

Ref No: -CL20160167

Date: 08th January 2018

TENDER DOCUMENT
FOR
ANNUAL RATE CONTRACT FOR SUPPLY
OF ELECTRICAL ITEMS & WORKS EXECUTION
AT
ARCI, BALAPUR, HYDERABAD



Owner

**INTERNATIONAL ADVANCED RESEARCH CENTRE FOR
POWDER METALLURGY AND NEW MATERIALS
(ARCI)**

Balapur PO, R.R. District, Hyderabad – 500 005, India
Tel: 040-24452376, 24452476 & 24452331 Fax: 040- 24442699
Web Site: www.arci.res.in

**INTERNATIONAL ADVANCED RESEARCH CENTRE FOR
POWDER METALLURGY AND NEW MATERIALS (ARCI)
Balapur PO, Hyderabad – 500 005, India**

**TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY OF
ELECTRICAL ITEMS & WORKS EXECUTION AT ARCI, HYDERABAD**

ARCI, an autonomous R&D Society of Department of Science and Technology, Govt. of India invites sealed tenders in two bid system from eligible contractors for following works:

Name of Works : Annual Rate Contract for Supply of Electrical Items & Works Execution at ARCI, Hyderabad.

Estimated Cost: Rs.20.00 lakhs

EMD : Rs.50000.00 by Demand draft.

Eligibility: The eligible companies conforming to eligibility criteria laid down in the tender document may submit tenders in sealed envelope to the Director, ARCI, Balapur PO, Hyderabad-500005 latest by **29th January 2018 up to 15.00 Hrs** super scribing the envelope, enclosing all requisite documents, with name of work and drop the envelope in the tender box kept at ARCI security. ARCI reserves the right to reject any or all tenders and to call off the process of finalizing of contractors, at any stage without assigning any reasons.

Press Notification: -

TENDER NOTICE

Ref No: - CL20160167

Date: 08th January 2018

Director, ARCI invites sealed tenders in two bid system (Technical and Price Bid) from Contractors registered with State and Central Government agencies /departments or Corporate Houses or MNC for Supply of Electrical Items & Works Execution at ARCI, Balapur, Hyderabad

S.NO	Tender Ref. No	Description of Work	Tender Value (approx)	EMD
1	CL20160167	Supply of Electrical Items & Works Execution	Rs.20.00 lakhs	Rs.50000.00

Tender document should be downloaded from ARCI website: www.arci.res.in. Tenderers should enclose DD for Rs. 1500/- towards the tender document fee. Tenders not accompanied with tender document fee will be rejected. **Last date for submission of tenders is 29.01.2018.**

Director, ARCI

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VOL-I

Eligibility Criteria

I.NOTICE FOR INVITATION OF TENDERS

Sealed Tenders on Item Rate basis and discount on OEM price lists are invited by International Advanced Research Centre for Powder Metallurgy and New Materials, (ARCI), an autonomous R&D Institution of Department of Science and Technology, Govt. of India, for Annual Rate Contract for Supply of Electrical Items and work execution at ARCI, Balapur, Hyderabad

*Tender to be addressed &
Deposited at : Director
ARCI
RCI Road, Opp .Balapur village
Hyderabad– 500005.
Phone no- 040 -24452376 /
24452331/24452476
Fax no-040-24442699

Tenders are to be deposited in a sealed envelope at security gate marked as **TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY OF ELECTRICAL ITEMS & WORKS EXECUTION AT ARCI, HYDERABAD**

- * Earnest Money Deposit (EMD): an amount of Rs 50,000/- (Rupees Fifty thousand only) in the form of a bankers cheque or demand draft in favour of Director ARCI payable at Hyderabad from any nationalized bank/Scheduled commercial Bank.
- * Rate Contract Period : 01/03/2018 to 28/02/2019.
- * Time of Completion of work : Time of completion from the date of PO as given
Below supply of items – 1 to 10 days depends on nature of items work execution - 01 month depends on nature and quantum of work
- * Last Date and Time for Receipt of Tenders : 29th January **2018** Up to 15.00 hrs.

Director, ARCI is not bound to accept the lowest tender and reserves the right to accept or reject any or all Tenders without assigning any reason whatsoever.

The blank tender documents with eligibility criteria terms and conditions are to be downloaded from ARCI website: www.arci.res.in. Contractor who downloaded the tender document are required to submit a DD of Rs1500/- drawn infavour of Director ARCI Hyderabad along with the technical bid, towards tender document cost. Tender without DD of Rs.1500/- will be outright rejected.

II. GENERAL INSTRUCTIONS TO TENDERERS

1.0 Scope of Tender:

International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) (referred to as Owner in these documents) invites tenders for Annual Rate Contract for supply of electrical items and work execution at ARCI, Balapur, Hyderabad

The successful tenderer shall complete the works within the completion period specified in the Notice Inviting Tenders (NIT).

2.0 Non Association / Relation:

Should a contractor or a tenderer have a relative, employed in ARCI or in case of partnership firm or company incorporated under the Indian company act, should a partner or relative of the partner or a share holder be employed in a responsible capacity in ARCI, the authority inviting the tender should be informed of the fact at the time of submission of tender, failing which the tender may be rejected. If such fact is suppressed at the time of tendering and comes to light at any time after acceptance of tender, the contract may be rescinded.

3.0 Eligibility Criteria:

1. Registered with any government organization along with **Grade 'A' Electrical Inspectorate Licence** and should have executed similar nature of works during the last seven financial years ending with March 2017 as mentioned below.
 - One similar nature of work (Industrial) costing not less than **Rs.16 Lakhs**
or
 - Two similar nature of works (Industrial) costing not less than **Rs.10 lakhs**
or
 - Three similar nature of works (Industrial) costing not less than **Rs.08 lakhs.**

Similar Works:

Supply, installation and testing of Electrical items/works, for industrial wiring, trench excavation and Cable laying, cable termination, Cable jointing works, and internal electrification works for office buildings.

2. Contractor should have been maintained an average annual turnover of **Rs.6 lakhs** during the last three financial years ending with March 2017.
3. The tenderer should have executed the minimum quantity of items of works as given below in any one year during the financial years from 2010 - 2017.

S.No	Item	Quantity
1.	Cable Trench Excavation.	300 Mtrs
2.	LT Cable Laying works (Underground & Surface)	500 Mtrs
3.	Electrical wiring Installations (1.0, 2.5 & 4.0 Sqmm)	2000 Mtrs
4.	LT Cable jointing Works (up to 400 Sqmm)	20 No's
5.	LT Cable Termination Works (up to 400 Sqmm)	50 No's
6.	Installation of LED & Induction Luminaires	50 No's

4. The tenderer should submit details of works completed during last 7 years with year ending on 31st march 2017 and works on hand as per the proforma available in tender document.
5. The tenderer shall furnish a copy of valid GST registration with commercial tax department.
6. The tenderer should furnish copy of permanent account number (PAN) and copy of latest income tax returns submitting along the proof of receipt.
7. The tenderer should submit the particulars in the format specified in the tender schedule along with necessary certificates, for SAC/HSN codes & GST rates for services for supply.
8. Current solvency certificate minimum of Rs.10 lakhs (Rupees Ten lakhs) in original from a scheduled commercial bank. The certificate should not be more than 1 month old.

4.0 Qualification of the Tenderer

All Tenderers shall provide Eligibility Criteria information as per proforma enclosed.

All Tenderers shall include the following information by producing relevant documents and certificate with their Tender.

- a. Conditions of the contract enclosed each page duly signed by the tenderer as token of acceptance. If any deviation is proposed by the tenderer the same must be clearly indicated and enclosed as deviation list but tenders with significant deviations list and merely enclosing tenderer's printed conditions or their own terms and conditions will make the tender liable for rejection.
- b. Earnest money deposit as laid down in these instructions to tenderers.
- c. Tender document cost.

5.0 Cost of Tendering

The Tenderer shall bear all costs associated with the preparation and submission of his Tender, and the Owner will in no case/way be responsible and liable for those costs.

The Tenderer, at the Tenderer's own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for Annual Rate Contract for supply electrical items and work execution at ARCI, Balapur, Hyderabad. The costs of visiting the site shall be at the Tenderer's own expense.

- 6.0 The tenderer should submit the particulars in the format specified in the tender schedule along with necessary certificates, for GST HSN and SAC codes for registration for services.

ELIGIBILITY CRITERIA INFORMATION

CHECKLIST TO ACOMPANY THE TENDER

Sl. No.	Document to be Submitted	Description to be given	Scanned documents/ photocopy to be Submitted	Column 5
(1)	(2)	(3)	(4)	(5)
1.a) b)	Contractors registration under appropriate class (Grade 'A') with Govt./PSU /MNC. Partnership deed in case of firms & Article of Association in case of companies	Registration	Yes / No	
2.	Copy of Permanent Account Number (PAN) card and copy of latest Income Tax returns submitted along with proof of receipt.	PAN & IT Returns	Yes / No	
3.	Work completion certificates in support of annual turnover in Electrical Engineering works (Format at Statement-I)	Annual turnover	Yes / No	
4.	Work completion certificates in support of satisfactory completion of similar works along with purchase/work orders (Format at Statement- II)	Similar work	Yes / No	
5.	Experience certificates in support of execution of Quantities of cable trench excavations, Laying of cables, Cable Jointing's, Cable terminations, point wiring, Telephone & LAN works. (Format at Statement-III)	Executed quantities	Yes / No	
6.	Statement of existing commitments and ongoing Govt. /PSU /MNC works along with supporting experience certificates as in Statement IVA	Existing commitments	Yes / No	
7.	Availability of equipment as in Statement –V	Equipment	Yes / No	
8	Availability of key personnel as in Statement VI	Key personnel	Yes / No	
10.	Information of litigation history as in Statement VII	Litigation history	Yes / No	

Sl. No.	Document to be Submitted	Description to be given	Scanned documents/ photocopy to be Submitted	Column 5
11	Credit facilities/solvency certificates from banks	Credit facilities	Yes / No	
12.	E.M.D	EMD	Yes / No	
13.	GST Registration with number	GST Registration	Yes / No	
14.	Cost of Tender document Rs 1500/-	Yes / No	Yes / No	

All experience certificates including those in support of existing commitments issued by an Officer not below the rank of Executive Engineer (or) Equivalent grade.

All the statements copy of the certificates, documents etc., enclosed to the Technical bid shall be given page numbers on the right corner of each certificate, which shall be indicated in column (5) against each item.

STATEMENT – I

Details of value of Electrical works (Turnover) executed in each year during the last three financial years by the Tenderer.

Sl. No.	Financial Year	Value in Rs.
1.	2014-2015	
2.	2015-2016	
3.	2016-2017	

Attach certificate(s) issued by the Executive Engineer or concerned head of the department showing work wise / year wise value of work done in respect of all the works executed by the Tenderer during last three years

Signature of the Contractor

STATEMENT – II

Details of similar electrical works completed in the name of the Tenderer during the last five financial years.

Sl. No	Name of the work	Address of Agt. Concluding Authority	Agreement No. & dated. With telephone number	Value of Contract
1	2	3	4	5

Stipulated period of completion	Actual date of completion	Value of work done year wise during the last 'five' years.					Total value of work done.
		1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	
6	7	8	9	10	11	12	13

Attach certificates issued by the Executive Engineer or concerned head of the department showing work wise / year wise value of work done and date of completion.

Signature of the Contractor

STATEMENT – III

Physical quantities executed by the Tenderer in the last five financial years. [Work wise / year wise].

Sl No	Financial Year	Name of work	Agt. No	Quantities executed / Year wise.				
				Cable trench (Mtrs)	Cable laying (Mtrs)	Cable jointings (No's)	Cable terminations (No's)	Wiring (Mtrs)
1	2	3	4	5	6	7	8	9
1	2012-2013							
2	2013-2014							
3	2014-2015							
4	2015-2016							
5	2016-2017							

Attach certificates in support of the above quantities issued by the Executive Engineer or concerned head of the department duly showing the quantities executed year wise.

Signature of the Contractor

STATEMENT – IV

Details of Existing Commitments.

Details of works on hand and, yet to be completed as on the date of submission of the Tender and works for which Tenders have been submitted are to be furnished.

A) Existing Commitments on ongoing works:

Sl. No	Name of work	Address of Agt. Concluding authority	Agt No. & Date	Value of contract	Stipulated period of completion	Value of work done so far.	Balance Value of works to be completed	Anticipated date of completion	Updated value of balance work
1	2	3	4	5	6	7	8	9	10

Attach certificates issued by the Executive Engineer or concerned head of the department indicating the balance work to be done, and likely period of completion.

Signature of the Contractor

STATEMENT – V

Availability of Equipment for Testing & Commissioning

The tenderer should furnish the information required below, regarding the availability of the equipment, required for execution & commissioning.

Sl. No	Details	Number	Number		
			Owned	Leased	To be procured
1	2	3	4	5	6

Signature of the Contractor

STATEMENT – VI.

Availability of Key Personnel

Qualification and experience of Key Personnel proposed to be deployed for execution of the Contract.

Sl. No	Name	Designation	Qualification	Total Experience	Working with the Tenderer since.
1	2	3	4	5	6

Signature of the Contractor

STATEMENT – VII

Information on litigation history in which Tenderer is the Petitioner.

S. No	Case No. / Year	Court where filed.	Subject Matter / Prayer in the case.	Details of Respondents	Present Stage.
1	2	3	4	5	6

Signature of the Contractor

7.0 Contents of documents.

Contract documents consists of

- Notice for invitation of Tenders
- Instructions to Tenderers
- Articles of Agreement
- General conditions of contract (GCC)
- Special conditions of contract (SCC)
- Guarantee Proforma for Retention Money
- Form of performance guarantee / Bank guarantee bond
- General Technical Specifications
- Bill of items
- Detailed description of items

The Tenderer shall be deemed to have examined all instructions, forms, terms, and specifications in the Documents. Failure to furnish the information required by the Tender Document or submission of a Tender not substantially responsive to the Tender Documents in every respect will be at the Tenderer's risk and may result in the rejection of the Tender.

The several documents forming the contract are to be taken as mutually explanatory of one another, and Special Conditions are in preference to General Conditions.

8.0 Amendment of Tendering Documents

- a) Before the deadline for submission of Tenders, the Owner may modify the Tender documents by issuing addenda.
- b) Any addendum thus issued shall be part of the Tender documents and shall be communicated in writing or by Fax to all the eligible contractors. The eligible contractors shall acknowledge receipt of each addendum by Fax to the Owner.
- c) To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Owner may extend if necessary the deadline for submission of Tenders.

9.0 Earnest Money Deposit (EMD)

Tender EMD amount of **Rs.50,000/-** in the form of a bankers cheque or demand draft infavour of Director, ARCI, payable at Hyderabad must accompany each Tender. **Tenders not accompanied by EMD and unconditional acceptance letter will be summarily rejected.**

9.1 The EMD of the unsuccessful Tenderers will be discharged / returned within 8 weeks from the last date of tender submission. The EMD of the successful Tenderer shall be retained till submission of performance guarantee as per clause 25 of general instructions.

9.2 The EMD of successful tender shall be refunded on submission of performance guarantee as per clause 25 of general instructions.

9.3 The EMD may be forfeited: if the Tenderer withdraws his Tender during the validity period of the Tender; or in case of a successful Tenderer fails to furnish performance guarantee.

10.0 Period of validity of Tender

The Tender shall remain valid for a period of 90 days after the last date of the submission of tender. A Tender valid for a shorter period, may be rejected by the owner.

11.0 Language of Tender

The document shall be written in English language. The total amount should be written in the same language.

12.0 Document comprising the Tender

No page of this Tender document shall be removed and the set must be submitted as it is. Each page of the Tender document is to be signed by the Contractor and must bear the Seal of the Company/Firm.

The Tender submitted by the Tenderer shall comprise of the following:

1. **Technical bid** in a separate sealed cover comprising of.
 - a. Eligibility Criteria Information
 - b. Instructions to tenderers
 - c. Conditions of the contract enclosed, each page duly signed by the tenderer as token of acceptance. If any deviation is proposed by the tenderer the same must be clearly indicated and enclosed as deviation list but tenders with significant deviations list and merely enclosing tenderer's printed conditions or their own terms and conditions will make the tender liable for rejection.
 - d. Specifications
 - e. Earnest money deposit as laid in these instructions to tenderers.
 - f. statement of list of deviations if any from tender conditions.
 - g. Tender cost of Rs.1500/- in the form of D.D. in favour of Director, ARCI.
2. **Price Bid** in a separate sealed cover comprising of Price Schedule with prices (Both in words and in figures) strictly in accordance with the price schedule format of the tender document. Departure from the price schedule format may render the tender liable for rejection
3. These two Sealed covers are to be placed in a single envelop. The envelop duly sealed & super-scribed with the name of work Ref No.CL20160167 should be addressed to The Director ARCI, RCI road, Balapur, Hyderabad-5 on or before the scheduled date and time. i.e., 29.01.2018 up to 15.00Hrs.

13.0 Tender Prices

- a) The contract shall be for the whole works as described in tender document based on the priced Schedule of Quantities submitted by the Tenderer.
- b) The tender submitted on behalf of a Firm/Company, shall be signed by a person who has the proper legal authority on behalf of the Company to enter into the contract; otherwise, the tender is liable to be rejected. Each page of the tender document is required to be signed by the authorized person submitting the tender, affixing the Firm/company seal in token of their having examined and acquainted themselves with the contents of each page. The forms of tender are to be filled in completely. Any tender with any of the documents not duly signed is liable to be rejected.
- c) The Tenderer shall fill in the rates for all items of the Works described in the Schedule of items. **In case the rates are not filled for any of the Items of Schedule of items, in such cases the rate will be considered as zero and the contractor has to accept for the amount arrived based on zero rate for non-quoted items.** Failure to comply with either of these conditions will make the tender liable for rejection and forfeiture of Earnest money.
- d) The GST payable by the Contractor under the contract, or for any other cause, shall be excluded in the rates, prices. Tenderers must include in their rates, the cost of transportation of materials to site, GST rates payable contractor under the HSN / SAC code should be separately as shown in separate column of price bid of BOQ. The taxes levied other than IT should be paid either directly by the contractor to the statutory authorities and challans/proof of payment with acknowledgement shall be provided by the contractor before release of the payment of next bill or shall be deducted at source. Contractor should also take a Group Insurance Policy for his Workmen, Supervisors and Engineers working on site for an adequate insurance cover. ARCI shall not be responsible for any accident or any untoward/unforeseen event involving workmen, labour, supervisor or engineer or any person directly or indirectly associated with the execution of work. The insurance policy to be obtained by the successful Tenderer must be comprehensive and shall cover all associated risks (known and unknown) from any Government Insurance Company.
- e) The rates quoted in the tender shall include cost of telephone rent and call charges, for execution of work at site, hire for any tools and tackles, shed for materials, marking out and transportation complete, cleaning the buildings and surroundings after execution of the total works and dumping the waste at designated place as directed by the Owner in all respects. The rates quoted in the tender shall be treated as rates for finally completing the item of work.
- f) The rates and prices quoted by the Tenderer shall be fixed for the duration of the contract and shall not be subject to escalation or adjustment on any account even if the work is delayed due to unavoidable circumstances beyond the control of owner. If OEM revises the price list same will be effective for forth coming purchase orders, PO's dates after the price list revision date.
- g) The calculations made by the tenderer should be based upon specifications of the items of work which are furnished in the Schedule of items, The

items of work irrespective of the quantities which may vary shall be carried out at the same accepted tender rates and no escalation in the rates will be entertained whatsoever.

- h) The tenderers must obtain for themselves on their own responsibility and their own expenses all the information which may be necessary, including risks, contingencies and other circumstances to enable them in making a proper tender and for entering into a contract.

14.0 Format and signing of Tender document

- a) The tenderer shall seal the bid in an envelope, duly marked as **TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY ELECTRICAL ITEMS AND WORK EXECUTION AT ARCI, BALAPUR, HYDERABAD.** which shall include Tender form duly signed by the tenderer on their letter head along with documents mentioned under clause 12 and priced BOQ document in single envelope. Please refer “Clause No. 12 of preparation of tender documents comprising tenders in Instructions to Tenderers”.
- b) The Tender shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Tenderer. All pages of the Tender where entries or amendments have been made shall be initialed by the person or persons signing the Tender.
- c) The Tender shall contain no alterations or additions, except those to comply with instructions issued by the Owner, or as necessary to correct errors made by the Tenderer, in which case such corrections shall be initialed by the person or persons signing the Tender. **ANY CONDITIONAL TENDER WILL BE SUMMARILY REJECTED.**

15.0 Sealing and marking and submission of Tenders

The Tenderers are requested to quote their offers in two separate sealed envelopes:

- 1st Envelope (Technical Bid) :** Comprising of Earnest Money Deposit as per clause No. 9 of Instructions to Tenderers. Etc. with all tender documents (Volumes I, II, III, IV) duly sealed and signed
- 2nd Envelope (Price bid) :** Priced BOQ document (Volume – V) duly signed and sealed. Please refer “Clause No. 12. of Preparation of tender documents in Instructions to Tenderers”.

These two envelopes are to be placed in a single envelope and shall be duly sealed indicating the name of work i.e. TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY ELECTRICAL ITEMS AND WORK EXECUTION AT ARCI, BALAPUR, HYDERABAD. and deposited in the tender box kept at the ARCI SECURITY OFFICE at main gate, RCI Road, opp Balapur ,Hyderabad-500005 on or before due date and time of submission of tender. In case of any queries, please contact at Phone no: 040-24452376 or 24452476 or 24452331.

- a) In addition to the identification required in Clause 12 the inner envelopes shall indicate the name and address of the Tenderer to enable for the

Tender to be returned unopened in case it is declared late, pursuant to Clause 16.0

- b) If the outer envelope is not sealed and marked as above, the Owner will assume no responsibility for the misplacement or premature opening of the Tender.

