

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
SEMI-CONDUCTOR LABORATORY (SCL)
CHANDIGARH**

**Tender for SITC of Air Conditioning System for upcoming Chemical
Store**

Bids to be submitted online

Tender No.: SCL/PurUnit-4/SC202100001401 dated 27-08-2021

A. Tender Details

| | |
|------------------------|--|
| Tender No : | SCL/PurUnit-4/SC202100001401 |
| Tender Date : | 27-08-2021 |
| Tender Classification: | GOODS |
| Purchase Entity : | PurUnit-4 |
| Centre : | SEMI-CONDUCTOR LABORATORY (SCL) |

Procurement of SITC of Air Conditioning System for upcoming Chemical Store

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dated 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.

Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.

The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened

in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

Parties interested to participate in this e-Tender are required to register themselves as vendors, if not already registered, in our e-procurement portal <https://eproc.vssc.gov.in> by downloading plugins and help demos listed on the home page of the e-procurement link mentioned above to complete the vendor registration process. Parties can seek help from help desk +91471 2565 454/2527 (Email: eproc@vssc.gov.in) also the home page of e-procurement portal may be accessed for any technical help for registration and subsequent process. Parties may please note that without registering in our E-procurement portal they will not be able to quote for this tender.

A.1 Tender Schedule

| | |
|------------------------------|-------------------------|
| Bid Submission Start Date : | 27-08-2021 14:30 |
| Bid Clarification Due Date : | 16-09-2021 17:27 |
| Bid Submission Due Date : | 24-09-2021 11:00 |
| Bid Opening Date : | 24-09-2021 11:30 |
| Price Bid Opening Date : | 12-10-2021 15:30 |

B. Tender Attachments

Technical Write-up/Drawings

Document : Tender Drawing 3- Piping and Instrumentation

Document : Detailed Specifications

Document : Tender Drawing 2

Document : Tender Drawing 1(B)

Document : Tender Drawing 1 (A)

Instructions To Vendors

6. INSTRUCTIONS TO TENDERERS AND TERMS CONDITIONS OF TENDER

1. Bid shall be submitted on-line only complying specified schedule.
2. Late tenders and delayed tenders will not be considered.
3. GST and/or other duties/levies legally leviable and intended to be claimed should be distinctly shown separately in the tender.
4. a) All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.
b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non acceptance of tender, the tenderer will have to remove the samples at his own expense.
c) Approximate net and gross weight of the items offered shall be indicated in your offer if available. If dimensional details are available the same should also be indicated in your offer.
(d) Specifications: Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.

5. The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

6. The tenderer should supply along with his tender, the name of his bankers as well as the latest Income-Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.

7. The authority of the person signing the tender, if called for, should be produced.

8. In case of any difference between General Terms & Conditions enclosed and Terms & Conditions specific to this tender i.e. technical specifications & Vendor Specified Terms, Terms and Conditions specific to this tender will prevail.

9. TERMS CONDITIONS OF TENDER

10. DEFINITIONS:

- a. The term PURCHASER shall mean Semi-Conductor Laboratory, Sector-72, Mohali, Punjab-160071, under the administrative control of DOS, Government of India.
- b. The term CONTRACTOR shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.
- c. The term STORES shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants machinery and subsequent testing, should such a condition is included in the Purchase Order. The term PURCHASE ORDER shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

11. PRICES:

Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.

12. PACKING FORWARDING INSURANCE:

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the

Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

13. DESPATCH:

The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods dispatched. The consignment should be dispatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on said to contain basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

14. TEST CERTIFICATE:

Wherever required, test certificates should be sent along with the dispatch documents.

15. ACCEPTANCE OF STORES:

- a. The stores shall be tendered by the Contractor for inspection at such places as may be specified by the purchaser at the Contractor's own risk, expense and cost.
- b. It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the purchaser, whose decision shall be final.
- c. If, in the opinion of the purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they shall be rejected may be either rejected or accepted at a price to be fixed by the purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor.
- d. If the whole or any part of the stores supplied are rejected in accordance with Clause No. 6 (c) above, the purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

16. REJECTED STORES:

Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

17. DELIVERY:

- a. The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates.

b. Should the Contractor fail to deliver the stores or any consignment thereof within the period prescribed for such delivery, the purchaser shall be entitled at his option either.

(i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such store may be in arrears subject to a minimum of 10%, or

(ii) to purchase from elsewhere, without notice to the Contractor on the account and at the risk of the Contractor, the stores not delivered or others of a similar description (where others exactly complying with the particulars, are not, in the opinion of the purchaser, readily procurable, such opinion being final) without cancelling the Contract in respect of the consignment (s) not yet due for delivery, or

(iii) to cancel the Contract or a portion thereof and if so desired to purchase or authorise the purchase of stores not so delivered or others of a similar description (where others exactly if complying with the particulars are not, in the opinion of the purchaser, readily procurable, such opinion final) at the risk and cost of the Contractor.

In the event of action being taken under sub-clause (ii) (iii) of clause above, the Contractor shall be liable for any loss which the purchaser may sustain on that account, provided that the re-purchase or if there is an agreement to repurchase then such agreement is made within six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. The manner and method of such re purchase shall be at the discretion of the purchaser, whose decision shall be final. It shall not be necessary for the purchaser to serve a notice of such re purchase on the defaulting Contractor. This right shall be without prejudice to the right of the purchaser to recover damages for breach of Contract by the Contractor.

18.

EXTENSION OF TIME:

As soon as it is apparent that the Contract dates cannot be adhered to, an application shall be sent by the Contractor to the purchaser. If failure, on the part of the Contractor, to deliver the stores in proper time shall have arisen from any cause which the purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final) he may allow such additional time as he considers it to be justified by circumstances, of the case without prejudice to the purchaser's right to recover liquidated damages under clause 8 thereof.

19. ERECTION OF PLANT MACHINERY:

Wherever erection of a plant or machinery is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the erection as and when called upon to do so within the period specified by the purchaser, the purchaser shall have the right to get the erection done through any source of his choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the purchaser is liable to incur towards erection. The Contractor shall, however, not be entitled to any gain due to such an action by the purchaser.

20. PAYMENT:

Contractor's bill will be passed for payment only after the stores have been received, inspected and accepted by the Purchaser.

21. MODE OF PAYMENT:

Normally payment will be made for the accepted stores within 30 days from the date of receipt of the materials.

22. RECOVERY OF SUM DUE:

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under this Contract against the Contractor, the purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the purchaser. Should this sum be not sufficient to cover the full amount recoverable, the contractor shall pay to the purchaser on demand the remaining balance due. Similarly, if the purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the purchaser are finally adjudicated upon and paid by the Contractor.

23. INDEMNITY:

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this Contract are free and clean of infringement of any Patent, Copyright or Trademark, and shall at all times indemnify the purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfillment of the contract.

24. COUNTER TERMS AND CONDITION OF SUPPLIERS:

Where counter terms and conditions printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the Purchaser, unless specific written acceptance thereof is obtained.

25. SECURITY FOR PURCHASE OF MATERIALS:

Successful tenderer will have to furnish in the form of a bank guarantee or any other form as called for by the purchaser towards adequate security for the materials and properties provided by the Purchaser for the due execution of the Contract.

C. Bid Templates

C.1 Technical Bid - SITC of Air Conditioning System for upcoming Chemical Store

1. Screw Chillers, Minimum Capacity 70 TR at 43 Deg C ambient

Item specifications for Screw Chillers, Minimum Capacity 70 TR at 43 Deg C ambient

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Screw Chillers, Minimum Capacity 70 TR at 43 Deg C ambient, with Single/Multiple screw compressor, air cooled condenser, shell and tube type heat exchanger, micro processor controlled, IP55 enclosure, complete with all the accessories, safeties, regrigerant, oil etc. | | - | | |

2. Chilled water pumps, Horizontal end suction, top discharge

Item specifications for Chilled water pumps, Horizontal end suction, top discharge

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Chilled water pumps, Horizontal end suction, top discharge, minimum capacity: 175 gpm @ 3 KG/CM2, complete with TEFC squirrel cage induction motor, heavy duty, IE3 Class motor, base frame, coupling, nuts, bolts, gaskets etc. | | - | | |

3. 4" Size, NRVs, PN-16/Class 150 rated, dual plate, with CI body and SS internals.

Item specifications for 4" Size, NRVs, PN-16/Class 150 rated, dual plate, with CI body and SS

internals.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | 4" Size, NRVs, PN-16/Class 150 rated, dual plate, with CI body and SS internals. | | - | | |

4. 4" Size, Butterfly valves, PN 16/Class 150 rated, wafer design, lever operated, CI/SG iron body, SG iron disc coated with Nylon, SS shaft.

Item specifications for 4" Size, Butterfly valves, PN 16/Class 150 rated, wafer design, lever operated, CI/SG iron body, SG iron disc coated with Nylon, SS shaft.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | 4" Size, Butterfly valves, PN 16/Class 150 rated, wafer design, lever operated, CI/SG iron body, SG iron disc coated with Nylon, SS shaft. | | - | | |

5. 4" size, Y-strainer, CI/MS body with brass wire/ SS wire-mesh, PN16/Class 150 rated

Item specifications for 4" size, Y-strainer, CI/MS body with brass wire/ SS wire-mesh, PN16/Class 150 rated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | 4" size, Y-strainer, CI/MS body with brass wire/ SS wire-mesh, PN16/Class 150 rated | | - | | |

6. 4" size, Motorised butterfly valves (On-Off type)

Item specifications for 4" size, Motorised butterfly valves (On-Off type)

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|--|--|---|--|--|
| 1 | 4"size, Motorised butterfly valves (On-Off type) | | - | | |
|---|--|--|---|--|--|

7. 4" size, Three way flow control valve

Item specifications for 4" size, Three way flow control valve

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------------------------------|-------|------------|-----------------------|--------|
| 1 | 4" size, Three way flow control valve | | - | | |

8. Temperature gauge, 4"Dial type, complete with capillary, SS Thermowell, all the fittings etc.

Item specifications for Temperature gauge, 4"Dial type, complete with capillary, SS Thermowell, all the fittings etc.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Temperature gauge, 4"Dial type, complete with capillary, SS Thermowell, all the fittings etc. | | - | | |

9. Pressure gauge, 4" dial size, bourdan movement, all SS internals, complete with all the fittings and isolating ball valve etc.

