed color schedule gives the requirements for piping and equipment painting.

The stripes or bands foreseen for the marking of piping system shall not interfere with the pipe marking.

#### 2) Size of Letter and Numbers

Unless specifically indicted by the material particular specification, the size of marking letters and numbers will be as follows:

<b>Outside Diameter of Pipe or Equipment</b>	<b>Size of Letters and Numbers</b>
¾" to 1¼" (19 to 32mm)	15mm
1½" to 2" (38 to 61mm)	20mm
3" to 6" (90 to 170mm)	35mm
8" to 10" (22 to 275mm)	65mm
12" to 16" (320 to 410mm)	90mm
18" to 24" (455 to 610mm)	100mm
Over 24" (over 610mm)	150mm for piping 200mm for equipment

## 10.0 LABOUR AND SAFETY

### 10.1 Labor

All steps pertaining to painting works shall only be performed by skilled personnel duly qualified to do so. The CONTRACTOR/SUPPLIER shall have its own supervision personnel working in relation with the Company / Consultant quality personnel.

## 10.2 Protection Of Works

### 10.2.1 Works Under Progress

All necessary protection steps shall be taken to protect works under progress from dust and a sufficient supply of clean drop clothes shall be maintained. The CONTRACTOR/SUPPLIER shall lay such drop clothes in all areas where the painting works under progress are to be protected.

### 10.2.2 Other Works

The CONTRACTOR/SUPPLIER shall lay drop clothes in all areas where painting is being done, to protect floors, machinery and equipment as well as other work, from damage during the prosecution of painting works.

As a general rule, spilled paint should be cleaned up immediately.

## 10.3 Safety at Work

### 10.3.1 Personnel Safety

CONTRACTOR/SUPPLIER shall take all necessary safety measures for the personnel, equipment and material.

For personnel safety special personal safety equipment shall be provided to the workers during the works. This will include but not limited to:

- Splash-proof goggles to be worn during chipping, wire brushing, sandblasting, spraying etc.
- Rubber gloves to be worn when using paint removers, acid treatment, cleaning compounds, etc.
- Safety belts when working inside tanks, on high equipment such as bridges, structural steel works, water towers, etc.
- Air line mask when sandblasting, spraying toxic products, etc.
- The CONTRACTOR/SUPPLIER shall provide required safety gears to Company / Consultant personnel during the inspection of work.

### 10.3.2 Safety Equipment

#### a) Ladders

All extension and straight ladders should be equipped with safety shoes.

All ladders shall be inspected once a month and the defectuous units shall be removed from the Site.

No metal ladders are allowed to be used where electric cables or sources are installed.

It is remind that neither piping nor equipment is to be used to support painters, ladders or scaffolding.

b) Swinging Stages and Scaffoldings

Swinging stages and scaffoldings shall always have a backrail. They shall be tested with twice the load they will be expected to bear in service.

Provision shall be included in the back of the backrail for providing suitable support for all hand tools that may be used. All tools shall be kept in this support when not in use.

### 10.3.3 General Precautions

Other requirements:

- When working around pulleys, gears, drive shafts, other moving parts, or inside tanks, fuses should be pulled or drive belts removed. Then working in any vessels, all lines coming to or leading from the vessel should be blanked or plugged.
- Overhead danger signs should be used when working near walkways, over doorways, platforms or roadways.
- Do not use paints containing a volatile solvent in enclosed areas where welders are at work.
- Use chemical type respirators when doing any spray painting except when in front of proper spray booth.
- Face shields should be worn when using power cleaning tools and chipping hammers.
- Manila or hemp ropes are not be used for scaffolds more than 7 meters away from the center of road tracks.
- Wear rubber gloves when using spark tester for locating breaks or pores in coatings.
- Do not seal paint cans of ready-to-mix paints after they have been mixed. The materials are not stable when mixed. For temporary storage punch a hole in the lid.
- No lead base paint or primer should be used.