16.0 Last date for submission of Tenders

Any Tender received by the Owner after the date and time of submission of Tenders i.e. up to **15.00 Hrs On 29.01.2018** will be rejected and returned unopened to the Tenderer.

17.0 Clarification of Tenders

To assist in the examination, evaluation, and comparison of Tenders, the Owner may, at his discretion, ask any Tenderer for clarification of his Tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by Fax, but no change in the price or substance of the Tender shall be sought, offered, or permitted.

18.0 Examination of Tenders and Determination of Responsiveness

- a) Prior to the detailed evaluation of Tenders, the Owner will determine whether each Tender (a) meets the eligibility criteria defined in clause 3.0; (b) has been properly signed and meets the requirements as in clause 4.2; (c) is accompanied by the required securities and; (d) is substantially responsive to the requirements of the Tendering documents.
- b) A substantially responsive Tender is one which confirms to all the terms, conditions, and specifications of the Tendering documents, without significant deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works (b) which limits in any substantial way, the Owner rights or the Tenderers' obligations under the contract; or (c) whose rectification would affect unfairly the competitive position of other Tenderers presenting substantially responsive Tenders.
- c) If a Tender is not substantially responsive, it will be rejected by the Owner, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

19.0 Correction of Errors

- a) Errors in the Schedule of Quantities shall be dealt with in the following manner:
 - i In the event of a discrepancy between the rates quoted in words and the rates in figures, rate quoted in words shall be deemed to be correct.
 - ii In the event of an error occurring on account of arithmetical calculations the same shall be corrected according to rates written in words and quantities in B.O.Q.

20.0 Evaluation and Comparison of Tenders

- a) The Owner will evaluate and compare only the Tenders determined to be prequalified and substantially responsive.
 - b) In evaluating the Tenders, the Owner will determine for each Tender the evaluated Tender Price by adjusting the Tender Price as follows:
 - (a) Making any correction for errors; or
 - (b) Making an appropriate adjustment for any other acceptable variations, deviations; and
 - (c) Making appropriate adjustments to reflect discounts offered.
- 21.0 The price bid of unqualified contractors contained in envelope B and EMD contained in envelope A will be returned to them without opening the envelope B seal.
- 22.0 **The Owner reserves the right to accept or reject any variation, deviation, or alternative offer and other factors which are in excess of the requirement of the Tendering.**
- 23.0 **Award criteria**
- a) The acceptance of Tender will rest with the Owner, which does not bind itself to accept the lowest tender and reserves to itself the authority to reject completely / partially, any or all of the Tender/s received without the assignment of a reason.
 - b) The owner reserves to itself the right of accepting the whole or any part of the Tender and the Tenderer shall be bound to supply / perform the same at the rate quoted.
 - c) The Owner reserves to itself the right of omission of any item of work from the awarded tender at any time / stage during the execution of work.
- 24.0 **Notification of award:** The successful Tenderer will be issued a Letter of Intent (LOI) / Purchase Order (PO) / Work order and the date of commencement of work will be as mentioned in the LOI or PO or WO.
- 25.0 **Performance Guarantee.**
- a) The successful tenderer shall submit the performance guarantee for an amount equal to Rs.100000/- of approved tender amount in the form of Bank guarantee from nationalized bank within 15 days from issue of PO / WO. Bank guarantee is to be valid for a period up to the actual date of completion. This amount will be refunded soon after recording completion certificate.
 - b) Failure of the successful tender to make payment of performance guarantee shall constitute sufficient ground for the annulment of the award and forfeiture of EMD.
- 26.0 **During Execution:**
The Contractor shall carry out all the works strictly in accordance with the specification and instructions of the Owner.

- a) The Contractor is bound to carry out any items of work necessary for the completion of the job even though such items are not included in the schedule of quantities and rates. Schedule of instructions in respect of such additional items and their quantities will be issued in writing by the owner. Rates for such items of work will be from **actual prevailing market rates of similar item along with 15% as contractor's profit & overhead**. The rates approved by the Owner in such cases will be final.
- b) The Contractor shall get the quality of work done inspected for material and workmanship at different stages of execution as per instructions given by the Owner or their representative time to time. Any item of work done which is found not conforming to the Contract shall be rejected by the Owner. The decision of the Owner in such cases shall be final.
- c) The Contractor shall not be entitled to any compensation suffered by him on account of delays in commencing or executing the work whatever the cause of delay may be, including delays arising out of modifications to the work entrusted to him or in any subcontracts connected therewith or delays in awarding contracts for other trades of the project or in commencement or completion of such other works or in procuring Government controlled or other building materials for any other reasons whatsoever. The Owner shall not be liable for any sum besides the tender amount, subject to such variations as are provided for herein and as instructed by Owner. However, necessary time extension will be given if the delays are not attributed to the Contractor.

ARTICLES OF AGREEMENT

Made atthis day
of..... 2018

Between

.....
.....
(hereinafter referred to as the Owner which expression shall include its heirs, Executors,
Administrators & Assignees) of the one part and

.....
..... (Hereinafter referred to as the Contractor which expression shall include his
heirs, Executors, Administrators & Assignees) of the other part

WHEREAS the Owner is desirous of carrying out ANNUAL RATE CONTRACT FOR SUPPLY ELECTRICAL ITEMS AND WORK EXECUTION AT ARCI, BALAPUR, HYDERABAD, and the specifications and the priced Schedule of quantities have been signed by or on behalf of the parties hereto and WHEREAS the Contractor has agreed to execute up to and subject to the conditions set forth herein (hereinafter referred to as “the work shown against each purchase order” and described in “the said Specifications” and the said “Priced Schedule of Quantities at the respective Rates mentioned in the Priced Schedule/ Purchase Order of Quantities attached.

And WHEREAS the Contractor has agreed to the submit the performance guarantee to ARCI for Rs. (Rupees.....
.....Only)
by him as performance guarantee for the due fulfillment of the contract to the satisfaction of the owner (ARCI)

NOW IT IS HEREBY AGREED AS FOLLOWS:

- (1) In consideration of the payments to be made to the Contractor as hereinafter provided he shall upon and subject to the conditions of contract execute and complete the works shown upon the said drawings and such further detailed drawings as may be furnished to him by the said Owner and described in the Specifications and the said Priced Schedule of Quantities.
- (2) The Owner shall pay the Contractor such sums as shall become due and payable hereunder at the times and in the manner specified in the said conditions.
- (3) The tender agreement, documents and terms and conditions of NIT above mentioned shall form the basis of this Contract and the decision of the said owner as mentioned in the Conditions of the Contract in reference to all matters of dispute as to the material, workmanship or account and as to the intended interpretation of the clauses of this agreement or any other document attached hereto shall be final and binding on both parties.
- (4) The Owner reserves the right of altering the drawing and nature of work and of adding to or omitting any items of work and of having portions of the same carried out departmentally or otherwise and such alterations or variations shall be carried out without prejudice of this contract.

- (5) The said Contract comprises the work above mentioned and all subsidiary works connected there to within the same site as may be ordered to be done from time to time by the said Owner even though such works may not be shown or described in the said specifications or the Priced Schedule of Quantities.
- (6) The said conditions shall be read and construed to be forming part of this agreement and the Parties hereto will respectively abide by and submit themselves to the conditions and stipulations and perform the agreement on their parts respectively in such conditions contained.
- (7) All disputes arising out of or in any way connected with this agreement shall be deemed to have arisen in Hyderabad and only the courts in Hyderabad alone shall have jurisdiction to determine the same.
- (8) The arbitrator for fulfilling the duties set forth in the arbitration clauses as defined with tender conditions of contract.
- (9) Arbitration: The Contract shall be governed by, and construed in accordance with the laws of India. Any dispute which cannot be amicably settled by the parties may be submitted, by the owners, to the International Center for Alternate Dispute Resolution (ICADR), Hyderabad. The dispute will be settled following the provisions of Arbitration and Conciliation Act, 1996. Both Parties agree that the results and awards of any such arbitration shall be binding on both Parties. Venue of Arbitration shall be Hyderabad.
- (10) The several parts of this contract have been read to us and fully understood by us.

As witness our hands this.....day
of.....2018.....

.....
Signed by the said Owner

.....
in the presence of

.....
Signed by the said Contractor

.....
In the presence of

IV. FORM OF TENDER

(To be submitted by the Tenderer in letter head).

From :

To

**International Advanced Research Centre for Powder Metallurgy
And New Materials (ARCI)**
Balapur, Hyderabad-500005

Dear Sir,

- 1.0 Having examined the Tender documents consisting of the Tender notice, General Instructions to Tenderers, General Conditions of Contract, Special Conditions of Contract, specifications, Form of Contract , form of tender, form of schedule Rates, Bill of Material etc., and having understood the provisions of the said tender documents and also having thoroughly studied the requirements of International Advanced Research Centre for Powder Metallurgy And New Materials (ARCI), related to the work tendered for in connection with the Annual Rate Contract for Supply of Electrical Items and work execution at ARCI, Balapur, Hyderabad. and having conducted a thorough study of the job site involved, the site conditions, power, water, material and equipment availability, the transport and communication facility and the availability and suitability of borrow areas etc., we hereby submit our tender offer for the performance of proposed work in accordance with the terms and conditions and within the time mentioned in the tender documents at the rates included within the tender documents and based on application of the rates tendered in the accompanying schedule of rates to the relative quantities indicated in the form of schedule rates forming part of the tender documents.

- 2.0 If the work or any part thereof is awarded to me/us, I/we undertake to perform the work in accordance with the contract documents as defined in the form of contract forming part of the tender documents and accept the terms and conditions of contract as laid down therein and undertake that on receipt of acceptance of tender and on confirmation. I/We will deposit such sums as may be necessary under the terms of contract and abide by the terms of the tender. I/We will also sign the necessary contract and other documents to commence the work and execute the work as per the terms and conditions contained in the tender documents failing which International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) shall be at liberty, without further reference to me/us and without prejudice to any of its rights to terminate the contract and or to forfeit the earnest money deposit and take further course of action.

- 3.0 I/We further undertake to keep our tender offer open for a period of not less than 90 days from the due date of submission of the tenders as specified in the General Instructions to tenderer forming part of the tender documents. `
- 4.0 I/We hereby undertake that the statements made herein/information above are true in all respects and that in the event of any such statement or information being found to be incorrect in particular, the same may be construed to be a misrepresentation entitling International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) to avoid any resultant contract and take further action as may be justified.

I/We confirm having deposited EMD of Rs _____ in the form of _____

Yours faithfully,

Signature of the tenderer

Name and designation of the
Authorized person signaling the
Tender on behalf of the Tenderer.

Name:

Designation.

Address.

Witness :

VOL-II

General & Special Conditions of
Contract for
Supply of Electrical Items and Work
Execution

GENERAL CONDITIONS OF CONTRACT (GCC)

A: GENERAL

1.0 Definitions

1.1 In this contract, the following terms shall be interpreted as indicated:

- (a) "The Contract" means the agreement entered into between the Owner and the Contractor, as recorded in the contract form signed by the parties, including all the attachments and appendices there to and all documents incorporated by reference therein.
- (b) "The Contract Value" means the amount payable to the Contractor under the contract for the full and proper performance of its contractual obligations.
- (c) "Contract Data" means any information provided in the Tender document and agreed to by the Contractor.
- (d) "The Work" means all labour, materials, tools and plant, equipment including government taxes and transport, that may be required in preparation of and for and in the full and entire execution and completion of "the Work".
- (e) "Services" means services ancillary to the execution of the work such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training and other obligations of the Contractor covered under the contract.
- (f) "GCC" means the General Conditions of Contract contained in this section.
- (g) "SCC" means the Special Conditions of Contract.
- (h) "The Owner" means the organization getting the work done, and or its representative
- (i) "The Contractor" means the individual or the firm executing the work.
- (j) "The Project Site" where applicable, means the place or places named in SCC.
- (k) "Day" means calendar day.
- (l) "GST" means Goods and Service Tax as applicable for HSN / SAC codes.

2.0 The Contractor shall offer the Engineer or any representative of Owner every facility and assistance for examining the works and materials. The Engineer or any representative of the owner shall have power to give notice to the Contractor or to his staff, of non-approval of any work or materials and such work shall be suspended or the use of such materials shall be discontinued until the decision of the owner. Such examinations shall not in any way exonerate the contractor from the obligations to remedy any defects which may be found to exist at any stage of the work or after the same is completed.

3.0 Interpretation and Application

3.1 These general conditions shall apply to the extent that provisions in other parts of the contract do not supersede them.

3.2 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Owner will provide instructions clarifying queries about the Conditions of Contract.

4.0 Standards

4.1 The works executed by the Contractor should be carried out in most professional manner, both as regards material and otherwise, in every respect, in strict

accordance with the Technical Specifications. All materials and workmanship shall so far as procurable be of the respective kinds described in the priced schedule of quantities and/ or specifications and in accordance with the Owner's instructions, and the Contractor shall upon the request of the Owner, furnish them with all invoices, accounts; receipts and other vouchers to prove that the material procured complies therewith. When no applicable standard is mentioned, the work shall be carried out as per the directions of the Owner. The Contractor shall at his own cost arrange for and / or carry out any test of materials which the Owner may require. In case of discrepancies in tender wording as regards the specifications of materials workmanship etc., written instructions will supersede the tender wording unless otherwise mentioned.

- 4.2 The Owner in their absolute discretion from time to time shall issue further drawings and/ or written instructions, details, directions and explanations which are hereafter collectively referred to as "the Owner's instructions" in regard to: -
- a. The variation or modification of the design quality or quantity of works or the addition or omission or submission on any work.
 - b. Any discrepancy in the drawings or between the schedule of quantities and / or drawings and /or specifications/ dimensions etc.
 - c. The removal and / or re-execution of any works executed by the Contractor.
 - d. The removal from the site of any materials brought thereon by the Contractor and the substitution of any other materials therefore / or rejection of the material brought on site.

5.0 Use of Contract Documents and Information

- 5.1 The Contractor shall not, without the Owners' prior written consent, disclose the contract or any provision thereof, or any specifications, plan, drawing, pattern, sample or information furnished by or on behalf of the Owner in connection therewith, to any person other than a person employed by the Contractor in performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance.
- 5.2 The Contractor shall not, without the Owner's prior written consent make use of any document or information enumerated in Para 5.1 except for the purposes of performing the contract.
- 5.3 All documents included but not limited to contract agreement shall remain the property of the Owner and shall be returned (in all copies) to the Owner on completion of the Contractor's performance under the contract, if so required by the Owner.

6.0 Performance Guarantee

- 6.1 Within 15 days from the date of PO/WO of the contract, the Contractor shall furnish performance guarantee in the form of a bank guarantee to the Owner, of the amount specified in the Special Conditions of Contract / General instructions clause no 25.
- 6.2 The proceeds of the performance guarantee shall be payable to the Owner as compensation for any loss or dues resulting from the Contractor's failure to complete its obligations under the contract.
- 6.3 The performance guarantee shall be in the form of bank guarantee from nationalized bank

6.4 The performance guarantee shall be discharged by the Owner and returned to the Contractor on completion of the work and recording of the completion certificate.

7.0 Site order Book:

The contractor shall maintain a site order book at site for the purpose of quick communication between the contractor, owner. Any communication relating to the work may be conveyed through site order book. Such a communication from one party to other shall be deemed to have been adequately served in terms of contract. Each site order book shall have machine numbered pages in triplicate, and shall be carefully maintained and preserved by the contractor, and shall be made available to the owner as and when demanded. Any instructions which the Owner may like to issue to the contractor or the contractor may like to bring to the owner two copies of such instructions shall be taken from the site order book and will be handed over to the Owner and second copy will be retained with contractor.

8.0 Contractor to provide everything necessary for proper execution of work

- 8.1 The Contractor shall provide everything necessary for the proper execution of the works according to the intent and meaning of the drawings, priced schedule of quantities and specifications taken together whether the same may or may not be particularly shown or described therein provided that the same can reasonably be inferred there from. If the Contractor finds any discrepancy therein he shall immediately and in writing refer the same to the Owner whose decision shall be final and binding. Further, if any sample(s) of material(s), fittings, fixtures or finished item(s), to be used in the electrical/LAN/telephone works, has/have been called for from the contractor, no work related to it/these shall be executed unless the same has/ have been approved by the Owner failing which no payment shall be made to the contractor on this account. Any sample, duly approved by the Owner shall become part of the supply to be used in “the works”.
- 8.2 The Contractor shall supply fix and maintain at his cost, during the execution of any works, all the necessary power supply, water supply, scaffolding, watching and lighting by night as well as by day, required not only for the proper execution but also for protection of the public and the safety of any adjacent roads, streets, pavements, walls houses, building and other erections, matters or things.
- 8.3 Throughout the execution of the work, the Contractor or his representative duly authorised and fully responsible and technically conversant with the work under this agreement, acting on his behalf shall be available at the site for supervising the work. The Contractor shall make adequate arrangements for watchmen to guard the materials brought by them to the site and shall ensure the safety, breakage and any theft of materials fixed or unfixed by him. Any material, brought to the site for bonafide use of the Project shall not be removed/ shifted from the site without the prior written permission of the owner
- 8.4 The contractor has to provide at his cost leveling pipe, steel/ metallic tapes, testing multi meter, meggar, test lamp, tester, etc. required by the supervising staff of the Owner representative during execution of the work.
- 8.5 Wherever the specifications of any item indicate the usage of approved equivalent of any material, the Contractor shall get the sample of the equivalent material approved from the Owner before execution. The approval of the equivalent material is entirely at the discretion of the owner.

9.0 Site Establishment

The contractor shall provide all stores, workmen and materials. All materials likely to deteriorate in the open shall be stored under suitable cover.

- 9.1 The contractor shall not be allowed to construct huts for accommodation of his employee or workmen, within the site area. The contractors employees or workmen will not be allowed to stay overnight at the site area.
- 9.2 The security of the contractor's equipment and materials is his own responsibility. The Owner accepts no liability for loss or damage to the contractor's plant tools and tackles & materials.
- 9.3 The materials issued to the contractor if any by the Owner will remain under the custody of contractor as a trustee. However, title on the same will remain with the Owner. The contractor will be responsible for loss or damage to such materials and shall preserve them in good working conditions as required for the contract and good executional practices till such time that they are incorporated in the works and erected, aligned and fully installed in position and handed over to the Owner. In case the Owner feels that arrangements made by the contractor are not adequate he shall so advise the contractor and the contractor shall promptly take corrective action. In case the contractor fails to take corrective action, Owner shall take such corrective actions and recover the cost thereof from the contractor's bills. Accounts of such material on completion of work shall be rendered and surplus material returned to the Owner as per instructions of Owner.
- 9.4 The contractor shall clear away periodically or as instructed by Owner any rubbish, scrap materials, etc. and dump the same in the authorised dump sites notified by local authority or area indicated by the Owner. All construction materials shall be neatly stacked in an orderly manner as directed by the Owner and care shall be taken to allow proper access to workmen and easy movement of men, vehicles, cranes and materials.
- 9.5 The contractor shall not permit the entry to the site of any person not directly connected/concerned with the work without first having obtained the written permission of Owner.
- 9.6 The contractor shall submit a list of equipment's, tools, tackles, etc. which he will use, to perform the work. These tools, etc. shall not be removed from the site till the completion of job. A gate pass must be obtained from the Owner's representative in order to remove from site any testing equipment, tools and materials.
- 9.7 All items such as instructions and other pertinent data regarding erection/commissioning and maintenance should be typed and classified for transmittal in a manner approved by the Owner.
- 9.8 All employees of the contractor shall confirm to rules of conduct, etc. established by the owner, Failure to do so will be sufficient cause for removal of such person from the site.

10.0 Messing & Accommodation

- 10.1 The contractor will make his own arrangements for messing and accommodation and the same shall not be done at site. No accommodation and messing shall be provided by the Owner.

11.0 Procurement, Consumption and Storage of Materials

- 11.1 The contractor shall at his own expenses, provide all materials required for the works. Adequate stocks of all materials required for the work are to be maintained

at site. No material (unless as provided elsewhere in this document) shall be supplied by the Owner.

- 11.2 All materials to be provided by the contractor shall be in conformity with the detailed specifications laid down in the contract and the contractor shall, if requested by the Owner furnish prior to the satisfaction of the Owner that the materials confirm to the laid down specifications.
- 11.3 All materials required for execution of work must be got approved by the Owner before they are actually put to use. All facilities for prior inspection of materials and subsequent inspection of work by the Site representative of the contractor must be made available.
- 11.4 The contractor shall, at his own expenses and without delay, supply to the Owner samples of materials proposed to be used in the work. The Owner shall within seven days of supply of samples, or within such further period as Owner may require and intimate the contractor in writing, whether samples are approved by Owner or not. If samples are not approved, the contractor shall forth with arrange to supply, for their approval, fresh samples complying with the specification laid down in the contract.
- 11.5 The Owner shall have full power to require removal of any or all the materials brought to site by the contractor which are not in accordance with the contract specifications or do not confirm in character or quality to the samples approved by Owner. In case of default on the part of the contractor in removing rejected materials, the Owner shall be at liberty to have them removed by other means. The Owner shall have full powers to direct other proper materials to be substituted for rejected materials and in the event of the contractor refusing to comply. Owner may cause the same to be supplied by other means. All risks and costs which may attend upon such removal and/or substitution shall be borne by the contractor.
- 11.6 Contractor shall be responsible for procurement of all materials/equipments etc. No delay due to non availability of any material equipment will be entertained by Owner.