Item specifications for Pressure gauge, 4" dial size, bourdan movement, all SS internals, complete with all the fittings and isolating ball valve etc.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Pressure gauge, 4" dial size, bourdan movement, all SS internals, complete with all the fittings and isolating ball valve etc. | | - | | |

10. Temperature sensor cum transmitter complete with SS Thermowell, all the fittings etc.

Item specifications for Temperature sensor cum transmitter complete with SS Thermowell, all the fittings etc.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Temperature sensor cum transmitter complete with SS Thermowell, all the fittings etc. | | - | | |

11. Differential pressure across chillers, complete with all the fittings, piping etc.

Item specifications for Differential pressure across chillers, complete with all the fittings, piping etc.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Differential pressure across chillers, complete with all the fittings, piping etc. | | - | | |

12. 4" size, MS, C-Class, chilled water line

Item specifications for 4" size, MS, C-Class, chilled water line

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | 4" size, MS, C-Class, chilled water line complete with all the fittings like bends, reducers, flanges, pumps connections, chiller connections, nuts, bolts, supports, gaskets etc. | | - | | |

13. 50 mm thick, TF quality Thermocole insulation for 4" MS chilled water line

Item specifications for 50 mm thick, TF quality Thermocole insulation for 4" MS chilled water line

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
| | | | | | |

| | | | | | |
|---|--|--|---|--|--|
| 1 | 50 mm thick, TF quality Thermocole insulation for 4" MS chilled water line complete with all the fittings like bends, reducers, flanges, pumps connections, chiller connections etc. | | - | | |
|---|--|--|---|--|--|

14. Expansion tank, Capacity: 1000 Ltrs., MOC: MS, insulated

Item specifications for Expansion tank, Capacity: 1000 Ltrs., MOC: MS, insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Expansion tank, Capacity: 1000 Ltrs., MOC: MS, insulated, complete with float valve & quick fill make-up connections, drain, over flow connection, MS stand etc. | | - | | |

15. Make-up line from expansion tank to highest point in the retrain air line, 2" size, MS - C Class

Item specifications for Make-up line from expansion tank to highest point in the retrain air line, 2" size, MS - C Class

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Make-up line from expansion tank to highest point in the retrain air line, 2" size, MS - C Class, complete with all the fittings, nuts, bolts, gasket and insulation | | - | | |

16. Expansion tank inlet line complete with all the fittings, supports, 1" size, GI - Class B

Item specifications for Expansion tank inlet line complete with all the fittings, supports, 1" size, GI - Class B

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
| | | | | | |

| | | | | | |
|---|---|--|---|--|--|
| 1 | Expansion tank inlet line complete with all the fittings, supports, 1" size, GI - Class B | | - | | |
|---|---|--|---|--|--|

17. Level switch for expansion tank

Item specifications for Level switch for expansion tank

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------------------------|-------|------------|-----------------------|--------|
| 1 | Level switch for expansion tank | | - | | |

18. Ball valve, 1" Size

Item specifications for Ball valve, 1" Size

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------------|-------|------------|-----------------------|--------|
| 1 | Ball valve, 1" Size | | - | | |

19. Butterfly valve, 2" Size

Item specifications for Butterfly valve, 2" Size

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--------------------------|-------|------------|-----------------------|--------|
| 1 | Butterfly valve, 2" Size | | - | | |

20. Drain points, 1" size, complete with all fittings and isolating ball valve.

Item specifications for Drain points, 1" size, complete with all fittings and isolating ball valve.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Drain points, 1" size, complete with all fittings and isolating ball valve. | | - | | |

21. Purge points, 1" size, complete with all fittings and isolating ball valve.

Item specifications for Purge points, 1" size, complete with all fittings and isolating ball valve.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Purge points, 1" size, complete with all fittings and isolating ball valve. | | - | | |

22. Air handling unit, minimum capacity: 8000 CFM**Item specifications for Air handling unit, minimum capacity: 8000 CFM**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Air handling unit, minimum capacity: 8000 CFM, complete with Louvers at inlet, pre and fine filter section, tubular/strip heaters section, 8 row chilled water coil section, SS 304 condensate tray, fans - 02 numbers, :minimum 8000 CFM each @ 65 mm static, with TEFC, IE3 efficiency, VFD compatible, spark/flame proof motors suitable for 415V +/- 10%, 3 phase, 50 Hz+ 5% AC , motorised isolation dampers at fan outlets, motorised fire and smoke damper at AHU outlet etc. | | - | | |

23. Differential pressure sensor**Item specifications for Differential pressure sensor**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Differential pressure sensor for DP across the filters | | - | | |

24. Thermostat for safety of heaters

25. Anodised Aluminium ducting, 22 gauge (Standard), as per SMACNA complete with supporting arrangements

Item specifications for Anodised Aluminium ducting, 22 gauge (Standard), as per SMACNA complete with supporting arrangements

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Anodised Aluminium ducting, 22 gauge (Standard), as per SMACNA complete with supporting arrangements, vanes, anchor fasteners, supports, access doors, nuts, bolts, neoprene rubber gaskets etc. . | | - | | |

26. Volume control dampers in AI construction within ducts to be provided with suitable ducts lever and quadrants.

Item specifications for Volume control dampers in AI construction within ducts to be provided with suitable ducts lever and quadrants.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Volume control dampers in AI construction within ducts to be provided with suitable ducts lever and quadrants. | | - | | |

27. Supply air grilles/ diffusers in AI construction with volume control dampers with necessary frame work etc. and complete as required.

Item specifications for Supply air grilles/ diffusers in AI construction with volume control dampers with necessary frame work etc. and complete as required.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|---|--|---|--|--|
| 1 | Supply air grilles/ diffusers in Al construction with volume control dampers with necessary frame work etc. and complete as required. | | - | | |
|---|---|--|---|--|--|

28. Thermal insulation for supply air duct: Aluminium faced Closed Cell Nitrile rubber, Class 'O' fire rating, 38 mm thick

Item specifications for Thermal insulation for supply air duct: Aluminium faced Closed Cell Nitrile rubber, Class 'O' fire rating, 38 mm thick

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Thermal insulation for supply air duct: Aluminium faced Closed Cell Nitrile rubber, Class 'O' fire rating, 38 mm thick with a density not less than 50 Kg/m ³ . All the joints shall be sealed with 50mm thick Al tape. | | - | | |

29. Temperature sensors inside the Chemical store

Item specifications for Temperature sensors inside the Chemical store

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Temperature sensors inside the Chemical store, accuracy +/- 0.5 Deg C. | | - | | |

30. Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 1800 CFM at 15 mm WG

Item specifications for Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 1800 CFM at 15 mm WG

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
| | | | | | |

| | | | | | |
|---|---|--|---|--|--|
| 1 | Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 1800 CFM at 15 mm WG, Cast Al impeller, suitable for 415V+10%, 50 Hz, 3 phase, TEFC squirrel cage induction motor, S1, F-Class, IP55, explosion proof type suitable for Hazardous Zone -II, Gas group-II C (FLP), Temperature Class - T3, complete with bird protection guard wire mesh both sides. | | - | | |
|---|---|--|---|--|--|

31. Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 900 CFM at 15 mm WG

Item specifications for Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 900 CFM at 15 mm WG

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 900 CFM at 15 mm WG, cast Al impeller, suitable for 415V+10%, 50 Hz, 3 phase, TEFC squirrel cage induction motor, S1, F-Class, IP55, explosion proof type suitable for Hazardous Zone -II, Gas group-II C (FLP), Temperature Class - T3, complete with bird protection guard wire mesh both sides. | | - | | |

32. Installation, Testing and Commissioning of Screw Chillers, Minimum Capacity 70 TR at 43 Deg C ambient

Item specifications for Installation, Testing and Commissioning of Screw Chillers, Minimum

Capacity 70 TR at 43 Deg C ambient

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Screw Chillers, Minimum Capacity 70 TR at 43 Deg C ambient, with Single/Multiple screw compressor, air cooled condenser, shell and tube type heat exchanger, micro processor controlled, IP55 enclosure, complete with all the accessories, safeties, refrigerant, oil etc. | | - | | |

33. Installation, Testing and Commissioning of Chilled water pumps, Horizontal end suction, top discharge

Item specifications for Installation, Testing and Commissioning of Chilled water pumps, Horizontal end suction, top discharge

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Chilled water pumps, Horizontal end suction, top discharge, minimum capacity: 175 gpm @ 3 KG/CM2, complete with TEFC squirrel cage induction motor, heavy duty, IE3 Class motor, base frame, coupling, nuts, bolts, gaskets etc. | | - | | |

34. Installation, Testing and Commissioning of 4" Size, NRVs, PN-16/Class 150 rated, dual plate, with CI body and SS internals.

Item specifications for Installation, Testing and Commissioning of 4" Size, NRVs, PN-16/Class 150 rated, dual plate, with CI body and SS internals.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|--|--|---|--|--|
| 1 | 4" Size, NRVs, PN-16/Class 150 rated, dual plate, with CI body and SS internals. | | - | | |
|---|--|--|---|--|--|

35. I/T/C of 4" Size, Butterfly valves, PN 16/Class 150 rated, wafer design, lever operated, CI/SG iron body, SG iron disc coated with Nylon, SS shaft.

Item specifications for I/T/C of 4" Size, Butterfly valves, PN 16/Class 150 rated, wafer design, lever operated, CI/SG iron body, SG iron disc coated with Nylon, SS shaft.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | 4" Size, Butterfly valves, PN 16/Class 150 rated, wafer design, lever operated, CI/SG iron body, SG iron disc coated with Nylon, SS shaft. | | - | | |

36. I/T/C of 4" size, Y-strainer, CI/MS body with brass wire/ SS wire-mesh, PN16/Class 150 rated

Item specifications for I/T/C of 4" size, Y-strainer, CI/MS body with brass wire/ SS wire-mesh, PN16/Class 150 rated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | 4" size, Y-strainer, CI/MS body with brass wire/ SS wire-mesh, PN16/Class 150 rated | | - | | |

37. I/T/C of 4" size, Motorised butterfly valves (On-Off type)

Item specifications for I/T/C of 4" size, Motorised butterfly valves (On-Off type)

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | 4" size, Motorised butterfly valves (On-Off type) | | - | | |

38. I/T/C of 4" size, Three way flow control valve

Item specifications for I/T/C of 4" size, Three way flow control valve

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------------------------------|-------|------------|-----------------------|--------|
| 1 | 4" size, Three way flow control valve | | - | | |

39. I/T/C of Temperature gauge, 4"Dial type, complete with capillary, SS Thermowell, all the fittings etc.

Item specifications for I/T/C of Temperature gauge, 4"Dial type, complete with capillary, SS Thermowell, all the fittings etc.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Temperature gauge, 4"Dial type, complete with capillary, SS Thermowell, all the fittings etc. | | - | | |

40. I/T/C of Pressure gauge, 4" dial size, bourdan movement, all SS internals, complete with all the fittings and isolating ball valve etc.

