



CEYLON PETROLEUM CORPORATION

(Established by Parliamentary Act Number 28 Of 1961)

**BIDDING DOCUMENT
FOR
RECONSTRUCTION OF FUEL OIL STORAGE
TANK NO. 39
AT SAPUGASKANDA OIL REFINERY
P-2305**

CEYLON PETROLEUM CORPORATION
P.O.BOX: 11
REFINERY DIVISION SAPUGASKANDA
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SECTION - 1

INSTRUCTIONS TO BIDDERS

Instructions to Bidders applicable to this contract are that given in Section-I of the Standard Bidding Document for Procurement of Works. CIDA Publication No.CIDA/SBD/01, Second Edition ,January 2007, published by Construction Industry Development Authority (CIDA), “Savsiripaya”, 123, Wijerama Mawatha, Colombo 07.

Instructions to Bidders shall be read in conjunction with the Bidding Data provided under section-5 of the Bidding Document (Volume 2)

Instructions to Bidders will not be a part of the contract.

SECTION – 2

STANDARD FORMS (CONTRACT)

- **Form of letter of acceptance**
- **Form of agreement**
- **Form of performance security**
- **Form of advance payment security**

FORM OF LETTER OF ACCEPTANCE
[LETTER HEADING PAPER OF THE PROCURING ENTITY]

----- [date]

To: -----
[name and address of the Contractor]

This is to notify you that your bid dated ----- *[insert date]* for the construction and remedying defects of the ----- *[name of the Contract and identification number]* for the Contract price of -----*[name of currency]* -----*[amount in figures and words]* as corrected in accordance with Instructions to Bidders and / or modified by a Memorandum of Understanding, is hereby accepted.

The adjudicator shall be -----
----- *[name and address of the Adjudicator, if agreed]* / shall be appointed by the Construction Industry Development Authority (CIDA).

You are hereby instructed to proceed with the execution of the said Works in accordance with the Contract documents.

The Start Date shall be: ----- *(fill the date as per Conditions of Contract).*

The amount of Performance Security is : ----- *(fill the date as per Conditions of Contract).*

The Performance Security shall be submitted on or before ----- *(fill the date as per Conditions of Contract).*

Authorized Signature : -----

Name and title of Signatory : -----

Name of Agency : -----

STANDARD FORM: AGREEMENT

This AGREEMENT, made the[day] day of -----[month] 20----- [year] between -----[name and address of Employer] (hereinafter called “the Employer”) of the one part, and ----- [name and address of Contractor] (hereinafter called “the Contractor”) of the other part.

WHEREAS the Employer desires that the Contractor execute ----- [name and identification number of Contract] (hereinafter called “the Works”) and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects wherein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year aforementioned in accordance with laws of Sri Lanka.

.....
Authorized signature of Contractor
Employer

.....
Authorized signature of

COMMON SEAL

COMMON SEAL

In the presence of:
Witnesses:

1. Name and NIC No. :
- Signature :
- Address :
2. Name and NIC No. :
- Signature :
- Address :

**FORM OF PERFORMANCE SECURITY
(UNCONDITIONAL)**

.....
(Issuing Agency’s Name and Address of Issuing Branch or Office)

Beneficiary:
.....
[Name and Address of employer]

Date:

PERFORMANCE GUARANTEE NO. :

We have been informed that
..... (Name of Contractor)
(hereinafter called “the Contractor”) has entered into Contract No.
..... (Reference No. of the Contract) dated
..... With you, for the
..... [name of the contract and brief
description of works] (hereinafter called “the Contract”).

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we
..... (name of agency)
hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of (amount in figures)
.....
..... (amount in words) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the day of 20.....
(insert date, 28 days beyond the intended Completion Date) and any demand for payment under it must be received by us at this office on or before that date.

.....
Signature(s)

FORM OF ADVANCE PAYMENT SECURITY

.....
.....
(Name and Address of Agency, and Address of Issuing Branch or Office)

Beneficiary :..... [Name and Address of employer]

Date:

ADVANCE PAYMENT GUARANTEE NO. :

We have been informed that
..... (Name of Contractor) (hereinafter called “the Contractor”) has entered into Contract No.
..... (Reference No. of the Contract) dated
With you, for the [name of contract & brief description] (hereinafter called “the Contract”).

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum.....(amount in figures)
..... (amount in words) to be made against an advance payment guarantee.

At the request of the Contractor, we
..... (name of issuing agency) hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of (amount in figures)
..... (amount in words) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation in repayment of the advance payment under the Contract.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor.

This guarantee shall expire on (insert date, 28 days beyond the expected expiration Date of the contract)

Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

.....
Signature(s)

SECTION – 3

CONDITIONS OF CONTRACT

Condition of Contract that will be applicable for this Contract is that given in Section III of the Standard Bidding Document for Procurement of Works “CIDA PUBLICATION NO. – CIDA/SBD/01” Second Edition January 2007 published by Construction Industry Development Authority (CIDA), “Savsiripaya”, 123, Wijerama Mawatha, Colombo 07.

This publication will not be issued with the Bidding Document and the Bidder is advised to purchase it from CIDA.

Conditions of Contract shall be read in conjunction with Contract data provided under Section-5 of the Bidding Document (Volume 2).

VOLUME - 02

INVITATION FOR BIDS

- SECTION 04 : FORM OF BID AND QUALIFICATION INFORMATION**
- SECTION 05 : BIDDING DATA AND CONTRACT DATA**
- SECTION 06 : SPECIFICATIONS**
- SECTION 07 : BILL OF QUANTITIES AND DAY WORK SCHEDULES**
- SECTION 08 : DRAWINGS**
- SECTION 09 : STANDARD FORMS (BID)**

CEYLON PETROLEUM CORPORATION**INVITATION FOR BIDS****RECONSTRUCTION OF FUEL OIL STORAGE TANK NO. 39****AT SAPUGASKANDA OIL REFINERY (P-2305)**

1. The Chairman, Department Procurement Committee (DPC), on behalf of the Ceylon Petroleum Corporation (CPC), now invites sealed bids from eligible and qualified bidders, having experience in the construction & repairs of Petroleum oil storage steel tanks as per the latest editions of API Standards 650/653 and the recommendations of the CPC inspection department, for **Reconstruction of Fuel oil storage Tank no 39 at Sapugaskanda Oil Refinery**. Construction shall be carried out as per the attached complete set of construction drawings, detailed scope of work, scope of supply, and technical specifications provided in this Bidding Document.

This project involves the construction of a fixed-roof (cone-type) storage tank with a diameter of 12.19 m and a height of 10.97 m. The scope of work includes the construction of the ring beam foundation, laying and welding of tank bottom plates, shell fabrication, fabrication and installation of the fixed roof and roof structure, fabrication and installation of steam coils, installation of the fire water and foam system, hydrotesting of the tank, sand blasting and painting, and final tank calibration. The total construction period is 300 days.

The site is situated at the CPC Refinery - Sapugaskanda, Kelaniya, Sri Lanka which is located 17km off by the road from Colombo.

2. Bidding will be conducted through **National Competitive Bidding Procedure**.
3. To be eligible for contract award, the successful bidder shall not have been blacklisted and shall meet the following requirements.

- i. **CIDA registration required**

Specialty : **Heavy Steel Fabrication**

Grade : **EM3 or above**

4. Qualification requirements to qualify for contract award include

- i. **Experience Required**

The bidder shall have experience in carrying out construction of at least one similar type of petroleum storage tanks (steel) of capacity equal or higher conforms to latest edition of API 650 and API 653 within last 5 years.

- ii. Average of the annual volume of construction work performed in the last five years shall be at least **Rs. 108,000,000.00 (Rupees One Hundred and eight Million)**.

- iii. The minimum amount of liquid assets and /or credit facilities net of other contractual commitments and exclusive of any advance payments which may be made under the contract shall be not less than **Rs.10,000,000.00 (Rupees Ten Million)**.
5. Interested bidders may obtain further information from The **Deputy Refinery Manager (Maintenance & Projects), Ceylon Petroleum Corporation, Refinery Division, P.O.Box.11, Kelaniya, Sri Lanka**, on Telephone-0117732977 and inspect the bidding documents at the address given below from 9.00 hrs to 16.00 hrs.
6. A complete set of Bidding Documents in English language may be purchased by interested bidders on the submission of a written application to the address below from **10.02.2026** until **11.03.2026** during office hours from 09.00 hrs to 14.00 hrs upon payment of a non-refundable fee of **Rs. 12,500.00** The method of payment will be by cash.
7. Bid document, which comprises the conditions of the bid and the specifications, available on the web site <https://www.ceypetco.gov.lk> is only for reference & viewing purpose.
8. Bids shall be delivered in duplicate to the address given below on or before **14.00 hrs of 23.03.2026** Late bids will be rejected. Bids will be opened soon after closing in the presence of the bidders' representatives who choose to attend.
9. Bids shall be valid up to **22.06.2026**.
10. All bids shall be accompanied by a Bid Security of **Rs. 600,000.00** (Rupees Six Hundred Thousand). Bid Security shall be valid up to **20.07.2026**
11. Any of the following party who wishes to submit a bid, shall register himself at the Department of Registrar of Companies www.drc.gov.lk (e-ROC) as per the Public Contracts Act, No. 03 of 1987 for every public contract value exceeding Sri Lankan Rupees Five million (LKR 5,000,000).
- I. An agent, sub-agent, representative or nominee must be registered prior to the closing of the Bid/Tender.
- II. If the tender applicant and the tenderer is the same party he must be registered prior to the award of the tender.
- However, this registration will be verified by CPC at the preliminary evaluation of Bids. In case of failure to meet this legal requirement the Bid shall be rejected.
- Contact details of the Registrar: Department of Registrar of Companies, "Samagam Medura", No. 400, D R Wijewardena Mawatha, Colombo 10 / Tel.: +94-11-2689208 / +94-11-2689209 / Email: registrar@drc.gov.lk (Contact details may vary from actuals & CPC does not take any responsibility in this regard)

The address (es) referred to above is (are):

**Chairman
Department Procurement Committee,
Ceylon Petroleum Corporation,
01st Floor,
No. 609, Dr. Danister De Silva Mwt.,
Colombo 09.
Tele: 0117732977, 0112400431, 0117296332
Fax:0112106769**

SECTION – 4

- **FORM OF BID**
- **QUALIFICATION INFORMATION**

FORM OF BID

Name of Contract: **RECONSTRUCTION OF FUEL OIL STORAGE TANK NO. 39
AT SAPUGASKANDA OIL REFINERY**

To:

The Chairman
Department Procurement Committee,
Ceylon Petroleum Corporation,
01st Floor,
No. 609, Dr. Danister De Silva Mwt.,
Colombo 09.