12.0 Method of storing the materials

- 12.1 The contractor shall at his own cost, provide for all necessary storage on the site in specified areas for all materials which are likely to deteriorate by the action of sun, wind, rain, dampness or other natural causes due to exposure in the compounds or in stores in such a manner that all materials, tools and tackles etc. shall be duly protected from damage by weather or any other cause.
- 12.2 Materials required for the works, by the contractor be stored by the contractor only at places approved by the Owner. Storage and safe custody of materials shall be the responsibility of the contractor.
- 12.3 All the materials including contractor's tools & tackles, testing & erection equipment's brought by the contractor to the site shall become and remain the property of the Owner and shall not be removed off the site without prior written approval of the Owner. But whenever the works are finally completed and advances, if any, in respect of such materials are fully recovered, the contractor shall at his own expenses forthwith remove from the site all surplus materials supplied by him and upon such removal, the same shall revert in and become the property of the contractor.

13.0 Scaffolding Materials

- 13.1 It shall be desirable to have adequate amount of scaffolding materials / ladders to complete the work speedily and Owner decision so as to the quantum of these desirable / resources at the site shall be final and binding.

14.0 Completion of Work

- 14.1 Before finally leaving site, all the Contractors stores, tools & tackles, testing equipment's and rubbish / Debris / waste materials shall be removed and the site left clean and tidy. The space allocated by Owner shall be vacated and handed over to the Owner.

15.0 Employment of Labour

- 15.1 The contractor shall comply with the requirement of statutory provisions and shall be solely responsible for fulfillment of all legal obligations under Contract Labour (reg. & abolition) Act, Inter State Migrant Workmen Registration of Employment and condition of Service Act, payment of Wages Act., Minimum Wages Act, Workmen's Compensation act, Employee's Provident Fund & Miscellaneous Provisions Act, Payment of Bonus Act, Payment of Gratuity Act, Industrial Disputes Act and all other Industrial/Labour enactments and Rules made there under as applicable from time to time. In case Owner incurs any liability towards payment of any dues, compensation, cost of any other liability of any kind whatsoever, due to non-fulfillment of statutory provisions under any industrial/labour laws by the contractor, the same shall be made good by the contractor and Owner shall have full right to recover and claim the same against the contractor from his outstanding bills or otherwise. No Labour to stay at site.
- 15.2 The contractor will be expected to employ on the work only his regular skilled employees with experience of this particular work. The permission of the Owner must be obtained before tradesmen are recruited locally for the work. This rule does not apply to unskilled labour. No female labour shall be employed in dark hours/ i.e. hours prohibited under the applicable law. No person below the age of eighteen years shall be employed at any point of time. The contractor shall pay, to each person, the wages as per minimum Wages Act of the State Government.
- 15.3 All traveling expenses including provision of all necessary transport to and fro, lodging allowances and other payments to the contractor's employees are his own responsibility.
- 15.4 The hours of work on the site shall be decided by the Owner and contractor shall adhere to the same.
- 15.5 All contractors' employees shall wear safety shoes, helmet, goggles, hand gloves, nose masks and any other required personal protection equipment such identifications marks as may be provided by contractor on work site and duly approved by Owner.
- 15.6 All notices displayed on the site and any instructions issued by the Owner shall be strictly adhered to by the Contractor's and/or his sub-contractors employees.
- 15.7 The contractor shall be required to maintain employment records as covered in relevant Acts and produce documentary evidence to the effect that he has discharged his obligations under the Employees Provident Fund Act 1952, and ESI Act, 1948, if applicable, Group Insurance and other Acts for the workmen working at site towards safety, statutory regulations and insurance aspects applicable as per latest government (central & state) acts.

16.0 Working and Safety Regulations

- 16.1 The contractor shall observe all statutory, safety, and legal requirements / regulations issued by Central and State Governments applicable to the work as well as any local regulations applicable to the site.
- 16.2 The contractor has to fulfill the safety obligations at site and ensure that all safety equipment required for the execution of the work is available and used by the workmen at site.
- 16.3 Required safety signage and other requirement as per safety norms must be complied as per the instructions of the Owner.
- 16.4 The contractor shall be responsible for the provision of all safety notices safety equipments including the safety gadgets for his workmen required by both the relevant legislation and such as the Owner may deem necessary. While working at heights, safety belts, nets, and safety helmets shall necessarily be used.

17.0 Particular attention is drawn to the following:

In case of accident, the Owner shall be informed in writing forthwith and First-Aid, Hospitalization shall be provided by the Contractor. The contractor shall strictly follow regulations laid down by Govt. and State authorities in this regard and all cases are to be defended By the Contractor. The Owner shall not entertain any insurance claims.

- 17.1 Contractor shall fence his site area, excavations and etc.
- 17.2 Compliance with all electricity regulations should be ensured.
- 17.3 Compliance with statutory requirements for inspection and test of all lifting appliances and auxiliary lifting gear is to be ensured.
- 17.4 Staircase, doors or gangways shall not be obstructed in any way that will interfere with means of access / escape.
- 17.5 Where it is necessary to provide and/or store petroleum products or petroleum mixtures and explosive, the contractor shall be responsible for carrying out such provision and/or storage in accordance with the rules and regulation laid down in Petroleum Act 1934. Explosive Act 1948 and Petroleum and Carbide of Calcium Manual Published by the Chief Inspector of Explosive of India. All such storage shall have prior approvals of the Owner. In case any approval or clearance from Chief Inspector of Explosive or any statutory authorities is required, the contractor shall be responsible for obtaining the same.
- 17.6 The contractor shall have his own Fire Fighting Extinguishers and Equipment.

18.0 Contractor's Risks

- 18.1 Contractor's Risks- All risks of loss or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract are the responsibility of the Contractor.
- 18.2 The Contractor shall be responsible for injury to persons if any, animals or things and for all damages to the structural and/or decorative part of property which may arise from the operations or neglect of himself or of any sub-contractor or of any of his or sub- Contractor's employees whether such injury or damage arises from carelessness accident or any other causes whatsoever in any way connected while carrying out the Contract. This clause shall be held to include interalia any damage to buildings, whether immediately adjacent or otherwise and any damage to roads, footpaths, or ways as well as all damage caused to the buildings and the work forming the subject to this Contract. The Contractor shall indemnify the Owner and hold him harmless in respect of all and any expenses arising from any

such injury or damage to persons or property as aforesaid and also in respect of any claim made in respect of injury or damage under any acts of Government or otherwise and also in respect of an award of compensation or damages consequent upon such claim.

The contractor shall make good all damages of every sort mentioned in the Clause, as to deliver up the whole of the Contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to the property of third parties.

19.0 Insurance

- 19.1 The contractor shall provide workmen compensation policy, obtained in his name.
- 19.2 Policies and certificates for insurance shall be delivered by the Contractor to the Owner for the Owner approval before the Date of Start of work. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
- 19.3 If the Contractor does not provide any of the policies and certificates required, the Owner may affect the insurance which the Contractor should have provided and recover the premiums the Owner has paid, from the contractor bills. Otherwise due to the Contractor or if no payment is due, the payment of the premiums shall be a debt due. The cost of premium will be deducted from the contractor's bill, if at any time the work remains uninsured.
- 19.4 Alterations to the terms of the insurance shall not be made without the approval of the Owner.
- 19.5 Both parties shall comply with the conditions in the insurance policy.
- 19.6 All policies in original shall be submitted to the owner after award of the contract

20.0 Setting out Works

- 20.1 The contractor shall set out the works and shall be responsible for the true and perfect setting out of the same and for the correctness of the positions, levels, dimensions and alignment of all parts thereof, if at any time any error shall appear during the progress of any part of works the contractor shall at his own expenses rectify such error, if called upon to the satisfaction of the Owner.

21.0 Contractor to remove non-suitable material etc immediately.

All debris, excavated soil, scrap etc. shall be at once carted away by the contractor out the site to a place directed by the owner. Under intimation to concerned authorities. Any material brought on site if found unsuitable / surplus shall be removed from site at once by the Contractor under intimation to the concerned authorities.

22.0 Inspections by Owner

- 22.1 The representative of the Owner at all times have free access to the works and /or to the workshops, factories or other places where materials are being prepared or executed for the Contract and also to any place where materials are lying or from which they are being obtained. No person except the representatives of Public authorities shall be allowed on the work at any time without the written permission of the owner. If any work is to be done at a place other than the site of the works, the Contractor shall obtain written permission of the owner for doing so.

- 22.2 The owner and their representatives shall have the right to test and/ or inspect the works to confirm their conformity to the contract, at all times, whenever in progress either on the site or on the Contractor's premises wherever situated or any firm or company where work in connection with this contract may be in progress. All records, registers or documents relating to the works including materials used on works shall be kept open to the inspection of the Owner or his Authorized representative when so called for in writing.
- 22.3 The Contractor shall get the quality of work done inspected for material and workmanship at different stages of execution as per instructions given by the owner or their representative from time to time. Any item of work done which is found not conforming to the Contract shall be rejected by the owner. The decision of the owner in such cases shall be final.
- 22.4 The inspections and tests may be conducted on the premises of the Contractor or at the Project site. When carried out on the premises of the Contractor or its sub-Contractor(s), all reasonable facilities and assistance including access to drawings and production data shall be furnished to the inspectors at no charge to the Owner.
- 22.5 Should any inspected items of work fail to conform to the specifications, the Owner shall communicate them and the Contractor shall either replace them or make all alterations necessary to meet specification requirements free of cost to the Owner.

23.0 Covering Up/Uncovering of Works

- 23.1 No part of the works shall be covered up without the approval of owner and the Contractor shall afford full opportunity for examination and inspection by the owner. The contractor shall give due notice to the owner about the work to be covered up for its measurements and examination. The owner shall within a reasonable time attend for the purpose of examining such work, unless the owner specifically advises the Contractor in writing of his unwillingness not to attend for such examination in which case the Contractor may proceed further with the Contract work.
- 23.2 Should the Owner consider it necessary in order to satisfy himself as to the quality of the work, the Contractor shall at anytime during the continuance of the contract pull down or cut into any part of the work and make such opening into and to such an extent through the same, as the owner may direct and the Contractor shall make good the whole to the satisfaction of the owner, should the work prove to be faulty or in any respect not in accordance with the terms of the contract documents, the owner shall be at liberty to order such further removal as he may consider necessary and the whole of the expenses incurred shall be borne by the contractor. If however, the work proves to be sound and in accordance with the contract document, the actual expenses incurred in such examination will be borne by the Owner.
- 23.3 Rates charged by the Contractor for works performed under the contract shall not vary from the rates quoted by the Contractor in its Tender.
- 23.4 If requested by the Owner, the Contractor shall provide the Owner with a detailed cost breakdown of any rate in the Schedule of Quantities.

24.0 Change in the order/ Extra items of work

- 24.1 The Owner may at any time, by written order given to the Contractor, make alterations in, omissions from, additions to, or substitutions for, in drawings, designs or specifications or quantities of the items of work

- 24.2 Owner reserves to itself the right of omission of any item of work from the awarded tender at any time / stage during the execution of work.
- 24.3 The Owner may at any time, by written order given to the Contractor, increase the scope of work or include any new item of work. The Contractor shall be bound to carry out such works, the rates for which shall be arrived at on the basis of the CPWD Schedule of Rates or if the Schedule is silent by standard methods of rate analysis as derived by the Owner.
- 24.4 If any such changes cause an increase or decrease in the cost of, or the time required for the Contractor's performance of any part of the work under the contract, whether changed or not changed by the order, an equitable adjustment shall be made in the contract value or work schedule, or both, and the contract shall accordingly be amended. Any claims by the Contractor for adjustment under this clause must be asserted within seven (7) days from the date of the Contractor's receipt of the Owner's change order.
- 25.0 Payment Terms:**
- 25.1 Supply & erection amount will be paid after successful completion of entire works i.e. inspection, erection, testing, commissioning and integration of the items with the total designed scheme, subject to Joint measurement / joint inspection of the above works, bill amounting to 100% of value of supply done as per site measurements / inspection will be paid after duly signed by the representative of ARCI.
- 25.2 Computerized detailed measurements, and Final Bill will be prepared by contractor and submitted to ARCI for approval.
- 25.3 Payment shall be made on bills submitted by the Contractor.
- 25.4 The Contractor shall furnish the following documents along with the bills.
- a. Delivery Challan with ARCI gate entry stamp & Invoices with SAC/ HSN code in triplicate.
 - b. Joint Site Measurement and Inspection Certificate given by ARCI.
 - c. All bills should be enclosed with ARC I gate entry stamp on delivery challans, abstract details of detailed joint measurements taken along with ARC I officials,
- 25.5 The Director, ARCI shall deduct/recover such amounts towards penalty, if any, cost of items not returned to stores, etc.
- 25.6 TDS under IT Act, as applicable shall be deducted from the payment.
- 25.7 The net payment so arrived at shall be paid by crossed cheque / RTGS payable to the Contractor.
- 25.8 The Director, ARCI reserves the right to adjust any excess/short payment, made in the earlier bills, at the time of making payment.

- 25.9 The BOQ items and quantities mentioned in PO shall be approximate in nature, depending upon the site conditions the requirement. BOQ items will be operated. The payments will be made as per actual site measurements.

26 Claims for Extra or for Deviations

- 26.1 The Owner shall not be responsible for the payment of any claim for extra work not included in the contract nor the Contractor shall be entitled to claim any addition to the contract sum in respect of any changes or alterations in the materials used unless the same shall have been ordered or sanctioned, as the case may be, in writing by the Owner.
- 26.2 If any work shall be ordered by the Owner and executed by the Contractor for the payment of which no provision in the opinion of the owner have been made in the priced schedule of quantities or the specifications, the Owner shall fix and determine such prices for the same based on the prices appearing in the priced schedule of quantities, such allowance being made as may seem to the Owner sufficient for any difference in the character of conditions of the work. Or the rates for extra items shall be fixed on the basis of actual rate analysis / CPWD schedule of rates

27 Removal of Imperfect Work.

- 27.1 If, it shall appear that the work has been executed with unsound, imperfect or unskilled workmanship, or with material of any imperfect or any inferior quality or otherwise not in accordance with the contract documents the Contractor shall at his own cost rectifies, reform, remove, or reconstruct the same, either in the whole or in part, as may be directed by the Owner, whether or not the value of any such work or materials shall have been included in any payment made to the Contractor.
- 27.2 The Contractor shall remove all debris etc., clean the floors and hand over the site quite clean on the completion of the work to the satisfaction of the Owner.

28 Delay in the Contractor's performance

- 28.1 Execution of the work and performance of the services shall be done by the Contractor in accordance with the time schedule specified by the Owner in the purchase order.
- 28.2 If, at any time during performance of the contract, the Contractor should encounter conditions impeding timely execution of the works and performance of services, the Contractor shall promptly notify owner in writing of the fact of the delay, its likely duration and its cause(s). As soon as possible, after receipt of the Contractor's notice, the owner shall evaluate the situation and may, entirely at its discretion, extend the Contractor's time for performance with or without liquidated damages.

29 Liquidated Damages.

If the Contractor fails to execute any or all of the works or to perform the services within the period(s) specified in the contract, the Owner shall deduct from the contract value, as liquidated damages, a sum specified in the SCC for each week or part thereof delay until actual completion or performance, up to a maximum deduction of the percentage specified in SCC. Once the maximum is reached, the Owner may consider termination of the contract. The pro-rata progress envisaged

and expected from the contractor shall be maintained, time being the essence of the contract.

30 Termination by Default

- 30.1 The Owner may without prejudice to any other right or remedy, by written notice (of fifteen days) of default sent to the Contractor, terminate the contract in whole or part:
- a) if the Contractor fails to complete any or all of the works within the period(s) specified in the NIT or any amendment thereof, or within any extension thereof granted by the Owner, or
 - b) if the Contractor fails to perform any other obligation(s) under the contract,
- 30.2 In the event, the Owner terminates the contract in whole or in part, the Owner may procure, such items and in such manner as it deems appropriate, works or services similar to those unexecuted and the Contractor shall be liable to the Owner for any excess costs for such similar work or services. However, the Contractor shall continue the performance of the contract to the extent not terminated.

31 Force Majeure

- 31.1 The Contractor shall not be liable for forfeiture of its performance security, liquidated damages or termination by default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure.
- 31.2 For purposes of this clause, “Force Majeure” means an unforeseeable event beyond the control of the Contractor and is not because of the Contractor’s fault or negligence. Such events may include acts of the Owner either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics.
- 31.3 If a Force Majeure situation arises, the Contractor shall promptly notify the Owner in writing of such conditions and the cause thereof. Unless otherwise directed by the Owner in writing, the Contractor shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

32 Termination for Insolvency

- 32.1 The Owner may at any time terminate the contract by giving written fifteen days’ notice to the Contractor, if the Contractor becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Contractor, provided such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Owner.

33 Termination for Convenience

The Owner, by written notice of fifteen days sent to the Contractor, may terminate the contract, in whole or in part, at any time for its convenience. The notice shall specify that the termination is for Owner’s convenience, the extent to which performance of the Contractor under the contract is terminated, and the date upon which such termination becomes effective.

The items of work those are complete and ready after the Contractor's receipt of notice of termination shall be accepted, if completed within the notice period, by the Owner at the contract terms and values. For the remaining works, the Owner may elect;

- a) to have any portion completed at the contract terms and value and/or
- b) to cancel the remainder and pay to the Contractor an amount, finalized by the Owner, for partially completed works and for materials and parts previously procured by the Contractor.
- c) The contractor shall obtain written permission from the owner to complete the incomplete items of work during the notice period.

34 Resolution of Disputes

34.1 The Owner and the Contractor shall make every effort to resolve amicably by direct informal negotiations any disagreement or dispute arising between them under or in connection with the contract.

If, after thirty (30) days from the commencement of such informal negotiations, the Owner and the Contractor have been unable to resolve amicably a contract dispute, either party may require that the dispute be referred for resolutions to the formal mechanisms specified in the SCC. These mechanisms may include but are not limited to, Arbitration in accordance with rules of Arbitration Act and award made in pursuance thereof shall be binding on both the parties.

35 Governing language

The contract shall be written in English language. All correspondence and other documents pertaining to the contract that are exchanged by the parties shall be written in the same language

36 Governing law

The contract shall be governed by the laws of The Union of India for the time being in force. All disputes arising out of or in any way connected with this agreement shall be deemed to have arisen in Hyderabad and only the courts in Hyderabad alone shall have exclusive jurisdiction to determine the same.

37 Notices

Any notice given by one party to the other pursuant to this contract shall be sent to other party in writing or by cable, email, or facsimile/FAX and confirmed in writing to the other party's address specified in SCC.

A notice shall be effective on the date on which it is delivered, or on the notice's effective date, whichever is later.

38 Discoveries

Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Owner. The Contractor is to notify the Owner of such discoveries and carry out the Owner's instructions for dealing with them.

39 Dismissal of workmen:

The contractor on request from the Owner, immediately dismiss from the works any person employed by him who may be found in the opinion of the Owner to be unsuitable or incompetent or who has shown misconduct.

- 40 **Working Hours:** Normal working hours shall be from 9.00 a.m. to 5.30 p.m. Any executional works of important nature should not be carried out on Sundays, Holidays and during nights. However permission to work beyond normal working hours can be granted by the Owner in exceptional circumstances to achieve the target schedule of completion.

41 **Delay and Extension of time**

If in the opinion of the Owner the work be delayed:

(a) by force majeure

or

(b) by reason of any exceptionally inclement weather

or

(c) by reason of proceedings taken or threatened by or disputes with adjoining or neighboring owners or public authorities

or

(d) by delays of other contractor or Tradesmen engaged by the Owner and the works not referred to in the Schedule of Quantities and/or specification

or

(e) by reasons of owner instruction

or

(f) by reason of civil commotion, local combination of workmen or strike or lockout affecting any of the building trades

or

(g) in consequence of the contractor not having received in due time necessary instructions from the Owner for which he shall have specially applied in writing

or

(h) from other cause which the Owner may certify as beyond the control of the contractor

or

(i) by reason of non-payment of interim certificate at specified time, the Owner shall recommend for approval a fair and reasonable extension of time for completion of the Contract works. In case of strike or lockout the contractor shall as soon as may be given written notice thereof to the Owner, but the contractor shall nevertheless constantly use his endeavors to prevent delay and shall do all that may reasonably be required to the satisfaction of Owner to proceed with the work.

42 **Completion Certificate:**

The Contractor shall request the Owner to issue a Certificate of Completion of the Works and the Owner will do so upon deciding that the Work is completed.

43 **Final Account:**

The Contractor shall put up a detailed account of the total amount payable under the Contract before the end of the defects liability period. The Owner shall issue a defect liability certificate and certify any final payment that is due to the Contractor within 15 days of receiving the Contractor's account if it is correct and complete. If it is not, the Owner shall issue within 20 days a schedule that states

the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Owner shall decide on the amount payable to the Contractor and issue a payment certificate within 30 days of receiving the Contractor's revised account.

- 44 **No Claim Certificate:** No claim certificate shall be submitted by the Contractor as per ARCI format along with the final bill (if the final bill is correct and complete).
- 45 **Taxes:** Cheque for taxes to be deducted at source will be issued to the contractor. The contractor will be required to deliver the cheque to the concerned authorities, and the acknowledgement is to be deposited with ARCI along with subsequent bills.

SPECIAL CONDITIONS OF CONTRACT (SCC)

The following Special Conditions of Contract are supplementary, to the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the General Conditions of Contract is indicated in parentheses.