Item specifications for I/T/C of Pressure gauge, 4" dial size, bourdan movement, all SS internals, complete with all the fittings and isolating ball valve etc.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Pressure gauge, 4" dial size, bourdan movement, all SS internals, complete with all the fittings and isolating ball valve etc. | | - | | |

41. I/T/C of Temperature sensor cum transmitter complete with SS Thermowell, all the fittings etc.

Item specifications for I/T/C of Temperature sensor cum transmitter complete with SS Thermowell, all the fittings etc.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|---|--|---|--|--|
| 1 | Temperature sensor cum transmitter complete with SS Thermowell, all the fittings etc. | | - | | |
|---|---|--|---|--|--|

42. I/T/C of Differential pressure sensor across chillers, complete with all the fittings, piping etc.

Item specifications for I/T/C of Differential pressure sensor across chillers, complete with all the fittings, piping etc.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Differential pressure across chillers, complete with all the fittings, piping etc. | | - | | |

43. I/T/C OF 4" size, MS, C-Class, chilled water line complete with all the fittings

Item specifications for I/T/C OF 4" size, MS, C-Class, chilled water line complete with all the fittings

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | 4" size, MS, C-Class, chilled water line complete with all the fittings like bends, reducers, flanges, pumps connections, chiller connections, nuts, bolts, supports, gaskets etc. | | - | | |

44. I/T/C OF 50 mm thick, TF quality Thermocole insulation for 4" MS chilled water line complete with all the fittings

Item specifications for I/T/C OF 50 mm thick, TF quality Thermocole insulation for 4" MS chilled water line complete with all the fittings

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
| | | | | | |

| | | | | | |
|---|--|--|---|--|--|
| 1 | 50 mm thick, TF quality Thermocole insulation for 4" MS chilled water line complete with all the fittings like bends, reducers, flanges, pumps connections, chiller connections etc. | | - | | |
|---|--|--|---|--|--|

45. I/T/C OF Expansion tank, Capacity: 1000 Ltrs., MOC: MS, insulated

Item specifications for I/T/C OF Expansion tank, Capacity: 1000 Ltrs., MOC: MS, insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Expansion tank, Capacity: 1000 Ltrs., MOC: MS, insulated, complete with float valve & quick fill make-up connections, drain, over flow connection, MS stand etc. | | - | | |

46. I/T/C OF Make-up line from expansion tank to highest point in the retrun air line, 2" size, MS - C Class

Item specifications for I/T/C OF Make-up line from expansion tank to highest point in the retrun air line, 2" size, MS - C Class

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Make-up line from expansion tank to highest point in the retrun air line, 2" size, MS - C Class, complete with all the fittings, nuts, bolts, gasket and insulation | | - | | |

47. I/T/C OF Expansion tank inlet line complete with all the fittings, supports, 1" size,GI - Class B

Item specifications for I/T/C OF Expansion tank inlet line complete with all the fittings, supports, 1" size,GI - Class B

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Expansion tank inlet line complete with all the fittings, supports, 1" size, GI - Class B | | - | | |

48. I/T/C/ OF Level switch for expansion tank

Item specifications for I/T/C/ OF Level switch for expansion tank

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------------------------|-------|------------|-----------------------|--------|
| 1 | Level switch for expansion tank | | - | | |

49. I/T/C OF Ball valve, 1" Size

Item specifications for I/T/C OF Ball valve, 1" Size

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------------|-------|------------|-----------------------|--------|
| 1 | Ball valve, 1" Size | | - | | |

50. I/T/C OF Butterfly valve, 2" Size

Item specifications for I/T/C OF Butterfly valve, 2" Size

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--------------------------|-------|------------|-----------------------|--------|
| 1 | Butterfly valve, 2" Size | | - | | |

51. I/T/C OF Drain points, 1" size, complete with all fittings and isolating ball valve.

Item specifications for I/T/C OF Drain points, 1" size, complete with all fittings and isolating ball valve.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Drain points, 1" size, complete with all fittings and isolating ball valve. | | - | | |

52. I/T/C OF Purge points, 1" size, complete with all fittings and isolating ball valve.**Item specifications for I/T/C OF Purge points, 1" size, complete with all fittings and isolating ball valve.**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Purge points, 1" size, complete with all fittings and isolating ball valve. | | - | | |

53. I/T/C OF Air handling unit, minimum capacity: 8000 CFM**Item specifications for I/T/C OF Air handling unit, minimum capacity: 8000 CFM**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Air handling unit, minimum capacity: 8000 CFM, complete with Louvers at inlet, pre and fine filter section, tubular/strip heaters section, 8 row chilled water coil section, SS 304 condensate tray, fans - 02 numbers, :minimum 8000 CFM each @ 65 mm static, with TEFC, IE3 efficiency, VFD compatible, spark/flame proof motors suitable for 415V +/- 10%, 3 phase, 50 Hz+ 5% AC , motorised isolation dampers at fan outlets, motorised fire and smoke damper at AHU outlet etc. | | - | | |

54. I/T/C OF Differential pressure sensor across the filters**Item specifications for I/T/C OF Differential pressure sensor across the filters**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|--|--|---|--|--|
| 1 | Differential pressure across the filters | | - | | |
|---|--|--|---|--|--|

55. I/T/C of Thermostats for the heaters

Item specifications for I/T/C of Thermostats for the heaters

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--------------------------------------|-------|------------|-----------------------|--------|
| 1 | I/T/C of Thermostats for the heaters | | - | | |

56. I/T/C of Anodised Aluminium ducting, 22 gauge (Standard), as per SMACNA complete with supporting arrangements

Item specifications for I/T/C of Anodised Aluminium ducting, 22 gauge (Standard), as per SMACNA complete with supporting arrangements

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | I/T/C of Anodised Aluminium ducting, 22 gauge (Standard), as per SMACNA complete with supporting arrangements, vanes, anchor fasteners, supports, access doors, nuts, bolts, neoprene rubber gaskets etc. . | | - | | |

57. I/T/C of Volume control dampers in Al construction within ducts to be provided with suitable ducts lever and quadrants.

Item specifications for I/T/C of Volume control dampers in Al construction within ducts to be provided with suitable ducts lever and quadrants.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | I/T/C of Volume control dampers in Al construction within ducts to be provided with suitable ducts lever and quadrants. | | - | | |

58. I/T/C of Supply air grilles/ diffusers in Al construction with volume control dampers with necessary frame work etc. and complete as required.

Item specifications for I/T/C of Supply air grilles/ diffusers in Al construction with volume control dampers with necessary frame work etc. and complete as required.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | I/T/C of Supply air grilles/ diffusers in Al construction with volume control dampers with necessary frame work etc. and complete as required. | | - | | |

59. I/T/C of Thermal insulation for supply air duct: Aluminium faced Closed Cell Nitrile rubber, Class 'O' fire rating, 38 mm thick

Item specifications for I/T/C of Thermal insulation for supply air duct: Aluminium faced Closed Cell Nitrile rubber, Class 'O' fire rating, 38 mm thick

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | I/T/C of Thermal insulation for supply air duct: Aluminium faced Closed Cell Nitrile rubber, Class 'O' fire rating, 38 mm thick with a density not less than 50 Kg/m ³ . All the joints shall be sealed with 50mm thick Al tape. | | - | | |

60. I/T/C of Temperature sensors inside the Chemical store

Item specifications for I/T/C of Temperature sensors inside the Chemical store

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Temperature sensors inside the Chemical store, accuracu +/- 0.5 Deg C. | | - | | |

61. I/T/C OF Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 1800 CFM at 15 mm WG

Item specifications for I/T/C OF Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 1800 CFM at 15 mm WG

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 1800 CFM at 15 mm WG, Cast Al impeller, suitable for 415V+10%, 50 Hz, 3 phase, TEFC squirrel cage induction motor, S1, F-Class, IP55, explosion proof type suitable for Hazardous Zone -II, Gas group-II C (FLP), Temperature Class - T3, complete with bird protection guard wire mesh both sides. | | - | | |

62. I/T/C OF Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 900 CFM at 15 mm WG

Item specifications for I/T/C OF Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 900 CFM at 15 mm WG

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|--|--|---|--|--|
| 1 | Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 900 CFM at 15 mm WG, cast Al impeller, suitable for 415V+10%, 50 Hz, 3 phase, TEFC squirrel cage induction motor, S1, F-Class, IP55, explosion proof type suitable for Hazardous Zone -II, Gas group-II C (FLP), Temperature Class - T3, complete with bird protection guard wire mesh both sides. | | - | | |
|---|--|--|---|--|--|

63. Supply of 3.5Cx150 Sq. mm size Aluminium conductor, XLPE insulated

Item specifications for Supply of 3.5Cx150 Sq. mm size Aluminium conductor, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | 3.5Cx150 Sq. mm size Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable | | - | | |

64. Supply of 4Cx35 sq mm size Aluminium conductor, XLPE insulated

Item specifications for Supply of 4Cx35 sq mm size Aluminium conductor, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|--|--|---|--|--|
| 1 | 4Cx35 sq mm size Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable Tray/underground as required. Make: Finolex/Havells/KEI/ Polycab/RPG/CCI | | - | | |
|---|--|--|---|--|--|

65. Supply of 3Cx 6 Sq. mm size Aluminium conductor, XLPE insulated

Item specifications for Supply of 3Cx 6 Sq. mm size Aluminium conductor, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | 3Cx 6 Sq. mm size Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable | | - | | |

66. Supply of 3Cx 10 Sq. mm size Aluminium conductor, XLPE insulated

Item specifications for Supply of 3Cx 10 Sq. mm size Aluminium conductor, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|--|--|---|--|--|
| 1 | 3Cx 10 Sq. mm size Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable Tray/underground | | - | | |
|---|--|--|---|--|--|