Gentleman,

1. Having examined the Standard Bidding Document – Procurement of Works (CIDA/SBD/01 – Second Edition – January 2007), Specifications, Drawings and Bill of Quantities and addenda for the execution of the above – named Works, we/I the undersigned, offer to execute and complete such Works and remedy any defects therein in conformity with the aforesaid Conditions of Contract, Specification, Drawings, Bill of Quantities and addenda for the sum of Sri Lankan Rupees..... (LKR) or such other sums as may be ascertained in accordance with the said Conditions.
2. We/I acknowledge that the schedule forms part of our Bid.
3. We/I undertake, if our Bid is accepted, to commence the Works as stipulated in the Contract Data, and to complete the whole of the Works comprised in the contract within the time stated in the Contract Data.
4. We/I agree to abide by this bid for the period of stated in the Sub-Clause 15 of Instructions to Bidders or any extended period and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
5. Unless and until a formal agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
6. We accept/ we do not accept the Adjudicator.
7. We/I understand that you are not bound to accept the lowest or any Bid you may receive.

Dated this day of 20.... in the capacity of
..... duly authorized to sign tenders for and on behalf of
.....

(IN BLOCK CAPITALS)

Signature :.....
 Name :.....
 Designation :.....
 Address :.....
 :.....
 Witness :.....

QUALIFICATION INFORMATION

(To be completed and submitted by the bidder, with the Bid)

CIDA Registration		
Registration number	<i>(attach copies of relevant pages from the registration book)</i>	
Grade : EM3 or above	
Specialty : Heavy Steel Fabrication	
Expiry Date	
Blacklisted Contractors		
Have you been declared as a defaulted contractor by NPA or any other Agency? (Yes/No)		
<i>(If yes provide details)</i>		
VAT Registration Number		
.....		
Construction Program		
<i>(attach as annex in the form of bar chart)</i>		
Legal status		
<i>(attach relevant status copies, as annex)</i>		
Value of Construction works performed in last 5 years (average value shall be at least 108 million)		
<i>(attach copies of Certificate of Completion etc. and other documents such as profit-loss and income expenditure statement)</i>		
Year 2020/2021	LKR	
Year 2021/2022	LKR	
Year 2022/2023	LKR	
Year 2023/2024	LKR	
Year 2024/2025	LKR	
Value of similar works completed in last 10 years (indicate only the three largest projects)	1. Value..... Year.....	
	2. Value..... Year.....	
	3. Value..... Year.....	
Major items of construction equipment proposed	1. Type Capacity	
	2. Type Capacity	
	3. Type Capacity	
	4. Type Capacity	
	5. Type Capacity	
Qualification and experience of key staff – Site & Head Office (Permanent, Contract basis & Consultants)	<u>Technical</u>	
	1. Site Engineer (Mech)	(Yes/No)
	2. Technical Officer (NDT Mech or equivalent)	(Yes/No)
	3. QA/QC Supervisor	(Yes/No)
<i>(attach copy of CVs as annex)</i>		
Any deviation from the scope of work, specifications drawings, bill of quantities and addenda	(Yes/No) <i>(If yes provide the details as annex)</i>	

SECTION - 5

BIDDING DATA & CONTRACT DATA

G. Bidding Data

Instructions to Bidders

Clause Reference

- (1.1) **Employer's Name and Address:**
Ceylon Petroleum Corporation,
No. 609, Dr. Danister De Silva Mwt,
Colombo 09,
Sri Lanka.
- Scope of work**
Reconstruction of Fixed roof type fuel oil storage Tank no 39 in compliance with latest edition of API Standards 650 and API Standards 653. The tank has a diameter of 12.19 meters, a height of 10.97 meters, and is located within the oil refinery premises at Sapugaskanda, Kelaniya, Sri Lanka.
- (1.2) **Time for Completion**
The Time for Completion for the whole works shall be **300 Calendar days from date of work order issue.**
- (2.1) The source of funds is Ceylon Petroleum Corporation
- (4.2) The registration required
Specialty : **Heavy Steel Fabrication**
Grade : **EM 3 or above (CIDA)**
- (4.3) Any Deviation from the scope of work, specifications, drawings, bill of quantities and addenda in the bidding document shall be clearly mentioned in the Bid. Otherwise, the Employer shall proceed with evaluation assuming that the Bidder is adhering to all requirements in the Bidding Document.
The following information shall be provided in Section 4:
- * CIDA Registration;
 - Registration number
 - Grade
 - Specialty
 - Expiry Date
 - * VAT Registration number
 - * Construction Programme
 - * Legal Status (Sole proprietor, Partnership, Company etc.)
 - * Total monetary value of construction work performed for each of the last five years;

- * Audited Financial Statements of the bidder for this period of last three years.
 - * Experience in works of a similar nature and size for each of the last ten years;
 - * Major items of construction equipment proposed to carry out the Contract;
 - * A documentary proof of qualifications and experience of key project members Engineer, Technical Officer, QA/QC Supervisor, and the technical staff, to be employed for this job.
 - * A complete Quality Assurance and Quality Control plan for the entire work.
 - * Bar charts, manpower histogram and S- Curves along with the offer for total work clearly indicating the various phase of the contract, breakdown of man power.
 - * Organization chart with list of man power available for this particular job by names and categories as Project Engineer, Technical Officer, QA/QC supervisor, welders, fitters & helpers etc,
- (4.4)
- * Average of the annual volume of construction work performed in the last five years shall be at least **Rs. 108,000,000.00 (Rupees One Hundred and eight Million)**.
 - * Experience in the construction of at least one contract of a nature and complexity equivalent to the works over the last 10 years (to comply with this requirement, works cited shall be at least 70 percent completed)
- 1 * Following technical and managerial staff:
- (i) **Managerial:**
 - a. Mechanical Engineer (Project Engineer)

A Mechanical Engineer with B.Sc. (Eng) or equivalent who is conversant with API Standard 650 and API 653 and other relevant standards and codes, with more than 5 years' experience in similar tank fabrication projects and pipeline projects should be assigned to the project full time basis during tank fabrication and installation.

(ii) Technical:

- a A Technical Officer (Mechanical) shall possess a National Diploma in Technology (NDT) or an equivalent qualification, be conversant with API Standard 650 and other relevant standards and codes, and have more than five (05) years of experience in similar tank fabrication works. The Technical Officer shall be assigned to the project on a full-time basis during the tank fabrication period.
- b A QA/QC Supervisor with a minimum of five (05) years of experience shall be provided. Possession of AWS certification, NDT certification or an equivalent qualification will be considered an added advantage.
- c NDT Technicians with NDT Level II or equivalent with more than 5 years' experience in Petroleum industry.

NDT Level II personnel shall be qualified and certified in accordance with an internationally recognized personnel qualification system (e.g., ISO 9712, RCN).

If NDT technicians are employer-certified in accordance with ASNT SNT-TC-1A, they shall work under the supervision of an NDT Level III qualified individual. Upon CPC request, NDT technicians shall demonstrate their testing competency and procedures.

- 2 This is the minimum requirement and the successful bidder shall assign all other necessary staff to enable compliance with all other contractual stipulations.

- * The minimum amount of liquid assets and /or credit facilities net of other contractual commitments and exclusive of any advance payments which may be made under the contract shall be not less than Rs. 10,000,000.00 (Rupees Ten Million)

- (7.1) **Site Visit**
- Prior to submitting a bid, bidders shall familiarize themselves and shall be deemed to have done so. The bidders shall inform Deputy Refinery Manager (Maintenance & Projects), Ceylon Petroleum Corporation, Refinery Division, P.O. Box.11, Kelaniya (Tel. +94-11-7732977, email - ref.procurement@ceypetco.gov.lk) at least 02 days in advance with their names, NIC Numbers/Passport Numbers so that the CPC will arrange required permits for the site visit.
- The bidders are advised to limit the number of persons, for the visit, due to the security reasons, at the CPC Refinery. The cost of such visits shall be borne by the bidder.
- (9.1) Employer's address for the purpose of clarification is ;
- Name : Deputy Refinery Manager (Maintenance & Projects)
Address : Ceylon Petroleum Corporation, Refinery Division,
P.O. Box.11, Kelaniya
Telephone: 0117732977
Email : ref.procurement@ceypetco.gov.lk
- The language of the bidding document shall be English.
- (13.3) VAT component shall not be included in the rates. The amount written in the Form of Bid shall be without VAT. However VAT component shall be shown separately at the end of the BOQ.
- (13.4) The Contract is not subjected to price adjustment in accordance with Clause 47 of the Conditions of Contract.
- (15.1) The Bid shall be valid up to **22.06.2026**
- (16.1) Bid shall include a Bid Security using the form included in Section 9.
- (16.2) Bid Security shall be:
- for an amount **Rs. 600,000. 00 (Rupees Six Hundred Thousand only)**
 - Valid until **20.07.2026**
 - Securities and Guarantees shall be on demand guarantees issued by a bank operating in Sri Lanka approved by Central Bank of Sri Lanka.
- (17.0) **Pre Bid meeting shall be together with the site visit**
- venue : CPC Refinery- Conference room / date: 11/03/2026
/time: 0900 hrs
- (19.2) a The Employer's address for the purpose of Bid submission is
Manager,
Procurement and Stores,
Ceylon Petroleum Corporation,
01st Floor,
No. 609, Dr. Danister De Silva Mwt.,
Colombo 09.