1.0 Definition

- (A) Owner means **International Advanced Research Centre for Powder Metallurgy And New Materials (ARCI), an autonomous Research and Development Centre of Department of Science & Technology, Government of India)**
Balapur P.O.,RCI Road
Hyderabad– 500005.
- (B) Site means the project site situated at various section buildings at ARCI, Balapur campus, on RCI road, OPP Balapur, Hyderabad

2.0 Performance Guarantee:

The (Earnest Money Deposit) EMD of the successful Tenderer shall be returned on submission of the Performance Guarantee. Within fifteen days (15) from date of PO/WO, the Contractor shall furnish Performance Guarantee to the Owner amounting to Rs. 100000/- (one lakhs) of the accepted Tender Value in the form of Bank guarantee from nationalized bank.

- 2.1 Agreement will be executed after submission of Performance Guarantee as per ARCI format.

3.0 Mobilization Advance: Mobilization advance nil.

4.0 Material Advance Material advance nil.

5.0 Payments

- 5.1 Supply & erection amount will be paid after successful completion of entire works i.e. inspection, erection, testing, commissioning and integration of the items with the total designed scheme, subject to Joint measurement / joint inspection of the above works, bill amounting to 100% of value of supply done as per site

measurements / inspection will be paid after duly signed by the representative of ARCI.

- 5.2 Computerized detailed measurements, and Final Bill will be prepared by contractor and submitted to ARCI for approval.
- 5.3 Payment shall be made on bills submitted by the Contractor.
- 5.4 The Contractor shall furnish the following documents along with the bills.
 - a. Delivery Challan with ARCI gate entry stamp & Invoices with SAC/ HSN code in triplicate.
 - b. Joint Site Measurement and Inspection Certificate given by ARCI.
 - c. All bills should be enclosed with ARC I gate entry stamp on delivery challans, abstract details of detailed joint measurements taken along with ARC I officials.
 - d. The contractor should supply the materials by procuring the electrical items from the authorized dealer of the item, and he should enclose the proof/bill with his bill.
- 5.5 The Director, ARCI shall deduct/recover such amounts towards penalty, if any, cost of items not returned to stores, etc.
- 5.6 TDS under IT Act, as applicable shall be deducted from the payment.
- 5.7 The net payment so arrived at shall be paid by crossed cheque / RTGS payable to the Contractor.
- 5.8 The Director, ARCI reserves the right to adjust any excess/short payment, made in the earlier bills, at the time of making payment.
- 5.9 The BOQ items and quantities mentioned in PO are approximate in nature, depending upon the site conditions the requirement for BOQ items are operated as per actual site measurements, The payments will be released as per actual site measurements.

6.0 ESCALATION: No Escalation shall be paid on any account.

7.0 Liquidated Damages: 0.5% per week upto a maximum of 5% (Five percent) of the PO value from the stipulated date of completion.

8.0 Notices

For the purpose of all notices, the following shall be the address of the Owner and the Contractor.

Owner: The Director,
**International Advanced Research Centre for Powder
Metallurgy and New Materials (ARCI),**
Balapur P.O., RCI Road
Hyderabad– 500005.

Contractor: _____
(To be filled in at the time of Signing of the Contract)

9.0 Labour

- 9.1 The Contractor shall make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport. No labour to stay at site.
- 9.2 The Contractor shall, if required by the owner, deliver to the owner a return in detail, in such form and at such intervals as the owner may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the owner may require.
- 9.3 Compliance with labour regulation:
During continuance of the contract, the Contractor and his sub Contractors shall abide at all times by all existing labour enactments and rules made thereunder, regulations, notifications and bye-laws of the State or Central Government or local authority and any other labour law (including rules), regulation by laws that may be passed or notifications that may be issued under any labour law in future either by the State or the Central Government or the local Authority. The Contractor shall keep the Owner indemnified in case any action is taken against the Owner by the competent authority on account of contravention of any of the provisions of any Acts or rules made thereunder, regulation or notifications including amendments. If the Owner is caused to pay or reimburse, such amount as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules /regulations including amendments, if any, on the part of the Contractor, the owner shall have the right to deduct any money due to the Contractor including his amount of performance security. The Owner shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Owner
- 9.4 The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Owner at any point of time.
- 9.5 No labour shall stay at site. Temporary storage space provision should be made by contractor.
- 9.6 The rates shall be complete in all respects i.e. inclusive of all taxes, octroi, local taxes, packing and forwarding, work contract tax, Insurance charges nothing on any account shall be paid over the approved rate.
- 9.7 All specialized and specific jobs shall be carried out by approved agencies/vendors only.
- 9.8 The Contractor shall arrange temporary drinking water and sanitation facilities for his workmen.

10.0 Fair Wage Clause:

- i. The contractor shall pay not less than fair wages to labourers engaged by him on the work.
- ii. "Fair" wages means wages whether for time or piecework notified by the Government from time to time, for the locality of works.
- iii. The contractor shall notwithstanding the revisions of any contract to the contrary cause to be paid to the labour, in directly engaged on the work including any labour engaged by the sub-contractor in connection with the said work, as if the labourers had been directly employed by him.

- iv. In respect of labour directly or indirectly employed in the works for the purpose of the contractors part of the agreement the contractor shall comply with the rules and regulations on the maintenance of suitable records prescribed for this purpose from time to time by the Government. He shall maintain his accounts and vouchers on the payment of wages to the labourers to the satisfaction of the Owner.
- v. The Owner shall have the right to call for such record as required to satisfy himself on the payment of fair wages to the labourers and shall have the right to deduct from the contract amount a suitable amount for making good the loss suffered by the worker or workers by reason of the “fair wages” clause to the workers.
- vi. The contractor shall be primarily liable for all payments to be made and for the observance of the regulations framed by the Govt., from time to time without prejudice to his right to claim indemnity from his sub-contractors.
- vii. As per contract labour (Regulation and abolition) Act. 1970 the contractor has to produce the license obtained from the licensing officers of the labour department along with the tender or at the time of agreement.
- viii. Any violation of the conditions above shall be deemed to be a breach of his contract.
- ix. Equal wages are to be paid for both men and women if the nature of work is same and similar.
- x. The contractor shall arrange for the recruitment of skilled and unskilled labour local and imported to the extent necessary to complete the work within the agreed period as directed by the Owner.

11.0 Safety Measures:

- i. The contractor shall take necessary precautions for safety of the workers and preserving their health while working in such jobs, which require special protection and precautions. The following are some of the measures listed but they are not exhaustive and contractor shall add to and augment these precautions on his own initiative where necessary and shall comply with directions issued by the Owner or on his behalf from time to time and at all times.
- ii. Providing protective foot wear, Goggles, nose masks, electrical hand Gloves, helmet to the workers as per the site requirement.
- iii. Getting the workers in such jobs periodically examined for chest trouble due to too much breathing in to fine dust.
- iv. Taking such normal precautions like fencing and lighting in excavation of trenches, working at the heights during night times and etc. As per the site requirement.
- v. Supply work men with proper belts, ropes etc., when working in precarious slopes and heights etc. As per the site requirement.
- vi. Avoiding un-insulated electrical wire etc., as they would electrocute the workers.
- vii. Taking necessary steps towards training the workers concerned on the machinery before they are allowed to handle them

independently and taking all necessary precautions in and around the areas where machines hoists cable pulleys, rollers, hydraulic crimping tools and heat sink cable jointing kits and similar units are working.

- viii. The Contractor should isolate the work spot by providing safety barricades, Signage boards and etc.

12.0 Indemnity Bond:

The tenderers should submit Indemnity Bond at the time of the Agreement as specified below.

Name of work: ... _____

I _____ contractor S/o. _____ aged _____ Resident of _____ do hereby bind myself to pay all the claims may come (a) under Workmen's Compensation Act. 1933 with any statutory modification thereof and rules there under or otherwise for or in respect of any damage or compensation payable in connection with any accident or injury sustained (b) under Minimum wages Act 1948 (c) under payment of wages Act.1936 (d) under the Contractor labour (Regulation and Abolition) Act. 1970 by workmen engaged for the performance of the business relating to the above contract ie., failing such payment of claims of workmen engaged in the above work and any claim raised by statutory authorities for nonpayment of taxes and duties, I abide in accepting for the recovery of such claims, effected from any of my assets with the Corporation and with other Government Departments / Corporations.

13.0 Fire fighting measures:

- a) The contractor shall provide and maintain adequate firefighting equipment and take adequate fire precaution measures for the safety of all personnel and temporary and permanent works and shall take action to prevent damage to destruction by fire of trees shrubs and grasses.
- b) Separate payment will not be made for the provision of fire prevention measures.

14.0 Resolution of Disputes & Arbitration

- 14.1 All disputes, other than quality, quantity, workmanship, specification, design, drawing, extension of time and rates for extra items, arising out of or relating to this contract whether arising during the progress of the work or after cancellation, termination, completion or abandonment there of shall dealt with mentioned herein after. The decision of Owner on the above said excepted matters shall be final and binding.
- 14.2 If the contractor considers any work demanded of him to be outside the requirements of the contract or disputes any drawings, record or decision given in writing in connection with or arising out of the contract or carrying out of the work, he shall promptly within 15 days request the Owner in writing for written instruction or decision.
- 14.3 If the Contractor is dissatisfied with this decision, the Contractor shall within a period of 30 days from receipt of the decision, give written notice to Director the International Advanced Research Centre for Powder Metallurgy and New

Materials (ARCI) for appointment of Arbitrator failing which the said decision shall be final binding and conclusive and not referable to adjudication by the Arbitrator.

- 14.4 Except where the decision has become final, binding and conclusive in terms of Sub Para (i) above disputes or difference shall be referred for adjudication through arbitration by a sole arbitrator appointed by The Director, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI). If the arbitrator so appointed is unable or unwilling to act or resign his appointment or vacates his office due to any reason whatsoever another sole arbitrator shall be appointed in the manner aforesaid. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.
- 14.5 It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each dispute along with the notice for appointment of arbitrator.
- 14.6 It is also a term of this contract that no person other than a person appointed by such International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) as aforesaid should act as arbitrator and if for any reason that is not possible, the matter shall not be referred to arbitration at all.
- 14.7 It is also a term of this contract that if the contractor does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 30 days of receiving the intimation from the Owner that the final bill is ready for payment, the claim of the contractor shall be deemed to have been waived and absolutely barred and ARCI shall be discharged and released of all liabilities under the contract in respect of these claims.
- 14.8 The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 (26 of 1996) or any statutory modifications or reenactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings under this clause.
- 14.9 It is also a term of contract that a simple interest of not more than 6% shall be applicable on the award.
- 14.10 The cost of arbitration shall be shared equally by both the parties.

15.0 Protection of environment

- 15.1 The Contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.
- 15.2 During continuance of the contract, the Contractor and his sub-contractors shall at all times abide by all existing enactment on environmental protection and rules made thereunder, regulations, notifications and bye-law of the State or Central Government, or local authorities and any other law, by-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority.
- 15.3 Salient features of some of the major laws that are applicable are given below:
The Water (Prevention and Control of Pollution) Act, 1974 This provides for the

prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.

- 15.4 The Air (Prevention and Control of Pollution) Act, 1981, This provides for prevention, control and abatement of air pollution, 'Air Pollution' means the presence in the atmosphere of any air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.
- 15.5 The Environment (Prevention and Control of Pollution) Act, 1986 This provides for the protection and improvement of environment and for matters connected to herewith, and the prevention of hazards to human beings. Other living creatures, plants and property, 'Environment' includes water, air and land and the interrelationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.
- 15.6 The Public Liability Insurance ACT 1991. This provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.

16.0 Deployment of Manpower:

The contractor shall deploy the following minimum man power at site to take instructions from ARCI Staff & Report the site activities on day to day basis as per works schedule execution of quality work and maintain all statutory records as per Govt. norms/as directed by ARCI staff.

- 1) Diploma in electrical to supervise the entire works along with safety aspects of working manpower and to coordinate with ARCI officials.
- 2) ITI electrical qualified competent technicians along with helper to carried out the electrical works, and measurement and etc.
- 3) PF, ESI and insurance working people, accidental insurance policy should be submitted after award of the contract.

17.0 The quantity mentioned in the purchase order is only approximate in nature i.e., approximate quantified scope. Hence, the contractor should **not claim any compensation towards non-operation of the part or total quantities and non-operated items listed in the Purchase order.**

18.0 Accident or Injury to Workman:

- a) ARCI shall not be responsible for any injury or loss of life of any worker of the contractor that may take place while on work. Any compensation or expenditure towards treatment for such injury or loss of life shall be the sole responsibility of the contractor.
- b) The contractor is solely responsible for any damage injury or accident that may occur to any of his personnel working under this contract. He will not claim any compensation from ARCI.

- 19.0** Since the payments are based on actual site measurement, the contractors are advised to procure the materials based on actual site requirement. Payment will not be made for left out and unused materials.
- 20.0 Income tax:**
- a) During the currency of the contract, deduction of TDS as applicable from the gross value of each bill of the contract.
 - b) The contractor's staff, personnel and labour will be liable to pay personnel income taxes in respect of their salaries and wages as are chargeable under the laws and regulations for the time being in force, and the contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such laws and regulations.
- 21.0** GST rates and SAC/ HSN codes as per rule will be shown separately by the contractor. Taxes to be deducted at source and cheques will be issued to the contractor. The contractor will be required to deliver the cheque to the tax authorities, the acknowledgement of which will be deposited by the contractor with ARCI along with subsequent bill.
- 22.0** The Contractor will be required to keep all the codes mentioned in the document at site. It will be the responsibility of the contractor to obtain GST rates and SAC/ HSN codes for supply and services.
- 23.0** It would be necessary for the contractor to get his materials gate entry at ARCI Main gate with duly signed by the duty officer of ARCI before unloading at the site.

**PROFORMA OF BANK GUARANTEE FOR RETENTION MONEY
ON NON-JUDICIAL STAMP PAPER OF RS. 100/-**

To,

WHEREAS _____ (hereinafter called the “CONTRACTOR”) has undertaken, in pursuance of _____ dated _____ to execute Annual Rate Contract for Supply of Electrical Items and work execution at ARCI, Balapur, Hyderabad (hereinafter called the “CONTRACT”)

AND WHEREAS it has been stipulated by you in the said contract that the Contractor shall furnish you with a Bank Guarantee by a nationalized bank for the sum specified therein as security for compliance with Contractor’s Performance obligations in accordance with the contract.

AND WHEREAS we, (Name of Bank) having our office at _____ (hereinafter called the “BANK”) have agreed to give the Contractor a Guarantee.

THEREFORE, we the Bank, hereby affirm that we are Guarantors and responsible to you, on behalf of the Contractor, up to a total of _____ (Rupees _____) and we undertake to pay you, without demur merely upon your first written demand declaring the Contractor to be in default under the Contract and without cavil or argument, any sum or sums within the limit _____ of _____ Rs. _____ (Rupees _____ only) as aforesaid, without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We the Bank lastly undertake not to revoke this guarantee except with the previous consent of the Owner in writing.

This guarantee is valid till _____.

NOTWITHSTANDING anything contained herein above.

Our liability under this Bank Guarantee shall not exceed Rs. _____/- (Rupees _____ only)

This Bank Guarantee shall be valid upto _____.

We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before _____.

Dated:

Place:

FORM OF PERFORMANCE GUARANTEE / BANK GUARANTEE BOND

In consideration of the Director,ARCI (hereinafter called “Director”) having offered to accept the terms and conditions of the proposed agreement betweenand(hereinafter called “the said contractor(s)” for the work(hereinafter called “the said agreement”) having agreed to production of an irrevocable Bank guarantee for Rs.....(Rupeesonly) as a security / guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We (hereinafter referred to as the “Bank”) hereby undertake to (Indicate the name of the Bank) pay to the Director an amount not exceeding Rs..... (Rupees.....only) on demand by the Director.
2. We.....do hereby under take to pay the amounts due and payable (Indicate the name of the Bank) under this guarantee without any demur, merely on a demand from the Director stating that the claimed is required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs (Rupees..... only).
3. We, the said Bank, further undertake too pay the Director any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.
The payment so made by us under this bond shall be valid discharge of our liability for payment thereunder, and contractor(s) shall have no claim against us for making such payment.
4. We.....further agree that the guarantee herein contained shall (indicate the name of the Bank) remain in full force and effect during the period that would be taken for the performance of the said agreement, and it shall continue to be enforceable till all the dues of the Director under or by virtue of the said agreement have been fully paid, and it’s claims satisfied or discharged, or till the Owner, on behalf of the Director, certifies that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor(s), and accordingly discharges this guarantee.
5. We..... further agree with the Director that the Director (Indicate the name of the Bank) shall have the fullest liberty without our consent, and without effecting in any manner our obligations hereunder, to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from the time to time any of the powers exercisable by the Director against the said contractor(s), and to forbear or enforce any of the terms and conditions related to the said agreement, and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor(s) or for any forbearances, act of omission on the part of the Director or any indulgence by the Director to the said contractor(s) or by any such matter or things whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).
7. We.....lastly undertake not to revoke this Guarantee except with (Indicate the name of the Bank) the previous consent of the Director in writing.
8. This guarantee shall be valid up to unless extended on demand by the Director notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs..... (Rupees..... only), and unless a claim in writing is lodged with us within six months of the date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the..... day of.....For.....

(Indicate the name of the Bank)

VOL-III

**SCOPE OF WORK
AND TECHNICAL
SPECIFICATIONS FOR SUPPLY
OF ELECTRICAL ITEMS AND
WORK EXECUTION**

Detailed scope of work involved in annual supply and erection rate contract.

I. Annual Supply Rate Contract:-

1. The contractor should indicate the percentage of discount offered by him on the original equipment manufacturer (OEM'S) price list to supply the item to ARCI in Volume – V
2. The discount offered on OEM'S price list shall be valid till the end of the contract i.e. initially for one year.
3. The contractors are requested to fill the discount column indicating the maximum discount offered by them on the standard price list, of individual make. The suppliers had to submit the latest price list to ARCI with the supplier's stamp & date of above-mentioned makes.
4. Suppliers should submit the original price list of above mentioned manufactures (all) in duplicate along with their stamp, signature with in 7days receipt of ARCI PO and also indicating the prices valid period, along with the quotation to be submitted. Please note ARCI is giving maximum time i.e. 7 days for collection of latest price lists from the manufactures as mentioned above.
5. As and when the OEM companies revise the prices, ARC I also revises the basic supply price as effected by OEM i.e. to this effect a proof from the Head Office of the OEM company should be produced along with new price list OR alternately supplier should ensure that the ARCI name is included in the manufactures mailing list, so that ARCI receives the communication directly from the manufactures, or ensure the company emails the latest price list to ARCI's official email address: info@arci.res.in
6. **Taxes:** GST rates and HSN / SAC codes will be revised whenever the Govt. revises, to this effect Xerox copy of gazette should be submitted as a proof
7. Suppliers should submit the original price list of above mentioned manufactures (all) in duplicate along with their stamp, signature with in 7days from the receipt of ARCI purchase order.
8. For late supplies ARCI will impose the **LD** as per the ARCI terms
9. Delivery Period (supply rate contract): - **A)** For off the shelf items 7 working days from the PO receipt date or by Fax communication or email. **B)** For non-off the shelf items 21 working days from the PO date or by Fax communication. **C)** If particular item is not available in the local market the supplier has to intimate the delivery schedule to ARCI with in 48 hours to avoid the LD clause. Reasons for delay should be valid and supported by documents from the authorized dealers for that item.

10. ARCI will be issuing the supply purchase order indicating the delivery period and the rate of the supply prices i.e. the price will be calculated from OEM price list less discount offered by contractor plus GST as applicable.

11. The transportation charges are to the account of contractor.

II. Annual Erection Rate Contract:-

12. The rates quoted in the tender shall be for the finished items of work. They shall include all the charges, labour, materials, transportation of material & equipment, double scaffolding, tool and tackles, marking out and cleaning of site, to do all things necessary to provide complete finished item for work consistent with the specifications attached to this tender documents. The rates shall be inclusive (erection rate contract) of octrol duty, excise duty, packing and forwarding, loading or unloading or any other duties or fees levied by any government, public or local bodies and labour.

13. The rates shall be firm no escalation charges allowed and shall not be subjected to change, variations, labour conditions or any conditions whatsoever till the completion of the contract.

14. During erection any damage to civil structure it may make good to original position.

15. **Delivery / Completion Period:** as per rate contract Purchase Order.

16. After receipt of purchase order the contractor should visit the work location and procure the items as per actual site requirement.

17. Hence he should depute adequate engineering and technical staff shall be appointed at site by the contractor. He should inform ARCI about their number and qualifications. Approval of ARCI shall be taken prior to appointing such technical staff on site.

18. The contract shall execute works strictly as per ARCI approved drawings. The contractor shall be responsible for any errors in this connection and shall have to rectify all the defects at his own cost, failing which ARCI reserves the right to get the same rectified at the risk and cost of contractor.

19. No claim for extra item or deviation from specification shall be entertained unless the same is pointed out by the contractor and accepted such by ARCI before the work is taken in hand.

20. The contractor shall comply with all bye-laws applicable GST rates for supply HSN code and SAC code for services and other statutory authorities having jurisdiction over the works and shall be responsible for the payment

of all the fees and other charges and the giving and receiving of all necessary notices drawings and test certificates.

21. All bills should be enclosed with ARC I gate entry stamp on delivery challans, abstract details of detailed joint measurements taken along with ARC I officials.
22. **Packing, forwarding, transit insurance and transportation:** Packing, forwarding transit insurance and transportation is included in the price quoted. The stores ordered shall be in packed condition in accordance with standard practice to avoid damages/losses in transit etc.
23. **DIMENSIONS:**
Before commencing any work the contractor shall verify all measurements of site and compare with dimensions / number / etc as per PO. If any discrepancies are found they should immediately be brought to the notice of ARC I. In no event the contractor shall scale the drawings. The contractor has to actually measure the site.
24. **CUTTING AND MAKING GOOD:**
Where it is found necessary to interfere with finished work in order to execute this contract, the contractor will be required to do all cutting and patching up all the work at his own expenses. Only approved cutting machines of HILTI or Bosch make shall be used to cut floor walls for cables. Wooden plugs will not be permitted. Holes shall be made with electric drills whenever possible. Structural members shall not be cut or drilled without prior consent of the ARCI.