67. 2 Pair Instrumentation cable, XLPE insulated

Item specifications for 2 Pair Instrumentation cable, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | 2 Pair Instrumentation cable, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable Tray/underground | | - | | |

68. 6 Pair Instrumentation cable, XLPE insulated

Item specifications for 6 Pair Instrumentation cable, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | 6 Pair Instrumentation cable, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable Tray/underground | | - | | |

69. Supply of end termination with brass double compression gland and Aluminium/Cu lugs for

3.5C x 150 sq mm Aluminium (50 mm) size XLPE insulated**Item specifications for Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 3.5C x 150 sq mm Aluminium (50 mm) size XLPE insulated**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | End termination with brass double compression gland and Aluminium/Cu lugs for 3.5C x 150 sq mm Aluminium (50 mm) size XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. Make: Dowells, 3M, Hex, Comet | | - | | |

70. Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 4 C x 35 sq mm Aluminium (32 mm) size XLPE insulated K**Item specifications for Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 4 C x 35 sq mm Aluminium (32 mm) size XLPE insulated K**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 4 C x 35 sq mm Aluminium (32 mm) size XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. Make: Dowells, 3M, Hex, Comet | | - | | |

71. Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 3 C x 6 sq mm Aluminium size XLPE insulated**Item specifications for Supply of end termination with brass double compression gland and**

Aluminium/Cu lugs for 3 C x 6 sq mm Aluminium size XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | End termination with brass double compression gland and Aluminium/Cu lugs for 3 C x 6 sq mm Aluminium size XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. Make: Dowells, 3M, Hex, Comet | | - | | |

72. Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 3 C x 10 sq mm Aluminium (22 mm) size XLPE insulated**Item specifications for Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 3 C x 10 sq mm Aluminium (22 mm) size XLPE insulated**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | End termination with brass double compression gland and Aluminium/Cu lugs for 3 C x 10 sq mm Aluminium (22 mm) size XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. Make: Dowells, 3M, Hex, Comet | | - | | |

73. Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 2 Pair instrumentation cable XLPE insulated**Item specifications for Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 2 Pair instrumentation cable XLPE insulated**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|---|--|---|--|--|
| 1 | End termination with brass double compression gland and Aluminium/Cu lugs for 2 Pair instrumentation cable XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. Make: Dowells, 3M, Hex, Comet | | - | | |
|---|---|--|---|--|--|

74. Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 6 Pair instrumentation cable XLPE insulated

Item specifications for Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 6 Pair instrumentation cable XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | End termination with brass double compression gland and Aluminium/Cu lugs for 6 Pair instrumentation cable XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. Make: Dowells, 3M, Hex, Comet | | - | | |

75. Supply of 50 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

Item specifications for Supply of 50 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|--|--|---|--|--|
| 1 | 50 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders or on surface including G.I. bolts & nuts, etc. as required. Make: L&T, Profab, Legrand, SIntex, OBO Bettermann | | - | | |
|---|--|--|---|--|--|

76. Supply of 100 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

Item specifications for Supply of 100 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Supply of 100 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders or on surface including G.I. bolts & nuts, etc. as required. Make: L&T, Profab, Legrand, SIntex, OBO Bettermann | | - | | |

77. Supply of 300 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped

Galvanised Iron cable tray

Item specifications for Supply of 300 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Supply of 300 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders or on surface including G.I. bolts & nuts, etc. as required. Make: L&T, Profab, Legrand, Sintex, OBO Bettermann | | - | | |

78. Earthing with maintenance free copper coated Earth rod of 3 Mtr length 20 mm dia earth rod

Item specifications for Earthing with maintenance free copper coated Earth rod of 3 Mtr length 20 mm dia earth rod

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|--|--|---|--|--|
| 1 | Earthing with maintenance free copper coated Earth rod of 3 Mtr length 20 mm dia earth rod with necessary coupler and connector, universal clamps, inspection chamber, earth conductivity enhancing mineral compound of required quantity around the electrode in the excavated pit and providing earth chamber including necessary civil works also necessary holes, material to interconnect with earth strips complete as required as per IS 60364 and IS 3043 with latest amendments. Make: OBO Bettermann/ Terec/ Erico/ Loress/ Ashlok/JMV Ips | | - | | |
|---|--|--|---|--|--|

79. Providing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.

Item specifications for Providing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Providing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm). | | - | | |

80. Providing 10 mm dia copper wire (Green yellow colour) on surface or in recess for loop earthing of motor, cable tray etc.

Item specifications for Providing 10 mm dia copper wire (Green yellow colour) on surface or in recess for loop earthing of motor, cable tray etc.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Providing 10 mm dia copper wire (Green yellow colour) on surface or in recess for loop earthing of motor, cable tray etc. with termination at both end as required. Make: Finolex/Havells/KEI/ Polycab/RPG/CCI. | | - | | |

81. Providing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.

Item specifications for Providing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Providing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required. | | - | | |

82. I/T/C of 3.5C x 150 Sq mm size Aluminium conductor, XLPE insulated

Item specifications for I/T/C of 3.5C x 150 Sq mm size Aluminium conductor, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | I/T/C of 3.5C x 150 Sq mm size Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable Tray/underground as required. | | - | | |

83. I/T/C of 4C x 35 Sq mm size Aluminium conductor, XLPE insulated

Item specifications for I/T/C of 4C x 35 Sq mm size Aluminium conductor, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | I/T/C of 4C x 35 Sq mm size Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable Tray/underground as required. | | - | | |

84. I/T/I/T/C of 3C x 6 Sq mm size Aluminium conductor, XLPE insulated

Item specifications for I/T/I/T/C of 3C x 6 Sq mm size Aluminium conductor, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | I/T/C of 3C x 6 Sq mm size Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable Tray/underground as required. | | - | | |

85. I/T/C of 3C x 10 Sq mm size Aluminium conductor, XLPE insulated

Item specifications for I/T/C of 3C x 10 Sq mm size Aluminium conductor, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
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|---|--|--|---|--|--|
| 1 | I/T/C of 3C x 10 Sq mm size Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable Tray/underground as required. | | - | | |
|---|--|--|---|--|--|

86. I/T/C of 2 Pair instrumentation cable, XLPE insulated

Item specifications for I/T/C of 2 Pair instrumentation cable, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | I/T/C of 2 Pair instrumentation cable, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable Tray/underground as required. | | - | | |

87. I/T/C of 6 Pair instrumentation cable, XLPE insulated

Item specifications for I/T/C of 6 Pair instrumentation cable, XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

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|---|--|--|---|--|--|
| 1 | I/T/C of 6 Pair instrumentation cable, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) on existing wall/surface/Cable Tray/underground as required. | | - | | |
|---|--|--|---|--|--|

88. Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3.5Cx150 Sq. mm Aluminium (50mm) size XLPE insulated

Item specifications for Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3.5Cx150 Sq. mm Aluminium (50mm) size XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3.5Cx150 Sq. mm Aluminium (50mm) size XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. | | - | | |

89. Making of end termination with brass double compression gland and Aluminium/Cu lugs for 4Cx35 Sq. mm Aluminium (32mm) size XLPE insulated

Item specifications for Making of end termination with brass double compression gland and Aluminium/Cu lugs for 4Cx35 Sq. mm Aluminium (32mm) size XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
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|---|--|--|---|--|--|
| 1 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 4Cx35 Sq. mm Aluminium (32mm) size XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. | | - | | |
|---|--|--|---|--|--|

90. Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3Cx6 Sq. mm Aluminium size XLPE insulated

Item specifications for Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3Cx6 Sq. mm Aluminium size XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3Cx6 Sq. mm Aluminium size XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. | | - | | |

91. Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3Cx10 Sq. mm Aluminium (22mm) size XLPE insulated

Item specifications for Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3Cx10 Sq. mm Aluminium (22mm) size XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|---|--|--|--|--|
| 1 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3Cx10 Sq. mm Aluminium (22mm) size XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable | | | | |
|---|---|--|--|--|--|

92. Making of end termination with brass double compression gland and Aluminium/Cu lugs for 2 Pair instrumentation cable XLPE insulated

Item specifications for Making of end termination with brass double compression gland and Aluminium/Cu lugs for 2 Pair instrumentation cable XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 2 Pair instrumentation cable XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. | | - | | |

93. Making of end termination with brass double compression gland and Aluminium/Cu lugs for 6 Pair instrumentation cable XLPE insulated

Item specifications for Making of end termination with brass double compression gland and Aluminium/Cu lugs for 6 Pair instrumentation cable XLPE insulated

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|--|--|---|--|--|
| 1 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 6 Pair instrumentation cable XLPE insulated, extruded PVC inner sheath, Steel wire armoured and PVC outer sheathed 1.1 KV grade cable. | | - | | |
|---|--|--|---|--|--|

94. Installing of 50 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

Item specifications for Installing of 50 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | Installing of 50 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders or on surface including G.I. bolts & nuts, etc. as required. | | - | | |

95. Installing of 100 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

Item specifications for Installing of 100 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

| | | | | | |
|---|---|--|---|--|--|
| 1 | Installing of 100 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders or on surface including G.I. bolts & nuts, etc. as required. | | - | | |
|---|---|--|---|--|--|

96. Installing of 300 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

Item specifications for Installing of 300 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Installing of 300 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders or on surface including G.I. bolts & nuts, etc. as required. | | - | | |

97. I/T/C of Earthing with maintenance free copper coated Earth rod of 3 Mtr length 20 mm dia earth rod

Item specifications for I/T/C of Earthing with maintenance free copper coated Earth rod of 3 Mtr

length 20 mm dia earth rod

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|--|-------|------------|-----------------------|--------|
| 1 | I/T/C of Earthing with maintenance free copper coated Earth rod of 3 Mtr length 20 mm dia earth rod with necessary coupler and connector, universal clamps, inspection chamber, earth conductivity enhancing mineral compound of required quantity around the electrode in the excavated pit and providing earth chamber including necessary civil works also necessary holes, material to interconnect with earth strips complete as required as per IS 60364 and IS 3043 with latest amendments. | | - | | |

98. Fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.**Item specifications for Fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm). | | - | | |

99. Fixing 10 mm dia copper wire (Green yellow colour) on surface or in recess for loop earthing of motor**Item specifications for Fixing 10 mm dia copper wire (Green yellow colour) on surface or in**

recess for loop earthing of motor

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---|-------|------------|-----------------------|--------|
| 1 | Fixing 10 mm dia copper wire (Green yellow colour) on surface or in recess for loop earthing of motor, cable tray etc. with termination at both end as required. Make: Finolex/Havells/KEI/Polycab/RPG/CCI. | | - | | |

100. Fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.**101. Extre Item/s if any****Item specifications for Extre Item/s if any**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------------|-------|------------|-----------------------|--------|
| 1 | Extre Item/s if any | | - | | |

102. I/T/C of extra Items if any**Item specifications for I/T/C of extra Items if any**

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|-----------------------------|-------|------------|-----------------------|--------|
| 1 | I/T/C of extra Items if any | | - | | |

Common Specifications (Applicable for all items)

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
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| 1 | OTHER TERMS AND CONDITIONS: 20) | On successful completion of the entire work, the Contractor shall provide 'As Built' drawings for all the Systems executed under the Contract. Three (03) sets of hard copies and one (01) set in soft copy (Pen Drive/CD/DVD) in Auto-CAD and PDF format shall be provided to SCL for its record and reference. Contractor shall also provide instruction / Operation manual(s), maintenance manuals, drawings, data, catalogues etc. for the all equipment/systems installed under this project. | Yes / No / Explain | | |
| 2 | Note 1 | Vendor to Download the " Technical Specification document" , take print of the complete document, sign all the Clauses/Pages of the document as token of Acceptance/ Compliance to the Technical Specifications, Scan the signed document and shall upload the same in the un-priced technical part of the bid/Supporting document from vendor. | Yes / No / Explain | | |
| 3 | Note 2 | Various materials / systems etc. procured by the selected Contractor for incorporation in the work shall be only of RFP specified Makes/Manufacturers of various materials / systems. Submittals of the same shall be submitted by the contractor for SCL review and approval. | Yes / No / Explain | | |

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| 4 | Note 3 | <p>In case, any extra item(s) over and above the BOQ items is(are) required to meet the specifications, description of such item(s) shall be mentioned here.</p> <p>Supply rates of such item(s) shall be mentioned in the row 'Supply of Extra item(s) if any' of BOQ.</p> <p>Installation/Testing/Commissioning rates of such item(s) shall be mentioned in the row 'I/T/C of Extra item(s) if any' row of BOQ.</p> | Yes / No / Explain | | |
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| 5 | Intent of Tender | <p>For storage of high purity chemicals, a building is being constructed in the Semi-Conductor Laboratory (SCL) premises in sector 71, S A S Nagar, (Mohali), and is nearing completion. The upcoming Building space has four bays for storing different families of chemicals. The layout of the said Building is as per the attached Drawing no. 01. The store is to have environmentally controlled condition.</p> <p>Accordingly, SCL intends to engage an experienced and competent HVAC contractor for implementation of the HVAC system and associated electrical & Instrumentation system required for the said Building.</p> <p>The scope of work covers Design, Detailed engineering, Supply, Installation, testing, commissioning of HVAC system and associated Electrical & Instrumentation system as per the technical specification as spelt out in this document. The scope of work also includes shop testing, inspection, packing, dispatching, loading, unloading and storage at site, transit, storage and construction insurance, assembly, erection, testing & commissioning at site and handing over of the entire systems covered under the scope of work.</p> <p>The work shall be executed as per the</p> | Yes / No / Explain | | |
|---|------------------|--|--------------------|--|--|

Approved for Construction (AFC) Drawings. The selected vendor (referred also as 'Contractor' in this document) will prepare design document complying with the technical specifications, tender drawings as well as the Bill of quantities and submit the detailed engineering drawings including design details to SCL for its approval. SCL shall review the detailed engineering drawings and comments, if any, shall be incorporated in the same by the selected vendor. The approved drawings (to be called as the Approved for construction or AFC drawings) shall be the drawings for implementation by the Contractor.

The Scope of work covers Design, Detailed engineering and Supply, Installation, Testing & Commissioning (SITC) of HAVC system and Instrumentation/control s for environment control inside the Chemical store. The HVAC system includes chillers, pumps, air handling unit, chilled water piping, heaters, ducting, instrumentation and control etc. The Air management inside the chemical store is based on "Once through concept", i.e. AHU shall be supplying the total fresh air inside the chemical store. No air re-circulation is allowed inside the chemical store. The

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| | | <p>temperature inside the chemical store is to be maintained between 21 Deg. C to 24 Deg. C round the year. Tentative layout of the chillers, AHU, pumps, piping and ducting layout is as shown in the Tender Drawing no. 02.</p> | | | |
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| 6 | Eligibility Criteria | <p>Only those Bidders who meet the below mentioned eligibility criteria are eligible to participate in the tender.</p> <p>1. Bidder should have successfully completed at-least one (01) similar project involving supply, installation, testing and commissioning of Chilled water plant of installed capacity not less than 110 TR comprising of Chiller(s), Pumps, Piping, Ducting, associated Electrical works, Controls/Instrumentation etc. during the last seven (07) years.</p> <p>OR</p> <p>Bidder should have successfully completed at-least two (02) similar projects each involving supply, installation and commissioning of Chilled water plants of installed capacity not less than 85 TR comprising of Chiller(s), Pumps, Piping, Ducting and associated Electrical works, Controls/Instrumentation etc. during last seven (07) years.</p> <p>2. All the major equipment/items such as Chillers, AHU, Pumps, Heaters, Exhaust fans, ducting, Piping, electrical cables etc. covered under the scope of supply shall be of Indian manufacturer(s) only .</p> <p>To assess eligibility for the work, the bidder shall furnish copy(ies)</p> | Yes / No / Explain | | |
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| | | of the Purchase Order(s) / work order(s) of their earlier completed works/Projects and their completion certificate(s), evidencing satisfactory completion of similar works (as mentioned above) issued by the respective clients/organizations. Bidder shall submit compliance to Pt.no.2 above duly supported by the makes offered from among the recommended makes mentioned in the tender document. | | | |
| 7 | Recommended Makes of Chillers | Trane/Mitsubishi/Dunham Bush/ Carrier/ York/Daikin Mc Quay/Climaveneta/ Hitachi/ Blue Star/ Voltas | Yes / No / Explain | | |
| 8 | Recommended Makes of Air Handling units | Edgetech/Zeco/Citizen /Carrier/Voltas/Daikins /Flakt Woods/Ventus | Yes / No / Explain | | |
| 9 | Recommended Makes of AHU fans | Woods/Ziehlabegg/Greenheck/Kruger/Nikotra / Comfrei | Yes / No / Explain | | |
| 10 | Recommended Makes of Motors | Siemens/ABB/Crompton/Bharat Bijlee/GE | Yes / No / Explain | | |
| 11 | Recommended Makes of Pumps | Johnson/ Grundfos /Armstrong/ Bell and Gossette/ Tour & Anderson/WILO | Yes / No / Explain | | |
| 12 | Recommended Makes of Heaters | Daspass/KEPL/Rapid Cool | Yes / No / Explain | | |
| 13 | Recommended Makes of Air Filters | Camfil/AAF/Klenzaid/FMI/Thermadyne/ Trijama/Aerosol | Yes / No / Explain | | |
| 14 | Recommended Makes of Isolation valves | L&T/Microfinish/ Avcon | Yes / No / Explain | | |
| 15 | Recommended Makes of Check Valve | Advance/Intervalve/L&T | Yes / No / Explain | | |
| 16 | Recommended Makes of MS Pipe | Tata/SAIL/Jindal | Yes / No / Explain | | |
| 17 | Recommended Makes of Y – Strainer | Sant/Leader | Yes / No / Explain | | |

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|----|--|---|--------------------|--|--|
| 18 | Recommended Makes of Pressure and Temperature gauges | Waree/Ashcroft/Bells | Yes / No / Explain | | |
| 19 | Recommended Makes of Temperature and RH Sensor | Vaisala/Siemens/Johnson/Honeywell | Yes / No / Explain | | |
| 20 | Recommended Makes of Three way motorised valve | Siemens/Johnson control/Honeywell/Sauter | Yes / No / Explain | | |
| 21 | Recommended Makes of Temperature sensor cum transmitter | Siemens/Johnson control/Honeywell/Sauter | Yes / No / Explain | | |
| 22 | Recommended Makes of Differential pressure sensor across pumps and filters | Siemens/Johnson control/Honeywell/Sauter | Yes / No / Explain | | |
| 23 | Recommended Makes of Fasteners | Unbrako/Bossard/TVS | Yes / No / Explain | | |
| 24 | Recommended Makes of Insulation | Beardsell / styrene Packing/Aeroflex/Armaflex / Trocellen / Paramount-XPE/Llyod | Yes / No / Explain | | |
| 25 | Recommended Makes of Thermostat for MAU duct | Siemens/Honeywell/Toshniwall | Yes / No / Explain | | |
| 26 | Recommended Makes of Exhaust Fans | Sarla/Suburban/Baltiboy/Flakt/Aerotech India/Hruger/Nikotra | Yes / No / Explain | | |
| 27 | Recommended Makes of Diffusers/grills | Caryaire/Dynecraft/Ravistar/Air-master | Yes / No / Explain | | |
| 28 | Recommended Makes of Damper | Caryaire/Ravistar/Air Master/Moosatty/Tristar | Yes / No / Explain | | |
| 29 | Recommended Makes of Smoke Damper | Caryaire/Ravistar/Air Master/Tristar | Yes / No / Explain | | |
| 30 | Recommended Makes of Actuator for smoke damper | Joventa/Belimo/Anergy | Yes / No / Explain | | |

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| 31 | Recommended Makes of Cable | Finolex/Havells/KEI/Polycab/RPG/CCI/Lapp | Yes / No / Explain | | |
| 32 | Recommended Makes of Gland, lugs | Dowells, 3M, Hex, Comet | Yes / No / Explain | | |
| 33 | Recommended Makes of Cable tray | L&T, Profab, Legrand, OBO Bettermann or equivalent | Yes / No / Explain | | |
| 34 | Recommended Makes of Maintenance free Earth Pit | OBO Bettermann/Terec/ Erico/ Loress/ Ashlok/JMV Ips | Yes / No / Explain | | |