(19.2) b Contract name: **Reconstruction of Fuel Oil Storage Tank No. 39 at Sapugaskanda Oil Refinery**

Contract No : **REF/PD/WORKS/05/2025**

The deadline for submission of Bids shall be **14.00 hrs on 23.03.2026**

(28.1) Not applicable

(34.0) The amount of Performance Security is 10 % of the Initial Contract Price.

(36.0) The Adjudicator proposed by Employer shall be **the Construction Industry Development Authority (CIDA)**
Fees and types of reimbursable expenses to be paid to the Adjudicator shall be on a case to case basis and shall be shared equally by the Contractor and the Employer.

The Employer will evaluate and compare only the bids determined to be substantially responsive in accordance with the following. The criteria and point system for the evaluation of the Technical Proposal are as follows:

The minimum Technical Score (St) required to pass is 60 points.

- The bids that scored pass mark from the Technical Evaluation will be subjected to the Financial Evaluation.
- The lowest evaluated Financial Proposal (Fm) will be given the maximum financial score (Sf) of 100 points. The financial scores (Sf) of the other Financial Proposals will be computed according to the following formula,
- $Sf = 100 \times (Fm / F)$ in which “Sf” is the financial score of the relevant responsive bid and “F” is the price of the proposal under consideration.
- Proposals will be ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposals while P = The weight given to the Financial Proposals)
- $T = 0.6$ and $P = 0.4$ where $T + P = 1$
- Total Score , $S = (St \times T) + (Sf \times P)$
- The firm who scored the highest total, S, (combined technical and financial score) will be selected as the successful bidder for the contract

No	Evaluation Criteria	Points
	Experience	
1	Recorded history of the firm in Tank construction/ Tank major repair projects	
	5 - 10 Years	7
	More than 10 Years	10
2	Similar tank construction projects successfully completed in the past 10 years with proof documents	
	One Similar project	5
	Two to four numbers of similar projects	10-20
	Five or more similar projects	25
	Financial	
3	Company Turnover (maximum 10 points)	
	10 - 60 million	6
	More than 60 million	10
	Documentation	
4	Complete list of construction equipment which will be at site of construction	2
5	Project & construction plan and the methodology (maximum 8 points)	
	Poor	0-2
	Satisfactory	3
	Good – Detailed methodology, QA/QC plan	4-6
	Very Good - Technology adoption, contingency planning & Risk mitigation	7-8
6	Project Scheduled / Bar chart	5
7	Resource histogram	2.5
8	Organization chart for the project	2.5
9	Quality assurance and quality control plan for the project (Includes WPS, ITPs, NDT procedures) provided	10
10	International Certifications of the firm (ISO 9001, ISO 45001, OHSAS 18001, ISO 14001)	3
	Personal Qualifications	
11	Details of a Project/Site Engineer conversant with API 650/ 653, NFPA 30, will available full time at the site	
	Educational qualification (BSc in Engineering or Higher)	2
	with Experience in Similar projects (5 -10)	5
	with Experience in similar projects more than 10 years and Certification of API 650/653	8
12	Availability of qualified level II (ASNT/ISO) NDT technicians for the construction site.	4
13	Availability of qualified Welding Inspector or QA/QC inspector (Min 5 year experience, AWS/NDT).	4
14	Availability of qualified sufficient numbers of qualified Welders (3G +) for the construction site.	3
15	Availability of sufficient numbers of qualified fitters and labourers for the construction site as per the provided resource histogram.	3
		100

Contract Data

(Please note that the Clause nos. given hereunder are that of Conditions of Contract)

(1.1) The Employer is
Name : The Chairman,
Address: Ceylon Petroleum Corporation,
01st Floor,
No. 609, Dr. Danister De Silva Mwt.,
Colombo 09.

(1.1) The Engineer is
Name: Deputy Refinery Manager (Maintenance & Projects),

Address: Ceylon Petroleum Corporation, Refinery Division,
P.O. Box.11,
Kelaniya,
Sri Lanka.

The work consists of **Reconstruction of a diameter 12.19 m and height 10.97 m Fixed roof type, Fuel oil storage Tank no 39 as per the drawings and specifications with the bidding document.**

The Site is located at CPC **Sapugaskanda Oil Refinery**

(1.1) The Start Date shall be 14 Days from the Letter of Acceptance.

(8.1) Schedule of other contractors: None

(9.1) Schedule of Key Personnel:

Minimum persons with qualifications and experience to be defined,

(a) Technical	Designation	Academic Qualification	Min. Experience
i.	Project Engineer (Mechanical)	B.S.c (Eng)	5 years
ii.	Technical Officer (Mechanical)	NDT or equivalent	5 years
iii.	QA/QC Supervisor	AWS, NDT certification	5 years

13.1

The minimum insurance covers shall be

- (a) The minimum cover for insurance of the Works and of plant and Materials is **110% of initial Contract Price.**

The maximum deductible for insurance of the Works and of Plant and Materials is **5% of initial contract price**

- (b) Contractor's Responsibility.

- (c) The minimum cover for insurance of other property (other than the Site) is Rs. **20,000,000.00.**

- (d) The minimum cover for personal injury of death, for third party and employees of the Employer and other persons engaged by the Employer in the Works is **Rs. 1,000,000.00** per event.

13.2

- (a) A copy of insurance policy for the workmen and other employees of the Contractor as per the Workmen compensation Act shall be forwarded to CPC prior to commencement of the work.

- (17.1)** The Intended Completion Date for the whole of Works shall be **300 days** from the Date of Commencement of Works

- (21.1)** The Site Possession Date shall be **14 Days** from the Letter of Acceptance

- (27.1)** The Contractor shall submit a programme for the Works within **14 Days** of delivery of the Letter of Acceptance.

Working Hours

- i. Normal working hours of CPC from Monday to Friday is from 0730 hrs. to 1630 hrs.
- ii. In the work program Saturday also can be considered as a working day and from Monday to Friday up to 1800 hrs also can be considered as a working hour by the contractor. But to work on Saturday and up to 1800 hrs the contractor is required to obtain prior permission since the offices are normally closed on Saturdays and after 1630hrs.

- iii. However, working on statutory holidays, Sundays and after 1800 hrs. on working days will not be permitted.
- (27.3) The Programme will be updated **Monthly**
- (27.4) The amount to be withheld for late submission of a Programme is Rupees (2% of the Initial Contract Price)
- (35.1) The Defects Liability Period is **365 Days**.
- (37.2) Not Applicable
- (39.2) Not Applicable
- (42) Not Applicable
- (46.1) All Payments shall be made in Sri Lanka Rupees. The exchange rate used for calculating amounts to be paid in Sri Lankan Rupees if quoted in other currencies, is based on the selling rate of conversion determined by the Central Bank as at 28 days prior to the date of closing of bids
- (47.1) The Contract Price is not subjected to price adjustment
- (48.1) The retention from each payment shall be **10%** percent of the certified work done.
- The limit of retention shall be **5%** percent of the Initial Contract Price.
- (49.1) The liquidated damages for the whole of the Works shall be **0.2% of Initial Contract Price per Day**
- (50.1) The maximum amount of liquidated damages for the whole of the Works shall be **10%** of the Initial Contract Price
- (52.1) The Performance Security shall be **10 %** of the Initial Contract Price.
- (58.1) Schedule of operating and maintenance manuals.
- (60.1) The percentage to apply to the value of the work not completed, representing the Employer's additional cost for completing the Works, is **25% of Initial Contract Price**.
- 63.7** Interim payment will be as follows
- the total contract price will be apportioned as follows for the purpose of making progress payments, which the contractor will be entitled to claim on completion of each item subject to payment

	DESCRIPTION	Payment%
1	Foundation works After completion of excavation for foundation, remove debris, Supply materials & construction of ring beam foundation, Soil filling & compact and laying bitumen & sand layer.	15
2	Bottom Plate Laying & Welding - After completion of sizing of plates, underside painting, laying of bottom and annular plates, welding of bottom plate, annular plates, annular to bottom plate and necessary NDT work including depression survey.	5
3	Shell erection works - (1st and 2nd) After completion of sizing & bending of all shell plates, welding of 1st shell course, shell to annular plate welding and necessary NDT work including peaking and banding measurements. Erection, welding, NDT of 2 nd shell course.	10
4	Shell erection works - (3rd to 5th) After completion of erection of shell plates, welding of shell plates and necessary NDT work including peaking and banding measurements. For 3rd shell course to 5th shell course. welding of shell top angle & necessary NDT works.	10
5	Roof fabrication works and installation of roof attachments - After completion of fabrication & Installation of fixed roof structure After completion of sizing, laying of roof plates and completion of welding of tank roof with necessary NDT work and after completion of fabrication & installation of all the roof accessories like Manholes, gauge hatch, Inspection door, Cooling water guide ring, Flame trap, Circumferential and radial handrail and etc. with necessary NDT work.	8
6	Fabrication and Installation of shell attachments - After completion of fabrication & installation of all shell accessories like Manhole nozzles, Tank Inlet /Outlet nozzles, Sludge door, Stairway with handrail, level gauge, gauge hatch, Instrument nozzles, Sample point nozzles, Top platform and etc. with necessary NDT work.	5
7	Steam Coil fabrication & Installation - After completion of fabrication and installation of steam coil with supports, conduct RT for welded joints and if required conduct repair works, hydro test.	5
8	Fabrication and Installation fire water & Foam system - After completion of fabrication & installation of fire water (cooling water) system, foam system with necessary NDT work, Installation of cooling water splash plates and necessary repairs for under ground fire water piping (If required).	3
9	Sand blasting & painting works- After completion of Supply of all painting materials, consumables, equipment with fuel and painting of the tank bottom top side, bottom shell course internal side 1.5 m band & top shell course 1.5 m band internal side. After completion of Supply of all painting materials, consumables, equipment with fuel and painting of tank roof external side, tank shell external side, stairways, platforms, fire water and foam systems, level gauge & all other accessories.	25

10	Fire barrier & External Scaffolding - After completion of erection & removing of fire barrier & Internal scaffolding, external scaffolding, around the tank up to full height of the tank.	2
11	After the Calibration of the tank. After completion of hydro-test, settlement survey parallel with hydro test (if rectification required for any defects find during hydro-test, hydro testing may require again after rectification work). After the Site clearing, concrete compartment area(3m from shell) and handing over the tank for commissioning, De-mobilization.	12
		100.0

SECTION 6

SPECIFICATIONS

6. SPECIFICATION

6.1 Scope of Supply by CPC

6.1.1 Material

CPC will supply all construction materials, including:

- 6.1.1.1 Steel plates for the Shell, Annular ring, Tank bottom and fixed roof. The most economical cutting schedule requiring minimum quantity of plates shall be adopted by the contractor subject to the approval of the Engineer.