GENERAL TECHNICAL SPECIFICATIONS

All materials shall conform to relevant IS specifications.

1. CONDUIT PIPES

- All PVC conduit pipes shall be of approved make (not less than 2.0mm thick for conduits of size up to 40mm) All PVC conduit accessories of 40mm dia shall be of approved make.
- Conduit shall be laid on GI base cum saddles and for every 1 mtr 3 Nos. of GI base cum saddles spaced as required, conduits shall be laid in straight runs.

2. CEILING ROSE

- Should be of three pin terminals type, White / cream color PVC ceiling rose IS 371:1999

3. SWITCHES AND SOCKETS

- The switch boards shall be sheet clad, floor mounting or wall mounting type as required and built out of 14 gauge sheet steel. The switch boards shall comply with the Indian Standards IS 3854: 1999, IS 1293: 1988 and approved from ARCI.
- All switches shall be placed in the live conductor of the circuit and no single pole switch for fuse shall be inserted in the earth or earthed neutral conductor of the circuit.
- Every socket outlet shall be controlled by a switch.
- The switch controlling the socket outlet shall be on the 'Live' side of the line.
- For location of 6A and 16A socket outlets, corresponding drawings may be referred.
- The third terminal of the 3 pin socket outlet shall be connected to the general earth

4. POWER DISTRIBUTION BOARDS AND METERING PANEL

The salient features of the panels shall be as follows:

- Sheet steel – 2mm thick for frames and equipment mounting plates 2.0mm thick for partitions.
- Welded construction – With transport sections bolted together. All such joints to be casketed.
- The cubicles shall be totally dust and vermin proof conforming to IP-54 as per IS 8623.
- All the doors to be Hinged type except bus bar chamber covers which shall be bolted type. The panels shall be of flush front design, suitable for access from front and rear, except where the boards are mounted against the wall in which case the boards shall be designed for maintenances with front access only.
- The construction shall be as to facilitate easy extension at both ends.

- The design shall be such as to have individual feeders in separate segregated compartments, with proper barriers between adjacent feeders, bus bar chamber and cable termination chambers.
- All incomer terminations shall be properly terminated to receive aluminium heavy duty power cable or 1.1kv grade or standard proper cable as the case may be. Adequate space shall be provided to facilitate proper and easy termination.
- Wherever necessary, if the Distribution board are to be mounted on a wall, the layout of the components and inter connections shall be design to facilitate maintenance from the front.
- The design of the distribution boards shall be such that clear segregation shall be provided for the various components, feeders and inter connection- such as busbar, incoming or outgoing feeders, cable chambers etc. The height of the panel shall not exceed 2200mm. The maximum operating height of any components shall not exceed 1800mm and shall not be below 300mm.
- An aluminium earth strip of adequate section shall be run through out the length of the distribution board to with all earth terminals of the various components shall be connected.
- All control wiring shall be carried out with 1.1KV grade sub core PVC cables with standard copper conductors of minimum 1.5Sqmm for potential circuits and 2.5Sqmm for current transformer circuits. The wiring shall be neatly bunched adequately supported and properly routed. The wires shall be identified by ferrules at both ends.
- Terminal blocks shall be of 500 volts grade and with minimum current rating of 10 Amps.
- All routine tests as specified in the Indian Standards shall be carried out in the presence of the ARCI officials and test certificates submission for approval.
- Test certificates shall also be submitted for all major components like MCCB's, CTs, Energy Meters and Relays etc.
- Prior to fabrication of the panels, the contractor has to submit the following drawings for approval:
 - 1) Single line diagram – power circuit
 - 2) Control circuit diagram
 - 3) Front view showing layout of components.
 - 4) Sectional view.
 - 5) Foundation drawings.

5. WIRES FOR CONCEALED WIRING

- PVC insulated single core cables with flame retardant properties (FRLS) and multistrand bare copper conductor for voltage grade of 1100V as per IS: 694/1990.
- The following color codes for the wiring shall be applicable.

Phase –	R	: Red
	Y	: Yellow / white
	B	: Blue
	Neutral:	Black
	Earth	: Green

6. MOULDED CASE CIRCUIT BREAKERS

- Moulded case circuit breaker (Thermal magnetic relays) of 50 kA breaking capacity and should comply the latest standards of IEC 60947-2 and IS 13947-2, and meets the requirements for CE marking. Ergonomic design, adjustable over load setting, adjustable short circuit setting, manual and fixed version.

7. RESIDUAL CURRENT CIRCUIT BREAKER

- Conforms to IS 12640 (part 1) IEC 61008-1
- RCCBs are available in DP and FP versions from 25 to 100A ratings with 300mA sensitivity
- Truly current operated – operation even at nominal voltage
- Operates on Core Balance Current Transformer (CBCT) principle
- Operation even in case of neutral failure

The exact locations of these RCCB in circuits can be had from the single line diagrams.

8. MINIATURE CIRCUIT BREAKERS

- Conforms to IS/IEC 60898
- Breaking capacity of 10kA
- Should be of B and C curves
- Tripe free mechanism
- Design based on advanced current limiting hammer trip mechanism
- No Line Load bias
- Suitable for accessory fitment

9. MCB DISTRIBUTION BOARDS

- Should conform to IS 8623 and IP 43
- Aesthetically superior to suit the interiors
- Suitable for surface mounting on GI angle frame
- Ready to use DBs provided with 100A phase bus bar, Neutral bar, Cement spill protector, earth bar and interconnecting wires as standard accessories
- Provided with removable top and bottom gland plates with adequate knockouts for easy wiring
- DBs made up of thick CRCA sheet steel & powder coated with RAL 9003 shade
- 200A vertical bus bar with 10kA fault with stand capacity for 1 sec. in VTPN DBs

10. ENERGY METER

- Panel-mount, LED display.
- 3-phase, 4-quadrant metering, class 0.5 accuracy (IEC 60687, ANSI).
- Voltage, current, power-Kw, KVA, KVAR, KWH, KVAH, KVARH, frequency, power factor.
- Total harmonic distortion.
- 2 optically isolated digital outputs.
- RS-485 communications port.
- Protocol: Modbus or Industrial ether Net.

11. WORKMAN SHIP

CONDUIT WIRING SYSTEM & CONDUIT LAYING

Conduit shall be laid on GI base cum saddles and for every 1 mtr 3 Nos. of GI base cum saddles spaced as required, conduits shall be laid in straight runs.

1. DRAWING OF WIRES

Guidelines as stipulated in IS shall be followed and the contractor shall also obtain approval from the ARCI / owner prior to commencement of work.

2. BUNCHING OF CABLES

Cables carrying alternating current shall be so bunched that the outgoing and return cables are always drawn into the same conduit.

3. SURFACE CONDUIT JOINTS

Conduit pipes shall be joined by means of screwed couplers and screwed accessories only. In long distance straight run on conduit, junction boxes inspection boxes at intervals not exceeding 5 mtrs, shall be used, where there are bends / curves, the same shall be reduced suitably, as directed by the owner.

4. CONCEALED CONDUIT JOINTS

Conduit pipes shall be joined by means of screwed couplers along with jointing solution and wiring accessories only. In long distance straight run on conduit, junction boxes inspection boxes at intervals not exceeding 5 mtrs, shall be used, where there are bends / curves, the same shall be reduced suitably, as directed by the owner/engineer.

5. BENDS IN CONDUITS

All necessary bends in the system including diversion shall be done by bending pipes as far as possible or by inserting suitable solid or inspection type normal bends, elbows or similar fittings. Radius of bends in conduit pipes shall not be less than 7.5 cms. No dent / crack shall be made on the pipes while bending. Pipes shall be bent with pipe bender only.

6. FIXING OF CONDUIT IN CHASE

The conduit pipe shall be fixed by means of GI nails or by means of saddles not more than 60 cm apart or by any other approved means of fixing. Fixing of standard bends or elbows shall be avoided as far as practicable and all curves maintained by bending the conduit pipe itself with a long radius which will permit easy drawings in of conductors.

7. WIRE MESH (CHICKEN)

To facilitate crack free plastering in wall chases GI chicken mesh should be fixed on PVC conduit by means of GI nails and plastering should be carried out as directed by the owner/engineer.

8. TERMINATION OF CONDUITS

Wherever conduits are terminate in an outlet box or a distribution board, cut & bend shall be fixed and completely sealed with sealant. Junction boxes fixed in position and wires are drawn, any open outlets shall be properly plugged using PVC stoppers and sealants as per site requirement.

9. POINT WIRING

Point wiring shall include all works necessary in complete wiring of a switch circuit in conduit wiring from the corresponding one way on the MCB distribution board to the following via the switch:

- Ceiling rose
- Socket outlet
- Lamp holder

Description / Scope

- **1.5 Sqmm Point wiring:** for Light fittings, Fans and etc.,
 - 3 runs (P,N,E) of 1.5 Sqmm copper FRLS wires should be drawn from switch board to first ceiling, Neutral and Earth should be looped from first ceiling rose to second ceiling rose and then on, up to 800w per circuit (maximum of 6 fittings).
 - But one separate run of Phase wire should be drawn to second ceiling rose and then on.
 - Maximum 9 no's of 1.5 Sqmm size wire are allowed in a single 25mm dia PVC pipe.
 - Measurements will be taken per meter as per site installation per run of three wires (P, N, E).
 - Jointing of wires are not allowed between switch board to ceiling rose
 - Color code shall be as per IS only.
 - A separate three core 1.5 Sqmm PVC flexible copper cable should be used to tap the power from the ceiling rose to light fittings, Fans and etc.,
- **2.5 Sqmm Circuit wiring:** for switch boards, 5A Power sockets and etc.,
 - 3 runs (P,N,E) of 2.5 Sqmm copper FRLS wires should be drawn from distribution board (LDB/PDB) to switch board.
 - If the circuit wiring for 5A power sockets maximum loop of 4 no's of power sockets for Neutral and Earth should be looped from first power socket to second power socket and then on. But one separate run of Phase wire should be drawn from LDB/PDB to second power socket and then on.

- Maximum 8 no's of 2.5 Sqmm size wire are allowed in a single 25mm dia PVC pipe.
 - Measurements will be taken per meter as per site installation per run of three wires (P, N, E).
 - Jointing of wires are not allowed between LDB/PDB to switch board / power sockets.
 - Color code shall be as per IS only
- **4.0 Sqmm Circuit wiring:** for AC points, 16A/20A Power sockets and etc.,
 - 3 runs (P, N, E) of 4.0 Sqmm copper FRLS wires should be drawn from distribution board (PDB) to each AC points, each 16A/20A Power sockets.
 - Maximum 6 no's of 4.0 Sqmm size wire are allowed in a single 25mm dia PVC pipe.
 - Measurements will be taken per meter as per site installation per run of three wires (P, N, E).
 - Jointing of wires are not allowed between PDB to AC points, 16A/20A Power sockets.
 - Color code shall be as per IS only.
 - The following tests should be conducted and submitted for approval from the owner/engineer before charging the wiring for all the DB's, switch boards, power sockets and ceiling roses.

10. CAPACITY OF CIRCUITS

- Lights, 6A socket points, call bell points and ceiling fans may be wired on a common circuit. Such circuit shall not have more than a total of six points of light, fan and socket outlets or a load or 800 watts, whichever is less.
- Each 16A 3 pin socket outlet shall have its own circuit from the distribution board, unless shown otherwise in the drawing. Separate phase and neutral wires should be brought from controlling MCB for 16A and above power points.

11. INSTALLATION OF DISTRIBUTION BOARDS / LDB / PDB's

- The distribution boards should be mounted/installed on 25X3mm GI angle frame and that frame should be grouted in wall.
- Distribution boards should be double door as per IP 43-degree protection supplied with bus bar, wire sets, blanking plates, identification of labels, earth bar and insulated neutral bar as standard.
- Two-point earthing should be done with 25X3 mm GI strip.
- Incoming and outgoing cable terminations should be done using suitable double compression gland, crimping with copper/aluminum lugs, aluminum cable tags as directed by the owner/engineer.
- In wiring a distribution board, the total load of the consuming devices shall be divided as far as possible, evenly between the number of ways of the board to balance the phase distribution.

12. L.T. CABLE – SUPPLY, INSTALLATION, TESTING AND COMMISSIONING

- Should be of 1.1Kv grade XLPE insulated unarmored and armored cables with copper/aluminum conductor conforming to IS 7098/part 1/1988

- All relevant factory tests report along with warranty and guarantee should be submitted along with the supply of cables.
- Cable drums should be stored on a plain vibration-free ground.
- Drums should be stored and kept in such a way that the bottom of the cable should not be damaged.
- While laying the cable in a trench, the cable end should be pulled with a pulling eye only after mounting the drum on the jacks. Do not keep drum on its flange while pulling the cable. This will result in the twist in the cable.
- The cables should be laid in the excavated cable trench (600mmX750mm) and a fine sand bed of 150mm thick and dressing to be carried out as per owner/engineer instructions. And cover the cable by providing fine sand bed of 150mm as cushioning to the laid cables and for protection cover with red bricks with single layer entire excavated trench area. Back fill the excavated earth soil and complete the reinstatement.
- While laying the minimum bending radius of the cable should not be less than 12D (where D = outer diameter of the cable).
- As per the site requirement cable jointing should be done with 1.1Kv grade straight through heat shrinkable jointing kits should provide.
- Cable markers (as specified by the tender document) should installed at every 20 mtrs distance along the cable trench.
- Cable shall be laid in Class 'B' GI pipes at all entry to buildings. The open ends of the pipes shall be sealed at both ends after the cables are laid, using bituminous compound with Jute material and any other suitable material to prevent entry of any foreign matter into the building.
- While crossing the roads the cables should be laid in class "B" GI pipe minimum dia of 100mm.
- All out door cables shall be laid in around not less than 750mm below ground level.
- Indoor cables should be laid along the walls, RCC structures with required fixing materials as per the site requirement, including GI base saddle at every 500mm in building premises with suitable GI clamps.
- While lying in underground/overhead cable trays at every 1000mm the cables should be properly dressed with cable ties.
- Testing of cables after installation should be carried, insulation resistance should be measured with 500V megger between the cores and all the cores to earth (Armour) and results to be recorded for the approval of the owner/engineer for charging.
- Both the ends of cable terminations should be done using suitable double compression gland, crimping with copper/aluminum lugs, aluminum cable tags as directed by the owner/engineer.
- Cable terminations shall be provided at either ends of each cable using suitable glands, cable lugs, soldering material, insulating tape, etc.
- Cable laying: Contractor should use latest equipments for unrolling and laying the PVC / XLPE cable in underground trenches / Cable trays / Hume / GI pipe. Ensure that no damage to the cable even to outer PVC sheath. ARCI official's prior permission to be obtained to ensure the quality of workmanship.
- At no point of time the cable should not touch the ground while pulling or laying i.e., it should be always on the Rollers or Cable pullers entire length of cable.

13. GENERAL

- All the electrical, computer networking (LAN) and Telephone installation works to be carried as per the latest applicable IEEE, IEC and IS codes.
- All switches, sockets, fan regulators etc., shall be housed in proper sheet steel enclosure as given in the specifications and covered with modular plate. The mounting heights and exact locations should be as per the drawings.
- Wherever power supply is drawn from 3 phase, 415 volts, it shall be endeavored to obtain a balanced loading on each of the 3 phases.
- All circuits / points in any room shall preferably be fed by phase only-either R or Y or B.
- All 3 phase energy meter boards shall have LED type phase indication lamps for indication of availability of power supply.
- Suitable lugs should be used for same size cable conductor core to avoid extra lead cuts of the conductor core.
- All cables shall be laid neatly properly supported and clamped. All materials and accessories such as clamps, supports, saddles and other accessories as required for installing and laying the cables shall be included in the rates quoted. Wherever the cables laying are buried in ground, the cost shall include excavation, supply and laying of bricks, sand, refilling and consolidation.
- All fittings shall be complete with necessary brackets, hooks, clamps, supports etc., and complete with connecting wires as required for the installation.
- Fan hook shall be provided for all ceiling fans directed at site.
- Height position of light / fan fittings, distribution boards, switches, sockets etc., as shown in the drawing are all indicative. If during execution the position, of any of these fittings needs to be changed, the same shall be carried out without any extra cost.
- The contractor shall provide safety equipment as necessary and as required and insisted upon by the Electrical Inspectorate. Wherever a separate item has been foreseen in the bill of quantities for the same, the contractor shall quote against this particular item otherwise, the rates quoted for other items shall absorb the cost towards safety equipment.
- In case of light fittings suspended from the ceiling, the rates to be quoted shall include the cost of connecting standard wires also.
- All light fixtures, ceiling fans, exhaust fans, the power supply should be tapped from the ceiling rose.
- Wherever street lights fittings are to be mounted on street lighting poles, the street lighting poles shall be complete with MCB, terminal blocks for looping of armoured heavy duty cables, connecting wires from the terminal block to the fitting and necessary installation arrangements for fixing of pole in foundation. The rate quoted shall include civil works for foundation.
- The bill of quantities clearly stipulates the interconnection wiring between the distribution boards / metering boards to the control switch points which normally do not come in the purview of light point wiring. It may be noted that only such interconnection wirings shall be allowed for as specifically mentioned as a separate as a item in the bill of quantities.

- In certain cases, where fittings are located quite distant from the control points, the costs are reckoned on per meter basis for wiring. The bill of quantities and the relevant drawings clearly state the items which are allowed for wiring meter basis.
- All bill of quantities shall be read conjunction with the relevant drawings.
- In certain cases, master control switches have been foreseen for lighting and power circuits. These switches are to be mounted at the entrance of rooms in order to externally switch off power supply to the particular rooms whenever they are vacant.
- Minor civil works required to complete the electrical scope of work deemed to be included. Such as making of groves/channels with the help of wall cutting machine to lay the concealed conduits, making holes in the walls to run the cables, PVC pipes, cable trays and as directed by the owner/engineer, making the floor cutting to lay the floor race ways below the finished floor level, laying of PVC conduits of required size in RCC structure as directed by the owner/engineer (i.e. Beams, Columns, Slabs) and make good to the original condition by engaging competent civil manpower. Caution should be taken to install GI chicken mesh over the PVC pipes which are laid in the groves on walls, and finish to the original condition with proper water curing, this is to avoid the cracks on the walls.
- The electrical / clean room contractor as to coordinate/co-operate with other contractors of the building to complete the work specified in the tender in integrated manner and the complete the work as per the owner instructions.

14. LIGHT AND FAN FIXTURES

- All light and fan fixtures, call bell etc., shall be installed in locations, as shown in various drawings and as per the directions of the Engineer using necessary fixing materials such as SS chain, eyelid anchor fasteners and etc.
- Unless other wise specified, all light fittings shown hanged / recessed mounted from ceiling.
- In specific cases where the ceiling lights are to be suspended from the ceilings, the costs towards the suspension conducts joints, wires etc., shall be included in the offer.
- Building external lighting required accessories materials such as class “B” GI pipe of required dia, fabricated GI base plate cum clamps of required size, minimum 10 mm anchor bolts, required civil work, and welding works are included and the work to be carried out as directed by the owner.
- For Exhaust fans required accessories materials such as GI louvers of required size, fabricated GI base frame (minimum angle of frame should be 25x3 mm)cum clamps of required size, minimum 10 mm anchor bolts for grouting, required civil work, and welding works are included and the work to be carried out as directed by the owner/engineer.

15. CERTIFICATES

- On completion of an electric installation a certificate for each type of block as per the proforma enclosed shall be furnished by the contractor counter signed by the qualified supervisor under whose direct supervision the installation was carried out.
- Should the above tests not comply with the limits laid down in the Indian electricity regulations, the contractor should rectify the faults until the required

results are obtained. The contractor shall be responsible for providing the necessary instruments and accessories for carrying out tests.

16. **EARTHING:**

- All non-current carrying metal parts of electrical installations shall be earthed as per IS : 3043 – 1996. All metal conduits, trunkings, cable sheaths, glands, switchgear, DB's, light fixtures, fans switch outlets boxes and all other parts made of metal shall be bounded together and connected to the general earth. PVC Insulated copper conductor earth wire shall be run for all the lightning / power circuits, inside the conduits. All the DB's shall be earthed with two runs earth wire/strip as specified to the respective earth electrodes. Earth electrodes shall be as per IS : 3043.
- All civil, fabrication, minor works are included in the scope for erection of all the electrical items. The erection should be discussed with the client and as per the proposed scheme should be carried out.
- The earth electrodes shall be installed at least 3 meters away from the outer face of the wall. The distance between the two earth electrodes shall not be less than 3 Meters.
- Joints between any two earth wires shall not be permitted. All earth wires shall be continuous. The earth pits shall be filled with salt, charcoal and sand in the presence of the owner.
- Earth pit resistance test will be conducted with earth tester equipment and the resistance values should be recorded in the presence of the owner. The earth resistance tester equipment within the calibration due date.
- The insulation resistance shall be measured by applying between earth end the whole system of conductors or any section there of with all fuses in place and all switches closed and expect in earthed concentric wiring, all lamps in position or both poles of the installation otherwise electrically connected together, a D.C voltage of not less than twice the working voltage provided that it does not exceed 500 volts for medium of voltage circuits. Where the supply is derived from the three wire or a poly phase system, the neutral pole of which is connected to earth either direct or through added resistance, the working pressure shall be deemed to be that which is maintained between the outer or phase conductor and the neutral.
- The insulation resistance for whole section or any section thereof measured as above shall not be less than 50 mega ohms divided by the number of points and shall confirm to relevant clause of IS: 732
- The insulation resistance shall also be measured between all conductors connected to one pole or phase conductor of the supply and all the conductors connected to the middle wire of the neutral or to the other pole or phase conductors of the supply and its value shall to be less than that specified in sub Para (d)
- The earth continuity conductor including metal conduits and metallic envelops of cables in all cases shall be tested for electrical continuity and the electrical resistance of the same along with the earthing lead in the completed installation shall not exceed one ohm.