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| 35 | <p>GENERAL TERMS AND CONDITIONS: a) VARIATION OF QUANTITY</p> | <p>The quantities indicated against each item in the bill of quantities (BOQ) are indicative and are for the purpose of bidding only and payment for the work shall be made on the basis of actual work done and the accepted rates for various items in the Bill of Quantities. Variation in quantities up-to + 25% shall be carried out by the contractor on the same conditions in all respects including the rates as per PO/Contract. In case of Contract/PO items which exceed the said limit of +25%, the contractor may claim revision of rates supported by proof of analysis and if the rate claimed is in excess of the rate specified in the bill of quantities, SCL's authorized officials in-charge shall after giving consideration to the analysis of rates submitted by the contractor, determine the rates on the basis of market rates and the contractor shall be paid in accordance with the rates so determined. The contractor's profit and OH (Over Head) shall be factored in the rate analysis @15%. In case of extra items (that are completely new and are in addition to the items contained in the contract), the contractor may claim rates supported by proper analysis, and SCL's authorized officials in-charge of the works under the aforementioned work packages, shall after</p> | Yes / No / Explain | | |
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| | | giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of market rates and the contractor shall be paid in accordance with the rates so determined. The contractor's profit and OH (Over Head) shall be factored in the rate analysis @15%. | | | |
| 36 | GENERAL TERMS AND CONDITIONS: b) ACCEPTANCE PROCEDURE | The Performance & Quality parameters of the entire installation shall be monitored for at least 10 days after commissioning for satisfactory performance upon which SCL shall give its Acceptance. Deviation in any of the specified parameters will not be acceptable and it shall be the responsibility of the Vendor to take corrective action/improvements/modifications, as required, in the installed system to meet the specified parameters. | Yes / No / Explain | | |

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| 37 | GENERAL TERMS AND CONDITIONS: c) WARRANTY | Warranty period will commence from the date of acceptance of the entire installation covered under the scope of work by SCL. The warranty period shall be 24 months to be reckoned from date of acceptance of the work as defined above. During the warranty period, the contractor shall provide four (04) numbers of quarterly preventive maintenance visits per year for each of the tendered system and breakdown visits as required. All the consumables, spares, parts, tools, tackles, required manpower etc. shall be covered under scope of the vendor during the warranty period. | Yes / No / Explain | | |
| 38 | GENERAL TERMS AND CONDITIONS: d) COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC) | SCL may enter into Comprehensive Annual Maintenance Contract (CAMC) for the system covered under the scope of this tender for a period of Five (05) years after expiry of the Warranty period of two (02) years. Vendor shall provide the yearly CAMC charge for five (05) years. During the CAMC, the contractor shall provide four (04) numbers of quarterly preventive maintenance visits per year for each of the tendered system. All the break downs shall be covered under the scope of the vendor. All the consumables, spares, tools, tackles, required manpower etc. shall be covered under scope of the vendor. | Yes / No / Explain | | |

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| 39 | GENERAL TERMS AND CONDITIONS: e) COMPLETION PERIOD | The entire work is to be completed within 6 months reckoned from the 7th day of award of the contract. | Yes / No / Explain | | |
| 40 | OTHER TERMS AND CONDITIONS: 1) | Factory Test certificates of the material / equipment/systems/machines supplied shall be furnished by the vendor. | Yes / No / Explain | | |
| 41 | OTHER TERMS AND CONDITIONS: 2) | Vendor to engage the electrical contractor possessing valid 'Class A' electrical contractor license issued by state/central authority for execution of the electrical works. | Yes / No / Explain | | |
| 42 | OTHER TERMS AND CONDITIONS: 3) | The machines/equipment/systems etc. shall be adequately isolated against transmission of vibrations to the building structure as per manufacturer recommendation. | Yes / No / Explain | | |
| 43 | OTHER TERMS AND CONDITIONS: 4) | All the sensors, gauges and energy meters etc. shall be calibrated and shall be traceable to accredited test house standards. | Yes / No / Explain | | |
| 44 | OTHER TERMS AND CONDITIONS: 5) | Necessary foundation bolts, nuts, leveling-screws vibration pads etc. wherever required, for mounting the machines, shall be provided by the vendor as per manufacturer's drawings/recommendations. | Yes / No / Explain | | |
| 45 | OTHER TERMS AND CONDITIONS: 6) | Technical leaflets and General layout of the equipments showing their overall dimensions shall be provided in duplicate along with the technical bid. | Yes / No / Explain | | |

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| 46 | OTHER TERMS AND CONDITIONS: 7) | The Vendor shall impart on-site hands-on training to SCL personnel free of cost, on operations, troubleshooting and preventive maintenance of the equipment / systems supplied and installed under the Contract, during installation and commissioning. | Yes / No / Explain | | |
| 47 | OTHER TERMS AND CONDITIONS: 8) | Vendor to provide certificate showing the date of manufacture of the machine and certifying that the machine being supplied is new and not a used/old/second hand/ refurbished /reconditioned machine. | Yes / No / Explain | | |
| 48 | OTHER TERMS AND CONDITIONS: 9) | The vendor should satisfy himself for the adequacy/completeness of the system and shall include any other item/s required for safe and satisfactory functioning. | Yes / No / Explain | | |
| 49 | OTHER TERMS AND CONDITIONS: 10) | Detailed manuals incorporating all technical details, spare part lists, troubleshooting, mechanical & electrical drawings, wiring-diagrams etc. shall be provided by the vendor. | Yes / No / Explain | | |
| 50 | OTHER TERMS AND CONDITIONS: 11) | Payment for the work shall be made on the basis of actual work done and the accepted rates for various items in the Bill of Quantities. | Yes / No / Explain | | |

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| 51 | OTHER TERMS AND CONDITIONS: 12) | For measurement of piping & insulation, installed straight length including fittings (bends, flanges, Tee, reducers) etc. shall be considered for payment and the payment shall be made as per unit rates based upon the measurements of actual work done. Valves shall be counted separately and paid at the agreed unit rates. | Yes / No / Explain | | |
| 52 | OTHER TERMS AND CONDITIONS: 13) | All the required tools, tackles, scaffoldings, man power etc. is in scope of the vendor. | Yes / No / Explain | | |
| 53 | OTHER TERMS AND CONDITIONS: 14) | Vendor shall ensure adherence to safe construction practices which shall inter-alia include use of Personnel Protection Equipment (PPE) by their workmen, supervisors etc. deployed on the work. PPE viz., safety helmets, safety shoes, harnesses, safety glasses, gloves etc. shall be provided by the vendor for the safety of all the personnel at the site of work. Work shall be executed as per the ISRO contractor safety Manual available at ISRO site www.isro.gov.in . | Yes / No / Explain | | |

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| 54 | OTHER TERMS AND CONDITIONS: 15) | Vendor shall take adequate measures to ensure that no damage or loss is caused to SCL's buildings, equipment and personnel due to any activity carried out by the vendor relating to the performance of the Contract. Vendor shall be liable to make good the loss/damage including any consequential damage caused by them and in case of failure to do so, SCL shall affect financial recovery for the same from the vendor. | Yes / No / Explain | | |
| 55 | OTHER TERMS AND CONDITIONS: 16) | All materials and equipment shall conform to the relevant Indian Standards and shall be of the approved make and design. Makes shall be strictly in conformity with the Recommended Makes/Manufacturers' listed in the Tender Document. | Yes / No / Explain | | |
| 56 | OTHER TERMS AND CONDITIONS: 17) | Electricity required for installation shall be provided by SCL at no charge basis to the vendor. For this, electricity connection will be provided at single point and further distribution shall be the vendor's responsibility. Vendor shall provide wattage of all the electrical loads required for installation and install all safety and protection devices viz., MCB/MCCB/ELCB/RCB etc. as per the applicable electricity rules. | Yes / No / Explain | | |

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| 57 | OTHER TERMS AND CONDITIONS: 18) | Civil works are excluded from the vendor's scope of work but necessary drawings and other details shall be provided by the vendor. However, making cut-outs/ penetrations etc. for routing utility piping lines, ducts etc. in the building and making good the same is in the vendor's scope of work. | Yes / No / Explain | | |
| 58 | OTHER TERMS AND CONDITIONS: 19) | Vendor shall be required to follow the security procedures in vogue at SCL for the movement of vendor's personnel, materials etc. into/from SCL premises. | Yes / No / Explain | | |

Supporting Documents required from Vendor

1. Copies of Purchase Orders/Work orders and their Completion certificates in support of the Eligibility Criteria
2. Documents/Brochure of the Equipments/Items of makes offered from among the recommended makes and showing the equipment/items are manufactured in India.
3. Signed and stamped Specification document

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

| Sl. No. | Description | Compliance | Vendor Terms |
|---------|---|--------------------|--------------|
| 1 | This being two part Tender Technical and Commercial parts separate, the bidder should not attach any document(s) containing pricing information alongwith Technical Part. The tenders containing price information in Technical Part will be summarily rejected. Prices should be indicated in the Price Bid format only | Yes / No / Explain | |
| 2 | DELIVERY TERMS : For supply Store/s: Stores shall be despatched on F.O.R destination basis i.e. SCL, S.A.S. Nagar, Mohali, Punjab exclusive of GST as may be applicable | Yes / No / Explain | |
| 3 | GST: Purchaser is entitled to concessional GST of 5% on supplies as per Ministry of Finance Department of Revenue, Notification No. 47/2017 Integrated Tax (Rate) both dated 14th November 2017 respectively and would accordingly issue Exemption Certificate in favour of the contractor quoting in Indian Rupees. The bidder should take note of the same while quoting the prices in Indian Rupees. GST on installation/ services shall be applicable @18%. | Yes / No / Explain | |
| 4 | DELIVERY AND INSTALLATION SCHEDULE: The Supply, Installation, Commissioning and Testing shall be completed within 6 months reckoned from 7 day of award of the contract | Yes / No / Explain | |
| 5 | VALIDITY: The tender must be valid for a minimum period of 120 days from the date of opening of Technical bid and 90 days after opening of Price bid. | Yes / No / Explain | |