Material transportation from the main stores to the work site and outside facilities are under the 'Contractor's Scope of Work'.

- 6.1.1.2 Structural steel, chequer plates for the roof structure, platform, fire water system, foam system and stairway and any reinforcing work.
- 6.1.1.3 Steel pipes, flanges for steam coil and nozzles.
- 6.1.1.4 Bolts, nuts and gaskets for all flange connections.
- 6.1.1.5 Materials required for the fire water piping system, and foam system.
- 6.1.1.6 Special fittings such as gauge hatches, materials to fabricate level gauges, and gaskets for all internal connections.
- 6.1.1.7 Steel plates and pipes required for procedure qualification tests and welder qualification tests.
- 6.1.1.8 Soil for earth filling of the tank foundation can be collected from the borrow pit at the CPC Refinery. (excavation and transportation not carried out by CPC).

6.1.2 Construction Equipment & erection material

Supply of erection material such as scaffolding pipes, lugs, brackets, wooden planks, steel planks for scaffoldings.

6.1.3 Construction Utilities

CPC will provide sufficient construction utilities at site at no extra cost to the bidder, which includes only supply of construction electrical power and water for the site etc.

- a The electrical power supply available to the contractor is 400 V AC, 4 wire (TPN), 50Hz and will be subject to following conditions.
- b The maximum load that the CPC electrical department can feed will be 100A, 3 phase.
- c The CPC Refinery Electrical Department will terminate the feeding cable(s) to suitable circuits isolating and interrupting devices such as a circuit breaker or a switch fuse at a convenient location. This installation will remain the property of CPC and the contractor will not have access to it.
- d It is the responsibility of the contractor to properly connect his main power distribution board(s) to the downstream side of the CPC switchgear, in consultation with the CPC electrical engineer.

- e The contractor's power distribution boards should consist of adequate over current and earth leakage protective devices for safety of men and machinery.
- f It is the responsibility of the contractor to maintain his switchgear and cable network in good condition, so as to provide, complete safety to men and machinery.
- g Power supply will be energized after a thorough check and inspection by the CPC electrical engineer, provided all requirements under clauses b to g should satisfied.
- h The whole electrical installation of the contractor should conform to the IET Wiring Regulations (18th Edition) published by the Institution of Engineering Technology (IET) - London. The safe working voltage for all portable hand lamps and portable hand-held tools used inside the tank up to 2KW should not exceed 110V. (Only 110V, 1 phase center point earthed reduced low voltage system is allowed).

6.1.4 Technical guidance by CPC

a. Civil works and Painting

All civil works such as rectification of foundation & basement, painting, etc will be witnessed / supervised by CPC Civil Department and will provide technical guidance. CPC Inspection Department will inspect the work subjected to the prior acceptance by Civil Department.

b. Fabrication, Erection and Welding.

All mechanical work such as prefabrications, erection, fit-ups, welding will be supervised / witnessed by CPC Project Engineering Department and will provide technical guidance. Every fit-ups and installations and their measurements are to be checked by CPC Project Engineering Department. Subjected to subsequent inspection, acceptance/rejection by Inspection Dept.

c. Non-Destructive Testing / Inspection

The contractor is responsible for carrying out all required Non-Destructive Testing (NDT) in accordance with the latest edition of API 650 and API 653 and under the instructions of the CPC Inspection Department.

The CPC Inspection Department has the authority to accept or reject any work performed by the contractor.

d. Quality Assurance / Quality Control

The Contractor shall be fully responsible for the Quality Assurance and Quality Control (QA/QC) program, while CPC Inspection will guide and monitor the Contractor's QA/QC personnel in following the approved procedures and plans to ensure the delivery of high-quality output.

6.1.5 Site Fabrication Facilities

CPC will provide sufficient space in Refinery premises close to the tank for establishment of a site workshop office for fabrication. The bidder shall indicate the extent of area needed for the site shop. The contractor shall under no circumstance use this site facility for any other purpose not involves with this job.

6.2. Scope of supply by contractor

6.2.1 Materials and Man power

- a Supply all foundation and bitumen layer construction materials, including metal, sand, SLS-certified tor steel, cement, formwork materials, bitumen, and other items necessary for proper job execution.
- b Supply all consumables necessary for the execution of the job, such as, Welding electrodes (reputable brands like Kobelco or Esab, to be tested and approved by CPC before starting the job), Gas for cutting, Grinding discs, NDT consumables, dye penetrant, X ray films, diesel for inspection, Kerosene for cleaning, White sand for blast cleaning and Any other consumables as needed.
- c The contractor is responsible for supplying diesel and lube oil for welding generators, air compressors (if any), cranes, and other machinery or equipment required for tank construction.
- d All paint materials, thinners, and abrasive materials required for paint the annular plates, bottom plates, tank shell, tank roof, fire water and foam pipelines, and other accessories.
- e Cover sheets for fire barriers.
- f Provide all construction equipment and other equipment, including:
 - Welding machines, gas cutters, grinders, cranes, rigging equipment, excavators, rammers, poker vibrators.
 - Sandblasting and spray-painting equipment.
 - Supply of all inspection equipment such as X ray machines, pressure/ vacuum testing instruments and gauges to perform necessary inspection and testing.
 - Necessary electrical panel boards with safety equipment .
 - Illuminating lamps, tools, lifting gear, and safety wear required for working inside the refinery.

All equipment must be well-maintained, tested where applicable, and comply with the requirements of the Sri Lanka Factories Ordinance.

- g Ensure the supply of blast-cleaning and airless spray-painting equipment, along with appropriate covering methods to prevent abrasive material from dispersing outside the site. The contractor must adhere to Sri Lankan environmental regulations for metal blast cleaning processes.
- h The contractor shall provide all engineers, Technical officer/ Supervisor, NDT technicians, QA/QC supervisors, laborers, and appropriate safety gear required for the job.

Note: All materials used in the construction must meet CPC's quality standards.

6.3 Scope of work

All the under mentioned conditions shall be completely fulfilled by the selected bidder for the completion of the total Tank construction job.

CPC has already demolished the old tank and removed all scraps and cleared the site. The contractor is required to reconstruct of Fixed roof type fuel oil storage Tank no 39 in compliance with latest edition of API Standards 650 and API Standards 653, as specified in below.

Note- All the work done by contractor shall be strictly adhere to the CPC-Refinery HSE procedure. (section 6.7)

6.3.1 Erection of a safety barrier

Erection of a safety barrier around the tank construction area to a height of 1.5m above the maximum height of the tank is required to protect the surrounding environment from construction sparks and hot projectiles when work is in progress. Maintaining the safety barrier during reconstruction is the total responsibility of the contractor until clearance is given by the CPC safety department to remove it.

6.3.2 Tank foundation and bottom asphalt layer

- a Completely remove existing foundation and completely remove and dispose of existing deteriorated sand/asphalt layer in the sand bed and oil contaminated loose soil. (All construction debris to be disposed as CPC instructions.)
- b The contaminated, loose soil removed areas shall be back filled with suitable soil (tested and confirmed) supplied from the borrow pit inside refinery premises and compacted in layers not exceeding 225 mm thickness to achieve degree of compaction of 95% MDD. Each compacted soil layer shall be tested at least from 5 points and the test report from an approved laboratory to be submitted for approval of CPC before laying the next layer.
- c Construction of concrete ring beam tank foundation, sump pit and tank bed as per CPC Dwg No. 8790 A with 1:2:4 (3/4") concrete and as per guide lines of API 650/ API 653.
- d Laying and compaction of 100mm thick new bitumen sand layer (Bitumen sand mix 1:5). Bitumen and sand shall be heated before mixing. The bitumen sand layer shall be properly compact (Lutong roller) to achieve adequate bearing capacity and provide a test report to confirm the bearing strength.
- e Before laying bottom plates, obtain level measurement of ring beam after completion of construction and submit for inspection department for approval.
- f Bitumen/sand (1:6) skirting should be at least 50 mm thick and properly compacted over well-compacted soil, with the required slope as shown in the drawing.

6.3.3 Laying and Welding of Tank Bottom, Annular plates & Fabrication of steam coil

- a Sizing, blast cleaning & painting of the underside of the annular & bottom plates as per Paint specification E, laying on the tank foundation after necessary preparation as per the CPC Dwg No 8509. Plate laying has to be done carefully without damaging the underside paint coating.
- b Welding of annular plates and bottom plates in best sequence after reviewing by CPC to minimize deformation. Contractor shall provide bottom plate welding sequence and annular plate welding sequence to CPC for approval.
Note - Bottom plate flatness and depression checks shall comply with API 650 Annex G.4.
- c Fabrication & installation of draw-off sump as per the CPC Dwg. No 3357.
- d Conduct PT and Radiography testing for annular plate welds, Vacuum testing for Bottom plate welds and Conduct PT and vacuum test for Annular to Bottom plate weld as per API Standard 650/653 (latest edition).
- e Conduct recommended NDT for welding of shell to annular plate followed by PT and diesel test as per API Standard 650/653 (latest edition).
- f Sealing between bottom plate and ring beam to be carried out by applying hot bitumen to prevent any water seepage in to the tank bottom.