LIST OF I.S. CODES FOR ELECTRICAL INSTALLATIONS

1. Electrical wiring installations (system voltage not exceeding 650V) IS 732 – 1989
2. Graphical symbols used in electrical-technology
Art-XI-Electrical installation buildings IS 2032 – 1969
3. Fire safety of buildings (General) Electrification Installation IS 1646-1997
4. PVC insulated cables IS 694-1990
5. XLPE Insulated cables IS 7098/part 1/1988
6. 5 / 15 A Modular switches IS 3854 – 1997
7. 3 / 5 -pin plugs and sockets IS 1293 – 1988
8. Earthing IS 3043-1966
9. LED Fittings IS 10322 part 5/sec 1 1987
10. Distribution Boards IS 8623
11. Energy meters
12. MCCB IS/IEC 60947-2
13. MCB IS/IEC 60898
14. Current Transformer IS 2705
15. Voltage Transformer IS 3156
16. Indicating Instruments IS 1248
17. Auxillary switches and push buttons IS 6875
18. Enclosed distribution fuse board and cutouts for voltage 100V IS 2675-1964
19. General and safety requirements for electric lighting fittings IS 1913-1969
20. Lighting public thorough fares IS 1944-1970
21. Water proof electric lighting fittings IS 3528-1966
22. Water tight electric lighting fittings IS 35553-1966
23. Luminaries for street lighting IS 2149-1970
24. Mild steel tubulars and other wrought steel pipe fittings IS 1239-1968
25. Ceiling fans IS 374-1951
26. Protecting of buildings and allied structures against lighting IS 2309-1967
27. Interior illumination IS 3636-1966
28. Degree of protection provided by enclosing for low voltages switchgear IS 2147

VOL-IV

Bill of Items with Detailed Description of the works for Supply of Electrical Items and Work Execution

BILL OF ITEMS WITH TECHNICAL SPECIFICATIONS

Sl.No	Item code	Technical Specification
1	304005020	<p>1sqmm copper wiring - FRLS: Supply installation testing and commissioning of point wiring to be drawn from switch board to ceiling rose. 3runs of 1sqmm PVC insulated copper conductor flexible multistrand wires to be drawn separately from sub DB to first ceiling rose and from second ceiling rose neutral and earth wire to be looped near from first ceiling rose, but 1 separate 1run phase wire should be drawn separately from SB to second ceiling rose. Similarly, all neutral and earth wires should be looped near ceiling roses for that SB and all ceiling roses should get 1run 1sqmm wire for phase directly from SB</p> <p>PI Note:</p> <ol style="list-style-type: none"> 1. Maximum 9nos of 1sqmm size wires are allowed in a single 25mm dia pvc pipe, if more than 9nos of wires are required to run one more 25mm dia pvc pipe should be laid. 2. Measurements will be taken per meters as per site installation per run of three wire i.e. phase, neutral & earth wires each one meter. 3. Finolex/Anchor/L&T make fire retardant low smoke type wires are only accepted. 4. Neutral and earth wire should be looped for maximum of six fittings. 5. Color code shall be as per IS only. 6. Erection should be carried out as per technical specifications and as directed by ARCI officials.
2	304005021	<p>1.5sqmm copper wiring – FRLS: POINT WIRING: Supply installation testing and commissioning of point wiring to be drawn from switch board to ceiling rose. 3runs of 1.5sqmm PVC insulated copper conductor flexible multistrand wires to be drawn separately from sub DB to first ceiling rose and from second ceiling rose neutral and earth wire to be looped near from first ceiling rose, but 1 separate 1run phase wire should be drawn separately from SB to second ceiling rose. Similarly, all neutral and earth wires should be looped near ceiling roses for that SB and all ceiling roses should get 1run 1sqmm wire for phase directly from SB</p> <p>PI Note:</p> <ol style="list-style-type: none"> 1. Maximum 9nos of 1.5sqmm size wires are allowed in a single 25mm dia pvc pipe, if more than 9nos of wires are required to run one more 25mm dia pvc pipe should be laid. 2. Measurements will be taken per meters as per site installation per run of three wire i.e. phase, neutral & earth wires each one meter. 3. Finolex/Anchor/L&T make fire retardant low smoke type wires are only accepted. 4. Neutral and earth wire should be looped for maximum of six fittings. 5. Color code shall be as per IS only. 6. Erection should be carried out as per technical specifications and as directed by ARCI officials.
3	304005022	<p>2.5sqmm copper wiring – FRLS: POINT WIRING: Supply installation testing and commissioning of circuit wiring to be drawn from lighting distribution board to first switch board (SB) of the circuit - 3runs of 2.5sqmm PVC insulated copper conductor flexible (FRLS) wires to be drawn separately from Main LDB to sub DB for Phase neutral and earthing.</p> <p>PI Note:</p> <ol style="list-style-type: none"> 1. Maximum 8nos of 2.5sqmm size wires are allowed in a single 25mm dia pvc pipe, if more than 8nos of wires are required to run one more 25mm dia pvc pipe should be laid. 2. Measurements will be taken per meters as per site installation per run of three wire i.e. phase, neutral & earth wires each one meter. 3. Finolex/Anchor/L&T make fire retardant low smoke type wires are only accepted. 4. Neutral and earth wire should be looped for maximum of six fittings. 5. Color code shall be as per IS only. 6. Erection should be carried out as per technical specifications and as directed by ARCI officials.

		officials.
4	304005023	<p>4sqmm copper wiring – FRLS</p> <p>Point wiring: Supply installation testing and commissioning of circuit wiring to be drawn from power distribution board to power point - 3runs of 4sqmm PVC insulated copper conductor flexible (FRLS) wires to be drawn separately from Main DB to power point for Phase neutral and earthing.</p> <p>PI Note:</p> <ol style="list-style-type: none"> 1. Maximum 6nos of 4sqmm size wires are allowed in a single 25mm dia pvc pipe, if more than 6nos of wires are required to run one more 25mm dia pvc pipe should be laid. 2. Measurements will be taken per meters as per site installation per run of three wire i.e. phase, neutral & earth wires each one meter. 3. Finolex/Anchor/L&T make fire retardant low smoke type wires are only accepted. 4. Neutral and earth wire should be looped for maximum of six fittings. 5. Color code shall be as per IS only 6. Erection should be carried out as per technical specification and as directed by ARCI officials.
5	304005024	<p>25mm Dia 2.0mm PVC conduit surface:</p> <p>Conduit: Supply laying installation of 25mm dia 2.0mm thick rigid PVC conduit pipe with all required accessories such as long bends, junction boxes, GI base saddles (One base saddle at every 500mm) to draw the circuit wiring and point wiring (wires are not in scope) separately in different conduits. the complete scope in clues minor civil works such as entry of 25mmpvc pipe surface through walls and finishing the wall to the original condition after laying the pipe includes painting. all other accessories materials should be included in the item rate such as GI base saddles, junction boxes, long bends, T-bends fischer make nylon grip gutti (imported make) SS screws length shall be 1" to 1.5, Thermacoal, insulation tapes to be used and Erection should be carried out as per technical specification and as directed by ARCI officials (Make: PRECISION / AVONPLAST-BLACK COLOR)</p>
6	304005025	<p>20mm Dia 2.0mm PVC Conduit Surface:</p> <p>Conduit: Supply laying installation of 20mm dia 2.0mm thick rigid PVC conduit pipe with all required accessories such as long bends, junction boxes, GI base saddles (One base saddle at every 500mm) to draw the circuit wiring and point wiring (wires are not in scope) separately in different conduits. the complete scope in clues minor civil works such as entry of 20mmpvc pipe surface through walls and finishing the wall to the original condition after laying the pipe includes painting. all other accessories materials should be included in the item rate such as GI base saddles, junction boxes, long bends, T-bends fischer make nylon grip gutti (imported make) SS screws length shall be 1" to 1.5, Thermacoal, insulation tapes to be used and Erection should be carried out as per technical specification and as directed by ARCI officials (Make: PRECISION / AVONPLAST-BLACK COLOR)</p>
7	304005026	<p>25mm Dia 2.0mm PVC Conduit Concealed:</p> <p>CONDUIT: Supply laying installation of 25mm dia 2.0mm thick rigid PVC conduit pipe with all required accessories such as long bends, junction boxes, to draw the circuit wiring and point wiring (wires are not in scope) separately in different conduits. The complete scope in clues minor civil works such as entry of 25mmpvc pipe, shall be layed in wall (concealed type) after laying the pipe includes chicken mesh, civil plastering painting and make good as original condition. All other accessories materials should be included in the item rate such as junction boxes, long bends, T-bends, joints with sealant, fischer make nylon grip gatti (imported make) SS screws length shall be 1" to 1.5, Thermacoal, insulation tapes to be used every area and Erection should be carried out as per technical specification and as directed by ARCI officials (Make: PRECISION / AVONPLAST-BLACK COLOR)</p>

8	304005027	<p>20mm Dia 2.0mm PVC Conduit Concealed: CONDUIT: Supply laying installation of 20mm dia 2.0mm thick rigid PVC conduit pipe with all required accessories such as long bends, junction boxes, to draw the circuit wiring and point wiring (wires are not in scope) separately in different conduits. The complete scope includes minor civil works such as entry of 20mmpvc pipe, shall be layed in wall (concealed type) after laying the pipe includes chicken mesh, civil plastering painting and make good as original condition. All other accessories materials should be included in the item rate such as junction boxes, long bends, T-bends, joints with sealant, Fischer make nylon grip gatti (imported make) SS screws length shall be 1" to 1.5, Thermacoal, insulation tapes to be used every area and Erection should be carried out as per technical specification and as directed by ARCI officials (Make: PRECISION / AVONPLAST-BLACK COLOR)</p>
9	304005028	<p>Earthing (GI Pipe): Supply installation, testing and commissioning and providing independent earthing with 100mm. Dia 'B' Class 3.0-meter-long GI pipe and covered with mesh of suitable size funnel enclosed in cement chamber of RR masonry internal size of 600x600x600mm. With suitable RCC precast cover with lifting arrangements. The GI pipe required to be provided with staggered holes of 16nos of 12mm. dia to the earth electrode, filling with 200mm layers height of salt and charcoal around dia. 400mm (keeping GI pipe in center) and from the bottom of the pipe to the bottom of the CC chamber. The connection from the electrode will be through 50x10mm. GI strip provided at the top with 12mm holes (4nos) of the GI pipe along with GI (10mm) nut bolts and washers complete as directed by ARCI officials and technical specifications (as per IS 3043).</p>
10	304005029	<p>Copper Plate earthing : Supply installation, testing and commissioning and providing independent earthing with 100mm. Dia 'B' Class 3.0-metre-long GI pipe and covered with mesh of suitable size funnel enclosed in cement RR masonry internal size of chamber of 750x750x450(depth)mm. With suitable RCC precast cover with lifting arrangements. The GI pipe required to be provided with staggered holes of 16nos of 12mm. dia to earth electrode, filling with 200mm layers height of salt and charcoal around dia 400mm (keeping gi pipe in center) and from the bottom of the pipe to the bottom of the CC chamber. the connection from the electrode will be through 50x10(thick)x700 length mm copper strip provided at the top with 12mm holes (4nos) of the GI pipe along with cadmium coated (12mm) nut bolts and washer, 600x600x6mm copper plate, 2nosx50x6(thick)x3000mm copper strip should be connected to Gi pipe with cadmium coated (12mm) nut bolts and washers as directed by ARCI officials.</p>

11	304005030	<p>50x6mm GI strip: Earthing: Supply, fixing, laying, commissioning and testing of 50x6mm GI strip as earthing conductor from equipment / LDBs / PDBs, earth bus to earth pit run in earth / Trench for outside building (trench excavation not in scope) and on walls inside the building complete with required materials such as GI nutbolts, anchor bolts for fixing and terminations and erection should be as directed by ARCI staff.</p>
12	304005031	<p>25x3mm GI strip: Earthing: Supply, fixing, laying, commissioning and testing of 25x3mm GI strip as earthing conductor from equipment / LDBs / PDBs, earth bus to earth pit run in earth / Trench for outside building (trench excavation not in scope) and on walls inside the building complete with required materials such as GI nutbolts, anchor bolts for fixing and terminations and erection should be as directed by ARCI staff.</p>
13	304005032	<p>8 SWG GI wire: Supply , fixing, laying, commissioning and testing of the 8 SWG GI wire as earthing conductor/bus from equipment to distribution boards in a room complete with required material for fixing at every 2mtrs and fixing GI wire to wall /beam/angles with required materials and bolt & nut for terminations at height decided by ARCI officials in a work shop/room/ building.</p>
14	304005033	<p>50mm dia GI pipe: Supply, fitting and laying GI pipes of medium quality ('B class) of Zenith / Tata / Jindal with all necessary fittings such as bends, tees, elbows, reducers, unions, nipples, plugs, clamps, fixtures, etc. including necessary earthwork, backfilling, complete as per specification as directed by ARCI officials.</p>
15	304005034	<p>100mm dia GI pipe: Supply, fitting and laying GI pipes of medium quality ('B class) of Zenith / Tata / Jindal with all necessary fittings such as bends, tees, elbows, reducers, unions, nipples, plugs, clamps, fixtures, etc. including necessary earthwork, backfilling, complete as per specification as directed by ARCI officials.</p>
16	304005035	<p>Hume pipe 200mm (reinforced tor steel): Supply & laying of reinforced concrete made hume pipe including caller to join two pipes with cement as per site requirement make: Hindustan</p>
17	304005036	<p>Hume pipe 300mm (reinforced tor steel) Supply & laying of reinforced concrete made hume pipe including caller to join two pipes with cement as per site requirement make: Hindustan</p>
18	304005037	<p>LT Cable Markers: Supply installation testing and commissioning of Cast Iron LT cable markers duly showing the direction of cable route. The markers are required to be fixed on GI angle of size 35x35x6mm of length 700mm and grouted in PCC of size 200x200x200mm at every interval of 15 to 20 metres length as DIRECTED BY ARCI OFFICIALS</p>
19	304005038	<p>Cable termination, extension box 300 x 300 x 200mm: Supply fixing testing & commissioning of size 300 x300 x 200mm cable termination extension box made up of 14 gauge MS sheet, supported on angular frame structure made from 25mm x 25mm x 3mm thick angle good smooth finish, painted to matching SFU / Bus Bar unit / Panel board existing in site to be fixed to SFU /Bus Bar Unit / Panel board existing in site with cadmium coated bolts & nuts as per site condition making circular hole for cable entry as per site condition. (cable termination not in scope).</p>

20	304005039	<p>Cable termination, extension box 200x200x150mm:</p> <p>Supply fixing testing & commissioning of size up to 200 x200 x 150mm cable termination extension box made up of 14 gauge MS sheet, supported on angular frame structure made from 25mm x 25mm x 3mm thick angle good smooth finish, painted to matching SFU / Bus Bar unit / Panel board existing in site to be fixed to SFU /Bus Bar Unit / Panel board existing in site with cadmium coated bolts & nuts as per site condition making circular hole for cable entry as per site condition.(cable termination not in scope).</p>
21	304005040	<p>MS Box 6" x 6":</p> <p>Supply installation & commissioning of MS box of 14-gauge size 6"x 6"x 2" depth with 3.5mm heylam sheet cover cutted to required shape to mount / fixing no of switches / sockets as required by site / ARCI officials. Painting initially two coats of red oxide finally one coat of required colour enamiel paint to be mounted on walls / RCC beams / MS structures / concealed as directed by ARCI staff provision should be made to enter the 25mm dia no of PVC pipes as per site requirement earthing provision for the box to be made inside. (switches & sockets are not in scope).</p>
22	304005041	<p>MS Box 8" x 6":</p> <p>Supply installation & commissioning of MS box of 14-gauge size 8"x 6"x 2" depth with 3.5mm hylam sheet cover cutted to required shape to mount / fixing no of switches / sockets as required by site / ARCI officials. Painting initially two coats of red oxide finally one coat of required colour enamiel paint to be mounted on walls / RCC beams / MS structures / concealed as directed by ARCI staff provision should be made to enter the 25mm dia no of PVC pipes as per site requirement earthing provision for the box to be made inside. (switches & sockets are not in scope).</p>
23	304005042	<p>MS Box 10"x8":</p> <p>Supply installation & commissioning of MS box of 14-gauge size 10"x 8"x 2" depth with 3.5mm hylam sheet cover cutted to required shape to mount / fixing no of switches / sockets as required by site / ARCI officials. Painting initially two coats of red oxide finally one coat of required colour enamiel paint to be mounted on walls / RCC beams / MS structures / concealed as directed by ARCI staff provision should be made to enter the 25mm dia no of PVC pipes as per site requirement earthing provision for the box to be made inside. (switches & sockets are not in scope).</p>
24	304005043	<p>MS Box 12"x 10":</p> <p>Supply installation & commissioning of MS box of 14-gauge size 12"x 10"x 2" depth with 3.5mm heylam sheet cover cutted to required shape to mount / fixing no of switches / sockets as required by site / ARCI officials. Painting initially two coats of red oxide finally one coat of required colour enamiel paint to be mounted on walls / RCC beams / MS structures / concealed as directed by ARCI staff provision should be made to enter the 25mm dia no of PVC pipes as per site requirement earthing provision for the box to be made inside. (switches & sockets are not in scope).</p>
25	304005044	<p>Cable Trench 300 x 750mm:</p> <p>Excavation of cable trench of size 300mm x 750mm depth in wet, dry & rocky conditions of the soil for cable laying on a fine sand (without sharp edges) bed of 150mm in the excavated trench after cable laying again cover the cable by 150mm sand cover all sides with red bricks and back filling. Stacking of removed earth from all along the trench on either side after back filling and reinstatement. the excavate / removed excess sand should be transported to designated place as per ARCI official.</p>
26	304005045	<p>Cable Trench 600 x 750mm:</p> <p>Excavation of cable trench of size 600mm x 750mm depth in wet, dry & rocky conditions of the soil for cable laying on a fine sand (without sharp edges) bed of 150mm in the excavated trench after cable laying again cover the cable by 150mm sand cover all sides with red bricks and back filling. Stacking of removed earth from all along the trench on either side after back filling and reinstatement. the excavate / removed excess sand should be transported to designated place as per ARCI official.</p>
27	304005046	<p>Faulty Cable Trench Excavation:</p>

		Fault cable trench excavation & removing the damaged cable to surface (From GI pipes/Hume pipes) for repair / Rectification and putting back the repaired / rectified cable in the trench (Including in GI pipes / Hume pipes) should use new minimum 50mm thick sand layer should be laid before laying the repaired cable and cover the cable by 50mm sand and place old brick on the cable and fill with removed earth to original condition as directed by ARCI officials.
28	304005047	Road cutting 300 x 750mm: Cutting the tar road or cement road/cobble stone road along with culverts either side of the road to make cable trench of size 300mm wide x 750mm depth, laying of 100mm dia, 50mm dia GI pipes and remaking to original shape both road with tar, pcc & culverts with bricks, plastering as directed by ARCI Officials for the run of Power/Telephone/LAN cables at the road crossings, building entry, underground floor and over the walls. GI pipe / Hume pipe not in scope.
29	304005048	Laying of cable up to 3.5/4C x 16sqmm: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size not exceeding 16sqmm on walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
30	304005049	Laying of cable up to 3.5/ 4C x 16sqmm in ground: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size not exceeding 16sqmm in ground upto building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
31	304005050	Laying of cable from 3.5 / 4C x 25 to 50 sqmm: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size from 25 to 50sqmm walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
32	304005051	Laying of cable from 3.5 / 4C x 25 to 50sqmm in ground Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size from 25 to 50sqmm in ground upto building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
33	304005052	Laying of cables upto 3.5C x 70 to 95 sqmm: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size from 70 to 95 sqmm walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
34	304005053	Laying of cable up to 3.5C x 70 to 95sqmm in ground: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size from 70 to 95sqmm in ground upto building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.

35	304005054	<p>Laying of cable up to 3.5C x 120 to 185sqmm:</p> <p>Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size from 120 to 185 sqmm walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.</p>
36	304005055	<p>Laying of cables from 3.5C x 120 to 185 sqmm in ground:</p> <p>Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size from 120 to 185sqmm in ground upto building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.</p>
37	304005056	<p>Laying of cables from 3.5C x 240 to 300 sqmm:</p> <p>Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size from 240 to 300 sqmm walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.</p>
38	304005057	<p>Laying of cables from 3.5C x 240 to 300 sqmm in ground:</p> <p>Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size from 240 to 300sqmm in ground upto building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.</p>
39	304005058	<p>Laying of cables for 3.5C x 400 sqmm:</p> <p>Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 400 sqmm walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.</p>
40	304005059	<p>Laying of cables for 3.5C x 400 sqmm in ground:</p> <p>Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 400sqmm in ground upto building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.</p>
41	304005060	<p>Laying of cables for 1C x 1000 sqmm:</p> <p>Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 1000 sqmm walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.</p>
42	304005061	<p>Laying of cables for 1C X 1000 sqmm in ground:</p> <p>Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 1000sqmm in ground upto building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.</p>
43	304005062	<p>Laying of 16sqmm single core copper cable:</p> <p>Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 16 sqmm on walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.</p>
44	304005063	<p>Laying of 25sqmm single core copper cable</p>

		Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 25 sqmm on walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
45	304005064	Laying of 35sqmm single core copper cable: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 35 sqmm on walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
46	304005065	Laying of 50sqmm single core copper cable: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 50 sqmm on walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
47	304005066	Laying of 70sqmm single core copper cable: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 70 sqmm on walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
48	304005067	Laying of 95sqmm single core copper cable: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 95 sqmm on walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
49	304005068	Laying of 120sqmm single core copper cable: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 120 sqmm on walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
50	304005069	Laying of 185sqmm single core copper cable: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 185 sqmm on walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.
51	304005070	Laying of 240sqmm single core copper cable: Labour charges for laying and fixing of one no PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size for 240 sqmm on walls/OH & UG trays/concrete beams/RCC structures with required fixing materials, including GI base saddles at every 500mm in building premises as directed by ARCI Staff/ officials and also required materials such as ladders/supports/scaffolding/cable drum handling/cable pulley & removing materials etc.