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| 6 | <p>Security Deposit: On acceptance of the tender, the Contractor shall submit security deposit for three percent (03 percent) value of the Purchase Order (PO) within 15 days from the date of PO towards successful execution of the PO. Security Deposit shall be submitted through Demand Draft / Bankers Cheque/ fixed deposit receipt or Bank Guarantee from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty (60) days beyond the date for completion of the Purchase Order.</p> <p>(This will be returned by SCL immediately on execution of the PO satisfactorily as per order terms. If not, the amount will be forfeited).</p> <p>In case Security Deposit is submitted in the form of Bank Guarantee (BG), after the issue of BG, the issuing bank shall communicate the genuineness of BG through e-mail from banks domain to njain @ scl.gov.in and copy to harjeet @ scl.gov.in followed by a hard copy to Shri Naveen Jain, Sr. Accounts Officer, Semi-Conductor Laboratory, Sector - 72, Mohali - 160071</p> | Yes / No / Explain | |
| 7 | <p>Warranty : The Contractor shall provide comprehensive warranty of complete project for parts as well as labour for a period of 24 months from the date of final acceptance at Purchasers site at no extra charges against any manufacturing defect/faulty workmanship. In case any defect arises during warranty period, the Contractor should replace/rectify the same at its own cost at site/works.</p> | Yes / No / Explain | |
| 8 | <p>WARRANTY REPLACEMENTS: The replacement parts, if any, shall be supplied by the Contractor free of cost on F.O.R. Purchaser site at SAS Nagar, Punjab basis.</p> | Yes / No / Explain | |

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| 9 | <p>COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC): SCL may enter into Comprehensive Annual Maintenance Contract (CAMC) for the system covered under the scope of this tender for a period of Five (05) years after expiry of the Warranty period of two (02) years. Vendor shall provide the CAMC charge for five (05) years. These charges shall not be considered during evaluation.</p> <p>During the CAMC, the contractor shall provide four (04) numbers of quarterly preventive maintenance visits per year for each of the tendered system. All the break downs shall be covered under the scope of the vendor. All the consumables, spares, tools, tackles, required manpower etc. shall be covered under scope of the vendor.</p> | Yes / No / Explain | |
| 10 | <p>TERMS OF PAYMENT:</p> <p>90% value of the supply parts shall be paid within 30 days of receipt of material at Purchaser site and the balance 10% amount and 100% of installation charges shall be payable on acceptance of the entire project against a Performance Bank Guarantee.</p> <p>Payment towards services (installations etc.) shall be released after deduction of TDS, if any.</p> | Yes / No / Explain | |

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| 11 | <p>PERFORMANCE BANK GUARANTEE (PBG): The Contractor shall furnish a Bank Guarantee (as per format given by purchaser) from any nationalized/ scheduled bank for an amount equivalent to 3% of the value of the Contract and shall be valid for a period of 60 days beyond the expiry date of warranty period. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.</p> <p>Note: Vendor to ensure that their Banker gives Bank Guarantee(BG) confirmation over email from Bank Domain immediately after issuance of the same at the following email Ids: njain@scl.gov.in</p> <p>CC: harjeet@scl.gov.in jarnail@scl.gov.in</p> <p>In addition the banker may send a scanned copy of the BG as an attachment.</p> | Yes / No / Explain | |
| 12 | <p>DELAY IN COMPLETION/LIQUIDATED DAMAGES: If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5 percent) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 percent) of the Contract price of the unit or units so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.</p> <p>Delivery of stores shall be complete on Installation, commissioning, Testing and Acceptance.</p> | Yes / No / Explain | |

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| 13 | <p>Variation of Quantity: The quantities indicated against each items in the Bill of Quantities (B O Q) are indicative and are for the purpose of bidding only and payment for the work shall be made on the basis of actual work done and accepted rates for various items in the Bill of Quantities.</p> <p>Variation in quantities up to plus 25 percent shall be carried out by the contractor on the same conditions in all respects including the rates as per PO/Contract. In case the Contract/PO items which exceed the said limit of plus 25 percent, the contractor may claim revision of rates supported by proof of analysis and rate claimed is in excess of the rate specified in the bill of quantities, S C Ls authorized officials in-charge shall after giving consideration to the analysis of rates submitted by the contractor, determine the rates of the basis of market rates and the contractor shall be paid in accordance with the rates so determined. The contractors profit and OH(Over Head) shall be factored in the rate analysis @15 percent</p> <p>In case of extra items (that are completely new and are in addition to the items contained in the contract) The contractor may claim rates supported by proper analysis, and S C L s authorized officials in-charge of works under the aforementioned work packages, shall after giving consideration to analysis of the rates submitted by the contractor, determine the rates on the basis of market rates and contractor shall be paid in accordance with the rates so determined. The contractors profit and OH(Over Head) shall be factored in the rate analysis @15 percent</p> | Yes / No / Explain | |
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| 14 | <p>EXTENSION OF TIME : If the completion of supply of stores is delayed due to reason of force majeure such as acts of god, acts of public enemy, acts of Government fires floods epidemics quarantine restriction strikes freight embargoes etc., the Contractor shall give notice within 15 days to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice after verification, if necessary may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.</p> | Yes / No / Explain | |
| 15 | <p>Labour Law: Contractor shall abide by all labour laws, rules and regulations in India, which are prevailing, and as enforced from time to time and SCL shall not be responsible for any accident or mishap during the course of the contract to any of engineer/ labour employee by the Contractor. The contractor shall also ensure that the statutory obligations with regards to the employment of labour under law are complied properly and timely.</p> | Yes / No / Explain | |

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| 16 | <p>ARBITRATION: In the event of any dispute/s, difference/s or claim/s arising out of or relating to the interpretation and application of the Contract, such dispute/s or difference/s or claim/s shall be settled amicably by mutual consultations of the good Offices of the respective Parties and recognizing their mutual interests attempt to reach a solution satisfactory to both the parties. If such a resolution is not possible, within 30 days from the date of receipt of written notice of the existence of such dispute/s, then the unresolved dispute/s or difference/s or claim/s shall be referred to the Sole Arbitrator appointed by the Parties by mutual consent in accordance with the rules and procedures of Arbitration and Conciliation Act 1996 as amended from time to time. The arbitration shall be conducted in New Delhi in the Arbitration and Conciliation Centre New Delhi (Domestic and International) as per its rules and regulations. The expenses for the Arbitration shall be shared equally or as may be determined by the Arbitrator. The considered and written decision of the Arbitrator shall be final and binding between the Parties. The applicable language for Arbitration shall be English only. Work under the Contract shall be continued by the CONTRACTOR during the pendency of arbitration proceedings, without prejudice to a final adjustment in accordance with the decision of the Arbitrator unless otherwise directed in writing by the DEPARTMENT or unless the matter is such that the works cannot be possibly continued until the decision (whether final or interim) of the Arbitrator is obtained.</p> | Yes / No / Explain | |
| 17 | <p>APPLICABLE LAWS: The contract shall be interpreted, construed and governed by laws of India. The contract shall be subject to exclusive Jurisdiction of the Court of SAS Nagar (Mohali), Punjab, India irrespective of anything mentioned in any correspondences or otherwise.</p> | Yes / No / Explain | |

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| 18 | The Participating Vendor / Suppliers /Service Provider shall indicate specifically whether they fall in the category of Class-I local Supplier or Class-II Local Supplier or Non - Local Supplier for evaluation as per Ministry of Commerce and Industry Office Order No. P-45021/2/2017-PP (B-II dt. 16th September 2020). The Provisions of the office order shall apply for this tender. The Vendor/Supplier/Service provider shall submit documentary proof in this regard along with their quotation. | Yes / No / Explain | |
| 19 | The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. Vendor shall also give details of location (s) at which the local value addition is made. | Yes / No / Explain | |
| 20 | Any Other Term: | Yes / No / Explain | |

C.3 Price Bid

| Sl. No. | Item | Quantity | Unit Price | Currency | Total Price | Remark |
|---------|--|-----------|------------|----------|-------------|--------|
| 1 | Screw Chillers, Minimum Capacity 70 TR at 43 Deg C ambient | 2.00 Nos. | | - | | |
| 2 | Chilled water pumps, Horizontal end suction, top discharge | 2.00 Nos. | | - | | |
| 3 | 4" Size, NRVs, PN-16/Class 150 rated, dual plate, with CI body and SS internals. | 2.00 Nos. | | - | | |

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|----|--|------------|--|--|--|--|--|
| 4 | 4" Size, Butterfly valves, PN 16/Class 150 rated, wafer design, lever operated, CI/SG iron body, SG iron disc coated with Nylon, SS shaft. | 12.00 Nos. | | | | | |
| 5 | 4" size, Y-strainer, CI/M S body with brass wire/ SS wire-mesh, PN16/Class 150 rated | 2.00 Nos. | | | | | |
| 6 | 4" size, Motorised butterfly valves (On-Off type) | 2.00 Nos. | | | | | |
| 7 | 4" size, Three way flow control valve | 1.00 Nos. | | | | | |
| 8 | Temperature gauge, 4"Dial type, complete with capillary, SS Thermowell, all the fittings etc. | 6.00 Nos. | | | | | |
| 9 | Pressure gauge, 4" dial size, bourdan movement, all SS internals, complete with all the fittings and isolating ball valve etc. | 10.00 Nos. | | | | | |
| 10 | Temperature sensor cum transmitter complete with SS Thermowell, all the fittings etc. | 2.00 Nos. | | | | | |

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| 11 | Differential pressure across chillers, complete with all the fittings, piping etc. | 2.00 Nos. | | | | | |
| 12 | 4" size, MS, C-Class, chilled water line | 114.00 m | | | | | |
| 13 | 50 mm thick, TF quality Thermocole insulation for 4" MS chilled water line | 114.00 m | | | | | |
| 14 | Expansion tank, Capacity: 1000 Ltrs., MOC: MS, insulated | 1.00 Nos. | | | | | |
| 15 | Make-up line from expansion tank to highest point in the return air line, 2" size, MS - C Class | 12.00 m | | | | | |
| 16 | Expansion tank inlet line complete with all the fittings, supports, 1" size, GI - Class B | 50.00 m | | | | | |
| 17 | Level switch for expansion tank | 1.00 Nos. | | | | | |
| 18 | Ball valve, 1" Size | 2.00 Nos. | | | | | |
| 19 | Butterfly valve, 2" Size | 1.00 Nos. | | | | | |
| 20 | Drain points, 1" size, complete with all fittings and isolating ball valve. | 6.00 Nos. | | | | | |
| 21 | Purge points, 1" size, complete with all fittings and isolating ball valve. | 4.00 Nos. | | | | | |