Note - Levelling (Profile) of the tank bottom shall be evaluated as per API 650 and any unacceptable bulges or depressions shall be rectified. This exercise will be done after fabrication of tank bottom and after completion of final hydrotest.

- g Fabrication of steam coil as per the CPC drawing no 3305 and conduct 100 % RT for all the welding joints. A hydrotest shall be conducted on the steam coil upon completion.
- h Preparation and carrying out for necessary NDT as per API Standard 650/653 (latest edition). Blast cleaning and painting of complete tank bottom top side (after mechanical work completed - paint specification A).

6.3.4 Roof structure and Roof

- a Fabrication and erection of roof structure as per CPC Dwg. No. 3301.
- b Fabrication and installation of fixed roof as per CPC Dwg. Nos. 3302 sizing and laying of roof plates on the roof structure and welding in the best sequence, this welding sequence shall be offered for reviewing of CPC. Carryout VT, PT and other NDT for welds as per API Standard 650/653 (latest edition).
- c Fabrication/repair and installation of roof attachments & accessories such as Roof Manholes with covers, Cooling water drencher system, Radial hand rail, Inspection door, Circumferential handrail, CPC Dwg. Nos 3374, 3371, 1684, 3251, 3370, 3245 and perform necessary NDT as per API Standard 650/653 (latest edition).
- d Recovered items from old tank and Items need to fabricate as follow.

Recovered items	Need to fabricate
Foam Chamber	Inspection door for level indicator - 3370
Gauge Hatch	
Flame Trap	
Sludge door	
Roof Manhole – 2 nos	
Shell Manhole 24"	
Shell Manhole 30"	
Jet Mixer Manhole	

- e Any minor repairs, grinding works or weld filling work required for the recovered item to ensure proper fitting shall be carried out by the contractor.
- f Installation of all the roof nozzles with required reinforcements as per the nozzle table and reference drawings.

Quantity	Size	Nozzle	DWG No.
2 Nos	20"	Man Hole for Roof	3368
1 No	12"	Flame Trap Vent 150# WN RF	3374
1 No	8"	Gauge Hatch 150# WN RF	3371
1 No	8"	Tank Gauging 150# WN RF	3371
1 No	10×24"	Inspection Door for Level Indicator	3370
1 No	1½"	Level Indicator External Board	
1 No	2"	Temperature Transmitter 150#	

Note- The fabricated roof and bottom shall be free of any significant bulging and there shall be no stagnation of water on the roof and bottom.

6.3.5 Shell construction work & Nozzle installation

- a. Fabrication & Erection of all shell courses as per CPC Dwg. No. 3300 and peaking & banding, plumbness & roundness and NDT testing (RT and PT) and other tests of completed shell and attachments for final acceptance as per API Standard 650/653. (Latest edition).
- b. Erection of scaffolding around at shell exterior and interior of the tank to provide access for CPC inspection activities on shell. Scaffolding shall be erected by following scaffolding procedure given in “STANDARD SPECIFICATION FOR SCAFFOLDING” & provision of platforms at required levels & locations using load tested wooden planks or load tested plates for inspection by CPC Inspection Department. Scaffolding plates/planks should be securely clamped or tie up to their supports.
- c. Installation of all the shell nozzles with required reinforcements as per the nozzle table and reference drawings.

d. Fabrication & installation of three sample points to shell as per CPC Dwg No. 8926.

Quantity	Size	Nozzle	DWG No.
2 No	6"	Oil Inlet 150# WN RF SCH 80	3363
1 No	12"	Oil Outlet 150# WN RF SCH 80	3363
2 No	2"	Steam Inlet 150# WN RF SCH 80	3363
2 No	2"	Condensate Outlet 150#WN RF SCH 80	3363
1 No	4"	Draw Off Sump	3357
1 No	24"	Man Hole	3358
1 No	30"	Manhole	3359
1 No	24"	Man Hole for Mixer	3220
1 No	24×24"	Flush type Clean Out	3361
1 No	1"	Thermometer 300# WN RF	3365
2 No	4"	Foam Inlet 150# WN RF	3364
1 No	1"	Sample Point 150# SW RF SCH 80	8926
1 No	1"	Sample Point 150# SW RF SCH 80	8926
1 No	1"	Sample Point 150# SW RF SCH 80	8926
1 No	3"	Level Switch (Triple High) 150#	
1 No	3"	Level Switch (Triple Low) 150#	
1 No	2"	Pressure Transmitter 150#	

6.3.6 Foam system and Cooling water system

- a. Install the foam system, fire water (cooling water) piping system with supports, and foam discharge heads in accordance with CPC Drawings No. 2229 and 2114.
- b. After fabrication, hydrotest both the fire water piping and foam piping systems as per CPC guidance.
- c. Install cooling water splash plates on top of the upper shell course in accordance with CPC Drawing No. 1684.
- d. Fabrication & installation of cooling water drencher system with plates as per CPC Dwg. No 1684.
- e. The piping and components of the cooling water drencher system, cooling water riser pipe, and foam system riser pipe shall be galvanized by the contractor.
- f. All pipelines and associated components (flanges, bolts, nuts etc) in the cooling water system and foam system shall be hot-dip galvanized (inside and outside) as specified below.

Hot dip Galvanizing

- i. All hot dip galvanizing work shall conform to ASTM A 123 or BS EN ISO 1461:2009. Average mean coating thickness of galvanizing is 70 microns for lids of rim air vents and 85 microns for all other pipes, fittings, flanges, supports and gratings.
- ii. Touch up painting with Zn rich paint shall be attended on the galvanized surfaces wherever required after installation.
- iii. Certificate from the galvanizing company stating that all the specifications of the bidding document were met shall be submitted to Engineer after completion of galvanizing work.

- **Additional Requirement**
 - a. Conduct a hydrotest on the fire water line to assess the condition of the underground portion.
 - b. Carry out all required replacements as recommended by the CPC Inspection Department.
 - c. This work includes excavation, replacement of the marked pipe section, NDT, hydrotesting, painting, application of protective tape, and sand and soil backfilling.

6.3.7 Other Shell Accessories

- a. Fabrication & installation of Helicoidal stairway, hand railing and top platform as per CPC Dwg No 8408
- b. Fabrication and installation of tank level gauge as per CPC Dwg. No1779.
- c. Install Tank Earthing connection and cable as per CPC Dwg. No 3367.

6.3.8 Peaking and banding and other tests

Carryout plumbness, roundness and peaking & banding test for the tank under CPC witnessing as per API 650 & API 653 after completion of construction of the Tank.

6.3.9 Final hydro testing and level measurements

Hydrostatic testing of tank shall be done after successful completion of nondestructive tests, roundness test, plumbness test and peaking & banding test. All preparation required for hydrostatic testing shall be done by the contractor. Water needed for hydrostatic testing will be provided by CPC.

Note – All the temporary welded lugs/brackets to shell and roof shall be removed and ground flush prior to hydrotest.

Level measurements of tank bottom shall be taken at the following stages of hydro test.

- Before filling water
- At 50% water level
- At 100% water level (completion of water filling)
- After the empty out the tank

Open all roof and shell manholes after hydro test and clean tank interior for inspection. Any distortions observed during and after the hydro test should be rectified by the contractor by his own cost.

6.3.10 Painting

6.3.10.1 Specification for blast cleaning

- a. Blast cleaning shall satisfy to SA 2 1/2
- b. All the blast cleaned surfaces shall be brushed off with clean brushes or blown off with compressed air to remove all traces of blast cleaned products before painting. CPC reserves the full authority to accept or reject a prepared surface depending on the cleanliness and/or anchor pattern specified by the specific paint manufacture, depending on the type of paint system selected.
- c. Prior to commencement of blast cleaning a sample of abrasive material to be supplied to CPC for approval and a test sample to be performed for the qualification of the particular abrasive material and the operator.
- d. Blasting areas of the tank shall be sufficiently covered to prevent falling of blasting dust into tank vicinity.

6.3.10.2 Painting specifications and Requirements

All paints shall be thoroughly stirred to ensure uniform consistency before use. Paints supplied as multi-component systems must be mixed in the proportions specified by the manufacturer and applied within the designated pot life. Coatings containing heavy or metallic pigments that tend to settle shall be kept in suspension using a mechanical agitator or stirrer. Paints in which the vehicle has hardened and cannot be properly re-incorporated through correct mixing shall not be used. Likewise, paints that have jellied or thickened to the extent that excessive thinning is required to achieve brushing consistency shall also be rejected.

Paints shall **not be applied** under the following conditions:

1. When the temperature of the surface is less than 3 °C above the dew point of the surrounding air and/or the relative humidity exceeds 85%.
2. When the temperature is below 15 °C.
3. When there is the likelihood of an unfavorable change in weather conditions within two hours after coating.
4. When there is moisture deposition in the form of rain, condensation, or frost on the surface, this is likely to occur when the relative humidity exceeds 80% and the temperature is below 15 °C.

Painting carried out under doubtful weather conditions shall be the responsibility of the Contractor. If any painting is found unacceptable, the affected surfaces shall be cleaned to bare metal and repainted at the Contractor's expense. The first coat of paint shall be applied as soon as possible after the surface preparation has been approved by the CPC Inspection Department.

Each coat shall be allowed to dry for the time recommended by the manufacturer before applying the next coat. Particular attention shall be given to corners, edges, welds, and other critical areas to ensure the specified minimum dry film thickness (DFT) is achieved. All surfaces that will become inaccessible after assembly shall be completely painted prior to assembly.

All loose abrasive material shall be removed from the adjacent blast-cleaned areas prior to painting to prevent contamination and deterioration of the coating caused by abrasive particles deposited by wind before the paint has dried.