52	304005071	4C x 4sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.
53	304005072	4C x 6sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.
54	304005073	4C x 10sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.
55	304005074	4C x 16sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipment's) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.
56	304005075	3.5C x 25sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.
57	304005076	3.5C x 35sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.
58	304005077	3.5C x 50sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.
59	304005078	3.5C x 70sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.
60	304005079	3.5C x 95sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.
61	304005080	3.5C x 120sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.

62	304005081	<p>3.5C x 185sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.</p>
63	304005082	<p>3.5C x 300sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.</p>
64	304005083	<p>3.5C x 400sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.</p>
65	304005084	<p>1C x 16sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.</p>
66	304005085	<p>1C x 25sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.</p>
67	304005086	<p>1C x 50sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.</p>
68	304005087	<p>1C x 95sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.</p>
69	304005088	<p>1C x 120sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.</p>
70	304005089	<p>1C x 1000sqmm Cable Terminations: Supply installation testing & commissioning of cable termination (labour material & equipments) of the cable at one end using double compression gland, Aluminum or copper lugs make: HMI / Hex / Jainson for crimping including aluminum cable tag and making required opening in gland plate with machine and crimping with tool.</p>
71	304005090	<p>LT cable jointing kit -16sqmm: Supplying and making straight through joint with heat shrink compound including ferrules and other jointing materials of PVC insulated and PVC sheathed / XLPE power cable 1.1KV grade, testing commissioning of LT straight through cable jointing kit both aluminum / copper both indoor / outdoor heat sink type of cables size 4C x 16sqmm as per direction of ARCI official - Make: Raychem / Denson</p>

72	304005091	LT cable jointing kit - 25sqmm: Supplying and making straight through joint with heat shrink compound including ferrules and other jointing materials of PVC insulated and PVC sheathed / XLPE power cable 1.1KV grade, testing commissioning of LT straight through cable jointing kit both aluminum / copper both indoor / outdoor heat sink type of cables size 4C x 25sqmm as per direction of ARCI official - Make: Raychem / Denson
73	304005092	LT cable jointing kit - 35sqmm: Supplying and making straight through joint with heat shrink compound including ferrules and other jointing materials of PVC insulated and PVC sheathed / XLPE power cable 1.1KV grade, testing commissioning of LT straight through cable jointing kit both aluminum / copper both indoor / outdoor heat sink type of cables size 3.5C x 35sqmm as per direction of ARCI official - Make: Raychem / Denson
74	304005093	LT cable jointing kit - 50sqmm: Supplying and making straight through joint with heat shrink compound including ferrules and other jointing materials of PVC insulated and PVC sheathed / XLPE power cable 1.1KV grade, testing commissioning of LT straight through cable jointing kit both aluminum / copper both indoor / outdoor heat sink type of cables size 3.5C x 50sqmm as per direction of ARCI official - Make: Raychem / Denson
75	304005094	LT cable jointing kit - 70sqmm: Supplying and making straight through joint with heat shrink compound including ferrules and other jointing materials of PVC insulated and PVC sheathed / XLPE power cable 1.1KV grade, testing commissioning of LT straight through cable jointing kit both aluminum / copper both indoor / outdoor heat sink type of cables size 3.5C x 70sqmm as per direction of ARCI official - Make: Raychem / Denson
76	304005095	LT cable jointing kit - 95sqmm: Supplying and making straight through joint with heat shrink compound including ferrules and other jointing materials of PVC insulated and PVC sheathed / XLPE power cable 1.1KV grade, testing commissioning of LT straight through cable jointing kit both aluminum / copper both indoor / outdoor heat sink type of cables size 3.5C x 95sqmm as per direction of ARCI official - Make: Raychem / Denson
77	304005096	LT cable jointing kit - 120sqmm: Supplying and making straight through joint with heat shrink compound including ferrules and other jointing materials of PVC insulated and PVC sheathed / XLPE power cable 1.1KV grade, testing commissioning of LT straight through cable jointing kit both aluminum / copper both indoor / outdoor heat sink type of cables size 3.5C x 120sqmm as per direction of ARCI official - Make: Raychem / Denson
78	304005097	LT cable jointing kit - 185sqmm: Supplying and making straight through joint with heat shrink compound including ferrules and other jointing materials of PVC insulated and PVC sheathed / XLPE power cable 1.1KV grade, testing commissioning of LT straight through cable jointing kit both aluminum / copper both indoor / outdoor heat sink type of cables size 3.5C x 185sqmm as per direction of ARCI official - Make: Raychem / Denson
79	304005098	LT cable jointing kit - 300sqmm: Supplying and making straight through joint with heat shrink compound including ferrules and other jointing materials of PVC insulated and PVC sheathed / XLPE power cable 1.1KV grade, testing commissioning of LT straight through cable jointing kit both aluminum / copper both indoor / outdoor heat sink type of cables size 3.5C x 300sqmm as per direction of ARCI official - Make: Raychem / Denson
80	304005099	GI perforated cable tray 100 x 50 x 2mm: Fabricating and installing the 100 x 50 x 2mm size of perforated GI cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with GI suspenders or fixing on cantilever supports and including painting etc as required.
81	304005100	GI perforated cable tray 150 x 50 x 2mm:

		Fabricating and installing the 150 x 50 x 2mm size of perforated GI cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with GI suspenders or fixing on cantilever supports and including painting etc as required.
82	304005101	GI perforated cable tray 300 x 50 x 2mm: Fabricating and installing the 300 x 50 x 2mm size of perforated GI cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with GI suspenders or fixing on cantilever supports and including painting etc as required.
83	304005102	GI perforated cable tray 450 x 50 x 2mm: Fabricating and installing the 100 x 50 x 2mm size of perforated GI cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with GI suspenders or fixing on cantilever supports and including painting etc as required.
84	304005103	GI perforated cable tray 600 x 50 x 2mm: Fabricating and installing the 600 x 50 x 2mm size of perforated GI cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with GI suspenders or fixing on cantilever supports and including painting etc as required.
85	304005104	Sheet Metal Enclosure - 1 way: Supply fixing testing & commissioning of sheet metal enclosure (1 way) of IP 42-degree protection with fixing of required rating of MCB as directed by ARCI officials. (supply of MCBs by ARCI) Make: Siemens / L&T / Scheinder / Legrand
86	304005105	Sheet Metal Enclosure - 2 way: Supply fixing testing & commissioning of sheet metal enclosure (2 way) of IP 42-degree protection with fixing of required rating of MCB as directed by ARCI officials. (supply of MCBs by ARCI) Make: Siemens / L&T / Scheinder / Legrand
87	304005106	Sheet Metal Enclosure - 3 way: Supply fixing testing & commissioning of sheet metal enclosure (3 way) of IP 42-degree protection with fixing of required rating of MCB as directed by ARCI officials. (supply of MCBs by ARCI) Make: Siemens / L&T / Scheinder / Legrand
88	304005107	Sheet Metal Enclosure - 4 way: Supply fixing testing & commissioning of sheet metal enclosure (4 way) of IP 42-degree protection with fixing of required rating of MCB as directed by ARCI officials. (supply of MCBs by ARCI) Make: Siemens / L&T / Scheinder / Legrand
89	304005108	SPN - Distribution Board - 6 way: Supply fixing testing & commissioning of SPN distribution board double door as per IP 43 & IP 54-degree protection supplied with wire sets, insulated busbars, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard, with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI) Make: Siemens / L&T / Scheinder / Legrand.
90	304005109	SPN - Distribution Board - 8 way: Supply fixing testing & commissioning of SPN distribution board double door as per IP 43 & IP 54-degree protection supplied with wire sets, insulated busbars, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard, with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI) Make: Siemens / L&T / Scheinder / Legrand.

91	304005110	<p>SPN - Distribution Board - 12 way: Supply fixing testing & commissioning of SPN distribution board double door as per IP 43 & IP 54-degree protection supplied with wire sets, insulated busbars, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard, with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI) Make: Siemens / L&T / Scheinder / Legrand.</p>
92	304005111	<p>SPN - Distribution Board - 16 way: Supply fixing testing & commissioning of SPN distribution board double door as per IP 43 & IP 54-degree protection supplied with wire sets, insulated busbars, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard, with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI) Make: Siemens / L&T / Scheinder / Legrand.</p>
93	304005112	<p>Horizontal TPN - Distribution Board - 4-way double door: Supply fixing testing & commissioning of horizontal TPN distribution boards double door as per IP 43 & IP 54-degree protection supplied with busbar, wire sets, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI). Make: Siemens / L&T / Scheinder / Legrand.</p>
94	304005113	<p>Horizontal TPN - Distribution Board - 6-way double door: Supply fixing testing & commissioning of horizontal TPN distribution boards double door as per IP 43 & IP 54degree protection supplied with busbar, wire sets, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI) Make: Siemens / L&T / Scheinder / Legrand.</p>
95	304005114	<p>Horizontal TPN - Distribution Board - 8-way double door: Supply fixing testing & commissioning of horizontal TPN distribution boards double door as per IP 43 & IP 54-degree protection supplied with busbar, wire sets, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI) . Make: Siemens / L&T / Scheinder / Legrand.</p>
96	304005115	<p>Horizontal TPN - Distribution Board - 12-way double door: Supply fixing testing & commissioning of horizontal TPN distribution boards double door as per IP 43 & IP 54-degree protection supplied with busbar, wire sets, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI). Make: Siemens / L&T / Scheinder / Legrand.</p>
97	304005116	<p>Vertical TPN - Distribution Board - 4-way double door: Supply fixing testing & commissioning of vertical TPN distribution boards double door as per IP 43 & IP 54degree protection supplied with busbar, wire sets, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI). Make: Siemens / L&T / Scheinder / Legrand.</p>
98	304005117	<p>Vertical TPN - Distribution Board - 8-way double door: Supply fixing testing & commissioning of vertical TPN distribution boards double door as per IP 43 & IP 54degree protection supplied with busbar, wire sets, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI). Make: Siemens / L&T / Scheinder / Legrand.</p>

99	304005118	<p>Vertical TPN - Distribution Board - 12-way double door: Supply fixing testing & commissioning of vertical TPN distribution boards double door as per IP 43 & IP 54 degree protection supplied with busbar, wire sets, blanking plates cable ties identification labels, earth bar & insulated neutral bar as standard with fixing of DB on MS angle frame grouted in wall and fixing of required rating of MCBs as directed by ARCI officials. (supply of MCBs and MS angle frame by ARCI). Make: Siemens / L&T / Scheinder / Legrand.</p>
100	304005119	<p>AC Box: Supply installation testing & fixing of sheet steel enclosure fitted with metal plug & socket of IP 30 degree of protection (supply of MCB by ARCI) Make: Siemens / L&T / Scheinder / Legrand.</p>
101	304005120	<p>Fabrication of MS Angle Frame / Tray: Fabrication, supply, erection / mounting, painting (Two coats of enamel as per code of red oxide) As per ARCI official design, grouting in wall / RCC beam / MS structure with welding at ARCI. All required civil materials for concrete grouting, finishing to original condition including painting the chipped areas. MS Angle frame of required size with support / legs to be made as per site requirement including supply of required size cadmium coated nuts, bolts & washers The size of angles to be used will be decided by ARCI officials and payment will be made on per KG basis.</p>
102	312002333	<p>6A Modular Switches:- Supply, Installation, Testing, Commissioning along with necessary accessories of switch-6A-SP-1way 1module, 250V, 50 HZ, AC. Makes :Legrand(Model no: 5734 00)/schneider.</p>
103	312002334	<p>6A Modular Switches(2Way):- Supply, Installation, Testing, Commissioning along with necessary accessories of switch - 6A-SP-2way 1module, 250V, 50 HZ, AC. Makes :Legrand(Model no: 5734 02)/schneider.</p>
104	312002335	<p>6A Modular Socket:- Supply, Installation, Testing ,Commissioning along with necessary accessories, socket shuttered - 6A-2/3 pin-universal india-2 module,250V, 50 HZ, AC. Makes : Legrand(model no: 5734 70)/schneider</p>
105	312002336	<p>6/16A Modular Switch and Socket :- Supply, Installation, Testing, Commissioning along with necessary accessories for socket shuttered-6/16A-3 pin-indian-2 module and switch - 20A-SP-1 way-1 module, 230V 50 HZ, AC. Makes: Legrand(model no: 5734 71), (Code 5734 10)/ (schneider)</p>
106	312002337	<p>20A Metal plug & socket plug with SP MCB: - Supply, Installation, Testing, Commissioning along with necessary accessories for SP 20A,230V industrial plug and socket in SS enclosure flushed in Wall including 20A SP MCB 10KA with all internal connections and labor complete. Makes: Legrand(model no:6032 35,, 6078 41) / Scheinder.</p>
107	312002339	<p>63A TPN industrial plug and socket DB with 4P MCB: - Supply, Installation, Testing, Commissioning along with necessary accessories for 63A TPN industrial plug and socket DB with 4P MCB ,15V, 50 HZ, AC. industrial plug and socket in SS enclosure flushed in Wall, with all internal connections and labor complete. Makes: Legrand(model no:6078 80, 6049 89) / Scheinder.</p>
108	312002340	<p>AC starter :- Supply, Installation, Testing, Commissioning along with necessary accessories 25A motor starter 2 module, 250V, 50 HZ, AC, modular box . Makes: Legrand(model no: 6730 31)/ schneider)</p>

109	312002341	<p>Ceiling rose: Supply, Fixing, testing of 3-pin ceiling rose for tapping power to light, fan points and erection should be as directed by per ARCI officials. Makes: Anchor / Legrand</p>
110	312002342	<p>2 Module metal flush box and cover plate with frame: Supply, Installation & Commissioning of metal flush mounting box - 2 module, along with modular base & cover plate with frame for modular switches in recess to mount number of switches/ sockets as required at site/directed by ARCI officials. Provisions should be made to enter the 25mm dia PVC conduits as per the site requirement. Earthing point provision to be made inside the box. Location as shown in drawings/ as directed by ARCI officials and technical specifications. Make: Legrand - (6890 07, 5757 10)/ schneider.</p>
111	312002343	<p>3 Module metal flush box and cover plate with frame: Supply, Installation & Commissioning of metal flush mounting box - 3 module, along with modular base & cover plate with frame for modular switches in recess to mount number of switches/ sockets as required at site/directed by ARCI officials. Provisions should be made to enter the 25mm dia PVC conduits as per the site requirement. Earthing point provision to be made inside the box. Location as shown in drawings/ as directed by ARCI officials and technical specifications. Make: Legrand - (6890 08, 5757 20)/ schneider.</p>
112	312002344	<p>4 Module metal flush box and cover plate with frame: Supply, Installation & Commissioning of metal flush mounting box - 4 module, along with modular base & cover plate with frame for modular switches in recess to mount number of switches/ sockets as required at site/directed by ARCI officials. Provisions should be made to enter the 25mm dia PVC conduits as per the site requirement. Earthing point provision to be made inside the box. Location as shown in drawings/ as directed by ARCI officials and technical specifications Make: Legrand - (6890 09, 5757 30)/ schneider.</p>
113	312002345	<p>6 Module metal flush box and cover plate with frame: Supply, Installation & Commissioning of metal flush mounting box - 6 module, along with modular base & cover plate with frame for modular switches in recess to mount number of switches/ sockets as required at site/directed by ARCI officials. Provisions should be made to enter the 25mm dia PVC conduits as per the site requirement. Earthing point provision to be made inside the box. Location as shown in drawings/ as directed by ARCI officials and technical specifications Make: Legrand - (6890 10, 5757 40)/ schneider.</p>
114	312002346	<p>8 Module metal flush box and cover plate with frame: Supply, Installation & Commissioning of metal flush mounting box - 8 module, along with modular base & cover plate with frame for modular switches in recess to mount number of switches/ sockets as required at site/directed by ARCI officials. Provisions should be made to enter the 25mm dia PVC conduits as per the site requirement. Earthing point provision to be made inside the box. Location as shown in drawings/ as directed by ARCI officials and technical specifications Make: Legrand - (6890 31, 5757 60)/ schneider</p>

115	312002347	<p>12 Module metal flush box and cover plate with frame: Supply, Installation & Commissioning of metal flush mounting box - 12 module, along with modular base & cover plate with frame for modular switches in recess to mount number of switches/ sockets as required at site/directed by ARCI officials. Provisions should be made to enter the 25mm dia PVC conduits as per the site requirement. Earthing point provision to be made inside the box. Location as shown in drawings/ as directed by ARCI officials and technical specifications Make: Legrand - (6890 11, 5757 70)/ schneider</p>
116	312002363	<p>Fan Regulator: Supply, Fixing, Testing and Commissioning of modular electronic step type fan regulator of 120W, 2 module, 230V, 50Hz for ceiling fans of 1200 mm sweep complete erection on existing board. Make: Legrand (5734 69)/Schneider.</p>
117	312002364	<p>Exhaust Fans: Supply, Fixing, Testing and Commissioning of fresh air exhaust fan of heavy duty 300mm size (12"), metallic body, metallic blades, wire mesh, fabricated GI base frame (minimum angle frame should be 25X3mm), clamps of required size., minimum 10mm anchor bolts for grouting, required civil work, and welding works are included and the work is to be carried out as directed by ARCI officials. 3 core 1.5sq.mm flexible copper cable for tap power from ceiling rose etc, including outside GI covers and all materials. Make: Crompton/Bajaj/Almonard.</p>
118	312002365	<p>Ceiling Fans: Supply, Fixing, Testing and Commissioning of 5 star rated ceiling fan of 1200 mm size (48") to fan hook box / Anchor fastener with 3 core 1.5sq.mm flexible copper cable from existing ceiling rose and all required materials. Make: HS Plus – 5 Star Crompton or Bajaj equivalent.</p>
119	312002385	<p>80 mm Dia GI Pipes: Supply/installations of GI pipe of 80mm dia with all types of GI bends/T's/L's/ Coupling as per site conditions class B pipe for the run of power cable / Communication cables for Road crossings & building entries. Make: Jindal/Tata Note: Before supply/ installations, contractor must take permission from ARCI officials.</p>
120	312002398	<p>Removing of Cables upto 3.5/4 C X 35Sqmm: - Removing of all types of cables upto 3.5/4 C X 35Sqmm from under ground trench/walls/OH and UG trays, by excavating the existing trench to remove the existing cables and fill the trench with removed earth to original condition as directed by ARCI officials.</p>
121	312002399	<p>Removing of Cables from 3.5CX50 sqmm to 95sqmm: - Removing of all types of cables from 50 Sqmm to 95 Sqmm from under ground trench/walls/OH and UG trays, by excavating the existing trench to remove the existing cables and fill the trench with removed earth to original condition as directed by ARCI officials.</p>
122	312002400	<p>Removing of Cables from 3.5CX120 Sqmm to 185Sqmm: - Removing of all types of cables from 120 Sqmm to 185 Sqmm, from under ground trench/walls/OH and UG trays, by excavating the existing trench to remove the existing cables and fill the trench with removed earth to original condition as directed by ARCI officials.</p>
123	312002401	<p>Removing of Cables from 3.5CX240 Sqmm to 400Sqmm: - Removing of all types of cables from 240 Sqmm to 400 Sqmm, from under ground trench/walls/OH and UG trays, by excavating the existing trench to remove the existing cables and fill the trench with removed earth to original condition as directed by ARCI officials.</p>