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| 22 | Air handling unit, minimum capacity: 8000 CFM | 1.00 Sets | | - | | |
| 23 | Differential pressure sensor | 2.00 Nos. | | - | | |
| 24 | Thermostat for safety of heaters | 2.00 Nos. | | - | | |
| 25 | Anodised Aluminium ducting, 22 gauge (Standard), as per SMACNA complete with supporting arrangements | 220.00 Square Metre | | - | | |
| 26 | Volume control dampers in Al construction within ducts to be provided with suitable ducts lever and quadrants. | 1.00 Square Metre | | - | | |
| 27 | Supply air grilles/ diffusers in Al construction with volume control dampers with necessary frame work etc. and complete as required. | 3.50 Square Metre | | - | | |
| 28 | Thermal insulation for supply air duct: Aluminium faced Closed Cell Nitrile rubber, Class 'O' fire rating, 38 mm thick | 4.00 Square Metre | | - | | |
| 29 | Temperature sensors inside the Chemical store | 4.00 Nos. | | - | | |

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|----|---|------------|--|--|--|--|
| 30 | Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 1800 CFM at 15 mm WG | 2.00 Nos. | | | | |
| 31 | Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 900 CFM at 15 mm WG | 4.00 Nos. | | | | |
| 32 | Installation, Testing and Commissioning of Screw Chillers, Minimum Capacity 70 TR at 43 Deg C ambient | 2.00 Nos. | | | | |
| 33 | Installation, Testing and Commissioning of Chilled water pumps, Horizontal end suction, top discharge | 2.00 Nos. | | | | |
| 34 | Installation, Testing and Commissioning of 4" Size, NRVs, PN-16/Class 150 rated, dual plate, with CI body and SS internals. | 2.00 Nos. | | | | |
| 35 | I/T/C of 4" Size, Butterfly valves, PN 16/Class 150 rated, wafer design, lever operated, CI/SG iron body, SG iron disc coated with Nylon, SS shaft. | 12.00 Nos. | | | | |

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| 36 | I/T/C of 4" size, Y-strainer, CI/M S body with brass wire/ SS wire-mesh, PN16/Class 150 rated | 2.00 Nos. | | | | | |
| 37 | I/T/C of 4" size, Motorised butterfly valves (On-Off type) | 2.00 Nos. | | | | | |
| 38 | I/T/C of 4" size, Three way flow control valve | 1.00 Nos. | | | | | |
| 39 | I/T/C of Temperature gauge, 4" Dial type, complete with capillary, SS Thermowell, all the fittings etc. | 6.00 Nos. | | | | | |
| 40 | I/T/C of Pressure gauge, 4" dial size, bourdan movement, all SS internals, complete with all the fittings and isolating ball valve etc. | 10.00 Nos. | | | | | |
| 41 | I/T/C of Temperature sensor cum transmitter complete with SS Thermowell, all the fittings etc. | 2.00 Nos. | | | | | |
| 42 | I/T/C of Differential pressure sensor across chillers, complete with all the fittings, piping etc. | 2.00 Nos. | | | | | |

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| 43 | I/T/C OF 4" size, MS, C-Class, chilled water line complete with all the fittings | 114.00 m | | - | | |
| 44 | I/T/C OF 50 mm thick, TF quality Thermocole insulation for 4" MS chilled water line complete with all the fittings | 114.00 m | | - | | |
| 45 | I/T/C OF Expansion tank, Capacity: 1000 Ltrs., MOC: MS, insulated | 1.00 Nos. | | - | | |
| 46 | I/T/C OF Make-up line from expansion tank to highest point in the return air line, 2" size, MS - C Class | 12.00 m | | - | | |
| 47 | I/T/C OF Expansion tank inlet line complete with all the fittings, supports, 1" size, GI - Class B | 50.00 m | | - | | |
| 48 | I/T/C/ OF Level switch for expansion tank | 1.00 Nos. | | - | | |
| 49 | I/T/C OF Ball valve, 1" Size | 2.00 Nos. | | - | | |
| 50 | I/T/C OF Butterfly valve, 2" Size | 1.00 Nos. | | - | | |
| 51 | I/T/C OF Drain points, 1" size, complete with all fittings and isolating ball valve. | 6.00 Nos. | | - | | |

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| 52 | I/T/C OF Purge points, 1" size, complete with all fittings and isolating ball valve. | 4.00 Nos. | | - | | |
| 53 | I/T/C OF Air handling unit, minimum capacity: 8000 CFM | 1.00 Sets | | - | | |
| 54 | I/T/C OF Differential pressure sensor across the filters | 2.00 Nos. | | - | | |
| 55 | I/T/C of Thermostats for the heaters | 2.00 Nos. | | - | | |
| 56 | I/T/C of Anodised Aluminium ducting, 22 gauge (Standard), as per SMACNA complete with supporting arrangements | 220.00 Square Metre | | - | | |
| 57 | I/T/C of Volume control dampers in Al construction within ducts to be provided with suitable ducts lever and quadrants. | 1.00 Square Metre | | - | | |
| 58 | I/T/C of Supply air grilles/ diffusers in Al construction with volume control dampers with necessary frame work etc. and complete as required. | 3.50 Square Metre | | - | | |

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| 59 | I/T/C of Thermal insulation for supply air duct: Aluminium faced Closed Cell Nitrile rubber, Class 'O' fire rating, 38 mm thick | 4.00 Square Metre | | | | | |
| 60 | I/T/C of Temperature sensors inside the Chemical store | 4.00 Nos. | | | | | |
| 61 | I/T/C OF Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 1800 CFM at 15 mm WG | 2.00 Nos. | | | | | |
| 62 | I/T/C OF Explosion proof, wall mounting, Exhaust fans, Axial flow, continuous duty, capacity - 900 CFM at 15 mm WG | 4.00 Nos. | | | | | |
| 63 | Supply of 3.5Cx150 Sq. mm size Aluminium conductor, XLPE insulated | 200.00 m | | | | | |
| 64 | Supply of 4Cx35 sq mm size Aluminium conductor, XLPE insulated | 100.00 m | | | | | |
| 65 | Supply of 3Cx 6 Sq. mm size Aluminium conductor, XLPE insulated | 100.00 m | | | | | |

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|----|--|-----------|--|---|--|--|
| 66 | Supply of 3Cx 10 Sq. mm size Aluminium conductor, XLPE insulated | 200.00 m | | - | | |
| 67 | 2 Pair Instrumentation cable, XLPE insulated | 800.00 m | | - | | |
| 68 | 6 Pair Instrumentation cable, XLPE insulated | 200.00 m | | - | | |
| 69 | Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 3.5C x 150 sq mm Aluminium (50 mm) size XLPE insulated | 6.00 Nos. | | - | | |
| 70 | Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 4 C x 35 sq mm Aluminium (32 mm) size XLPE insulated K | 6.00 Nos. | | - | | |
| 71 | Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 3 C x 6 sq mm Aluminium size XLPE insulated | 4.00 Nos. | | - | | |

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| 72 | Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 3 C x 10 sq mm Aluminium (22 mm) size XLPE insulated | 4.00 Nos. | | | | | |
| 73 | Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 2 Pair instrumentation cable XLPE insulated | 70.00 Nos. | | | | | |
| 74 | Supply of end termination with brass double compression gland and Aluminium/Cu lugs for 6 Pair instrumentation cable XLPE insulated | 10.00 Nos. | | | | | |
| 75 | Supply of 50 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray | 100.00 m | | | | | |

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| 76 | Supply of 100 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray | 50.00 m | | | | | |
| 77 | Supply of 300 mm width x 50 mm depth x 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray | 50.00 m | | | | | |
| 78 | Earthing with maintenance free copper coated Earth rod of 3 Mtr length 20 mm dia earth rod | 2.00 Nos. | | | | | |
| 79 | Providing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required. | 100.00 m | | | | | |
| 80 | Providing 10 mm dia copper wire (Green yellow colour) on surface or in recess for loop earthing of motor, cable tray etc. | 50.00 m | | | | | |
| 81 | Providing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required. | 50.00 m | | | | | |

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| 82 | I/T/C of 3.5C x 150 Sq mm size Aluminium conductor, XLPE insulated | 200.00 m | | | | | |
| 83 | I/T/C of 4C x 35 Sq mm size Aluminium conductor, XLPE insulated | 100.00 m | | | | | |
| 84 | I/T/I/T/C of 3C x 6 Sq mm size Aluminium conductor, XLPE insulated | 100.00 m | | | | | |
| 85 | I/T/C of 3C x 10 Sq mm size Aluminium conductor, XLPE insulated | 200.00 m | | | | | |
| 86 | I/T/C of 2 Pair instrumentation cable, XLPE insulated | 800.00 m | | | | | |
| 87 | I/T/C of 6 Pair instrumentation cable, XLPE insulated | 200.00 m | | | | | |
| 88 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3.5Cx150 Sq. mm Aluminium (50mm) size XLPE insulated | 6.00 Nos. | | | | | |

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| 89 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 4Cx35 Sq. mm Aluminium (32mm) size XLPE insulated | 6.00 Nos. | | | | | |
| 90 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3Cx6 Sq. mm Aluminium size XLPE insulated | 4.00 Nos. | | | | | |
| 91 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 3Cx10 Sq. mm Aluminium (22mm) size XLPE insulated | 4.00 Nos. | | | | | |
| 92 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 2 Pair instrumentation cable XLPE insulated | 70.00 Nos. | | | | | |

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|----|---|------------|--|--|--|--|--|
| 93 | Making of end termination with brass double compression gland and Aluminium/Cu lugs for 6 Pair instrumentation cable XLPE insulated | 10.00 Nos. | | | | | |
| 94 | Installing of 50 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray | 100.00 m | | | | | |
| 95 | Installing of 100 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray | 50.00 m | | | | | |
| 96 | Installing of 300 mm width X 50 mm depth X 1.6 mm thickness size of perforated Hot, Dipped Galvanised Iron cable tray | 50.00 m | | | | | |
| 97 | I/T/C of Earthing with maintenance free copper coated Earth rod of 3 Mtr length 20 mm dia earth rod | 2.00 Nos. | | | | | |

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|-----|---|----------|--|---|--|--|
| 98 | Fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required. | 100.00 m | | - | | |
| 99 | Fixing 10 mm dia copper wire (Green yellow colour) on surface or in recess for loop earthing of motor | 50.00 m | | - | | |
| 100 | Fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required. | 50.00 m | | - | | |
| 101 | Extre Item/s if any | 1.00 Lot | | - | | |
| 102 | I/T/C of extra Items if any | 1.00 Lot | | - | | |

Common charges (Applicable for all items)

| | |
|---|--|
| Post Warranty AMC Charges per Year | |
|---|--|