1. All paints shall be obtained from a reputed manufacturer.
2. For all external paint systems (Primer, Overcoat, Finish Coat, DFT/Number of Coats), the system shall comply with **ISO 12944-5** for environmental condition **C5-I** and **high durability**. (Durability refers to the service duration of the coating until it reaches condition Ri 3 as defined in **ISO 4628-3**.) All external paints shall withstand temperatures up to 75 °C.
3. Manufacturer's recommendations regarding over-coating intervals, touch-dry time, mixing ratio (for two-pack paints), thinners, etc., shall be strictly followed.
4. All paints shall be within their shelf life and shall be well mixed and free from lumps at the time of application.
5. Paint mixing shall be carried out only with a mechanical agitator or paint mixer.

6.3.10.3 Tank Painting and Coating Plan

Conduct tank painting as per the following plan

1. Blast clean and paint underside of bottom plate as per paint specification (E), before laying.
2. Blast clean and paint all roof structural parts as per painting specification (A) prior to fabrication of roof. Paint damaged areas due to welding to be power brush cleaned and painted as per same painting specification.

3. Blast clean and paint roof internal side as per paint specification (A)
4. Blast clean and paint tank roof external side after all welding & tank hydro test, as per painting specification (B).
5. Blast clean and paint tank shell external side, stairway, platforms & hand railings etc. after completion of tank hydro test as per painting specification (C).
6. Blast clean and paint internal sides of tank top shell course, bottom most shell course and tank bottom (product side) as per painting specification (A).
7. Blast clean and paint Foam pipe lines and Fire water/cooling water pipe lines as per painting specification(D)

6.3.10.4 Painting schedule

Painting Specification A

Internal side of the roof including the roof structure, internal sides of top most shell course and bottom most shell course and the product side of the tank bottom.

Amide/amine adduct cured epoxy (Novolac) paint system from a reputed manufacturer (e.g., Sigma, Carboline, Hempel, Jotun) approved for immersion service in gas oil with hydrocarbon and sulphur compound vapors, designed for high durability. The coating system shall withstand temperatures up to 75 °C.

Surface preparation: Sand blast to SA 2 ½.

Application: Airless spray.

DFT, over coating interval, etc. shall be as per manufacturer's data sheet.

Paint Specification B

External surface of the roof and roof accessories

Surface preparation	:	Blast cleaning to SA 2 ½
Primer	:	Zinc Phosphate Primer or suitable equivalent.
DFT / No. of coats	:	Total 170 microns
Application	:	Airless spray
Over coating interval	:	4 hrs (minimum) 7 days (maximum)
Overcoat	:	Bright Aluminum or equivalent
DFT / No. of coats	:	Total 100 microns in 2 coats
Over coating interval	:	4 hrs. (Minimum) 7 days (maximum)

Paint Specification C**External sides of the shell**

Surface preparation	:	Blast cleaning to SA 2 ½
Primer	:	Zinc Phosphate Primer or suitable equivalent.
DFT / No. of coats	:	Total 170 microns
Application	:	Airless spray
Over coating interval	:	4 hrs (minimum) 7 days (maximum)
Overcoat	:	Bright Aluminum or equivalent
DFT / No. of coats	:	Total 100 microns in 2 coats
Over coating interval	:	4 hrs. (Minimum) 7 days (maximum)

Paint Specification D**Foam/ Fire water piping, Stairs and hand railing - For new (Replacement) items.**

Surface preparation	:	Blast cleaning to SA 2 ½
Primer	:	Zinc Phosphate Primer or suitable equivalent.
DFT / No. of coats	:	Total 170 microns
Application	:	Airless spray
Over coating interval	:	4 hrs (minimum) 7 days (maximum)
Overcoat	:	Enamel paint compatible with the primer
DFT / No. of coats	:	Total 100 microns in 2 coats
Over coating interval	:	4 hrs. (Minimum) 7 days (maximum)

For Existing Items

Surface preparation	:	Scrape/ Wire brushing
Primer	:	Zinc Phosphate Primer or suitable equivalent.
DFT / No. of coats:		2 patch coats where the metal is exposed, and 2 coats to cover the complete surface.
Application	:	Airless spray/ Roller brush
Over coating interval	:	4 hrs (minimum) 7 days (maximum)

Overcoat	:	Enamel paint compatible with the primer
DFT / No. of coats	:	Total 100 microns in 2 coats
Over coating interval	:	4 hrs. (Minimum) 7 days (maximum)

Note: Consecutive coatings shall be different in color.

Paint Specification E

Underside of the bottom plates

High build amide/ amine cured epoxy coal tar paint system or high build bituminous coating system which, suitable for high durability (Above 15 Years),

Surface preparation: Blast clean to SSPC SA 2 ½ .

6.3.11 Calibration

After successful hydro testing of the tank calibration is to be carried out using optical triangulation method by a third party company acceptable to CPC. The calibration and tabulations should conform to API 2550 ASTM 1220. The tank calibration has to be carried out using one of the following methods by a third party company acceptable to CPC.

- MPMS Ch. 2.2B – Calibration of Upright Cylindrical Tanks using the optical line reference method.(ORLM)
- MPMS Ch. 2.2C – Calibration of Upright Cylindrical Tanks using the optical Triangulation method.(OTM)
- MPMS Ch. 2.2D – Calibration of Upright Cylindrical Tanks using the Internal Electro Optical Distance Ranging method.(EODRM)

MPMS (Manual of Petroleum Measurement Standards)

The name and address of the 3rd party company should be given in the bid for evaluation purposes. The Contractor should forward (03) sets of calibration tables and soft copies in the format of spread sheets to the Engineer on or before successful completion of the work.

6.3.12 Levelling of tank compound & concrete compartment area

Removal of used sand, and other debris, followed by leveling of the tank compound to the correct slope to facilitate proper rainwater drainage. Apply a 4-inch concrete layer in the tank compartment area, extending from the tank shell up to 3 m outward.

6.3.13 Remove Fire Barrier

After completion of all work fire barrier shall be removed.

6.3.14 Commissioning

Completion of tank in all respect ready for commissioning to the satisfaction of CPC Engineering, Inspection & Operation Departments, Cleaning of all debris from site and bring back the tank compound to its original condition.

6.4 Technical Specifications/ Codes/ Standards

6.4.1 Welding procedures and welder qualification:

Filler material for all joints:

The following welding electrodes shall be used for each category of joint.

- All fillet welds on bottom- AWS E 7018
- All welds on the shell for all passes and roof structure fabrication - AWS E7018

All piping work

- Root run - AWS E 6010
- For filling and capping passes - AWS E 7018
- All fillet welds on roof plates and structural work- AWS E 6013

- a. Welding procedure specifications (WPS) for all types of joints to be submitted to CPC for approval and Welding Procedure Qualification test shall be carried out at Refinery Training School in the presence of CPC Inspection Engineers /inspector.
- b. All welders to be qualified as per ASME Sec. IX in presence of CPC Inspection Engineer at CPC site and test samples for bend test with test certificates from a reputed third-party inspection company approved by CPC to be submitted. Welding of any type will not be allowed without proper qualification of welders by CPC.
- c. Pipe welders shall be qualified for all pipe joints as per ASME Sec. IX and bend test results by a reputed third-party inspection company approved by CPC to be submitted along with test pieces
- d. Maximum two tests will be done for an applicant NDT of those will be done by CPC. Cost for further test shall be borne by the contractor.

6.4.2 Standard of mechanical construction:

This tank has been designed according to API Standard 650 (latest edition) by CPC. All mechanical construction work, tolerances and testing has to be as per API Standard 650/653 (latest edition). Final acceptance will be by CPC based on the limits / tolerances and specification of this standard otherwise specified in this bid document

6.5 Manpower and Schedules:

- i. All the bidders must produce documentary proof that a consultant or an engineer who is conversant with API standard 650 and 653 could be assigned for this construction work.
- ii. A full-time technical person with a B.Sc. in Engineering (or higher qualification in a relevant discipline) must be available on-site and responsible for all engineering and safety aspects of the construction/repair work.

- iii. The contractor must provide a list of personnel (by name and category) for this project, including as Project/Site engineer, Technical officer, QA/QC Supervisor, welders, fitters & helpers etc, Resumes (CVs) of key technical staff assigned to this project must be submitted with the bid.
- iv. Bidders are requested to submit a complete list of construction equipment which will be at site of construction.
- v. Bidder shall submit a bar chart, manpower histogram and S- Curves along with the offer for total work clearly indicating the various phase of the contract, breakdown of man power and equipment allocated for this contract.
- vi. Bidder shall submit an organization chart clearly illustrating structure of the assigned project team indicating Project manager, Project Engineers, Supervisors, Technicians, Laboures, etc.
- vii. Bidders shall submit a complete Quality Assurance and Quality Control plan for the entire work including Inspection & Testing Plan (ITP) with defined Witness, Hold, and Surveillance points.

6.6 Inspection and Testing

- i. All local fabrication and installation at site will be inspected by CPC inspector with concurrence of the contractor's own inspection.
- ii. In the event of any rejection arising out of quality of standard of fabrication/installation according to API Standard 650/653 (latest edition), such items shall be replaced by the contractor at no cost to CPC. In view of standard of fabrication that have to be maintained, CPC reserves the right to reject services of workers not meeting up to skills required.
- iii. CPC inspectors & project engineers will carry out inspection at all stages of construction.

6.7 CPC Refinery Health, Safety and Environment (HSE) Procedures

All persons engaged in work at Ceylon Petroleum Corporation, Refinery, Sapugaskanda (hereinafter called the Refinery) shall be acquainted with the following regulations and their consent to abide by them shall be an essential condition of their permit to work at the Refinery.