124	312002425	<p>GI PIPE EARTHING (50 mm): - Supply, installation, testing and commissioning of independent earthing with 50 mm. Dia "C" Class 3.0-meter-long GI Pipe and covered with mesh of suitable size funnel enclosed with stone masonry chamber of size 600mm x 600mm x 450 mm, stone masonry base should be of PCC of 100mm thick. With suitable RCC precast cover with lifting arrangements. The GI pipe required to be provided with staggered holes of 16 Nos. of 12 mm. dia to the earth electrode, filling with 200mm layers height of salt and charcoal around dia 400mm (keeping GI pipe in center) and from the bottom of the pipe to the bottom of the CC chamber. The connection from the electrode will be through 50 x10 mm. GI strip provided at the top with 12mm holes(4nos) of the GI pipe along with GI(10mm) nut bolts and washers complete as per the drawing /as directed by ARCI officials and technical specifications.</p>
125	312002429	<p>50X6 MM CU Strip: - Supply, fixing, laying, commissioning and testing of 50X6 MM CU Strip as earthing conductor with all required materials such as GI nut bolts, Anchor fastners, bolts and terminations etc., and erection should be as directed by ARCI staff</p>
126	312002517	<p>32A TPN Industrial plug & socket: Supply, Fixing, Testing and Commissioning along with necessary accessories TPN 32A, 415V industrial plug & socket in SS enclosure flushed in panel including 32A TPN MCB 10KA withal internal connections and labor complete. Make: Legrand / L&T/ Siemens.</p>
127	312002518	<p>63A TPN Industrial plug & socket: Supply, Fixing, Testing and Commissioning along with necessary accessories TPN 63A, 415V industrial plug & socket in SS enclosure flushed in panel including 63A TPN MCB 10KA withal internal connections and labor complete. Make: Legrand / L&T/ Siemens.</p>
128	312002568	<p>Removing of Wires/PVC pipe: Removing all types of wires/PVC pipes/fitting, cables from walls/OH and UG trays, and to make to original condition as directed by ARCI officials.</p>
129	312002572	<p>Lightning Arrestor: Supply, installation, Testing and Commissioning and handing over to ARCI lightning arrestor of copper as per IS2309-1967, to be installed on the floor of the building with concrete basement with complete machinery and manpower. (FRANKLIN ROD)</p>
130	304005121	<p>Oil Filtration: Transformer oil filtration must be carried out at ARCI, with inclusive of equipment transporting to site, the filtration should be carried out till achievement of minimum BDV level as per IS standards and submission of test reports.</p>
131	304005122	<p>Hiring of crane: Hiring of 5Ton crane for shifting electrical cables / equipment's, on 8 hrs basis</p>
132	304005123	<p>Hiring of forklift: Hiring of forklift for shifting electrical cables / equipment's, per day inclusive of drivers charges. The time will be taken into account from the start of work at ARCI. On 8 hrs basis</p>
133	304005124	<p>Electrician: The electrician must be ITI holder with minimum five years of Industrial experience.</p>
134	304005125	<p>Labour: Hiring of labour per day shifting of electrical items.</p>
135	304005126	<p>Scaffolding material: Four Legged Scaffolding made of metal easily removed and assembly along with necessary safety belt and helmet for the operation up to 15meters height from ground level. Basic time starts per day after assembly of total scaffolding.</p>

136	312002329	<p>Concealed/Surface Conduit (40mm Dia) :- Supply,Laying, Installation of 40mm dia 2.0mm thick rigid PVC conduit pipe with all required accessories such as long bends, junction boxes, Thermacoal, insulation Tapes to draw the cables required for external/internal lighting points in conduits.The complete scope includes minor civil works such as entry of 40mm pvc pipe concealed through walls and finishing the walls to the original condition after laying the pipe includes lappam & painting. Erection should be carried out as per technical specifications and as directed by ARC I officials. MAKE:PRECISION-LHSFT / AVONPLAST-BLACK COLOR</p>
137	312002588	<p>SS perforated cable tray 100 x 50 x 2mm: Fabricating and installing the 100 x 50 x 2mm size of perforated SS cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with suspenders or fixing on cantilever supports and etc as required.</p>
138	312002589	<p>SS perforated cable tray 300 x 50 x 2mm: Fabricating and installing the 300 x 50 x 2mm size of perforated SS cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with suspenders or fixing on cantilever supports and etc as required.</p>
139	312002590	<p>SS perforated cable tray 450 x 50 x 2mm: Fabricating and installing the 450 x 50 x 2mm size of perforated SS cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with suspenders or fixing on cantilever supports and etc as required.</p>
140	312002591	<p>SS perforated cable tray 150 x 50 x 2mm: Fabricating and installing the 150 x 50 x 2mm size of perforated SS cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with suspenders or fixing on cantilever supports and etc as required</p>
141	312002584	<p>50x6mm GI strip with tor wrapping: Supply, fixing, laying, commissioning and testing of 50x6mm GI strip with tor wrapping as earthing conductor with all required materials such as tor wrapping,GI nutbolts, anchor bolts for fixing and terminations and erection should be as directed by ARCI staff.</p>
142	312002585	<p>25 x 3mm GI strip with tor wrapping: Supply, fixing, laying, commissioning and testing of 25x3mm GI strip with tor wrapping as earthing conductor with all required materials such as tor wrapping, GI nutbolts, anchor bolts for fixing and terminations and erection should be as directed by ARCI staff.</p>
143	312002573	<p>6.0Sqmm Point Wiring: - Supply, Installation, Testing and Commissioning of circuit wiring to be drawn from power distribution board to power points-4runs of 6sqmm PVC insulated copper conductor flexible wires (FRLS) for 32A power points. PI Note: 1. Maximum 4no of 6.0Sq.mm size wires are allowed in a single 25mm dia pvc pipe, if more than 4 nos of wires are required to run, one more 25mm dia pvc pipe should be laid. 2. Measurements will be taken per meter as per site installation per run of four wires (Phase R-Y-B, Neutral). 3. Finolex/ Anchor/ L&T- Makes, fire retardant low smoke type wires are accepted. 4. Color code shall be as per IS code. 5. Erection should be carried out as per general technical specifications and as directed by ARCI officials. 6. Joints of wires are not allowed between Distribution boards to the power points.</p>

144	312002586	<p>Metering Panel: - Design, fabrication, supply, installation, testing and commissioning of 3 phase 415V meter box of 14 guage CRCA sheet steel powder coated and designed for giving extra space for incoming termination with all switch gears, with din-channel mounted Multifunction meter with functions like V, A, kVA, kVAH, kW, kWH, selector switch, L.E.D indicating lights. 63A/5A- 3no's or 125/5A-3no's or 250/5A-3no's, C. T's should be fixed in a panel as per shown in drawing, all meters should have RS-485 communications port with Modbus / industrial Ethernet protocol. This module/panel must be assembled bottom of the TPN distribution board i.e. on GI angle frame of required size with 25x3mm GI angles. As shown in GA drawings or as instructed by ARCI officials.</p> <p>Make:- Schneider electric/ L&T/ Siemens..</p> <p>Note: Erection should be as directed by ARC I officials. And technical</p>
145	312002587	<p>Busbar panel board:- Design, fabrication, supply, installation, testing and commissioning of 3 phase 415V meter box of 14 guage CRCA sheet steel powder coated as per IP43 degree protection with copper bus bar of 50X6mm,wire sets, blanking plates, cable ties, identification labels, earth bar & insulated neutral busbar and designed for giving extra space for incoming termination of 400A SFU and 4 Nos of outgoing provision of 125A SFU with din-channel mounted Multifunction meter ,selector switch, L.E.D indicating lights, C.T's should be fixed in a panel as per shown in drawing, Panel should be fixed with 50x 6mm GI angle frame and frame to be grouted on wall and panel should be fixed on angle frame.of required size with 25x3mm GI angles.</p> <p>Note: All switchgear items will be supplied by ARCI and erection should be as directed by ARC I officials.</p>
146	304005127	<p>33KV HT Cable Jointing – 3C X 185sqmm:</p> <p>Supplying and making straight through joint/end joint with heat shrink compound including ferrules and other jointing materials of XLPE power cable 11KV,33KV grade, testing commissioning of HT straight through /end cable jointing kit both aluminum / copper both indoor / outdoor heat sink type of cables size 3.Core X 185sqmm as per direction of ARCI official - Make: Raychem / Denson</p>
147	304005128	<p>11KV HT CABLE JOINTING - 3C X 95 SQMM:</p> <p>Supplying and making straight through joint/end joint with heat shrink compound including ferrules and other jointing materials of XLPE power cable 11KV grade, testing commissioning of HT straight through /end cable jointing kit both aluminum both indoor / outdoor heat sink type of cables size 3.Core x 95sqmm as per direction of ARCI official - Make: Raychem / Denson</p>
148	304005129	<p>LT Cable fault locater:</p> <p>Cable fault finding LT power cables of 1.1 KV grade with expert service engineer along with tools and tackles per fault per cable.</p>
149	304005130	<p>HT Cable fault locater:</p> <p>Cable fault finding LT power cables of 11 & 33 KV grade with expert service engineer along with tools and tackles per fault per cable</p>
150	125001776	<p>Supply of Electrical Items on Original Equipment Manufacturer (OEM) price lists:</p> <p>Supply of electrical items on original equipment manufacturer (OEM) Price lists, under annual rate contract as per detailed specifications enclosed in volume-V and GST applicable, The contractor had to quote maximum discount offered on company price lists as per volume-V.After awarding the contract, the contractor had to submit all OEM price lists for issuing the PO, and whenever the OEM changes the price lists, ARCI will change the rates as applicable.</p>

Important Note: Please note that the supplier for above BOQ items quantities is taken as one number, However the successful contractor as to supplies more than one quantities as per the requirement of ARCI, during the total operation of the contract.

VOL – V

PRICE BID FOR BILL OF ITEMS AND DISCOUNT PERCENTAGE OFFERED ON OEM PRICE LISTS

Important Note: Please note that the supplier for below BOQ items quantities is taken as one number, However the successful contractor as to supply more than one quantities as per the requirement of ARCI, during the total operation of the contract.

Sl. No	Item code	Description	Qty	Unit	SAC Code	Basic rate in figures (in Rupees)	GST % Rate	Total Amount in words (in Rupees)
1	304005020	1sqmm copper wiring - FRLS	1	Mtrs				
2	304005021	1.5sqmm copper wiring - FRLS	1	Mtrs				
3	304005022	2.5sqmm copper wiring - FRLS	1	Mtrs				
4	304005023	4sqmm copper wiring - FRLS	1	Mtrs				
5	304005024	25mm Dia 2.0mm PVC conduit surface	1	Mtrs				
6	304005025	20mm Dia 2.0mm PVC conduit surface	1	Mtrs				
7	304005026	25mm Dia 2.0mm PVC conduit concealed	1	Mtrs				
8	304005027	20mm Dia 2.0mm PVC conduit concealed	1	Mtrs				
9	304005028	Earthing (100 mm GI Pipe)	1	No				
10	304005029	Copper Plate earthing	1	No				
11	304005030	50x6mm GI strip	1	Mtr				
12	304005031	25x3mm GI strip	1	Mtr				
13	304005032	8 SWG GI wire	1	Mtr				
14	304005033	50mm dia GI pipe	1	Mtr				
15	304005034	100mm dia GI pipe	1	Mtr				

16	304005035	Hume pipe 200mm (reinforced tor steel)	1	Mtr				
17	304005036	Hume pipe 300mm (reinforced tor steel)	1	Mtr				
18	304005037	LT Cable Markers	1	No				
19	304005038	Cable termination, extension box 300x300x200mm	1	No				
20	304005039	Cable termination, extension box 200x200x150mm	1	No				
21	304005040	MS Box 6"x6"	1	No				
22	304005041	MS Box 8"x6"	1	No				
23	304005042	MS Box 10"x8"	1	No				
24	304005043	MS Box 12"x10"	1	No				
25	304005044	Cable Trench 300x750mm	1	Mtrs				
26	304005045	Cable Trench 600x750mm	1	Mtrs				
27	304005046	Faulty Cable Trench Excavation	1	Mtrs				
28	304005047	Road cutting 300 x 750mm	1	Mtr				
29	304005048	Laying of cables upto 3.5 / 4C x 16 sqmm	1	Mtr				
30	304005049	Laying of cables upto 3.5 / 4C x 16 sqmm in ground	1	Mtr				

31	304005050	Laying of cables from 3.5 / 4C x 25 to 50 sqmm	1	Mtr				
32	304005051	Laying of cables from 3.5 / 4C x 25 to 50 sqmm in ground	1	Mtr				
33	304005052	Laying of cables from 3.5C x 70 to 95 sqmm	1	Mtr				
34	304005053	Laying of cables from 3.5C x 70 to 95 sqmm in ground	1	Mtr				
35	304005054	Laying of cables from 3.5C x 120 to 185 sqmm	1	Mtr				
36	304005055	Laying of cables from 3.5C x 120 to 185 sqmm in ground	1	Mtr				
37	304005056	Laying of cables from 3.5C x 240 to 300 sqmm	1	Mtr				
38	304005057	Laying of cables from 3.5C x 240 to 300 sqmm in ground	1	Mtr				
39	304005058	Laying of cables for 3.5C x 400 sqmm	1	Mtr				
40	304005059	Laying of cables for 3.5C x 400 sqmm in ground	1	Mtr				
41	304005060	Laying of cables 1C X 1000 sqmm	1	Mtr				
42	304005061	Laying of cables 1C X 1000 sqmm in ground	1	Mtr				

43	304005062	Laying of 16sqmm single core copper cable	1	Mtr				
44	304005063	Laying of 25sqmm single core copper cable	1	Mtr				
45	304005064	Laying of 35sqmm single core copper cable	1	Mtr				
46	304005065	Laying of 50sqmm single core copper cable	1	Mtr				
47	304005066	Laying of 70sqmm single core copper cable	1	Mtr				
48	304005067	Laying of 95sqmm single core copper cable	1	Mtr				
49	304005068	Laying of 120sqmm single core copper cable	1	Mtr				
50	304005069	Laying of 185sqmm single core copper cable	1	Mtr				
51	304005070	Laying of 240sqmm single core copper cable	1	Mtr				
52	304005071	4C x 4sqmm Cable Terminations	1	No				
53	304005072	4C x 6sqmm Cable Terminations	1	No				
54	304005073	4C x 10sqmm Cable Terminations	1	No				
55	304005074	4C x 16sqmm Cable Terminations	1	No				

56	304005075	3.5C x 25sqmm Cable Terminations	1	No				
57	304005076	3.5C x 35sqmm Cable Terminations	1	No				
58	304005077	3.5C x 50sqmm Cable Terminations	1	No				
59	304005078	3.5C x 70sqmm Cable Terminations	1	No				
60	304005079	3.5C x 95sqmm Cable Terminations	1	No				
61	304005080	3.5C x 120sqmm Cable Terminations	1	No				
62	304005081	3.5C x 185sqmm Cable Terminations	1	No				
63	304005082	3.5C x 300sqmm Cable Terminations	1	No				
64	304005083	3.5C x 400sqmm Cable Terminations	1	No				
65	304005084	1C x 16sqmm Cable Terminations	1	No				
66	304005085	1C x 25sqmm Cable Terminations	1	No				
67	304005086	1C x 50sqmm Cable Terminations	1	No				
68	304005087	1C x 95sqmm Cable Terminations	1	No				
69	304005088	1C x 120sqmm Cable Terminations	1	No				
70	304005089	1C x 1000sqmm Cable Terminations	1	No				
71	304005090	LT cable jointing kit - 16sqmm	1	No				

72	304005091	LT cable jointing kit - 25sqmm	1	No				
73	304005092	LT cable jointing kit - 35sqmm	1	No				
74	304005093	LT cable jointing kit - 50sqmm	1	No				
75	304005094	LT cable jointing kit - 70sqmm	1	No				
76	304005095	LT cable jointing kit - 95sqmm	1	No				
77	304005096	LT cable jointing kit - 120sqmm	1	No				
78	304005097	LT cable jointing kit - 185sqmm	1	No				
79	304005098	LT cable jointing kit - 300sqmm	1	No				
80	304005099	GI perforated cable tray 100 x 50 x 2mm	1	Mtrs				
81	304005100	GI perforated cable tray 150 x 50 x 2mm	1	Mtrs				
82	304005101	GI perforated cable tray 300 x 50 x 2mm	1	Mtrs				
83	304005102	GI perforated cable tray 450 x 50 x 2mm	1	Mtrs				
84	304005103	GI perforated cable tray 600 x 50 x 2mm	1	Mtrs				
85	304005104	Sheet Metal Enclosure - 1 way	1	No				
86	304005105	Sheet Metal Enclosure - 2 way	1	No				
87	304005106	Sheet Metal Enclosure - 3 way	1	No				
88	304005107	Sheet Metal Enclosure - 4 way	1	No				

89	304005108	SPN - Distribution Board - 6 way	1	No				
90	304005109	SPN - Distribution Board - 8 way	1	No				
91	304005110	SPN - Distribution Board - 12 way	1	No				
92	304005111	SPN - Distribution Board - 16 way	1	No				
93	304005112	Horizontal TPN DB - 4 way double door	1	No				
94	304005113	Horizontal TPN DB - 6 way double door	1	No				
95	304005114	Horizontal TPN DB - 8 way double door	1	No				
96	304005115	Horizontal TPN DB - 12 way double door	1	No				
97	304005116	Vertical TPN DB - 4 way double door	1	No				
98	304005117	Vertical TPN DB - 8 way double door	1	No				
99	304005118	Vertical TPN DB - 12 way double door	1	No				
100	304005119	AC Box	1	No				
101	304005120	Fabrication of MS Angle Frame / Tray	1	KG				
102	312002333	6A, Modular type 1-way switch	1	No				
103	312002334	6A, Modular type 2-way switch	1	No				
104	312002335	6A, Modular type 3-pin socket	1	No				
105	312002336	6/16A Modular switch and socket	1	No				

106	312002337	20A, Metal plug and socket with SP MCB	1	No				
107	312002339	63A TPN industrial plug and socket DB with 4P MCB	1	No				
108	312002340	AC starter	1	No				
109	312002341	Ceiling rose	1	No				
110	312002342	2 Module metal flush box and cover plate with frame	1	No				
111	312002343	3 Module metal flush box and cover plate with frame	1	No				
112	312002344	4 Module metal flush box and cover plate with frame	1	No				
113	312002345	6 Module metal flush box and cover plate with frame	1	No				
114	312002346	8 Module metal flush box and cover plate with frame	1	No				
115	312002347	12 Module metal flush box and cover plate with frame	1	No				
116	312002363	Fan Regulator	1	No				
117	312002364	Exhaust Fans	1	No				
118	312002365	Ceiling Fans	1	No				
119	312002385	80 mm Dia GI Pipes	1	Mtr				

120	312002398	Removing of Cables upto 3.5/4C X 35Sqmm	1	Mtrs				
121	312002399	Removing of Cables from 3.5CX50 sqmm to 95sqmm	1	Mtrs				
122	312002400	Removing of Cables from 3.5CX120 Sqmm to 185Sqmm	1	Mtrs				
123	312002401	Removing of Cables from 3.5CX240 Sqmm to 400Sqmm	1	Mtrs				
124	312002425	GI Pipe Earthing (50 mm)	1	No				
125	312002429	50X6 MM CU Strip	1	Mtrs				
126	312002517	32ATPN Industrial plug & socket.	1	No				
127	312002518	63ATPN Industrial plug & socket.	1	No				
128	312002568	Removing of wires/PVC pipe	1	Mtrs				
129	312002572	Lightning Arrestor	1	No				
130	304005121	Oil Filtration	1	ltr				
131	304005122	Hiring of crane- 5T	8	hrs				
132	304005123	Hiring of forklift-3T	8	hrs				
133	304005124	Electrician	1	day				

134	304005125	Labour	1	day				
135	304005126	Scaffolding material	1	lumsu m				
136	312002329	Concealed / Surface Conduit (40mm Dia)	1	Mtrs				
137	312002588	SS perforated cable tray 100 x 50 x 2mm	1	Mtrs				
138	312002589	SS perforated cable tray 300 x 50 x 2mm	1	Mtrs				
139	312002590	SS perforated cable tray 450 x 50 x 2mm	1	Mtrs				
140	312002591	SS perforated cable tray 150 x 50 x 2mm	1	Mtrs				
141	312002584	50X6mm GI strip with tor wrapping	1	Mtrs				
142	312002585	25X3mm GI strip with tor wrapping	1	Mtrs				
143	312002573	6.0 sqmm Copper wiring	1	Mtrs				
144	312002586	Metering Panel	1	No				
145	312002587	Busbar Panel Board	1	No				
146	304005127	33KV HT Cable Jointing-3CX185sqmm	1	No				
147	304005128	11KV HT Cable Jointing-3CX95sqmm	1	No				
148	304005129	LT Cable Fault Locater	1	No				
149	304005130	HT Cable Fault Locater	1	No				
150	125001429	Supply of Electrical Items on Original Equipment Manufacturer (OEM) price lists	1	year				Percentage of discount should be quoted on various companies price lists GST rates & HSN codes as enclosed in Annexure - I

BOQ S.NO:150 ARCI Item Code: 125001776

Percentage of Discount Offered on various Companies Price list (Electrical items)

S.NO	Companies Price Lists with HSN codes	Discount offered by Contractor in %	GST in percentage	Remarks
1	LV- Switch Gear - SIEMENS			
2	LV- Switch Gear - L & T			
3	LV- Switch Gear - GE			
4	LV- Switch Gear - SCHNEIDER			
5	LV – Switch Gear – LEGRAND			
6	LV – Switch Gear – COOPER BUSSMANN			
7	Luminaires - PHILIPS			
8	Luminaires - BAJAJ			
9	Luminaires - CROMPTON			
10	Switches & Accessories - ANCHOR			
11	Wires - FINOLEX			
12	Wires - ANCHOR			
13	Wires - L & T			
14	LT Power & Control Cables – UNIVERSAL			

15	LT Power & Control Cables- FINOLEX			
16	LT Power & Control Cables- ANCHOR			
17	PVC Conduits – PRECISION			
18	MCB's & Distribution Boards – SCHNEIDER			
19	MCB's & Distribution Boards – L&T			
20	LT/HT Cable Jointing Kits – RAYCHEM			
21	LT/HT Cable Jointing Kits – DENSON			
22	Fans - ALMONARD			
23	Fans - BAJAJ			
24	Fans - CROMPTON			
25	Glands & Lugs – HMI			
26	Glands & Lugs - JAINSON			
27	Glands & Lugs - HEX			
28	Terminals – ELMEX			
29	Digital panel meters – SCHNEIDER			
30	Digital panel meters – L & T			
31	LT Power Capacitors – L & T			
32	Batteries - EXIDE			

33	Batteries - HBL			
34	Motors & Pumps – SIEMENS			
35	Motors & Pumps – TEXMO			
36	Motors & Pumps – SUGUNA			
37	Motors & Pumps – CROMPTON			
38	Current Transformers – KAPPA			
39	Current Transformers – L & T			
40	LT Power Capacitors – Neptune			
41	LED Luminaires - PHILIPS			
42	LED Luminaires - WIPRO			
43	LED Luminaires - CROMPTON			
44	Switches & Accessories – LEGRAND			