1. The whole of the premises within the boundary fence is constituted a danger area with the exception of any area expressly exempted by the Refinery Manager (hereinafter called the Manager).
2. All employees, agents and invitees of the Contractor who may not be aware of the exact locality of any area expressly exempted from the danger area must assume that any part of the Refinery is a danger area and act accordingly.
3. Before commencing work of any nature in any area by the Contractor, his employees, agents or invitees, the Contractor must obtain the Manager's authorized signatories necessary for excavation permits, safety/fire certificates and clearance certificates. (Refer CPC Refinery Health, Safety and Environment (HSE) Procedures)
4. The Contractor, his employees, agents or invitees must observe all precautions stipulated in these documents. If the work cannot be completed in the period for which these documents are valid, the work shall be discontinued until the documents are renewed.
5. Persons under 18 years of age should not be employed by any contractor or by any sub-contractor for carrying out any contract work in any part of the Refinery.
6. All contractor personnel and their vehicles are required to obtain gate passes before entering the CPC Refinery. Only individuals who possess a valid police clearance are eligible to obtain gate passes.
7. Every contract worker shall have a valid police report to work within the refinery premises.
8. The contractor shall, except if and so far as the contract provides otherwise, indemnify the CPC against all losses and claims in respect of injuries or damage to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution of the works and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto except any compensation or damages for or with respect to:
 - a. the permanent use or occupation of land by the works or any part thereof;
 - b. the right of the CPC to execute the works or any part thereof on, over, under, in or through any land;
 - c. injuries or damage to persons or property resulting from any act or neglect of the CPC, his agent, servants or other Contractors, not being employed by the Contractor, or for or in respect of any claims proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the Contractor, his servants or agents such part of the compensation as may be just and equitable having regard to the extent of the responsibility of the Employer, his servants or agents or other contractors for the damage or injury.

9. It is a condition of the permit to work at the Refinery that all persons engaged at the Refinery shall submit to be searched by the Refinery's security officials. This search may take place, either at the time of entry to the Refinery or at any other place and during any time while the employees are in the Refinery, at the discretion of the Senior Security Officer, Refinery.
10. Fire, naked flame, lighters, matches, petrol or any other flammable substance and any apparatus / equipment which can cause ignition should not be taken to the danger area by any contract personnel without a written authority signed by an authorized representative of the Contractor and approval of CPC. Such written permit shall be valid for the period stated therein and must be returned to the Head of Fire Fighting and Safety, Refinery.
11. No dry battery or accumulator type of electric hand-lamp or hand-torch, which is not of a flameproof safety type, approved by the authorized representative of the Contractor, may be taken to the danger area.
12. Smoking is strictly prohibited in any part of the Refinery.
13. No fires shall be lit and no matches shall be ignited in any part of the Refinery without a special fire permit being given and signed by the Manager's authorized signatory.
14. The contractor shall observe the speed limit of 30 KMPH for vehicles and 24 KMPH for motorcycles within the Refinery premises and all vehicles must be mechanically sound and have an efficient exhaust, silencer, horn, brake, filler caps and tyres of good condition. All contract drivers must possess a valid driving license.
15. The vehicles used by the contractor should only be driven on the recognized main roads in the Refinery and no vehicle should leave a main road and enter into an operational area without having a valid Fire and Safety Permit.
16. Mobile cranes and other lifting equipment used for the contract job must be load tested and test reports must be produced to the Fire & Safety Department.
17. If any contract work involves scaffolding, it should be erected as per Standard, Refinery Scaffolding Procedure. A copy of Standard Refinery Scaffolding Procedure should be requested when necessary.
18. All contract work should be stopped if the fire siren is sounded or in case of a Refinery Emergency.
19. (a) The Contractor shall ensure that his employees and those of any of his sub- contractors shall not make use of any equipment, material or property of any kind whatsoever belonging to the Corporation unless the written permission of the corporation has been obtained beforehand.
(b) The Contractor shall ensure that so far as is compatible with the work being carried out, the area in which his workers and /or agents are working shall be kept free of all equipment, material or property of any other kind which may constitute an accident hazard. If it is necessary in the opinion of the Contractor for such equipment, material or property to be on site, it will be the Contractor's responsibility to ensure all necessary safety precautions are observed by his own employees and those of his sub-contractors.
20. The contractor must supply all personal protective equipment necessary for the contract employees to carry out the contract work. All contract employees should follow Refinery Safety Regulations and ensure to wear personal protective equipment.
21. All accidents caused to the contractor's employees must be reported to the Fire and Safety Department immediately.

22. After completion of the contract work by the contractor the area involved with the contract work should be inspected by the Fire and Safety Department to ensure that the cleanliness and good housekeeping practices had been followed. The area involved with the contract work should be certified by the Fire and Safety Department before the final payment is made.
23. If the Contractor / Sub Contractor intend to use electronic equipment / radioactive equipment the contractor shall inform the engineer in charge and give the complete details of such equipment and the purpose for which such equipment is used and obtain the permission from the Electrical Department before commencing the contract work.
24. Any employee, agent or invitee of a Contractor consciously or without consciousness, breaking the above Rules shall be liable to have his permit to work at the Refinery terminated immediately.
25. In addition to the above it will be contractor's responsibility to abide by the relevant clauses of Factories Ordinance of Sri Lanka in respect of all work carried out at the site and the safety of personnel engaged and equipment used at site.

Contractor shall pay special attention to the following clauses of the Factories Ordinance of Sri Lanka. However, the responsibility of the contractor will not be limited to the clauses listed below but will cover all other conditions in the whole,

Factories Ordinance and its amendments.

1. Clause 27 - Hoists and lifts
 2. Clause 28 - Chains, Ropes & Lifting Tackle
 3. Clause 29 - Cranes and other Lifting Machines
 4. Clause 30 - Construction and Maintenance of floors, passages and stairs.
26. The mobile phones will not be allowed to bring Refinery premises without proper authorization/approval.

6.7.2 STANDARD SPECIFICATION FOR SCAFFOLDING

Scaffolds

A scaffold is an elevated working platform for supporting both personnel and materials. It is temporary, its main use being in construction and/or maintenance work. Scaffolds should be designed to support at least four times the anticipated weight of workers and materials which will be used for. Scaffolding is the structure that supports the working platform.

Over Head Protection

Whenever, work is being done above the personnel working on a scaffold, overhead protection should be provided on the scaffold for those personnel. This protection should be not more than 9 ft. (3m) above the working platform and should be planks or other strong suitable material.

Means of Access

A safe convenient means must be provided to gain access to the working platform level. Means of Access may be a portable ladder, fixed ladder, ramp or runway or stairway.

Suggested Scaffolding Regulations for Refinery Use Definition of Scaffold Terms

- a **Standards (or upright)** -The vertical supports which bear the weight of the structure and its load.
- b **Ledgers** -Horizontal tubes which connect standards longitudinally and which may act as supports for transoms.
- c **Transoms** -Tubes which span ledgers transversely and may support as working platform.
- d **Braces** - Tubes fixed diagonally across the length and/or width of a scaffold through a scaffold (i.e. Plan bracing) to increase its stability.
- e **Ties** - Tubes used to maintain stability in a scaffold by connecting it to the structure or to the wedges on ground.
- f **Right Angle Load Bearing Coupler** - Scaffold fitting used to join major load bearing tubes at right angle.
- g **Swivel Coupler** - Fitting used to join tubes at any angle.
- h **Base Plate** - A steel plate approximately 6"x6" with a spigot over which a scaffold tube can be placed at right angles to the plate.
- i **Joint Pin** - Coupler for joining scaffold tubes end to end by fitting externally.
- j **Sole Plate** - Wood plank of suitable size to cover soft ground

Independent Tie Scaffolds

There are scaffolds having two rows of standards

1. All scaffolds should be erected on level and firm ground. Where level ground is not available then the ground directly below the sole plates should be leveled.
2. Excavations manholes, openings, etc. must be covered with larger timber for sole plates. Where several standards are involved a competent engineer must ensure the bridging is adequate for the loads involved.
3. Bricks, scrape pieces of timber, breeze blocks, etc. must not be used as sole plates.
4. Metal base plates must be used to support standards on grounds other than hard concrete floor.
5. Standards shall be erected vertically at spaced not more than 6 ft. (2.134 m)
6. Joints in standards must be staggered, i.e. no adjacent joints in the same lift, and should be as near as possible to the ledgers. These joints should be made with joint pins (internal couplers). Swivel joint couplers should not be used for this purpose.
7. Ledgers must be fitted horizontally and secured with 90° load bearing couplers to the inside of the standards, and spaced not more than 6 ft.
8. Joints in ledgers should be avoided as much as possible, but may be made with sleeve couplers and must be staggered (i.e. no adjacent joints in the same bay) and should not be more than 2 ft. (610 mm) from any standard.
9. Transoms should be fixed at both ends to the ledgers with right angle or swivel couplers. The distance between two adjacent transom shall be not more than 4 ft.
The two transoms at the edges of platform should be as close as possible to standard. Those two transoms may be fixed to the standards with any right angle coupler.
10. Additional transoms must be fitted to ensure that the ends of the boards or planks are supported properly.
11. Ties must be fitted at 20 ft. minimum intervals along the scaffold horizontally over 30 ft. vertically
12. All ties must be secured with right angle load bearing couplers.
13. At least 50% of all ties should be through ties and must be horizontal where possible and secured to standards or close to standards. Horizontal ties must be fastened both to the internal and external standards or ledgers.
14. Where it is not possible to make all ties through ties inter- mediate reveal ties may be fitted.
15. The minimum width of the scaffold platforms should be as follows:
 - (a) 24" - 2 persons only (no material) 3 boards/planks
 - (b) 32" - 3 persons and the depositing of materials not more than 25 kg. Passage of persons 4 boards/planks

(c) 48" - 4 persons & material up to 50 kg. 6 boards/planks must be supported by minimum of six standards

16. All scaffolding must be suitably braced.

(d) Diagonal bracing at right angles to the structure and at alternative pairs of standards is necessary for the full height of the scaffold.

(e) Longitudinal or facade bracing to the full height of the structure in the end bays and intermediate locations of 100 ft. may be used.

(f) Longitudinal bracing should be fastened to extended transoms by right angle couplers provided that such transoms are clamped to ledgers or standards with right angle couplers. Bracing, fastened to the standards may be secured by swivel couplers as near to the ledger as possible.

(g) Joints in braces should be made by sleeve or parallel couplers.

17. Scaffold boards/planks must be free of large splits, knots, should be banded at both ends, and to cut in any way.

18. Every scaffold boards/planks longer than 6 ft. should have at least three supports, but needs more supports as in clause 10.

19. No board should overhang its last support by more than 12 inches.

20. Every scaffold board should have a minimum overhang of 6 inches over its last support.

21. The space between two adjacent boards must not exceed 1 inch.

22. Scaffold platforms must be completely boarded out.

23. Every scaffold platform from which a person can fall more than 6 ft. 6 inch. must be fitted with guard rails the height of the guard rail from the platform must be between 3 ft. and 3 ft. 9 inch (1.142 m).

24. The space between the edge of the working platforms and of the equipment must be as small as possible and must never exceed 12 inches. If due to circumstances a gap of more than 12 inches is created, guardrails must be fitted as above.

25. As possibility of displacement exist, from high winds etc. boards must be fastened down at both ends with suitable clamps.

26 Where platforms become slippery due to oil etc. the boards should either be cleared off and sanded or turned over.

27. Clear access must be maintained at all times to all scaffolds and all ladders being used to give access must be sound construction.

28. The gap in the guardrail for the ladder access must be as small as possible.

29. Ladder runs must not, under any circumstances, be used to support gangways, runways, or platforms of any nature.

30. Single planks run must not be used under any circumstances.

31. Ladder landings must be provided at every 30 ft.

32. No part of scaffold be used to support any other load or as a supporting point for a chain blocks ratchet etc.

7 Mobile or United Scaffolds

1. No mobile or united scaffold shall be erected to a height greater than 3 1/2 times its minimum base width.

2. The standards should be made vertical

3. All other requirements for independent tied scaffolds should be satisfied other than ties.

4. Maximum height of mobile or united scaffold is 60 ft.

8 Inspection of Scaffolds and Accessories

- 1 Every scaffolding pipe, coupler & base plate must be inspected by Inspection Engineer once in every month period.
2. The Inspection Engineer will reject the defective items such as damaged pipes, corroded couplers and base plates etc.
3. Every plank to be used for a platform should be load tested at 6 months intervals by Inspection Dept.
4. The planks should be supported at closest to its ends and tested with the rated load at the centre.

The rated loads shall be :

300 Kg. for planks 4 ft. long, 200 kg. for planks 6 ft. long, 150 kg. for planks 8 ft. long, 100 kg. for planks 12 ft. long.

5. Before load testing every 6 months, planks to be inspected
6. Every scaffolding clamp and pipe must be numbered.

SECTION - 7

BILL OF QUANTITIES

Description	QTY	Unit	Rate	Amount
Preliminary expenses including mobilization, transport and etc.	1	Ls		
Foundation				
Excavation for foundation & remove debris				
Soil filling and compact				
Supply materials and Construction of ring beam foundation including draw off sump	1	EA		
Laying bitumen & sand layer.				
Fire barrier & External scaffolding				
Erection and removal of Fire barrier & External scaffolding up to full height of tank	450	m ³		
Internal scaffolding				
Erection and removal of Internal scaffoldings for tank construction and painting	1250	m ³		
Bottom plate laying & Welding				
Sizing of Bottom plates & Annular plates as per the CPC dwg.				
Blast cleaning and painting bottom plate underside				
Laying and fit up of bottom plates and annular plates (After under side painting)				
Welding of Bottom plates as per the CPC dwg & conduct NDT				
Welding of Annular plates as per the CPC dwg & conduct NDT				
Welding of Bottom plates to Annular plates as per the CPC dwg & NDT				
Depression (flatness) survey				
Shell erection works				
Sizing & Rolling of shell plates as per the CPC dwg.				
Erection of shell plate and Welding (1st shell course)				
Conduct necessary NDT and take Peaking and Banding measurement				
Conduct annular to shell weld				
Erection of shell plate and Welding (2nd shell course)				
Conduct necessary NDT and take Peaking and Banding measurement				
Erection of shell plate and Welding (3rd shell course)				
Conduct necessary NDT and take Peaking and Banding measurement				

Erection of shell plate and Welding (4th shell course)				
Conduct necessary NDT and take Peaking and Banding measurement				
Erection of shell plate and Welding (5th shell course)				
Conduct necessary NDT and take Peaking and Banding measurement				
Welding of shell top angle & necessary NDT works				
Installation of roof structure & Center hub				
Pre-fabrication of roof trusses, center hub and painting				
Installation of roof structure with necessary NDT work				
Roof fabrication works & Installation of roof attachments -				
Sizing of roof plates as per the CPC dwg.				
Laying of roof plates				
Completion of welding of tank roof as per drawing with necessary NDT work.				
Fabrication & installation of roof accessories (Man hole, Gauge hatch, Inspection door, Flame trap, Circumferential and radial handrail and etc.) with necessary NDT work.				
Fabrication & Installation of shell attachments				
Fabrication & installation of stairway, level gauge, top platform, nozzle and all shell accessories, with necessary NDT work .	1	Ls		
Steam Coil fabrication & Installation				
Fabrication and installation of steam coil with supports, conduct RT for welded joints and if required conduct repair works, hydro test.	1	Ls		
Installation of Fire water & Foam system				
Fabrication & Installation of foam system and Piping	1	Ls		
Fabrication & Installation of Cooling water system, Piping as per the CPC dwg and Hydro test, Installation of cooling water splash plates	1	Ls		
Repair underground Fire water piping, NDT and Hydro test.(If required) - refer below table				
Final hydro test				
Conduct Hydrotest and settlement survey (If required any repair/correction based on settlement survey, contractor have to conduct)	1	Ls		

Sand blasting & painting works				
Supply of all painting materials , consumables, equipment with fuel and Painting of the tank bottom top side, bottom shell course internal side & top shell course 1.5 m band internal side.	1	Ls		
Supply of all painting materials , consumables, equipment with fuel and Painting of tank roof external side, tank shell external side, stairways, platforms, fire water and foam systems, level gauge & all other accessories.	1	Ls		
Calibration of the tank.				
Site clearing & Handing over the tank for commissioning & Demobilization.	1	Ls		
Concrete compartment area (3m from shell)	14.54	m ³		

Labour rates for repairing under ground fire water line (If required)

Item	Qty	Unit	Rate	Total
Excavation		m ³		
Weldings (4" SCH 40 Pipe)		Nos		
Painting (4" Pipe)		Meter		
Apply protective tape		Meter		
Hydro Testing		Lot		
Holyday Testing		Meter		
Sand filling		m ³		
NDT (PT) per pipe joint				

SECTION – 8

DRAWINGS

List of Drawings

#	Description	Drawing No
1	Tank general plan	3298
2	Shell	3300
3	Bays for tank (Roof Structure)	3301
4	Roof	3302
5	Cooling water drencher system for tank 38 & 39	1684
6	Helicoidal Stairway with platform	8408
7	Radial Handrail	3251
8	4" DIA. Draw of sump	3357
9	24" DIA. Shell manhole	3358
10	30" DIA. Shell manhole	3359
11	24"x24" Flush type clean out	3361
12	6" DIA. Nozzle for oil inlet	3363
13	12" DIA. Nozzle for oil outlet	3363
14	8" DIA. Nozzle for oil inlet	3363
15	4"DIA. Foam discharge head	3364
16	1" DIA. Nozzle thermometer	3365
17	Grounding	3367
18	20" DIA. Roof manhole	3368
19	8" DIA. Roof nozzle gauge hatch	3371
20	12" DIA. Nozzle flame trap- vent	3374
21	10"x24" Inspection door	3370
22	6" DIA. Jet mixer	3220
23	Heating coil	3305
24	Circumferential handrail	3245
25	2" DIA. Cooling ring	3304, 6922
26	Annular plate & Bottom plate arrangement	8509
27	Ring beam foundation drawing	8790 A
28	Level gauge drawing	1779
29	Sample point drawings (3 levels)	8926
30	Foam system (piping drawing)	2229
31	Fire water piping system	2114
32	Tank nozzle orientation	9187

SECTION – 9

STANDARD FORMS (BID)

FORM OF BID SECURITY

[this Guarantee form shall be filled in accordance with the instructions indicated in brackets]
----- [insert issuing agency's name, and address of issuing branch or office]

8.1 Beneficiary:
.....[insert(by PE) name and address of employer]

Date: ----- [insert (by issuing agency) date]

BID GUARANTEE No.: ----- [insert (by issuing agency) number]

We have been informed that ----- [insert (by issuing agency) name of the Bidder] (hereinafter called "the Bidder") has submitted to you its bid dated -----[insert (by issuing agency) date] (hereinafter called "the Bid") for the of [insert name of Contract] under Invitation for Bids No. ----- [insert IFB number] ("the IFB").

Furthermore, we understand that, according to your conditions, Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we ----- [insert name of issuing agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ----- [insert amount in figures] ----- [insert amount in words] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified; or
(b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
(c) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This Guarantee shall expire: (a) if the Bidder is the successful bidder, upon our receipt of copies of the Contract signed by the Bidder and of the Performance Security issued to you by the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of the successful bidder furnishing the performance security, otherwise it will remain in force up to ----- (insert date)
Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date.

[signature(s) of authorized representative(s)]

CHECK LIST FOR BIDDERS

Bidders are advised to fill the following table.

ITEM	ITB Clause	YES (tick)	REFERENCE
Form of Bid			
Addressed to the Employer?	18		
Completed?	18		
Signed?	18		
Bid Securing Declaration Form (if required)			
Properly filled and signed	16		
Bid Security			
Address to the Employer?	16		
Format as required?	16		
Issuing Agency as specified?	16		
Amount as requested?	16		
Validity 28 days beyond the validity of Bid?	16		
Qualification Information			
All relevant information completed?	4		
Signed?	4		
Addendum			
Contents of the addendum (if any) taken in to account?	10		
Bid package			
All the documents given in ITB Clause 12 enclosed in the original and copy?	12		
ITB Clause 19 followed before sealing the Bid package?	19		